COLLEGE OF BUSINESS ADMINISTRATION
KING SAUD UNIVERSITY- AL MUZAHIMIYAH BRANCH
COURSE SPECIFICATION: MACROECONOMICS (ECON- 102)

The main purpose of this course is to provide a thorough understanding of the fundamental principles of macroeconomics. This course also focuses on contemporary macroeconomic events and aims to provide students with the ability to understand macroeconomic analysis in the context of business and household decision making as well as government policy. At the end of this course, students should be able to describe the macroeconomic context in which households, business enterprises and governments operate, to use macroeconomic theory to explain macroeconomic performance. This course encompasses all the materials needed to understand the key concepts. Multiple-choice questions, true/false statements, conceptual questions and numerical questions will be given in exam to assess the understandings of the students. Problem sets with solution keys will be used to test the students' ability to apply the concepts covered in the lectures. A set of exams, including review material and practice exams, will help them to better understand the subject. Keeping these things in mind the following topics have been included for this course.

Subject Coordinator: Dr. Md. Izhar Alam			
Instructor:	Dr. Md. Izhar Alam Dr. Mohd. Imran	**Instructor title:**	Asstt. Professor
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Required Topics	Credit hrs	Week
1. Introduction: Nature and Scope of Macro Economics; Differences between microeconomics and macroeconomics; Goal & Importance of macroeconomics; Tools of macroeconomics; Major Issues and Concerns of Macroeconomics; Post- Keynesian Developments in Macroeconomics- Monetarism, Supply- side Economics and Rational Expectations Theory, Review Questions, **Internal Assessment.**	**3**	**1**
2. National Income: Concepts- Gross Domestic Product (GDP), Gross National Product (GNP)	**6**	**2**

at market price and factor cost, Real & Nominal, Deflator, etc; Measurement and limitation of National Income; Circular flows of Income in two, three and four sector economy, Review Questions, **Internal Assessment.**		
3.Determination of Income and Employment (Classical and Keynesian Theory): Classical Theory of Employment, Say's Law of Market; Keynesian theory of employment- Aggregate demand & Aggregate Supply; Inflation & Deflation- Causes and Remedies; wages and unemployment (Phillips Curve); determination of National Income- Keynesian two, three and four sector model, Review Questions, **Internal Assessment.**	**9**	**3**
First Exam	**20 marks**	
4. Consumption and Saving: The principle of Effective Demand; Consumption Function- Average and Marginal Propensity to consume and save, Theories of consumption- Keynesian Absolute/Psychological law, Post- Keynesian Consumption Theories- Absolute & Relative Income Hypothesis, Permanent Income Hypothesis, Life Cycle Hypothesis, Review Questions, **Internal Assessment.**	**4**	**1**
5. IS- LM Model: Some Basic Concepts Introduction: Meaning of IS & LM curves; Goods Market Equilibrium- Derivation of IS curve, why does IS curve slope downward, the steepness of IS curve, shift in IS curve; Money Market Equilibrium- Derivation of LM curve, the slope of LM curve, shift in the LM curve, some essential features of LM curve, simultaneous equilibrium of goods and money markets; effect of changes in supply of money on interest rate and income level; the criticisms of IS- LM model; IS- LM model: Algebraic Analysis; Some Numerical problems and its implications, Review Questions, **Internal Assessment.**	**3**	**1**
6. Theories of Investment, Multiplier Accelerator & Business Cycle: Concepts, Types of investment, Determination of level of investment, Marginal Efficiency of Capital (MEC), Concepts and Working of Multiplier & Accelerator, Concepts and features of Business/Economic Cycle, Review Questions, **Internal Assessment.**	**4**	**1**
7. National Budget: Concept and types of budget, Government deficit and debt, Fiscal policy, Review Questions, **Internal Assessment.**	**3**	**1**
Second Exam	**20 marks**	
8. Monetary System and Monetary Policy: Money and its types and functions; Meaning and Functions of Central Bank and Commercial Banks; Monetary policy of Central Bank, Review Questions, **Internal Assessment.**	**4**	**1**
9. International Trade, Finance, Balance of Payment and Exchange Rate: Theories of International Trade; International Financing, Meaning and	**5**	**2**

components of Balance of Payments; Meaning, types and determination of Exchange Rate, Review Questions, **Internal Assessment.**		
10. Economic Growth & Development: Meaning, determinants and differences between Economic growth and development, Theories of Economic growth and development, Review Questions, **Internal Assessment.**	**4**	**1**
Final Exam	**40 marks**	

Distribution of Marks:

S. No.	**Examinations**	**Marks**
1.	First Exam	20 marks
2.	Second Exam	20 marks
3.	Internal Assessment	20 marks
4.	Final Exam	40 marks
5.	**Total**	**100 marks**

Suggested Study Materials:

- Class Notes & Practice Workbook Prepared by the Instructor (*Dr. Md. Izhar Alam & Dr Mohammad Imran*);
- Macroeconomics, 7th Edition by *N. Gregory Mankiw*; Worth Publishers; New York, USA;
- Advanced Macroeconomics, 4th Edition by *David Romer*; McGraw- Hill.

Note:

- Students are advised to visit the Instructor's website and look at announcements and download the study materials and be always updated.
- The above mentioned books (of softcopy) are more than 2 MB space and that's why these books cannot be uploaded at the website. Therefore, students are advised to take these books in their USB flash memory from their Instructions.

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1. Introduction to Macroeconomics

Points to be remembered:

Economy: A system of providing living to people.
Microeconomics: Study of the behavior of individual, small, isolated and disaggregated units.
Macroeconomics: Study of groups and broad aggregates of the economy.
Firm: An individual producing unit.
Industry: A group of firms producing identical or closely related goods.
The term microeconomics and macroeconomics were first given by **Ragner Frisch** in 1933.
Prof. J.M. Keynes is known as father of modern macroeconomics.
Macroeconomics became popular after *great depression of 1929- 33*.
Prof. J.M. Keynes wrote the book ***General Theory of Employment, Interest and Money*** in 1936.

Meaning of Macroeconomics:

The term macro has been derived from Greek word '*makros*' which means *large*. It is the study of aggregates or groups or the entire economy such as gross domestic product, total employment, aggregate demand, aggregate supply, total savings, general price level, etc.

Scope of Macroeconomics:

Macroeconomics has a wider scope than microeconomics. The study of macroeconomics extends to the following areas:

- Theory of National Income;
- Theory of Employment;
- Theory of Money Supply;
- Theory of General Price Level;
- Theory of International Trade; and
- Theory of Economic Growth.

Goals and Importance of Macroeconomics:

- To Achieve Higher Level of Gross Domestic Product;
- To Achieve Higher Level of Employment;
- Stability of Prices;
- Formulation of Economic Policies; and
- Achievement of Economic Development.

Tools of Macroeconomics:

Fiscal Policy: relates to the management of government revenue, expenditure and debt to achieve favorable effects and avoid unfavorable effects on income, output and employment.
Monetary Policy: relates to the management of money supply and credit to step up business activities, promote economic growth, stabilize the price level, achievement of full employment and equilibrium in balance of payments.
Income Policy: through this policy direct control is exercised over prices and wages.

Major Issues and Concerns of Macroeconomics:

- Employment and Unemployment;
- Determination of National Income (or GNP);
- General Price Level and Inflation;
- Business Cycle;
- Stagflation;
- Economic Growth;
- Balance of Payments and Exchange Rate.

Differences between Microeconomics and Macroeconomics:

Differences based on	Microeconomics	Macroeconomics
1. Subject- matter:	Small segments such as individual household, individual firm, individual price, etc.	Large aggregates such as aggregate demand, aggregate supply, national income, general price level, etc.
2. Use of techniques:	Partial equilibrium analysis	General equilibrium analysis
3. Assumptions:	Full employment in the economy	Underemployment of resources.
4. Core differences:	Price is the main determinant of microeconomics.	Income is the main determinant of macroeconomics.

Microeconomics and macroeconomics are interdependence.

Post- Keynesian Developments in Macroeconomics:

- Monetarism;
- Supply- side Economics;
- Rational Expectations Theory.

Monetarism:

Monetarists led by American economist Milton Friedman criticised Keynes' macroeconomics and developed a new idea that monetary policy is the prime engine in causing fluctuations in economic activity by bringing about change in aggregate demand. He stressed that even the Great Depression of 1930s was primarily caused by tight monetary policy adopted at that time.

There are two differences (issues) between the monetarists and Keynesians. First issue or difference relates to the relationship between money supply and inflation. The second relates to the role of government in the economy.

Monetarists believe that inflation is always and everywhere a monetary phenomenon. According to them, inflation is caused by rapid expansion of money supply in the economy and suggest a constant growth rate of money supply to control inflation.

As Keynesians emphasize that active role should be played by the government to control business cycles and achieve economic stability. Like classical economists, monetarists also believe that free- market economy is inherently stable and if the economy departs from the state of full- employment, full- employment equilibrium is restored through automatic adjustments in it.

Supply- Side Economics:

The failure of Keynesians to deal with stagflation (high inflation with high rate of unemployment) led supply- side economics. Supply- side economists pointed out that it was supply- shocks, delivered among others by reduction in oil supplies and increase in oil prices that caused the problem of stagflation. As a result of contraction in supply due to the adverse supply shocks, given the aggregate demand curve, price level and inflation rate could rise on the one hand and aggregate output could fall giving rise to more unemployment on the other.

Supply- side economists suggest that for the expansion in aggregate supply and thereby increase in employment opportunities, incentives to work, save and invest more were required to be promoted.

New Classical Macroeconomics or Rational Expectation Theory:

New classical macroeconomics also opposed to Keynesian macroeconomic theory and policy which focused on aggregate demand for goods and services. According to the new classical macroeconomic theory, consumers, workers and producers behave rationally to promote their interests and welfare. On the basis of their rational expectations, based on all the available information, they make quick adjustments in their behaviour. Therefore, according to the new classical macroeconomists or the profounder of rational expectation theory, involuntary unemployment cannot prevail.

A significant difference between the Keynesian theory and rational expectation theory may be noted here. In the Keynesian theory deficit in government budget leads to increase in aggregate demand and will therefore promote private investment. On the other hand, according to rational expectations theory, budget deficit will cause rate of interest to rise which will discourage private investment.

Like Friedman and other monetarists, supporters of rational expectations theory are opposed to the active role by the government.

Questions for Review

Multiple Choice Questions with Answer:

1. **Who is considered as father of modern macroeconomics?**

a. Adam Smith
b. Prof. J. M. Keynes
c. Prof. J. N. Keynes
d. Alfred Marshall

2. Who wrote the book "*General Theory of Employment, Interest and Money*"?

a. Adam Smith
b. Prof. J. M. Keynes
c. Prof. J. N. Keynes
d. Alfred Marshall

3. The term *microeconomics* and *macroeconomics* were first given by ----------

a. Adam Smith
b. Prof. J. M. Keynes
c. Ragner Frisch
d. Alfred Marshall

4. The book "*General Theory of Employment, Interest and Money*" was published in----------

a. 1836
b. 1936
c. 1963
d. None of these

5. Macroeconomics became popular after----------

a. *Great depression of 1929- 33*
b. 1972-73
c. 1996- 97
d. 2006- 07

6. The term '*macro'* has been derived from----------

a. Greek word '*makros*' which means *large*
b. English word '*makros*' which means *large*
c. Greek word '*makros*' which means *small*
d. French word '*makros*' which means *large*

7. In macroeconomics, we study about ----------

a. Theory of National Income & Employment
b. Theory of Money Supply & Price Level
c. Theory of International Trade & Eco growth
d. All of the above.

8. Which of the following is/are the goals of macroeconomics----------

a. To Achieve Higher Level of GDP
b. To Achieve Higher Level of Employment
c. Stability of Prices
d. All of the above.

9. What are the tools of macroeconomics?

a. Monetary Policy
b. Fiscal Policy
c. Income Policy
d. All of the above.

10. The study of groups and broad aggregates of the economy is known as----------

a. Microeconomics
b. Macroeconomics
c. International Economics
d. None of the above.

Ans:

Ques	1	2	3	4	5	6	7	8	9	10
Ans.	b	b	c	b	a	a	d	d	d	b

Write *T* for True and *F* for False against each of the following statements:

1. The term microeconomics and macroeconomics were first given by **Ragner Frisch** in 1933.
2. Prof. J.M. Keynes is known as father of modern macroeconomics.
3. Macroeconomics became popular after *great depression of 1929- 33*.
4. Prof. J. N. Keynes wrote the book *General Theory of Employment, Interest and Money* in 1936.
5. Price is the main determinant of macroeconomics.
6. Income is the main determinant of microeconomics.
7. Partial equilibrium analysis is used in macroeconomics.
8. General equilibrium analysis is applied in microeconomics.
9. Milton Friedman is monetarist.
10. Classical economists and monetarists emphasize that active role should be played by the government to control business cycles and achieve economic stability.

11. Keynesians believe in free- market economy.

12. Friedman and other monetarists as well as supporters of rational expectations theory are opposed to the active role by the government.

13. Microeconomics and macroeconomics are independent to each other.

Ans:

Ques	1	2	3	4	5	6	7	8	9	10	11	12	13
Ans.	T	T	T	F	F	F	F	F	T	F	F	T	F

Matching Test:

Match- I	**Match- II**
A. Father of Modern Macroeconomics	a. Milton Friedman
B. The term macroeconomics is given by	b. Prof. J. M. Keynes
C. Monetarist	c. Robert Lucas Jr.
D. Supply- side economist	d. Ranger Frisch
E. New Classical economist	e. Bruce Bartlett

Ans:

Match- I	A	B	C	D	E
Match- II	b	d	a	e	c

Ques: What is macroeconomics?

Ans: The term macro has been derived from Greek word '*makros*' which means *large*. It is the study of aggregates or groups or the entire economy such as gross domestic product, total employment, aggregate demand, aggregate supply, total savings, general price level, etc.

Ques: What are the scopes of macroeconomics?

Ans: Macroeconomics has a wider scope than microeconomics. The study of macroeconomics extends to the following areas:

- Theory of National Income;
- Theory of Employment;
- Theory of Money Supply;
- Theory of General Price Level;
- Theory of International Trade; and
- Theory of Economic Growth.

Ques: what are the main objectives/goals of macroeconomics?

Ans: Followings are the main objectives or goals of macroeconomics:

- To Achieve Higher Level of Gross Domestic Product;
- To Achieve Higher Level of Employment;
- Stability of Prices;
- Formulation of Economic Policies; and
- Achievement of Economic Development.

Ques: What are the main tools of macroeconomics?

Ans: **Fiscal Policy:** relates to the management of government revenue, expenditure and debt to achieve favorable effects and avoid unfavorable effects on income, output and employment.

Monetary Policy: relates to the management of money supply and credit to step up business activities, promote economic growth, stabilize the price level, achievement of full employment and equilibrium in balance of payments.

Income Policy: through this policy direct control is exercised over prices and wages.

Ques: What are the major issues and concerns of macroeconomics?

Ans: The major issues and concerns of macroeconomics are as follows

- Employment and Unemployment;
- Determination of National Income (or GNP);
- General Price Level and Inflation;
- Business Cycle;
- Stagflation;
- Economic Growth;
- Balance of Payments and Exchange Rate.

Ques: What are the main differences between microeconomics and macroeconomics?

Ans: The main differences between microeconomics and macroeconomics are as follows:

Differences based on	Microeconomics	Macroeconomics
5. Subject- matter:	Small segments such as individual household, individual firm, individual price, etc.	Large aggregates such as aggregate demand, aggregate supply, national income, general price level, etc.
6. Use of techniques:	Partial equilibrium analysis	General equilibrium analysis
7. Assumptions:	Full employment in the economy	Underemployment of resources.
8. Core differences:	Price is the main determinant of microeconomics.	Income is the main determinant of macroeconomics.

2. National Income

Introduction:

National income is an important concept of macroeconomics. It is the measure of economic activities in a country. It is the money value of all final goods and services produced by residents of a country in a year. It is also defined as the sum of factor incomes in a country in a year. It is also expressed in terms of aggregate expenditure of a country in a year.

Importance of National Income Estimates:

- Indicator of Economic Progress;
- Measure of Economic Growth;
- Comparison with other Countries;
- Significance in Business Policy Making;
- Significance for Trade Unions;
- Knowledge of Structural Changes;
- Signification for Economic Analysis, etc.

Some Basic Concepts:

Domestic Territory of a Country: It includes land mass of a country, territorial waters, ships and aircrafts owned and operated by residents across countries, fishing vessels, oil rigs and floating platforms and embassies abroad.

Normal Residents: A person or institution who ordinarily resides in a country and whose centre of economic interest lies in that country.

The normal residents of a country **include** the following:

- All producing enterprises operating in a country;
- Nationals of a country and the foreign nationals who stay for one year or more in the country;
- Saudi nationals who have gone abroad but come back within a year's time;
- Saudi employees working in the foreign embassies and international institutions located in Saudi Arabia; and
- Saudi students and patients who have gone abroad and stay there even for more than one year.

Normal Residents = Nationals living in Saudi Arabia + Non- nationals living in Saudi Arabia.

The persons who will **not be included** in the category of *normal residents* of a country are-

- Foreign nationals visiting the country for study tours, conferences, medical treatments, etc., and staying for a period less than one year (these persons, if they stay on for more than a year, will be considered as normal residents);
- Crew members of foreign vessels, businessmen and seasonal workers in the country if their stay is of less than a year (if they stay for more than one year, they will be considered as normal residents);
- International organizations (such as IMF, WTO, WHO, ILO, etc.) are not the normal residents of a country where they are located. They are residents of international area;
- Foreign national employees of international organizations, if their stay is of less than a year. However, Saudi nationals employed in the offices of these organizations situated in Saudi Arabia will be considered as normal residents of Saudi Arabia; and
- Officials, diplomats and members of the armed forces of a foreign country.

Non- resident of a Country: if a Saudi national goes abroad and stays there for a period less than one year, he will remain normal resident of Saudi Arabia. But, if he stays there for more than one year he will be treated as non- resident of Saudi Arabia.

Flow: It is quantity that can be measured over specific period of the time.

Stock: It is quantity measureable at particular Point of the time.

Accounting Year: The financial year which the flow of income in an economy is recorded.

Capital formation: The surplus of the production over consumption in an accounting year which is further used for production.

Final Goods: Goods which directly satisfies human wants.

Intermediate Goods: Goods which are used in the production process to produce other goods.

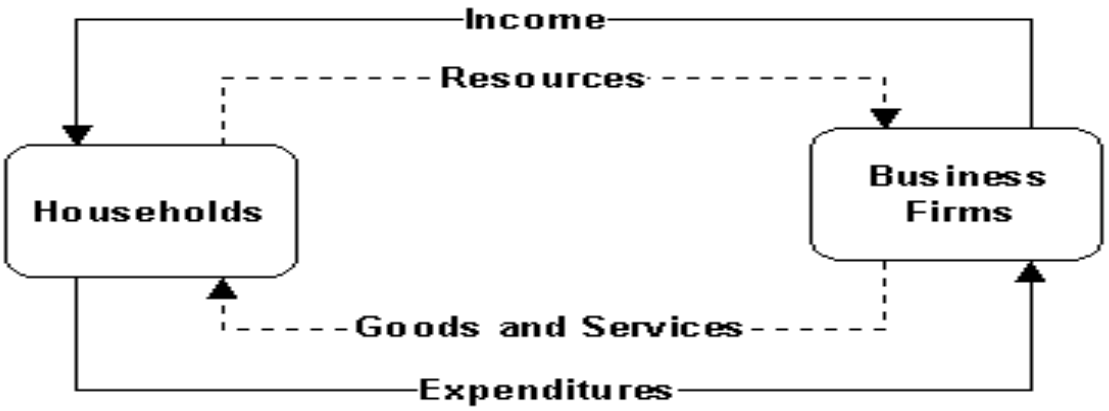
Per Capita Income: This is the average income of the citizens of a country obtained after dividing national income by living population.

Subsidies: economic assistance given to the producing unit by the state for compensating the cost of product so that it is available to consumers at affordable prices.

Factors of production/Primary Inputs/Economic Resources: Resources/goods which is used in the production process. For example land, labour, machines, power etc.

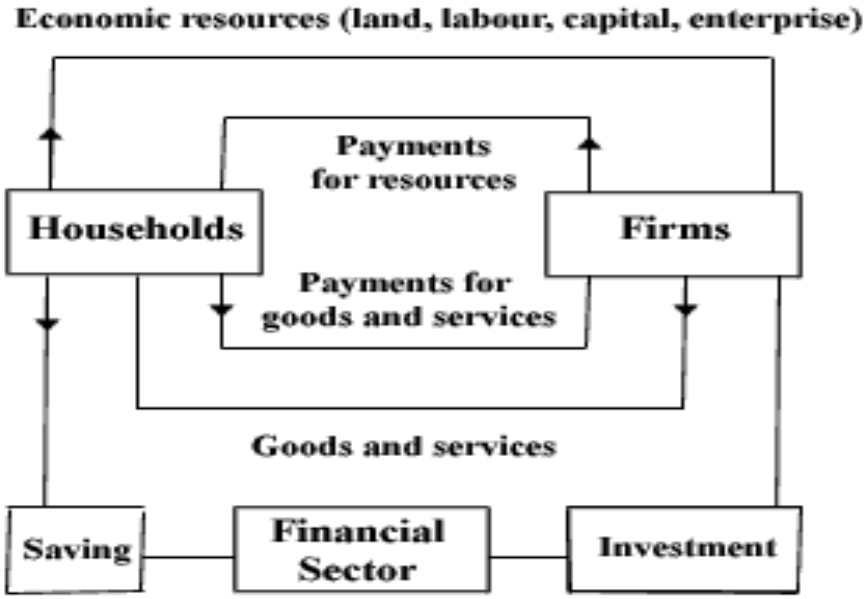
Circular Flow of Income:

Flow of Income in a Two- sector Economy:

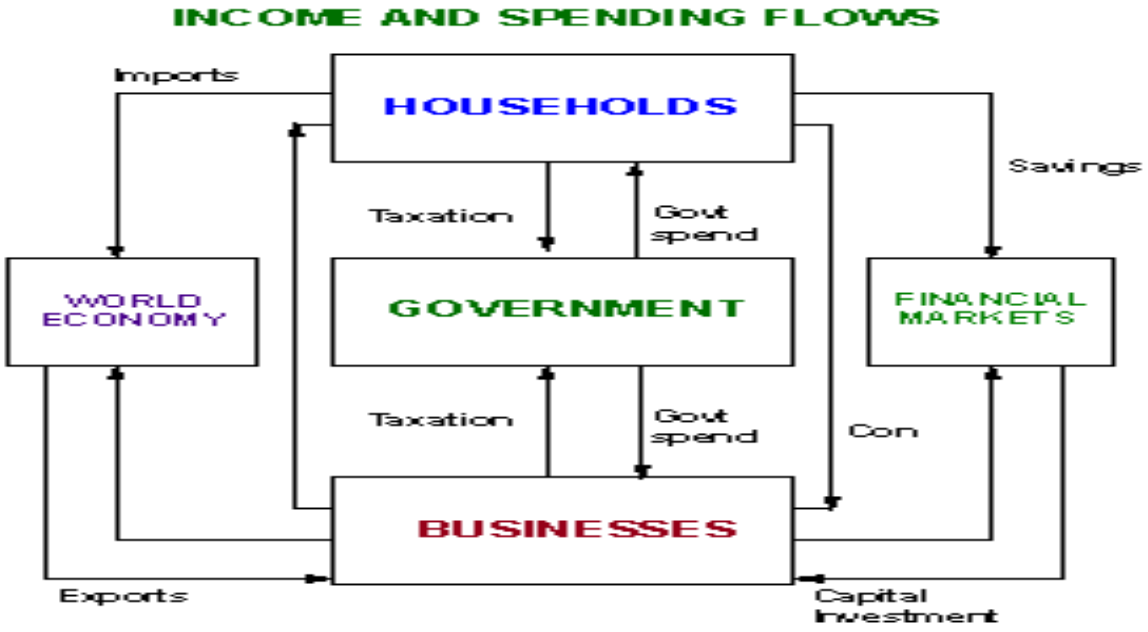


Solid Lines - Flow of Money
Dashed Lines - Flow of Goods and Services

Flow of Income in a Three- sector Economy (Introduction of Saving and Investment in the Flow of Income):



Flow of Income in a Four- sector Economy (Introduction of Foreign Trade in the Flow of Income):



Some Concepts of National Income and Related Aggregates:

The important concepts related to national income are:

- Gross Domestic Product at Market Price (GDP_{MP});
- Gross Nation Product at Market Price (GNP_{MP});
- Net Domestic Product at Market Price (NDP_{MP});
- Net Nation Product at Market Price (NNP_{MP});
- Gross Domestic Product at Factor Cost (GDP_{FC});
- Gross Nation Product at Factor Cost (GNP_{FC});
- Net Domestic Product at Factor Cost (NDP_{FC});
- Net Nation Product at Factor Cost (NNP_{FC});
- Private Income;
- Personal Income;
- Personal Disposable Income;

Gross Domestic Product at Market Price (GDP_{MP}): Gross Domestic Product (GDP_{MP}) is the market value of all final goods and services produced within domestic territory of the country during a year.

Features of GDP_{MP}:

- It includes only final goods and services produced in the domestic territory of a country;

- It includes consumption of fixed capital (depreciation);
- It is estimated at the prevailing prices.

Gross Nation Product at Market Price (GNP_{MP}): Gross National Product at market price is Gross Domestic Product at market price plus net factor income from abroad. **GNP_{MP}** is the money value of all final goods and services produced in the domestic territory of a country during a year plus Net factor income from abroad. i.e.,

$$GNP_{MP} = GDP_{MP} + NFIA$$

Where,

GNP_{MP} = Gross National Product at market price
GDP_{MP}= Gross Domestic Product at market price
NFIA= Net factor income from abroad

Net Factor Income from Abroad (NFIA): Net factor income from abroad is the difference between the income received from abroad for rendering factor services by the normal residents of the country to the rest of the world and income paid for the factor services rendered by non-residents in the domestic territory of a country.

Net Domestic Product at Market Prices (NDP_{MP}): Net Domestic Product at market prices is the net market value of all the final goods and services produced in domestic territory of a country during a year. Net market value of the goods is equal to the market value of goods minus depreciation.

$$NDP_{MP} = GDP_{MP} - D \text{ (or CCA)}$$

Where,

NDP_{MP}= Net Domestic Product at market prices
GDP_{MP}= Gross Domestic Product at market price
D = Depreciation
CCA= Capital Consumption Allowances

Net National Product at Market Price (NNP_{MP}): Net National Product at Market Prices is the net market value of all the final goods and services produced by the normal residents of a country during a year.

$$NNP_{MP} = GNP_{MP} - D$$

Where,

NNP_{MP} = Net National Product at Market Prices
GNP_{MP} = Gross National Product at market price
D = Depreciation

Gross Domestic Product at Factor Cost (GDP_{FC}): It is the sum of net value added at factor cost by all the producers in the domestic territory of a country and the consumption of fixed capital during an accounting year. i.e.,

GDP_{FC} = Domestic Factor Income + Consumption of Fixed Capital

$GDP_{FC} = GDP_{MP} – IT + S$

Gross National Product at Factor Cost (GNP_{FC}): It is the difference between the GNP_{MP} and net indirect taxes. It is the sum of net domestic factor income, consumption of fixed capital and net factor income from abroad. Symbolically,

$GNP_{FC} = GNP_{MP} – IT + S$

GNP_{FC} = Domestic Factor Income + NFIA + Consumption of fixed capital.

Net Domestic Product at Factor Cost (NDP_{FC}): Net domestic income is the income generated in the form of wages, rent, interest and profit in the domestic territory of a country by all the producers (normal and non- normal residents) in an accounting year. In other words,

$NDP_{FC} = NDP_{MP} – IT + S$

Where;

IT = Indirect Taxes; and
S = Subsidies.

Net Indirect Tax: The difference between IT and S is known as net indirect tax.

Net National Product at Factor Cost (NNP_{FC}): Net National Product at the factor cost is the sum total of net value added at factor cost by all the normal residents producer enterprises of a country during a year. Symbolically,

$NNP_{FC} = NDP_{FC} + NFIA$

It is also expressed as the sum of domestic factor income and net factor income from abroad. *i.e.,*

NNP_{FC} = Net Domestic Income + NFIA

Net National Product at Factor Cost (NNP_{FC}) is also known as *National Income.*

Personal Income: Personal income is sum of all kinds of income received by the individuals from all sources.

Private Income: It refers to the income which accrues to individuals from whatsoever source, within the domestic territory of a country and abroad.

Distinction between Private Income and Personal Income: Private income includes all the payments which accrue to individuals from whatever sources while personal income includes only those payments which are actually received by the individuals.

Personal Disposable Income: It refers to that part of personal income which is actually available to households for consumption and saving. In other words,

Personal Disposable Income = Personal Income – (Direct Taxes + Fines, Fees, etc. + Social Security Contributions by Employees)

Net National Disposable Income: It is the sum of national income, net indirect taxes and other current transfers from the rest of the world. In other words,

Net National Disposable Income = National Income + Net Indirect Taxes + Net Capital Transfers from the rest of the World

Per Capita Income (PCI): It is the average income of the normal residents of a country. Symbolically,

$$\text{PCI} = \frac{National\ Income\ (NNPat\ Factor\ Cost)}{Population}$$

Real Income: The income measured in physical term or in terms of the quantity of goods and services. It is calculated at some base year.

Nominal income: The income measured in term of current price.

GDP Deflator: It is nominal GDP (current price) divided by real GDP (base year price).

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

Measurement of National Income

National income worked as important indicators to measure the level of economic growth and welfare of the country. National income data facilitate the formulation of plans and fixing the targets of development. National incomes also narrate the picture of saving, investment, distribution of national income, consumption and employment level of the country. For this overall these aspects we need national income and allied estimates.

Methods of Measurement of National Income

There are three methods of the measurement of the national income. They are as follows:

- **Value Added Method or *Product Method***
- **Income Method or *Factor income in production process***

- **Expenditure Method**

VALUE ADDED METHOD OR *PRODUCT METHOD*

The economy consists of either public or private enterprises. The enterprises contribute to the production with the help of given factors of production. In the economy the produced goods are useful for producers and individuals or we can say that they are either consumer goods or the producer goods. In the same way there are various people who are not directly producing. But without providing their services the economy cannot run. For example the services of doctor, teachers, Police, bank services etc. are necessary for economic development. Those people who are providing these services are paid in terms of the wages and salaries.

Therefore , Value added method or product method of the estimation of the national income states that if we add all the money value of the final goods and services in domestic territory of the in an accounting year time gives us **Gross Domestic Product** at market prices.

Steps for the Estimation of National Income by Value Added or Product Method

1) Estimating the value of Gross Domestic Product of the different sectors of an economy. The producing sectors of an economy divided into three parts
    A. Primary Sector
    B. Secondary sector and
    C. Tertiary sector
2) Determining the cost of Materials and services provided by the sectors
3) Determining the net value added of the domestic product and
4) Adding the factor income from abroad

Precautions while estimating National Income through Value Added Method

A. Net Increase in stocks should be included.
B. Own account production of fixed assets by all the producer enterprises should be included.
C. Non- marketed goods and services for self-consumption should not be included.
D. Imputed rent of owner occupied houses should be properly counted and included.
E. Sales and purchase of second hand goods should not be included.
F. The brokerage or commission of second hand should be included because it is productive services rendered by them.
G. Trading of stocks and bonds should not count in the estimation of national income because it does not represent the production of new assets.

INCOME METHOD

According to the income method, national income is estimated by adding incomes earned by all factors of production for their factor services during a year. The factor services include land,

labour, capital and enterprises. These factor services received the income against their services. The factors income distributed as follow:

Factors of Production	Factors Income
1.Land	1. Rent
2.Labour	2.Wages or Salaries
3.Capital	3.Interest
4.Enterprises	4. Profit

Steps of Income Method

I. **Identifying the producer enterprises which employ factors of production**
This is the first step. All the producer enterprises are divided into three main sectors: primary, secondary and tertiary sector.

II. **Classification of Factor Incomes**
Factor incomes are generally classified into three groups
   A. Compensation to the employees
   B. Operating surplus (Rent +Interest+ Profit) and
   C. Mixed Income of the self employed

III. **Estimating Factor Payments—**
Payment made by different individual enterprises to the factors of production for rendering factor services is known as **factor payments**.
Adding the factor payments by all enterprises in an individual sector, we get factor payment of that sector. By adding the incomes paid out to all the sectors of the domestic territory of the country, we get domestic factor income or the national income.

Precautions while estimating National Income through Income Method

A. All government expenditure on transfer payments, such as Unemployment benefits, old age Pensions, scholarships etc. should not be included. This is because they are received without rendering any productive services.
B. Value of imputed rent owner-occupied houses should be included.
C. Incomes earned through illegal activities like smuggling, tax evasion etc. should not be included.
D. Windfall gains like lottery income should not be included.
E. Money received for sale and purchase of second hand goods and bonds and share should not be included in factor income.

EXPENDITURE METHOD

According to the expenditure method, the gross domestic product (GDP) is the sum total of all final expenditure on various goods and services within domestic territory of the country, during a year. The main components of the final expenditure are as follows;

I. Private Final Consumption Expenditure(C)
II. Investment Expenditure (I)

III. Government purchase of goods and services(G)
IV. Net Exports (X-M) Where, X for exports and M for Imports

Mathematically the expenditure method to calculate the national income written as

$$Y= C+I+G+(X-M) + \text{Net Factor Income from Abroad}$$

Where,

Y is the National Income
C is the Private Consumption Expenditure
I is the Investment Expenditure
G is the Government Purchases of the goods and services
X-M is the net Exports

Precautions of Expenditure Method

A. Expenditure on second hand goods should not included
B. Expenditure on bonds and shares should not be included
C. All government expenditure on transfer payments, such as Unemployment benefits, old age Pensions, scholarships etc. should not be included.
D. Expenditure on all intermediate goods and services should not be included.

Formula: National Income Accounting:

$GDP_{MP} = C + I + G$

$GNP_{MP} = GDP_{MP} + NFIA$

$NDP_{MP} = GDP_{MP} – D$ (or CCA)

$NNP_{MP} = GNP_{MP} – D$

GDP_{FC} = Domestic Factor Income + Consumption of Fixed Capital

$GDP_{FC} = GDP_{MP} – IT + S$

$GNP_{FC} = GNP_{MP} – IT + S$

GNP_{FC} = Domestic Factor Income + NFIA + Consumption of fixed capital.

$NDP_{FC} = NDP_{MP} – IT + S$

$NNP_{FC} = NDP_{FC} + NFIA$

NNP_{FC} = Net Domestic Income + NFIA

Personal Income = Private Income – Corporate Taxes – Corporate Savings

Personal Disposable Income = Personal Income – (Direct Taxes + Fines, Fees, etc. + Social Security Contributions by Employees)

Net National Disposable Income = National Income + Net Indirect Taxes + Net Capital Transfers from the rest of the World

Personal Saving = Personal Disposable Income – Personal Consumption Expenditure

Gross Domestic Saving = Personal Savings + Private Corporate Savings + Public Savings.

PCI = $\frac{National\ Income\ (NNPat\ Factor\ Cost)}{Population}$

GDP Deflator = $\frac{Nominal\ GDP}{Real\ GDP} \times 100$

Questions for Review

Multiple Choice Questions with Answer:

1. The market value of all final goods and services produced within domestic territory of the country during a year is known as----------
   a. GDP_{MP} b. GDP_{FC}
   c. GNP_{MP} d. GNP_{FC}

2. The money value of all final goods and services produced in the domestic territory of a country during a year plus Net factor income from abroad is called----------
   a. GDP_{MP} b. GDP_{FC}
   c. GNP_{MP} d. GNP_{FC}

3. The difference between the income received from abroad for rendering factor services by the normal residents of the country to the rest of the world and income paid for the factor services rendered by nonresidents in the domestic territory of a country is known as-------
   a. Net Factor Income from Abroad b. Capital Consumption Allowances
   c. Depreciation d. None of these.

4. The difference between indirect tax and subsidy is known as----------
   a. Net Factor Income from Abroad b. Capital Consumption Allowances
   c. Depreciation d. Net Indirect Tax.

5. Net National Product at Factor Cost (NNP_{FC}) is also known as----------
   a. Net Factor Income from Abroad b. National Income

c. National cost
d. Net Indirect Tax.

6. That part of personal income which is actually available to households for consumption and saving is called----------
   a. National Disposable Income
   b. Personal Disposable Income
   c. Personal Income
   d. None.

7. Real and nominal income is calculated respectively at----------
   a. Current price and Constant Price
   b. Constant price and Current price
   c. Current price and Current price
   d. Constant price and Constant price.

8. GDP Deflator is equal to----------

   a. $\frac{Nominal\ GDP}{Real\ GDP} \times 100$
   b. $\frac{Real\ GDP}{Nominal\ GDP} \times 100$
   c. $\frac{Nominal\ GNP}{Real\ GNP} \times 100$
   d. $\frac{Nominal\ NDP}{Real\ NDP} \times 100$

9. Sum of all kinds of income received by the individuals from all sources is called---------
   a. Personal Income
   b. Private Income
   c. Personal Disposable Income
   d. None

10. GNP_{MP} is equal to
    a. GDP_{MP} + NFIA
    b. GDP_{MP} - NFIA
    c. GDP_{MP} – D
    d. None

Ques	1	2	3	4	5	6	7	8	9	10
Ans	a	c	a	d	b	b	b	a	a	a

Write *T* for True and *F* for False against each of the following statements:

1. GNP_{MP} is the money value of all final goods and services produced in the domestic territory of a country during a year.
2. Gross Domestic Product (GDP_{MP}) is the market value of all final goods and services produced within domestic territory of the country during a year.
3. $GNP_{MP} = GDP_{MP} + NFIA$
4. $NDP_{MP} = GDP_{MP} – D$ (or CCA)
5. $NNP_{MP} = GNP_{MP} – D$
6. Net National Product at Factor Cost (NNP_{FC}) is also known as *National Income.*
7. The difference between IT and S is known as net indirect tax.
8. GDP_{MP} does not include consumption of fixed capital (depreciation).

Ques	1	2	3	4	5	6	7	8
Ans								

Matching Test:

Factors of Production- I
1. Land
2. Labour
3. Capital
4. Enterprises

Factors Income- II
A. Rent
B. Wages or Salaries
C. Interest
D. Profit

Match- I	1	2	3	4
Match- II	A	B	C	D

Match- I
A. GDP_{MP} + NFIA
B. GNP_{MP} – IT + S
C. GNP_{MP} – D
D. NDP_{FC} + NFIA

Match- II
1. GNP_{FC}
2. GNP_{MP}
3. NNP_{FC}
4. NNP_{MP}

Match- I	A	B	C	D
Match- II	2	1	4	3

Questions with Answer:

Question: What do you understand by the term *national income*?

Answer: It is the money value of all final goods and services produced by residents of a country in a year. It is also defined as the sum of factor incomes in a country in a year. It is also expressed in terms of aggregate expenditure of a country in a year.

Question: What is the importance of national income accounting in an economy?

Answer: Followings are the points which shows the importance of national income accounting:

- Indicator of Economic Progress;
- Measure of Economic Growth;
- Comparison with other Countries;
- Significance in Business Policy Making;
- Significance for Trade Unions;
- Knowledge of Structural Changes;

- Signification for Economic Analysis, etc.

Question: What do you understand by the term *domestic territory of a country*?

Answer: It includes land mass of a country, territorial waters, ships and aircrafts owned and operated by residents across countries, fishing vessels, oil rigs and floating platforms and embassies abroad.

Question: What do you mean by normal resident?

Answer: A person or institution who ordinarily resides in a country and whose centre of economic interest lies in that country is called normal resident.

The normal residents of a country **include** the following:

- All producing enterprises operating in a country;
- Nationals of a country and the foreign nationals who stay for one year or more in the country;
- Saudi nationals who have gone abroad but come back within a year's time;
- Saudi employees working in the foreign embassies and international institutions located in Saudi Arabia; and
- Saudi students and patients who have gone abroad and stay there even for more than one year.

Normal Residents = Nationals living in Saudi Arabia + Non- nationals living in Saudi Arabia

Question: What do you understand by *non- resident of a country*?

Answer: if a Saudi national goes abroad and stays there for a period less than one year, he will remain normal resident of Saudi Arabia. But, if he stays there for more than one year he will be treated as non- resident of Saudi Arabia.

Question: What is capital formation?

Answer: The surplus of the production over consumption in an accounting year which is further used for production is called capital formation.

Question: What are final goods?

Answer: Goods which directly satisfies human wants are called final goods.

Question: What are intermediate goods?

Answer: Goods which are used in the production process to produce other goods are called intermediate goods.

Question: What is Gross Domestic Product at Market Price (GDP_{MP})?

Answer: Gross Domestic Product (GDP_{MP}) is the market value of all final goods and services produced within domestic territory of the country during a year.

Question: What is the features of GDP_{MP}?

Answer: the main features of GDP_{MP} are:

- It includes only final goods and services produced in the domestic territory of a country;
- It includes consumption of fixed capital (depreciation);
- It is estimated at the prevailing prices.

Question: What is Gross Nation Product at Market Price (GNP_{MP})?

Answer: Gross National Product at market price is Gross Domestic Product at market price plus net factor income from abroad. **GNP_{MP}** is the money value of all final goods and services produced in the domestic territory of a country during a year plus Net factor income from abroad. i.e.,

$$GNP_{MP} = GDP_{MP} + NFIA$$

Where,

GNP_{MP} = Gross National Product at market price
GDP_{MP}= Gross Domestic Product at market price
NFIA= Net factor income from abroad

Question: What do you understand by Net Factor Income from Abroad (NFIA)?

Answer: Net factor income from abroad is the difference between the income received from abroad for rendering factor services by the normal residents of the country to the rest of the world and income paid for the factor services rendered by nonresidents in the domestic territory of a country.

Question: What is Net Domestic Product at Market Prices (NDP_{MP})?

Answer: Net Domestic Product at market prices is the net market value of all the final goods and services produced in domestic territory of a country during a year. Net market value of the goods is equal to the market value of goods minus depreciation.

$$NDP_{MP} = GDP_{MP} - D \text{ (or CCA)}$$

Where,

NDP_{MP}= Net Domestic Product at market prices
GDP_{MP}= Gross Domestic Product at market price

D = Depreciation
CCA= Capital Consumption Allowances

Question: What is Net National Product at Market Price (NNP_{MP}): Net National Product at Answer: Market Prices is the net market value of all the final goods and services produced by the normal residents of a country during a year.

$NNP_{MP} = GNP_{MP} – D$

Where,

NNP_{MP} = Net National Product at Market Prices
GNP_{MP} = Gross National Product at market price
D = Depreciation

Question: What is Gross Domestic Product at Factor Cost (GDP_{FC})?

Answer: It is the sum of net value added at factor cost by all the producers in the domestic territory of a country and the consumption of fixed capital during an accounting year. i.e.,

GDP_{FC} = Domestic Factor Income + Consumption of Fixed Capital

$GDP_{FC} = GNP_{MP} – IT + S$

Question: What is Gross National Product at Factor Cost (GNP_{FC})?

Answer: It is the difference between the GNP_{MP} and net indirect taxes. It is the sum of net domestic factor income, consumption of fixed capital and net factor income from abroad. Symbolically,

$GNP_{FC} = GNP_{MP} – IT + S$

GNP_{FC} = Domestic Factor Income + NFIA + Consumption of fixed capital.

Question: What is Net Domestic Product at Factor Cost (NDP_{FC})?

Answer: Net domestic income is the income generated in the form of wages, rent, interest and profit in the domestic territory of a country by all the producers (normal and non-normal residents) in an accounting year. In other words,

$NDP_{FC} = NDP_{MP} – IT + S$

Where;

IT = Indirect Taxes; and
S = Subsidies.

Question: What is Net Indirect Tax?
Answer: The difference between IT and S is known as net indirect tax.

Question: What is Net National Product at Factor Cost (NNP_{FC})?

Answer: Net National Product at the factor cost is the sum total of net value added at factor cost by all the normal residents producer enterprises of a country during a year. Symbolically,

$NNP_{FC} = NDP_{FC} + NFIA$

It is also expressed as the sum of domestic factor income and net factor income from abroad. *i.e.,*

NNP_{FC} = Net Domestic Income + NFIA

Net National Product at Factor Cost (NNP_{FC}) is also known as *National Income.*

Question: What is Personal Income?

Answer: Personal income is sum of all kinds of income received by the individuals from all sources.

Question: What is Private Income?

Answer: It refers to the income which accrues to individuals from whatsoever source, within the domestic territory of a country and abroad.

Question: What is difference between Private Income and Personal Income?

Answer: Private income includes all the payments which accrue to individuals from whatever sources while personal income includes only those payments which are actually received by the individuals.

Question: What is Personal Disposable Income?

Answer: It refers to that part of personal income which is actually available to households for consumption and saving. In other words,

Personal Disposable Income = Personal Income – (Direct Taxes + Fines, Fees, etc. + Social Security Contributions by Employees)

Question: What is Net National Disposable Income?

Answer: It is the sum of national income, net indirect taxes and other current transfers from the rest of the world. In other words,

Net National Disposable Income = National Income + Net Indirect Taxes + Net Capital Transfers from the rest of the World

Question: What is Per Capita Income (PCI)?

Answer: It is the average income of the normal residents of a country. Symbolically,

$$\text{PCI} = \frac{National\ Income\ (NNPat\ Factor\ Cost)}{Population}$$

Question: What is Real Income?

Answer: The income measured in physical term or in terms of the quantity of goods and services. It is calculated at some base year.

Question: What is Nominal income?

Answer: The income measured in term of current price is called nominal income.

Question: What is GDP Deflator?

Answer: It is nominal GDP (current price) divided by real GDP (base year price).

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

Question: What are the methods of measurement of national income?

Answer: There are three methods of the measurement of the national income:

- Value Added Method or *Product Method*
- Income Method or *Factor income in production process*
- Expenditure Method

Question: Suppose a country produces four goods: rice, cloth, cement and cars. The production of the four commodities in the year 2013- 14 was 1000 units, 5000 units, 2000 units and 500 units respectively. The per unit price of the four commodities is SR 10, SR 20, SR 50 , and SR 2,00,000 respectively. Find out the GDP at market prices.

Solution:

S. No.	Commodity	Quantity (Units)	Price per unit (SR)	Gross Money Value (SR)
1.	Rice	1000	10	10,000
2.	Cloth	5000	20	1,00,000
3.	Cement	2000	50	1,00,000

4.	Car	500	20,00,000	10,00,00,000
Total Money Value in SR (GDP_{MP}) =				**10,02,10,000**

Question: Suppose the gross domestic product at market prices of Saudi Arabia in 2012- 13 was SR 85,000 crores and net factor income from abroad was (-) SR 430 crores. Calculate GNP_{MP}.

Solution: $GNP_{MP} = GDP_{MP} + NFIA$

$= 85,000 + (- 430) = SR\ 84,570$ crores.

Question: Suppose we are provided with the following information:

(i) GNP_{MP} = SR 35,800 Crores
(ii) Consumption of fixed capital = SR 1,670

Find out Net National Product at market price.

Solution: $NNP_{MP} = GNP_{MP}$ – Consumption of fixed capital

$= 35,800 – 1,670$

$= SR\ 34,130$ Crores.

Question: Given the following data, calculate net domestic product at market prices:

(i) Gross National Product at market prices = SR 85,000 Crores;
(ii) Consumption of fixed capital = SR 3,000 Crores
(iii) Net factor income from abroad = SR 2,000 Crores.

Solution: $NDP_{MP} = GDP_{MP}$- Consumption of fixed capital

$= (GNP_{MP}$ – Net factor income from abroad) - Consumption of fixed capital

$= (85,000 – 2,000) – 3,000 = SR\ 80,000$ Crores.

Question: Given the following information, calculate net domestic product at factor cost:

(i) Net domestic product at market prices = SR 25,000 Crores
(ii) Indirect taxes = SR 1500 Crores
(iii) Subsidies = SR 500 Crores.

Solution: $NDP_{FC} = NDP_{MP}$ – IT +S

$= 25000 – 1500 + 500 = SR\ 24000$ Crores.

Question: Given the following information about an economy, calculate net domestic product at factor cost:

(i) Gross domestic product at market prices = SR 12000 Crores
(ii) Consumption of fixed capital = SR 1500 Crores
(iii) Subsidies = SR 300 Crores
(iv) Indirect taxes = SR 1000.

Solution: $NDP_{FC} = NDP_{MP} – IT + S$

$= (GDP_{MP} – \text{Consumption of fixed capital}) – IT + S$

$= (12000 – 1500) + 1000 + 300$

$= 9500 + 1300 = \text{SR } 10800 \text{ Crores}$

Question: Given the following data, calculate GDP_{FC}:

(i) Net domestic product at factor cost = SR 25000 Cr
(ii) Consumption of fixed capital = SR 3000 Cr

Solution: $GDP_{FC} = NDP_{FC} + \text{Consumption of fixed capital}$

$= 25000 + 3000 = \text{SR } 28000 \text{ Cr.}$

Question: Given the following information, calculate GDP_{FC}:

(i) NNP_{MP} = SR 3200 Cr
(ii) NFIA = SR 200 Cr
(iii) Consumption of fixed capital = SR 1000 Cr
(iv) Indirect taxes = SR 500 Cr
(v) Subsidies = SR 300 Cr

Solution: $GDP_{FC} = GDP_{MP} – IT + S$

$= (NNP_{MP} + \text{Consumption of fixed capital} - NFIA) – IT + S$

$= (3200 + 1000 - 200) – 500 + 300$

$= 4000 – 500 + 300$

$= \text{SR } 3700 \text{ Cr}$

3. Theory & Determination of Income and Employment (Classical and Keynesian Theory)

Points to be remembered:

- **Employment (توظيف):** A situation when a person is able and willing to take up a job and gets employed.
- **Full Employment (كامل التوظيف):** A situation where all those workers who are able and willing to work get employment.
- **Under Employment (تحت التوظيف):** A situation when people are engaged in jobs but they do not get these jobs according to their capabilities, efficiency and qualifications.
- **Unemployment (بطالة):** A situation when a person is willing to work but does not get opportunity to work.
- **Involuntary Unemployment (البطالة القسرية):** A situation when the workers are willing to work under any conditions and at any wage rate but they fail to get employment.
- **Voluntary Unemployment (البطالة الطوعية):** When the economy offers employment opportunities to the workers, but they themselves are not willing to take up jobs because the employment conditions such as wage rate, location, promotional avenues, physical environment, attitude of the employer, etc., do not suit them.
- **Cyclical Unemployment (البطالة الدورية):** It is caused by slackness in business conditions. During depression, investment activities get discouraged. Contraction in business activities renders large numbers of workers unemployed.
- **Technological Unemployment (البطالة التكنولوجية):** It is generally found in the advanced countries. The main cause of this unemployment is the introduction of the new technology.
- **Frictional Unemployment (البطالة الاحتكاكية):** It is a temporary unemployment which exists during the period of the transfer of labor from one occupation to another.
- **Structural Unemployment (البطالة الهيكلية):** It is the result of the backwardness and underdevelopment of an economy.
- **Disguised Unemployment (البطالة المقنعة):** When more workers are engaged in a work than actually required to work, it is called disguised unemployment.

- **Equilibrium level of employment (مستوى التوازن للعمالة):** level of employment where aggregate demand equals aggregate supply.
- **Full employment level (مستوى التوظيف الكامل):** the level of employment where all the available supply of labour is gainfully employed.
- **Excess demand (الطلب الزائد):** when aggregate demand exceeds aggregate supply at full employment level.
- **Deficient demand (الطلب ناقص):** when aggregate demand falls short of aggregate supply at full employment level.
- **Inflationary gap (فجوة تضخمية):** it occurs as an excess of anticipated expenditure over available output at full employment level.
- **Deflationary gap (الفجوة الانكماشية):** it occurs as an excess of available aggregate output over anticipated aggregate expenditure.
- **Ex- ante saving (السابقين عليه سابقا الادخار):** Ex- ante saving is what the savers plan (or intend) to save at different levels of income in an economy. It is also known as intended saving or planned saving.
- **Ex- post saving (آخر سبيل توفير):** It refers to actual or realized saving in an economy during a year.
- **Ex- ante Investment (السابقين أنتي الاستثمار):** Ex- ante investment is what the investors plan (or intend) to invest at different levels of income in an economy. It is also known as intended investment or planned investment.
- **Ex- post investment (استثمار آخر السابقين):** It refers to actual or realized investment in an economy during a year.

Classical Theory of Income and Employment:

Old classical economists like Adam Smith, Ricardo, J. B. Say, J. S. Mill, and N. Senior believe in *laissez faire* policy (no government intervention in any economic activities) developed the classical theory of employment. This theory states that full employment is a normal feature of a capitalist economy. The classical theory of employment rules out the possibility of unemployment in a free market economy. The economy would always be in a full employment equilibrium.

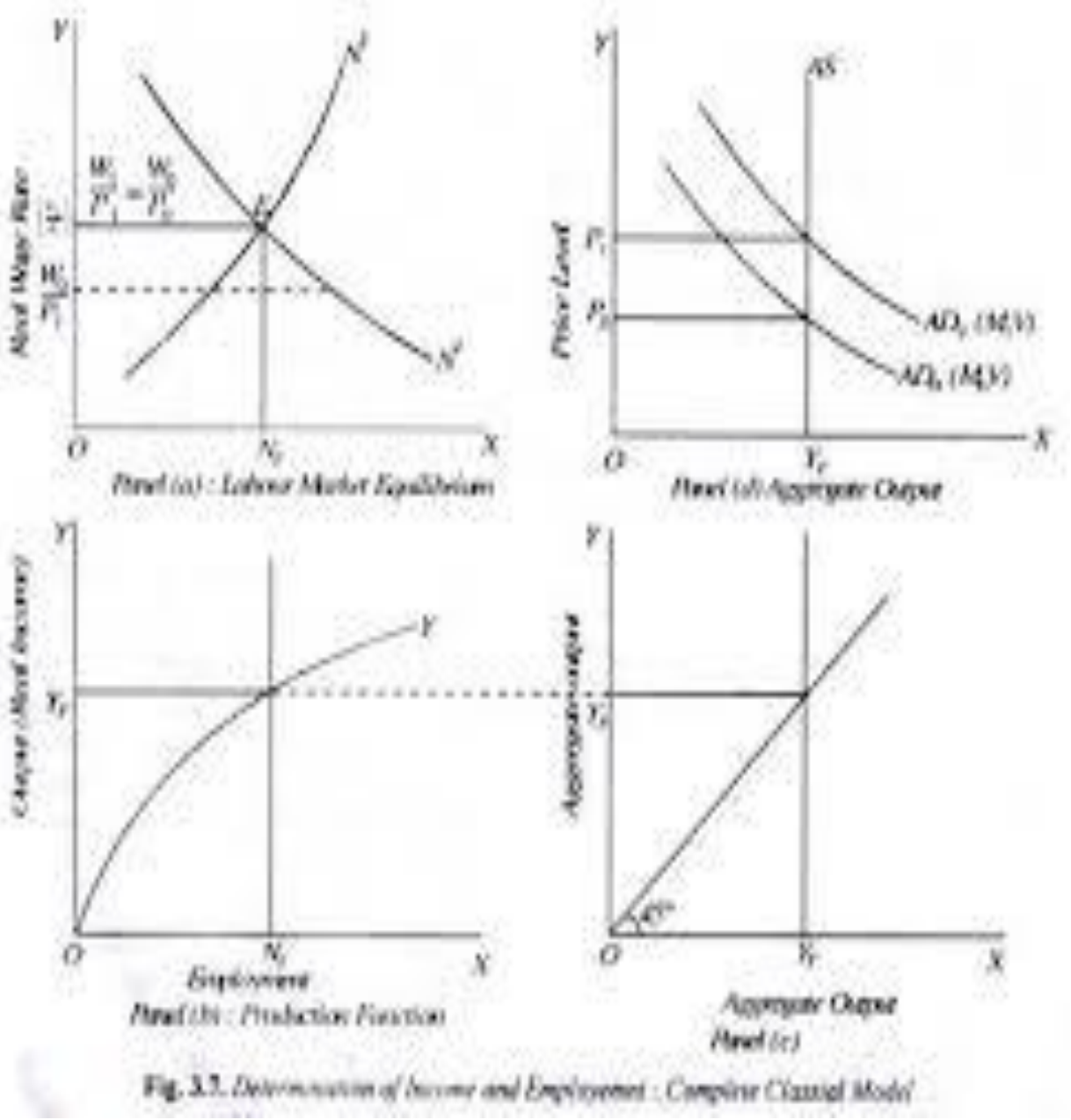
The classical theory of employment is based on the following assumptions:

- The Say's law of market;

- Flexibility (مرونة) of the interest rates;
- Flexibility of the wage rates.

According to ***Say's Law of Market***, "The supply creates its own demand". It is an automatic mechanism which establishes equilibrium between aggregate demand and aggregate supply.

The implication of the classical system is that there will never be a possibility of over-production or under- production in the economy.



During the Great Depression of 1930s, the Classical Theory of Employment failed miserably.

Prof. J. M. Keynes developed a new theory of employment in his book "*General Theory of Employment, Interest and Money*" published in 1936.

Keynesian theory of employment is based on the concept of effective demand. Keynes states that *demand creates its own supply*.

Effective demand means the level of income where aggregate demand and aggregate supply are equal.

Prof. J. M. Keynes used the approach of aggregate demand and aggregate supply for the determination of full employment equilibrium.

Aggregate Demand (الطلب الكلي):

The total demand for goods and services in an economy in a year's time is called aggregate demand. It is expressed in terms of total expenditure of the community.

Goods and services are demanded for two purposes- (1) Consumption, and (2) Investment.

Consumption is of two types: private (household) consumption and public (government) consumption. Similarly, investment is also of two types: private (household) investment and public (government) investment.

Aggregate Demand (AD) = Consumption Demand (C) + Investment Demand (I)

$$AD = C + I$$

$$Y = C + I$$

Aggregate Demand Schedule:

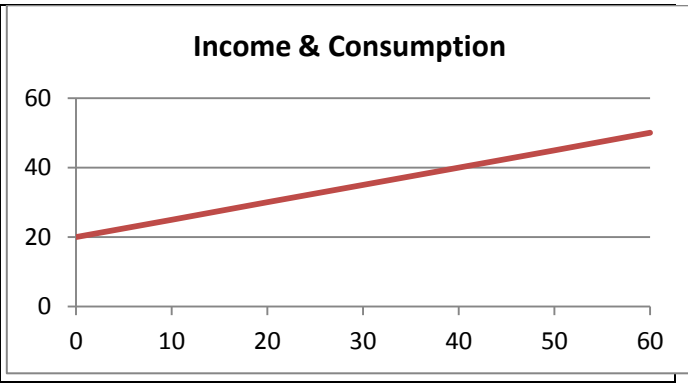
The aggregate demand schedule can be drawn by aggregating- aggregate consumption (C) and aggregate investment (I) at different levels of income.

Consumption depends on income (Y), propensity to consume (c) and many other factors.

$$C = a + cY$$

Relationship between Income and Consumption:

(SR '000 Crores)	
Income	**Consumption**
0	20
10	25
20	30
30	35
40	40
50	45
60	50



Aggregate Investment:

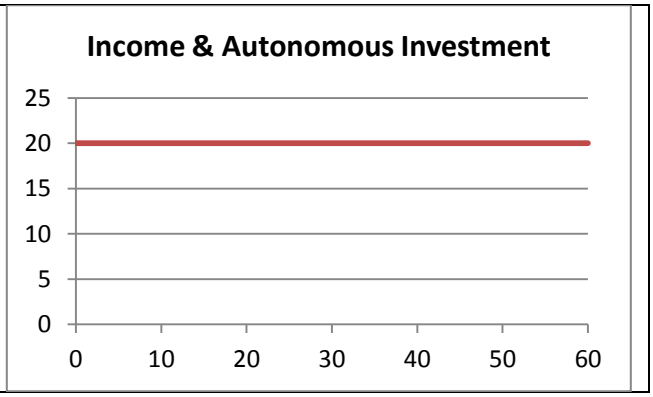
It is of two types- autonomous investment and induced investment.

Autonomous Investment: It is that expenditure on capital formation which is undertaken independently of the level of income.

Induced Investment: It is expenditure both on fixed assets and on the stocks that are required if the economy is to be able to produce a bigger output as aggregate demand rises.

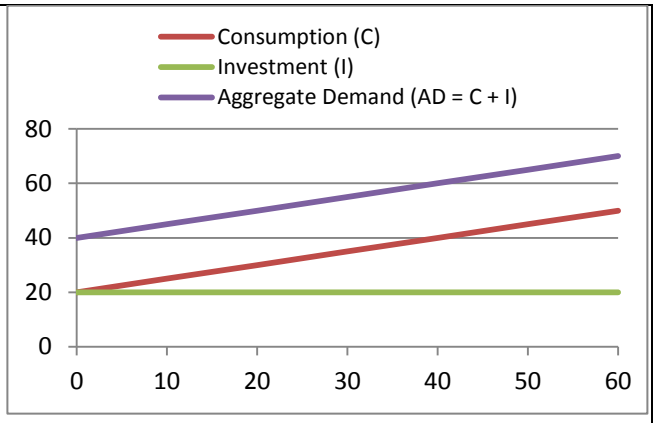
Here, we assume that only investment expenditure that is incurred in the economy is in the form of autonomous investment.

(SR '000 Crores)	
Income	**Investment**
0	20
10	20
20	20
30	20
40	20
50	20
60	20



Aggregate demand schedule can be derived by adding consumption schedule and investment schedule.

Income (Y)	Consumption (C)	Investment (I)	Aggregate Demand (AD = C + I)
0	20	20	40
10	25	20	45
20	30	20	50
30	35	20	55
40	40	20	60
50	45	20	65
60	50	20	70



Components of Aggregate Demand:

There are four major components of aggregate demand-

1. Household consumption expenditure (C);
2. Government final consumption expenditure (G);
3. Private and public investment expenditure (I); and
4. Net export (X-M)

Symbolically,

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

Aggregate Supply:

It refers to the money value of all goods and services produced in a country in a year's time. It, in fact, refers to the national income of a country because it is the money value of all goods and services produced in a year's time.

Aggregate Supply = Domestic Product = Total Factor Incomes = National Income

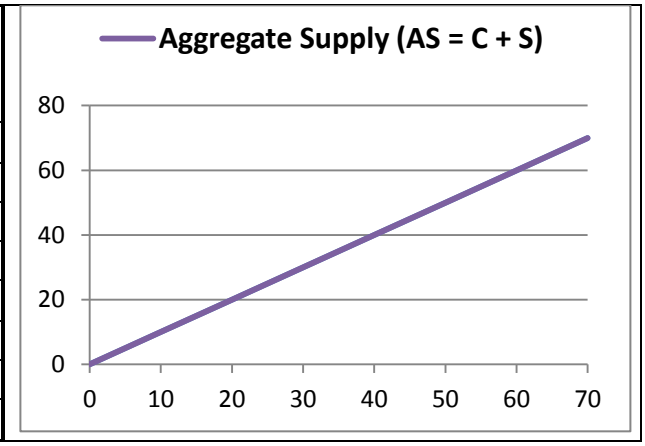
Aggregate Supply (AS) = Consumption (C) + Saving (S)

$$Y = C + S$$

Aggregate Supply Schedule:

Aggregate supply schedule can be formed by aggregating consumption expenditure and savings at different levels of income.

Income (Y)	Consumption (C)	Savings (S)	Aggregate Supply (AS = C + S)
0	20	-20	0
10	25	-15	10
20	30	-10	20
30	35	-5	30
40	40	0	40
50	45	5	50
60	50	10	60
70	55	15	70



Determination of Equilibrium:

Determination equilibrium of an economy can be studied by two approaches:

1. As equality of aggregate demand and aggregate supply; and
2. As equality of saving and investment.

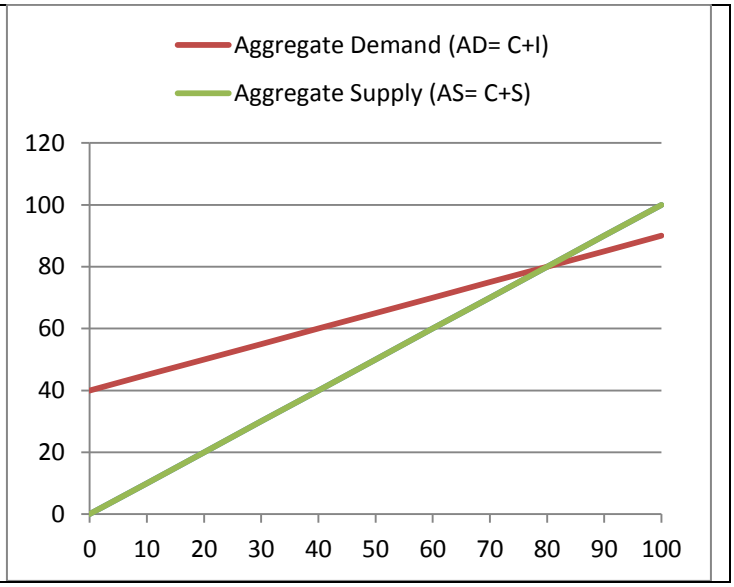
AS and AD Approach:

Equilibrium level of income is determined where aggregate demand curve cuts aggregate supply. In other words, the level of income will be in equilibrium where aggregate demand is equal to aggregate supply.

Example:

(SR '000 Million)

Income (Y)	Aggregate Demand (AD= C+I)	Aggregate Supply (AS= C+S)
0	40	0
10	45	10
20	50	20
30	55	30
40	60	40
50	65	50
60	70	60
70	75	70
80	**80**	**80**
90	85	90
100	90	100



If Aggregate Demand is not equal to Aggregate Supply:

Aggregate Demand (AD)	**Aggregate Supply (AS)**
=	
If AD > AS	If AD < AS
↓	↓
Increase in employment of factor services	Decrease in employment of factor services
↓	
Increase in the level of output of goods and services	Decrease in the level of output of goods and services
↓	↓
Ultimately AD = AS	Ultimately AD = AS

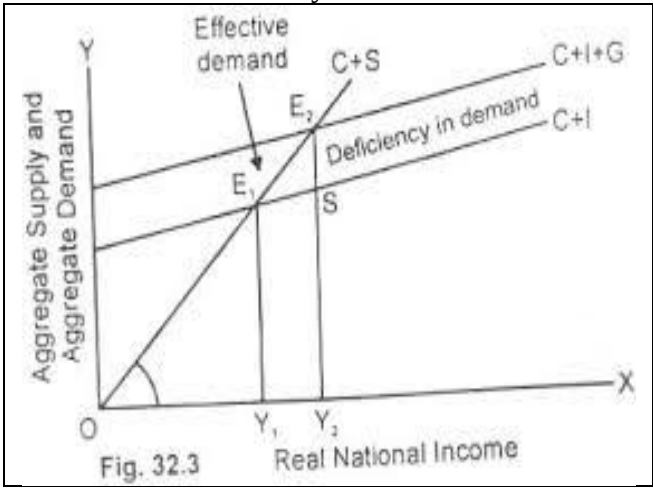
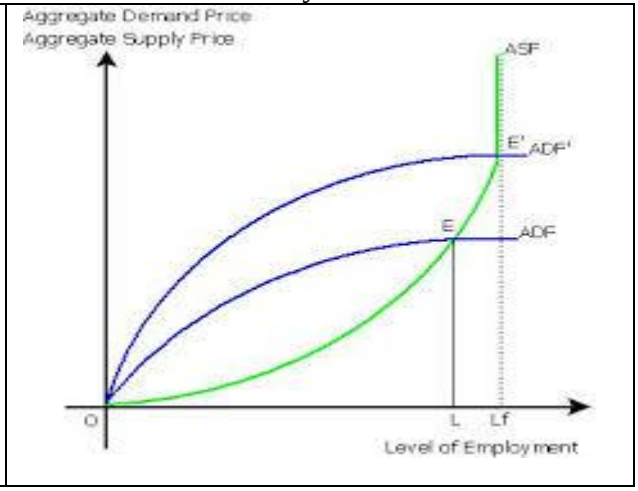


Fig. 32.3



Alternative Approach to Equilibrium (Saving and Investment Approach):

Since, AD is:

$Y = C + I$, …… (1)

And,

AS is:

$Y = C + S$, …….. (2)

By putting together equations (1) and (2), we get

$$C + I = C + S$$

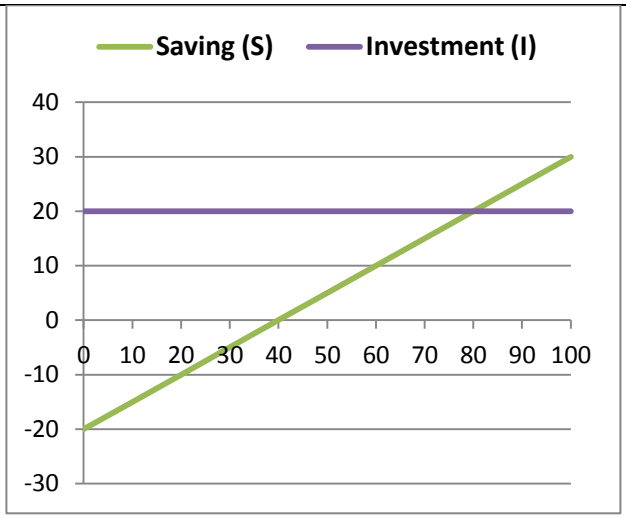
Hence,

$I = S$

i.e., aggregate investment equals aggregate saving in the economy.

Diagrammatic Presentation:

Income (Y)	Consumption (C)	Saving (S)	Investment (I)
0	20	-20	20
10	25	-15	20
20	30	-10	20
30	35	-5	20
40	40	0	20
50	45	5	20
60	50	10	20
70	55	15	20
80	**60**	**20**	**20**
90	65	25	20
100	70	30	20



Equilibrium level of employment (or income) is determined by the intersection of the aggregate demand and aggregate supply schedule.

The classical economists held the view that this equilibrium level of employment would be full employment level. There will be no involuntary unemployment either of labour or of capital. If there were to be any unemployment resources, wage rates and interest rates would move. Movement in the wage rates and interest rates would serve to bring full employment in the economy.

Prof. J. M. Keynes did not agree with this view of the classical economists. He gave three types of equilibrium situations:

1. Equilibrium at full employment level;
2. Equilibrium at less than full employment level;
3. Equilibrium at more than full employment level;

Equilibrium at full employment level: this will obtain when the equality of AD and AS occurs at a level where at the available resources are gainfully employed.

Equilibrium at less than full employment level (Deflationary gap): this will occur when the aggregate demand is not sufficient to absorb all those who seek employment. Clearly, there will be involuntary unemployment in the economy. This would have been caused by deficient demand.

Equilibrium at more than full employment level (Inflationary gap): this will occur when the available resources in the economy are not sufficient to meet the aggregate demand for goods and services. Clearly, this situation is caused by excess demand in the economy.

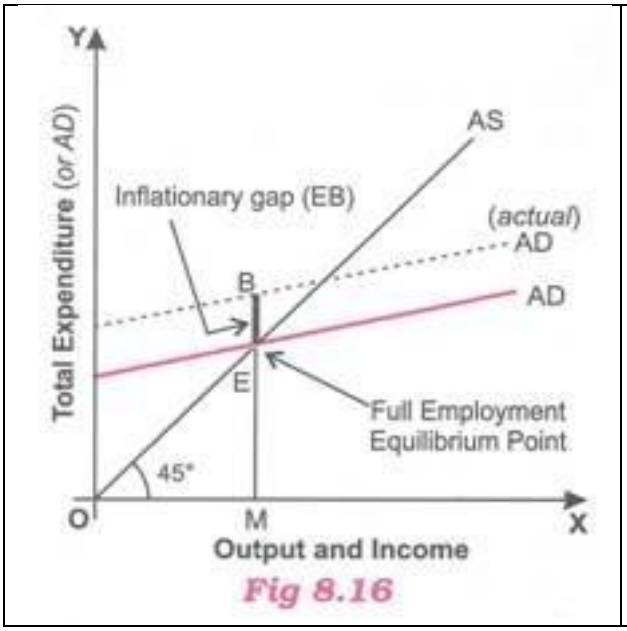


Fig 8.16

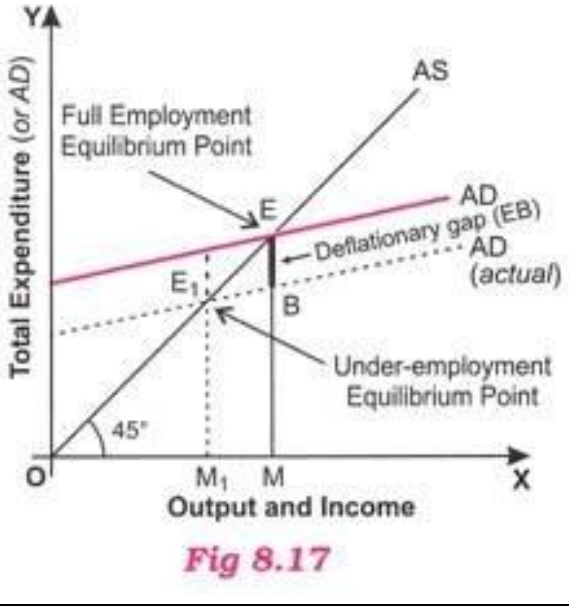


Fig 8.17

Causes of Excess Demand (*Inflationary gap*) and Deficient Demand (*Deflationary gap*):

Causes	
Of Excess Demand	**Of Deficient Demand**
• Government expenditure > Government revenue	• Government expenditure < Government revenue
• Increase in autonomous investment	• Cut in autonomous investment
• Surplus on balance of payments	• Deficits in balance of payments
• Increase in capital formation	• Cut in capital formation

Effects of Excess Demand:

In case of excess demand, the planned aggregate expenditure is more than the planned aggregate output. All the available resources are already fully employed. Therefore, there is no chance to increase the level of employment further.

Likewise, since no additional resources are available, it will not be possible either to increase the level of output.

But, in case, there is already full employment in the economy large aggregate expenditure in the economy would result in a rise in the general price level. Thus, excess demand has a general inflationary potential and that is why excess demand is known as inflationary gap.

Effects of Deficient Demand:

In case of deficient demand, the planned aggregate expenditure is less than the planned aggregate output. In this case, there will be tendency to curtail the employment.

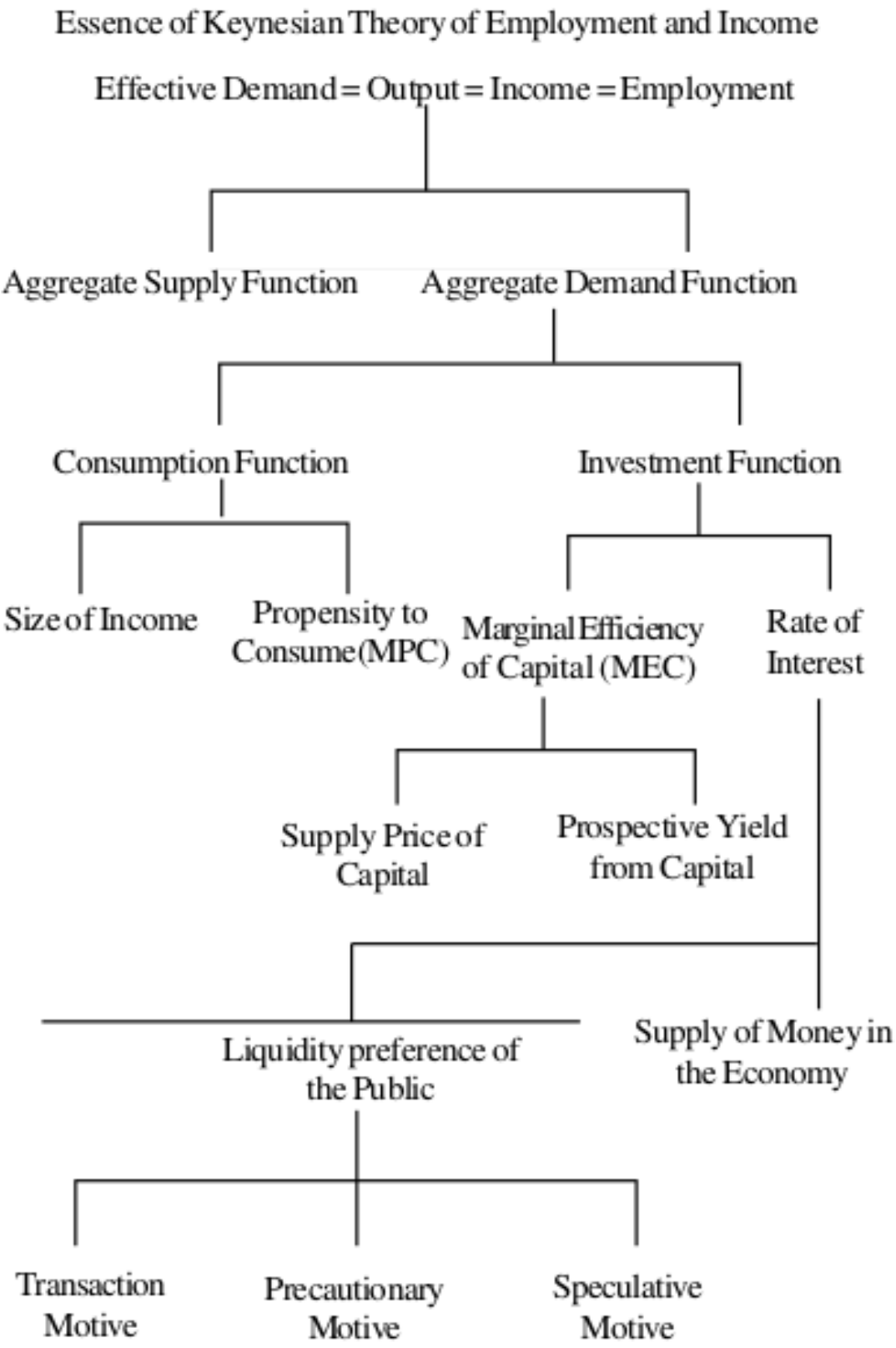
Since the aggregate output cannot be absorbed by the aggregate expenditure, the surplus availability of output will result in a fall in the general price level. Thus, deficient demand has a general deflationary potential and that is why it is also known as deflationary gap.

Measures to Correct Deficient Demand:

1. *Fiscal policy:*
    - Reduction in tax rates; and
    - Increase in government expenditure.
2. *Monetary policy:*
    - Reduction in bank rate;
    - Reduction in reserve ratios; and
    - Purchase of government securities.
3. *Export promotion:*

Measures to Correct Excess Demand:

1. *Fiscal policy:*
    - Rise in tax rates; and
    - Decrease in government expenditure.
2. *Monetary policy:*
    - Rise in bank rate;
    - Increase in reserve ratios; and
    - Sale of government securities.
3. *Import promotion:*


Essence of Keynesian Theory of Employment and Income
Effective Demand = Output = Income = Employment
Aggregate Supply Function
Aggregate Demand Function
Consumption Function
Investment Function
Size of Income
Propensity to Consume (MPC)
Marginal Efficiency of Capital (MEC)
Rate of Interest
Supply Price of Capital
Prospective Yield from Capital
Liquidity preference of the Public
Supply of Money in the Economy
Transaction Motive
Precautionary Motive
Speculative Motive

Questions for Review

Multiple Choice Questions with Answer:

1. A situation when a person is able and willing to take up a job and gets employed, it is called-
    a. Employment
    b. Full Employment
    c. Under Employment
    d. Unemployment.
2. A situation when people are engaged in jobs but they do not get these jobs according to their capabilities, efficiency and qualifications, it is called-
    a. Employment
    b. Full Employment
    c. Under Employment
    d. Unemployment.
3. A situation when the workers are willing to work under any conditions and at any wage rate but they fail to get employment, it is called-
    a. Voluntary Unemployment
    b. Involuntary Unemployment
    c. Cyclical Unemployment
    d. Frictional Unemployment
4. A temporary unemployment which exists during the period of the transfer of labor from one occupation to another is called-
    a. Voluntary Unemployment
    b. Involuntary Unemployment
    c. Cyclical Unemployment
    d. Frictional Unemployment
5. When more workers are engaged in a work than actually required to work, it is called-
    a. Voluntary Unemployment
    b. Involuntary Unemployment
    c. Disguised Unemployment
    d. Frictional Unemployment
6. Who developed the Classical Theory of Income and Employment?
    a. J. B. Say
    b. J. S. Mill
    c. Ricardo
    d. All of the above.
7. *"The supply creates its own demand".* This is the famous law of----
    a. Market (*Say's Law of Market*)
    b. Demand
    c. Supply
    d. None of the above.
8. The book *General Theory of Employment, Interest and Money* was written by----
    a. J. N. Keynes
    b. J. M. Keynes
    c. Ricardo
    d. None of the above.

9. Keynesian theory of employment is based on the concept of----------
    a. Aggregate Demand
    b. Aggregate Supply
    c. Aggregate Demand and Supply both
    d. None.
10. The investment which is undertaken independently of the level of income is known as----
    a. Autonomous Investment
    b. Induced Investment
    c. Public Investment
    d. Private Investment
11. The components of aggregate demand is/ are------
    a. Household consumption expenditure
    b. Govt final conspt. expenditure
    c. Pvt and public invt expenditure
    d. All
12. Determination equilibrium of an economy can be studied by-----
    a. Equality of AD and AS
    b. Equality of saving and investment
    c. Both a and b
    d. None.

Q.N.	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Ans.	**a**	**c**	**b**	**d**	**c**	**d**	**a**	**b**	**c**	**a**	**d**	**c**

Write *T* for True and *F* for False against each of the following statements:

1. The Classical theory of Income and Employment states that full employment is a normal feature of a capitalist economy.
2. The classical theory of employment rules out the possibility of unemployment in a free market economy.
3. According to classical economists the economy would never be in a full employment equilibrium.
4. Keynesian theory of employment is based on the concept of effective demand.
5. Effective demand means the level of income where aggregate demand and aggregate supply are equal.
6. Classical economists used the approach of aggregate demand and aggregate supply for the determination of full employment equilibrium.
7. Induced investment is expenditure both on fixed assets and on the stocks that are required if the economy is to be able to produce a bigger output as aggregate demand rises.

8. AD = C + I + G + (X-M)
9. Equilibrium level of income is determined where aggregate demand curve cuts aggregate supply.
10. The level of income will be in equilibrium when aggregate demand is greater than aggregate supply.

Q.N.	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Ans.	**T**	**T**	**F**	**T**	**F**	**F**	**T**	**T**	**T**	**F**

Matching Test:

Match-I	**Match-II**
A. Ex- ante Saving	1. Actual Saving
B. Ex- post Saving	2. Intended or planed Saving
C. Supply creates its own demand	3. J. M. Keynes
D. Demand creates its own supply	4. J. B. Say

Match-I	**A**	**B**	**C**	**D**
Match-II	**2**	**1**	**4**	**3**

Match-I	**Match-II**
A. Voluntary Unemployment	1. When more workers are engaged in a work than actually required to work.
B. Involuntary Unemployment	2. It is a temporary unemployment which exists during the period of the transfer of labor from one occupation to another.
C. Frictional Unemployment	3. A situation when the workers are willing to work under any conditions and at any wage rate but they fail to get employment.
D. Disguised Unemployment	4. When the economy offers employment opportunities to the workers, but they themselves are not willing to take up jobs.

Match-I	A	B	C	D
Match-II	4	3	2	1

Match-I	Match-II
A. When AD > AS	1. Decrease in employment and output
B. When AD < AS	2. Increase in employment and output
C. When AD = AS	3. Equilibrium level of income and employment
D. AS =	4. C + I + G + (X - M)
E. AD =	5. C + S

Match-I	A	B	C	D	E
Match-II	2	1	3	5	4

Questions with Answers:

1. **What is employment (توظيف)?**

   A situation when a person is able and willing to take up a job and gets employed is called employment.

2. **What is full employment (كامل التوظيف)?**

   A situation where all those workers who are able and willing to work get employment is called full employment.

3. **What is under employment (تحت التوظيف)?**

   A situation when people are engaged in jobs but they do not get these jobs according to their capabilities, efficiency and qualifications is called under employment.

4. **What is unemployment (بطالة)?**

   A situation when a person is willing to work but does not get opportunity to work is called unemployment.

5. **What do you mean by involuntary unemployment (البطالة القسرية)?**

   A situation when the workers are willing to work under any conditions and at any wage rate but they fail to get employment is called involuntary unemployment.

6. **What do you understand by the term voluntary unemployment (البطالة الطوعية)?**

   When the economy offers employment opportunities to the workers, but they themselves are not willing to take up jobs because the employment conditions such as wage rate, location, promotional avenues, physical environment, attitude of the employer, etc., do not suit them.

7. **What is cyclical unemployment (البطالة الدورية)?**

   It is caused by slackness in business conditions. During depression, investment activities get discouraged. Contraction in business activities renders large numbers of workers unemployed.

8. **What is technological unemployment (البطالة التكنولوجية)?**

   It is generally found in the advanced countries. The main cause of this unemployment is the introduction of the new technology.

9. **What is frictional unemployment (البطالة الاحتكاكية)?**

   It is a temporary unemployment which exists during the period of the transfer of labor from one occupation to another.

10. **What is structural unemployment (البطالة الهيكلية)?**

    It is the result of the backwardness and underdevelopment of an economy.

11. **What do you mean by disguised unemployment (البطالة المقنعة)?**

    When more workers are engaged in a work than actually required to work, it is called disguised unemployment.

12. **Who are classical economists?**

    The old economists such as Adam Smith, J. B. Say, J. S. Mill, Ricardo, etc. who believe in laissez faire policy (non- interference of government in any economic activities) are called classical economists.

13. **What is classical theory of income and employment?**

    The Classical theory of income and employment states that full employment is a normal feature of a capitalist economy. The classical theory of employment rules out the possibility of unemployment in a free market economy. The economy would always be in a full employment equilibrium.

14. **What are the assumptions on which the classical theory of income and employment based?**

    The classical theory of employment is based on the following assumptions:

    - The Say's law of market;
    - Flexibility (مرونة) of the interest rates;
    - Flexibility of the wage rates.

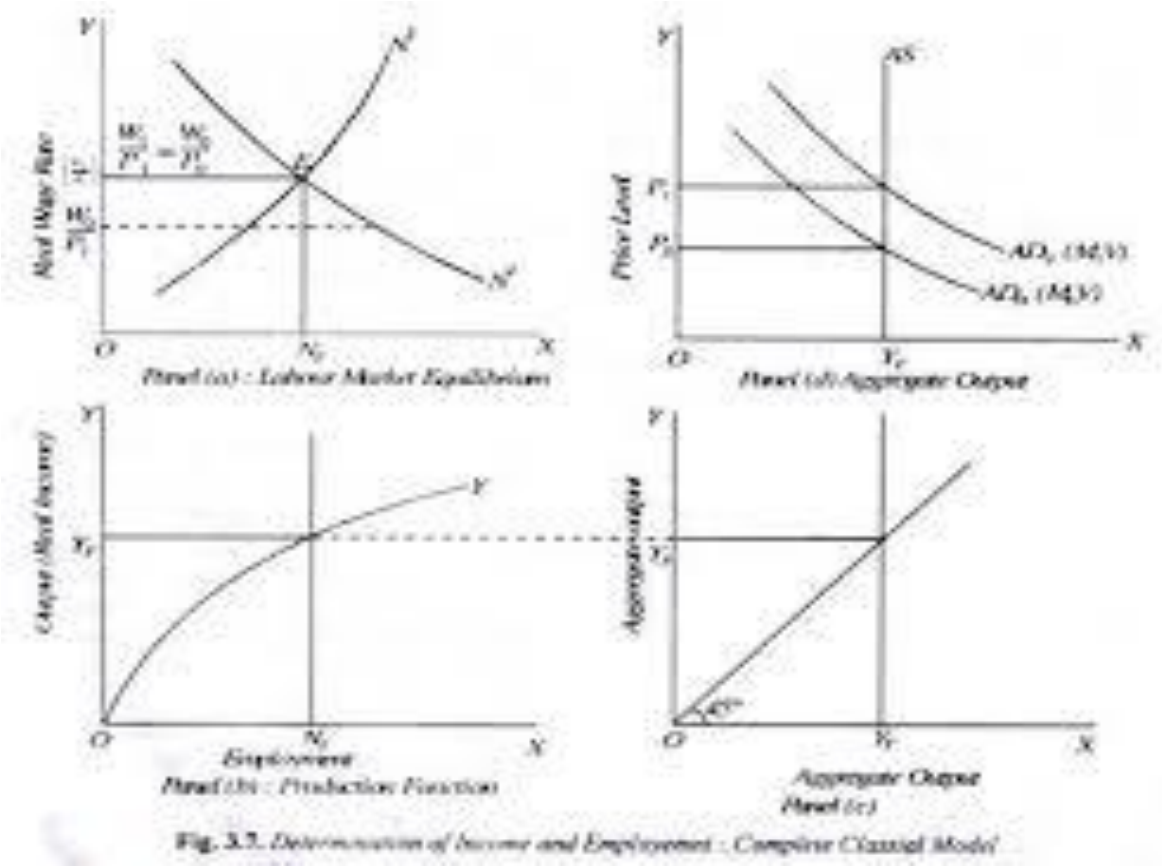
15. What is *Say's Law of Market*?

According to ***Say's Law of Market,*** "The supply creates its own demand". It is an automatic mechanism which establishes equilibrium between aggregate demand and aggregate supply.

16. What is the main implication of classical theory of income and employment?

The implication of the classical system is that there will never be a possibility of over-production or under- production in the economy. The economy would always be in a full employment equilibrium.

17. Sketch the Classical theory of income and employment through diagram.



18. Who criticised the classical theory of employment?

Prof. J. M. Keynes in his famous book "*General Theory of Employment, Interest and Money*" published in 1936, criticised the classical view on employment.

19. What is modern theory of income and employment?

Or, What is Keynesian theory of income and employment?

Prof. J. M. Keynes developed a new theory of employment in his book "*General Theory of Employment, Interest and Money*" published in 1936. His theory of employment is based on the concept of *effective demand*. Keynes states that *demand creates its own supply*. *Effective demand* means the level of income where aggregate demand and aggregate supply are equal. Prof. J. M. Keynes used the approach of aggregate demand and aggregate supply for the determination of full employment equilibrium.

20. What is aggregate demand?

The total demand for goods and services in an economy in a year's time is called aggregate demand. It is expressed in terms of total expenditure of the community.

Aggregate Demand (AD) = Consumption Demand (C) + Investment Demand (I)

$$AD = C + I$$

$$Y = C + I$$

21. What are the components of aggregate demand?

There are four major components of aggregate demand-

1. Household consumption expenditure (C);
2. Government final consumption expenditure (G);
3. Private and public investment expenditure (I); and
4. Net export (X-M)

Symbolically, AD = C + I + G + (X-M)

22. What is equilibrium level of employment (مستوى التوازن للعمالة)?

The level of employment where aggregate demand equals aggregate supply is called equilibrium level of employment.

23. What is full employment level (مستوى التوظيف الكامل)?

The level of employment where all the available supply of labour is gainfully employed is called full employment level.

24. What is excess demand (الطلب الزائد)?

When aggregate demand exceeds aggregate supply at full employment level, it is called excess demand.

25. What is deficient demand (الطلب ناقص)?

When aggregate demand falls short of aggregate supply at full employment level, it is called deficient demand.

26. What is inflationary gap (فجوة تضخمية)?

It occurs as an excess of anticipated expenditure over available output at full employment level.

27. How you can show the inflationary gap diagrammatically?

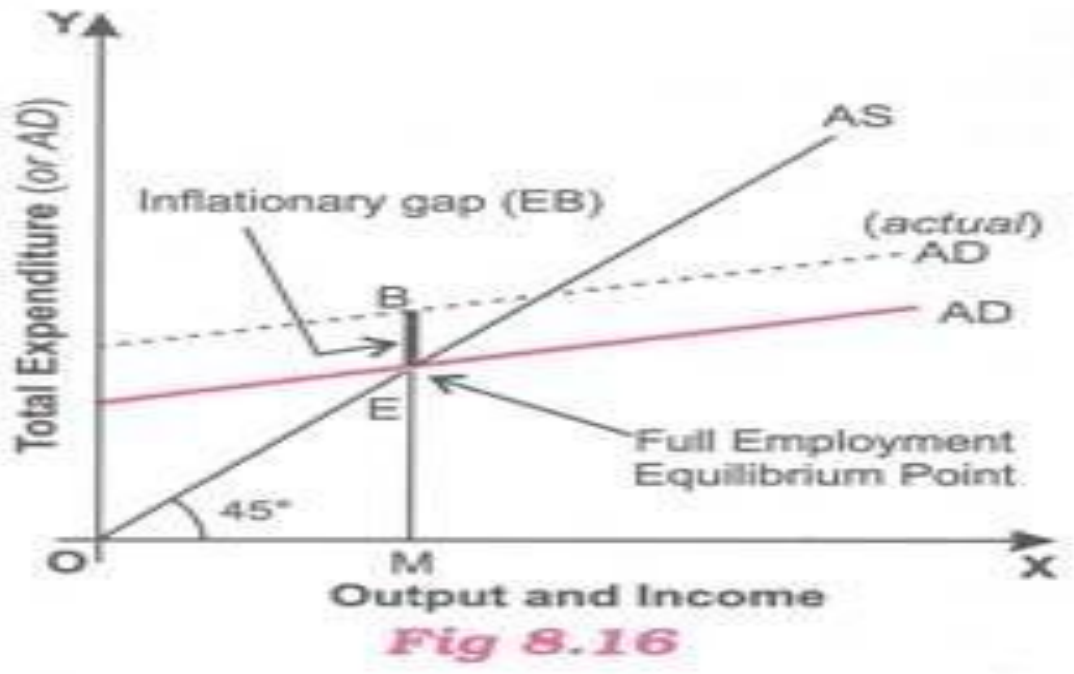


Fig 8.16

28. What is deflationary gap (الفجوة الانكماشية)?

It occurs as an excess of available aggregate output over anticipated aggregate expenditure.

29. How you can show the deflationary gap diagrammatically?

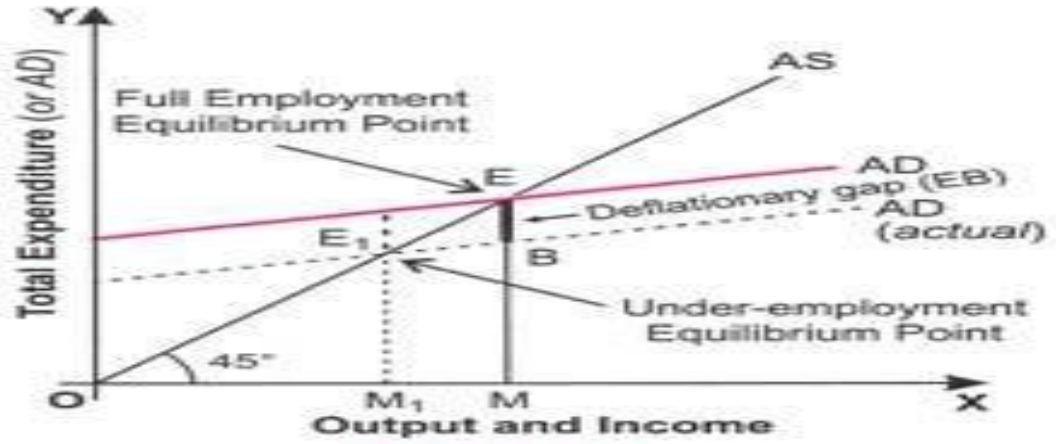


Fig 8.17

30. What are autonomous and induced investment?

Autonomous Investment: It is that expenditure on capital formation which is undertaken independently of the level of income.

Induced Investment: It is expenditure both on fixed assets and on the stocks that are required if the economy is to be able to produce a bigger output as aggregate demand rises.

31. What is aggregate supply?

It refers to the money value of all goods and services produced in a country in a year's time. It, in fact, refers to the national income of a country because it is the money value of all goods and services produced in a year's time.

Aggregate Supply = Domestic Product = Total Factor Incomes = National Income

Aggregate Supply (AS) = Consumption (C) + Saving (S)

$$Y = C + S$$

32. What are ex- ante saving and ex- post saving?

Ex- ante saving: Ex- ante saving is what the savers plan (or intend) to save at different levels of income in an economy. It is also known as intended saving or planned saving.

Ex- post saving: It refers to actual or realized saving in an economy during a year.

33. What are ex- ante investment and ex- post investment?

Ex- ante Investment: Ex- ante investment is what the investors plan (or intend) to invest at different levels of income in an economy. It is also known as intended investment or planned investment.

Ex- post investment: It refers to actual or realized investment in an economy during a year.

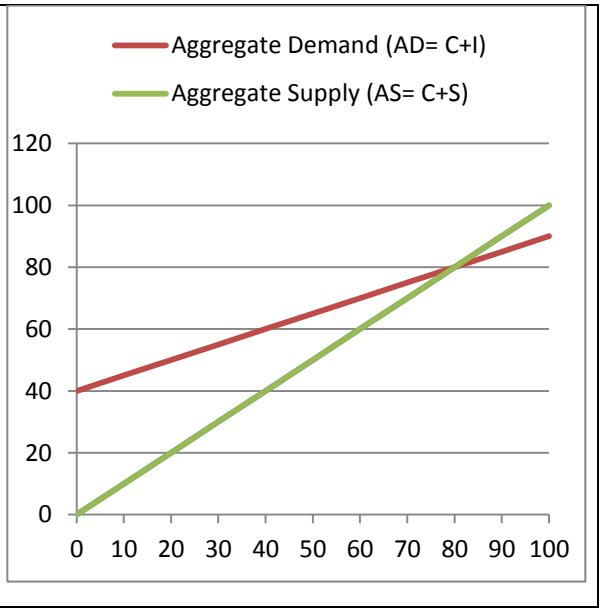
34. How the Keynesian theory of income and employment is determined through aggregate demand and aggregate supply? Explain it through diagram.

Equilibrium level of income is determined where aggregate demand curve cuts aggregate supply. In other words, the level of income will be in equilibrium where aggregate demand is equal to aggregate supply.

Example:

(SR '000 Million)

Income (Y)	Aggregate Demand (AD= C+I)	Aggregate Supply (AS= C+S)
0	40	0
10	45	10
20	50	20
30	55	30
40	60	40
50	65	50
60	70	60
70	75	70
80	**80**	**80**
90	85	90
100	90	100



If Aggregate Demand is not equal to Aggregate Supply:

Aggregate Demand (AD) = **Aggregate Supply (AS)**

If AD > AS
↓
Increase in employment of factor services
↓
Increase in the level of output of goods and services
↓
Ultimately AD = AS

If AD < AS
↓
Decrease in employment of factor services
↓
Decrease in the level of output of goods and services
↓
Ultimately AD = AS

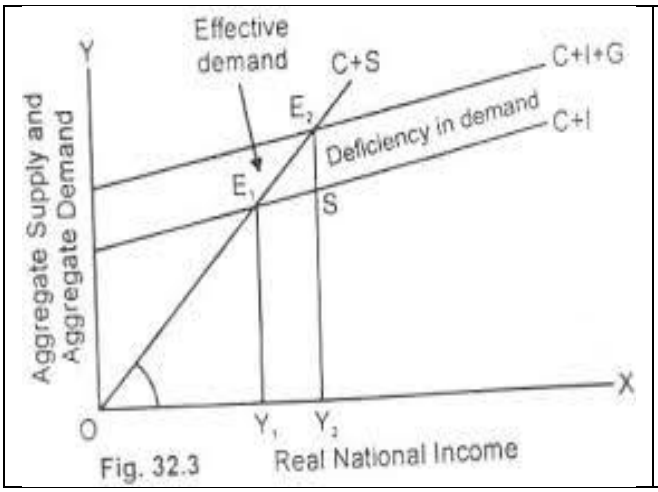
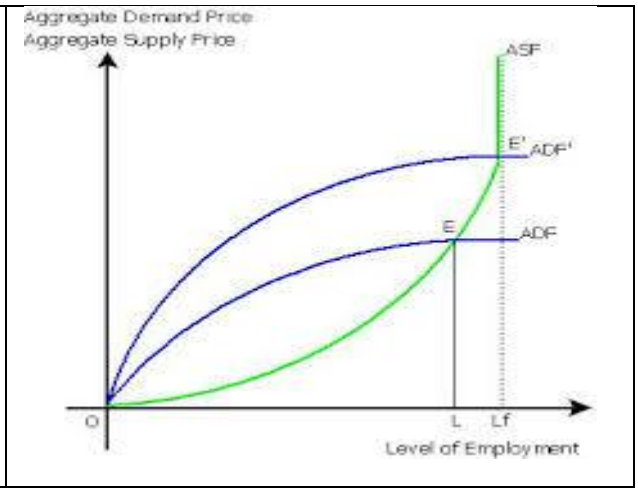


Fig. 32.3



35. Sketch the essence of Keynesian theory of income and employment.

Essence of Keynesian Theory of Employment and Income

Effective Demand = Output = Income = Employment

- Aggregate Supply Function
- Aggregate Demand Function
  - Consumption Function
    - Size of Income
    - Propensity to Consume (MPC)
  - Investment Function
    - Marginal Efficiency of Capital (MEC)
      - Supply Price of Capital
      - Prospective Yield from Capital
    - Rate of Interest
      - Liquidity preference of the Public
        - Transaction Motive
        - Precautionary Motive
        - Speculative Motive
      - Supply of Money in the Economy

Chapter- 4: Consumption & Saving (إنقاذ و استهلاك)

The concept of consumption function plays an important role in Keynes' theory of income and employment. According to Keynes, of all the factors it is the current level of income that determines the consumption of an individual and also of society.

Consumption Function (استهلاك وظيفة): the relationship between various level of disposable income and consumption expenditure.

$$C = f(Y_d) = a + bY_d$$

Where, C = Consumption;
Y_d = Level of Income;
a = Intercept or Autonomous consumption (does not dependent on income);
b = Slope of consumption curve (or, MPC or proportion of disposable income which is consumed); and
f = function (that is, depends on)

Consumption Curve (منحنى استهلاك): the curve which shows the relationship between consumption expenditure and income is called consumption curve.

Propensity to consume (الميل للاستهلاك): Ratio between consumption expenditure and aggregate income.

Average propensity to consume (APC) (متوسط الميل للاستهلاك): Ratio between total consumption expenditure and aggregate income (C/Y).

Example: *Suppose the level of income of Saudi economy is SR 50,000 million and consumption is SR 40,000 million. What is the average propensity to consume for the Saudi economy?* (**Hint:** *Average Propensity to Consume (APC)* $= \frac{C}{Y}$)

Solution: The level of income, Y = SR 50,000 million

Consumption, C = SR 40,000 million

Hence, average propensity to consume (APC) = C/Y = 40,000/50,000 = 0.8 = 80 %

Marginal propensity to consume (MPC) (الميل الحدي للاستهلاك): Ratio between addition to total consumption expenditure and addition to total income ($\Delta C/\Delta Y$). It varies between zero and one.

Example: *Suppose the income increases from SR 50,000 million to SR 60,000 million and as a result consumption increases from SR 40,000 to SR 47,000 million in Saudi economy. What is the marginal propensity to consume for the Saudi economy?*

Solution: The formula for marginal propensity to consume (MPC) = $\Delta C/\Delta Y$

Where ΔC = SR 47,000 – SR 40,000 = SR 7000 million

ΔY = SR 60,000 – SR 50,000 = SR 10,000 million

Hence,

The marginal propensity to consume (MPC) for the Saudi economy = ΔC/ΔY = 7000/10000 = 0.7 = 70 %.

Algebraic and Diagrammatic Explanation of Consumption Function:

$$C = f(Y)$$

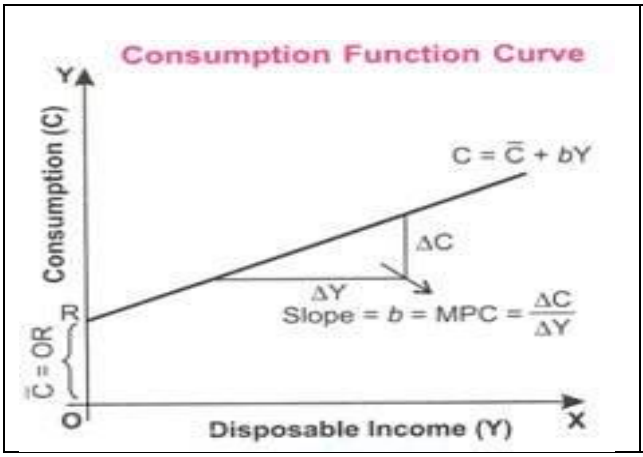
$$C = a + bY$$

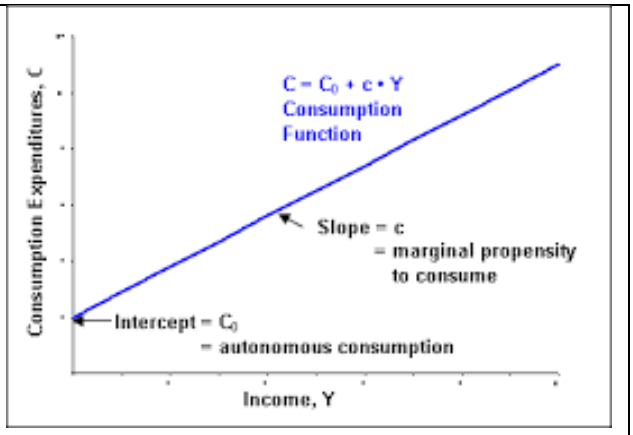
Where; C is consumption expenditure;

a is consumption (autonomous consumption) at zero level of income and it remains constant;

b is marginal propensity to consume (ΔC/ΔY) or slope of consumption function; and

Y is level of income.





Example: *Suppose the value of autonomous consumption (a) is SR 40 million and marginal propensity to consume (b) is 0.6, then how can you estimate consumption at different levels of income (0, 100, 200, 300, 400, 500, and so on)?*

Solution: Since, Consumption Function is, C = a + bY

If Y = 0, then C = a + bY

= 40 + 0.6× 0

= 0

If Y = 100, then C = a + bY

= 40 + 0.6× 100

= 100

If Y = 200, then C = a + bY

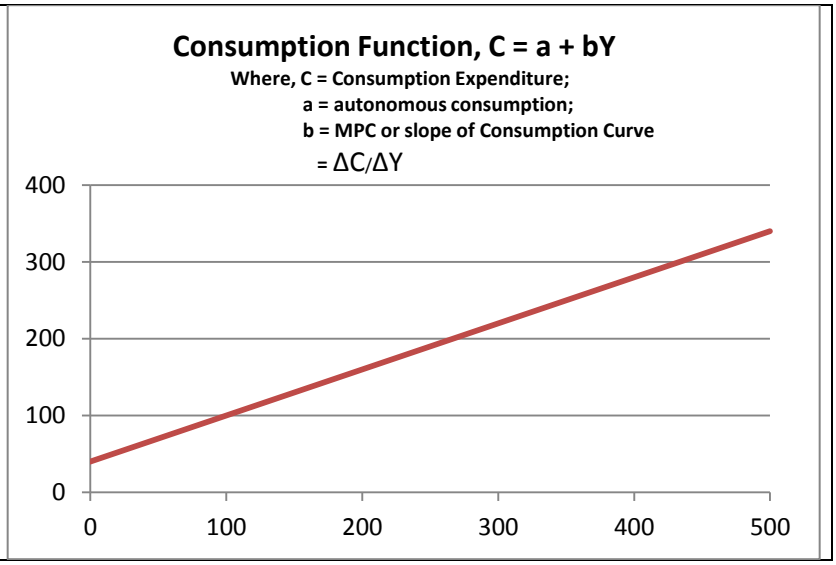
= 40 + 0.6× 200

= 160

In the same way, we can calculate other values of consumption as shown in the following table:

Consumption Schedule (C = a + bY; where a= 40; and b = 0.6)

Income (Y)	**Consumption (C = a + bY)**
0	40
100	100
200	160
300	220
400	280
500	340



The above table shows that aggregate consumption varies directly but not proportionately with the level of income.

Increase in consumption as a result of an increase in income is determined by propensity to consume (b).

Theory of Consumption (نظرية الاستهلاك)

There are following theories of consumption:

1. The Absolute Income Theory of Consumption or Psychological law of consumption (*Keynesian Theory of Consumption*), and
2. The Post- Keynesian Theory of Consumption:---

i. Relative income theory of consumption (*J. S. Duesenberry*);

ii. Life cycle theory of consumption (*Ando A. Modigliani*);

iii. Permanent income theory of consumption (*Friedman*)

Absolute Income Theory of Consumption:

Prof. Keynes laid stress on the absolute size of income as a determinant of consumption and his theory is known as absolute income theory of consumption. He gave a *psychological law of consumption* which state that *as income increases consumption increases but not by as much as the increase in income.*

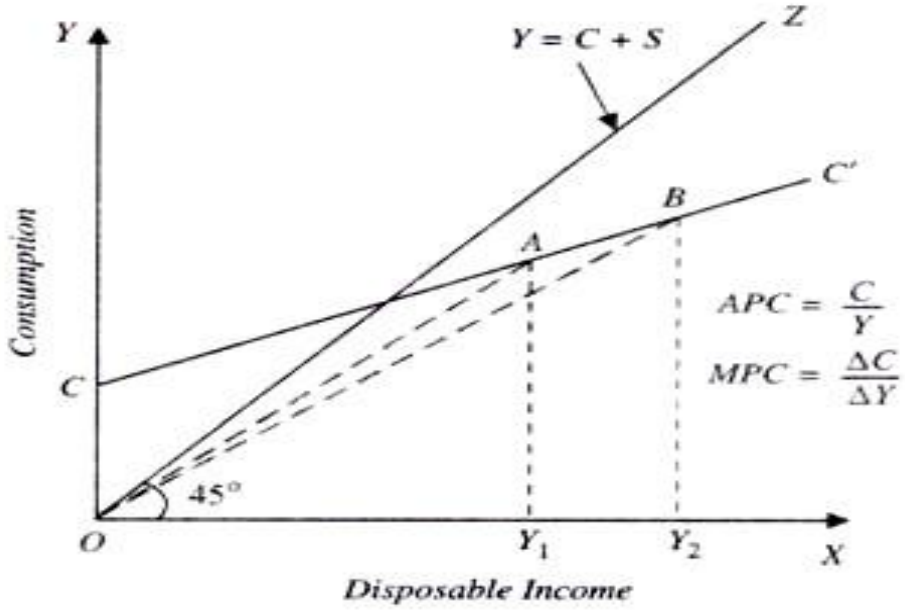


Fig. 6.3. *Consumption Function: Declining Average Propensity to Consume*

In this theory of consumption, Keynes makes three points:

a. He suggests that consumption expenditure depends mainly on absolute income of the current period;
b. Consumption expenditure does not have a proportional relationship with income; and
c. Since the APC falls as income increases, the MPC is less than the APC (MPC < APC).

Determinants/ factors affecting propensity to consume or save:

Prof. Keynes divided the factors determining the propensity to consume or the consumption function into two groups: subjective factors and objective factors.

Subjective factors: unforeseen contingencies, such as illness, unemployment, accidents, etc, some future needs such as education, marriages, save more for accumulate wealth, etc.

Objective factors: changes in general price level, rate of interest, stock of wealth, fiscal policy, credit conditions, income distribution, windfall gains and losses, change in expectations.

Consumption Function Puzzle: Keynes' Consumption Function and Kuznets Findings:

Kuznets' consumption function contradicts Keynes' consumption function which is known as *consumption function puzzle*.

Keynes' consumption function can be algebraically written as:

$$\mathbf{C = a + bY}$$

Where ***a*** is a positive intercept, known as autonomous consumption as it does not vary with income and ***b*** is marginal propensity to consume ($\Delta C/\Delta Y$) which falls as income increases.

Keynes Consumption Function

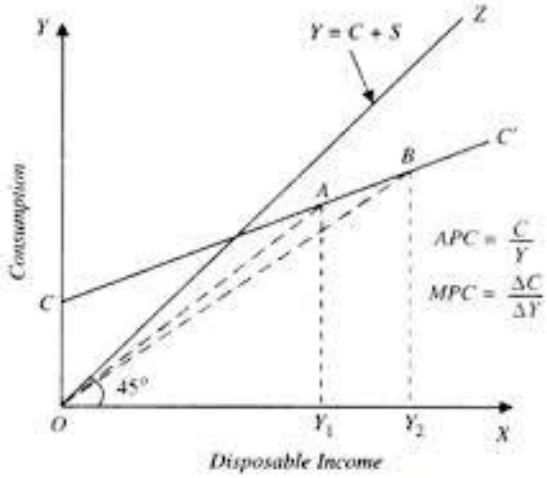


Fig. 6.3. *Consumption Function: Declining Average Propensity to Consume*

Kuznets Consumption Function

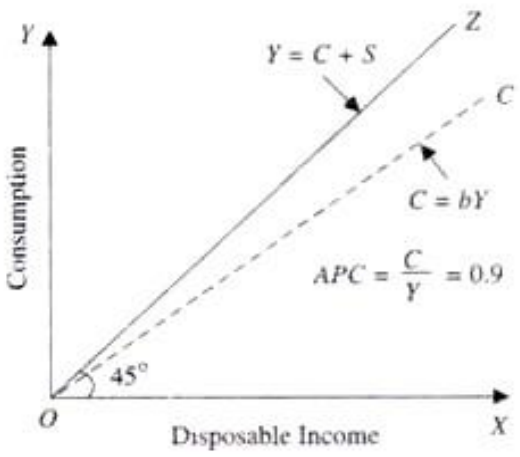


Fig. 6.8. *Kuznets's Consumption Function: Constant APC*

On the other hand, Kuznets found that consumption function is of the form:

$$\mathbf{C = bY}$$

In Kuznets consumption function there is no intercept term (i.e., no autonomous consumption). Kuznets consumption function starts from the origin and is very near to 45° line showing that the propensity to consume (*b*) is very high nearly 0.9.

So, we can see that implication of Keynes' consumption function (**C = a + bY**) and Kuznets' consumption function (**C = bY**) are different. Whereas in Keynes' consumption function APC

falls as income rises, in Kuznets' consumption function it remains constant over a long period. Further, the value of MPC which is less than one is much higher in Kuznets function as compare to Keynes' consumption function. Keynes' consumption function is short- run consumption function whereas Kuznets' function is a long- run consumption function.

Relative Income Theory of Consumption:

An American economist J. S. Duesenberry gave stress on relative income rather than absolute income as a determinant of consumption. According to this theory, consumption of an individual is not the function of his absolute income but of his relative position in the income distribution in a society that is, his consumption depends on his income relative to the incomes of other individuals in the society.

For example, if the incomes of all individuals in a society increase by the same percentage, then his relative income would remain the same, though his absolute income would have increased.

According to Duesenberry, because his relative income has remained the same the individual will spend the same proportion on consumption as he was doing before the absolute increase in his income. That is, his average propensity to consume (APC) will remain the same despite the increase in his absolute income.

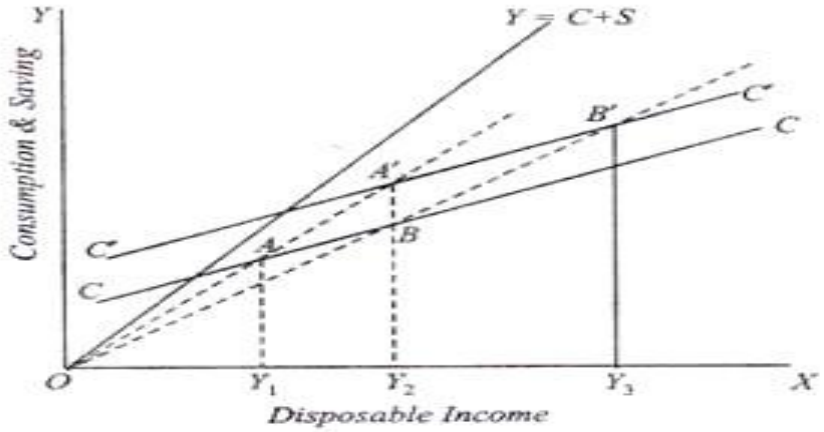


Fig. 7.1. *Duesenberry's Relative Income Theory of Consumption*

Duesenberry's relative income theory suggests that as income increases consumption function curve shifts above so that average propensity to consume remains constant. This is due to demonstration effect and ratchet effect.

Life Cycle Theory of Consumption:

This consumption theory has been given by Modigliani and Ando. According to life cycle theory, the consumption in any period is not the function of current income of the period but of the whole lifetime expected income.

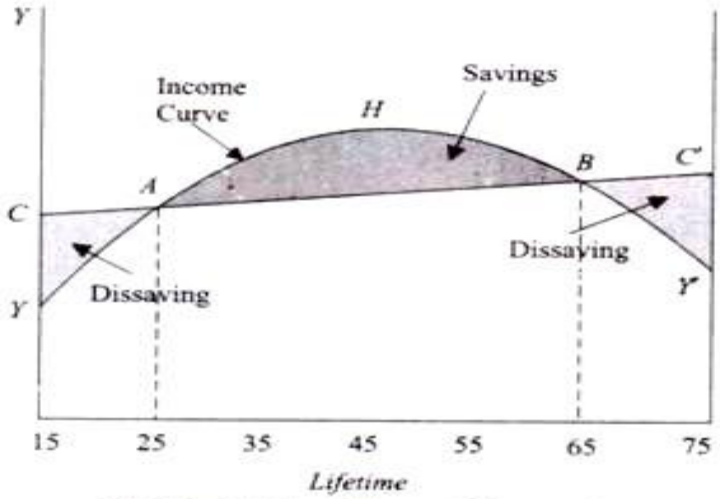
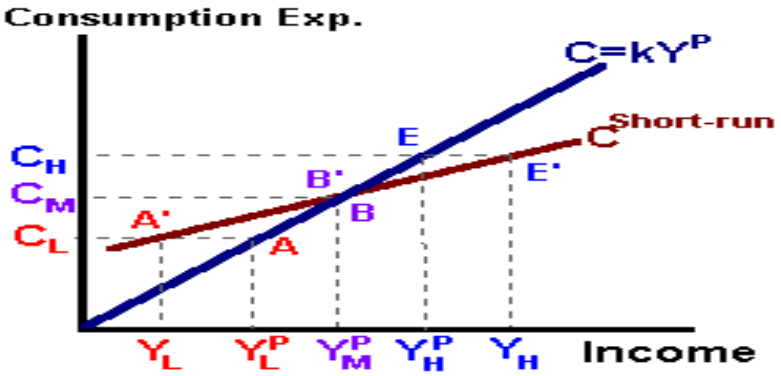


Fig. 7.3. *Life Cycle Theory of Consumption*

Permanent Income Theory of Consumption:

This theory has been given by Milton Friedman. According to this theory, consumption is determined by long- term expected income rather than current level of income. It is this long-term expected income which is called by Friedman as permanent income on the basis of which people make their consumption plans.



Saving:

Saving is excess of income over consumption expenditure.

Symbolically,

$$S = Y - C$$

Where, S = Saving;
Y = Income; and
C = Consumption expenditure.

Like consumption, saving is also a function of income. In other words, saving depends on money income.

Saving Function: the relationship between income and saving is called saving function.

$$S = f(Y)$$

Where, S = aggregate saving;
Y = Level of Income; and
f = function (that is, depends on)

Saving function explains the relationship between national income and aggregate savings.

Saving function can be written as follow;

$$S = -a + (1-b)Y$$

Where, S = Saving;
-a = saving at zero level of income;
b = marginal propensity to save (mps); and
Y = Level of Income.

Example: suppose for the Saudi economy, the value of –a = 40, and b = 0.6. How can you estimate saving at different levels of income?

Solution: Since, -a = 40, b = 0.6

If, Y = 0, then $S = -a + (1-b)Y$

$= -40 + (1- 0.6) \times 0$

$= -40 + 0 = -40$

If, Y = 100, then $S = -a + (1-b)Y$

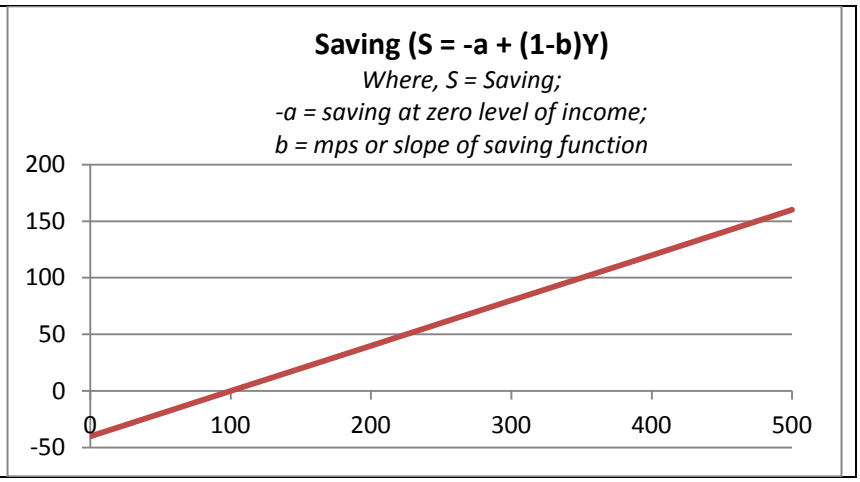
$= -40 + (1- 0.6) \times 100$

$= -40 + 0.4 \times 100$

$= -40 + 40 = 0$

In the same way, we can calculate other values of saving at different levels of income as shown in the following table:

Income (Y)	Saving (S = -a + (1-b)Y)
0	-40
100	0
200	40
300	80
400	120
500	160



Propensity to save: Ratio between aggregate income and total saving.

Average propensity to save (APS): Ratio between total saving and aggregate income (S/Y).

Example: *If at a particular time the level of income in Saudi economy is SR 50,000 million and the level of saving is SR 10,000 million (assuming consumption equal to SR 40,000 million at this level of income). What is the average propensity to save for the Saudi economy?*

Solution: Since, Average Propensity to Save (APS) = $\frac{Saving\ (S)}{Income\ (Y)}$

Here, Income (Y) = SR 50,000 million, and

Saving (S) = SR 10,000 million

Hence,

Average Propensity to Save (APS) = $\frac{Saving\ (S)}{Income\ (Y)} = \frac{10{,}000}{50{,}000} = 0.2 = 20\ \%$

Marginal propensity to save (MPS): Ratio between addition to total saving and addition to total income (ΔS/ΔY).

Example: *Suppose at the income level of SR 50,000 million, saving amounts to SR 11,000 million. An income at SR 60,000 million, saving increased to SR 14,000 million. What is the marginal propensity to save for the Saudi economy?*

Solution: Since, Marginal Propensity to Save (MPS) = $\frac{Additional\ Saving\ (\Delta S)}{Additional\ Income\ (\Delta Y)}$

Here, Additional Income (ΔY) = SR 60,000 - SR 50,000 = SR 10,000 million, and

Additional Saving (ΔS) = SR 14,000 - SR 11,000 = SR 3,000 million

Hence,

Marginal Propensity to Save (MPS) = $\frac{\Delta S}{\Delta Y} = \frac{3,000}{10,000} = 0.3 = 30\ \%$

Relationship between Propensity to Consume and Propensity to Save:

Consumption and saving both are functions of money income.

Relationship between Average Propensity to Consume (APC) and Average Propensity to Save (APS):

The sum of average propensity to consume (APC) and average propensity to save (APS) is always equal to unity.

In other words, APC + APS = 1. (Y = C + S, Dividing both side by Y, we get, APC + APS = 1)

It is so because the money income can either be spent on consumption or it can be saved.

Relationship between Marginal Propensity to Consume (MPC) and Marginal Propensity to Save (MPS):

The sum of marginal propensity to consume (MPC) and marginal propensity to save (MPS) is always equal to unity. In other words, MPC + MPS = 1.

We know that $\Delta Y = \Delta C + \Delta S$,

Dividing both sides by ΔY, we get,

$$\frac{\Delta Y}{\Delta Y} = \frac{\Delta C}{\Delta Y} + \frac{\Delta S}{\Delta Y}$$

$$1 = MPC + MPS$$

$$MPC + MPS = 1$$

Example: The relationship between propensity to consume and propensity to save is shown with the help of following table:-

Y	C	APC = C/Y	MPC = $\frac{\Delta C}{\Delta Y}$	S	APS= S/Y	MPS = $\frac{\Delta S}{\Delta Y}$
100	90	0.90	-----	10	0.10	-----
120	108	0.90	0.90	12	0.10	0.10
140	124	0.89	0.80	16	0.11	0.20
160	139	0.87	0.75	21	0.13	0.25
180	153	0.85	0.70	27	0.15	0.30
200	167	0.83	0.70	33	0.17	0.30

Review Questions

I. Multiple Choice Questions with Answer:

1. The French economist Jean-Baptiste Say transformed the equality of total output and total spending into a law that can be expressed as follows:
a. Unemployment is not possible in the short run.
b. Demand and supply are never equal.
c. Supply creates its own demand.
d. Demand creates its own supply.

2. The classical economists argued that the production of goods and services (supply) generates an equal amount of total income and, in turn, total spending. This theory is called:
a. Keynes' General Theory.
b. Say's Law.
c. The "animal spirits" theory.
d. The law of autonomous consumption.

3. Which of the following statements is true about Say's law?
a. It states that supply creates its own demand.
b. It states that demand creates its own supply.
c. It states that total output will always exceed total spending.
d. It states that consumption spending is the most volatile component of aggregate expenditures.
e. It is a major proposition of the Keynesian model.

4. The school of thought that emphasizes the natural tendency for an economy to move toward equilibrium full employment without inflation is known as the:
a. Keynesian school.
b. Supply- side school.
c. Non-interventionist school.
d. Rational expectations school.
e. Classical school.

5. According to Keynes, what is the most important determinant of households' spending on goods and services?
a. The price level.
b. The interest rate.
c. Autonomous consumption.
d. Disposable income.

6. The consumption function shows the relationship between consumer expenditures and:
a. The interest rate.
b. The tax rate.
c. Savings.

d. Disposable income.

7. The relationship between consumer expenditures and disposable income is the:
a. Savings function.
b. The tax rate function.
c. Disposable income function.
d. Consumption function.

8. Which of the following statements is true concerning the consumption function?
a. It slopes upward.
b. Its slope equals the MPC.
c. It represents the direct (positive) relationship between consumption spending and the level of real disposable income.
d. If the consumption function lies above the 45-degree line then saving is positive.
e. All of the above.

9. The consumption function shows the relationship between consumption and:
a. Interest rates.
b. Saving.
c. Price level changes.
d. Disposable income.

10. At the point where the disposable income line intersects the consumption function, saving:
a. equals consumption.
b. equals disposable income.
c. is less than zero.
d. is equal to zero.

11. Autonomous consumption is consumption that:
a. varies directly with disposable income.
b. varies inversely with disposable income.
c. is independent of the level of disposable income.
d. is constant at first and then varies with disposable income.

12. Autonomous consumption is equal to the level of consumption associated with:
a. unstable disposable income.
b. positive disposable income.
c. zero disposable income.
d. negative disposable income.

13. Given the consumption function C = $100 billion + 0.75 ($300 billion), autonomous consumption is equal to:
a. $100 billion.
b. $225 billion.
c. $300 billion.
d. $325 billion.
e. $400 billion.

14. That part of disposal income not spent on consumption is defined as:
a. transitory disposable income.
b. permanent disposable income.
c. disposal income.
d. autonomous consumption.
e. saving.

15. If disposal income is $400 billion, autonomous consumption is $60 billion, and MPC is 0.8, what is the level of saving?
a. $20 billion.
b. $210 billion.
c. $380 billion.
d. $590 billion.
e. $780 billion.

16. The marginal propensity to consume (MPC) is computed as the change in:
a. consumption divided by the change in savings.
b. consumption divided by the change in disposable personal income.
c. consumption divided by the change in GDP.
d. None of the above.

17. The marginal propensity to consume (MPC) is the slope of the:
a. GDP curve.
b. disposable income curve.
c. consumption function.
d. autonomous consumption curve.

18. The slope of the consumption function is called the:
a. autonomous consumption rate.
b. marginal consumption rate.
c. average propensity to consume.
d. marginal propensity to consume.

19. The change in consumption divided by a change in disposable income is defined as:

a. the marginal propensity to consume.
b. autonomous consumption.
c. the consumption function.
d. Keynes' absolute disposable income hypothesis.
e. transitory consumption.

20. The marginal propensity to consume is:
a. the change in disposable income divided by the change in consumption.
b. consumption spending divided by disposable income.
c. disposable income divided by consumption spending.
d. the change in consumption divided by the change in disposable income.
e. the change in consumption divided by disposable income.

21. The marginal propensity to consume measures the ratio of the:
a. average amount of our disposable income that we spend.
b. average amount of our savings that we spend.
c. change in consumer spending to a change in money holdings.
d. change in consumer spending to a change in interest rates.
e. change in consumer spending to a change in disposable income.

22. The marginal propensity to save (MPS) is computed as the change in:
a. savings divided by the change in saving.
b. savings divided by the change in disposable personal income.
c. saving divided by the change in GDP.
d. None of the above.

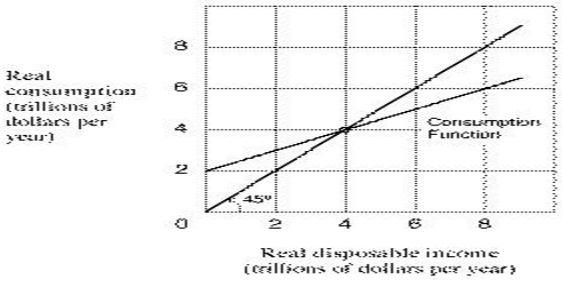
23. If your disposable personal income increases from $30,000 to $40,000 and your savings increases from $2,000 to $4,000, your marginal propensity to save (MPS) is:
a. 0.2.
b. 0.4.
c. 0.5.
d. 0.8.
e. 1.0.

24. The marginal propensity to save is:
a. the change in saving induced by a change in consumption.
b. (change in S) / (change in Y).
c. 1 - MPC / MPC.
d. (change in Y - bY) / (change in Y).
e. 1 - MPC.

25. If the marginal propensity to consume = 0.75, then:
a. the marginal propensity to save = 0.75.
b. the marginal propensity to save = 1.33.

c. the marginal propensity to save = 0.20.
d. the marginal propensity to save = 0.25.
e. since the marginal propensity to save and the marginal propensity to consume are unrelated, we cannot determine the marginal propensity to save from the information given.

Diagram- 1 Consumption function



26. As shown in Diagram 1, autonomous consumption is:
a. 0.
b. $2 trillion.
c. $4 trillion.
d. $6 trillion.
e. $8 trillion.

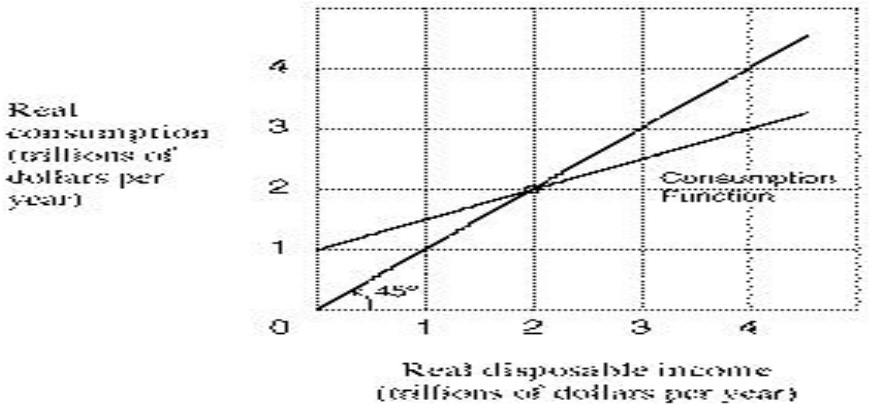
Diagram- 2 Disposable income and consumption data

Disposable income	Consumption	Saving	Marginal propensity to consume (MPC)	Marginal propensity to save (MPS)
0	$100			
100	175			
200	250			
300	325			
400	400			
500	475			
600	550			

Note: All amounts are in billions of dollars per year.

27. As shown in Diagram- 2, if disposable income is $100 billion, saving is:
a. $100 billion.
b. $75 billion.
c. -$75 billion.
d. -$175 billion.

Diagram- 3 Consumption function



28. As shown in Diagram- 3, autonomous consumption is:
a. 0.
b. $1 trillion.
c. $2 trillion.
d. $3 trillion.
e. $4 trillion.

29. As shown in Diagram 3, the marginal propensity to consume (MPC) is:
a. 0.25.
b. 0.50.
c. 0.75.
d. 0.90.

30. Psychological law of consumption has been given by-----

a. J. M. Keynes
b. *J. S. Duesenberry*
c. *Ando A. Modigliani*
d. *Friedman*

31. The absolute income theory of consumption has been given by-----

a. J. M. Keynes
b. *J. S. Duesenberry*
c. *Ando A. Modigliani*
d. *Friedman*

32. Relative income theory of consumption has been given by-----

a. J. M. Keynes
b. *J. S. Duesenberry*
c. *Ando A. Modigliani*
d. *Friedman*

Write *T* for True and *F* for False against each of the following statements:

1. The concept of consumption function is given by Prof. J. M. Keynes.
2. The *General Theory of Employment, Interest and Money* was written by Prof. J. N. Keynes in 1936.
3. Consumption function shows the relationship between consumption expenditure and various level of disposable income.
4. Marginal propensity to consume varies between zero and infinity.
5. Average propensity to consume is the addition in consumption to the addition in disposable income.
6. The sum of average propensity to consume and marginal propensity to consume is always equal to one.
7. The sum of average propensity to consume and average propensity to save is always equal to one.
8. Autonomous consumption depends on level of income.
9. Friedman has given the famous psychological law of consumption.
10. *"a"* is autonomous consumption and "*b*" is the marginal propensity to consume in the consumption equation, C= a + bY.
11. Marginal propensity to consume is the slope of consumption curve.
12. When saving is equal to zero, consumption is equal to disposable income.
13. In the equation C = 500 + 0.80Y, marginal propensity to save is equal to 30 per cent.
14. In the equation C = 500 + 0.80Y, the marginal propensity to consume is equal to 20 per cent.
15. In the equation C = 500 + 0.80Y, autonomous consumption is equal to 500.

Q	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A	T	F	T	F	F	F	T	F	F	T	T	T	F	T	T

Matching Test:

Match- I	**Match- II**
A. Average Propensity to Consume (APC)	1. $\frac{\Delta C}{\Delta Y}$
B. Marginal Propensity to Consume (MPC)	2. $\frac{\Delta S}{\Delta Y}$
C. Average Propensity to Save (APS)	3. $\frac{C}{Y}$
D. Marginal Propensity to Save (MPS)	4. $\frac{S}{Y}$

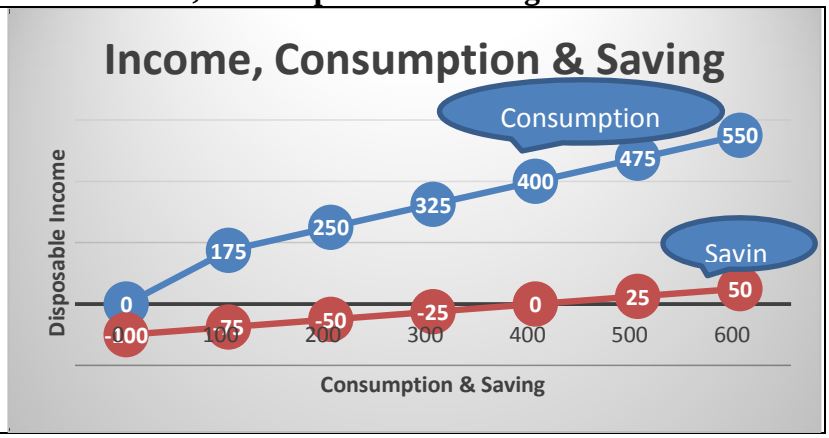
Match- I **Match- II**

A. The absolute income theory of consumption	1. Friedman
B. Relative income theory of consumption	2. J. S. Duesenberry
C. Life cycle theory of consumption	3. J. M. Keynes
D. Permanent income theory of consumption	4. Ando and Modigliani

Match the following after studying the above table:

Table- Relationship among Disposable income, consumption and saving:

Disposable income	Consumption	Saving
0	100	-100
100	175	-75
200	250	-50
300	325	-25
400	400	0
500	475	25
600	550	50



Match- I	Match- II
A. Autonomous Consumption	1. 100
B. MPC at income level 500	2. 0.25
C. APS at income level 600	3. 0.75
D. MPS at income level 200	4. 0.08

Questions with Answers:

1. **What is consumption function?**

   The relationship between various level of disposable income and consumption expenditure is known as consumption function. It can be shown as follow:

   $$C = f(Y_d)$$

   Where, C = Consumption;
   Y_d = Level of Income; and
   f = function (that is, depends on)

2. **What do you mean by average propensity to consume (APC) and marginal propensity to consume (MPC)?**

Average propensity to consume (APC): Ratio between total consumption expenditure and aggregate income (C/Y).

Marginal propensity to consume (MPC): Ratio between addition to total consumption expenditure and addition to total income ($\Delta C/\Delta Y$). It varies between zero and one.

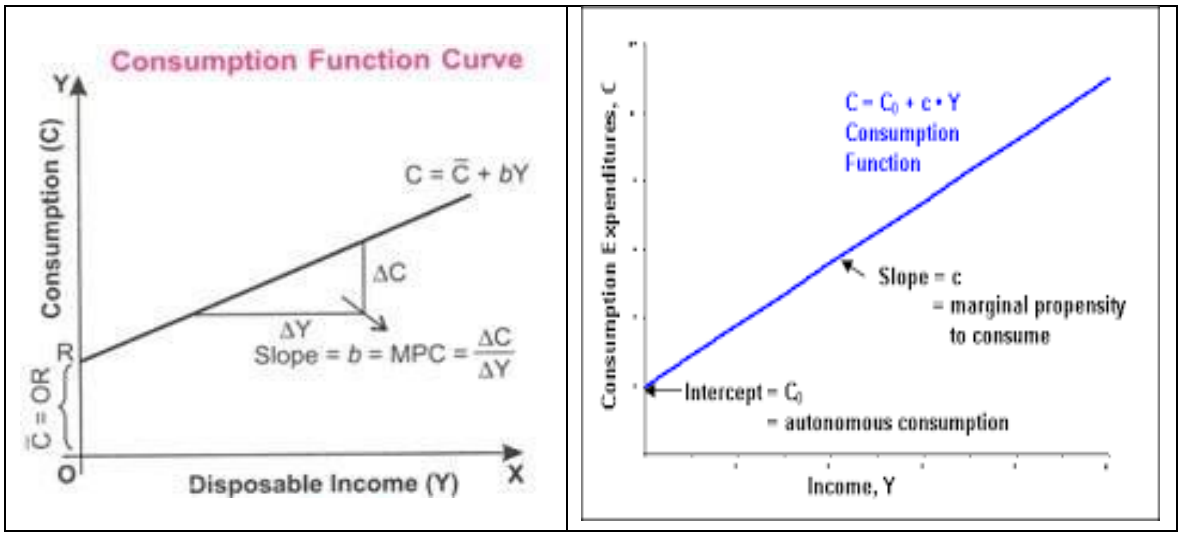
3. Diagrammatically show the consumption function, C = a + bY.

Consumption function, C = a + bY
Where; C is consumption expenditure;

a is consumption (autonomous consumption) at zero level of income and it remains constant;

b is marginal propensity to consume ($\Delta C/\Delta Y$) or slope of consumption function; and

Y is level of income.



4. What is absolute income theory of consumption?
Or, what is Psychological law of consumption?

Prof. Keynes laid stress on the absolute size of income as a determinant of consumption and his theory is known as absolute income theory of consumption. He gave a *psychological law of consumption* which state that *as income increases consumption increases but not by as much as the increase in income.*

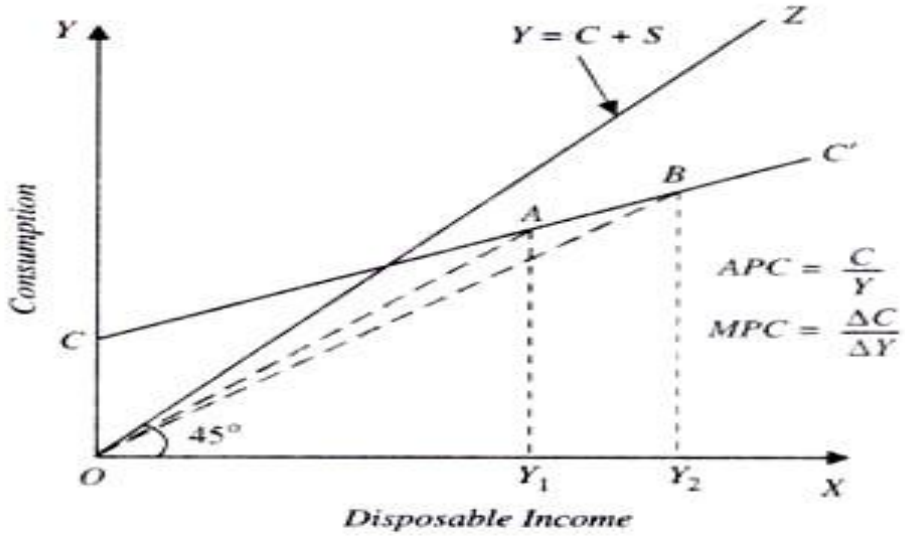


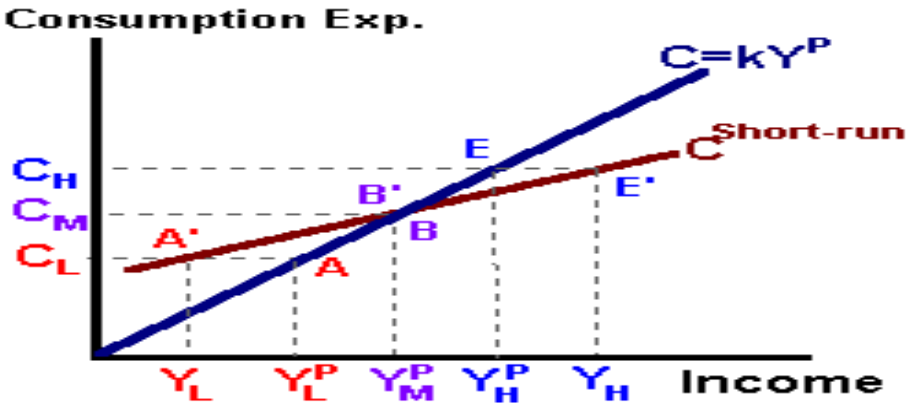
Fig. 6.3. *Consumption Function: Declining Average Propensity to Consume*

In this theory of consumption, Keynes makes three points:

d. He suggests that consumption expenditure depends mainly on absolute income of the current period;
e. Consumption expenditure does not have a proportional relationship with income; and
f. Since the APC falls as income increases, the MPC is less than the APC (MPC < APC).

5. What is permanent income theory of consumption?

This theory has been given by Milton Friedman. According to this theory, consumption is determined by long- term expected income rather than current level of income. It is this long- term expected income which is called by Friedman as permanent income on the basis of which people make their consumption plans.



6. What is saving function?

The relationship between income and saving is called saving function.

$$S = f(Y)$$

Where, S = aggregate saving;
Y = Level of Income; and
f = function (that is, depends on)

Saving function explains the relationship between national income and aggregate savings. Saving function can be written as follow;

$$S = -a + (1-b)Y$$

Where, S = Saving;
-a = saving at zero level of income;
b = marginal propensity to save (mps); and
Y = Level of Income.

7. How can you derive a saving function?

Since, S = Y – C, and C = a + bY

S = Y – (a + bY)
S = Y – a – bY
S = - a + Y – bY
S = -a + Y(1-b)
S = -a + (1-b)Y

8. Define average propensity to save (APS) and marginal propensity to save (MPS).

Average propensity to save (APS): Ratio between total saving and aggregate income (S/Y) is called average propensity to save.

Marginal propensity to save (MPS): Ratio between addition to total saving and addition to total income (ΔS/ΔY) is called marginal propensity to save.

9. Fill in the blanks with appropriate digits:

Y	C	APC	MPC	S	APS	MPS
100	90					
120	108					
140	124					
160	139					
180	153					
200	167					

10. Given the data of the disposable income (Y_d) and amount of consumption at initial level of income (SR 100). Assuming that marginal propensity to consume is 50 per cent. Complete the table and draw the graphs of consumption and saving functions.

S. No.	Y_d	C	S	APC	MPC	APS	MPS
1.	100	150					
2.	200						
3.	300						
4.	400						
5.	500						
6.	600						

Chapter- 5: The IS- LM Curve Model

Introduction:

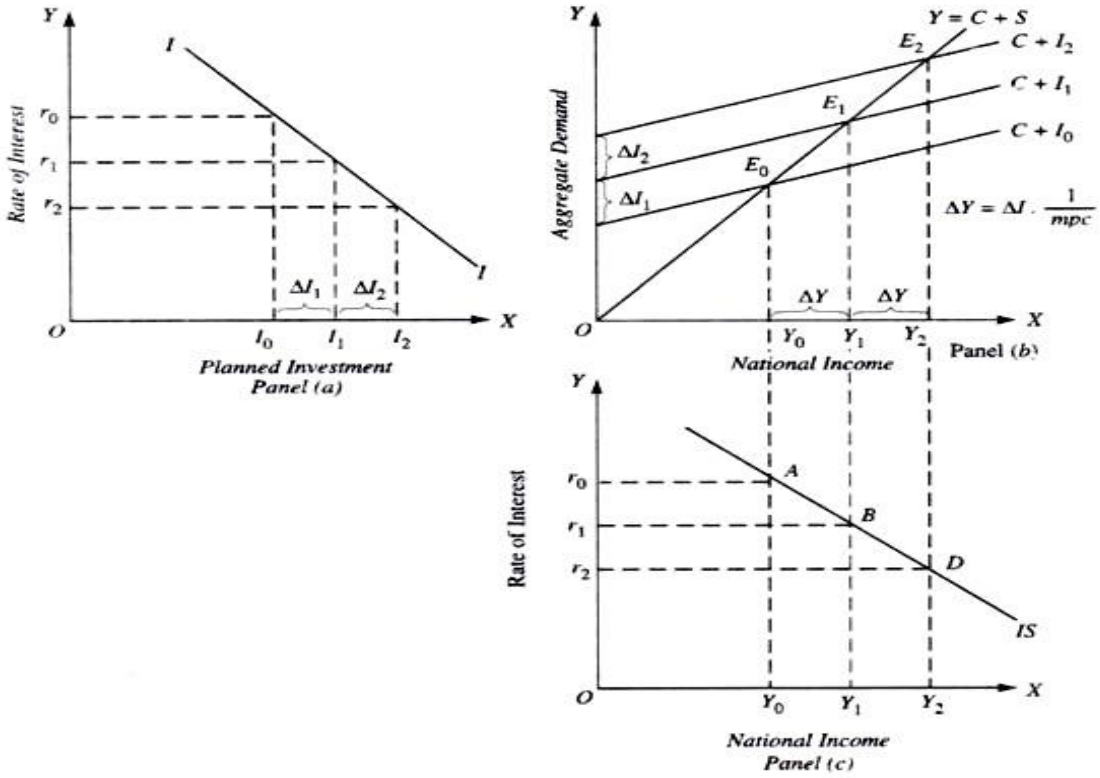
- According to Prof. J. M. Keynes, national income is determined at the level where aggregate demand (i.e., aggregate expenditure) for consumption and investment goods (C + I) equals aggregate supply.
- Keynes in his simple analysis of equilibrium in the goods market, he considers that investment is determined by the rate of interest and marginal efficiency of capital and it is independent of the level of national income.
- According to Prof. Keynes, rate of interest is determined in the money market equilibrium by the demand for money and the supply of money.
- There is one flaw in this Keynesian model of money market equilibrium. In this model whereas the changes in the rate of interest in the money market affect investment and therefore the level of income and output in the goods market, there is seemingly no inverse influence of changes in goods market (investment and income) on the money market equilibrium.
- Hicks, Hansen, Lerner and Johnson have put forward a complete and integrated model based on the Keynesian framework where investment, national income, rate of interest, demand for and supply of money are interrelated and mutually interdependent and can be represented by the two curves called *IS* and *LM* curves.
- The *IS- LM model* shows how the level of national income and rate of interest are jointly determined by the simultaneous equilibrium in the two interdependent goods and money markets.
- By Goods Market, we mean all the buying and selling of goods and services.
- By Money Market, we mean the interaction between demand for money and the supply of money.

Goods Market Equilibrium: The Derivation of the IS Curve

- The goods market is in equilibrium when aggregate demand is equal to income.
- The aggregate demand is determined by consumption demand and investment demand.
- In the Keynesian goods market equilibrium we also introduce the rate of interest as an important determinant of investment.
- When the rate of interest falls the level of investment increases and vice versa.
- When the rate of interest falls, it lowers the cost of investment projects and thereby raises the profitability of investment. The businessmen will therefore undertake greater investment at a lower rate of interest.
- The increase in investment demand will bring about increase in aggregate demand which in turn will raise the equilibrium level of income.

- The IS curve seeks to find out the equilibrium level of national income as determined by the equilibrium in goods market by a level of investment determined by a given rate of interest.
- The IS curve shows different equilibrium levels of national income with various rates of interest.
- The lower the rate of interest, higher will be the equilibrium level of income.
- The IS curve is the locus of those combinations of rate of interest and the level of national income at which goods market is in equilibrium.

Derivation of IS Curve:



Why does IS Curve Slope Downward?

The decrease in the rate of interest bring about to increase in the planned investment which increases the aggregate demand (upward shift of aggregate demand) therefore leads to the increase in the equilibrium level of national income. This makes the IS curve to slope downward.

The steepness of the IS curve depends on:

1. the elasticity of investment demand curve; and
2. the size of the multiplier.

Shift in the IS Curve:

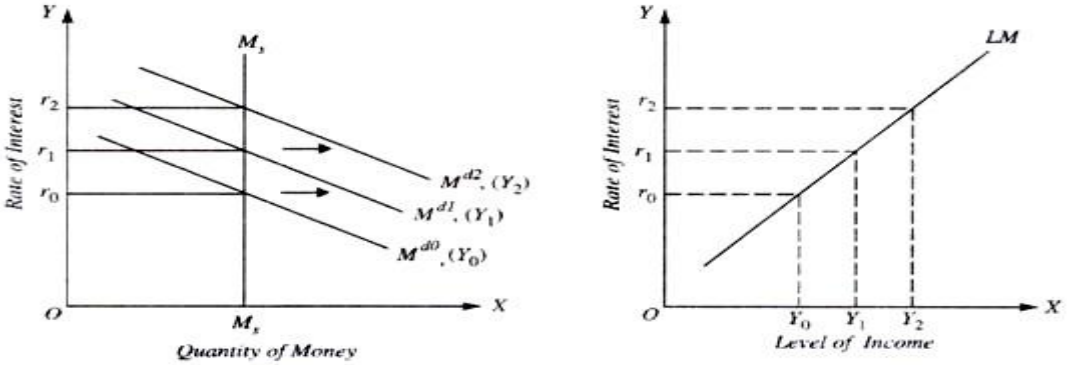
- It is the autonomous expenditure which determines the position of the IS curve and changes in the autonomous expenditure causes a shift in it.
- By autonomous expenditure we mean the expenditure (investment expenditure, government expenditure, consumption expenditure) which does not depend on the level of income and the rate of interest.

Money Market Equilibrium: Derivation of LM Curve

- The LM curve can be derived from the Keynesian theory from its analysis of money market equilibrium.
- According to Keynes, demand for money to hold depends on transactions motive and speculative motive.
- Demand for money can be written as: $M^d = f(Y, r)$
- The intersection of various money demand curves corresponding to different income levels with the supply curve of money fixed by the monetary authority would give us the LM curve.
- The LM curve relates the level of income with the rate of interest which is determined by money- market equilibrium corresponding to different levels of demand for money.
- The LM curve tells what the various rates of interest will be (given the quantity of money and the family of demand curves for money) at different levels of income.

Derivation of LM Curve:

- We have derived the LM curve from a family of demand curves for money. As income increases, money demand curve shifts outward and therefore the rate of interest which equates supply of money with demand for money rises.



- LM curve slopes upward to the right. This is because with higher levels of income, demand curve for money (M^d) is higher and consequently the money market equilibrium (that is, the equality of the given money supply with money demand curve occurs at a higher rate of interest).
- This means that rate of interest varies directly with income.

The slope of LM curve:

- The slope of LM curve depends on two factors:
    1. The responsiveness of demand for money to changes in income. ($M^d = f(Y)$); and
    2. The elasticity or responsiveness of demand for money to the changes in rate of interest.
- The lower the elasticity of liquidity preference for speculative motive with respect to the changes in the rate of interest, the steeper will be the LM curve. On the other hand, if the elasticity of liquidity preference (money demand function) to the changes in the rate of interest is high, the LM curve will be flatter or less steep.

Shift in the LM Curve:

- **Factors that determine the position of LM curve:** LM curve is drawn by keeping the stock or money supply fixed. Therefore, when the money supply increases, given the money demand function, it will lower the rate of interest at the given level of income. This is because with income fixed, the rate of interest must fall so that demand for money for speculative and transactions motive rises to become equal to the greater money supply. This will cause the LM curve to shift outward to the right.
- The other factor which causes a shift in the LM curve is the change in liquidity preference for a given level of income.
- If the liquidity preference function for a given level of income shifts upward, this, given the stock of money, will lead to the rise in the rate of interest for a given level of income. This will bring about a shift in the LM curve to the left.
- If the money demand function (liquidity preference) for a given level of income declines, it will lower the rate of interest for a given level of income and will therefore shift the LM curve to the right.

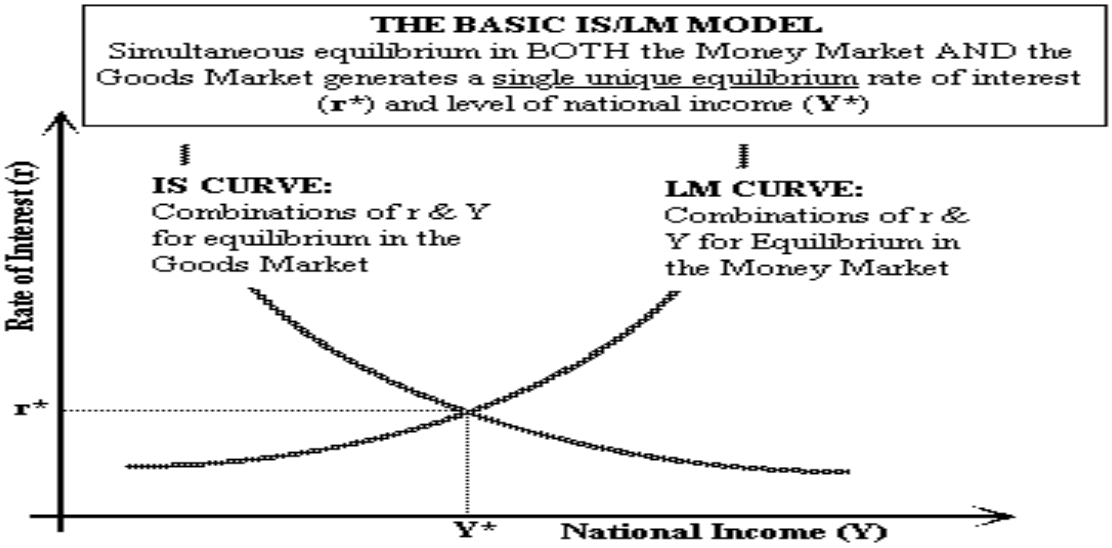
The LM Curve: The Essential Features

- The LM curve is a schedule that describes the combinations of rate of interest and level of income at which money market is in equilibrium.
- The LM curve slopes upward to the right.
- The LM curve is flatter if the interest elasticity of demand for money is high. On the contrary, the LM curve is steep if the interest elasticity demand for money is low.

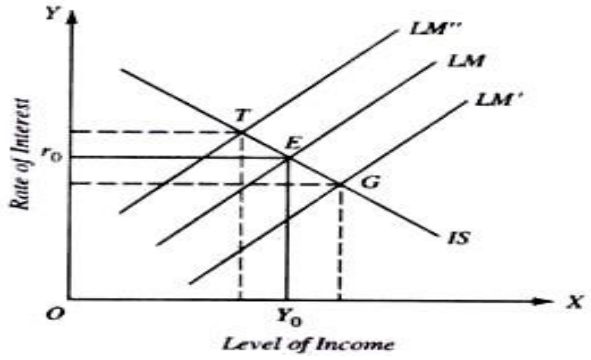
- The LM curve shifts to the right when the stock of money is increased and it shifts to the left if the stock of money supply is reduced.
- The LM curve shifts to the left if there is an increase in the money demand function which raises the quantity of money demanded at the given interest rate and income level. On the other hand, the LM curve shifts to the right if there is a decrease in the money demand function which lowers the amount of money demanded at given levels of interest rate and income.

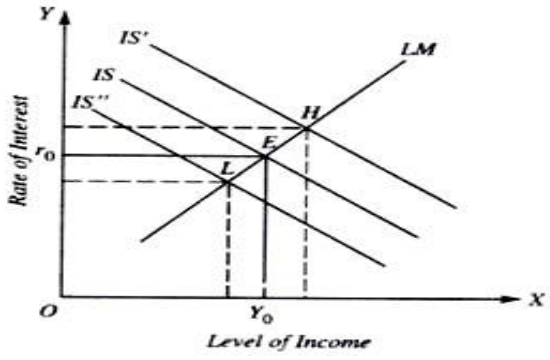
Simultaneous Equilibrium of the Goods and Money Market:

- The IS- LM curves relate the two variables: income and the rate of interest.
- The equilibrium rate of interest is determined at the point where IS and LM curves cut to each other.



Effect of Changes in Supply of Money on the Rate of Interest and Income Level:





The Criticisms of the IS- LM Model:

1. It is based on the assumption that the rate of interest is quite flexible.
2. The model is based on the assumption that investment is interest- elastic that is, investment varies with the rate of interest. If investment is interest – inelastic, then the IS-LM model breaks down.
3. Don Patinkin and Milton Friedman have criticised by saying that the division of the economy into two sectors- monetary and real is artificial and unrealistic. These sectors are quite interwoven and act and react on each other.
4. Further, Patinkin has pointed out that the IS- LM model has ignored the possibility of changes in the price level of commodities. According to him, the various economic variables such as supply of money, propensity to consume or save, investment and the demand for money not only influence the rate of interest and the level of national income but also the prices of commodities and services.

IS- LM Model: Algebraic Analysis

The derivation of Equation for IS Curve: The IS curve is derived from goods market equilibrium. The IS curve shows the combinations of levels of income and interest at which goods market is in equilibrium.

Aggregate demand consists of consumption demand, investment demand, government expenditure on goods and services and net exports. Consumption demand is a function of disposable income. Investment is negatively related to rate of interest. Thus,

C = a + bY (Consumption function)
$I = I_a – dr$ (Investment function)
AD = C + I + G + NX
Where, AD = Aggregate demand,
C = Consumption expenditure,
A = Autonomous consumption,
B = Marginal propensity to consume (MPC),
Y = Income,
I = Investment expenditure,
Ia = Autonomous investment,
D = Sensitivity of investment to the change in rate of interest,
G = Government expenditure
NX = Net Exports

Product market is in equilibrium when

Y = AD = C(Y) + I(r) + G + NX
Or, $Y = a + bY + I_a – dr + G + NX$
Or, $Y – bY = a + I_a – dr + G + NX$
Or, $Y(1-b) = a + I_a – dr + G + NX$

Or, $Y = \frac{1}{1-b}(a + I_a + G + NX) - \frac{dr}{1-b}$

The above equation describes IS curve. Terms in the brackets are all autonomous expenditure and are independent of both income and rate of interest. If we denote all these autonomous expenditures by Ā, then the above equation can be written as –

$Y = \frac{1}{1-b}(\bar{A}) - \frac{1}{1-b}.\ dr$

Or, $Y = \frac{1}{1-b}(\bar{A} - \ dr)$

$\frac{1}{1-b}$ is the income multiplier and b is marginal propensity to consume. Given the value of autonomous expenditure, we can obtain value of Y at different rates of interest to draw an IS curve. The value of autonomous expenditure (Ā) determines the intercept of the IS curve, d in the term *dr* shows the sensitivity of investment to the changes in rate of interest and determines the slope of IS curve. Since fall in investment rate increases investment spending, it will raise aggregate demand and thus the equilibrium level of income. The slope of the IS curve depends on the size of the income multiplier.

Problem 1: The following equations describe an economy:

C = 10 + 0.5Y;

I = 190 – 20r. Derive the equation for IS curve.

Solution: IS curve describes the equation for product market equilibrium at various combinations of level of income and rate of interest.

Y = AD = C + I

Y = 10 + 0.5Y + 190 – 20r

Y – 0.5Y = 200 – 20r

Y (1- 0.5) = 200 – 20r

½ Y = 200 – 20r

Y = 400 – 40r.

Thus IS curve is: **Y = 400 – 40r.**

Problem 2: The following equations describe an economy

$C = 100 + 0.75Y_d$

$I = 50 - 25r$

$T = G = 50$

Where *C* is aggregate consumption, Y_d is disposable income, *I* is aggregate investment. *T* is taxes, *G* is government purchases and *r* is the rate of interest. Derive the *IS* curve for the economy.

Solution: $Y = C + I + G$

Now, $C = 100 + 0.75Y_d = 100 + 0.75 (Y- T) = 100 + 0.75 (Y - 50)$

$I = 50 - 25r$; $G = T = 50$

Hence, $Y = C + I + G$

$Y = 100 + 0.75 (Y - 50) + 50 - 25r + 50$

$Y = 200 + 0.75Y - 37.5 - 25r$

$Y - 0.75Y = 162.5 - 25r$

$0.25Y = 162.5 - 25r$

$Y = 650 - 100r$

Thus, IS equation will be: **$Y = 650 - 100r$**

The derivation of Equation for LM Curve: LM curve is a curve that shows combinations of interest rates and levels of income at which money market is in equilibrium. That means demand for money is equal to supply of money. We explain the derivation of LM curve in two steps. First, we show how money demand depends on interest rate and level of income. It is important to note that in their demand for money people care more about the purchasing power of money, that, people's demand is for real money balances rather than nominal money balances. Real money balances are given by *M/P* where *M* stands for nominal money demand and *P* for price level.

The demand for real money balances depends on the level of real income and interest rate. Thus $M_d = L(Y, r)$. Demand for real money balances increases with the rise in level of income and decreases with rise in rate of interest. Let us assume that money demand function is linear. Then

$$L(Y, r) = kY - hr; \text{ where } k, h > 0$$

Parameter *k* represents how much demand for real money balances increases when level of income rises. Parameter *h* shows how much demand for real money balances decreases when rate of interest rises. The equilibrium in the money market is established where demand for real money balances equals supply of real money balances and is given by

$$\frac{M}{P} = kY - hr$$

Money supply (*M*) is set by the central bank of a country and we assume it to remain constant for a period. We also assume the price level (*P*) to remain constant.

Solving the above equation for interest rate, *r*, we have

$$r = \frac{1}{h}\left(kY - \frac{M}{P}\right)$$

The above equation describes the equation for LM curve. This equation gives us the equilibrium rate of interest for any given value of level of income (Y) and real money balances. Thus LM curve describes money market equilibrium for different values of income and rate of interest, given a fixed value of real money balances (M/P), we obtain a rate of interest for different values of income.

In the above equation for LM curve, the coefficient (k) of income (Y) is positive, LM curve will slope upward. That is, higher income requires higher interest rate for money market to be in equilibrium, given the supply of real money balances. Since the coefficient of real money balances is negative, the expansion in real money balances will cause a shift in the LM curve to be right, and decrease in the real money balances will shift LM curve to the left.

Form the coefficient of income k/h, we can know whether LM curve is steep or flat. If demand for money is not much sensitive to level of income, then k will be small. Therefore, in case of small k (that is, low sensitivity of interest with respect to change in income), small change in interest rate is required to offset a small increase in money demand caused by a given increase in income.

Problem 3: Given the following data about the monetary sector of the economy:

$M_d = 0.4Y - 80r$

$M_s = 1200$ million

Where, M_d is demand for money, *Y* is the level of income, *r* is the rate of interest and M_s is the supply of money.

Derive the equation for LM curve and give the economic interpretation of this curve.

Solution: For money market to be in equilibrium,

$M_d = M_s$

$0.4Y - 80r = 1200$

$80r = 0.4Y - 1200$

$$r = \frac{1}{200}Y - 15$$

Thus we get the following LM curve: $r = \frac{1}{200}Y - 15$

LM curve means what would be rate of interest when money market is in equilibrium, given the level of income. Thus, if level of national income is SR 4000 million, then using LM equation, we have:

$$r = \frac{1}{200} \times 4000 - 15$$

$$r = 20 - 15 = 5\%$$

Thus, at income of SR 4000 million, rate of interest will be 5 per cent when money market is in equilibrium.

Now, if level of income is SR 4400 million, equilibrium rate of interest will be:

$$r = \frac{1}{200}Y - 15$$

$$r = \frac{1}{200} \times 4400 - 15$$

$$r = 22 - 15 = 7\%$$

Thus, at income of SR 4400 million, rate of interest will be 7 per cent when money market is in equilibrium.

Problem 4: the following data is given for the monetary sector of the economy:

Transaction demand for money, $M_t = 0.5Y$, Speculative demand for money, $M_{sp} = 105 - 1500r$ and money supply $M_s = 150$. Derive LM equation from the data.

IS- LM Model: Algebraic Analysis
(Joint Equilibrium of Income and Interest Rate)

The intersection of IS and LM curves determines joint equilibrium of income and interest rate. We can obtain the equilibrium values by using the equations of IS and LM curves:

Equation for IS curve: $Y = \frac{1}{1-b}(\bar{A} - dr)$

Equation for LM curve: $r = \frac{1}{h}(kY - \frac{M}{P})$

To find equilibrium values we substitute the interest rate from the LM equation into the IS equation. By doing so, we have

$$Y = \frac{1}{1-b}[\bar{A} - d(\frac{1}{h}\left(kY - \frac{M}{P}\right)]$$

$$Y = \frac{1}{1-b}[\bar{A} - \frac{d}{h}\left(kY - \frac{M}{P}\right)]$$

$$Y = \frac{1}{1-b}[\bar{A} - \frac{d}{h}\left(kY\right) + \frac{d}{h}(\frac{M}{P})]$$

The equation shows that the equilibrium level of income depends on exogenously given autonomous variables ($\bar{A}$) such as autonomous consumption, autonomous investment, government expenditure on goods and services, and the real money supply ($\frac{M}{P}$) and further on the size of multiplier ($\frac{1}{1-b}$). It is noticed that higher the autonomous expenditure, the higher the level of equilibrium income and the greater the real money supply, the higher the level of national income.

Problem 5: For an economy the following functions have been given:

C = 100 + 0.8Y

S = -100 + 0.2Y

I = 120 – 5r

M_s = 120

M_d = 0.2Y – 5r

Find out (1) IS equation, (2) LM equation, (3) equilibrium level of income and interest rate.

Solution:

(1) IS curve: $Y = \frac{1}{1-b}(\bar{A} - dr)$

$$Y = \frac{1}{1-b}[(a + Ia) - dr)]$$

Where b = *MPC*, a and I_a are autonomous consumption and autonomous investment respectively, *d* is sensitivity of investment demand to changes in rate of interest (*r*).

Substituting these values in IS equation, we have

$$Y = \frac{1}{1-0.8}[(100 + 120) - 5r)]$$

$$= \frac{1}{0.2}(220 - 5r)$$

$$= 5(220 - 5r)$$

Hence, IS equation: Y = 1100 – 25r

(2) LM curve:

For money market equilibrium;

$M_d = M_s$

0.2Y – 5r = 120

5r = 0.2Y – 120

r = $\frac{0.2}{5}$Y – 24

Hence, LM equation: r = $\mathbf{\frac{0.2}{5}}$***Y – 24***

(3) Equilibrium level of income and interest rate:

Substituting the value of r in the IS equation we have

Y = 1100 – 25r

Y = 1100 – 25($\frac{0.2}{5}$*Y – 24*)

Y = 1100 – (1Y - 600)

Y = 1100 – Y + 600

2Y = 1700

Y = 850

Thus the equilibrium level of income is 850. To obtain the equilibrium rate of interest we substitute the value of Y in LM equation and we get

$r = \frac{0.2}{5}Y - 24$

$r = \frac{0.2}{5} \times 850 - 24$

r = 34 – 24 = 10

Thus equilibrium rate of interest is 10 per cent.

Problem 6: Consider the following economy:

$C = 100 + 0.8Y_d$

$I = 50 - 25_r$

G = T = 50

$\frac{M'}{P} = 200$

$M_d = Y - 25r$

1. Calculate the IS and LM curves.

2. Calculate the equilibrium levels of output (national income) and interest.

Review Question

Multiple Choice Questions:

1. Who developed the concept of IS- LM model?

a. Hicks and Hansen

b. J. M. Keynes

c. Adam Smith

d. None of the above.

2. When rate of interest falls, level of investment will—

a. increase

b. decrease

c. no effect on investment

d. both a & b

3. The curve which shows different equilibrium levels of national income with various rates of interest is called-

a. LM curve,

b. IS curve

c. Income curve

d. None of the above

4. IS curve slopes—

a. upward

b. downward

c. horizontal

d. vertical

5. The steepness of IS curve depends on---

a. the elasticity of investment demand curve;

b. the size of the multiplier;

c. demand for money

d. both a & b

6. The position of IS curve depends on---

a. rate of interest,

b. rate of investment,

c. autonomous expenditure

d. none of the above

7. The curve which relates the level of income with the rate of interest which is determined by money- market equilibrium corresponding to different levels of demand for money is known as-

a. IS curve

b. LM curve

c. Income curve

d. None of the above.

8. LM curve slopes—

a. downward to the right

b. upward to the right

c. vertical

d. horizontal.

9. The LM curve is flatter if the interest elasticity of demand for money-

a. high

b. low

c. both may be possible

d. none of the above

10. The LM curve shifts to the right when the stock of money is-

a. decreased

b. increased

c. constant

d. none of the above.

11. Which of the following is the correct definition of the IS curve?

a. The IS curve represents the single level of output where financial markets are in equilibrium.

b. The IS curve represents the combinations of output and the interest rate where the money market is in equilibrium.

c. The IS curve represents the single level of output where the goods market is in equilibrium.

d. The IS curve represents the combinations of output and the interest rate where the goods market is in equilibrium.

12. Suppose the economy is operating on the LM curve but not on the IS curve. Given this information, we know that:

a. the money market and bond markets are in equilibrium and the goods market is not in equilibrium.

b. the money, bond and goods markets are all in equilibrium.

c. neither the money, bond, nor goods markets are in equilibrium.

d. the goods market is in equilibrium and the money market is not in equilibrium.

13. Which of the following statements is consistent with a given (i.e., fixed) LM curve?

a. A reduction in the interest rate causes investment spending to increase.

b. A reduction in the interest rate causes money demand to decrease.

c. An increase in output causes an increase in demand for goods

d. An increase in output causes an increase in money demand.

14. A reduction in government spending will cause:

a. an upward shift in the LM curve.

b. a leftward shift in the IS curve.

c. a downward shift in the LM curve.

d. a rightward shift in the IS curve.

15. Suppose investment spending is NOT very sensitive to the interest rate. Given this information, we know that:

a. the IS curve should be relatively steep.

b. the IS curve should be relatively flat.

c. the LM curve should be relatively flat.

d. the LM curve should be relatively steep.

16. An increase in the aggregate price level, P, will most likely have which of the following effects?

a. a rightward shift in the IS curve.

b. a leftward shift in the IS curve.

c. an upward shift in the LM curve.

d. a downward shift in the LM curve.

17. Which of the following will occur if there is an increase in taxes?

a. The IS curve shifts and the economy moves along the LM curve.

b. The LM curve shifts and the economy moves along the IS curve.

c. Output will change causing a change in money demand and a shift of the LM curve.

d. Neither the IS nor the LM curve shifts.

e. Both the IS and LM curves shift.

18. Suppose the current level of output and the interest rate are such that the economy is operating on neither the IS nor LM curve. Which of the following is true for this economy?

a. Production does not equal demand.

b. The quantity supplied of bonds does not equal the quantity demanded of bonds.

c. The money supply does not equal money demand.

d. Financial markets are not in equilibrium.

e. all of the above.

19. Suppose the economy is currently operating on both the LM curve and the IS curve. Which of the following is true for this economy?

a. Financial markets are in equilibrium.

b. The quantity supplied of bonds equals the quantity demanded of bonds.

c. Production equals demand.

d. The money supply equals money demand.

e. all of the above.

20. The IS curve will NOT shift when which of the following occurs?

a. a reduction in government spending.

b. a reduction in consumer confidence.

c. a reduction in the interest rate.

d. all of the above.

e. none of the above.

21. Based on our understanding of the IS-LM model that takes into account dynamics, we know that a reduction in the money supply will cause:

a. a gradual increase in r and gradual reduction in Y.

b. an immediate increase in r and no initial change in Y.

c. an immediate drop in Y and immediate increase in r.

d. none of the above.

22. Which of the following best defines the LM curve?

a. illustrates the effects of changes in r on desired money holdings by individuals.

b. illustrates the effects of changes in r on investment.

c. the combinations of r and Y that maintain equilibrium in the goods market.

d. the combinations of r and Y that maintain equilibrium in financial markets.

23. A reduction in consumer confidence will likely have which of the following effects?

a. a rightward shift in the IS curve.

b. a leftward shift in the IS curve.

c. an upward shift in the LM curve.

d. a downward shift in the LM curve.

24. For this question, assume that investment spending depends only on output and no longer depends on the interest rate. Given this information, an increase in the money supply:

a. will cause investment to increase.

b. will cause an increase in output and have no effect on the interest rate.

c. will cause a reduction in the interest rate.

d. will cause investment to decrease.

e. will have no effect on output or the interest rate.

25. Which of the following statements is consistent with a given (i.e., fixed) IS curve?

a. An increase in government spending causes an increase in demand for goods.

b. A reduction in the interest rate causes investment spending to increase.

c. A reduction in the interest rate causes money demand to decrease.

d. A reduction in the interest rate causes an increase in the money supply.

e. An increase in taxes causes a reduction in demand for goods.

26. Which of the following best defines the IS curve?

a. the combinations of i and Y that maintain equilibrium in the goods market.

b. illustrates the effects of changes in i on investment.

c. the combinations of i and Y that maintain equilibrium in financial markets.

d. illustrates the effects of changes in i on desired money holdings by individuals.

27. Which of the following is the definition for the real supply of money?

a. the stock of money measured in terms of goods, not dollars.

b. the stock of high powered money only.

c. the actual quantity of money, rather than the officially reported quantity.

d. the ratio of the real GDP to the nominal money supply.

e. the real value of currency in circulation only.

28. Which of the following is true for a given point on the LM curve?

a. The goods market is in equilibrium.

b. Production is equal to demand.

c. No inventory investment equals zero.

d. all of the above.

e. none of the above.

29. Based on our understanding of the IS-LM model that takes into account dynamics, we know that a reduction in government spending will cause:

a. a gradual reduction in r and an immediate reduction in Y.

b. an immediate reduction in r and no initial change in Y.

c. an immediate drop in Y and immediate increase in r.

d. a gradual reduction in r and gradual reduction in Y.

30. Assume that investment does NOT depend on the interest rate. A reduction in the money supply will cause which of the following for this economy?

a. an increase in investment.

b. no change in the interest rate.

c. no change in output.

d. a reduction in investment.

Answer:

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

11	12	13	14	15	16	17	18	19	20
d	a	d	b	a	c	a	e	e	c

21	22	23	24	25	26	27	28	29	30
b	d	b	c	b	a	a	e	d	c

Write down T for true statement and F for false statement for the following statements:-

1. Prof. J. M. Keynes developed the concept of IS- LM model in economics.

2. According to Prof. J. M. Keynes, national income is determined at the level where aggregate demand equals aggregate supply.

3. According to Prof. Keynes, rate of interest is determined in the money market equilibrium by the demand for money and the supply of money.

4. By goods market, we mean the interaction between demand for money and the supply of money.

5. The money market is in equilibrium when aggregate demand is equal to income.

6. When the rate of interest falls the level of investment increases and vice versa.

7. The increase in investment demand will bring about increase in aggregate demand which in turn will raise the equilibrium level of income.

8. The LM curve seeks to find out the equilibrium level of national income as determined by the equilibrium in goods market by a level of investment determined by a given rate of interest.

9. The IS curve shows different equilibrium levels of national income with various rates of interest.

10. The lower the rate of interest, lower will be the equilibrium level of income.

11. The LM curve is the locus of those combinations of rate of interest and the level of national income at which goods market is in equilibrium.

12. It is the autonomous expenditure which determines the position of the IS curve and changes in the autonomous expenditure causes a shift in it.

13. The IS curve can be derived from the Keynesian theory from its analysis of money market equilibrium.

14. According to Keynes, demand for money to hold depends on transactions motive and speculative motive.

15. The LM curve relates the level of income with the rate of interest which is determined by money- market equilibrium corresponding to different levels of demand for money.

16. The IS curve tells what the various rates of interest will be (given the quantity of money and the family of demand curves for money) at different levels of income.

17. The LM curve slopes upward to the right.

18. The IS curve slopes upward to the right.

19. The LM curve is flatter if the interest elasticity of demand for money is high.

20. The LM curve is steep if the interest elasticity demand for money is low.

21. The LM curve shifts to the right when the stock of money is decreased.

22. The LM curve shifts to the right when the stock of money is increased.

23. The LM curve shifts to the right if there is a decrease in the money demand function.

24. The LM curve shifts to the left if there is an increase in the money demand function.

25. The IS- LM curves relate the two variables: income and the rate of interest.

Answer:

1	2	3	4	5	6	7	8	9	10
F	T	T	F	F	T	T	F	T	F

11	12	13	14	15	16	17	18	19	20
F	T	F	T	T	F	T	F	T	T

21	22	23	24	25	26	27	28	29	30
F	T	T	T	T	-	-	-	-	-

Match the following:

Match - I	Match- II
A. The LM curve shifts to the right	1. when the stock of money is increased.
B. The LM curve shifts to the left	2. when the stock of money supply is reduced.
C. The LM curve shifts to the left if	3. there is an increase in the money demand function.
D. The LM curve shifts to the right if	4. there is an decrease in the money demand function.

Match - I	A	B	C	D
Match - II	1	2	3	4

Match - I	Match- II
A. IS curve shows	1. goods market equilibrium.
B. LM curve shows	2. money market equilibrium.
C. IS curve shifts to the right	3. when autonomous expenditure increases.
D. IS curve shifts to the left	4. when autonomous expenditure decreases.

Match - I	A	B	C	D
Match - II	1	2	3	4

Questions with Answer:

1. Who developed the concept of IS- LM model in economics?

Hicks, Hansen, Lerner and Johnson have developed the concept of IS- LM model in economics.

2. What is shown by IS- LM model?

The *IS- LM model* shows how the level of national income and rate of interest are jointly determined by the simultaneous equilibrium in the two interdependent goods and money markets.

3. Define goods market and money market.

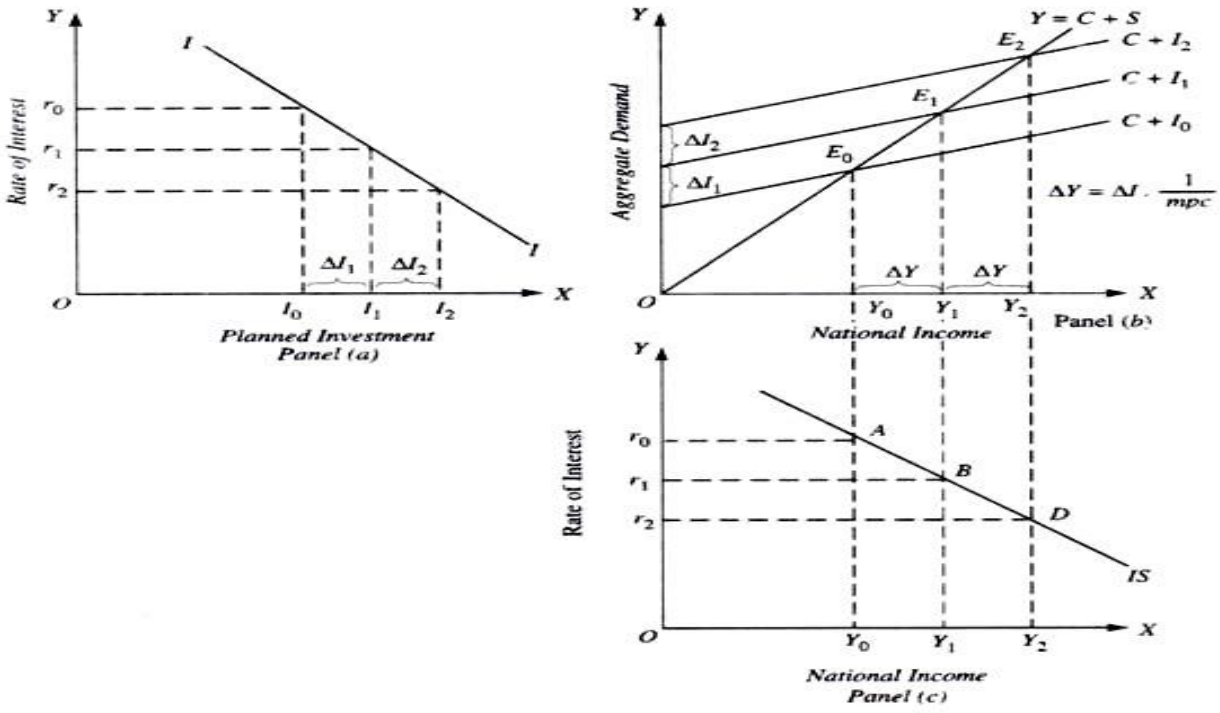
By Goods Market, we mean all the buying and selling of goods and services.

By Money Market, we mean the interaction between demand for money and the supply of money

4. What is IS (Investment- Saving) curve?

The IS curve shows different equilibrium levels of national income with various rates of interest. It is the locus of those combinations of rate of interest and the level of national income at which goods market is in equilibrium. IS curve always slopes downward to the right (negative slope).

5. Derive the IS curve through diagram.



6. **Why does IS Curve Slope Downward?**

The decrease in the rate of interest bring about to increase in the planned investment which increases the aggregate demand (upward shift of aggregate demand) therefore leads to the increase in the equilibrium level of national income. This makes the IS curve to slope downward.

7. What are the factors on which the steepness of the IS curve depends on?

There are two factors on which the steepness of the IS curve depends on:-

1. the elasticity of investment demand curve; and
2. the size of the multiplier.

8. What are the factors which determine the position/ shift in the IS curve?

It is the autonomous expenditure which determines the position of the IS curve and changes in the autonomous expenditure causes a shift in it.

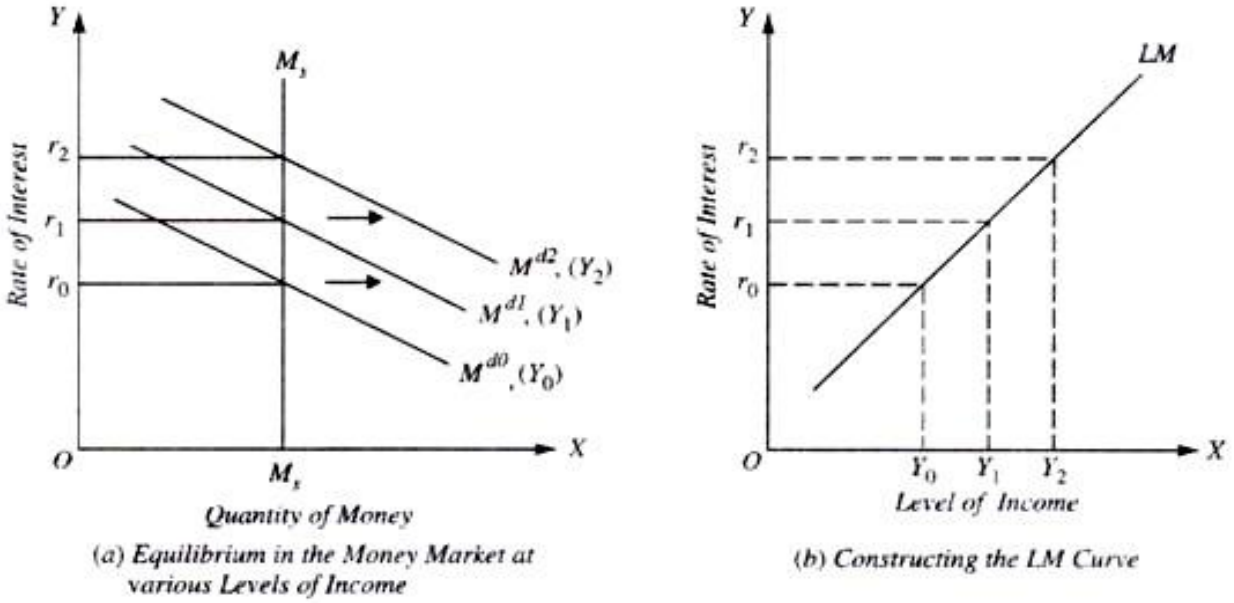
9. What do you mean by autonomous expenditure?

By autonomous expenditure we mean the expenditure (investment expenditure, government expenditure, consumption expenditure) which does not depend on the level of income and the rate of interest.

10. What is LM curve?

The LM curve relates the level of income with the rate of interest which is determined by money- market equilibrium corresponding to different levels of demand for money. The LM curve tells what the various rates of interest will be (given the quantity of money and the family of demand curves for money) at different levels of income.

11. Derive the LM curve diagrammatically.



(a) Equilibrium in the Money Market at various Levels of Income

(b) Constructing the LM Curve

We have derived the LM curve from a family of demand curves for money. As income increases, money demand curve shifts outward and therefore the rate of interest which equates supply of money with demand for money rises.

12. Why LM curve slopes upward to the right?

This is because with higher levels of income, demand curve for money (M^d) is higher and consequently the money market equilibrium (that is, the equality of the given money supply with money demand curve occurs at a higher rate of interest). This means that rate of interest varies directly with income.

13. Write down the equation for IS curve.

Equation for IS curve: $Y = \frac{1}{1-b}(\bar{A} - dr)$

14. Write down the equation for LM curve.

Equation for LM curve: $r = \frac{1}{h}(kY - \frac{M}{P})$

15. *Problem:* The following equations describe an economy:

C = 10 + 0.5Y;

I = 190 – 20r. Derive the equation for IS curve.

Solution: IS curve describes the equation for product market equilibrium at various combinations of level of income and rate of interest.

Y = AD = C + I

Y = 10 + 0.5Y + 190 – 20r

Y – 0.5Y = 200 – 20r

Y (1- 0.5) = 200 – 20r

½ Y = 200 – 20r

Y = 400 – 40r.

Thus IS curve is: **Y = 400 – 40r.**

16 Problem: The following equations describe an economy

$C = 100 + 0.75Y_d$

I = 50 – 25r

T = G = 50

Where *C* is aggregate consumption, Y_d is disposable income, *I* is aggregate investment. *T* is taxes, *G* is government purchases and *r* is the rate of interest. Derive the *IS* curve for the economy.

Solution: Y = C + I + G

Now, $C = 100 + 0.75Y_d = 100 + 0.75 (Y- T) = 100 + 0.75 (Y – 50)$

I = 50 – 25r; G = T = 50

Hence, Y = C + I + G

Y = 100 + 0.75 (Y – 50) + 50 – 25r + 50

Y = 200 + 0.75Y – 37.5 – 25r

Y – 0.75Y = 162.5 – 25r

0.25Y = 162.5 – 25r

Y = 650 – 100r

Thus, IS equation will be: **Y = 650 – 100r**

17. Problem: Given the following data about the monetary sector of the economy:

$M_d = 0.4Y - 80r$

$M_s = 1200$ million

Where, M_d is demand for money, Y is the level of income, r is the rate of interest and M_s is the supply of money.

Derive the equation for LM curve and give the economic interpretation of this curve.

Solution: For money market to be in equilibrium,

$M_d = M_s$

$0.4Y - 80r = 1200$

$80r = 0.4Y - 1200$

$r = \frac{1}{200}Y - 15$

Thus we get the following LM curve: $r = \frac{1}{200}Y - 15$

LM curve means what would be rate of interest when money market is in equilibrium, given the level of income. Thus, if level of national income is SR 4000 million, then using LM equation, we have:

$r = \frac{1}{200} \times 4000 - 15$

$r = 20 - 15 = 5\%$

Thus, at income of SR 4000 million, rate of interest will be 5 per cent when money market is in equilibrium.

Now, if level of income is SR 4400 million, equilibrium rate of interest will be:

$r = \frac{1}{200}Y - 15$

$r = \frac{1}{200} \times 4400 - 15$

$r = 22 - 15 = 7\%$

Thus, at income of SR 4400 million, rate of interest will be 7 per cent when money market is in equilibrium.

18. Problem: the following data is given for the monetary sector of the economy:

Transaction demand for money, $M_t = 0.5Y$, Speculative demand for money, $M_{sp} = 105 - 1500r$ and money supply $M_s = 150$. Derive LM equation from the data.

19. Problem: For an economy the following functions have been given:

C = 100 + 0.8Y

S = -100 + 0.2Y

I = 120 – 5r

M_s = 120

M_d = 0.2Y – 5r

Find out (1) IS equation, (2) LM equation, (3) equilibrium level of income and interest rate.

Solution:

(1) IS curve: $Y = \frac{1}{1-b}(\bar{A} - dr)$

$$Y = \frac{1}{1-b}[(a + Ia) - dr)]$$

Where b = *MPC*, a and I_a are autonomous consumption and autonomous investment respectively, d is sensitivity of investment demand to changes in rate of interest (r).

Substituting these values in IS equation, we have

$$Y = \frac{1}{1-0.8}[(100 + 120) - 5r)]$$

$$= \frac{1}{0.2}(220 - 5r)$$

$$= 5(220 - 5r)$$

Hence, IS equation: Y = 1100 – 25r

(2) LM curve:

For money market equilibrium;

$M_d = M_s$

0.2Y – 5r = 120

5r = 0.2Y – 120

r = $\frac{0.2}{5}$Y – 24

Hence, LM equation: r = $\frac{0.2}{5}$Y – 24

(3) Equilibrium level of income and interest rate:

Substituting the value of r in the IS equation we have

Y = 1100 – 25r

$Y = 1100 - 25(\frac{0.2}{5}Y - 24)$

$Y = 1100 - (1Y - 600)$

$Y = 1100 - Y + 600$

$2Y = 1700$

$Y = 850$

Thus the equilibrium level of income is 850. To obtain the equilibrium rate of interest we substitute the value of Y in LM equation and we get

$r = \frac{0.2}{5}Y - 24$

$r = \frac{0.2}{5} \times 850 - 24$

$r = 34 - 24 = 10$

Thus equilibrium rate of interest is 10 per cent.

20. Problem: Consider the following economy:

$C = 100 + 0.8Y_d$

$I = 50 - 25_r$

$G = T = 50$

$\frac{M'}{P} = 200$

$M_d = Y - 25r$

1. Calculate the IS and LM curves.

2. Calculate the equilibrium levels of output (national income) and interest.

Chapter- 6

Investment, Multiplier, Accelerator & Business Cycle

Investment: investment means the purchase of new machines, new buildings and other capital goods that add to the existing stocks of capital.

Gross Investment: The total purchase of new capital goods during a year is called gross investment.

Net Investment: Gross investment less replacement or depreciation is called net investment.

Components of Investment:

1. Plants and machinery;
2. Construction; and
3. Stocks.

Private investment: it refers to the expenditure incurred by the private entrepreneurs on the purchase of capital goods like plant and machinery, or construction of houses, factories, offices, shops, etc.

Public investment: investment expenditure by the government.

Motivations for investment: Expected profitability is the main motive for investment in private sector of the economy. In public sector, these decisions are motivated by profitability in terms of surplus of social benefits over social costs.

In the private sector, investment may be of two types:

1. Induced investment; and
2. Autonomous investment.

Induced investment: it takes place when the level of income and demand in the economy goes up.

Autonomous investment: it is that kind of investment which is not affected by the changes in income, rate of interest or rate of profit. This does not depend upon the growth of sales.

Determinants of Private Investment:

1. Prospective income from the capital asset;
2. Supply price of the capital asset; and
3. The rate of interest.

Prospective Income: it is defined as expected revenues from the use of the capital asset minus variable cost.

Supply Price: it refers to the cost of the asset. Suppose the machine costs SR 3000. This will be known as the supply price of the asset. Supply price is the current cost of the asset.

Prospective yield: it is the future return on the asset.

Example: if you are given an option to accept SR 100 now or SR 100 five years hence, you will definitely like to have SR 100 now rather than five years afterwards. If you are to be asked to wait for five years, you will demand more than SR 100. Similarly, every person will evaluate SR 100 in present more than SR 100 in future. The present value of SR 100 in future will be less.

For t yearns, at a rate of interest of r per cent, the present value is calculated by this formula:

$$P = \frac{A}{(1+r)^t}$$

Example: on the basis of the above formula, the present value of the expected returns of a machine which costs SR 3,000 and which is expected to last for five years will be calculated as follows:

Present value of prospective yield = $\frac{A}{(1+r)^t} + \frac{A}{(1+r)^t} + \frac{A}{(1+r)^t} + \frac{A}{(1+r)^t} + \frac{A}{(1+r)^t}$

$= \frac{1000}{(1+0.05)^1} + \frac{1000}{(1+0.05)^2} + \frac{1000}{(1+0.05)^3} + \frac{850}{(1+0.05)^4} + \frac{700}{(1+0.05)^5}$

= 952.75 + 907 + 863 + 700 + 550.25 = SR 3,973

The present value of the prospective yield of an asset that is expected to last for five years will be equal to SR 3,973 which is greater than the supply price of the asset (or the current cost). Therefore, it will be desirable to invest.

For calculation of Marginal Efficiency of Capital (MEC), the formula will be:

$$Cr = \frac{R1}{(1+r)^1} + \frac{R2}{(1+r)^2} + \frac{R3}{(1+r)^3} + \frac{R4}{(1+r)^4} \dots\dots + \frac{Rt}{(1+r)^t}$$

Where, *Cr* = replacement cost or supply price of an asset; R_1, R_2, R_2,....R_t are the prospective annual yields for the periods *1, 2, 3, ...t,* respectively and *r* is the rate of discount.

Marginal Efficiency of Capital (MEC): The rate of discount (r) which equalizes the present value of the prospective yield of an asset with its supply price is known as marginal efficiency of capital (MEC).

With increase in investment, MEC falls. This is due to the following reasons:

1. The marginal revenue productivity of capital falls as more and more capital is employed;
2. The supply price of capital assets increases when more of them are demanded.
3. The increased output of the goods being produced with the help of capital will tend to drive down their prices.

Therefore, at higher rate of interest, less capital investment will take place. More private investment will take place at a lower rate of interest.

Rate of Interest: It refers to the cost of funds required to finance the project.

Criterion for Investment: Investors take decision on comparing MEC to rate of interest:

1. If the MEC > the rate of interest, the investors will be inclined to carry out investment;
2. If the MEC < the rate of interest, the investors will *not* be inclined to carry out investment; and
3. If the MEC = the rate of interest, the investors will be neutral to carry out investment;

Question: The supply price of a machine is SR 110 and its life is two years. In each year of its life it yields SR 72. Calculate its marginal efficiency of capital (MEC).

Solution: the marginal efficiency of capital can be found by equating the supply price (SR 110) and present value of expected yields (SR 72 in each year) with the help of this formula:

$$Cr = \frac{R1}{(1+r)^1} + \frac{R2}{(1+r)^2}$$

$$110 = \frac{72}{(1+r)^1} + \frac{72}{(1+r)^2}$$

$$110(1+r)^2 = 72 + 72 + 72r$$

$$110(1+2r+ r^2) = 144 + 72r$$

$$110 + 220r + 110r^2 = 144 + 72r$$

$$110r^2 + 148r - 34 = 0$$

Which gives,

$$r = 0.2 = 20\%$$

Given the value of r as 20%, we can calculate the prospective yield per annum as follow:

I year: SR $\frac{R1}{(1+r)^1} = \frac{72}{(1+0.20)^1} = \frac{72}{1.20}$ = SR 60

II year: SR $\frac{R2}{(1+r)^t} = \frac{72}{(1+0.20)^2} = \frac{72}{(1.2)^2}$ = SR 50

The rate of discount is 20%. The sum of discounted value of prospective annual yield (SR 60 + SR 50 = SR 110) equals the supply price of capital asset (SR 110). Investment in the asset is profitable if the cost of borrowing is less than 20%. In other words, if the rate of discount (MEC) exceeds the rate of interest (r), it will be desirable to invest.

Role of Expectation in Private Investment: Business expectations play a dominant role in determining the volume of private investment. The calculation of the MEC is full of uncertainty. If an investor is optimistic about the future, the net future income of a capital will be high, and vice versa.

Determinants of Public Investment: Public investment is motivated by social profitability considerations. The investment proposals in the public sector are subject to cost- benefit analysis.

Multiplier

Meaning: Multiplier shows the relationship between change in investment and the resulting change in income.

An increase in investment in an economy leads to an increase in income which is more than the proportionate increase in investment.

The multiplier coefficient (K) measures the change in income due to change in investment. In other words, K = $\frac{\Delta Y}{\Delta I} = \frac{1}{1-MPC} = \frac{1}{MPS}$

Higher the value of MPC, higher will be the value of multiplier.

Higher the value of MPS, lower will be the value of multiplier.

Algebraic Derivation of Multiplier:

Since, National Income = Consumption Expenditure + Saving

Or, Y = C + S = C + I (because S= I)

If there is change (Δ) in investment, income and consumption also change.

So,

$$\Delta Y = \Delta C + \Delta I$$

Dividing both side by $\Delta Y, we\ get,$

$$\frac{\Delta Y}{\Delta Y} = \frac{\Delta C}{\Delta Y} + \frac{\Delta I}{\Delta Y}$$

$$1 = \frac{\Delta C}{\Delta Y} + \frac{\Delta I}{\Delta Y}$$

$$1 - \frac{\Delta C}{\Delta Y} = \frac{\Delta I}{\Delta Y}$$

$$\frac{\Delta Y}{\Delta I} = \frac{1}{1 - \frac{\Delta C}{\Delta Y}}$$

$$\text{K} = \frac{1}{1 - \text{MPC}} = \frac{1}{\text{MPS}}$$

Question: What will be the value of multiplier if the marginal propensity to save is 0.4?

Solution: Multiplier, $\text{K} = \frac{1}{\text{MPS}} = \frac{1}{0.4} = 2.5$

Question: Given MPC = 0.6, calculate the value of $\Delta Y, \Delta C \text{ and } \Delta S$ when investment increases by SR 2000 million.

Solution: the calculation of these values is summarized in the following table:

Round	ΔI	ΔY	ΔC	ΔS
1	2000	2000	1200	800
2		1200	720	480
3		720	432	288
4		432	259.2	172.8
Last	↓	↓	↓	↓
	Total	**5000**	**3000**	**2000**

$\Delta Y = \frac{\Delta I}{1 - \text{MPC}} = \frac{2000}{1 - 0.6} = 5000$

$\Delta C = \Delta Y \times MPC = 5000 \times 0.6 = 3000$

$\Delta S = \Delta Y \times MPS = \Delta Y(1 - MPC) = 5000\ (1 - 0.6) = 5000 \times 0.4 = 2000$

Question: An additional investment of SR 1000 million in the Saudi economy creates how much additional income, if MPC = (i) 1, (ii) 0, (iii) 0.5?

Question: An additional investment of SR 20,000 million in the Saudi economy will create how much additional income, if MPS = (i) 1, (ii) 2, (iii) 3?

Question: If the Saudi economy plans to generate SR 1000 million of additional income, how much additional investment will be required if MPS = (i) 0.5, (ii) 0.4?

Question: If the Saudi economy plans to generate SR 200 million of additional income, how much additional investment will be required if MPC = (i) 0.3, (ii) 0.4?

Question: Find the value of MPC and MPS if an additional investment of SR 100 million generated an additional income of SR 500 million.

Accelerator

The multiplier describes the relationship between investment and income, i.e., the effect of investment on income.

The multiplier concept is concerned with original investment as a stimulus to consumption and thereby to income and employment. But in this concept, we are not concerned about the effect of income on investment. This effect is covered by the *'accelerator'*.

The term *'accelerator'* is associated with the name of J.M. Clark in the year 1914. It has been proved a powerful tool of economic analysis since then.

Keynes, astonishingly, has altogether ignored this concept. That is why, the concept of accelerator is not considered the part of Keynesian theory.

According to the principle of accelerator, when income increases, people's spending power increases; their consumption increases and consequently the demand for consumer goods increases. In order to meet this enhanced demand, investment must increase to raise the productive capacity of the community. Initially, however, the increased demand will be met by over-working the existing plants and machinery. All this leads to increase in profits which will induce entrepreneurs to expand their plants by increasing their investments.

Thus a rise in income leads to a further induced investment. The accelerator is the numerical value of the relation between an increase in income and the resulting increase in investment.

(Figures in SR. '000)

Years	**Demand**	**Required Stock of Capital**	**Replacement Cost**	**Net Investment**	**Gross Investment**
2007	500	5 machines 1500	1 machine 300	0 machine	300
2008	500	5 machines 1500	1 machine 300	0 machine	300
2009	800	8 machines 2400	1 machine 300	3 machines 900	1200
2010	1000	10 machines 3000	1 machine 300	2 machines 600	900
2011	1000	10 machines 3000	1 machine 300	0 machine	300
2012	800	8 machines 2400	1 machine 300	– 2 machines 600	– 300

Cost per machine: SR. 300,000 per machine

In the above example, suppose we are living in a world, where the only commodity produced is cloth. Further suppose that to produce cloth SR. 100,000, we require one machine worth Rs. 300,000, which means that the value of the accelerator is 3 (i.e., the capital-output ratio is 1:3). That is, if demand rises by SR. 100,000, additional investment worth SR. 300,000 takes place. If the existing level of demand for cloth remains constant, let us say, at SR. 500,000, then to produce this much cloth we need five machines worth SR. 1.5 million. At the end of one year, let us suppose, that one machine becomes useless as a result of wear and tear, so that at the end of one year, a gross investment of SR. 300,000 must take place to replace the old machine in order that the stock of capital is capable of producing output worth SR. 500,000.

In the third period, i.e., the year 2009, demand rises to SR. 800,000. To produce output worth Rs. 800,000, we need 8 machines. But our previous stock consisted of only 5 machines. Thus if we are to produce output worth SR. 800,000, we must install 3 new machines, worth SR. 900,000. The net investment for the year 2009 will be SR. 900,000 and with the replacement cost of one machine SR. 300,000, our gross investment jumps from SR. 300,000 in the year 2008 to SR. 1.2 million in the year 2009. A 60 per cent increase in demand led to a 400 per cent increase in gross investment. Here we have a glimpse of the powerful destabilising role of accelerator.

Assumptions of the Accelerator:

1. Under the principle of accelerator, it is assumed that ***there is no excess capacity existing in the consumer goods industries***. No machines are lying idle and shift working is not possible.

2. ***In capital goods industries, it has been assumed that there is an existence of surplus capacity.*** If there is no excess capacity in capital goods industries, increased demand for machines could not lead to increase in the supply of machines.

3. ***Output is flexible.*** The machine-making industry or capital goods industry can increase its output whenever desired.

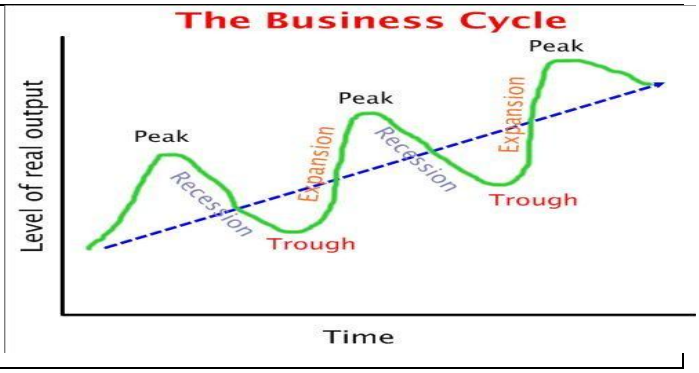
4. ***The size of the accelerator does not remain constant over time.*** It value will be affected by the businessmen's calculations regarding the profitability of installing new plants to make more machines on the basis of their probable working life.

5. ***The demand for machines will remain stable in the future,*** although the increase in demand has suddenly cropped up.

Trade / Business Cycle

Changes in aggregate demand bring about changes in the level of output, employment, income and price. These changes are generally cyclical in nature and follow a cycle of four different stages:

1. Prosperity or boom;
2. Recession;
3. Depression or slump; and
4. Recovery.



The cyclical nature of economic activity is known as a *trade cycle* or *business cycle*.

Prosperity or boom or peak: it is a phase of economic activity characterized by rising demand, rising prices, rising investment, rising employment, rising incomes, rising purchasing power and hence rising demand and so on. The investors, therefore, voluntarily undertake risks and go in for investment, this further fuels boom conditions through the working of the multiplier effect.

Recession: during the boom period, the economy may get over- heated and the monetary authorities, the financial institutions and the business itself may begin to play cautious. There may be cuts in investment, resulting in cuts in employment, fall in incomes, decline in purchasing power and demand. Prices may begin to fall.

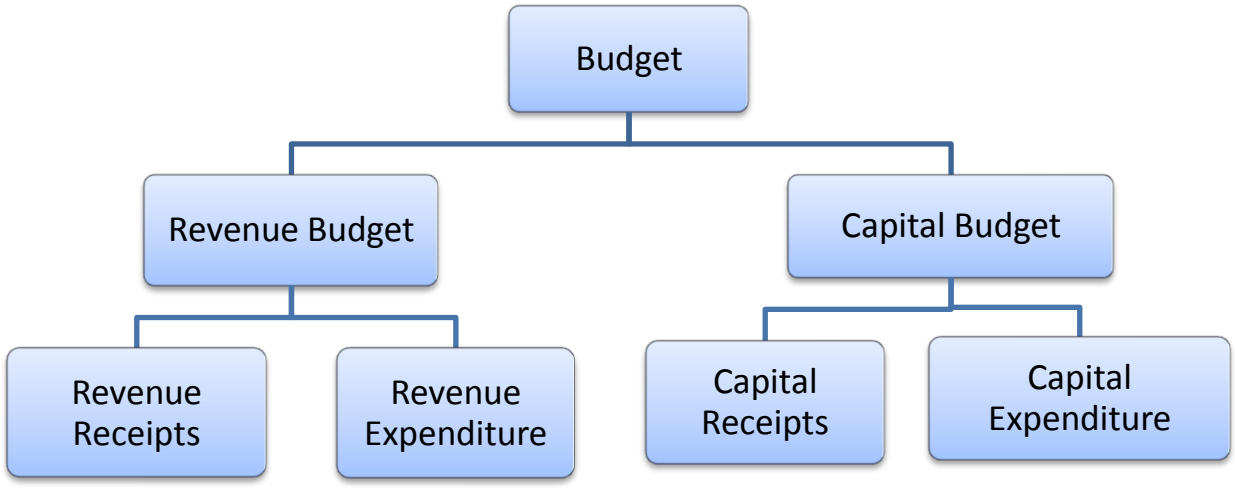
Depression or slump or trough: if the effective corrective measures cannot be undertaken, the economy may find itself go into depression. It is a stage when the business confidence is at its lowest. Investment, employment, output, income and prices touch the bottom.

Recovery or expansion: as the economy moves out of depression, it enters the phase of recovery. Sustained recovery will find the level of investment, employment, output, income and prices moving upwards. This may finally results in boom conditions in the economy.

7. Government Budget

Points to be remembered:

- ***Budget:*** An annual statement of the revenue and expenditure by the government.
- ***Revenue Receipts:*** Those inflows of money to the government account against which no liability of repayment is created.
- ***Capital Receipts:*** Those inflows of money to the government against which a liability of repayment devolves upon the government.
- ***Revenue Budget:*** A statement relating to the revenue expenditure and revenue receipts of the government.
- ***Capital Budget:*** A statement relating to the capital receipts and capital expenditure of the government.
- ***Surplus Budget:*** A budget in which the receipts of the government exceed its expenditure.
- ***Deficit Budget:*** A budget in which the receipts of the government fall short of its expenditure.
- ***Balanced Budget:*** A budget in which the receipts of the government are matched by its expenditure.



Budget is divided into two parts:

1. Revenue budget; and
2. Capital budget.

Revenue budget:

The revenue budget contains details relating to the current revenues and the current expenditure of the government.

Revenue Receipts: It is government income through tax revenue (direct and indirect taxes) and non- tax revenue (interest receipts, dividends and profits, external grants, etc). Revenue receipts are also known as *current revenues*.

Revenue Expenditure: The government expenditure which meets the consumption needs of the government is called revenue expenditure. The purpose of this expenditure is not to build up any assets in the economy. This type of expenditure is necessary to keep the government machinery running and to enable the government meet its liabilities. It is also known as *current expenditure* of the government.

Normally, the government expenditure is classified into two categories:

i. Plan expenditure; and
ii. Non- plan expenditure.

The overall expenditure of the government can also be classified in two groups:

i. Developmental expenditure; and
ii. Non- developmental expenditure.

Capital budget:

Capital budget contains details relating to the capital receipts and capital expenditure of the government.

Capital Receipts: the government's capital receipts refer to all those sources of inflows to the government account which have any one of the following features:

- These involve a liability of repayment such as loans and borrowings;
- These involve a recovery of loans earlier extended by the government;
- These involve selling of an asset of the government, for example, disinvestment of the equity of the public sector undertakings.

Capital Expenditure: expenditure incurred by the government on such items as have a life of more than one year is called capital expenditure. This type of expenditure adds to the capital stock of the economy.

Capital expenditure is also classified into two categories:

i. Plan expenditure; and
ii. Non- plan expenditure.

The sum total of the revenue receipts and the capital receipts constitutes the total receipts of the government.

i. e., revenue receipts + capital receipts = total receipts

The sum total of the revenue expenditure and capital expenditure constitutes the total expenditure of the government.

i. e., revenue expenditure + capital expenditure = total expenditure

Overall Budget:

The overall budget of the government comprises all the receipts and all the expenditure of the government.

The various sources of receipts can be briefly summarized as follows:

A. Revenue Receipts

A 1 Tax Revenue

a. Corporation tax
b. Income tax
c. Custom duty
d. Excise duty

A 2 Non- tax Revenue

a. Interest receipts
b. Dividend and profits
c. External grants

B. Capital Receipts

a. Recoveries of loans
b. Market borrowings and other loans
c. External assistance
d. Disinvestment of PSU equity

C. Overall Receipts (= A + B)

Various sources of government expenditure can be briefly summarized as follows:

I. Non- plan expenditures

I A. Revenue Expenditure

a. Interest payments
b. Defence
c. Subsidies
d. Economic, social and other services

I B. Capital Expenditure

a. Defence capital
b. Non- plan capital outlay
c. Loans to:
    i. Public enterprises,
    ii. States, and
    iii. Foreign Governments.

II. Plan Expenditure

II A. Revenue Expenditure

a. Central plan
b. Central assistance to states

II B. Capital Expenditure

a. Central plan
b. Central assistance to states

III. Overall Expenditure (= I + II)

Balanced, Surplus and Deficit Budget

Surplus budget: If the receipts of the government are more than its expenditure, it is called surplus budget. A surplus budget implies that the government is pumping out more money from the economic system. It has a contractionary effect and level of economic activity falls.

Balanced budget: If the receipts of the government are equal to its expenditure, it is called balanced budget. It will have a neutral effect on the level of economic activity. It will neither have an expansionary effect nor contractionary effect on the economy.

Deficit budget: If the receipts of the government are less than its expenditure, then the budget is called deficit budget. It implies that the government is pumping in more money in the economy. It has an expansionary effect and the level of economic activities rise. Government of developing countries always plan for a deficit budget.

Different Measures of Deficits:

Revenue Deficit: When revenue expenditure of the government is greater than the revenue receipts, it is called revenue deficit. It is financed by drawing upon the capital budget.

Budgetary deficit: when overall expenditure of the government is greater than the overall receipts, it is called budgetary deficit. It is financed by printing of new currency notes by the government.

Fiscal deficit: it is the excess of overall expenditure over the sum of revenue receipts, and recoveries of loans. It is financed by loans and borrowings and printing of new currency notes.

Monetized deficit: that part of the fiscal deficit which is financed by printing of new currency notes is called monetized deficit.

Primary deficit: when interest payment is deducted from fiscal deficit, it is called primary deficit.

Objectives of budget:

- To promote economic growth;
- To promote balanced regional development;
- To reduce inequalities in the distribution of income and wealth;
- To promote saving and investment in the economy;
- To promote full employment and price stability.

Review Questions

Multiple Choice Questions:

1. An annual statement of the revenue and expenditure by the government is known as-
    A. Revenue budget;
    B. Budget;
    C. Capital budget;
    D. None of these.
2. Those inflows of money to the government account against which no liability of repayment is created, is called-
    A. Revenue receipts;
    B. Capital receipts;
    C. Revenue expenditure;
    D. Capital expenditure.

3. Those inflows of money to the government against which a liability of repayment devolves upon the government, is known as-
    A. Revenue receipts;
    B. Capital receipts;
    C. Revenue expenditure;
    D. Capital expenditure.
4. A statement relating to the revenue expenditure and revenue receipts of the government is known as-
    A. Revenue budget;
    B. Budget;
    C. Capital budget;
    D. None of these.
5. A statement relating to the capital receipts and capital expenditure of the government is known as-
    A. Revenue budget;
    B. Budget;
    C. Capital budget;
    D. None of these.
6. A budget in which the receipts of the government exceed its expenditure is called-
    A. Surplus budget;
    B. Deficit budget;
    C. Balanced budget;
    D. None of the above.
7. A budget in which the receipts of the government fall short of its expenditure is known as-
    A. Surplus budget;
    B. Deficit budget;
    C. Balanced budget;
    D. None of the above.
8. A budget in which the receipts of the government are matched by its expenditure is known as-
    A. Surplus budget;
    B. Deficit budget;
    C. Balanced budget;
    D. None of the above.
9. When revenue expenditure of the government is greater than the revenue receipts, it is called-
    A. Budget deficit;
    B. Revenue deficit;
    C. Fiscal deficit;
    D. Monetized deficit.

10. When overall expenditure of the government is greater than the overall receipts, it is called-
    A. Budget deficit;
    B. Revenue deficit;
    C. Fiscal deficit;
    D. Monetized deficit.
11. The excess of overall expenditure over the sum of revenue receipts, and recoveries of loans is called-
    A. Budget deficit;
    B. Revenue deficit;
    C. Fiscal deficit;
    D. Monetized deficit.
12. When interest payment is deducted from fiscal deficit, it is called-
    A. Budget deficit;
    B. Revenue deficit;
    C. Fiscal deficit;
    D. Primary deficit.

Ques.	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Ans.	**B**	**A**	**B**	**A**	**C**	**A**	**B**	**C**	**B**	**A**	**B**	**D**

Write *T* for true and *F* for false statement given below:

1. An annual statement of the revenue and expenditure by the government is called budget.
2. In surplus budget, the receipts of the government fall short of its expenditure.
3. Recoveries of loans, market borrowings and other loans, external assistance, disinvestment of PSU equity are capital receipts of the government.
4. Interest receipts, dividend and profits, external grants are non- tax revenues of the government.
5. Corporation tax, income tax, custom duty and excise duty are tax revenue of the government.
6. Interest payments, defense, subsidies, economic, social and other services are example of government's revenue expenditure.
7. Loans to public enterprises, states, and foreign governments are examples of capital expenditure of the government.
8. If the receipts of the government are more than its expenditure, it is called surplus budget.
9. If the receipts of the government are less than its expenditure, then the budget is called deficit budget.

10. When revenue expenditure of the government is less than the revenue receipts, it is called revenue deficit.

Matching Test:

Match- I	Match- II
A. If the receipts of the government are more than its expenditure	1. Balanced budget
B. If the receipts of the government are equal to its expenditure	2. Surplus budget
C. If the receipts of the government are less than its expenditure	3. Deficit budget

Match- I	A	B	C
Match- II	2	1	3

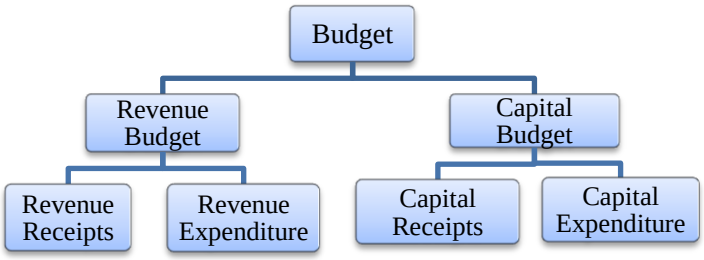
Match- I	Match- II
A. **Revenue Deficit**	1. When interest payment is deducted from fiscal deficit.
B. **Fiscal deficit**	2. The excess of overall expenditure over the sum of revenue receipts, and recoveries of loans
C. **Budgetary deficit**	3. When overall expenditure of the government is greater than the overall receipts.
D. **Primary deficit**	4. When revenue expenditure of the government is greater than the revenue receipts.

Match- I	A	B	C	D
Match- II	4	2	3	1

Questions with Answer:

1. **What is *budget*?**
   An annual statement of the revenue and expenditure by the government is called budget.

2. **How can you classify budget?**
   Budget is divided into two parts: - Revenue budget; and Capital budget.



3. **What is revenue budget?**
   The revenue budget contains details relating to the current revenues and the current expenditure of the government.

4. **What is capital budget?**
   Capital budget contains details relating to the capital receipts and capital expenditure of the government.

5. **What is revenue receipts?**
   It is government income through tax revenue (direct and indirect taxes) and non- tax revenue (interest receipts, dividends and profits, external grants, etc). Revenue receipts are also known as *current revenues*.

6. **What is revenue expenditure?**
   The government expenditure which meets the consumption needs of the government is called revenue expenditure. The purpose of this expenditure is not to build up any assets in the economy. This type of expenditure is necessary to keep the government machinery running and to enable the government meet its liabilities. It is also known as *current expenditure* of the government.

7. **What do you mean by capital receipts?**
   Capital Receipts refer to all those sources of inflows to the government account which have any one of the following features:
   - These involve a liability of repayment such as loans and borrowings;
   - These involve a recovery of loans earlier extended by the government;
   - These involve selling of an asset of the government, for example, disinvestment of the equity of the public sector undertakings.

8. **What do you understand by capital expenditure?**
   The expenditure incurred by the government on such items as have a life of more than one year is called capital expenditure. This type of expenditure adds to the capital stock of the economy.

9. **Define: Surplus budget, balanced budget and deficit budget.**
   Surplus budget: If the receipts of the government are more than its expenditure, it is called surplus budget. A surplus budget implies that the government is pumping out more money from the economic system. It has a contractionary effect and level of economic activity falls.
   Balanced budget: If the receipts of the government are equal to its expenditure, it is called balanced budget. It will have a neutral effect on the level of economic activity. It will neither have an expansionary effect nor contractionary effect on the economy.

Deficit budget: If the receipts of the government are less than its expenditure, then the budget is called deficit budget. It implies that the government is pumping in more money in the economy. It has an expansionary effect and the level of economic activities rise. Government of developing countries always plan for a deficit budget.

10. Define: revenue deficit, budgetary deficit, fiscal deficit, monetized deficit and primary deficit.

Revenue Deficit: When revenue expenditure of the government is greater than the revenue receipts, it is called revenue deficit. It is financed by drawing upon the capital budget.

Budgetary deficit: when overall expenditure of the government is greater than the overall receipts, it is called budgetary deficit. It is financed by printing of new currency notes by the government.

Fiscal deficit: it is the excess of overall expenditure over the sum of revenue receipts, and recoveries of loans. It is financed by loans and borrowings and printing of new currency notes.

Monetized deficit: that part of the fiscal deficit which is financed by printing of new currency notes is called monetized deficit.

Primary deficit: when interest payment is deducted from fiscal deficit, it is called primary deficit.

11. What are the main objectives of budgeting?

The main objectives of budgeting are:

- To promote economic growth;
- To promote balanced regional development;
- To reduce inequalities in the distribution of income and wealth;
- To promote saving and investment in the economy;
- To promote full employment and price stability.

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9. International Economics

(Trade, Finance, Balance of Payment and Exchange Rate)

International Trade

International trade is the exchange of capital, goods, and services across international borders or territories.

International trade is also a branch of economics, which, together with international finance, forms the larger branch called international economics.

The following are noted models of international trade:

- Adam Smith's model
- Ricardian model
- Heckscher–Ohlin model
- New Trade Theory
- Gravity model
- Contemporary theories
- Neo-Ricardian trade theory
- Ricardo-Sraffa trade theory

Adam Smith's model: Absolute Advantage

Adam Smith displays trade taking place on the basis of countries exercising absolute advantage over one another. In economics, the principle of absolute advantage refers to the ability of a party (an individual, or firm, or country) to produce more number of a good product or service than competitors, using the same amount of resources. Adam Smith first described the principle of absolute advantage in the context of international trade, using labor as the only input. Since absolute advantage is determined by a simple comparison of labor productiveness, it is possible for a party to have no absolute advantage in anything; in that case, according to the theory of absolute advantage, no trade will occur with the other party. The main concept of absolute advantage is generally attributed to Adam Smith for his 1776 publication *An Inquiry into the Nature and Causes of the Wealth of Nations* in which he countered mercantilist ideas. Smith argued that it was impossible for all nations to become rich simultaneously by following mercantilism because the export of one nation is another nation's import and instead stated that all nations would gain simultaneously if they practiced free trade and specialized in accordance with their absolute advantage. Smith also stated that the wealth of nations depends upon the goods and services available to their citizens, rather than their GOLD reserves. While there are possible gains from trade with absolute advantage, the gains may not be mutually beneficial.

Ricardian Model: Comparative Cost Advantage

David Ricardo developed the classical theory of comparative advantage in 1817 to explain why countries engage in international trade even when one country's workers are more efficient at producing every single good than workers in other countries. He demonstrated that if two countries capable of producing two commodities engage in the free market, then each country will increase its overall consumption by exporting the good for which it has a comparative advantage while importing the other good, provided that there exist differences in labor productivity between both countries. Widely regarded as one of the most powerful yet counter-intuitive insights in economics, Ricardo's theory implies that comparative advantage rather than absolute advantage is responsible for much of international trade.

Ricardo's example

In a famous example, Ricardo considers a world economy consisting of two countries, Portugal and England, which produce two goods of identical quality. In Portugal, the a priori more efficient country, it is possible to produce wine and cloth with less labor than it would take to produce the same quantities in England. However, the relative costs of producing those two goods differ between the countries.

Hours of work necessary to produce one unit		
Country	Cloth	Wine
England	100	120
Portugal	90	80

In this illustration, England could commit 100 hours of labor to produce one unit of cloth, or produce units of wine. Meanwhile, in comparison, Portugal could commit 90 hours of labor to produce one unit of cloth, or produce 9/8 units of wine. So, Portugal possesses an absolute advantage in producing cloth due to fewer labor hours, and England has acomparative advantage due to lower opportunity cost.

In the absence of trade, England requires 220 hours of work to both produce and consume one unit each of cloth and wine while Portugal requires 170 hours of work to produce and consume the same quantities. If each country specializes in the good for which it has a comparative advantage, then the global production of both goods increases, for England can spend 220 labor hours to produce 2.2 units of cloth while Portugal can spend 170 hours to produce 2.125 units of wine. Moreover, if both countries specialize in the above manner and England trades a unit of its cloth for 5/6 to 9/8 units of Portugal's wine, then both countries can consume at least a unit each of cloth and wine, with 0 to 0.2 units of cloth and 0 to 0.125 units of wine remaining in each respective country to be consumed or exported. Consequently, both England and Portugal can consume more wine and cloth under free trade than in autarky.

Modern theories

Since 1817, economists have attempted to generalize the Ricardian model and derive the principle of comparative advantage in broader settings, most notably in the neoclassical specific *factors* Ricardo-Viner and *factor proportions* Heckscher–Ohlin models. Subsequent developments in the new trade theory, motivated in part by the empirical shortcomings of the H–O model and its inability to explain intra-industry trade, have provided an explanation for aspects of trade that are not accounted for by comparative advantage. Nonetheless, economists like Alan Deardorff, Avinash Dixit, Gottfried Haberler, and Victor D. Norman have responded with weaker generalizations of the principle of comparative advantage, in which countries will only *tend* to export goods for which they have a comparative advantage.

In both Ricardian and H–O models, the comparative advantage concept is formulated for 2 country, 2 commodity case. It can easily be extended to the 2 country, many commodity case or many country, 2 commodity case. But in the case with many countries (more than 3 countries) and many commodities (more than 3 commodities), the notion of comparative advantage requires a substantially more complex formulation.

Heckscher–Ohlin model:

The Heckscher–Ohlin model (H–O model) is a general equilibrium mathematical model of international trade, developed by Eli Heckscher and Bertil Ohlin at the Stockholm School of Economics. It builds on David Ricardo's theory of comparative advantage by predicting patterns of commerce and production based on the factor endowments of a trading region. The model essentially says that countries will export products that use their abundant and cheap factor(s) of production and import products that use the countries' scarce factor(s).

Relative endowments of the factors of production (land, labor, and capital) determine a country's comparative advantage. Countries have comparative advantages in those goods for which the required factors of production are relatively abundant locally. This is because the profitability of goods is determined by input costs. Goods that require inputs that are locally abundant will be cheaper to produce than those goods that require inputs that are locally scarce.

For example, a country where capital and land are abundant but labor is scarce will have comparative advantage in goods that require lots of capital and land, but little labor—grains. If capital and land are abundant, their prices will be low. As they are the main factors used in the production of grain, the price of grain will also be low—and thus attractive for both local consumption and export. Labor-intensive goods on the other hand will be very expensive to produce since labor is scarce and its price is high. Therefore, the country is better off importing those goods.

The Ricardian model of comparative advantage has trade ultimately motivated by differences in labour productivity using different "technologies". Heckscher and Ohlin did not require production technology to vary between countries, so (in the interests of simplicity) the "H–O

model has identical production technology everywhere". Ricardo considered a single factor of production (labour) and would not have been able to produce comparative advantage without technological differences between countries (all nations would become autarkic at various stages of growth, with no reason to trade with each other). The H–O model removed technology variations but introduced variable capital endowments, recreating endogenously the inter-country variation of labour productivity that Ricardo had imposed exogenously. With international variations in the capital endowment like infrastructure and goods requiring different factor "proportions", Ricardo's comparative advantage emerges as a profit-maximizing solution of capitalist's choices from within the model's equations. The decision that capital owners are faced with is between investments in differing production technologies; the H–O model assumes capital is privately held.

Assumptions: The original, 2×2×2 model was derived with restrictive assumptions:

Both countries have identical production technology;

Production output is assumed to exhibit constant returns to scale;

The technologies used to produce the two commodities differ;

Factor mobility within countries;

Factor immobility between countries;

Commodity prices are the same everywhere;

Perfect internal competition.

Heckscher–Ohlin theorem:
The exports of a capital-abundant country will be from capital-intensive industries, and labour-abundant countries will import such goods, exporting labour-intensive goods in return. Competitive pressures within the H–O model produce this prediction fairly straightforwardly. Conveniently, this is an easily testable hypothesis.

Rybczynski theorem:
When the amount of one factor of production increases, the production of the good which uses that particular factor of production intensively increases relative to the increase in the factor of production, as the H–O model assumes perfect competition where price is equal to the costs of factors of production. This theorem is useful in explaining the effects of IMMIGRATION emigration, and foreign capital investment. However, Rybczynski suggests that a fixed quantity of the two factors of production are required. This could be expanded to consider factor substitution, in which case the increase in production would be more than proportional.

Stolper–Samuelson theorem:
Relative changes in output goods prices will drive the relative prices of the factors used to produce them. If the world price of capital-intensive goods increases, it will increase the relative rental rate as well as decrease the relative wage rate (the return on capital as against the

return to labor). Also if the price of labor-intensive goods increases, it will increase the relative wage rate as well as decrease the relative rental rate.

Factor–price equalization theorem:
Free and competitive trade will make factor prices converge along with traded goods prices. The FPE theorem is the most significant conclusion of the H–O model, but it is also the theorem which has found the least agreement with the economic evidence. Neither the rental return to capital, nor the wage rates seem to consistently converge between trading partners at different levels of development.

Leontief paradox:
In 1954 an econometric test by Wassily W. Leontief of the H–O model found that the United States, despite having a relative abundance of capital, tended to export labor-intensive goods and import capital-intensive goods. This problem became known as the Leontief paradox. Alternative trade models and various explanations for the paradox have emerged as a result of the paradox. One such trade model, the Linder hypothesis, suggests that goods are traded based on similar demand rather than differences in supply side factors (i.e., H–O's factor endowments).

The Vanek formula:
Various attempts in the 1960s and 1970s to "solve" the Leontief paradox and save the Heckscher–Ohlin Theory failed. From the 1980s a new series of statistical tests had been tried. The new tests depended on the Vanek's formula.[3] It takes a simple form

$$Fc = Vc - ScV$$

Where Fc is the net trade of factor service vector for country c, Vc the factor endowment vector for country c, and s_c the country c's share of the world consumption and V the world total endowment vector of factors. For many countries and many factors, it is possible to estimate the left hand sides and right hand sides independently. To put it another way, the left hand side tells the direction of factor service trade. Thus it is possible to ask how this system of equations holds. The results obtained by Bowen, Leamer and Sveiskaus (1987) was disastrous.[4] They examined the cases of 12 factors and 27 countries for the year 1967. They found that the both sides of the equations had the same sign only for 61% of 324 cases. For the year 1983, the result was more disastrous. Both sides had the same sign only for 148 cases out of 297 cases (or the rate of correct predictions was 49.8%). The results of Bowen, Leamer, and Sveiskaus (1987) mean that the Hecksher–Ohlin–Vanek (HOV) theory has no predictive power concerning the direction of trade.

Gravity model of trade:
The gravity model of international trade predicts bilateral trade flows based on the economic sizes of two nations, and the distance between them.

Ricardo–Sraffa trade theory:

Ricardian theory is now extended in a general form which includes not only labor but also inputs of materials and intermediate goods. In this sense, it is much more general and plausible than the Heckscher–Ohlin model and escapes the logical problems such as capital as endowments, which is in reality produced goods. As the theory permits different production processes to coexist in an industry of a country, the Ricardo–Sraffa theory can give a theoretical bases for the New Trade Theory.

International Finance

International finance (also referred to as **international monetary economics** or **international macroeconomics**) is the branch of financial economics broadly concerned with monetary and macroeconomic interrelations between two or more countries. International finance examines the dynamics of the global financial system, international monetary systems, balance of payments, exchange rates, foreign direct investment, and how these topics relate to international trade. Sometimes referred to as multinational finance, international finance is additionally concerned with matters of international financial management. Investors and multinational corporations must assess and manage international risks.

International financing may take one of the following forms:

· Bilateral arrangements
· Third country financing arrangements
· Multilateral arrangements
· Combined or multiparty arrangements (Other types of financing are available but may be considered as a variation of one of the above categories).

Sources of Finance for Development:

- International Institutions
- International Finance Facility
- Foreign Direct Investment
- Aid
- Tax measure

International Institutions:

The International Monetary Fund (IMF):

The International Monetary Fund (IMF) Set up in 1944 at the Bretton Woods Conference, New Hampshire Set up to help put in place an ECONOMIC structure that would help prevent the problems experienced by many countries in the 1930s Aims to stabilise the international monetary system and help when monetary flow from trade causes problems Provides help and advice as well as funds to countries experiencing balance of payments problems

IMF:
IMF IMF gets its funds from its 184 member states – called 'quotas' Current funds in excess of $310 billion Quotas determined by the ECONOMIC size of the member state The Headquarters of the IMF in Washington DC.

The World Bank:
The World BANK An agency of the United Nations A group of five organisations which focus on providing funds for projects aimed at alleviating poverty, inequality and promoting development Currently has 184 members

The World Bank:
The World Bank The 5 institutions: The International Bank for Reconstruction and Development (IBRD) – provides LOANS and advice to poor countries to assist development The International Development Association (IDA) – interest free credits and grants to countries who are not able to borrow through normal market channels International Finance Corporation (IFC) – providing finance through the private sector for development The Multilateral Investment Guarantee Agency (MIGA) – providing investors with protection against risk to promote investment in developing countries The International Centre for the Settlement of Investment Disputes (ICSID) – arbitration service in the event of investment disputes

Special Drawing Rights (SDRs):
Special Drawing Rights (SDRs) Originally set up in 1969 to support fixed XCHANGE RATES Value based on a basket of international currencies – currently 1.24 SDRs to the £ Now used as a potential claim on currencies of IMF members – currencies can be bought in exchange for SDRs held by members Ghana participates in the Heavily Indebted Poor Countries Initiative (HIPC) scheme administered by the IMF as it attempts to reduce poverty. The scheme helps it to build new facilities such as this Salvation Army hostel.

International Finance Facility (IFF):
International Finance Facility (IFF) Aiming to bridge the gap between the funds currently pledged and those needed to meet the Millennium Development Goals (MDGs) Aims to raise an extra $50 billion per year between now and 2015 Uses the long term commitments of donor countries as security for raising further funds on international CAPITAL MARKETS There is concern from some about the technical feasibility of the scheme and whether the funds will be used in the correct way to achieve the MDGs

Foreign Direct Investment (FDI):
Foreign Direct Investment (FDI) Policies to attract investment Such investment often associated with multinational CORPORATIONS (MNCs) Policies need to focus on having the right conditions in place – Infrastructure Security Peace Local laws and regulation Government corruption Freedom of the market Local labour supply Legal issues – protection for the investor,

property rights, etc. Tax regime has been criticised as being a means by which MNCs can exploit poorer countries

Aid:
Aid Bilateral – from one country to another Multilateral – aid distributed by an agency who co-ordinate donations Aid can be useful for important infrastructure projects such as dams which help to generate electricity as well as providing irrigation schemes.

Aid:
Aid Benefits: Help to kick-start economic development Used to help develop vital infrastructure needed to encourage other investment Costs: Not always used for appropriate purposes Can be linked to various 'strings' that may not be in the recipient countries' interests Crowding out of domestic investment Creates a dependency culture Distorts the WORKING of the market

Tax Measures:
Tax Measures Tobin Tax – a tax imposed on CURRENCY TRADING Aims to reduce short term speculative trades and stabilise currency flows Funds raised used to finance development projects Political will to implement such a tax?

Tax Measures:
Tax Measures International aid to help developing countries improve tax systems to generate tax revenue more efficiently International taxes on pollution, air transport, arms, rent on deep sea mineral extraction – funds raised used to help fund development Issues of how far such taxes could raise sufficient funds and whether they would distort markets too much.

Exchange Rate

Points to be remembered:

Foreign Exchange (FOREX): A currency unit of a country.

Rate of Exchange: The value of domestic currency in terms of a unit of foreign currency.

Devaluation: A fall in the external value of domestic currency under a fixed exchange rate system.

Depreciation: A fall in the external value of domestic currency under flexible exchange rate system.

Balance of Trade: An account of the value of visible exports and the value of visible imports by a country during a year.

Balance of Payments: A monetary statement of the total receipts and total payments of foreign exchange of a country during a year.

Introduction:

International trade is different from domestic trade because all the transactions in domestic trade are settled by means of domestic currency. For example—you want to buy a car or you want to consult a doctor. You make the payment in Saudi Riyal. But Saudi Riyal is legal tender money only within the political boundaries of Kingdom of Saudi Arabia. Beyond these political boundaries Saudi Riyal loses all value. It becomes simple piece of paper. It does not command any purchasing power. Therefore, if you need to purchase a good or a service from anywhere in the rest of the world, you need to have the currency of that country.

Currencies of other countries are known as foreign exchange.

We need to have foreign exchange to settle our transactions with the rest- of- the world.

Some foreign currencies are treated as *'soft'* currencies and some are treated as *'hard'* currencies.

The demand for soft currencies is very limited.

Hard currencies are those currencies which are accepted throughout the world, although they are not legal tender.

Nobody will accept Indian rupee outside India as a means of International payment. But American dollar, British pound-sterling, the Japanese yen, the French franc, and the Italian lira are accepted throughout the world.

Rate of Exchange:

Rate of exchange refers to the external value of a currency that is; it is the purchasing power of a currency in terms of other currencies.

In other words, rate of exchange refers to the number of units of foreign currency that can be exchanged against a unit of domestic currency.

Some Concepts of Rate of Exchange:

Spot Rate: It refers to the rate at which foreign currency is available on the spot.

Forward Rate: The rate at which a future contract for foreign currency is bought and sold is called forward rate. It is quoted at a premium or discount over the spot rate.

Fixed Exchange Rate: It refers to the system under which the rate of exchange of a currency is fixed in terms of gold or in terms of another currency.

Flexible Exchange Rate: It is the type of exchange rate system which involves keeping the exchange rate fixed over short period and changing it from time to time according to need.

Floating Exchange Rate: When the currency unit of a country is free to fluctuate and find its own level, according to conditions of demand and supply in the foreign exchange market.

Multiple Rates: If a country adopts more than one rate of exchange for its currency, it is said to follow a system of multiple exchange rates.

Two Tier Exchange Rate System: It is a form of multiple exchange rate system under which the government maintains two rates- a higher rate for commercial transactions and a lower rate for capital transactions.

Determination of Rate of Exchange:

The recent history of the determination of rate of exchange can be divided into two periods:

1. Between 1946 and 1971, and
2. Since 1972.

Between 1946 and 1971 (Fixed Exchange Rates):

The International Monetary Fund (IMF) was set up in 1945. The member countries of the IMF agreed among themselves to set up a fixed exchange rate system. All the member countries were asked to communicate the gold values of their respective currencies to the IMF. The IMF established the parity between the gold values of different currencies. These became the rates of exchange of different currencies.

For Example:

Suppose the gold values of the three currencies, Saudi Riyal, American dollar, and British pound were as follows:

SR 1 = 1 oz of gold

$ 1 = 2 oz of gold

£ 1 = 4 oz of gold

Then,

£ 1 = 2$ = SR 4

Or,

SR 1 = $0.5 = £0.25

This is how the rates of exchange of all other countries were determined.

The member countries were not allowed to change their rates of exchange without the prior permission of the IMF.

This system worked with fair degree of success till 1971.

Devaluation of currency means to bring down the external value of its currency. It encourages exports and discourages imports.

Revaluation of currency means to raise the external value of its currency. It encourages imports and discourages exports.

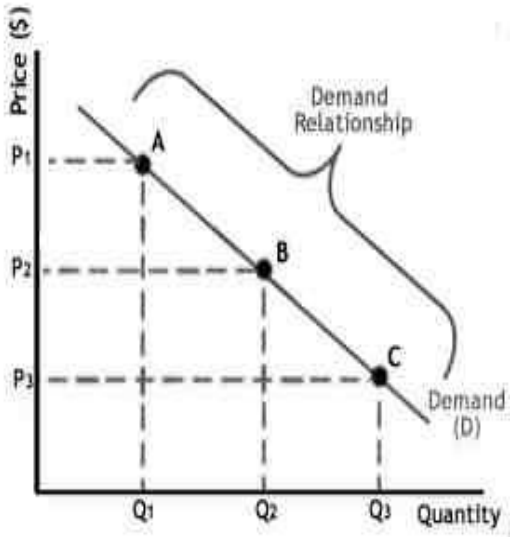
Since 1972:

The rate of exchange of a currency is determined by demand for and supply of foreign exchange in its foreign exchange market. This is known as the market- determined rate of exchange.

Every country has foreign transactions in goods, services and capital which involve payments and receipts of foreign exchange. Payments in foreign exchange results in demand for foreign exchange and receipts in foreign exchange result in supply of foreign exchange. Demand and supply of foreign exchange interact to determine the rate of exchange.

Demand for foreign exchange:

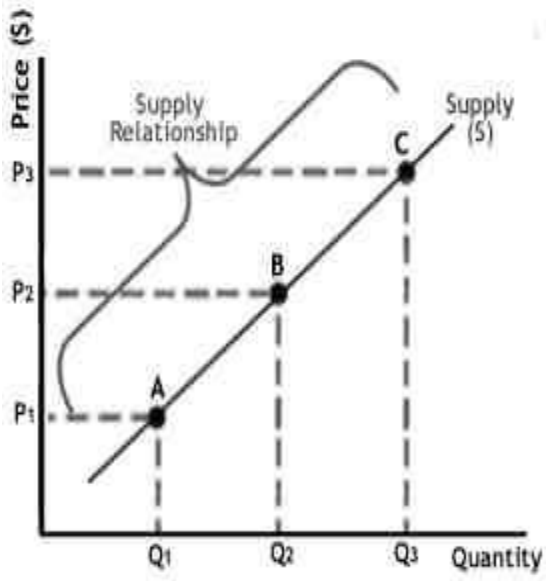
Demand for foreign exchange arises due to imports of goods, services and capital, tourists going abroad, remittances by foreigners working in home country and by multi- nationals, foreign institutional investors, repayment of interest and loans, extension of loans to foreigners. In short, any transactions that involves a payment, we need foreign exchange and we demand for foreign exchange.



There are inverse/ opposite relationship between the price of foreign exchange and the quantity demanded of foreign exchange. The demand for foreign exchange curve slopes downward to the right.

Supply of Foreign Exchange:

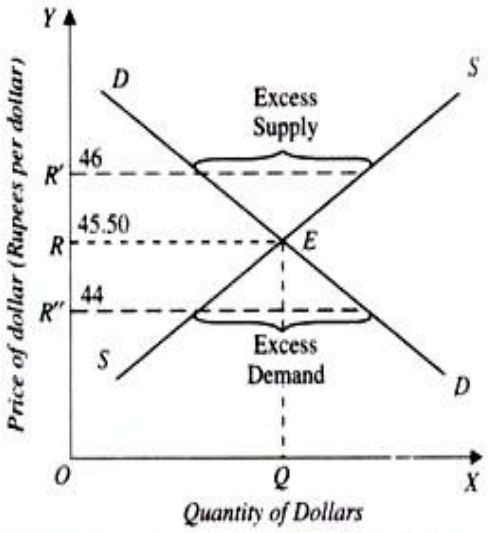
In the same way, any transaction that involves receipts of foreign exchange leads to an increase in the supply of foreign exchange. The supply of foreign exchange can be increased by exports of goods, services and capital, foreign tourists coming in the country, remittances by country men working abroad, foreign direct investment by multi- national companies, purchase of stocks by foreign institutional investors, etc. In short, any transaction that results in a receipt of foreign exchange in the country adds to the supply of foreign exchange.



There are direct relationship between the supply of foreign exchange and the price of foreign exchange. In other words, the supply curve of foreign exchange goes upward to the right.

Equilibrium Rate of Exchange:

Equilibrium rate of exchange is determined where demand for foreign exchange (dollar) and supply for dollar cut each other. In Fig. OR is the price at which the quantity demanded and the quantity supplied of dollars are equal.



At a price higher than the equilibrium price (i.e., OR'), there will be an excess supply of foreign exchange in India's foreign exchange market and Indian rupee will tend to appreciate.

On the other hand, if the price is lower than the equilibrium price (say for example OR"), then there will be deficit in the supply of foreign exchange and Indian rupee will tend to depreciate.

Balance of Payments

Meaning:

Balance of payments is an annual statement of accounts of all monetary transactions of a country with the rest of the world.

Monetary transactions between countries arise due to transactions in the flow of goods, services and capital.

All the transactions, in goods, services and capital, are accounted for in foreign exchange.

When a country exports goods, services and capital, it receives payment in foreign exchange. Similarly, when a country imports goods, services and capital, it makes payment in foreign exchange to the other country. Balance of payments statement records all these transactions on an annual basis.

Balance of payments has two sides: debit and credit. Payments are recorded on the debit side and receipts on the credit side. Debit side are recorded with a minus (-) sign and credit items are recorded with plus (+) sign.

The balance of payments accounts are prepared on the double- entry system of accounting. Hence the sum of all debits should necessarily be equal to the sum of all credits. That is why it is said that balance of payments is always balanced in accounting sense.

Components of Balance of Payments:

Balance of payments statement is divided into two parts:

- Balance of payments on Current Account; and
- Balance of payments on Capital Account.

Balance of payments on Current Account:

This component of balance of payments is further divided into two parts:

- Balance of Trade/ Visible; and
- Balance of Invisibles.

Balance of Trade/ Visible: In balance of trade we include the value of exports and imports of all visible goods (tangible goods only) during a year.

The difference between the value of exports and value of imports is called balance of trade. It may be favorable (positive), unfavorable (negative) or balanced.

When the value of exports is greater than the value of imports during the year, it is called trade surplus or favorable trade of positive balance of trade.

When the value of exports is less than the value of imports during the year, it is called trade deficit or unfavorable trade of negative balance of trade.

When the value of exports is equal to the value of imports during the year, it is called balanced trade.

- Balance of Trade = Visible Exports – visible Imports
- Favourable Balance of Trade = Exports > Imports
- Unfavourable Balance of Trade = Exports < Imports

Balance of Invisibles: We include the value of different types of services which are also known as invisible items (intangibles), rendered to or received from rest of the world.

Types of Services:

- *Factor services* like services of land, labor, capital, etc.
- *Non- factor services* like tourism, transportation, insurance, banking, etc.
- *Private transfers* like donations, gifts, remittances, etc.
- *Official transfers* like grants from abroad, etc.

The difference between the value of exports and value of imports of invisible goods or services is called balance of invisibles. As balance of goods trade, it may also be favorable (positive), unfavorable (negative) or balanced.

The sum total of the balance of trade (BoT) and balance of invisibles (BoI) gives us balance of payment (BoP) on current account, *i.e.,*

BoP current A/c = BoT + BoI

BoP on current account may also be favorable, unfavorable or balanced during a year.

A favorable BoP on current account means that a country has earned more foreign exchange than it has spent during the year. This situation is also known as BoP surplus or current account surplus.

An unfavorable BoP on current account means that a country has spent more foreign exchange than it has earned during the year. This situation is known as BoP deficit or current account deficit.

When a country's total earnings is equal to its total expenditure of foreign exchange during a year, it is called balanced BoP in current account.

Balance of payments on Capital Account:

Capital account statement records the flows of capital. Flows of capital may take any of the following forms:

1. **Non- debt creating inflows:**
    - Foreign direct investment (FDI); and
    - Portfolio investment (PI).
2. **Debt creating inflows:**
    - External assistance;
    - External commercial borrowings;
    - Short- term credits;
    - NRI deposits

Capital flows are required to settle surplus or deficit in BoP on current account.

A country which has a current account surplus should be sending out its capital in different forms. It ought to have a capital account deficit. This deficit will cancel the current account surplus.

A country which has a current account deficit must arrange a net inflow of capital from abroad. Capital account surplus is required to finance current account deficit.

Thus, a country which has a current account surplus will manage a capital account deficit and vice versa.

Overall balance of payments is the sum total of BoP on current account and BoP on capital account.

Distinction between Current Account and Capital Account:

Current Account	Capital Account
1. Current account deals with payments for currently produced goods and services;	1. Capital accounts, deals with the payments of debts and claims
2. The current account of the balance of payments has direct influence on the level of income of a country**.**	2. The capital account does not have such a direct effect on the level of income; it influences the volume of assets which a country holds**.**

Difference between Balance of Trade and Balance of Payments

There are following difference between balance of trade and balance of payments

Balance of Trade	Balance of Payments
1. Balance of trade refers to the visible imports and visible exports only	1. Balance of payments refers to account visible as well as invisible items.

2. Balance of trade is only one of the parts of balance of payments. 3. There are three possible situations for balance of trade- it may be balanced, deficit, or surplus.	2. Balance of payments is much wider than the concept of balance of trade. 3. In the case of balance of payments as a whole must always remain balanced with the total quantum of debits.

Significance of Balance of Payments:

There are following significance of the balance of payments:

1. Balance of payment accounts takes the stock of county's foreign exchange receipts and payments obligations with a view to correcting accounting aberrations.
2. It yields necessary information on the strength and weaknesses of the country international economic transactions.
3. By analyzing the balance of payments accounts of the past years, we can find out overall gains and losses from international economic transactions
4. Balance of payments accounts Caution us and provide enough signals for future policy formulations.
5. With the help of balance of payments accounts, we are able to know the manner in which national economy affects and is affected by transactions with the rest of the world markets.

Chapter- 10

Economic Growth & Development

Economic development is fundamentally about enhancing a nation's factors of productive capacity, i.e., land, labour, capital, and technology, etc. By using its resources and powers to reduce the risks and costs, which could prohibit investment, the public sector often has been responsible for setting the stage for employment-generating investment by the private sector. The public sector generally seeks to increase incomes, the number of jobs, and the productivity of resources in regions, states, countries, cities, towns, and neighbourhoods. Its tools and strategies have often been effective in enhancing a community's:

- labour force (workforce preparation, accessibility, cost)
- infrastructure (accessibility, capacity, and service of basic utilities, as well as transportation and telecommunications)
- business and community facilities (access, capacity, and service to business incubators, industrial/technology/science parks, schools/community colleges/universities, sports/tourist facilities)
- environment (physical, psychological, cultural, and entrepreneurial)
- economic structure (composition)
- Institutional capacity (leadership, knowledge, skills) to support economic development and growth.

However, there can be trade-offs between economic development's goals of job creation and wealth generation. Increasing productivity, for instance, may eliminate some types of jobs in the short-run. Economic development encompasses a broad and expansive set of activities and tools that assist communities in growth and prosperity. The best economic development practitioners strive to bring quality jobs, new businesses and increased services (along with numerous other benefits) to communities through innovative approaches and outcome driven strategies.

Technology development has added a new dimension to the role of economic development professionals. The quest for increased technology can be confusing and challenging from many perspectives. Communities must judge to what extent they should strive to recruit and support the technology industry, how to determine the proper role of advanced technology on the organization's everyday activities and design ways to help local businesses tap into technology opportunities. Many communities have been able to incorporate technology into both their practices and programs while others have struggled to understand the capabilities of this industry. As the information age and technology sector maintain steady growth, the need for more advanced economic development activity is expanding as well. Technology development encompasses increased infrastructure capabilities, advanced financing options, innovative marketing processes and start-up business assistance.

Economic Development vs. Economic Growth

Development is a qualitative change, which entails changes in the structure of the economy, including innovations in institutions, behaviour, and technology.

Growth is a quantitative change in the scale of the economy - in terms of investment, output, consumption, and income.

According to this view, economic development and economic growth are not necessarily the same thing. First, development is both a prerequisite to and a result of growth. Development, moreover, is prior to growth in the sense that growth cannot continue long without the sort of innovations and structural changes noted above. But growth, in turn, will drive new changes in the economy, causing new products and firms to be created as well as countless small incremental innovations. Together, these advances allow an economy to increase its productivity, thereby enabling the production of more outputs with fewer inputs over the long haul. Environmental critics and sustainable development advocates, furthermore, often point out that development does not have to imply some types of growth. An economy, for instance, can be developing, but not growing by certain indicators. Indeed, the measure of productivity should not be solely monetary; it should also address the issues like how effectively scarce natural resources are being used? How well pollution is being reduced or prevented? Etc.

Stages of Economic Development

Professor W.W. Rostow has defined and analysed in his book 'The stages of economic growth', the five stages of economic development:

1. The traditional society: In the traditional long-lived social and economic system, the output per head is very low and tends not to rise. There are still few examples of traditional societies in this 21st century, that is, Afghanistan, Somalia, Ethiopia, etc.

2. The pre-conditions for take-off: sometimes also referred to 'preparatory period'. It covers a long period of a century or more during which the preconditions for take-off are established. These conditions mainly comprise fundamental changes in the social, political and economic fields; for example, (i) a change in society's attitudes towards science, risk-taking and profit-earning, (ii) the adaptability of the labour force; (iii) political sovereignty; (iv) development of a centralised tax system and financial institutions; and (v) the construction of certain economic and social overheads like rail roads and educational institutions.

3. The take-off stage: This is the crucial stage which covers a relatively brief period of two or three decades in which the economy transforms itself in such a way that economic growth subsequently takes place more or less automatically. The take-off is defined as the interval during which the rate of investment increases in such a way that real output per capita rises and this initial increase carries with it radical changes in the techniques of production and the disposition of income flows which perpetuate the new scale of investment and perpetuate thereby the rising trend in per capita output.

4. The drive to maturity: It is the stage of increasing sophistication of the economy. Against the background of steady growth, new industries are developed, there is less reliance on imports and more exporting activity. The economy demonstrate its capacity to move beyond the original industries which powered its takeoff, and to absorb and to apply efficiently the most advanced fruits of modern technology.

5. The stage of mass production and mass consumption: The fourth stage ends in the attainment of fifth stage, which is the period of mass production and consumption. The economy is characterised by affluent population, availability of durable and sophisticated consumer goods,

hi-tech industries, and production of diversified goods and services. USA, UK, Canada, France, Germany, Japan, Spain, Italy, etc are the examples.

Characteristics of Developing Economies

A developing country is one with real per capita income that is low relative to that in industrialised countries like US, Japan and those in Western Europe. Developing countries typically have population with poor health, low levels of literacy, inadequate dwellings, and meagre diets. Life expectancy is low and there is a low level of investment in human capital.

1. Deficiency of capital: One indication of the capital deficiency is the low amount of capital per head of population. Shortage of capital is reflected in the very low capital-labour ratio. Not only is the capital stock extremely small, but the current rate of capital formation is also very low, which is due to low inducement to invest and to the low propensity to save. Thus low level of per capita income limits the market size.

2. Excessive dependence on agriculture: Most of the less-developed countries are agrarians. In Pakistan, most of the people are engaged in agriculture. Whereas in developed countries 15% of the population is engaged in agriculture. The excessive dependence on agriculture in less developed countries is due to the fact that non-agricultural occupations have not grown in proportion with the growth in population. Hence, the surplus labour is to be absorbed in agriculture.

3. Inequalities in the distribution of income and wealth: In under-developed countries, there is a concentration of income in a few hands. In other terms, the income is insufficient to meet the requirements of the whole economy. Such income is diverted to non-productive investments such as jewellery and real-estates, and unproductive social expenditure.

4. Dualistic economy: Dualistic economy refers to the existence of two extreme classes in an economy, particularly less-developed economy. There are old and new production methods, educated and illiterate population, rich and poor, modern and backward, capitalists and socialists, donkey carts and motor cars existing side by side. This situation creates an atmosphere of great conflict and contradiction, and hampers the economic development in the long-run.

5. Lack of dynamic entrepreneurial abilities and highly skilled labour

6. Inadequate infrastructure: like airports, rail roads, highways, overheads, bridges, telecommunication facilities, sewerage and drainage, power generation, hospitals, etc.

7. Rapid population growth and disguised unemployment

8. Under-utilisation of natural resources

9. Poor consumption pattern: In less-developed countries, most of the people's income is spent on basic necessities of life. They are too poor to spend on other industrial goods and services.

Determinants of Economic Growth

(Factors of Economic Development in UDCs / Reasons of Failure of Under-Developed Countries)

The process of economic development is a highly complex phenomenon and is influenced by numerous and varied factors, such as political, social and cultural factors. The supply of natural resources and the growth of scientific and technological knowledge also have a strong bearing on the process of economic development. From the standpoint of economic analysis, the most important factors determining the rate of economic development are:

1. Availability of natural resources: The availability and use of natural resources within a country play a vital role in the economic development. Many poor countries have enormous amount of natural resources, but they are failed to explore them. The reason is that the government has not provided necessary incentives to the farmers and landowners to invest in capital and technologies that will increase their land's yield. In natural resources, minerals, oil and gas, forests, oceans and seas, livestock, land's fertility, and mountains are generally included. It must be noted here that the existence of natural resources is not a sufficient condition of economic growth. Many poor and under-developed countries are rich with natural resources but there is a problem of availability of capital required for their extraction. Such countries include Pakistan, India, Afghanistan, and several African and Latin American countries.

2. Rate of capital formation: The second important factor of economic development is the rate of capital formation. Keynes also ascribed the economic development of Europe to the accumulation of capital. According to him, Europe was so organised socially and economically as to secure the maximum accumulation of capital. The crux of the problem of economic development in any under-developed country lies in a rapid expansion of the rate of its capital investment so that it attains a rate of growth of output which exceeds the rate of growth of population by a significant margin. Only with such a rate of capital investment will the living standards begin to improve in a developing country.

Capital formation or inducement to invest depends on the propensity to save. In less-developed countries, there is a very low saving tendency because of low income. Developed countries managed to save 20% of their output in capital formation. Whereas only 5% of the national income is saved in UDCs. Much of the savings goes to housing and basic needs and, therefore, a very small amount is left over for development.

Capital formation is the basic tool for economic development. It may take decades to invest in building up a country's infrastructure, information technologies, power-generating plants, and other capital goods industries. Developing countries must have to build up their infrastructure, or social overhead capital in order to set path for economic glory.

If there are so many obstacles in finding domestic savings for capital formation, then the country depends on foreign sources of funds. Less-developed countries have to welcomed the flow of foreign capital or foreign borrowings. As long as the exports of these countries grew at the same rate as borrowings, it is a favourable condition. But several poor countries needed all their earnings simply to pay interest on their foreign debts. This is an adverse situation. Such countries need to boost up their production in order to cope with their current indebtedness.

3. Capital-output ratio: Apart from the ratio of capital formation to the aggregate national income, the growth of output depends upon the capital-output ratio. The capital-output ratio may be defined as the relationship of investment in a given economy or industry for a given time period to the output of that economy or industry for a similar time period. The productivity of capital depends on many factors such as the degree of technological development associated with

capital investment, the efficiency of handling new types of equipment, the quality of managerial and organisation skill, the existence and the extent of the utilisation of economic overheads and the pattern and rate of investment. For instance, the higher the proportion of investment devoted to the production of direct commodities, the lower the capital-output ratio, and higher the proportion of investment devoted to public utilities, i.e., economic and social overheads, the higher shall be the capital-output ratio, and vice versa. Higher the investment devoted to heavy industry, the higher will be the capital-output ratio, and vice versa. Higher the rate of investment and greater the technological progress, the lower will be the capital-output ratio. The capital-output ratio also varies with the prices of inputs.

4. Technological progress: The key to economic development for any country is the technological progress. Greater the technological progress, the higher will be the economic progress. The great importance of technological progress in the economic progress of Western European countries was recognised by Karl Marx himself. The technological progress of a country includes development in research and development, means of transportation, telecommunication, energy-generation, oil and gas exploration, information technologies, integrated circuits manufacturing, etc. Again, without capital formation, the technological progress is impossible, because building huge hi-tech industries requires a huge investment and a favourable economic condition.

5. Dynamic entrepreneurship: The modern economists recognise the dynamic role of entrepreneurs in promoting the economic growth of the country. The efficient utilisation of entrepreneurial skills can only be ensured when there is presence of considerable profit motive. The entrepreneur maximises his profit by making innovations, i.e., by bringing out a new product, new technologies, new product lines, new market, new sources of raw materials and by adopting an optimum combination of factors of production. Thus he is making the most significant contribution in the national income and in the technological progress.

The private enterprises in UDCs like India and Pakistan, has not taken them any far on the road of economic development. There is a lacking of entrepreneurial skills in under-developed countries. There is a lack of innovation. Entrepreneurs are more attracted by commerce than by industries. So it becomes the government's duty to ensure the supply of required type of entrepreneurship.

6. Human Resources: Besides efficient entrepreneurs, the economic development of a country depends on the supply of skilled and semi-skilled labour, and requires government's greatest contribution to the development of human resources. The development of human resources depends on the availability of hygienic food; quantity and quality of education centres and health centres; clean water; means of transportation and communication; entertainment; counselling services; loan facilities; scholarship; job security and old age benefits; etc.

In poor countries GDP rises but at the same time the population also grows. Several developing countries are facing high birth rates with stagnant national income per head. It is hard for poor countries to overcome poverty with birth rates so high. In under-developed countries, the economic planners emphasise the following specific programmes:

(a) Control disease and improve health and nutrition,

(b) Improve education, reduce illiteracy and train workers, and

(c) Ensure that the labour force is well-equipped with necessary and competing skills.

7. ***Rate of growth of population:*** The size and rate of population growth has an important bearing on the economic development of a country. A rapidly growing population aggravates the food problem, worsens the unemployment situation, adds to the number of unproductive consumers, keeps down per capita income and labour efficiency, and militates against capital formation. A rapid rate of population growth acts like a drag on economic development and slows down the pace of economic growth.

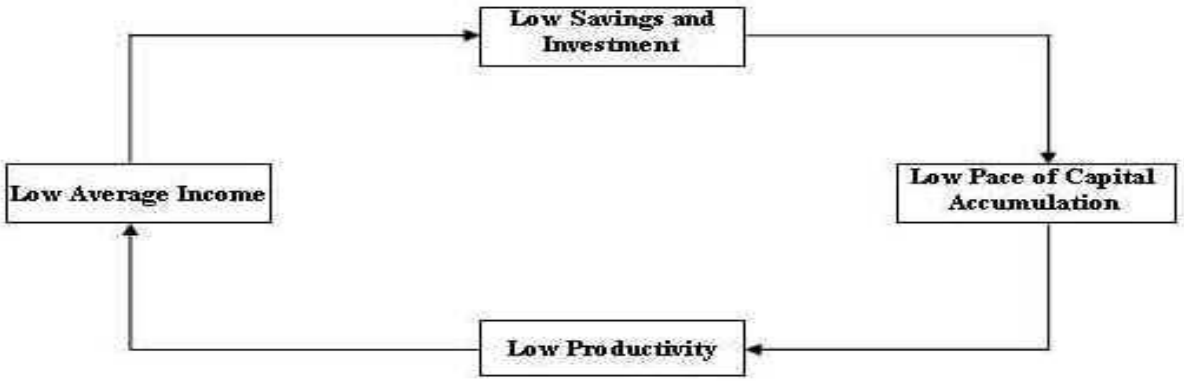
8. ***Price Mechanism:*** In under-developed economies, a very little emphasis is placed on price mechanism. The disequilibrium of prices has severe consequences on the efficiency of the economy. The resource utilisation becomes lack of optimality. The productive machinery of the community is hampered. There is no guarantee as regard to the quantity and quality of the production.

In order to speed up the economic development, price mechanism must go or confined to unimportant sectors of the economy like the purchase and sale of consumer goods.

9. ***Non-economic factors:*** Non-economic factors include social factors, demographical factors, institutional factors and political factors. The economic development depends on the political sovereignty, the complexion and competence of government, quality of administration, and political ideology of government.

Vicious Cycle of Poverty

Many developing countries are caught up in vicious cycle of poverty. Low level of income prevents savings, retards capital growth, hinders productivity growth, and keeps income low. Successful development may require taking steps to break up the chain at many points. Other points in poverty are also self-reinforcing. Poverty is accompanied by low levels of education, literacy and skill; these in turn prevent the adaptation to new and improved technologies and lead to rapid population growth. The vicious cycle of poverty is depicted as below:



Overcoming the barriers of poverty often requires a concentrated effort on many fronts and a 'big-push' is required to break the 'vicious cycle' into 'virtuous circle'. If the country has stepped to invest more, improve health and education, develop labour skills, and curb population growth, she can break vicious cycle of poverty and stimulate a virtuous circle of rapid economic growth.

Approaches to Economic Development

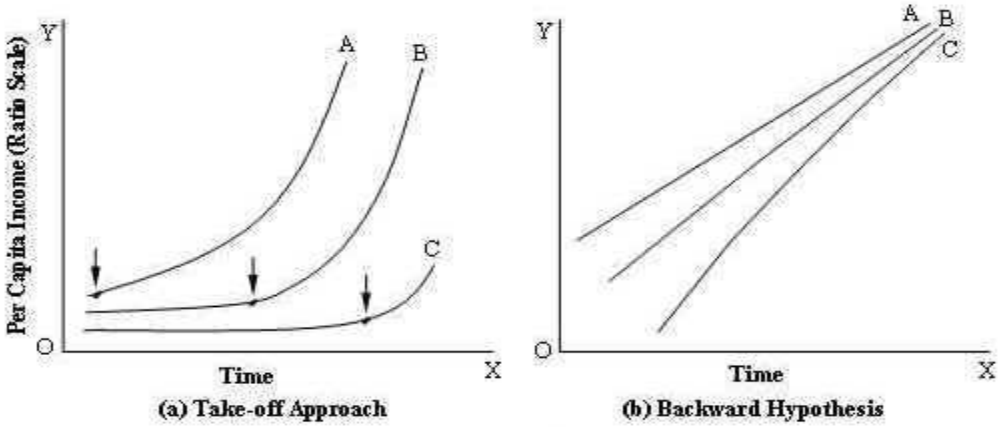
The following approaches are developed in recent years to explain the economic development and answer the question how countries break out of the vicious cycle of poverty to virtuous circle of economic development:

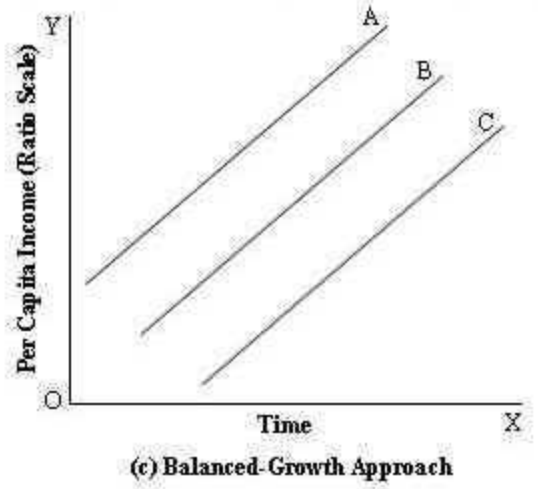
1. ***The Take-off Approach:*** Take-off is one of the stages of economic growth. Different economies have been benefited from 'take-off' approach in different periods, including England at the beginning of eighteenth century, the United States at the mid of nineteenth century, and Japan in early twentieth century. The take-off is impelled by leading sectors such as a rapid growing export market or an industry displaying large economies of scale. Once these leading sectors begin to flourish, a process of self-sustained growth (i.e. take-off) occurs. Growth leads to profits, profit are reinvested, capital, productivity and per capita income spur ahead. The virtuous cycle of economic development is under way.

2. ***The Backwardness Hypothesis and Convergence:*** The second approach emphasises the global context of economic development. Poor countries have important advantages that the pioneers of industrialisation had not. Developing nations can draw upon the capital, skills and technologies of advanced countries. Developing countries can buy modern textile machinery, efficient pumps, miracle seeds, chemical fertilisers and medical supplies. Because they can lean on the technologies of advanced countries. Today's developing nations can grow more rapidly than Great Britain, Western European Countries and United States in past. By drawing upon more productive technologies of the leaders, the developing countries would expect to see convergence towards the technological frontier.

3. ***Balanced Growth:*** Some writers suggest that growth is a balanced process with countries progressing steadily ahead. In their view, economic development resembles the tortoise making continual progress, rather than the hare, who runs in spurts and then rats when exhausted. ***Simon Kuznets*** examined the history of thirteen advanced countries and conceived that the balanced growth model is most consistent with the countries he studied. He noticed no significant rise or fall in economic growth as development progressed.

Note one further important difference between these approaches. The 'take-off' theory suggests that there will be increasing divergence among countries (some flying rapidly, while others are unable to leave the ground). The 'backward' hypothesis suggests 'convergence', while the 'balanced-growth' model suggests roughly 'constant' differentials. In the following diagrams, advanced countries are represented by curve A, middle income countries by curve B and low-income countries by curve C. The curves show per capita income:





Strategies of Economic Development

Following are the strategies commonly applied in economic planning:

1. ***Balanced vs. Unbalanced Growth:*** Currently there are two major schools of thoughts regarding the process of growth, i.e., balanced growth strategy and unbalanced growth strategy:

(a) Balanced Growth Strategy: Economists like Ragnar Nurkse and Rosenstsein-Rodan strongly advocate balanced growth strategy. According to them, the pattern of investment should be so designed as to ensure a balanced development of the various sectors of the economy. They advocate simultaneous investment in a number of industries so that there is a balanced growth of different industries.

(b) Unbalanced Growth Strategy: Economists like H.W. Singer and A.O. Hirschman, on the other side, believe that rapid economic growth follows 'concentration' of investment in certain strategic industries rather than an even distribution of investment among the various industries. In the view of these economists, unbalanced growth is more conducive in economic development than a balanced one.

2. ***Big-Push Strategy:*** The big-push strategy is associated with the name of Rosenstein-Roden and Harvey Leibenstein. It is contended that a big-push is needed to overcome the initial inertia of a stranger economy. Rosenstein-Roden observes that there is a minimum level of resources that must be devoted to a development programme if it is to have any chance of

success. Launching a country into self-sustaining growth is like getting an airplane off the ground. There is critical ground speed which must be passed before the craft can become airborne.

3. Balanced, Unbalanced and Big-Push (BUB) Strategy: The advocates of this strategy suggest that no single strategy will take us to the goal of economic development. Not only has the strategy to be changed from time to time as the situation may require, but it may be necessary sometimes to strike a balance between the alternative strategies. In the initial stage, which is characterised by unbalances, counter-unbalance strategy is to be adopted. But once an appropriate balance is attained by a fair dose of big-push, the strategy of balanced growth may be applied to further planning.

Issues in Economic Development

Following are the important issues in under developed countries:

1. Industrialisation vs. Agriculture: In most countries, incomes in urban areas are almost more than double in rural areas. Many nations jump to the conclusion that industrialisation is the cause rather than effect of affluence. To accelerate industrialisation at the expense of agriculture has led many analysis to rethink the role of farming. Industrialisation tends to be capital intensive, attract workers into crowded cities, and often produces high level of unemployment. Rising productivity on farms may require less capital, while providing productive for surplus labour.

2. Inward vs. Outward Orientation: This is a fundamental issue of economic development towards international trade. Should the developing countries be self-sufficient? If yes, the country has to replace imported goods and services with domestic production. This strategy is known as *'import substitution'* or *'inward orientation'*.

If the country decides to pay for imports it needs by improving efficiency and competitiveness, developing foreign markets, and giving incentives for exporters. This is called *'outward orientation'* strategy. It is generally observed that by subsidising import substitution, competition is limited, innovation is dampened, productivity growth is slow down and country's real income falls to a lower level. Whereas, the outward orientation sets up a system of incentives that stimulates exports. This approach maintains a competitive FOREX rate, encourages exports, and minimises unnecessary government regulation of businesses esp. small and medium sized firms.

3. State vs. Market: The cultures of many developing countries are hostile to the operation of markets. Often competition among firms or profit seeking behaviour is contrary to traditional practices, religious beliefs, or vested interest. Yet decades of experience suggest that extensive reliance on markets provides the most effective way of managing an economy and promoting rapid economic growth.

The government has a vital role in establishing and maintaining a healthy economic environment. It must ensure law and order, enforce contracts, and orient its regulations towards competition and innovation. The government plays a leading role in investment in human capital through education, health and transportation, but the government should minimise its intervention or control in sectors where it has no comparative advantage. Government, should focus its efforts on areas where there are clear signs of market failure.

Models of Economic Growth

Classical Model of Economic Growth

Every nation strives after development. Economic progress is an essential component, but it is not the only component. Economic development is not purely an economic phenomenon. In an ultimate sense, it must encompass more than the material and financial side of people's lives. Economic development should therefore be perceived as a multidimensional process involving the reorganization and reorientation of entire economic and social systems. In addition to improvements in incomes and output, it typically involves radical changes in institutional, social, and administrative structures. Finally, although development is usually defined in a national context, its widespread realization may necessitate fundamental modification of the international economic and social system as well.

The classical theories of economic development consist of following four schools of thought:

1. Linear-stages-of-growth model: Theorists of the 1950s and 1960s viewed the process of development as a series of successive stages of economic growth through which all countries must pass. It was primarily an economic theory of development in which the right quantity and mixture of saving, investment, and foreign aid were all that was necessary to enable developing nations to proceed along an economic growth path that historically had been followed by the more developed countries. Development thus became synonymous with rapid, aggregate economic growth.

This linear-stages approach was largely replaced in the 1970s by two competing economic schools of thought – *theories of structural change*and *international-dependence theories.*

2. Theories and patterns of structural change: Theories and patterns of structural change uses modern economic theory and statistical analysis in an attempt to portray the internal process of structural change that a "typical "developing country must undergo if it is to succeed in generating and sustaining a process of rapid economic growth.

Structural-change theory focuses on the mechanism by which under-developed economies transform their domestic economic structures from a heavy emphasis on traditional subsistence agriculture to a more modern, more urbanised, and more industrially diverse manufacturing and service economy. It employs the tools of neo-classical price and resource allocation theory and modern econometrics to describe how this transformation process takes place. Two well-known representative examples of the structural-change approach are the 'two-sector surplus labour' theoretical model of Sir W. Arthur Lewis, and the 'patterns of development' empirical analysis of Hollis B. Chenery and his co-authors.

3. International-dependence revolution: The international-dependence revolution was more radical and political in orientation. It viewed underdevelopment in terms of international and domestic power relationships, institutional and structural economic rigidities, and the resulting proliferation of dual economies and dual societies both within and among the nations of the world. Dependence theories tended to emphasize external and internal institutional and political constraints on economic development. Emphasis was placed on the need for major new policies

to eradicate poverty, to provide more diversified employment opportunities, and to reduce income inequalities.

International-dependence models view developing countries as troubled by institutional, political, and economic rigidities, both domestic and international, and caught up in a *dependence* and *dominance* relationship with rich countries. Within this general approach there are three major streams of thought – the neo-colonial dependence model, the false-paradigm model, and the dualistic-development thesis.

4. Neoclassical or free-market counterrevolution: This theory is also known as neo-liberal theory. Throughout of the 1980s and 1990s, the neoclassical or free-market counterrevolution approach prevailed. It emphasizes the beneficial role of free markets, open economies, and the privatisation of inefficient public enterprises. Failure to develop, according to this theory, is not due to exploitive internal and external forces as expounded by dependence theorists. Rather, it is primarily the result of too much government intervention and regulation of the economy.

In the 1980s, the political ascendancy of conservative governments in the United States, Canada, Britain, and West Germany brought a*neoclassical counterrevolution* in economic theory and policy. In developed nations, this counterrevolution favoured supply-side macroeconomic policies, rational expectations theories, and the privatisation of public corporations. In developing countries it called for freer markets and the dismantling of public ownership, central planning, and government regulation of economic activities. Neo-classicists obtained controlling votes on the boards of the world's two most powerful international financial agencies — the World Bank and the International Monetary Fund. In conjunction and with the simultaneous erosion of influence of organizations such as the International Labour Organization (ILO), the United Nations Development Program (UNDP), and the United Nations Conference on Trade and Development (UNCTAD), which more fully represent the views of LDC delegates.

The neo-classical approach states that underdevelopment arises from:

- Poor resource allocation due to incorrect price policies, and
- Government's intervention in the economic activities.

Neo-classical or neo-liberal approach states that economic growth can be put to spur by:

- Permitting competitive free markets to flourish,
- Privatising state-owned enterprises,
- Promoting free trade and export expansions,
- Welcoming investors from developed economies, and
- Eliminating the plethora of government regulations and price distortions in factor, product and market.

1. Linear-stages-of-growth model:

Following are the growth models studied under linear-stages:

(a) Rostow's Stages of Growth: The stages-of-growth model of development is taken by most of the newly independent countries. According to Walt W. Rostow doctrine, the transition from underdevelopment to development can be described in terms of a series of steps or stages through which all countries must proceed. According to Rostow, it is possible to identify all societies, in their economic dimensions, as lying within one of five categories:

- The traditional society,
- The pre-conditions to take-off into self-sustaining growth,
- The take-off,
- The drive to maturity, and
- The age of high mass-consumption.

Rostow also clarified that these stages are not merely a way of generalising certain factual observations about the sequence of development of modern societies. He argued that the advanced countries had all passed the stage of take-off into self-sustaining growth and the under-developed countries that were still in either the traditional society or the pre-conditions stage. One of the principal strategies of development necessary for any take-off was the mobilisation of domestic and foreign saving in order to generate sufficient investment to accelerate economic growth.

(b) Harrod-Domar Model: This model, developed independently by RF Harrod and ED Domar in the l930s, suggests savings provide the funds which are borrowed for investment purposes.

The model suggests that the economy's rate of growth depends on:

- the level of saving
- the productivity of investment i.e. the capital output ratio

For example, if $10 worth of capital equipment produces each $1 of annual output, a capital-output ratio of 10 to 1 exists. A 3 to 1 capital-output ratio indicates that only $3 of capital is required to produce each $1 of output annually.

The Harrod-Domar model was developed to help analyse the business cycle. However, it was later adapted to 'explain' economic growth.

2. Structural-change theory:

Following economic growth model represents the structural-change theory:

(a) Lewis Theory of Development: It is one of the best-known early theoretical models of economic development that focused on the structural transformation of a primarily subsistence economy was that formulated by Noble-prize winner Sir W. Arthur Lewis in the mid 1950s. His theory was later modified by his followers. The Lewis two-sector economy model became the general theory of the development process in surplus-labour

Third-World nations during most of the 1960s and 1970s. In the Lewis model, the underdeveloped economy consists of two sectors:

- A traditional, overpopulated rural ***subsistence sector*** characterised by zero-marginal labour productivity. Lewis classify this as 'surplus-labour' in the sense that it can be withdrawn from the agricultural sector without any loss of output, and
- A high, productivity modern urban ***industrial sector*** into which labour from the subsistence sector is gradually transferred.

The primary focus of the model is on both the process of labour transfer and the growth of output and employment in the modern sector. Both labour transfer and modern-sector employment growth are brought about by output expansion in that sector.

(b) Patterns of Development: The patterns of development analysis of structural change focuses on the sequential process through which the economic, industrial and institutional structure of an underdeveloped economy is transformed over time to permit new industries to replace traditional agriculture as the engine of economic growth.

In addition to the accumulation of capital both physical and human, a set of interrelated changes in the economic structure of a country are required for the transition from a traditional economic system to a modern one.

These structural changes involve virtually all economic functions, including the transformation of production and changes in the composition of consumer demand, international trade and resource use as well as changes in socio-economic factors such as urbanisation, and the growth and distribution of a country's population.

3. International-dependence revolution:

Within this general approach, there are three major streams of thought:

(a) Neo-Colonial Dependence Model: It is an indirect outgrowth of Marxist thinking. It refers to the existence and continuance of underdevelopment in a highly unequal international capitalist system. The international system is dominated by unequal power relationships between the centre (the developed nations) and the periphery (the less developed countries). The poor nations attempt to become self-reliant and independent but this system makes it difficult and sometimes even impossible.

According to this theory, certain groups in the developing countries (including landlords, entrepreneurs, military rulers, merchants, salaried public officials, and trade union leaders) who enjoy high incomes, social status, and political power constitute a small elite ruling class whose principal interests are in perpetuation of the international capitalist system of inequality. Directly and indirectly, they serve (are dominated by)and are rewarded by (are dependent on) international special-interest power groups including multinational corporations, national bilateral-aid agencies, and multilateral assistance organizations like the World Bank or the International Monetary Fund (IMF). Therefore,

a major restructuring of the world capitalist system is required to free dependent developing nations from the direct and indirect economic control of their developed-world and domestic oppressors.

Curiously, a very similar but obviously non-Marxist perspective statement was expounded by Pope John Paul II in his widely quoted 1988 encyclical letter:

"One must denounce the existence of economic, financial, and social mechanisms which, although they are manipulated by people, often function almost automatically, thus accentuating the situation of wealth for some and poverty for the rest. These mechanisms, which are manoeuvred directly or indirectly by the more developed countries, by their very functioning, favour the interests of the people manipulating them. But in the end they suffocate or condition the economies of the less developed countries."

(b) False-Paradigm Model: The second and less radical international-dependence approach to development, the *false-paradigm model***,** attributes underdevelopment to faulty and inappropriate advice provided by well-meaning but often uninformed, biased, and ethnocentric international 'expert' advisers from developed-country assistance agencies and multinational donor organizations. These experts offer sophisticated concepts, elegant theoretical structures, and complex econometric models of development that often lead to inappropriate or incorrect policies. Because of institutional factors such as the central and remarkably resilient role of traditional social structures (i.e., tribe, caste, class, etc.), the highly unequal ownership of land and other property rights, the disproportionate control by local elites over domestic and international financial assets, and the very unequal access to credit, these policies, based as they often are on mainstream, Lewis-type surplus labour or Chenery-type structural-change models, in many cases merely serve the vested interests of existing power groups, both domestic and international.

(c) Dualistic Development Thesis: *Dualism* is a concept widely discussed in development economics. It represents the existence and persistence of increasing divergences between rich and poor nations and rich and poor peoples on various levels. One of the elements of dualism is that there is a coexistence of wealthy, highly educated elites with masses of illiterate poor people within the same country or city. According to this theory, there is a coexistence of powerful and wealthy industrialized nations with weak, impoverished peasant societies in the international economy.

This coexistence is chronic and not merely transitional. It is not due to a temporary phenomenon, in which with the capacity of time, the discrepancy between superior and inferior elements would be eliminated.

4. Neo-classical counterrevolution:

This approach can be implemented through the following three models:

(a) Free-Market Analysis: Free-market analysis argues that markets alone are efficient if:

- Product markets provide the best signals for investments in new activities,
- Labour markets respond to these new industries in appropriate ways,
- Producers know best what to produce and how to produce it efficiently, and
- Product and factor prices reflect accurate scarcity values of goods and resources.

Under free-market, competition is effective not necessarily perfect. Technology is freely available and nearly costless to absorb. Information is correct and nearly costless to obtain.

(b) Public-Choice Theory: Public-choice theory, also known as *'new political economy approach'*, goes even further to argue that government can do nothing right. This is because that politicians, bureaucrats, citizens and states act solely from a self-interested perspective, using their powers and the authority of government for their own selfish needs. Citizens use political influence to obtain special benefits (sometimes also referred to as *'rent'*) from government policies, for example, import licenses, or rationed forex. Politicians use government resources to consolidate and maintain positions of power and authority. Bureaucrats use their positions to extract bribes from rent-seeking citizens and to operate protected business on the side. And finally state uses its power to confiscate private property from individuals. The net result is not only a misallocation of resources but also a general reduction in individual freedoms. The conclusion, therefore, is that minimal government is the best government.

(c) Market-Friendly Approach: The third approach is market-friendly approach, which is the most recent variant on the neoclassical counterrevolution. It is associated principally with the writings of the World Bank and its economists, many of whom were more in the free-market and public-choice camps during the 1980s. This approach recognizes that there are many imperfections in LDC product and factor markets and that governments do have a key role to play in facilitating the operation of markets through 'non-selective' (market-friendly) interventions — for example, by investing in physical and social infrastructure, health care facilities, and educational institutions and by providing a suitable climate for private enterprise.

Karl Marx's Model

Czarist Russia grew rapidly from 1880 to 1914; it was considerably less developed than industrialised countries like US and Great Britain. World War I brought great hardship to Russia and allowed the communists to seize power. From 1917 to 1933, the Soviet Union experimented with different socialist models before settling on central planning. Most economists believed until recently that the Soviet Union grew rapidly from 1928 until the mid 1960s. After the mid 1960s, growth in Soviet Union stagnated and output actually began to decline. In the late 1980s and early 1990s, open inflation erupted. Prices were well below market-clearing levels and acute shortages arose in what is called *'repressed inflation'*. The repressive political system was

unacceptable to the people in Soviet Union and some countries in Eastern Europe and was universally rejected in 1989.

The father of this repressive political system – Communism is Karl Marx (1818 – 1883). The centrepiece of Marx's work is an incisive analysis of the strengths and weaknesses of capitalism. He argued that it is the only labour power that gives value to a commodity. By imputing all the value of output to labour, Marx hoped to show that profits, which is the part of output that is produced by workers but received by capitalists, amount to *'unearned income'*. According to Marx, this unearned income is unjustly received by capitalists. This injustice can be eliminated by transferring the ownership of factories and other means of production from capitalists to workers.

Marx saw capitalism as inevitably leading to Socialism. In Marx's world, technology enables capitalists to replace workers with machinery as a means of earning greater profits. As a result unemployment increases with the increased use of technological advances. This increasing accumulation of capital will reduce the rate of profit and investment opportunities, and therefore, the ruling capitalists will become imperialists. Karl Marx believed that the capitalist system could not continue this unbalanced growth. Marx predicted increasing inequality under capitalism. Business cycles would become ever more violent as mass poverty resulted in macro-economic under-consumption. Finally, a cataclysmic depression would sound the death knell of capitalism. The economic interpretation of history is one of Marx's lasting contributions to Western thought. Marx argued that economic interests lie behind and determine our values. His arguments against capitalism suggested communism would arise in the most highly developed industrial countries. Instead, it was backward, feudal Russia that adopted the Marxist vision.

Features of Karl Marx's Socialist Model:

1. Government ownership of productive resources,
2. Planning is centralised,
3. Equal distribution of income,
4. Peaceful and democratic evolution,
5. Labour theory of value – value of a product represents the human labour used in production, and
6. Theory of surplus value.

Theory of Surplus Value:

Marx propounded his theory of surplus value on the basis of his theory of value. He said that in order to enable labour to carry on the work of production, he should have some instruments of production and other facilities but he lacks these facilities. Hence, he has to sell his labour to the capitalist. It is, however, not necessary for the capitalist to pay labour the full value of the product produced by him. Here Karl Marx supported his theory on the basis of a classical theory, viz., the subsistence theory of value, according to which the level of wages is determined by the subsistence of the worker. The work of labour force is not merely to produce value equal to its price but much more. This surplus value is the difference between the market value of the commodity and the cost of the factors used in the production of commodity. Karl Marx says that the manufacturer gets for his commodity more than what he has spent on labour and other

costs. The excess of market value over the costs is the surplus value. This surplus is created because labour is paid much less than is due to it. He characterises the appropriation of the surplus value by the capitalist as robbery and exploitation. The capitalist class goes on becoming richer and richer through exploitation of the working class.