APPOLO STUDY CENTRE

Test – 3

UNIT VI INDIAN ECONOMY

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Nature of Indian Economy – Five Year Plans – Planning commission & NITI Aayog	12th std Economics	Unit 1 – Introduction to Macro Economics
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12th Std

Nature of Indian Economy

Unit 1 – Introduction to Macro Economics

> "Macroeconomics is very much about tying together facts and theories".
> - **Dorn Busch, Fischer and Startz**

Introduction

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

Meaning of macro Economics

The word 'Macro' is derived from the Greek word 'Makros' meaning 'large'. Hence, Macro Economics is the study of the economy as a whole. In other words, macro economics deals with aggregates such as national income, employment and output. Macro Economics is also known as 'Income Theory'.

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

Importance of Macro Economics

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

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

Scope of Macro Economics

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

- **National Income:** Measurement of national income and its composition by sectors are the basic aspects of macroeconomic analysis. The trends in National Income and its composition provide a long term understanding of the growth process of an economy.
- **Inflation:** Inflation refers to steady increase in general price level. Estimating the general price level by constructing various price index numbers such as Wholesale Price Index, Consumer Price Index, etc, are needed.
- **Business Cycle:** Almost all economies face the problem of business fluctuations and business cycle. The cyclical movements (boom, recession, depression and recovery) in the economy need to be carefully studied based on aggregate economic variables.
- **Poverty and Unemployment:** The major problems of most resource - rich nations are poverty and unemployment. This is one of the economic paradoxes. A clear understanding about the magnitude of poverty and unemployment facilitates allocation of resources and initiating corrective measures.

- **Economic Growth:** The growth and development of an economy and the factors determining them could be understood only through macro analysis.
- **Economic Policies:** Macro Economics is significant for evolving suitable economic policies. Economic policies are necessary to solve the basic problems, to overcome the obstacles and to achieve growth.

Limitations

Macro economics suffers from certain limitations. They are:

1. There is a danger of excessive generalisation of the economy as a whole.
2. It assumes homogeneity among the individual units.
3. There is a fallacy of composition. What is good of an individual need not be good for nation and viceversa. And, what is good for a country is not good for another country and at another time.
4. Many non - economic factors determine economic activities; but they do not find place in the usual macroeconomic books.

Economy and its Types

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

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

In an economy, the fundamental economic activities are production and consumption. These two activities are supported by several other activities. The ultimate aim of these activities is to achieve growth. The 'exchange activity' supports the production and consumption activities. These activities are influenced by several economic and non-economic activities. The major economic activities include transportation, banking, advertising, planning, government policy and others. The major non-economic activities are environment, health, education, entertainment, governance, regulations etc. In addition to these supporting activities,

external activities from other economies such as import, export, international relations, emigration, immigration, foreign investment, foreign exchange earnings, etc. also influence the entire functioning of the economy.

Economies can be classified into different types based on the

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

Economic Systems

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

1. Capitalistic Economy (Capitalism),
2. Socialistic Economy (Socialism)and
3. Mixed Economy (Mixedism)

Globalism

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

Capitalism and socialism are two extreme and opposite approaches. In capitalism, there is total freedom and private ownership of means of production. In socialism, there is no freedom for private and there is public ownership of means of production. Mixedism denotes the Co-existence of

capitalism and socialism. The features, merits and demerits of various economic systems are discussed below.

Capitalistic Economy (Capitalism)

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

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

Features of Capitalistic Economy

1. **Private Ownership of Property and Law of Inheritance:** The basic feature of capitalism is that all resources namely, land, capital, machines, mines etc. are owned by private individuals. The owner has the right to own, keep, sell or use these resources according to his will. The property can be transferred to heirs after death.
2. **Freedom of Choice and Enterprise**: Each individual is free to carry out any occupation or trade at any place and produce any commodity. Similarly, consumers are free to buy any commodity as per their choice
3. **Profit Motive:** Profit is the driving force behind all economic activities in a capitalistic economy. Each individual and organization produce only those goods which ensure high profit. Advance technology, division of labour, and specialisation are followed. The golden rule for a producer under capitalism is 'to maximize profit.'
4. **Free Competition:** There is free competition in both product and factor market. The government or any authority cannot prevent firms from buying or selling in the market. There is competition between buyers and sellers.
5. **Price Mechanism:** Price mechanism is the heart of any capitalistic economy. All economic activities are regulated through price mechanism i.e, market forces of demand and supply.

6. **Role of Government:** As the price mechanism regulates economic activity, the government has a limited role in a capitalistic economy. The government provides basic services such as, defense, public health, education, etc.

7. **Inequalities of Income:** A capitalist society is divided into two classes – 'haves' that is those who own property and 'have-nots' who do not own property and work for their living. The outcome of this situation is that the rich become richer and poor become poorer. Here, economic inequality goes on increasing.

Merits of Capitalism

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

Demerits of Capitalism

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

Socialistic Economy (Socialism)

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

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

Features of Socialism:

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

Merits of Socialism

1. **Reduction in Inequalities:** No one is allowed to own and use private property to exploit others.
2. **Rational Allocation of Resources:** The central planning authority allocates the resources in a planned manner. Wastages are minimised and investments are made in a pre planned manner.
3. **Absence of Class Conflicts:** As inequalities are minimum, there is no conflict between rich and poor class. Society functions in a harmonious manner.
4. **End of Trade Cycles:** Planning authority takes control over production and distribution of goods and services. Therefore, economic fluctuations can be avoided.
5. **Promotes Social Welfare:** Absence of exploitation, reduction in economic inequalities, avoidance of trade cycles and increase in productive efficiency help to promote social welfare.

Demerits of Socialism

1. **Red Tapism and Bureaucracy:** As decision are taken by government agencies, approval of many officials and movement of files from one table to other takes time and leads to red tapism.
2. **Absence of Incentive:** The major limitation of socialism is that this system does not provide any incentive for efficiency. Therefore, productivity also suffers.
3. **Limited Freedom of Choice:** Consumers do not enjoy freedom of choice over the consumption of goods and services.
4. **Concentration of Power:** The State takes all major decisions. The private takes no initiative in making economic decisions. Hence, the State is more powerful and misuse of power can also take place.

Mixed Economy (Mixedism):

In a mixed economy system both private and public sectors co-exist and work together towards economic development. It is a combination of both capitalism and socialism. It tends to eliminate the evils of both capitalism and socialism. In these economies, resources are owned by individuals and the government. India, England, France and Brazil are the examples of mixed economy.

Features of Mixed Economy

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

Merits of Mixed Economy

1. **Rapid Economic Growth:** The best advantage of mixed economy is that it promotes rapid economic growth. Thus, both public requirements and private needs are taken care of.
2. **Balanced Economic Growth:** Mixedism promotes balanced growth of the economy. It promotes balanced growth between agriculture and industry, consumer goods and capital goods, rural and urban etc.
3. **Proper Utilization of Resources:** In a mixed economy, the government can ensure proper utilization of resources. The government controls most of the important activities directly and the private sector indirectly.
4. **Economic Equality:** The government uses progressive rates of taxation for levying income tax to bring about economic equality.
5. **Special Advantages to the Society:** The government safeguards the interest of the workers and weaker sections by legislating on minimum

wages, and rationing, establishing fair price shops and formulating social welfare measures.

Demerits of Mixed Economy

1. **Lack of Coordination:** The greatest drawback of mixedism is lack of coordination between public sector and private sector. As both work with divergent motives, it creates many coordination related problems.
2. **Competitive Attitude:** It is expected that both government and private should work with a complementary spirit towards the welfare of the society, but in reality they are competitive in their activities.
3. **Inefficiency:** Most of the public sector enterprises remain inefficient due to lethargic bureaucracy, red tapism and lack of motivation.
4. **Fear of Nationalization:** In a mixed economy, the fear of nationalization discourages the private entrepreneurs in their business operations and innovative initiatives.
5. **Widening Inequality:** Ownership of resources, laws of inheritance and profit motive of people widens the gap between rich and poor.

Ultimately the inequality of capitalism and inefficiency of socialism are found in mixed economies.

Comparison of Different Economic Systems

S.No.	Features	Capitalism	Socialism	Mixedism
1.	Ownership of Means of production	Private Ownership	Public Ownership	Private ownership and Public ownership
2.	Economic Motive	Profit	Social Welfare	Social Welfare and Profit Motive
3.	Solution of Central Problems	Free Market System	Control Planning system	Central Planning System and Free Market System
4.	Government Role	Interanal Regulation only	Complete Involvement	Limited Role
5.	Income Distribution	Unequal	Equal	Less unequal
6.	Nature of	Private	Government	Both Private and

		Enterprise	Enterprise	Enterprise	State Enterprises
7.	Economic Freedom	Complete Freedom	Lack of Freedom	Limited Freedom
8.	Major Problem	Inequality	Inefficiency	Inequality and Ineffiency

Concepts of Macro Economics

The important concepts used in macro economics are presented below:

Stock and Flow Variables

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

- Stock refers to a quantity of a commodity measured at a point of time. In macro economics, money supply, unemployment level, foreign exchange reserves, capital etc are examples of stock variables.
- Flow variables are measured over a period of time. National Income, imports, exports, consumption, production, investment etc are examples of flow variables.

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

Circular Flow of Income

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

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

1. Two Sector Model: It is for a simple economy with households and firms.
2. Three Sector Model: It is for a mixed and closed economy with households, firms and government.
3. Four Sector Model: It is for an open economy with households, firms, government and rest of the world (External sector).

Circular Flow of Income in a Two-Sector Economy:

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

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

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

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

$$Y = C + I$$

Where
Y is income; C is Consumption; I is investment

Circular Flow of Income in a Three- Sector Economy:

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

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

Therefore:

$$Y = C + I + G$$

Circular Flow of Income in a Four-Sector Economy:

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

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

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

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

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

2. National Income

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

- Samuelson

Introduction

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

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

Meaning of National Income

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

Definitions

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

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

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

Basic concepts of national income.

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

- GDP
- GNP
- NNP
- NNP at factor cost
- Personal Income
- Disposable Income
- Per capita Income
- Real Income
- GDP deflator

Gross Domestic Product (GDP)

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

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

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

a) Net Domestic Product (NDP)

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

Net Domestic Product = GDP - Depreciation.

Gross National Product (GNP)

GNP is the total measure of the flow of final goods and services at market value resulting from current production in a country during a year, including net income from abroad. GNP includes five types of final goods and services:

1. value of final consumer goods and services produced in a year to satisfy the immediate wants of the people which is referred to as consumption (C);
2. gross private domestic investment in capital goods consisting of fixed capital formation, residential construction and inventories of finished and unfinished goods which is called as gross investment (I) ;
3. goods and services produced or purchased by the government which is denoted by (G) ; and
4. net exports of goods and services, i.e., the difference between value of exports and imports of goods and services, known as (X-M) ; Net factor incomes from abroad which refers to the difference between factor incomes (wage, interest, profits) received from abroad by normal residents of India and factor incomes paid to the foreign residents for factor services rendered by them in the domestic territory in India (R-P);
5. GNP at market prices means the gross value of final goods and services produced annually in a country plus net factor income from abroad (C + I + G + (X-M) + (R-P)).

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

Net National Product (NNP) (at Market price)

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

> NNP + GNP – depreciation allowance

(depreciation is also called as Capital Consumption Allowance)

NNP at Factor cost

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

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

Personal Income

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

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

Disposable Income

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

> Disposable Income = Personal income – Direct Tax. As the entire disposable income is not spent on consumption,
> Disposal income = consumption + saving

Per Capita Income

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

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

Real Income

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

P1 – Price index during current year;
P0 – Price index during base year

GDP deflator

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

$$\text{GDP deflator} = \frac{No\min al\ GDP}{\mathrm{Re}\,al\ GDP} \times 100$$

Methods of Measuring National Income

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

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

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

Output = Income = Expenditure

GDP – By Sum of Spending, Factor Incomes or Output		
GDP (Expenditure)	**GDP (Factor Incomes)**	**GDP (Value of Output)**
Consumption Government spending Investment spending	Income from people in jobs and in self employment (e.g. wages and salaries)	Value added from each of the main economic sectors
Change in value of stocks	Profits of private sector business	These sectors are • Primary • Secondary • Manufacturing • Quaternary
Exports	Rent income from the ownership of land	
-Imports		
= GDP (known as aggregate demand)		

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

Product Method

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

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

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

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

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

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

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

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

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

Precautions

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

1. Double counting is to be avoided under value added method. Any commodity which is either raw material or intermediate good for the final production should not be included. For example, value of cotton enters value of yarn as cost, and value of yarn in cloth and that of cloth in garments. At every stage value added only should be calculated.

2. The value of output used for self consumption should be counted while measuring national income.

3. In the case of durable goods, sale and purchase of second hand goods (for example pre owned cars) should not be included.

Income Method (Factor Earning Method)

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

Steps involved

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

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

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

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

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

Precautions

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

Items not to be included

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

Items to be included

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

The Expenditure Method (Outlay method)

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

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

C - Private consumption expenditure
I - Private Investment Expenditure
G - Government expenditure

X-M = Net exports

Precautions

1. Second hand goods: The expenditure made on second hand goods should not be included.

2. Purchase of shares and bonds: Expenditures on purchase of old shares and bonds in the secondary market should not be included.

3. Transfer payments: Expenditures towards payment incurred by the government like old age pension should not be included.

4. Expenditure on intermediate goods: Expenditure on seeds and fertilizers by farmers, cotton and yarn by textile industries are not to be included to avoid double counting. That is only expenditure on final products are to be included.

Factor cost (FC)
There are a number of inputs that are included into a production process when producing goods and services. These inputs are commonly known as factors of production and include things such as land, labour, capital and entrepreneurship.
Producers of goods and services incur a cost for using these factors of production. These costs are ultimately added onto the price of the product.
The factor cost refer to the cost of production that is incurred by a firm when producinggoods and services.
Examples of such production costs include the cost of renting machines, purchasing machinery and land, paying salaries and wages, cost of obtaining capital, and the profit margins that are added by the entrepreneur.
The factor cost does not include the taxes that are paid to the government since taxes are not directly involved in the production process and, therefore, are not part of the direct production cost.
However, subsidies received are included in the factor cost as subsidies are direct inputs into the production.

Market price (MP)
Once goods and services are produced they are sold in a market place at a set market price.
The market price is the price that consumers will pay for the product when they purchase it from the sellers.
Taxes charged by the government will be added onto the factor price while subsides provided will be reduced from the factor price to arrive at the market price.

Taxes are added on because taxes are costs that increase the price, and subsidies are reduced because subsidies are already included in the factor cost, and cannot be double counted when market price is calculated.
Thus, MP = FC + Indirect Taxes - Subsidies ...... Equation (1)
Or, FC = MP - Indirect Taxes + Subsidies .... Equation (2)

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

[Where, Net Indirect Taxes = Indirect tax – Subsidies]
[Gross Value Added = Value of Output – Intermediate Consumption]
Value of Output = Sales = Change in Stock
Where, Change in Stock = Closing Stock – Opening Stock

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

<div align="center">or</div>
<div align="center">Value of Output = Price x Quantity Sold</div>

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

Importance of National Income Analysis

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

1. To know the relative importance of the various sectors of the economy and their contribution towards national income; from the calculation of national income, we could find how income is produced, how it is distributed, how much is spent, saved or taxed.
2. To formulate the national policies such as monetary policy, fiscal policy and other policies; the proper measures can be adopted to bring the economy to the right path with the help of collecting national income data.

3. To formulate planning and evaluate plan progress; it is essential that the data pertaining to a country's gross income, output, saving and consumption from different sources should be available for economic planning.
4. To build economic models both in short - run and long - run.
5. To make international comparison, inter - regional comparison and inter - temporal comparison of growth of the economy during different periods.
6. To know a country's per capita income which reflects the economic welfare of the country (Provided income is equally distributed)
7. To know the distribution of income for various factors of production in the country.
8. To arrive at many macro economic variables namely, Tax – GDP ratio, Current Account Deficit - GDP ratio, Fiscal Deficit - GDP ratio, Debt - GDP ratio etc.

Difficulties in Measuring National Income

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

Transfer payments

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

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

Difficulties in assessing depreciation allowance

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

Unpaid services

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

Income from illegal activities

Income earned through illegal activities like gambling, smuggling, illicit extraction of liquor, etc., is not included in national income. Such activities have value and satisfy the wants of the people but they are not considered as productive from the point of view of society.

Production for self-consumption and changing price

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

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

Capital Gains

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

Statistical problems

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

The following are the some of the statistical problems:

1. Accurate and reliable data are not adequate, as farm output in the subsistence sector is not completely informed. In animal husbandry, there are no authentic production data available.
2. Different languages, customs, etc., also create problems in computing estimates.
3. People in India are indifferent to the official inquiries. They are in most cases non-cooperative also.
4. Most of the statistical staff are untrained and inefficient.

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

National Income and Social Accounting

National income is also being measured by the social accounting method. Under this method, the transactions among various sectors such as firms, households, government, etc., are recorded and their interrelationships traced. The social accounting framework is useful for economists as well as policy makers, because it represents the major economic flows and statistical relationships among various sectors of the economic system. It becomes possible to forecast the trends of economy more accurately.

Social Accounting and Sector

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

  i.   Firms,
 ii.   Households,
iii.   Government,
 iv.   Rest of the world and
  v.   Capital sector.

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

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

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

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

- Rest of the world sector" relates to international economic transactions of the country. It contains income, export and import transactions,

external loan transaction, and allied overseas investment income and payments.

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

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

National Income and Welfare

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

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

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

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

National Income & Erosion of national Wealth

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

National income in terms of US$

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

Social and Environmental Cost

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

Chapter 4

Consumption and Investment Functions

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

Introduction

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

The primary macroeconomic objective is acceleration of growth of national income. We have already seen that national income comprises of consumption goods (C) and investment (I) goods. There is close correlation between investment and national income.

The multiplier refers to the change in national income resulting from change in investment. The value of multiplier itself depends on consumption function or marginal propensity to consume. The consumption function is the relationship between consumption expenditure and the national income. The unspent portion of national income is called saving which becomes investment and thereby capital. The relationship between consumption expenditure and the capital expenditure is explained by the principle of accelerator. All these variables are closely interconnected.

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

consumption Function
Meaning of Consumption Function

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

$$C = f(Y)$$

Where,

C = Consumption
Y = Income
f = Function

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

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

Table : 1 Income - Consumption Schedule (₹Crores)

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

If we take C = 100 + 0.8y, then MPC = 0.8 Here, if Y = 0, C = 100; if Y = 100, C = 180;

if Y = 200, C = 260;
if Y = 300, C = 340 (MPC = $\Delta c / \Delta y$ = 0.8)

In mathematical terms
C= a + b Y or C = 20 + 0.8Y

Where a>0 and b<1
C= Consumption
a= constant or intercept = 20

Y= income
b= MPC (Marginal prosperity to consume) = 0.8 = $\Delta c / \Delta y$

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

Here, when y = 120, C = 120 (Point B is the diagram)
When y = 180, C = 170, S = 10 (Point S is the diagram)

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

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

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

(i) The Average Propensity to Consume= c/ y
(ii) The Marginal Propensity to Consume = $\Delta c / \Delta y$

(iii) The Average Propensity to Save= s / y
(iv) The Marginal Propensity to Save = Δs / Δy

(1) The Average Propensity to Consume:

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

$$APC = C/Y$$

Where,
C= Consumption
Y = Income

(2) The Marginal Propensity to Consume:

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

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

Where,
ΔC= Change in Consumption
ΔY = Change in Income
MPC is positive but less than unity

$$0 ‹ \Delta C / \Delta C ‹ I$$

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

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

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

$$\boxed{APS = S / Y}$$

Where,
S= Saving
Y=Income

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

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

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

$$\boxed{APS = \Delta S / \Delta Y}$$

ΔS = Change in Saving
ΔY= Change in Income
Since MPC+MPS=1
MPS=1-MPC and MPC = 1 - MPS

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

Income Y	Consumption C	APC % C/Y	APS % S/Y	MPC $\Delta C / \Delta Y$	MPC $\Delta S / \Delta Y$
120	120	(120/120) 100 = 100	(0/120) 0	-	-
180	170	(170 / 180) 100 = 94	(10 / 180) 100	50 / 60 = 0.83	0.17

Keyne's Psychological Law of Consumption:

Keynes propounded the fundamental Psychological Law of Consumption which forms the basis of the consumption function. He stated that "The fundamental psychological law upon which we are entitled to depend with great confidence both prior from our knowledge of human nature and from the detailed facts of experience, is that men are disposed as a rule and on the average to increase their consumption as their income

increases but not by as much as the increase in their income." The law implies that there is a tendency on the part of the people to spend on consumption less than the full increment of income.

Assumptions:

Keynes's Law is based on the following assumptions:

1. Ceteris paribus (constant extraneous variables):

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

2. Existence of Normal Conditions:

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

3. Existence of a Laissez-faire Capitalist Economy:

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

Propositions of the Law:

    This law has three propositions:

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

(2) **The increased income will be divided in some proportion between consumption expenditure and saving.** This follows from the first

proposition because when the whole of increased income is not spent on consumption, the remaining is saved. In this way, consumption and saving move together.

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

The three propositions of the law

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

Proposition (1):

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

Proposition (2):

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

Proposition (3):

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

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

Proposition (1):

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

Proposition (2):

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

Proposition (3):

Increases in income to 180 and 240 lead to increased consumption 170 and 220 and increased saving 20 and 10 than before. It is clear from the widening area below the C curve and the saving gap between 45° line and C curve.

Determinants of Consumption function: Subjective and Objective Factors

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

A) Subjective Factors

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

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

1. The motive of precaution: To build up a reserve against unforeseen contingencies. Eg. Accidents, sickness
2. The motive of foresight: The desire to provide for anticipated future needs. Eg. Old age
3. The motive of calculation: The desire to enjoy interest and appreciation.

4. The motive of improvement: The desire to enjoy for improving standard of living.

5. The motive of financial independence.

6. The motive of enterprise (desire to do forward trading).

7. The motive of pride. (desire to bequeath a fortune)

8. **The motive of avarice.** (purely miserly instinct)

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

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

1. The motive of enterprise: The desire to obtain resources to carry out further capital investment without incurring debt.

2. The motive of liquidity: The desire to secure liquid resources to meet emergencies, and difficulties.

3. The motive of improvement: The desire to secure a rising income and to demonstrate successful management.

4. The motive of financial prudence: The desire to ensure adequate financial provision against depreciation and obsolescence and to discharge debt.

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

B) Objective Factors

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

1) Income Distribution

If there is large disparity between rich and poor, the consumption is low because the rich people have low propensity to consume and high

propensity to save. The community with more equal distribution of income tends to have high propensity to consume. This view has been corroborated by V.K.R.V. Rao.

2) Price level

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

3) Wage level

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

4) Interest rate

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

5) Fiscal Policy

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

6) Consumer credit

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

7) Demographic factors

Ceteris paribus, the larger the size of the family, the grater is the consumption. Besides size of family, stage in family life cycle, place of

residence and occupation affect the consumption function. Families with children of college education stage spend more than those of primary education and urban families spend more than rural families.

8) Duesenberry hypothesis

Duesenberry has made two observations regarding the factors affecting consumption.

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

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

9) Windfall Gains or losses

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

Investment Function

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

$I = f(r)$
I= Investment (Dependent variable)
r = Rate of interest (Independent variable)

Meaning of investment

The term investment means purchase of stocks and shares, debentures, government bonds and equities. According to Keynes, it is only

financial investment and not real investment. This type of investment does result in an addition to the stock of real capital of the nation.

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

Types of investment
Autonomous Investment and Induced Investment

Autonomous Investment

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

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

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

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

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

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

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

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

SI. No	Autonomous Investment	Induced Investment
1.	Independent	planned
2.	Income inelastic	Income elastic
3.	Welfare motive	Profit motive

Determinants of Investment Function

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

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

However, Keynes contended that business expectations and profits are more important in deciding investment. He also pointed out that

investment depends on MEC (Marginal Efficiency of Capital) and rate of interest.

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

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

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

Relationship between rate of interest and Investment:

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

Interest rates and investment

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

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

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

1. With higher rates, it is more expensive to borrow money from a bank.

2. Saving money in a bank gives a higher rate of return. Therefore, using savings to finance investment has an opportunity cost of lower interest payments.

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

Marginal Efficiency of Capital.

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

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

MEC depends on two factors:

1. The prospective yield from a capital asset.

2. The supply price of a capital asset.

Factors Affecting MEC:

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

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

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

a) Short - Run Factors

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

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

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

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

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

b)Long - Run Factors

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

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

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

improvements encourage investment in various projects and increase marginal efficiency of capital.

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

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

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

Marginal Efficiency of Investment

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

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

Multiplier

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

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

Assumptions of Multiplier:

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

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

Marginal propensity to consume and multiplier.

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

Symbolically

$$\boxed{MPC = \Delta C/\Delta Y}$$

The value of multiplier depends on MPC

Multiplier

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

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

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

Using formula k = 1/1- MPC
1/1-0.75 =1/0.25 =4

Table 4.

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

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

C =100 + 0.8 y;   I =100   I = 10

$$Y = C + I$$

= 100 + 0.8y + 100
0.2y = 200
Y = 1000

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

S = 100 = I
After I is raised by 10, now I = 110,
Y = 100 + 0.8y + 110
0.2y = 210

$$Y = 210/0.2 = 1050$$

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

Diagrammatic Explanation.

At 45° line y = C+ S
It implies the variables in axis and axis are equal.
The MPC is assumed to be at 0.8 (C = 100 + 0.8y)
The aggregate demand (C+I) curve intersects 45° line at point E.
The original national income is 500.
(C = 100 + 0.8y = 100 + 0.8(500) = 500)

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

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

Y = 210/0.2 = 1050

C = 940; S = 110 = I

Working of Multiplier

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

Positive Multiplier and Negative Multiplier Effects	
Positive Multiplier	Negative Multiplier
When an intial increases in an injection (or a decrease in a leakage) leads to a greater final increase in	When an intial increases in an injection (or an increase in a leakage) leads to a greater final decrease in

| real GDP. | real GDP. |

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

$\Delta Y = 100 + 100 \times 0.8 + 100 \times (0.8)^2 + 100 \times (0.8)^3$

$= 100 + 80 + 64 + 51.2...$
$= 500$

that is $100 \times 1/1 - 4/5$
$100 \times 1/1/5$
$100 \times 5 = Rs.\ 500$ crores

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

Then $Y = 100 + 0.8Y + 100$
$0.2Y = 200$
$Y = 200/0.2 = 1000 \rightarrow$ Point B

If I is increased to 110, then
$0.2Y = 210$
$Y = 210/0.2 = 1050 \rightarrow$ Point D

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

This is due to multiplier effect.

At point A, $Y = C = 500$

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

At point B, $Y = 1000$
$C = 100 + 0.8\ (1000) = 900;\ S = 100 = I$

At point D, $Y = 1050$

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

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

This is multiplier effect $(K = 5)$

K = 1/0.25 = 5

Classification of Multiplier:

1. Static and dynamic multiplier

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

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

Leakages of multiplier

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

Payment towards past debts.

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

Purchase of existing wealth

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

Import of goods and services

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

Non availability of consumer goods

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

Full employment situation

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

Uses of multiplier

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

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

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

4. It helps in formulating Government policies.

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

KINDS OF MULTIPLIER

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

The Accelerator Principle

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

Meaning

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

Accelaration Effects		
Increase in consumer demand	Films get chose to fill capacity	Films Invest in meet rising demand

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

ΔI = Change in investment outlays (Say 100)

ΔC = Change in consumption demand (Say 50)

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

Definition

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

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

Accelerator = 100/50 = 2

Assumptions

1. Absence of excess capacity in consumer goods industries.

2. Constant capital - output ratio

3. Increase in demand is assumed to be permanent

4. Supply of funds and other inputs is quite elastic

5. Capital goods are perfectly divisible in any required size.

Operation of the Acceleration Principle

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

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

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

Diagrammatic illustration:

Operation of Accelerator.

SS is the saving curve. II is the investment curve. At point E1, the economy is in equilibrium with OY1 income. Saving and investment are equal at OI2. Now, investment is increased from OI2 to OI4. This increases

income from OY1 to OY3, the equilibrium point being E3. If the increase in investment by I2 I4 is purely exogenous, then the increase in income by Y1 Y3 would have been due to the multiplier effect. But in this diagram it is assumed that exogenous investment is only by I2 I3 and induced investment is by I3 I4. Therefore, increase in income by Y1 Y2 is due to the multiplier effect and the increase in income by Y2 Y3 is due to the accelerator effect.

Limitations

1. The assumption of constant capitaloutput ratio is unrealistic.

2. Resources are available only before full employment.

3. Excess capacity in capital goods industries is assumed.

4. Accelerator will work only if the increased demand is permanent.
5. Accelerator will work only when credit is available easily.

6. If there is unused or excess capacity in the consumer goods industry, the accelerator principle would not work.

Super Multiplier: (k and β interaction)

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

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

Leverage Effect

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

Symbolically

$$Y = C + I_A + I_P$$

Y = Aggregate income.
C = Consumption expenditure
IA= autonomous investment
IP= induced private investment.

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CHAPTER 3

Theories of Employment and Income

> "Unemployed people suffer the demoralization, frustration and loss of self respect that come from enforced idleness".
>
> - Wonnacott. P and Wonnacott. R

Introduction

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

Meaning of Full Employment

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

Lerner defines full employment as "that level of employment at which any further increase in spending would result in an inflationary spiral of wages and prices".

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

Unemployment and its types

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

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

Types of unemployment:

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

The following are the types of unemployment.

1. Cyclical Unemployment

This unemployment exists during the downturn phase of trade cycle in the economy. In a business cycle during the period of recession and depression, income and output fall leading to widespread unemployment. It is caused by
deficiency of effective demand. Cyclical unemployment can be cured by public investment or expansionary monetary policy.

2. Seasonal Unemployment

This type of unemployment occurs during certain seasons of the year. In agriculture and agro based industries like sugar,production activities are carried out only in some seasons. These industries offer employment only

during that season in a year. Therefore people may remain unemployed during the off season. Seasonal unemployment happens from demand side also; for example ice cream industry, holiday resorts etc.

3. Frictional Unemployment (Temporary Unemployment)

Frictional unemployment arises due to imbalance between supply of labour and demand for labour. This is because of immobility of labour, lack of necessary skills, break down of machinery, shortage of raw materials etc. The persons who lose jobs and in search of jobs are also included under frictional unemployment.

4. Educated Unemployment

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

5. Technical Unemployment

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

6. Structural Unemployment

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

7. Disguised Unemployment

Disguised unemployment occurs when more people are there than what is actually required. Even if some workers are withdrawn, production

does not suffer. This type of unemployment is found in agriculture. A person is said to be disguisedly by unemployed if his contribution to output is less than what he can produce by working for normal hours per day. In this situation, marginal productivity of labour is zero or less or negative.

Classical Theory of Employment

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

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

Say's Law of Market

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

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

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

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

Assumptions of the Say's law of market

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

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

Implications of Say's Law

1. There is no possibility for over production or unemployment.
2. If there exist unutilized resources in the economy, it is profitable to employ them up to the point of full employment. This is true under the condition that factors are willing to accept rewards on a par with their productivity.

3. As automatic price mechanism operates in the economy, there is no need for government intervention. (However, J.M. Keynes emphasized the role of the State)
4. Interest flexibility brings about equality between saving and investment.
5. Money performs only the medium of exchange function in the economy, as people will not hold idle money.

Criticisms of Say's Law

The following are the criticisms against Say's law:

1. According to Keynes, supply does not create its demand. It is not applicable where demand does not increase as much as production increases.
2. Automatic adjustment process will not remove unemployment. Unemployment can be removed by increase in the rate of investment.
3. Money is not neutral. Individuals hold money for unforeseen contingencies while businessmen keep cash reserve for future activities.
4. Say's law is based on the proposition that supply creates its own demand and there is no over production. Keynes said that over production is possible.
5. Keynes regards full employment as a special case because there is under-employment in capitalist economies.
6. The need for state intervention arises in the case of general over production and mass unemployment.

Keynes' Theory of Employment and Income

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

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

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

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

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

Effective Demand

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

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

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

$$ED = Y = C + I = Output = Employment$$

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

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

Aggregate Demand Function (ADF)

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

Aggregate demand has the following four components:

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

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

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

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

Aggregate Supply Function (ASF)

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

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

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

The components of aggregate supply are:

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

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

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

AGGREGATE SUPPLY CURVE

Z curve is linear where money wages remains fixed; Z1 curve is non - linear since wage rate increases with employment. When full employment level of Nf is reached it is impossible to increase output by employing more men. So aggregate supply curve becomes inelastic (Vertical straight line).

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

Equilibrium between ADF and ASF

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

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

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

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

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

In the figure, the aggregate demand and aggregate supply reach equilibrium at point E. The employment level is No at that point.

At ON1 employment, the aggregate supply is $N_1 R_1$. But they are able to produce $M_1 N_1$. The expected level of profit is $M_1 R_1$. To attain this level of profit, entrepreneurs will employ more labourers. The tendency to employ more labour will stop once they reach point E. At all levels of employment beyond, ON_o, the aggregate demand curve is below the aggregate supply curve indicating loss to the producers. Hence they will never employ more than ON_o labour. Thus effective demand concept becomes a crucial point in determining the equilibrium level of output in the capitalist economy or a free market economy in the Keynesian system.

It is important to note that the equilibrium level of employment need not be the full employment level (N1) from the Figure, it is understood that the difference between N_o – N_f is the level of unemployment. Thus the concept of effective demand becomes significant in explaining the under employment equilibrium.

S.No	Keynesianism	Classicism
1.	Short-run equilibrium	Long-run equilibrium
2.	Saving is a vice	Saving is a social virtue.
3.	The function of money is a medium of exchange on the one side and a store of value on the other side.	The function of money is to act as a medium of exchange
4.	Macro approach to national problems	Micro foundation to macro problems
5.	State intervention is advocated.	Champions of Laissez-fair

		policy
6.	Applicable to all situations – full employment and less than full employment.	Applicable only to the full employment situation.
7.	Capitalism has inherent contradictions	Capitalism is well and good.
8.	Budgeting should be adjusted to the requirements of economy.	Balanced budget
9.	The equality between saving and investment is advanced through changes in income.	The equality between saving and investment is achieved through changes of rate of interest.
10.	Rate of interest is determined by the demand for and supply of money.	Rate of interest is determined by saving and investment.
11.	Rate of interest is a flow.	Rate of interest is a stock.
12.	Demand creates its own supply.	Supply creates its own demand.
13.	Rate of interest is a reward for parting with liquidity.	Rate of interest is a reward for saving.

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