DIRECTORATE OF DISTANCE EDUCATION
UNIVERSITY OF JAMMU
JAMMU

SELF LEARNING MATERIAL

B.A Semester-IIIrd

SUBJECT : ECONOMICS **UNIT : I-IV**
COURSE CODE : EC- 301 **LESSON NO : 1-19**

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http:/www.distanceeducationju.in

Printed and Published on behalf of the Directorate of Distance Education, University of Jammu, Jammu by the Director, DDE, University of Jammu, Jammu.

ECONOMICS

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Format Editing & Proof Reading by
Dr. Neelam Choudhary

Printed by : Ashish Art Printers /20 / Qty. 200

ECONOMICS

University of Jammu

Semester III

Syllabus of Economics for the Examinations to be held in the years 2015, 2016, 2017, 2018, 2019 & 2020

Course N0: 301
Duration of Examilnation : 3 Hours

Title : Macroeconomics
Total Marks : 100
External Examination : 80
Internal Assessment : 20

PREAMBLE: The aim of this course is to give an overview as to how the economy behaves when the behaviour of the various economic agents are aggregated. The role of the state and its influence on the economy through its powers to tax, spend and control the supply of money is a major area of economic analysis in terms of theoretical, empirical as well as policy-making issues. Macroeconomics has an extensive, substantive as well as methodical content. It deals with the functioning of the economy as a whole, including how the economy's total output of goods and services and employment of resources is determined and what causes these totals to fluctuate. This paper has been designed to make the undergraduate students aware of the basic theoretical framework underlying the field of Macroeconomics.

UNIT : 1 National Income and Social Accounts:

National income- concepts, methods of measurement: Difficulties in measuring national income and Uses of national income; National income identities with govemment and International trade. Two sector and three-sector models.

UNIT: 2 Output and Employment:

The Principle of Effective Demand; Consumption function: Investment function (autonomous, induced and Marginal Efficiency of Capital); Saving and Investment (ex-post and ex-ante)equilibrium; Investment Multiplier and its effectiveness in LDCs.

UNIT: 3 Financial Markets and Macro Economic Theory:

Money Market - concept. functions and constituents of organised Indian money market:

Characteristics of a developed money market: Monetary and Fiscal policies - meaning, objectives and role in developing economics; ISLM Model.

UNIT : 4 Trade cycles, Inflation and Open Economy:

Trade cycles - nature and characteristics : Control of trade cycles - Counter -cylical Policies. Inflation - types, causes of demand pull and cost push inflation; Effects and methods to control inflation;Concepts of reflation and deflation; Determination of the Equilibrium National Income in a Small Open Economy, Foreign Trade Multiplier; Equilibrium in the Goods Market.

Note for Paper setting : The question paper will contain two sections. In the first section, two questions from each unit i.e. 8 questions in total will be asked. The candidate will be required to answer any four questions of 6 marks each (choosing one question from each unit), word limit is not more than 250 words each. Second section will contain two questions from each unit i.e. 8 questions in total. The candidate will be required to answer question from each unit i.e a total of 4 questions. There will be internal choice within each unit. Each question will carry 14 marks and word limit is not more than 600 words.

NATIONAL INCOME - MEANING OF NATIONAL INCOME, CONCEPT OF NATIONAL INCOME AND METHODS OF CALCULATING NATIONAL INCOME

B.A. Sem 3rd **UNIT I**

EC - 301 **LESSON: 1**

STRUCTURE:

1.1 Objectives

After reading this lesson, the learners are expected to:

- know or understand the meaning of national income

- know the various concepts of National Income
- have knowledge about the various methods of calculating National Income.
- know about a country's aggregate economic activity.

1.2 Introduction

Like many other terms in common use, the concept "national income" has various connotations. For example, national income is variously described. Sometimes, it is known as "national income" at other times "national product" or "national dividend". As a matter of fact, all these terms mean one and the same thing.

Modern economy is money economy. Thus, national income of a country is expressed in money terms. National Sample Survey has therefore defined national income as money measures of the net aggregates of all commodities and services accruing to the inhabitants of a country during a specific period.

An important point about national income is that it is always expressed with reference to a time interval. It is meaningless to talk of national income without mentioning the period over which it is generated.

1.3 National Income

1.3.1 Meaning of National Income

By National Income we mean the sum total of factor incomes earned by normal residents of a country during the period of one year.

$$NY = \sum_{i=1}^{n} FY_i$$

NY = National income

S = Sum of total ($\sum$ is called sigma)

FY = Factor income

n = all normal residents of a country

National income is also defined as the sum total of the market value of final goods and services, produced by normal residents of a country in one year.

According to Marshall, "The labour and capital of a country, acting upon its natural resources, produce annually a certain net aggregate of commodities, material and immaterial, including services of all kinds. The limiting word "net' is needed to provide for using up of raw and half-finished commodities and for the wearing out and depreciation of plant which is involved in production ; all such waste must, of course, be deducted from the gross produce before the true or net income can be found. And net income due on account of foreign investments must be added in. This is the true net annual income or revenue of the country, or the national dividend."

In the words of A.C. Pigou, "The national dividend is that part of the objective income of the community including, of course, income derived from abroad, which can be measured in money."

In the words of Prof. J.R. Hicks, "The national income consists of a collection of goods and services reduced to a common basis by being measured in terms of money".

1.3.2 Concepts of National Income

- Gross Domestic Product (GDP).
- GDP at Constant Prices and Current Prices.
- GDP at Factor Cost and GDP at Market Price.
- Net Domestic Product.
- Gross National Product (GNP).
- Net National Product (NNP).
- NNP at Factor Cost or National Income.
- Private Income
- Personal Income

- Personal Disposable Income.

Following is a brief description of these concepts.

Gross Domestic Product (GDP): Gross Domestic Product is the money value of all final goods and services produced in the domestic territory of a country during an accounting year. Domestic territory is defined to include : (i) Territory lying within the political frontiers, including territorial water of the country, (ii) Ships and aircrafts operated by the residents of the country between two or more countries, (iii) Fishing vessels, oil and natural gas rigs, and floating platform operated by the residents of the country in the international waters and (iv) Embassies, consulates and military establishments of the country located abroad.

GDP at Constant Prices and Current Prices: If the domestic product is estimated on the basis of the prevailing prices, it is called GDP at current prices. On the other hand, if GDP is measured on the basis of some fixed prices, that is prices prevailing at a point of time or in some base year, it is known as GDP at constant prices or real Gross Domestic Product.

GDP at Factor Cost and GDP at Market Price: GDP at factor cost is estimated as the sum of net value added by different producing units and the consumption of fixed capital. Since the net value added gets distributed as income to the owners of factors of production, we can also estimate GDP as the sum of domestic factor incomes and consumption of fixed capital. The market value of goods and services is not the same as the earnings of the factors of production. GDP at market prices include indirect taxes and exclude the subsidies given by the government. Therefore, in order to arrive at GDP at factor cost we must subtract indirect taxes from and add subsidies to GDP at market price. Thus,

$$GDP_{FC} = GDP_{MP} - IT + S,$$

where IT = indirect taxes and S = subsidies.

Net Domestic Product: When depreciation allowance (also called capital consumption allowance) is subtracted from GDP, we get Net Domestic Product. Thus, NDP = GDP - depreciation.

Gross National Product (GNP): Gross National Product is defined as the sum of the Gross Domestic Product and net factor incomes from abroad *i.e.,* incomes earned by country's residents abroad minus incomes earned by foreign residents from the country. Thus, GNP=GDP + NFIA (net factor income from abroad).

Two things must be noted with regard to GNP. *First,* it measures the market value of annual output. It is a *monetary measure*. *Secondly,* it includes the market value of final goods and ignores transactions involving intermediate goods. Final goods are those goods which are being purchased for final use and not for resale or further processing.

Net National Product (NNP): Net National Product is the *net* production of goods and services in a country during the year. It is GNP *minus* the value of capital consumed or depreciated during the year.NNP = GNP-Depreciation. NNP then is simply GNP adjusted for depreciation charges. NNP is also sometimes referred to as *National Income at Market Prices.* NNP is a better concept than GNP, because it makes proper allowance for the depreciation suffered by machinery, equipment, buildings, etc., during the year. This concept is also highly useful as it gives an idea of *net* increase in the total production of the country. It also proves helpful in the analysis of the long-run problem of maintaining and increasing the supply of physical capital in the country. NNP is, therefore, a highly useful concept for the study of 'Growth Economics'.

NNP at Factor Cost or National Income: National income is the total of all income payments received by the factors of production - land, labour, capital and organisation. It can be derived from the NNP (net national product) in the following manner:

National Income = Net National Product - Indirect Taxes +

Subsidies - Profits accruing to the Government

Private Income: Private income is the income of the private sector obtained from any source, productive or otherwise, and the retained income of the corporations.

According to Central Statistical Organization, "Private Income is the total of factor income from all sources and current transfers from the government and rest of the world accruing to private sector".

Personal Income: Personal income is the total of all current income received by households from all sources. It is, in fact, the sum total of all types of factor incomes actually received by the households and current transfers.

Personal Income = Private Income – Undistributed Profits Or Corporate Saving – Corporation Tax.

Personal Disposable Income: Personal Disposable Income is that part of personal income which the households can spend the way they like. It reflects purchasing power of the households. Disposable income is either spent or saved. In other words, Personal Disposable Income is the income remaining with individuals and households after deduction of all taxes levied against their income and their property by the government.

It is calculated by deducting direct taxes and miscellaneous fees, fines, etc. paid by the individuals from their income.

Thus,

Personal Disposable Income = Personal Income – Direct Personal Tax – Miscellaneous Receipts of the Government Administrative Department or Miscellaneous fees and fines paid by the Households.

Check your progress-I

- Discuss the concept of national income

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- What are the different concepts of national income?

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· Distinguish between personal income and personal disposable income

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1.3.3 Methods of Measuring National Income.

There are three methods of measuring national income, because national income can be looked at from three view points as total output, product or total expenditure. All these three are flows in the economy per period of time. They are three names for the same thing which is the aggregate output. As Cairncross has written, "The national income can be looked at in any one of the three ways : as the national income measured by adding up everybody's output….; as the national outlay measured by adding up the value of all the things that people buy and adding in their saving."

Since the volume of flows in a particular period of time must equal, we can closely define a fundamental accounting identity which applies in a hypothetical economy in a particular period. It is:

Income = Product = Expenditure on product or, more formally,

National Income = Net National Product = Expenditure on net national product.

or

National Income	=	Gross		Expenditure
+		National	=	on gross
Depreciation		product		national product

It is clear from this fundamental identity that the measure of national income must give us the same result whichever way we adopt. We explain the three methods of measuring national income below. The three methods measure the same flow. When production takes places, factors of production are paid. There is an income flow and an output flow. Output is purchased by people through expenditure which gives rise to income. Thus income, output and expenditure are the three facets of the same concept.

1.3.3.1 Product Method or Value Added Method

Product method or Value added method is that method, which measures the national income by estimating the contribution of each producing enterprise to production in the domestic territory of the country in an accounting year. The entire output of final goods and services is multiplied by their respective market prices to find out the gross national product. The gross national product may be arrived at by adding up the values imparted to the intermediate goods and services during different process of production. Whether we employ the 'final products' method or the 'value added' method, the total money-value of the gross national product would be the same. From the gross national product so estimated, we have to deduct the gross depreciation of equipment and machinery involved in the process of production to arrive at the country's national income.

Value-added method measures the contribution of each producing enterprise in the domestic territory of the country. This method involves the following steps :

(a) Identifying the producing enterprise and classifying them into industrial sectors according to their activities,

(b) estimating net value added by each producing enterprise as well as each industrial sector and adding up the net value added by all the sectors.

All the producing enterprises are broadly classified into three main sectors, namely:
(i) Primary sector which includes agriculture and allied activities,

(ii) Secondary sector which includes manufacturing units and

(iii) Tertiary sector which includes services like banking, insurance, transport and communications, trade and professions. These sectors are further divided into sub-sectors and each sub-sector is further divided into commodity group or service group.

For calculating the net product of the industrial sector we need to know about gross output of the sector, the raw materials and intermediate goods and services used by the sector and the amount of depreciation. For an individual unit, we subtract from the value of its gross output, the value of raw material and intermediate goods and services used by it and from this, we subtract the amount of depre-ciation to get net production

value added by each unit. Adding value-added by all the units in one sub-sector, we get value added by the sub--sector. By adding net products of all the sub-sectors, we get value-added or net product of sector. For the economy as a whole, we add net products contributed by each sector to get Net Domestic Product. If the information regarding the final output and intermediate goods is available in terms of market prices, we can easily convert it in terms of factor costs by subtracting net indirect taxes from it. If we add or subtract net income from abroad, we get Net National Product at factor cost which is nothing but National Income.

Precautions regarding Product Method

Following precautions must be taken into account while using the products method:

- Value of the sale and purchase of second hand goods is not included in value added.
- Commission earned on account of the sale and purchase of second hand goods is included in the estimation of value added.
- Own account production of goods of the producing units is taken into account while estimating value added.
- Value of intermediate goods is not included in the estimation of value added.
- Imputed value of production for self-consumption is taken into account.
- Imputed rent on the owner occupied house is also taken into account.
- Services for self-consumption are not considered while estimating value added.

1.3.3.2 Income Method According to this method, the incomes accruing to all the factors of production during the process of production are aggregated together to arrive at the national income of the country. This is known as *national income at factor cost*. As is well known, the various factors of production are paid remuneration for the services rendered by them in production. These payments are known as factor payments. They represent the *costs* of the producers. But for the factors of production they constitute *factor-incomes* which have to be aggregated to estimate the national income of the country.

Thus, according to this method, the national product is obtained by adding up the factor-incomes accruing to the concerned factors during the process of production.

Normally, it *is* difficult to separate labour income from capital income because in many instances people provide both labour and capital services. In order to overcome this difficulty, a new category of income, called mixed income, is introduced which includes all those incomes which are difficult to separate.

Precautions while using Income Method

The following precautions are to be taken while using income method:

- Transfer earnings like old age pensions, unemployment allowances, scholarships, pocket expenses, etc. should not be included in national income.
- Income from illegal activities like smuggling, theft, gambling, etc. should not be included in national income.
- Sale proceeds of second hand goods like second hand car, second hand house, second hand TV sets are not included in national income.
- The sale proceeds of shares and bonds are not included in national income.
- Windfall gains, like lotteries and capital gains should not be included as there is no value addition corresponding to windfall gains.
- Imputed rent of owner occupied houses is included in national income.
- Imputed value of production of goods for self-consumption should be included but value of self-consumed services should not be included.
- Indirect taxes like sales tax, excise duty, etc. tend to increase the market price of goods and services. These are included in the estimation of national income at market price but are not to be included while estimating national income at factor cost.
- Corporate tax, dividends and undistributed profits are all the components of corporate profits. Once profit is included in the estimation of national income, any

of these components should not be separately added.

- Income tax is paid out of compensation of employees. It should not be separately added in the estimation of national income.

1.3.3.3 Expenditure Method Expenditure method is the method which measures final expenditure on gross domestic product at market price during an accounting year. Final expenditure is equal to the gross domestic product at market price. This is also called 'Income Disposal Method' or Consumption and Investment Method.

Precautions while using Expenditure Method

The following precautions are to be taken while using expenditure method:

- Final Expenditure is to be taken into account to avoid error of double counting.
- The intermediate expenditure is not included in the calculation of national income.
- Expenditure on second hand goods is not included.
- Expenditure on shares and bonds is not included in total expenditure, as these are mere paper claims and are not related to the flow of final goods and services. Such expenditures do not cause any value addition.

Check your progress-II

· Discuss the different methods of measuring national income

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· What precautions should be taken while measuring national income through income method and expenditure method?

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- Why should double counting be avoided while calculating national income?

1.4 Let us sum up

From the above discussion, one can conclude that, national income refers to the income of a country, its measurement is bound to a specified time period say year; and it includes all the goods and services which have exchange value and avoid double counting. There are various concepts of national income and different methods of calculating/ measuring national income such as income method, expenditure method, product method etc. Each country chooses the method which suits it the most.

1.5 References

- Edey, H.C. and Peacock, 'A.T. National Income and Social Accounting.'
- Mithani, D.M. 'Money, Banking, International Trade and Public Finance.'
- Shapiro Edward, 'Macroeconomic Analysis.'

Examination oriented questions

- What is national income? Explain the different concepts of national income.
- What are the different methods of measuring national income?
- What precautions should be taken while calculating income through different methods?

DIFFICULTIES IN MEASURING NATIONAL INCOME AND USES OF NATIONAL INCOME

B.A. Sem 3rd **UNIT I**

EC - 301 **LESSON: 2**

STRUCTURE:

2.1 Objectives

After studying this lesson, the learners are expected to:

- familiarize themselves with the difficulties in the measurement of national income.
- know how to remove these difficulties.
- know about the nature of difficulties in the measurement of national income.
- understand the uses / importance of national income

2.2 Introduction

While estimating national income, statisticians and economists usually face the following types of difficulties :

- Conceptual and

- Statistical or practical.

The conceptual problem relates to how and what is to be included and what not, in the measurement of the national income. There are statistical problems too. Double counting must be avoided; otherwise there will be an exaggerated valuation of national output. Again, statistical data may not have perfect reliability when they are compiled from numerous sources.

2.3 Difficulties in the measurement of national income.

Although all the methods are used in all the countries to calculate national income, yet the calculation faces the following difficulties:

- **Difficulty of Defining the 'Nation'**. The first and foremost difficulty in measuring national Income is the defining of nations in national income. National income doesn't include just the income produced within the country, but also income earned in other countries, by way of shipping charges, interest, insurance and banking, minus any payments made to foreign countries. Therefore, the definition of nation goes beyond the political boundaries.

- **Non-Marketed Services.** Another important difficulty in the measurement of national income is regarding what kind of goods and services are to be included in the national income. Commodities and services having money value are included in the national income but there are goods and services which may have no corresponding flow of money payments. Services performed for love, kindness and mercy and not for money have an economic value but have no money value. The difficulty is whether these services should be included in national income and how to measure their money value. For example, a paid maid servant's services are included in the national income but later when she marries the master, she is not paid any thing, though she continues to perform the services. There is, thus, a reduction in the national income.

- **Choice of method.** There are different methods of measuring national income. It becomes difficult for the statistician to decide which method to choose in the estimation of national income. It is, however, preferred to use these methods simultaneously depending upon the availability of data or statistics.

- **There is little occupational specialization.** Another difficulty in the way of measuring national Income is that there is little occupational specialization on the part of the people in underdeveloped countries. Most of people take up more than one activity to earn their livelihood. It becomes difficult to collect information about their incomes, etc. For example, the small farmers in India not only do farming, but are also engaged in other works during the slack season to supplement their meager earnings from agriculture.

- **Which Stage to choose.** Another problem is regarding the stage of economic activity at which national income is to be calculated. Which stage: production, consumption or distribution should be chosen depends on the immediate aim. If the aim is to show the economic progress and power of the economy, then the production stage would be more suitable, whereas if it is to measure the welfare of individuals, then consumption stage would be more appropriate.

- **Double Counting.** Another difficulty is of double counting, usually associated with the inventory method. Double counting implies the possibility of a commodity like raw material or labour being included in national income more than once, e.g., a farmer sells wheat worth rupees one hundred to a mill-owner. The mill owner further sells the wheat flour to a wholesale dealer, who further sells it to a retailer and who in turn sells it to consumer.If we calculate it at every stage, its money value will increase by eight hundred rupees; but the actual increase in national income has been to the extent of two hundred rupees only. The best way to avoid this difficulty is to calculate the value of only those goods and services that enter into final consumption.

- **Transfer Payments.** Transfer payment is another issue in calculating the national income. Individuals get pensions, scholarships, unemployment allowance and interest on public loans, but due to the very definition and nature of national income, these are to be excluded.

- **Price Changes.** Another difficulty in calculating national income is the price changes. When the price level in the country rises, the national income also shows an increase even though the production might have fallen. On the other hand, with a fall in price level, the national income shows decline even though the production might

have gone up. Thus, due to price changes the national income cannot be adequately measured.

- **Self-Consumed and bartered production.** Self-consumed and bartered production is another source of difficulty in the measurement of national income. A substantial part of the produce is not brought to the market to be exchanged with the measuring rod of money. This non-monetised part of the economy is having products either consumed directly by the producers or exchanged for other goods and services. Only rough estimates are made about the part of the produce. This difficulty is mostly in rural areas in agricultural sector of the economy.

- **No Systematic Accounts.** Majority of the producers do not keep any accounts of their produce because most of them are illiterate. They mostly produce for self-consumption, not for the market. Thus, the national income estimates are based only on guess work.

- **Inadequate and Unreliable Data**. Another important difficulty in the way of calculating national income is the inadequate and unreliable data. The available statistics in these countries are not only inadequate but also unreliable. For example, Statistics pertaining to agriculture in India are not complete. We have no reliable estimates of production costs in Indian agriculture. The same holds true for small-scale and medium industries.

- **Illiteracy and ignorance.** Majority of the small producers in the underdeveloped countries are illiterate and ignorant, and are not in a position to keep any account of their productive activities. So they cannot give to the investigator information about the quantity or value of their output. Inevitably, an element of guesswork enters into the assessment of income or output in large sectors of the economy.

Check your progress-I

- What are the various difficulties, a country comes across, while calculating national income?

- In a country with most of the production self consumed or bartered, shall we be able to get a true picture of the economy while estimating income?

2.4 Uses of National Income Accounting.

National Income is of great importance for the economy of a country. The importance of national income can be discussed as follows:

- **Estimation of National Income.** National income accounting helps to show the level of production in the economy and the level of income of the people.
- **Structure of the economy.** National income accounting gives us the knowledge about the Structure of the economy. We come to know how different sectors of the economy are interdependent.
- **Relative significance of the production sectors.** The estimation of national income gives us the knowledge about the relative significance of the production sectors of the economy. Production sectors of the economy include primary, secondary and tertiary sectors. National income accounting offers techniques of estimating output across these sectors. Accordingly, relative significance of these sectors is studied.
- **Factor wise distribution of Income.** National income accounting gives us the knowledge about the distribution of national income in terms of rent, interest, profit and wages. It also facilitate to show the relative significance of the factors of production in the economy.

- **Inter-regional and International Comparison.** Another importance of national income accounting is that it facilitates a comparison across different regions of a country and across different countries of the world.

- **Formulation of Policies.** With the help of Estimation of national income, we can formulate the policies for the economic growth and economic development of the country.

- **Economic Planning.** For economic planning, the national income accounting is of great significance. For economic planning, it is very important that the data pertaining to a country's gross income, output, saving, consumption from different sources should be available. Without these, economic planning is impossible.

- **Usefulness for research Scholars of Economics.** The national income accounting is very useful for the research scholars of Economics. The research scholars of Economics make use of the various data of the country's input, output, income, saving, consumption, investment, employment etc., which are obtained from social accounts.

- **Indicator of Economic Progress.** Another great importance of national income accounting is that it is an indicator of economic progress. The economic welfare of the country is directly linked with the increase in its national income. Hence, national income presents clear economic picture of the economy.

- **Inflationary and Deflationary Gaps.** With the help of national income accounting we are in a position to get a idea about the inflationary and deflationary gaps.

- **Budgetary Policies.** With the help of the national income accounting, we can formulate the budgetary policies. Modern governments try to prepare their· budgets within the frame work of national income data.

- **National Expenditure.** With help of national income accounting, we can get an idea how national expenditure is divided between consumption expenditure and investment expenditure.

- **Standard of Living.** With the help of national income accounting, we can compare the standards of living of people in different countries and of people living in the same country at different times.
- **International Sphere.** National income studies are very important in the international sphere. e.g. these enable us to determine the subscriptions and quotas of international organization like U.N.O., I.M.F., I.B.R.D. etc.
- **Defence and Development.** National income accounting gives us the knowledge to divide the national product between defence and development purposes.

Check your progress-II

- What are the various uses of national income? Discuss

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- How is national income an indicator of economic progress?

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Public Sector. With the help of national income accounting we can get an idea about the relative roles of public and private sectors in the economy.

2.5 Let us sum up

In this lesson, we learned that there are numerous problems faced by the economists during the measurement of national income. It is because most of the people in less-developed countries are illiterate, they do not have appropriate knowledge/accounts about their income and expenditure. There is problem of double counting and so on. Therefore, national income estimates in some countries are not very accurate, adequate and

dependable. But the calculation of national income is very useful to formulate budgetary policies, monetary policies and to know the real economic position of a country.

2.6 References

- Ahuja, H.L. 'Macro Economic (Theory and Public)'.
- Jhingan, M.L. 'Macro Economic Theory.'
- Mithani, D.M. 'Money, Banking, International Trade and Public Finance'.
- Vaish, M.C. 'Macro Economic Theory'.

NATIONAL INCOME IDENTITIES WITH GOVERNMENT AND INTERNATIONAL TRADE

B.A. Sem 3rd **UNIT I**

EC - 301 **LESSON: 3**

STRUCTURE:

3.1 Objectives

After going through this lesson, the learners are expected to :

- understand the difference between national income and national income accounts.
- know about the national income accounting
- know the difference between 'stock and flow'.

3.2 Introduction

National income is the money value of all goods and services produced in an economy during a specific period say during an year. National income accounts are systematic records and presentation of national income statistics. Thus, national income accounting also known as "economic accounting" or "social accounting" transcends the mere compilation and publication of statistical information. Its purpose is to present data in

such a form that interrelations among items are most easily discerned from the STRUCTURE of statements. Thus, national income accounts and statistics are two related but different things.

In the social accounts, transactions among various sectors such as firms, households, government and rest of the world are recorded and their interrelationships are traced.

3.3 National income identities with government and international trade.

Social Accounting is a method of presenting statistical inter-relationships between the different sectors of the economy for a thorough understanding of the economic conditions of the whole economy. It is a "method of studying the STRUCTURE of the body economic. It is a technique of presenting information about the nature of the economy of a society, with a view, not merely to get an idea of its prosperity, past or present, but also to get guide lines for collective (or state) policy to influence (or regulate) the economy."

In the words of Edey, Peacock and Cooper : "Social accounting is concerned with the statistical classification of the activities of human beings institutions, in ways which help us to understand the operation of the economy as a whole. The field of studies summed up by the word's social accounting' embraces, however, not only the classification of economic activity, but also the application of information thus assembled to the investigation of the operation of the economic system." In other words, social accounting describes statistically the economic activities of the different sectors of the entire economy, indicates their mutual relationship and provides a fame-work for analysis.

The principal forms of economy activity are production, consumption, capital accumulation, government transactions and transactions with the rest of world. If the incomings and outgoings of a country, relating to these five activities, are shown in the form of accounts, they show a closed network of flows representing the basic structure of the economy. These flows are always expressed in money terms. We classify these flows as under :

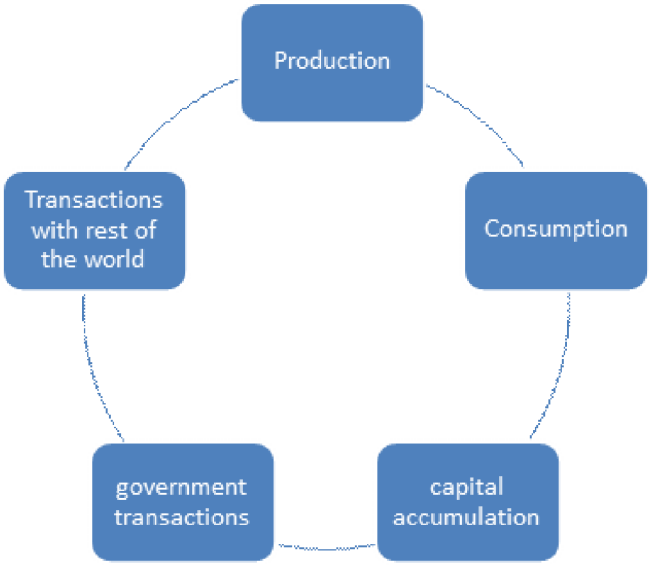

Fig: Forms of economic activity

Production Account : The production account relates to the business sector of economy. It indicates all forms of productive activity, i.e., manufacturing, trading etc. It covers public and private companies, proprietary firms and sole partnerships; and state-owned business undertaking. Since all productive activity takes place within this sector, all payments flow from it to the other sectors. The production account of the business sector is shown in table 3.1

Table 3.1 Production Account

(Rs. In crores)

Payments		Receipts	
Payments to personal sector	279	Consumption expenditure	219
Business saving	9	Government purchases	30
Government surplus	12	Gross private domestic investment	36
Total Gross national income	300	Net exports	15
		Total Gross national income	300

Payments to personal sector include rent, interest, dividends, wages, salaries, employee's compensation and proprietors' income. Business saving refers to producer's retained income or corporate saving. Government surplus relates to producers' net payments to government in the form of taxes and social security payments. These figures make up gross national income.

The receipt side of the production account shows the incomings to the business sector from sales of goods and services to the household or personal sector and the government. Gross private domestic investment comprises the gross flow of capital goods (fixed capital formation) and the net change in inventories. Net exports refers to the income earned by the business sector by selling goods and services to the rest of the world. It is the difference between exports and imports of goods and services by this sector. The total of all these items gives GNP by expenditure.

Consumption Account. The consumption account refers to the income and expenditure account of the household or personal sector. The household sector includes all consumers and non-profit making institutions such as clubs and associations. The consumption account is shown in Table 3.2

Table 3.2 Consumption Account

(Rs. In crores)

Consumption expenditure	219	Receipts from business, wages and salaries etc.	279
Payments to government	45		
Transfer to foreigners	6	Receipts from government	6
Personal saving	15		
Total Personal outlay and saving	300	Total Personal income	285

The major item in the left side of the consumption account is the expenditure by business and household consumers to satisfy their wants. Payments to government include taxes and special insurance contributions. The item 'transfers to foreigners' might be taken as related to investment in foreign securities or expenses by the residents on education or travel abroad. The right hand side of the account shows of business and household consumers as the major item which comes in the form of wages and salaries, profit, interest, divided, rent and receipts from current transfers, etc. Receipts from government include transfer payments and net interest payments on public debt.

Government Account. The government account relates to the outflows and inflows of the government sector. In the government sector are included all public authorities – centre, states and local authorities in a country. The government account is shown in Table 3.3.

Table 3.3 **Government Account**

(Rs. In crores)

Payments to business	30	Receipts from business	12
Payments to persons	6	Receipts from person	45
Payments to foreigners	6		
Government surplus	15		
Total Government outlay and surplus	57	Total Government receipts	57

All items in the above Table have already been explained in the two accounts contained in Table 3.1 and 3.2. However, the important point to be noted, is that state - owned business enterprises are excluded from the government sector as it has been included in the business sector because, like private enterprises public undertakings produce goods and services for sale.

Capital Account. The capital account shows that saving equals domestic and foreign investment. Savings is invested in fixed capital and inventories within the country and / or in international assets.

Let us take the inflows and outflows of the household, business and government sectors in relation to the foreign sector. The household sector buys goods imported from abroad and makes payment for them which is a leakage from the circular flow. The households may receive payments from the foreign sector for the services rendered by them in foreign countries.

On the other hand, the business sector exports goods to foreign countries and its receipts are an injection in the circular flow. Similarly, there are many services rendered by business firms to foreign countries such as shipping, insurance, banking etc. for which they receive payments from abroad. On the other hand, the business sector makes payments to the foreign sector for imports of capital goods, machinery, goods and services from abroad. These are the leakages from the circular flow.

Like the business sector, modern governments also export and import goods and services, and lend to and borrow from foreign countries. For all exports of goods, the government receives payments from abroad. It also receives royalties, interest, dividends etc. for investments made abroad. These are injections into the circular flow. On the other hand, the leakages are payments made for the purchase of goods and services to foreigners. Three sector model includes government sector in addition to the household sector and the business sector.

Further, imports, exports and transfer payments arise from the three domestic sectors - the household, the business and the government. The outflows and inflows pass through the foreign sector which is also called the "Balance of Payments Sector." If exports exceed imports, the economy has a surplus in the balance of payments. And if imports exceed exports, it has a deficit in the balance of payments. But in the long run, exports of an economy must balance its imports. This is achieved by the foreign trade policies adopted by the economy.

The whole analysis can be shown in simple equations :

$$Y = C + I + G$$

Where

Y represents the production of goods and services ;

C stands for consumption expenditure ;

I is the investment level in the economy; and

G stands for government expenditure..

Now we introduce taxation in the model to equate the government expenditure.

Therefore,

$$Y = C + S + T$$

Where,

S is saving ; and

T is taxation

By equating (I) and (2) we get

$$C + I + G = C + S + T$$

$$I + G = S + T$$

With the introduction of the foreign sector, we divide investment into domestic investment (I_d) and foreign investment (I_t) we get

$$I_d + I_t + G = S + T$$

But

$$I_t = X - M$$

Where

X is exports ; and

M is import

Therefore,

$$I_d + (X - M) + G = S + T$$

$$I_d + (X - M) = S + (T - G)$$

Thus, the equation shows the equilibrium condition in the circular flow of income and expenditure.

3.4 Let us sum up

In view of the above, it can be concluded that firms produce a given amount of goods and services and the market for these goods and services come from household, government, business and foreign sector. Thus the national income has/have identities with government and international trade.

3.5 References

Edley, H.C. and Peacock, A.T. National Income and Social Accounting.

Mithani, M.D. Money, Banking, International Trade and Public Finance.

Examination oriented questions

- Discuss the national income identities with government and international trade.
- Discuss the different forms of economic activity in an open economy.

TWO SECTOR AND THREE SECTOR MODELS

B.A. Sem 3rd **UNIT I**

EC - 301 **LESSON: 4**

STRUCTURE:

4.1 Objectives

After studying this lesson the learners shall:

- have an understanding about the circular flow of income in two sector economy.
- know about the circular flow of income in three sector economy.
- know about the role of government in a three sector model.

4.2 Introduction

In a two sector model of circular flow of income, there are only two sectors. Hence, we shall study about the activities of firms (business sector) and households only. In a three sector model of economy, we shall incorporate the role of government in the economic life of any country.

4.3 Circular flow of income in a two sector model

The circular flow of income and expenditure refers to the process whereby the national income and expenditure of an economy flow in a circular manner continuously through time. The various components of national income and expenditure such as saving, investment, taxation, government expenditure, exports, imports, etc. are shown in the form of current and cross-current in such a manner that the national income equals national expenditure.

We begin with a simple hypothetical economy where there are only two sectors, the household and business. The household sector owns all the factors of production, that is, land, labour and capital. This sector receives income by selling the services of these factors to the business sector. The business sector consists of producers who produce products and sell them to household sector or consumers. Thus, the household sector buys the output of products of the business sector. The circular flow of income and expenditure in such an economy is shown in given figure. 1 where the product market is shown in the upper portion and the factor market in the lower portion. In the product market, the household sector purchases goods and services from the business sector while in the factor market the household sector receives income from the former for providing service.

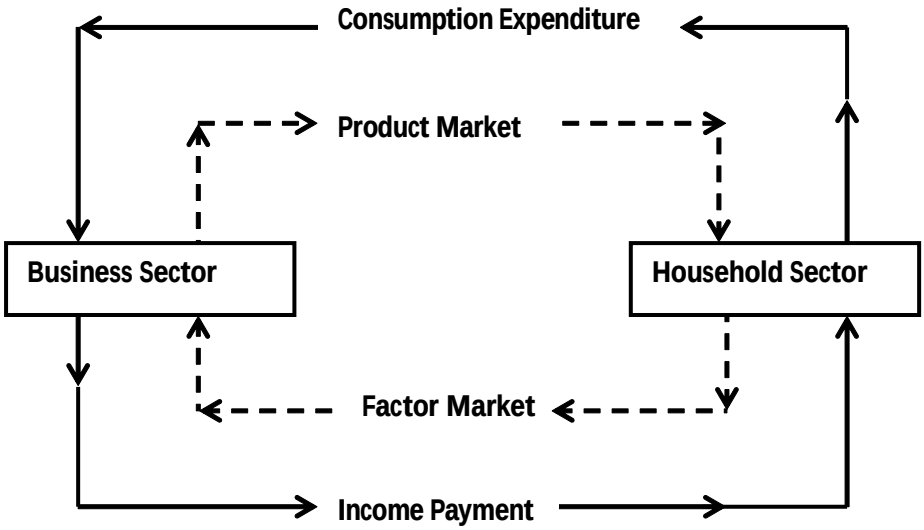

Figure 4.1

Thus, the household sector purchases all goods and services provided by the business sector and makes payment to the latter in lieu of these. The business sector, in turn makes payments to the households for the services rendered by the latter to the business - wage payments for labour services, profit for capital supplied; etc. Thus payments go around in a circular manner from the business sector to the household sector, and from the household sector to the business sector, as shown by arrows in the outer portion of the figure 4.1. There are also flows of goods and services in the product market, and services flow from the household sector to the business sector in the factor market, as shown in the inner portion of the figure1. These two flows give GNP=GNI. From this circular flow, one can understand that for every flow, there is a counter-flow. In other words, what is expenditure for one economic entity i.e. household sector is income for the other i.e. firms and vice versa. It is assumed that there is no leakage and the circular flow continues uninterrupted.

Check your progress-I

- Discuss the inflows and outflows of income in case of a two sector model

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- Discuss how households' income is firms' expenditure and vice versa

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4.4 Circular flow of income in a three sector model.

When we discuss the circular flow of income and expenditure in a two sector model, we assume the case of an economy with no role of government. But in fact, the government has a role to play. In a three sector model, through different interactions

between the government sector and the firms on the one hand and between the government sector and households on the other we can show this interdependence and inter-relationship.

The circular flow of income is well illustrated with the help of following diagram.

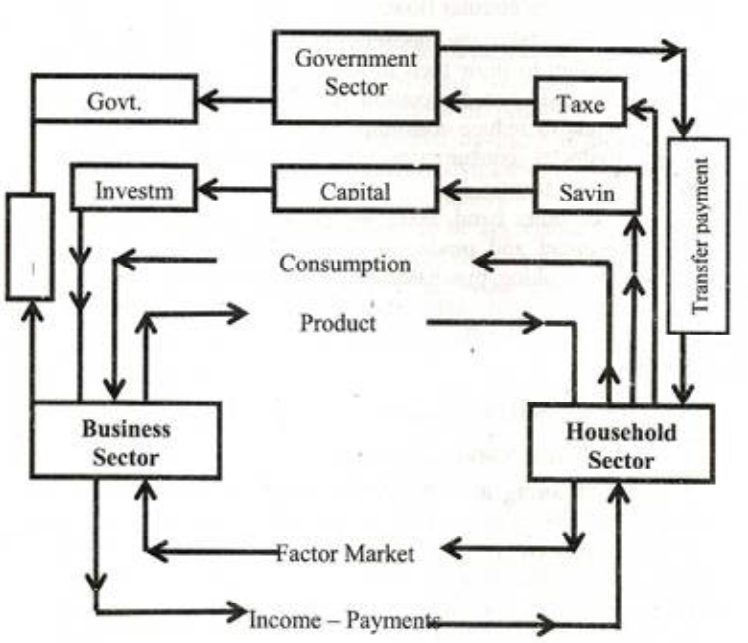

Fig.4.2

The factor payments from firms or business sector to the household sector and the supply of factors of production from household sector to firms have been shown by the direction of arrows drawn. The capital market has a role in mobilizing the savings of household sector and making the funds available to business sector. There are taxes which flow from households and business sector to the government. There are outflows from government sector to these sectors through transfer payments, subsidies etc. This is how the circular flow works.

Check your progress-II

- How does the addition of government affect the circular flow of income in an economy?

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- Discuss how income and expenditure flow across three economic entities in case of a three sector model.

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4.5 Let us sum up

We learned about the various kinds of interactions between household and business sectors in case of a two sector model . We also learned how the three sectors interact and how inflows and outflows continue in the circular flow of income when government is added to the existing model.

4.6 References

- Jhingan, M.L. Macro Economic Theory
- Sethi, M.L. Macro Economics.

Examination oriented/practice questions

- Discuss the various injections into the income stream and leakages from it in case of a two sector model.
- What is the role of government in case of a three sector model?
- Explain with diagram the different interactions between firms and government sector.
- What does the household sector sell?
- Is saving a leakage from income stream? Try to find out.

OUTPUT AND EMPLOYMENT

PRINCIPLE OF EFFECTIVE DEMAND

B.A. Sem 3rd **UNIT II**

EC - 301 **LESSON: 5**

STRUCTURE:

5.1 Objectives

After going through this lesson, the learners should be able to : -

- understand the principle of effective demand
- know about the aggregate demand function
- know about the aggregate supply function
- have knowledge about point of effective demand.

5.2 Introduction

Keynes' theory of income, output and employment was a reaction to classical theory of full employment. Keynes, through his theory justified why less than full employment is more realistic than more ambitious full employment. He attributes lack of full employment to the phenomenon of effective demand. In this lesson, you will learn more about this and the related concepts.

5.3 Principle of Effective Demand

Effective demand means total demand of goods and services both for consumption and investment by people of a country. To meet this demand the people are employed both in the production of consumption goods and in the production of investment goods (capital goods). Employment increases when the demand from either side increases. The basic principle is that consumption increases with increase in income but less than increase in income. Hence the gap between increased income and increased consumption must be filled (covered) by additional investment to sustain the income and employment.

In a money economy, thus, effective demand manifests itself in the spending of income or the flow of expenditure. The flow of ex-penditure in turn determines the flow of income, as one man's spending becomes the income of another. In real terms, the expen-diture flow in a community consists of consumption expenditure and investment expenditure-expressing the total demand for goods and services. A fundamental principle is that consumption increases with an increase in income, but less propor-tionately. As a result, there will be a gap between income and consumption ; hence to sustain the flow of expenditure, the gap must be filled up by an appropriate investment expenditure. This means that the level of effective demand and resulting employ-ment can be sustained only if investment demand increases with an increase in income. Thus a deficiency in effective demand is caused when investment inadequately fills up the gap between income and Consumption. This results in creating unemployment in the country's economy. Hence, it may be concluded that in order to promote employment, effective demand should be increased by increasing investment in the economy.

5.3.1 Factors Determining Effective Demand

Since the level of activity in an economy is a matter of demand and supply, using technical terminology, Keynes stated that effec-tive demand is determined by the interaction of the aggregate supply function and the aggregate demand function. That is to say, the volume of employment in an economy is determined by the entrepreneur's consideration of the 'aggregate demand price' and the 'aggregate supply price' at that particular level of employment.

Price here means the amount of money received from the sale of' output, *i.e.* sales proceeds.

5.3.1.1 Aggregate Supply Function (ASF)

The "Supply price" for any· given quantity of commodity' refers to that price at which the seller is willing to or induced to supply that amount in the market. Hence, the supply schedule of that commodity shows the varying level of quantities of the com-modity the seller offers for sale at the alternative prices. Similarly, the aggregate supply schedule for the economy as a whole, refers to the response of all entrepreneurs in supplying the whole of the output of the economy. Keynes measured the whole of output of the economy in terms of the amount of labour employed with a given marginal productivity. He, thus, said that the level of output varies with the level of employment. Obviously, each level of employment results in a certain level of output of commodities, *i.e.* real income along with the money income generated in the process of investment expenditure.

According to Keynes, using employment as a single measure of total output or the economy, the supply price of employment can be determined in terms of labour cost.

Check your progress-I

What according to Keynes, results in less than full employment in an economy?

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What is principle of effective demand? Why is there deficiency of effective demand?

Graphical Presentation: The following fig. (Fig. 5.1) illustrates the Aggregate Supply Function.

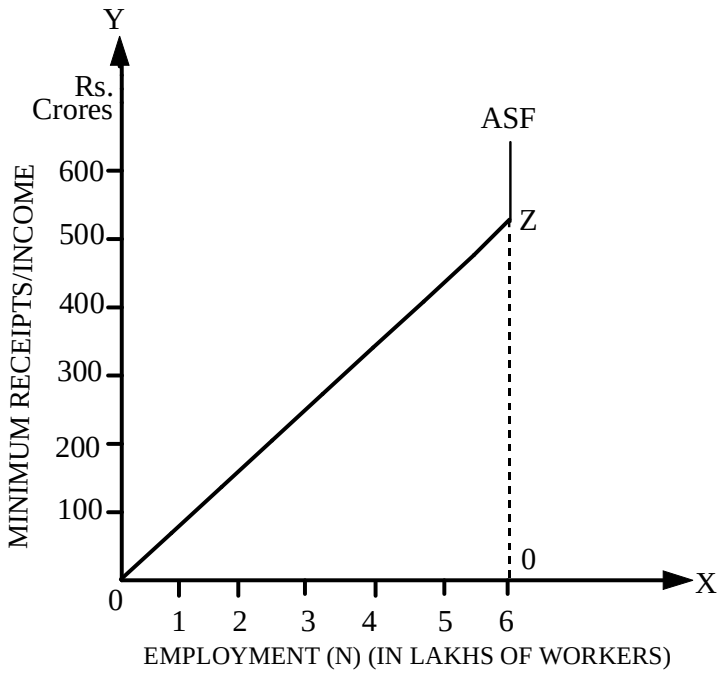


Fig. 5.1. The Aggregate Supply Function

In the figure, the x-axis represents the level of employment and the y-axis measures the expected minimum sales proceeds. The curve AS represents the aggregate supply function. It is linear, because we have assumed a constant wage rate. But, if wage rate is changing (increasing) or costs of employment are rising with an increase in employment, the ASF curve will be non-linear and upward sloping. Indeed the aggregate supply price is related with the employment level, in any case. However, the aggregate supply function-ASF curve-will become perfectly inelastic at a point where the economy has full

employment. Thus, at full employ-ment level, the aggregate supply function will be a vertical straight line. Suppose, in our illustration, the economy reaches full employ-ment when all its 6 lakh workers are employed, then the ASF curve will become vertical at point Z as shown in the figure. That means, the level of employment cannot exceed Q level (i.e. 600 in our example), whatever be the expectations of minimum sales proceeds. It is interesting to note that modern economists measure the aggregate supply function in terms of real income or value of total output by measuring GNP rather than the level of employment as Keynes did.

5.3.1.2 Aggregate Demand Function (ADF)

In Keynesian terminology, the aggregate demand function refers to the schedule of maximum sale proceeds which the entrepreneurial community actually does expect to receive from the sale of different quantities of output, resulting at various levels of employment. Thus, the quantum of maximum 'sales revenue expected from the output produced is described as the demand price of a particular level of employment. There is a positive correlation between the level of employment and the demand price, *i.e.* expected sales receipts.

Thus, with an increase in the level of employment, the aggre-gate demand price tends to rise, and vice versa. The aggregate demand price-the maximum sales proceeds expected for a given level of output-depends upon the total expenditure flow of the economy, which is determined by the spending decisions of the community as a whole. In a free capitalist economy, households and firms are the two major economic sectors which spend for consumption and investment. Now, what these sectors are expected to spend in the next period is viewed as the aggregate demand price, the expectation of sales revenue, for the given level of output and employment by the entrepreneurs.

The aggregate demand function may be represented graphically as in Fig. 5.2

$$ADF = f(N)$$

Where,

ADF = expected sales receipts by entrepreneurs,

N = the volume of employment, and

f = the functional relationship.

The ADF curve drawn in figure 5.2 is linear. It can be non-linear, too. Its shape and slope depend on the assumptions and nature of data relating to the aggregate demand schedule. For the sake of simplicity, we shall, however, consider linear functions only. Thus, it may be recalled that the statement showing the varying levels of aggregate demand prices, *i.e.* expected sales revenue by the entrepreneur for the output, associated with different levels of employment is called the aggregate demand price schedule or the aggregate demand function.

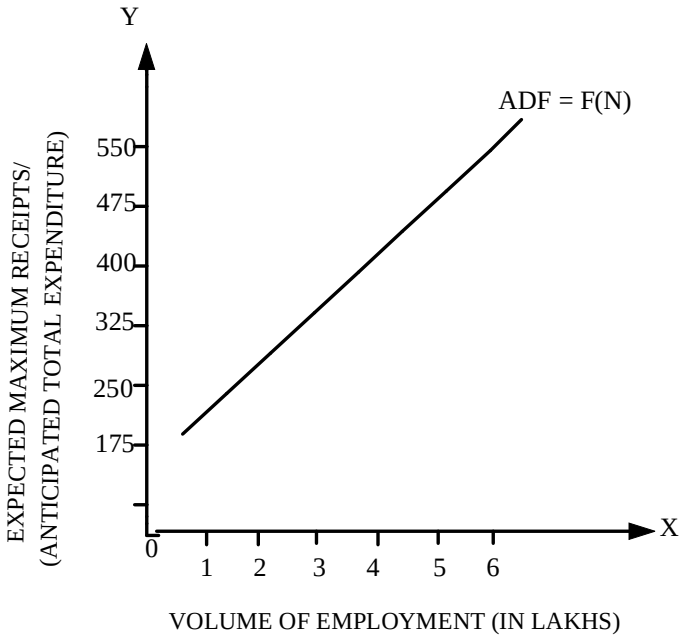


Fig. 5.2. The Aggregate Demand Function.

5.3.2. Equilibrium Level of Employment – The Point of Effective Demand

The intersection of the aggregate demand function with the aggregate supply function determines the level of income and employment. The aggregate supply schedule represents costs involved at each possible level of employment. The aggregate demand schedule represents expectation of maximum receipts of the entrepreneurs at each possible level of

employment. It, thus, follows that so long as receipts exceed costs, the level of employment will go on increasing. The process will continue till receipts become equal to cost.

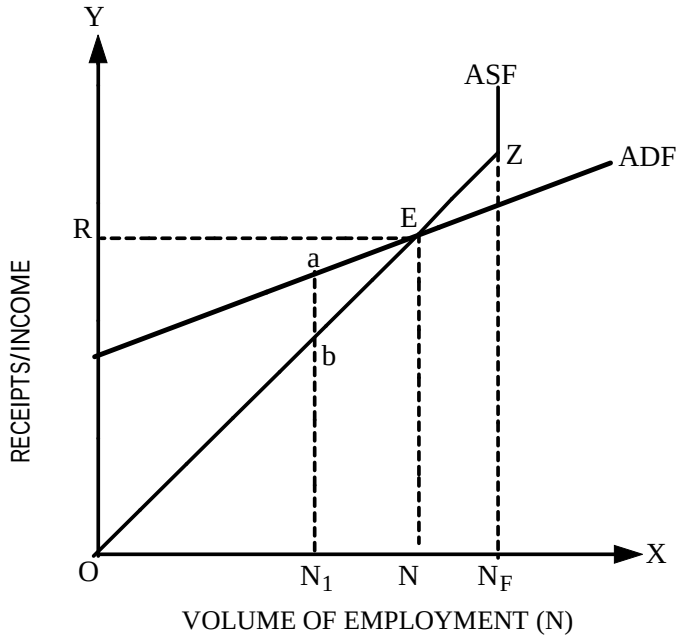
Needless to say, when costs exceed receipts, the employment level will tend to decrease. This is what we can observe by comparing the two functions as represented in Table 5.1.

Table 5.1

The Equilibrium Level of Employment

Employment (in lakhs of workers (N)	Aggregate supply of price (in crores of Rs.)(ASF)	Aggregate Demand Price (in crores of Rs.) (ADF)	Comparison	Direction of change in employment (ΔN)
1	100	175	ADF>ASF	Increase
2	200	250	ADF>ASF	Increase
3	300	325	ADF>ASF	Increase
4	400	400	AD = AS	Equilibrium
5	500	475	ADF<ASF	Decrease
6	600	550	ADF<ASF	Decrease

So long as the aggregate demand price (ADF) is greater than the aggregate supply price (ASF), the level of employment tends to increase. The economy reaches equilibrium level of employment when the aggregate demand function becomes equal to the aggregate supply function. At this point, the amount of sales proceeds which entrepreneurs expect to receive is equal to what they must receive in order to just appropriate their total costs. In the given schedule above, it is Rs. 400 crores which is the entrepreneur's expected minimum as well as maximum sales proceeds, so 4 lakh workers' employment is the equilibrium point. This is the point of effective demand.



In graphical terms, the point of effective demand and equilibrium of the economy has been represented in Fig. 5.3 above.

The two curves ADF and ASF intersect at point E, which is called the point of effective demand. In fact, the value OR, i.e. the sales proceeds which entrepreneurs expect to receive at the point of aggregate demand function where it is intersected by the aggregate· supply function, is called the effective demand because it is at this point that the entrepreneurs' expectation of profits will be maxi-mised. Thus, when the aggregate demand prices are equal to the aggregate supply prices, the entrepreneurs would earn the highest normal profits as their Sale proceeds equal their total costs at this point. It goes without saying that so long as the aggregate demand function lies above the aggregate supply function, i.*e* ADF>ASF, indicating that costs remain less than the revenue, the entrepreneurs would be induced to provide increasing employment till both of them are equalised. But after the point of intersection of the aggregate demand function and the aggregate supply function, for a further rise in employment, the aggregate supply prices become higher than aggregate demand prices, *i,e.*, ASF>ADF, indicating that total costs exceed total revenue expected, so that entrepreneurs would incur losses and refuse to employ that particular number of

workers. Diagrammatically, thus, actually only ON number of men will be employed where the aggregate demand function (ADF) equals the aggregate supply function (ASF). ON number of workers will provide some possibility of maximising profits by increasing the employment further, since ADF<ASF by ab, whereas any number of men exceeding ON cannot be employed, because then ASF would exceed ADF, implying losses to the entrepreneurs. It is only at point E where ADF=ASF and normal profit is maximum that the equilibrium level of employment is ON. Thus, it may be concluded that employment in an economy will increase till ADF=ASF.

Check your progress-II

- Discuss the determinants of effective demand.

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- What do you mean by equilibrium level of employment?

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5.4 Let us sum up

The principal of effective demand lies at the heart of Keynes' general theory of employment. The focal point of the theory is that the volume of employment depends on the level of effective demand in an economy. It is concluded that there are two basic determinants of effective demand in an economy. These are consumption and investment. The level of effective demand determines the level of employment, which in turn, determines the level of output and income in a country.

5.5 References

Keynes, J.M. General Theory of Employment, Interest and Money.

Mithani, M.D. Money, Banking, International Trade and Public Finance.

Examination oriented/practice questions

- What is principle of effective demand? What role does it play in Keynes' theory of employment?
- Where do you find the problem of deficiency of effective demand, in more developed or less developed nations?
- How was Keynes' concept of effective demand an improvement over and more realistic than classical economists' approach towards employment?
- What are ADF and ASF? What are their shapes? Why do they take these shapes?
- What is the equilibrium level of employment according to Keynes' theory? Is it full employment? If not, why? Justify your answer.
- Through graphical and tabular presentations, explain Keynes' theory of employment. Also label important points.

CONSUMPTION FUNCTION AND INVESTMENT FUNCTION

B.A. Sem 3rd **UNIT II**

EC - 301 **LESSON: 6**

STRUCTURE:

6.1 Objectives

After studying this lesson, the learners shall:

- understand the functional relationship between income and consumption.
- know about the marginal propensity to consume.
- know about the relationship between marginal propensity to consume and marginal propensity to save.
- understand the meaning of investment.

6.2 Introduction

Consumption is the function of income. It is written as C=f(Y). Where C = consumption, 'f' stands for functional relationship and 'Y' stands for income. Thus consumption function or propensity to consume is the functional relationship between income and consumption. Investment refers to the purchase of new machines, new buildings and other capital goods which are used to produce some other goods. The two main determinants of investment are marginal efficiency of capital (MEC) and the rate of interest (ROI). In this lesson, we will learn more about these two and related concepts.

6.3 Consumption function

The consumption function or the propensity to consume is nothing but an expression of an empirical income consumption relationship. In technical terms, Keynes postulates that *ceteris paribus,* consumption is a function of income.

Algebraically, the relationship between consumption, as a dependant variable and total real income as the independent variable may be expressed as :

$$C = f(Y)$$

where C is real aggregate consumption expenditure, Y is total real income and *f* a: function of or depends upon.

Real income *(Y)* is assumed to represent disposable personal income (Y_d) because for simplicity, the model assumes that the economy has no personal income taxes. It must be

noted here that Keynes mentions certain subjective and objective factors of co-determinants of consumption, but he considers real income as the principal variable upon which consumption depends.

The propensity to consume or the consumption function shows the relationship between aggregate real consumption and aggregate real income. To put it more simply, the propensity to consume refers to the actual consumption expenditure undertaken or intended out of varying levels of income. Other things being equal, the consumption function shows that changes can be ex-pected in consumption from given changes in income.

6.3.1 Schedule of the Propensity to Consume

The propensity to consume does not mean a mere desire to consume, but the actual amount of real consumption that takes place or that is expected to take place at various income levels. In this respect, it is similar to a demand schedule, which refers not to a mere desire to buy but an effective desire or demand, backed 'by an ability and willingness-to pay for the goods. Similarly, the 'Propensity to consume also refers to effective consumption and not to a mere desire to consume.

We can tabulate various amounts of consumption expenditure which people are prepared to incur at corresponding levels of income. Such a list is called a Schedule of the propensity to consume or is sometimes also referred to as the schedule of intended consumption. A schedule of the propensity to consume is a state-ment showing the functional relationship between the level of consumption at each level of income. Such a schedule is illustrated in Table 6.1.

Table 6.1

Consumption Function

Income (Y)	Consumption (C) (In crores of rupees)
200	220
300	300
400	380
500	460
600	540
700	620

In Table 6.1, the first column indicates various levels of income. The second column shows the amounts of real consumption expenditure at each level of income. It is the whole schedule relating to various amount of consumption at various levels of income, and is called "the propensity to consume" or "the consumption function."

Table 6.1 shows that consumption is an increasing function of income, as both variables Y and C move in the same direction. Consumption and income are positively related. It may be further noticed that consumption is shown to change by Rs. 80 crores for each Rs. 100 crores change in income. This is based on the assumption that in the short-run, the propensity to consume will remain stable.

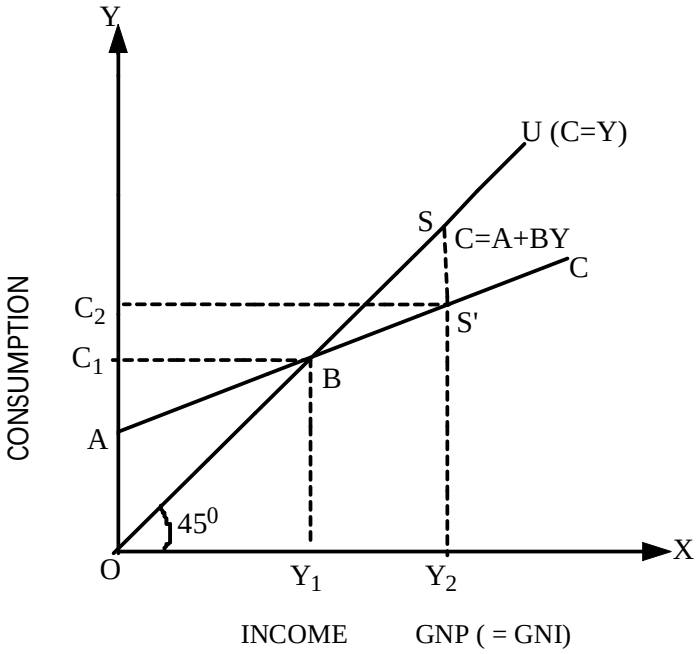

Fig. 6.1. Linear Consumption Function

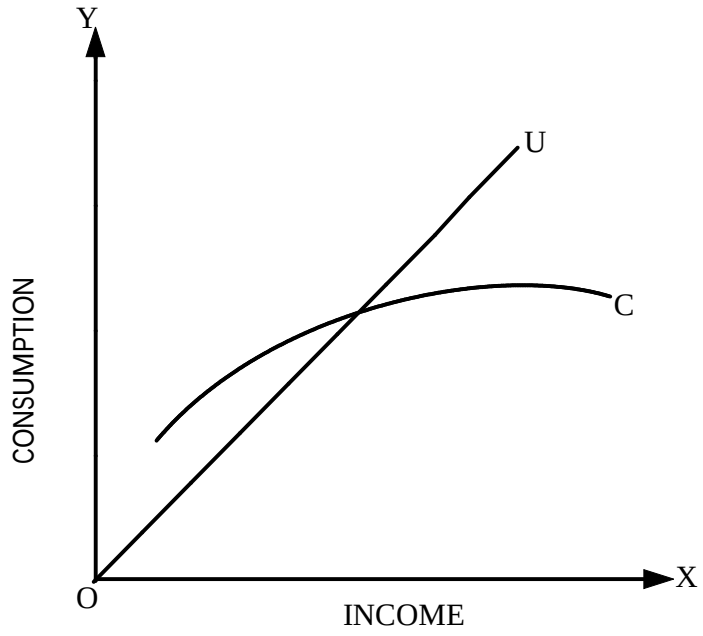

Fig. 6.2 Non-Linear Consumption Function.

We may represent the consumption function diagrammatically as in Fig. 6.1. As a matter of fact, the consumption function may, be a linear as in Fig. 6.I, or non-linear as shown in Fig. 6.2.

In both the diagrams, the' y-axis' measures consumption and the 'x-axis' real income. The AC curve represents the consumption function or the propensity to consume. It moves upward to the right, indicating that consumption increases as income increases. But, in Fig. 6.1 it should be noticed that the C curve raises less steeply than the unity line after the intersection or break even point B (the break-even point is the position where consumption is the same as income). This shows that the increase in consump-tion is smaller than the increase in income. In Fig. 6.1, increase in consumption 'C1C2' is less than the increase in income 'Y_1Y_2'.

Now, that part of income which is not consumed is saved . 'SS' is the saving or the gap between OU, the unity curve and the CC curve. Thus, the consumption function measures not only the amount spent on consumption but also the amount saved. The unity curve (45^0 line) may thus be regarded as the zero saving line, while the shape and position of the C curve indicate the division of income between consumption and saving.

It is interesting to note that at Point A interception of curve C at Y, income is zero, but there is consumption. But this is not an unrealistic phenomenon. Perhaps, this refers to the case of traditional primitive society, where people do not produce any real output but consume fruits, leaves, etc. as available in nature.

Further, in a traditional society people consume more than what they produce. As such, up to AB, we find that consumption exceeds income. In a modern economy, this may be met by dissaving-consuming capital or relying on foreign aid for consumption. Economic development in a real sense (when capital formation emerges from domestic savings which is invested) starts at a point of "break-even". Break even point is a theoretical possibility which, however, cannot be proved empirically due to non homogeneity in macro entities, but its existence cannot be denied.

Usually, as we have seen, the shape of propensity to con-sume curve, *i.e.* the C curve, is such that it moves upward to the right, but less' steeply than the unity curve. This normal shape of the consumption function is explained by Keynes in terms of the fundamental

psychological law of consumption when he states "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 incomes.

6.3.2 Technical Attributes of Consumption Function

In dealing with the consumption function or the propensity to consume, Keynes considered its two technical attributes : (i) the average propensity to consume and (ii) the marginal propensity to consume, both having substantial economic significance.

6.3.2.1 Average Propensity to Consume (APC)

The average propensity to consume (APC) is defined as the ratio of aggregate or total consumption to aggregate income in a given period of time. Thus, the value of average propensity to consume, for any income level, may be found by dividing consumption by income. Symbolically

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

where, C stands for consumption and Y stands for income.

In Table 6.2, the APC is calculated at various income levels. It is obvious that proportion of income spent on consumption decreases as income increases. Since the average propensity to consume is 100%, 95%, 90% and 88%, it follows that the average propensity to save (S/Y) is , 0, 5%, 8%, 10% and 12% respectively. ($\because$ APS = S/Y=I – C/Y). Thus, the proportion of income saved increases as income increases.

The economic significance of the APC is that it tells us what proportion of the total cost of a given output from planned employment may be expected to be recovered by selling consumer goods & services demanded by the community that originates in the demand for consumer goods. The average propensity to save tells what proportion of the total cost of a given output will have to be recovered by the sale of capital goods. Other things remaining equal, the relative development of consumer goods and capital goods industries, in an economy depends on the APC and the APS. This suggests that in highly industrialized economies, the APC is persistently low and the APS is persistently high.

Table 6.2

Schedule of Propensity to Consume

Income (Y)	Consumption (C)	Average Propensity to consume (APC=C/Y)	Marginal propensity to consume (MPC=Δ C/Δ Y)
300	300	$\frac{300}{300}$ =1 or 100%	—
400	380	$\frac{380}{400}$ = 0.95 or 95%	$\frac{80}{100}$ = 0.8 or 80%
500	460	$\frac{460}{500}$ = 0.92 or 92%	$\frac{80}{100}$ = 0.8 or 80%
600	540	$\frac{540}{600}$ = 0.90 or 90%	$\frac{80}{100}$ = 0.8 or 80%
700	620	$\frac{620}{700}$ = 0.88 or 88%	$\frac{80}{100}$ = 0.8 or 80%

The economic significance of the APC is that it tells us what proportion of the total cost of a given output from planned employment may be expected to be recovered by selling consumer goods services demanded by the community originates in the demand for consumer goods. The average propensity to save tells what proportion of the total cost of a given output will have to be recovered by the sale of capital goods. Other things remaining equal, the relative development of consumer goods and capital goods industries, in an economy depends on the APC and the APS. This suggests that in highly industrialized economies, the APC is persistently low and the APS is persistently high.

6.3.2.2 Marginal Propensity to Consume

The marginal propensity to consume (MPC) is the ratio of the change in the level of aggregate consumption to the change in the level of aggregate income. The MPC, thus, refers to the effect of additional income on consumption.

MPC can be found by dividing a change (increase or decrease) in consumption by a change (increase or decrease) in income. Symbolically.

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

where, (delta) indicates the change (increase or decrease), and C and Y denote consumption and income, respectively.

In Table 2 above, the MPC is calculated at various income levels. It is obvious that the MPC is 0.8 or 80% at all levels. Thus, the MPC is constant here because it is a linear consumption function. In case it is non-linear, MPC will not be constant.

Again, the marginal propensity to consume (MPC) is always positive, but less than one. This behavioural characteristic of the MPC is attributed by Keynes to the fundamental psychological law of consumption that consumption increases less than income when income increases.

6.3.3 Keynes' psychological law of Consumption :- This extract from Keynes may be considered to be a statement of what has come to be known as Keynes' *Psychological Law of Consumption* or *Fundamental Law of Consumption.* This law is a statement of a tendency which may be considered to be a very common one - a tendency about which there can be little doubt in actual practice. The law is generally considered to be consisting of three related propositions :

1. When the total income of a community increases, the consumption expenditure of the community will also increase, but less proportionately.

2. It follows from this fact that an increase in income is always bifurcated into spending and saving.

3 That an increase of income is unlikely to lead either to less spending or less saving than before. In other words, as the income of a person increases, his spending and saving both go up. It is not possible for a person to spend less when his income goes up, unless he happens to be a confirmed miser. A normal person will certainly increase his consumption expenditure when his income goes up. The reason is that

he would like to enjoy greater amenities and comforts of life when his income increases. Consequently, his spending and saving both go up when his income increases.

The first proposition is the most important and may be considered to be the core of Keynes' *Psychological Law of Consumption.* What the law stresses is the tendency of people to fail to spend on consumption items the full amount of an increment of income. The law may be considered to be a rough indication of the actual macro-behaviour of consumers in the short period. An illustration of this law would be found in the following Table.

Table 6.3

(In Crores of Rupees)

Income (Y)	Consumption (C)
100	70
120	80
140	90
160	100
180	105
200	110

Looking at the two columns of the above Table, it becomes evident that consumption expenditure does not increase in the same proportion in which the income increases. To start with, the income increases by Rs. 20 crores (from Rs. 100 crores to Rs. 120 crores), but the consumption expenditure increases only by Rs. 10 crores (i.e., from Rs. 70 crores to Rs. 80 crores). Again, when the income increases from Rs. 160 crores to Rs. 180 crores (i.e., by Rs. 20 crores) the consumption expenditure increases only from Rs. 100 crores to Rs. 105 crores (i.e., by Rs. 5 crores). Thus, the increase in consumption expenditure fails to keep pace with the increase in aggregate income. This tendency is so deep-rooted

in people's habits, customs, traditions and psychological setup that it is difficult to change or alter it without affecting structural changes in society.

6.3.3.1 Assumptions of Keynes' Psychological Law of Consumption

This law is based on three main assumptions. The operation of the law in full depends upon these assumptions. If these -assumptions are not realized, the law shall not work. These assumptions may also be referred to as the limitations of the law. These are as follows :

(i) Propensity to consume will remain stable owing to the constancy of the existing psychological and institutional complexities influencing consumption expenditure.

(ii) General economic conditions are normal and there are no abnormal and extraordinary circumstances such as war, revolution, inflation, etc.

(iii) It is assumed that there exists a wealthy capitalistic economy, in which there is no government restriction on consumption when income increases.

6.3.3.2 Implications of Keynes' Psychological Law of Consumption

Following are some important implications of this law:

(i) This law highlights the importance of consumption function or propensity to consume. Since the consumption expenditure mostly depends upon the income of the individual, the law explains why consumption function is stable. On account of the stability of the consumption function, there arises a gap between the increase in income and the increase in consumption expenditure. This gap has to be filled by increasing the volume of investment. If the investment is not correspondingly increased, there is bound to be depression and unemployment in the economy. To increase output and employment, it becomes imperative to step up the rate of investment. Keynes' psychological law of consumption, therefore, emphasizes on the crucial importance of investment to promote full employment.

(ii) According to this law, even though the income of the community increases, its consumption expenditure does not increase in the same proportion in which the income increases. The lag in consumption expenditure inevitably results in

overproduction and general unemployment in the economy. In such circumstances, laissez faire policy does not pay and the Government has to intervene to set matters right.

(iii) As pointed out above, the increase in consumption expenditure always lags behind the increase in income. This naturally affects the marginal efficiency of capital in an adverse manner. Due to inadequate demand, the marginal efficiency of capital declines or the profitability of industry receives a setback. Investment declines and economic progress of the community is retarded.

(iv) The law also explains the *turning points* of trade cycle. It explains the *downturn* from a boom because, although people's income increases, the consumption expenditure does not increase in the same proportion. Likewise, it explains the *upturn* from a depression because, although people's income decreases, the consumption expenditure cannot be reduced in the same proportion.

(v) Since the increase in consumption expenditure does not keep pace with the increase in income, there arises the danger of an *over saving gap* in the community. Rich and prosperous communities are exposed more to the danger of this over saving gap than poor and backward communities.

(vi) Lastly, this law also explains the unique nature of income generation in a community. When the supply of money is increased in a community, the income does not increase in the same proportion in which the supply of money is increased. The reason is obvious, The people do not increase their consumption expenditure in the same proportion in which the income increases.

Keynes' *consumption function* or, *propensity to consume* is based on this law.

6.3.3.3 Factors affecting consumption function :- According to Keynes, *two* types of factors influence the con-sumption function: subjective and objective. The subjective factors are endogenous or internal to the economic system itself.

The subjective factors relate to psychological characteristics of human nature, social structure, social institutions and social practices. These are likely to remain more or

less stable during the short period. Established behaviour pattern undergoes material change only over long periods. These sectors fundamentally determine the form of the consumption function.

The objective factors affecting the consumption function are exogenous, or external to the economy itself. These factors may at times undergo rapid changes. Thus, objective factors may cause changes in the consumption function.

First we shall discuss explain the subjective factors

Subjective Factors

Subjective factors basically underlie and determine the form of the consumption function *(i.e.* its slope and position).

The subjective factors concerned are: *(i)* behaviour patterns fixed by the psychology of human nature, and *(ii)* the institutional arrangements of the modern social order, and social practices relating to the behaviour patterns of business firms with respect to wage and dividend payments and retained earnings, and the insti-tution controlling the distribution of income.

Human behaviour regarding consumption and savings out of· increased income depends on psychological motives. First, there are motives which "lead individuals to refrain from spending out of their incomes." Keynes enlists eight such motives:

- **The Motive of Precaution:** The desire to build up a reserve against unforeseen contingencies.
- **The Motive of Foresight :** The desire to provide for anti-cipated future needs, *e.g.* in relation to old age, family education, etc.
- **The Motive of Calculation:** The desire to enjoy interest and appreciation, because a larger real consumption, at a later date, is preferred to a smaller immediate con-sumption.

- **The Motive of Improvement:** The desire to enjoy a gradually increasing expenditure since it gratifies the common instinct to look forward to a gradually improving standard of life rather than the contrary.
- **The Motive of Independence:** The desire to enjoy a sense of independence and the power to do things.
- **The Motive of Enterprise:** The desire to secure a masse de manoeuvre to carry on speculation or establish busi-ness projects.
- **The Motive of Pride:** The desire to possess or to bequeath a fortune.
- **The Motive of Avarice:** The desire to satisfy pure miser-liness, *i.e.* unreasonable, but insistent abstinence from expenditure as such.

To this, Keynes adds a corresponding list of motives on consumption such as enjoyment, short-sightedness, generosity, miscalcu-lation, ostentation and extravagance.

Subjective motivations also apply to the behavioural patterns of business corporations and governmental bodies. In this respect, Keynes listed the following motives for accumulation:

- **The Motive of Enterprise:** The desire to do big things, to expand, to secure resources to carry out further capital investment.
- **The Motive of Liquidity:** The desire to face emergencies and difficulties successfully.
- **The Motive of Improvement:** The desire to secure a rising income and to demonstrate successful management.
- **The Motive of Financial Prudence:** The desire to ensure adequate financial provision against depreciation and obsolescence and to discharge debt.

Keynes maintains that the strength of all these motives may vary considerably according to the institutions and the organisations of the economic society. Since economic and social institutions and organisations are formed by habits, race, education, morals, present hopes and past experiences, techniques of

capital equipment and the prevailing distribution of wealth and established standards of life, all these factors are unlikely to vary in the short run. They therefore affect secular progress only very gradually. In other words, these factors, subject to slow change and over a long period, may be considered as given or stable.

Objective Factors

Objective factors, subject to rapid changes and causing violent shifts in the consumption function, are discussed below :

- **Windfall Gains or Losses:** When windfall gains or losses accrue to people, their consumption level may change suddenly.

- **Fiscal Policy:** The propensity to consume is also affected 'by variations in fiscal policy of the government. For instance, imposition of heavy taxes tends to reduce the disposal and real income of the community, so its level of consumption may adversely change. Similarly, a withdrawal of certain taxes may cause upward shift of consumption function.

- **Changes in Expectations:** The propensity to consume is also affected by expectations regarding future changes. For instance, an expected war considerably influences the consumption by creating fears about future scarcity and rising prices. This leads people to buy more than they immediately need, *i.e.* to hoard.

- **The Rate of Interest:** In the long run, substantial changes in the market rate of interest may also influence consump-tion. A significant rise in the rate of interest may induce people to reduce their consumption at each income level, because people will save more in order to take advantage of the higher rate of interest.

- **The Distribution of Income:** With the given level of income, aggregate consumption will vary if income is distributed in different ways among the people. A community with a greatly unequal distribution of income tends to have a low propensity to consume on the whole, while a community with a high degree equality of income will have a high propensity to consume, in gene-ral. Thus, redistribution of income through fiscal measures of the state will affect the propensity to consume.

- **Holding of Saving-Liquid Assets :** Another factor affecting the consumption function is the 'volume of accumulated savings by the people.' The larger the amount of such savings *(i.e.* holding of liquid assets, like cash balances, savings accounts and government bonds) the more likely people will tend to spend out of their current income, because the holdings of savings in the form of liquid assets, will give them a greater sense of security. A change in the real value of such assets held by them owing to general price changes might also affect the consumption function.

- **Corporate Financial Policies :** Kurihara observes that business policies of corporations with respect to income retention, dividend payments, and re-investments affect the propensity to consume of equity holders. A cautious dividend policy followed by corporations and corporate savings will reduce the consumption function by reducing the residual disposal income of the shareholders (who are consumers, in a way).

Check your progress-I

- Discuss Keynes' psychological law of consumption.

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- What do you mean by APC and MPC?

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6.4 Investment function

Investment function refers to inducement to invest or invest-ment demand. Classical economists considered investment demand simply as a decreasing function of the interest

rate, that is I=f (i) where 'I' stands for investment demand and 'I' stands for the rate of interest.).

Keynes accepts this classical hypothesis and proceeds further in an analytical manner. His analysis of the investment function is basically confined to tracing the causes of extreme variability of investment expenditure in a market economy. In his view, fluctu-ating investment expenditure forms a major part of the study of changes in the aggregate demand and consequent variations in the level of income and employment in a capitalist economy.

6.4.1 Autonomous Investment and Induced Investment

Investment is of two types :

- Autonomous (independent) investment and
- Induced investment.

Autonomous Investment : An investment which is not influenced by expected profitability or level of income is called autonomous investment. In fact, it is an investment expenditure incurred by the government with a view to promoting the level of aggregate demand in the economy.

When the level of aggregate demand falls short of the aggregate supply (resulting in fall in prices and profitability, and consequently a rise in unemployment), the government intends to push up the level of aggregate demand by investing without being influenced by profitability. Diagrammatically, this is indicated by a horizontal straight line-parallel to the X-axis as in Fig. 6.3. As can be seen from the fig.the distance OI on the Y-axis shows the level of autonomous investment. Horizontal straight line II indicates that OI level of investment remains unaffected whatever be the level of income.

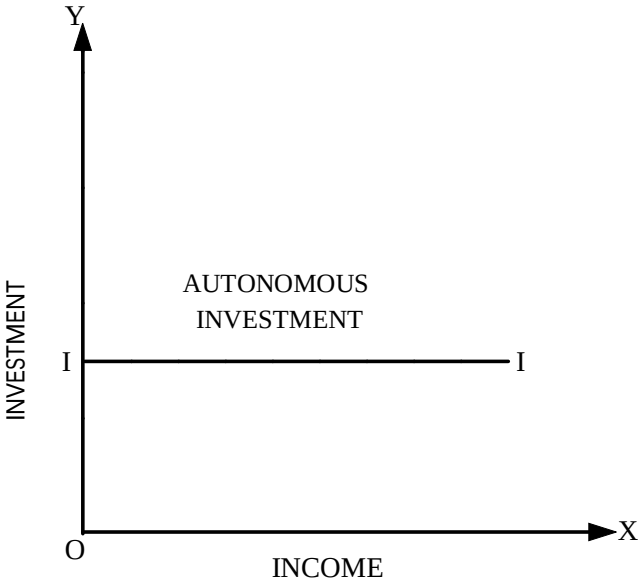
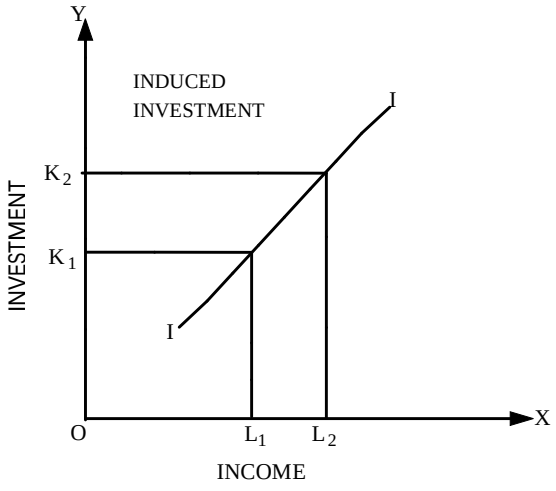


Fig. 6.3

Induced Investment : At higher levels of income, consumption expenditure tends to increase. Increased consumption expenditure or the increased level of demand raises expected profitability of the producers who are induced to make greater investment. Thus, induced investment is positively related to the level of income in an economy. Fig. 6.4 illustrates the relationship between induced investment and the level of income. In this figure, curve II tends to move upwards. Indicating increased investment at the increased level of income.



6.4.2 MEC and RI

Keynes states that the volume of investment (I) undertaken by private entrepreneurs in an economy depends upon two factors: the marginal efficiency of capital *(e)* and the rate of interest *(i)*. Thus: I = *f* (e, i).

Inducement to invest depends upon these two factors. Private entrepreneurs are induced to invest only if there is a positive difference between the marginal efficiency of capital and the rate of interest. The marginal efficiency of capital in conjunction with the rate of interest determines the nature of demand for capital goods or the volume of new investment, which in turn deter-mines the level of capital, given the propensity to consume.

6.4.2.1 Marginal efficiency of Capital

It is a well-known dictum that production in a capitalist economy is profit-oriented. Since the prime goal of businessmen is profit maximization, they are induced to invest only if they expect to get profits. Keynes thus introduced the concept of marginal efficiency of capital, keeping this observed behaviour of investors in mind .

Marginal efficiency of capital in ordinary parlance means the expected rate of profit. It is the expected rate of return over cost or the expected profitability of a capital asset. Marginal efficiency of a given capital asset is the highest rate of return over the cost expected from an additional or marginal unit of that capital asset.

Kurihara defines marginal efficiency of capital as the ratio between the prospective yields of additional capital assets and their supply price. This may be symbolically expressed as :

$$e = Q/P$$

where ,

'e' is the marginal efficiency of capital,

Q is the expected yield of return (that is, prospective yield) of a capital asset for a unit of time, and

P is the supply price of this asset.

In view of the definition just given, the marginal efficiency of capital depends upon two factors: (i) the prospective yield from the capital asset, and (ii) the supply price of this asset (which is the source of the prospective yield).

The term "prospective yield" refers to the amount of annual income an investor expects to obtain from selling the output of his investment or capital assets, after deducting the running expenses for obtaining that output during its life-time. In other words, the prospective yield of a capital asset is the aggregate net return expected from it during its life-time. If we divide this total expec-ted life of a capital asset, say a factory, into a series of periods, usually years, we may refer to the annual returns as a series of annuities, represented by Q_1, Q_2, Q_3 .. · ... Q_n,' the subscripts refer-ring to the years of respective annuities. This series of annuities (that is, the returns accruing once every year) is conveniently called "prospective yield of investment."

The prospective yield of an asset is, however, not the only thing which an investor will have to consider while acquiring a new capital asset, that is, machinery, plant, or factory. He will also have to consider the supply price of the asset, that is, the price he has to pay to acquire it, or the cost of producing the asset. It should be noted that the supply price of a particular type of asset is the cost of producing a totally new asset of that kind, and not the price of the existing asset of that kind. Thus the supply price of an asset is alternatively called "replacement cost".

By relating these two concepts: the prospective yield and the supply price, Keynes arrives at a precise definition of the marginal efficiency of capital as "being equal to that rate of discount which would make the present value of the series of annuities given by the return expected from the capital asset during its life just equal to its supply". In other words, the marginal efficiency of a capital asset is the rate at which the prospective yield expected from one additional unit (marginal unit) of the asset must be dis-counted if it is just equal to the cost, that is, the supply price of that asset. Following Dillard, this may be expressed in the following terms :

$$SP = \frac{Q_1}{(1+e)^1} + \frac{Q_2}{(1+e)^2} + \ldots\ldots \frac{Q_n}{(1+e)^n}$$

where SP is the supply price of the capital asset ; it is the cost of constructing a new capital asset or the price which is to be paid for purchasing the new asset. Q_1, Q_2, Q_3, …. Q_n are

series of anticipated annual returns of the prospective yields of the capital assets in the years 1, 2, 3,…..n, respectively, and e is the rate of discount or the marginal efficiency of capital. It should, however, be remembered that the value of Q tends to vary each year in a dynamic economy. Hence, we may find some typical discount rate or marginal efficiency of capital 'e', which will equalize the two sides of the equation. The term $\frac{Q_1}{(1+e)^1}$ represents the current value of the annuity or yield receivable at the end of the first year discounted at the rate e. If the rate of discount is assumed to be 10 per cent, each rupee (that is, 100 paise) which we expect to get after a year, is worth 90.91 paise now. This follows from the fact that :

$$\frac{Q_1}{(1+e)^1} = \frac{100}{1.10} = 90.91 \text{ paise}$$

This means that each 90.91 paise currently invested at 10 per cent will become Re. 1 within a year.

Similarly, the term $(1+e)^2$ denotes the current value of the annuity or return expected at the end of the second year, discounted at the rate of 'e'. Again, assuming the rate of discount to be 10 per cent, each rupee due or expected after two years is worth 80.65 paise,

$$\frac{Q_1}{(1+e)^2} = \frac{100}{(1.10)^2} = 82.65 \text{ paise}$$

This shows that 82.65 paise invested presently at per cent will become one rupee in two years. Likewise, we can discount the present value of various annual yields in order to bring their aggregate into equality with the current supply price or replacement cost of the capital asset.

Thus, the concept of marginal efficiency of capital as a rate of discount can be illustrated by a simple arithmetical example. Suppose there is a capital asset the lifetime of which is only 2 years and that the supply price of this asset is Rs. 3,000. If the capital asset is expected to yield Rs. 1,100 at the end of the first year and Rs. 1,210 at the end of the second year, the marginal efficiency of, capital *e*, can be calculated as"

$$SP = \frac{Q_1}{(1+e)^1} + \frac{Q_2}{(1+e)^2}$$

$$2{,}000 = \frac{1{,}100}{(1+e)^1} + \frac{1{,}210}{(1+e)^2}$$

The value of 'e' is 10 per cent.

Taking e = 1/10,

$$SP = \frac{1{,}100}{\left(1+\frac{1}{10}\right)} + \frac{1{,}100}{(1+\frac{1}{10})^2} = 1{,}000 + 1{,}000 = 2{,}000$$

From the aforementioned formula of marginal efficiency of capital, it may be observed that the rate of discount or the marginal efficiency of capital or 'e', would increase if the expected yields increase. Assuming the supply price of the capital asset to remain unchanged, the marginal efficiency of capital 'e' would decrease if the supply price of capital rises with given *Q's, i.e.*, the expected annual yields of the capital asset. Similarly, a fall in the amount of expected yield *(Q's)* will lower the marginal effi-ciency of capital '*e'* and if the supply price decreases with the given *Q's* then '*e'., i.e.* the marginal efficiency of capital or rate of dis-count increases.

Thus, a change in the prospective yields directly affects the MEC or 'e', and a change in the supply price inversely affects it. It means that the rate of return over cost, i.e. marginal efficiency of capital, may change either because the cost changes or because the amount of return changes.

In short, thus, the marginal efficiency of capital is the rate at which the prospective yield from an asset must be discounted to bring it into equality with supply price or replacement cost of the capital asset. However, in practice, it is not very easy to do it. It is a very complex phenomenon. But, for our purpose, we must at least remember that it is only when the net prospective yield is greater than the supply price that the investor will be encouraged to take up an investment, because only then can he reasonably hope to earn a surplus over cost.

6.4.2.2 Comparison of Marginal efficiency of capital (MEC) and Rate of Interest

Since the marginal efficiency of capital is expressed as a ratio, it can be compared directly with the rate of interest. Such comparison is essential, because private investment to capital

assets depends upon a rational comparison of the expected rate of profit and the rate of interest. Such a comparison is in fact a comparison between the *supply price* of an asset and its *demand price*.

The demand price of an asset is defined as the sum of the expected future yields (that is, the series of prospective annual yields) discounted at the current rate of interest.

Thus, demand price = sum of prospective yields discounted as the current rate of interest whereas supply price = sum of prospective yields discounted by the MEC.

Symbolically, the demand price of an asset is :

$$DP = \frac{Q_1}{(1+i)^1} + \frac{Q_2}{(1+i)^2} + \frac{Q_3}{(1+i)^3} + ... + \frac{Q_n}{(1+i)^n}$$

where, DP represents the demand price, Q_1 …….Q_n the prospective yield or annuities, and i the current rate of interest.

Thus, the demand price of an asset is its true present market value. Suppose, for instance, the market value of an asset, which promises to yield Rs. 1,100 at the end of one year, and Rs. 1,210 at the end of two years, will be estimated greater than Rs. 2000. When the interest rate is less than 10 per cent (i.e., rate of MEC) e.g. it is 5 per cent, the capital asset will have the present value of :

$$\frac{1100}{(1.05)} + \frac{1210}{(1.05)^2} = 1047.62 + 1047.62 + 1097 = 2144.62$$

This is what Keynes called the demand price of a capital asset.

From the example just mentioned, it is easy to see that the greater the demand price, the lower the current rate of interest at which it is discounted. Evidently, the lower the rate of interest, the greater will be the number of capital assets for which the demand price will exceed the supply price and the greater the inducement to invest. The marginal efficiency of capital will be greater than the rate of interest and consequently, new investment in capital goods will prove profitable till the point the supply price, *i.e.*, cost of production remains less than the demand price. A comparison between the *supply price* and *demand price* of a capital asset is- clearly expressed in Table 6.4 below.

Table 6.4

The Supply Price and Demand Price of a capital Asset and the Inducement to Invest

Supply Price (SP) Rs.	Annual Yield (Q) Rs.	MEC (e) %	Rate of Interest (i) %	Demand Price (DP) Rs.	Effect on the Inducement to Invest
2500	100	4	4	2500	Neutral
2000	100	5	4	2500	Favourable
2500	100	4	5	2000	Adverse

So the behaviour of entrepreneurs can be explained in terms of a rational comparison of the supply price and demand price of an income producing capital asset or the marginal efficiency of capital and the rate of interest.

The effect of the relative positions of the demand and supply on the behavioural tendency of the entrepreneurs regarding inducement to invest may be generalised as follows:

1. When the MEC = rate of interest (i) or SP = DP, the effect is neutral.

2. When the MEC>i, or DP>SP the effect will be favourable.

3. When the MEC<i, or DP<SP, there will be an adverse effect.

This implies that the rate of interest as well as the marginal efficiency of capital must be known before the volume of investment is determined by the entrepreneurs. However, these two strategic variables are determined independently of each other; the margi-nal efficiency of capital is the result of the supply price and the prospective yields of assets, and the rate of interest depends upon the liquidity preference function and the money supply.

Given these two independent variables, investment increases when MEC exceeds the rate of interest 'i' and continues to rise till the MEC=i. It should be noted here that the changes in the volume of investment directly affect the marginal efficiency of capital but not the rate of interest. The MEC declines as the rate of investment increases. It is the changes in the volume of investment which bring about the equality of the MEC and the rate of interest. When the MEC is equal to the rate of interest, investment will come to a

halt; this is the point of equilibrium. Thus, ' MEC=I' is the condition for equilibrium of output of capital goods.

As a rule, the MEC of an asset will always diminish as invest-ment in that asset increases. There are two reasons for this: *(i)* the prospective yields of the asset will fall as more units of it are produced. This happens because as more assets are produced, they will compete with each other to meet the demand for the product and, consequently, their general earnings will decline, and *(ii)* the supply price of the asset will rise as more assets are produced. This is due to the rising cost in the industry making the asset. Thus, the marginal efficiency of capital declines with an increased investment, either as a result of decreasing prospective yield or due to increasing supply price.

6.5 Let us sum up

In this lesson, we learned that:

- Consumption is a positive function of income.
- Consumption varies less than proportionately with income.
- APC and MPC are two attributes of consumption function.
- Investment depends on MEC and RI.

6.6 References

- Kurihara, K.K. Monetary Theory and Public Policy.
- Mithani, M.D. Money, Banking, International Trade and Public Finance.
- Vaish, M.C. Macroeconomic Analysis.

Examination oriented/practice questions

- Discuss Keynes' psychological law of consumption.
- Why is there a gap between increase in income and increase in consumption?

- What are the consequences of deficiency in demand? What can be done to promote full employment?
- What are the subjective and objective factors affecting consumption function?
- What are autonomous and induced investments? Explain diagrammatically.
- What are MEC and RI? How do they jointly influence the level of investment?

SAVINGS AND INVESTMENT (EX-ANTE AND EX-POST) EQUILIBRIUM

B.A. Sem 3rd **UNIT II**

EC - 301 **LESSON: 7**

STRUCTURE:

7.1 Objectives

After going through this lesson, the learners shall be able to:

- understand the meaning of savings.
- know about the meaning of investment.
- understand the relationship between savings and rate of interest and investment and rate of interest.
- know about the determinants of savings and investment.

7.2 Introduction

Saving means economic surplus. It may be defined as an accounting difference between current income and current consumption. Keynes defined savings as an excess of income over expenditure of consumption.

Equality between saving and investment is regarded as an essential condition of equilibrium level of income, output and employment by Keynes as well as classical economists. But, their approach and views regarding the phenomenon are altogether different.

7.3 Savings and Investment (ex-post and ex-ante) equilibrium

In his most famous work, 'The General Theory of Employment, Interest, and Money', Keynes shows how saving and investment are always equal. Now, saving is the difference between income and consumption. This is,

$$\text{Saving} = \text{Income} - \text{Consumption}$$

$$S = Y - C$$

Alternatively, if national income (Y) consists partly of consumer goods and partly of capital goods (investment), then

$$\text{Investment} = \text{Income} - \text{Consumption}$$

$$I = Y - C$$

In other words,

$$S = Y - C$$

$$I = Y - C$$

$$S = I$$

Thus, by definition, S and I are necessarily equal . So long as S and I are equal, aggregate income (Y) will continue to be constant and, in Keynesian analysis, the level of employment will also be constant.

7.3.1 Ex – ante S and I

The *ex-ante* saving and investment refer to the planned saving and planned investment of the community. Since plans for consumption and saving are not made by the same people who plan investment, it is unlikely that planned saving will be equal to planned investment. In other words, so long as savers and investors are different groups of persons, and so long as saving and investment are influenced by different motives, there is no reason why planned saving and planned investment need be equal ; there can be divergence between planned S and planned I.

Planned saving and planned investment may or may not be equal. In real life, the level of output and income is the result of decisions of millions of persons in an economy among whom there is no co-operation or co-ordination. Hence, it is almost impossible that planned S and planned I will be automatically equal except probably in a primitive community in which the savers may also be investors.

7.3.2 Ex-post S and I

On the other hand. *ex-post* saving and investment refer to the realised saving and realised investment respectively in any period. Realised saving is the total disposable income (Y) *minus* consumption expenditure. *i.e.*

$$S = Y - C$$

Realised investment is the total income (Y) minus consumption expenditure, i.e.,

$$I = Y - C$$

$$\therefore \quad S = I$$

It is clear that realised saving is so defined as to be identical with realised investment.

Realised saving is identical with realised investment. But this identity is only an accountant's identity, and it is very much different from the actual situation. In practice, equilibrium level of output and income can be established only at the income level, when planned saving and planned investment are equal.

However, the concepts of realised saving and realised investment are not significant since they do not show whether the economy is in equilibrium or not. For our analysis of equilibrium, planned saving and planned investment are the concepts required. When planned saving and planned investment are equal, the economy is in equilibrium; when they are divergent, the economy is in disequilibrium. We can summarise this analysis as follows:

- S and I are necessarily equal by definition; here, we refer to realised saving and realised investment.
- S and I need not be equal, here we refer to planned saving and planned investment.
- An economy is in equilibrium when planned saving and planned investment are equal; it is in disequilibrium when planned saving and planned investment are not equal.

According to Keynes, it is the divergence between planned saving and planned investment which is responsible for fluctuations in the level of income, output, employment etc.

7.3.3 Planned Saving exceeds Planned Investment.

Suppose planned saving exceeds planned investment. This may take place when the community decides to save more or when the entrepreneurs decide to invest less. We can explain the results by taking a simple but imaginary example. Suppose, the total money income of the community is Rs. 100 crores, of which 80% is consumed and 20% saved. Suppose, the community now decides to save 25% of the income i.e., Rs. 25 crores. This would be possible by reduction of consumption to Rs. 75 crores. Thus, the immediate effect of increase in saving is curtailment of consumption by the community. But if investment also rises by the same amount, the total volume of income will remain constant :

$$C + I = Y$$

(Rs. 75 crores) + (Rs. 25 crores) = (Rs. 100 crores)

But investment can be expected to remain the same or even decline. For, when producers see that consumption expenditure has declined, they will be unwilling to increase their investment. Thus, if consumption expenditure declines (as a result of increased saving)

and if investment remains the same, the volume of income generated in the next period will be lower than in the previous period :

$$C + I = Y$$

(Rs. 75 crores) + (Rs. 20 crores) = (Rs. 95 crores).

When saving increases, both consumption expenditure as well as investment can be expected to decline. National income will decline and consequently effective demand will decline. Ultimately, price level will decline.

The same result can be expected when investment declines for various reasons while saving remains constant.

7.3.4 Planned Investment exceeds Planned Saving.

Suppose investment exceeds saving. This will be possible when the entrepreneurs decide to invest more than what the community is prepared to save. The investors may get hold of past savings or may borrow funds from banks (new bank credit). Increase in investment will lead to increased demand for capital goods and factors of production. At the same time, income of the community will rise leading to an increase in effective demand for consumption goods. Thus, there is increased demand for both consumption goods and capital goods. Employment, income and prices will also go up; and after the stage of full employment and maximum production, prices alone will rise.

Thus, in Keynesian analysis, the price level is made dependent upon the fluctuations of income and effective demand which in turn depend upon the relationship between saving and investment. Three alternative positions can be indicated here.

- If S and I are equal : Income, output, employment and price level will all be constant.
- If S exceeds I : Income, output employment and price level will decline.
- If I exceeds S : Income output, employment and price level will rise.

7.4 Let us sum up

In this lesson, we learned that planned (ex-ante) saving and investment may not be equal, but actual or realized (ex-post) saving and investment are always equal. We also learned how their inequality brings about changes in the economy.

7.5 References

- Edward, Shapiro. Macroeconomic Analysis.
- Gardner, Ackey, Macroeconomic Theory.
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Examination oriented/practice questions

- What do you mean by saving and investment?
- What do you mean by ex-ante saving and investment?
- If planned saving exceeds planned investment, how does the economy get affected?
- What happens to the macroeconomic variables if ex-ante investment is more than ex-ante saving?
- Why are planned saving and investment usually not equal?
- Discuss ex-post saving and investment.
- Discuss in detail saving investment equilibrium.

INVESTMENT MULTIPLIER AND ITS EFFECTIVENESS IN LESS DEVELOPED COUNTRIES (LDCs)

B.A. Sem 3rd **UNIT II**

EC - 301 **LESSON: 8**

STRUCTURE:

8.1 Objectives

After going through this lesson, you are expected to:

- understand the meaning of investment multiplier
- understand the relationship between investment and income
- know about the working of multiplier in LDCs.

8.2 Introduction

The effect of changes in investment upon consumption expenditure and the consequent generation of income in the short-run are examined by Keynes in the theory of multiplier. Keynes rests his analysis of income multiplier (which he named "investment multiplier") on the behaviour of consumption function, and in particular the coefficient of marginal propensity of consume. It tells us that when there is an increment in aggregate investment, income will increase by an amount which is 'K' (the investment multiplier) times the increment of investment.

8.3 Investment multiplier and its effectiveness in less developed countries (LDCs)

8.3.1 Concept of investment multiplier :- Conceptually, the multiplier refers to the effects of changes to investment outlays on aggregate income through induced consump-tion expenditures. Thus, the multiplier expresses a relationship between an initial increment in investment and the resulting increase in aggregate income. In fact, the multiplier is the name given to the numerical coefficient which indicates the increase in income which will result in response to an increase in investment. For instance, if investment increases by one crore of rupees and the aggregate income (or the national income) rises by four crores of rupees, then the multiplier is 4 (increase in income of Rs. 4 crores + increase in investment of Rs. 1 crore = 4). The multiplier may be defined as the ratio of the realised changed in aggregate income to the given change in investment.

Symbolically,

$$K = \frac{\Delta Y}{\Delta I}$$

where, K stands for the investment multiplier, "Y represents change in income, and "I refers to a given change in investment.

It follows that, given the multiplier coefficient K, we can measure the resulting change in the level of income caused by an intended change in investment.

$$\Delta Y = K. \Delta I$$

Samuelson, therefore, defines the multiplier as "the number by which the change in investment must be multiplied in order to present us with the resulting change in income."

The propelling force behind the multiplier effect is the con-sumption function. As a result of an increase in investment outlay, income initially increases in the same magnitude, but as income increases, consumption also increases. Consumption expenditures, in turn, become additional income to factors of production engaged in the production of consumers' goods. Thus, there is a further increase in income due to induced consumption and so on. This process, however, is not endless as the whole of the increase in income is not consumed. The process continues till the increasing ratio of income to expenditure gradually works itself out, because of the marginal propensity to consume being less than unity.

Keynes assumes that when the real income of the community increases or decreases, its consumption will increase or decrease, but not in the same proportion. Hence, the marginal propensity to consume is always less than one. This concept of marginal propensity to consume is at the heart of the multiplier principle. The value of the multiplier is in fact determined by the marginal propensity to consume. The larger its value, the greater is the value of the multiplier and vice versa. Thus, the investment multiplier is a direct function of the marginal propensity to consume (MPC). On this basis, Keynes sets a general formula for the multiplier as follows:

$$K = \frac{I}{I - \left(\frac{\Delta C}{\Delta Y}\right)} \text{ or } \frac{I}{I - MPC}$$

where k stands for the multiplier coefficient and $\frac{\Delta C}{\Delta Y}$ refers to the marginal propensity to consume (MPC).

Alternatively, since I – MPC = MPS we can also say

$$k = \frac{1}{MPS}$$

(where MPS refers to the marginal propensity to save).

This means that the multiplier coefficient is measured as the reciprocal of the marginal propensity to save.

Theoretically, the values of the multiplier have a wide range, from one to infinity ; when MPC = 0, k = I, and when MPC = 1, k = α , a result which may prove explosive. However, both these cases are rare phenomena because, in normal circumstances, the marginal propensity to consume is always less than one and cannot be zero. Keynes

estimates the actual value of the multiplier to be about 3, with variations in different phases of the trade cycle.

8.3.2 Working of the multiplier

The process of the working of the multiplier can be briefly illustrated by a "sequence analysis", which is discussed here.

Suppose in any given period, investment increases by Rs. 10 crores. It will first increase income by Rs. 10 crores for those engaged in producing investment goods. Assuming the marginal propensity to consume to be 0.5 or 50 per cent in the first round, Rs. 5 crores will be spent on consumption goods by these income recipients. Thereafter, Rs. 5 crores are received as income by those engaged in consumer goods industries. This logic is based on the fundamental proposition that one person's consump-tion expenditure is another person's income, so that an amount spent on consumption means a further amount of income received within the economy. The recipients of the Rs. 5 crores income will further spend 50 per cent of that income on consump-tion, *i.e.* Rs. 2.5 crores in the second round. Similarly, Rs. 1.25 crores of income will be generated in the third round, and so on and so forth.

Economists estimate that each round of expenditure takes about two to three months to materialise. This interval of time between con-sumption responses is the multiplier period or propagation period. Professor Halm defines the multiplier period as the average period of time taken before money received as income and spent on consump-tion becomes income again. As we move from one multiplier period or round to another, the initial expenditures give rise to a gradually diminishing series of successive additions to income (when MPC is >0 but < 1). This process will continue till the total increment in income becomes so large that it generates additional savings which is equal to the increase in investment. This process may be demon-strated mathematically, by the use of the formula for the sum of an infinite geometric series,

$$\Delta Y = \Delta I \quad (1 + c + c^2 + c^3 + \ldots + C^n)$$

where, "Y represents the increase in income, "I is the initial increase in investment, and c, the marginal propensity to consume.

Since the absolute value of c is less than 1, the sum of an infinite geometrical progression is

$$1 + c + c^2 + c^3 + \ldots\ldots + c^n = \frac{1}{1 - c}$$

or $$\Delta Y = \Delta I. \frac{1}{1 - c}$$

Hence, substituting the value of the above example in the formula

$$Y = 10 \text{ X } \frac{1}{1 - 0.5} = 10 \text{ X } \frac{1}{\frac{1}{2}} = 10 \text{ X } 2 = \text{ Rs. 20 crores.}$$

In other words, with a marginal propensity to consume of 0.5, an initial investment of Rs. 10 crores will give rise to an aggregate income amounting to Rs. 20 crores.

Table 8.1

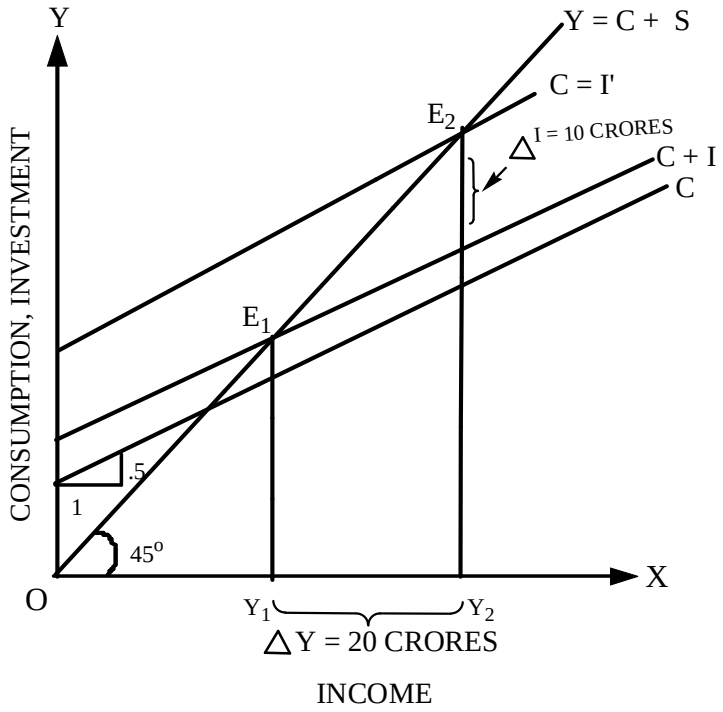
The Multiplier Effect of a Steady Injection of New Investment $\left(\text{MPC} = \frac{1}{2}\right)$

Multiplier	Initial investment 'I' in Rs. Crores	$\left(\text{MPC} = \frac{1}{2}\right)$ Increase in consumption*	Total increase i income ΔY = ΔC
0	10		10
1	1	5	15
2	10	5+2.5	17.5
3	10	5+2.5+1.25	18.75
4	10	5+2.5+1.25+0.625	19.375
5	10	5+1.5+1.25+0.625+0.312	19.687
…	…	…….. …….	
…	10	…….. …….	20.00

* Successive figures trace these increments of consumption in successive periods, which are attributable to increment of investment in each period.

8.3.3 Graphical representation of the multiplier effect

The effect of investment multiplier, in generating income, can also be expressed diagrammatically as in Fig. 8.1.



In Fig. 8.1, curve C refers to a linear consumption function, with a constant MPC of 0.5. The level of effective demand is determined by consumption and investment outlays, as represented by the curve C + I, which is merely superimposed on the C curve. The 45° line, OY, shows that Income = Consumption + Saving. The C + I curve intersects the 45° line at E1 ; the original equilibrium level of income OY_1.

An increase in investment in shown by a shift of the C + I curve to the C + I + ΔI curve. The difference between the two curves is the value of the new investment. In our example, it is Rs. 10 crores. Now, this new C + I + ΔI curve intersects the 45° line at E_2, which gives a new equilibrium level of income OY_2. Income Y_1Y_2 (that is, Rs. 20 crores in

our example) is, in fact, twice the initial outlay (Rs. 10 crores), implying that the multiplier coefficient is Rs. 2.

In the aforementioned example, the change in income is Y_1Y_2 = Rs. 20 crores, which is k time ΔI . (k = 2, $\Delta I = 10 \therefore \Delta Y = 20$).

Check your progress-I

- What is an investment multiplier? How is it related to MPC?

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- Show diagrammatically the working of a multiplier.

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8.3.4 Assumptions of the Multiplier Theory

The assumptions which are implicit in the Keynesian theory of the multiplier may be stated as under:

- The original propensity to consume remains constant during the process of income propagation.
- Fiscal and monetary policies remain stable, so that they do not affect the propensity to consume.
- Excess capacity exists in the economic system. The assumption is that the economy operates at less than full-employment level, so that the multiplier effect is realized in real terms in that it raises the level of output and employment.
- A closed economy model is assumed; that is, the country has no foreign trade

activity. With this assumption, the impact of international economic transactions and consequent position of the 'balance of payments' on the domestic level of income and consumption is ruled out.

- A static economy model is assumed. That is, there is absence of dynamic change in the economy. The state of techno-logy, capital formation and accumulation, labour supply, stock of raw materials, power resources and other input variables are assumed to be given.

- There is no significant time lag involved between the receipt of income and its expenditure. Thus the process of income propagation in each round is assumed to be instantaneous.

8.3.5 Shortcomings of the multiplier theory

Keynes' multiplier theory has the following drawbacks/shortcomings:

- By assuming an instantaneous relationship between income, consumption and investment, Keynes treated the multiplier as a timeless phenomenon. In reality, however, there is a time lag as the modern economists point out that the multiplier effect always takes some time to make its full impact.

- Keynes' principle of investment multiplier is a static pheno-menon, which doesn't suit the changing processes of the dynamic world. Under certain static assumptions, it shows the process of income propagation from one point of equilibrium to another; there is no analysis of the actual sequence of events.

- Keynes presents no empirical evidence of his multiplier theory. As Gottfried Haberler points out, "Keynes offers no adequate proof, only a number of rather disconnected observations. His central theoretical idea about the relationship between the propen-sity to consume and the multiplier, which is destined to give shape and strength to these observations turns out to be not an empirical statement which tells us something about the real world, but a barren algebraic relation which no appeal to facts can either confirm or disprove. In short, Keynes' theory of multiplier is an unveri-fied hypothesis.

- Probably, the greatest weakness of the multiplier theory, according to Gordon, is its exclusive emphasis on consumption. It would be more realistic to speak of a "marginal propensity to spend" rather than consume, and then to consider the repercussions of an initial increase in investment, not only on consumption but also on total private investment and government spending.

- The multiplier takes into account only the effects of induced consumption on income ; it neglects the repercussions of induced consumption on induced investment. It fails to express that the demand for capital goods is a derived demand.

- Professor Hazlitt held that about the concept of multiplier some Keynesians make fuss than about anything else in the Keynesian system. In his view, there can never be any precise, pre-determinable or mechanical relationship between investment and income, and that the multiplier is in fact a worthless concept. It is a myth.

The multiplier theory has its practical application in times of depression. It is on the basis of the multiplier effect that Keynes advocated a policy of public investment to overcome a depression. He argued that if a government takes up public investment outlays such as public works programme, this would bring about an increase in income several times larger than initial outlay.

8.3.6 Effectiveness of Multiplier in less developed countries. (LDCs)

There is deep rooted poverty and chronic unemployment in backward under-developed countries, now called "Less Developed Countries" (LDCs). They are caught in a low equilibrium trap.

The MPC is very high in such LDCs. The main reason for the higher MPC in these countries is that the income level is so low that almost the entire income is consumed.

According to the Keynesian multiplier theory, higher the MPC, higher is the value of the multiplier, and therefore, a small initial investment should lead to income propagation and employment creation to a very large extent, and unemployment in such countries ought to have been cured, and income level ought to have gone up substantially.

But the picture in the LDCs is quite different from what should have happened. The multiplier has not worked in such countries. These under-developed countries like India still suffer from chronic poverty and chronic unemployment even though large public and private investments have taken place in such countries. For example, heavy investments in India have not, as yet solved the problem of poverty and unemployment.

Dr. V.K.R.V. Rao writes : "The income multiplier is much higher in money terms than in real terms and to that extent, prices rise much faster than an increase in aggregate real income. The multiplier principle, therefore, works with reference to money incomes but not with reference to real income or employment."

According to Dr.Rao, certain conditions are necessary for the multiplier to work. These are (i) existence of involuntary unemployment, (ii) elastic supply of output of consumption goods (iii) excess capacity in such industries and (iv) elastic supply of working capital. These conditions are rarely satisfied in the LDCs.

In India, most of the people (70 per cent) are engaged in the agricultural sector; they are self-employed, and there is no involuntary un-employment. There is disguised unemployment. The supply of consumption goods is also inelastic. The supply of working capital is also inelastic or much less elastic. "Besides, there are many rigidities, market imperfections, and bottlenecks, lack of complementary factors and inelasticities in such under-developed, poor economies."

In such countries, as Dr. Rao rightly points out, the price multiplier is in operation to a great extent, but the investment multiplier as visualized by Keynes does not operate and it has failed to be effective in additional income propagation and employment creation.

The main reason is that such countries, including India, are agriculture-dominated. The industrial sector is small. Any new investment generates income to farmers in the primary agricultural sector in the first round, and there is no secondary expansion in the manufacturing and the tertiary sectors. Since agricultural output is inelastic, at least, in the short period and whatever output is produced is used for self-consumption, very little is left as marketable surplus. As a result of additional investment, additional demand for food and other wage goods expands. But due to inelastic supply of output and low availability

of the marketable surplus, the multiplier effect leads to price inflation. It generates a price spiral. Money incomes multiply, but real incomes lag behind. The income multiplier turns into a price multiplier.

There is a lot of truth in the above arguments and evidence in India itself has shown that the price multiplier has worked more effectively causing various prices to increase in a spiral and the real income-multiplier has lagged miles behind. This is because of the relatively small industrial sector in the LDCs like India.

However, the long run, with the dynamic economic development of the LDCs, it is observed that the income multiplier will operate even in such countries. The problem of the LDCs is not of just creating additional investments. The problem is one of reducing the proportion of the agricultural income or reducing the dependence on agricultural sector for raising aggregate national income. The multiplier does apply to the industrial sector in such economies. It is only in the long run, when adequate conditions are created, that the multiplier will apply more effectively. Unless inelasticities, particularly in the wage good industries, are removed, the operation of the income multiplier will be much limited. Besides, a large part of the income of LDCs gets leaked out in the form of imports. It is only through the balanced growth of industries that finally, the multiplier effect will operate fully in the real sector of the economy.

Check your progress-II

- What are the basic assumptions of multiplier? Also discuss its shortcomings.

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- Explain with justification the relevance of the concept of multiplier in case of a less developed country.

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8.4 Let us sum up

The multiplier theory has its practical application during depression. It is on the basis of the multiplier effect that Keynes advocated a policy of public investment to overcome depression. If government takes up public investment outlays such as public works programme, this would bring about an increase in income several times larger than initial outlay.

In the process of interaction between the consumption and investment functions; the magnitude of income change is determined by the relative values of marginal propensity to consume. In a less developed country, saving – income ratio is very low, so the marginal propensity to consume being high the economy will be subject to more violent fluctuation than a rich country with high income- saving ratio and low propensity to consume. The government in a less developed country therefore affects the level of income through indirect consumption or direct investment rather than by Monetary Policy.

8.5 References

- Jhingan, M.L. Money, Banking, International Trade and Public Finance.
- Samuelson, P.A. Economics
- Vaish, M.C. Macroeconomic Theory.

FINANCIAL MARKETS AND MACRO ECONOMIC THEORY: MONEY MARKET - CONCEPT, FUNCTIONS AND CONSTITUENTS OF ORGANISED INDIAN MONEY MARKET

B.A. Sem 3rd **UNIT III**

EC - 301 **LESSON: 9**

STRUCTURE:

9.1 Objectives

After going through this lesson, the learners should be able to :

- understand what a money market is.
- know about the functions of money market.
- know about the constituents of money market.
- have knowledge about Indian money market.

- know the difference between organised and unorganized money markets.

9.2 Introduction

Finance is the integral part of modern business. The institutionalised provision for finance is equally important. The financial system of a country works through a set of financial markets and institutions.

The term "money market" refers to the institutional arrangement facilitating borrowing and lending of short term funds. In a money market, funds may be borrowed for period varying from a day, a week to 3 to 6 months.

9.3 Money Market – Concept, Functions And Constituents Of Organised Indian Money Market

9.3.1 Concept The term "money market" refers to the institutional arrange-ments facilitating borrowing and lending of short· term funds. In a money market, funds may be borrowed for periods varying from a day, a week, 3 to 6 months and against different types of instruments such as bills of exchange, short-term securities, banker's acceptances, etc., called "near-money". According to Crowther, "The money market is the collective name given to the various firms and institutions that deal in the various grades of near money."

Professor Sen rightly says that the short-term money market is "the place where the strain on the banking system is first felt in periods of pressure, and it is the place where ease in the banking system is first felt in periods of monetary superfluity". Central Banks have, therefore, generally confined their operations to the short· term money market as this gives them very good position from which to influence cost and demand, availability and supply of money.

9.3.2 Functions of a Money Market

A money market performs a number of functions in an economy. The main functions of money market are as under:

- **Provides Funds** It provides short-term funds to the public and private institutions needing such financing for their working capital requirements. It is done by discounting trade bills through commercial banks, discount houses, brokers and

acceptance houses. Thus, the money market helps the development of commerce, industry and trade within and outside the country.

- **Use of Surplus Funds** It provides an opportunity to banks and other institutions to use their surplus funds profitably for a short period. These institu-tions include not only commercial banks and other financial institutions but also large non-financial business corporations, states and local governments.

- **No Need to Borrow from Banks** The existence of a developed money market removes the necessity of borrowing by the commercial banks from the central bank. If the former find their reserves short of cash requirements they can call in some of their loans from the money market. The commercial banks prefer to recall their loans rather than borrow from the central bank at a higher rate of interest.

- **Helps Government** The money market helps the government in borrowing short-term funds at low interest rates on the basis of treasury bills. On the other hand, if the government were to issue paper money or borrow from the central bank, it would lead to inflationary pressures in the economy.

- **Helps in Monetary Policy** A well developed money market helps in the successful implementation of the monetary policies of the central bank. It is through the money market that the central bank is in a position to control the banking system and thereby influence commerce and industry.

- **Helps in Financial Mobility** By facilitating the transfer of funds from one sector to another, the money market helps in financial mobility. Mobility in the flow of funds is essential for the development of commerce and industry in an economy.

- **Promotes Liquidity and Safety** One of the important functions of the money market is that it promotes liquidity and safety of financial assets. It thus encour-ages savings and investments.

- **Equilibrium between Demand and Supply of Funds** The money market brings equilibrium between the demand and supply of loanable funds. This it does by allocating savings into investment channels. In this way, it also helps in rational allocation of resources.

- **Economy in Use of Cash** As the money market deals in near-money assets and not money proper, it helps in economising the use of cash. It thus provides a convenient and safe way of transferring funds from one place to another, thereby immensely helping commerce and industry.

9.3.3 Constituents Of Organized Indian Money Market.

The money market is composed of several financial agencies that deal with different types of short-term credit. We may describe the following important components/ constituents of the money market:

Call Money Market

In India, call money market is centered at Mumbai, Kolkata and Chennai. Call money market deals with borrowing and lending transactions for a day or a few days. These loans are called call loans and the call money market is also known as Interbank call money market. Scheduled Commercial Banks, Cooperative Banks and the Discount and Finance House of India (DFHI) operate in it. Institutions like UTI, LIC, OIC, IDBI and NABARD are also allowed to operate in this market as lenders. On account of its highly sensitive nature, call money market is considered the most appropriate indicator of the liquidity position of the money market.

Treasury Bill Market

This market deals in treasury bills. In India treasury bills are short term (91-day) liability of the Central Government. Theoretically, they are issued to meet temporary deficits which a government faces due to excess of expenditure over revenue at some point of time. However, in India they have become a permanent source of funds because the amount of Treasury Bills outstanding has been continually on increase and every year new bills issued are more than those which are retired. Every year a part of treasury bills held by the RBI is converted into long-term bonds.

Treasury bills are of two kinds: ad hoc and regular or ordinary. Ad hoc treasury bills are issued for providing investment outlets to state governments, semi-government departments and foreign central banks for their temporary surpluses. They are not sold to general public (or banks) and are not marketable. But, their holders, when in need of

cash, can get them rediscounted with the RBI. The treasury bills sold to the public or banks are regular or ordinary and are freely marketable. Their buyers are almost entirely commercial banks.

Commercial Bill Market

It is a market that deals with trade bills or commercial bills which are drawn by one merchant firm on the other. The purpose of commercial bills is to reimburse the seller while the buyer delays payment. These bills are generally of three months maturity. They are postdated cheques drawn by sellers of goods on the buyers for value received. Take for instance a seller who sells goods to a buyer and is in need of cash. For that he draws a bill and sends it to buyer for acceptance. The latter in acknowledgement of his responsibility to make payment on due date, writes accepted on the bill or gets the bills accepted on his behalf by his bank which then assumes the responsibility of payment if the drawee defaults. The bill so accepted becomes a marketable instrument and on receipt the drawer can sell it in the market for cash. For this, the drawer goes to his bank and gets the bill discounted i.e., he sells it for cash to the bank. The commercial bill differs from a treasury bill or local government bill which are instruments of public financial instruments. In India, the commercial bill market is undeveloped mainly due to (i) prevalence of cash credit system in banks lending; and (ii) the reluctance of the large buyer to bind himself to payment discipline associated with commercial bill market.

Certificate of Deposit Market

Certificate of Deposit (CD) was introduced in the money market by the RBI in March 1989. Initially CDs were issued only by scheduled commercial banks in multiples of Rs. 25 lakh subject to the minimum size of issue being Rs. 1 crore and their maturity ranged from three months to one year. In 1993 six financial institutions: IDBI, ICICI, IFCI, IRBI, SIDBI and EMM bank of India were permitted to issue CDs with maturity period of one year to three years. CDs are issued at discount to face value and discount rate is freely determined. They are transferable by endorsement and delivery. Banks pay high interest rates on CDs. Therefore, holders of CDs prefer to hold them till maturity and thus, secondary activity in CDs have been non-existent.

Mutual Funds

A Scheme of Money Market Mutual Funds (MMMFs) was introduced by the RBI in April 1992. The objective of the scheme was to provide an additional short-term avenue to the individual investors. With a view to making the scheme more flexible, the RBI permitted certain relaxations in November 1995. The new guidelines allow banks, public financial institutions and also the institutions in the private sector to set up MMMFs. The ceiling of Rs. 50 crore in the size of MMMFs stipulated earlier, has been withdrawn. The prescription of limits on investments in individual instruments by MMMF has been generally deregulated. Since April 1996, MMMFs are allowed to issue units to corporate enterprises and others.

The scheme was further liberalised in 1997-98 and the MMMFs were permitted to make investments in rated corporates and others. The scheme was further liberalised in 1997-98 and the MMMFs were permitted to make investments in rated corporate bonds and debentures with residual maturity of upto one year.

The MMMFs have been brought under the purview of the SEBI regulations since March, 2000. Banks are now allowed to set up MMMFs only as a separate entity in the form of trust. Currently, there are three MMMFs in operation.

Venture Capital Funds (VCF)

The Union Budget for 1999-2000 stressed the need of higher investment in venture capital activity. As it is difficult to access capital market to raise funds for technology development on demonstration especially for small and medium industries, the VCF has a major role to play in this area.

The National Venture Funds for software and IT industry (NVFSIT) launched in the current financial year merit mention in this context. NVFSIT is managed by the Small Industry Development Bank of India (SIDBI), Venture Capital Ltd. (SVCL) which is a wholly subsidiary of the IDBI.

9.4 Let us sum up

Money market is a collective name given to the various forms and institutions that deal with the various grades of near money. The lenders of the money market are Reserve

Bank of India, all Schedule Commercial Banks, Cooperative Banks, Financial Institutions like the LIC, UTI, GIC, Foreign Exchange Banks, Money Lenders etc. Thus money market is a market for monetary assets in which the short term requirement of the barrowers are met in order to provide liquidity or cash to the lenders.

9.5 References

- Jhingan, M.L. Money, Banking, International Trade and Public Finance.
- Mithani, M.D. Money, Banking, International Trade and Public Finance.

Examination oriented questions

- What are the main constituents of organized Indian money market?
- What are the functions of a money market?
- How does a money market operate? How does it facilitate different transactions?

CHARACTERISTICS OF A DEVELOPED MONEY MARKET

B.A. Sem 3rd **UNIT III**

EC - 301 **LESSON: 10**

STRUCTURE:

10.1 Objectives

After going through this lesson, you shall be able to:

- understand the difference between developed and under developed money markets.
- know about the characteristics of a developed money market.

10.2 Introduction

A developed money market possesses a well – organized banking system. Banks are the main channels of short – term transactions. It should have a central bank, adequate availability of credit instruments and large number of sub markets. This market is very sensitive to the impact of internal and institutional influences. The London Money Market is regarded as the most developed money market.

10.3 Characteristics of a developed money market

The developed money market is a well organised market which has the following main features/characteristics:

- **A Central Bank.** A developed money market has a central bank at the top which is the most powerful authority in monetary and banking matters. It con-trols, regulates and guides the entire money market. It provides liquidity to the money market, as it is the lender of the last resort to the various constituents of the money market.

- **Organised Banking System.** An organised and integrated banking system is the second feature of a developed money market. In fact, it is the pivot around which the whole money market revolves. It is the commercial banks which supply short-term loans, and discount bills of exchange. They form an important link between the borrowers, brokers, discount houses and acceptance houses and the central bank in the money market.

- **Specialised Sub-Markets.** A developed money market consists of a number of specialised sub-markets dealing in various types of credit instruments. There is the call loan market, the bill market, the treasury bill market, the collateral loan market and the acceptance market, and the foreign exchange market. The larger the number of sub-markets, the more developed is the money market. But the mere number of sub-markets is not enough. What is required is that the various sub-markets should have a number of dealers in each market and the sub-markets should be properly integrated with each other.

- **Existence of Large Near-Money Assets.** A developed money market has a large number of near-money assets of various types such as bills of exchange, promissory notes, treasury bills, securities, bonds, etc. The larger the number of near-money assets, the more developed is the money market.

- **Integrated Interest-Rate structure.** Another important characteristic of a developed money market is that it has an integrated interest-rate STRUCTURE. The interest rates prevailing in the various sub-markets are-integrated to each other. A change in the bank rate leads to proportional changes in the interest rate prevail-ing in the sub-markets.

- **Adequate Financial Resources.** A developed money market has easy access to financial sources from both within and outside the country. In fact, such a market attracts adequate funds from both sources, as is the case with the London Money Market.

- **Remittance Facilities.** A developed money market provides easy and cheap remittance facilities for transferring funds from one market to the other. The London Money Market provides such remittance facilities throughout the world.

- **Miscellaneous Factors.** Besides the above noted features, a developed money market is highly influenced by such factors as restrictions on international transactions, crisis, boom, depression, war, political instability etc.

10.4 Let us sum up

We learned that a developed money market has a well-organized banking system and a central Bank that regulates the working of the money market. There should be large number of sub-markets, adequate availability of funds and mobility of funds throughout the money market. Absence of any above stated characteristics absolutely makes a less developed money market.

10.5 References

- Mithani, D.M. Money, Banking, International Trade and Public Finance.
- Jhingan, M.L. Money, Banking, International Trade and Public Finance.
- Dwivedi, D.N. Macroeconomics (Theory and Policy)

Examination oriented questions

- What are the main features of a developed money market?
- What is the need for an organized banking system?
- What are near money assets? Give examples.
- Write a short note on specialized sub-markets of money market.

MONETARY POLICY - MEANING, OBJECTIVES AND ROLE IN LDCs

B.A. Sem 3rd **UNIT III**

EC - 301 **LESSON: 11**

STRUCTURE:

11.1 Objectives

After going through this lesson, you should be able to :-

- understand how the monetary policy helps to accelerate economic development.
- know about how the monetary policy controls the price level in an economy or maintains price stability.
- know about the role of monetary policy in a less developed country.

11.2 Introduction

Monetary policy plays an important role in affecting the economic activities of a country because money and credit in a modern economy exercise a vital influence upon the course, nature and volume of economic activities. Monetary policy can also help in correcting the economic ills of the economy such as inflation and deflation. In short, monetary policy is an important economic tool which can be used to attain many macro – economic goals.

11.3 Monetary Policy – meaning, objectives and role in less developed countries (LDCs)

11.3.1 Meaning of monetary policy :- Monetary policy in a narrow sense means monetary matters and decisions of a country which aim at controlling the volume of money, influencing the level of interest rates, public spending, use of money and credit etc. But in the broader sense, it includes all those monetary and non-monetary measures and decisions which influence the cost and supply of money. Hence, monetary policy implies measures designed to ensure an efficient operation of the economic system or set of specific objectives through its influence on the supply, cost and availability of money. For this purpose, monetary policy involves the deliberate and conscious use of monetary instruments like bank rate, open market operations, change in reserve ratio and qualitative credit control measures.

In the words of *Paul Einzig, "Monetary policy includes all monetary decisions and measures irrespective of whether their aims are monetary or non-monetary, and all non-monetary decisions and measures that aim at affecting the monetary system. "*

In the words of *R. P. Kent, "Monetary policy is the management of the expansion and contraction of the volume of money in circulation for the explicit purpose of attaining a specific objective, such as full employment. "*

In the words of *Prof G. Crowther, "Monetary policy consists of the steps taken or efforts made to reduce to a minimum the disadvantages that flow from the existence and operation of the monetary system. It is a policy to regulate the flow of monetary resources in the economy to attain certain specific objectives".*

11.3.2 Objectives of Monetary Policy

The objectives of monetary policy have been varying from time to time depending upon the nature of economy and problems faced by the countries and the general economic policies pursued by them. In an underdeveloped country, the monetary policy is different from what it is in a developed country. In case of an underdeveloped country, the monetary policy has to be more dynamic so as to meet requirements of an expanding economy by creating suitable conditions for economic growth, whereas in a developed country, the monetary policy has to serve the function of stabilisation and maintaining proper equilibrium in the economic system. Further, in case of a developing country, monetary policy has to play a special role. It has to make a very large-scale mobilisation of productive resources of all types and has to organise their most efficient allocation. Moreover, the monetary policy, in a developing economy, has to play an important role in the implementation of development plans of sizable dimensions. The main objectives of monetary policy are as follows:

- **Economic Growth.** The foremost objective of economic policy is to achieve the aim of economic growth. In underdeveloped countries, the national income and real per capita income are very low along with poor standard of living. These economies are in poverty and unemployment. It is because both the production capacity and productivity are extremely low. It is due to low capital formation. On account of low capital formation, underdeveloped countries fail to utilise their natural and human resources fully. As a result of economic development, there will be proper utilisation of natural and human resources, more capital formation, more employment, increase in national and per capita income as well as an improvement in the standard of living.

- **Price Stability.** Another main objective of monetary policy is to attain price stability in the country. Price stability refers to the prevention of wide fluctuations in prices. Economists like *Cassels* and *Keynes* suggested price stabilisation as the main objective of monetary policy of a country. As a matter of fact, fluctuations in price level either in upward direction or downward direction distort the entire economic system of the country. In this way, price stability is a prerequisite for economic development of a country. According to *Prof Basu, " A monetary policy which*

can maintain a reasonable degree of price stability and keep employment reasonably full, sets the stage of economic development."

- **Exchange Stability.** Another major objective of monetary policy is to bring foreign exchange rate stability in the country. By foreign exchange rate is meant the number of units of foreign currency that can be had in exchange for one unit of domestic currency. For example, 1 U.S. $ = Rs. 46.97 and 1 U.K. pound = Rs. 65.72. Fluctuations in the foreign exchange rate are very much influenced by balance of payments. By 'balance of payments' is meant difference between total exports and total imports. When the total exports exceed total imports, it is said that balance of payment is favourable. On the contrary, when the total imports exceed total exports, it is said that balance of payment is unfavourable. Every country aims at favourable balance of payments.

- **Full Employment.** Another objective of monetary policy of each country is to attain and maintain full employment. Full employment implies a situation where all competent persons who are willing to work at the prevailing rate of wages get work. To attain this situation, it is necessary to increase production and demand. During boom period, there is rapid increase in demand and thereby the production is also increased in order to meet the rising demand. It also leads to full employment. On the contrary, during the period of depression, there is low production because of low demand and wide unemployment. Hence, the objective of monetary policy is to check rising unemployment during depression period.

- **Neutrality of Money.** Another major objective of monetary policy is neutrality of money. Economists like *Worksteed, Hayek* and *Robertson are the main exponents of neutral money.* They hold the view that monetary policy should aim at neutrality of money in the economy. According to neutralists, the monetary changes cause distortion and disturbances in the proper operation of the economic system of the country. They are of the firm opinion that if somehow neutral policy is followed, there will be no cyclical fluctuations, no trade cycles, no inflation and no deflation in the economy. Under this system, money is kept stable by the monetary authority. In this way the main objective of monetary policy should be neutrality of money.

- **Credit Control.** Another objective of monetary policy is credit control in order to influence the patterns of investment and production in the economy. Its main objective is to control inflationary pressures arising in the process of development. This requires the use of both quantitative and qualitative methods of credit control. Under the conditions of undeveloped money markets, the traditional tools of credit control- the bank rate and open market operations have not been proved to be effective.

- **Equilibrium in the Balance of Payments.** Another objective of monetary policy is to have equilibrium in the balance of payments. In an underdeveloped economy, a successful monetary policy must aim at achieving the balance of payments equilibrium. The developing countries generally face the problem of unfavourable balance of payments due to the excess of developmental imports over their lesser exports, with the result that they usually have a foreign exchange crisis. The central bank solves this problem of balance of payments equilibrium by using direct and traditional methods of exchange control. In order to provide suitable conditions for rapid economic development, the maintenance of balance of payments will be essential which can be done with the help of an effective monetary policy.

- **Reduction in Inequalities of Income and Wealth.** Another important objective of monetary policy is the reduction in inequalities of income and wealth. Under capitalism and mixed economies, there are inequalities in income and wealth due to right of private property and law of inheritance. As a result, the society is divided into two classes, rich and poor. Rich class exploits the poor class and thereby gross injustice is done to poor class. Thus, the objective of monetary policy is to reduce the inequalities of income and wealth so as to achieve harmony, peace, justice and overall prosperity.

- **Debt Management.** Debt management is another objective of monetary policy in an underdeveloped country. It aims at proper timing and issuing of government bonds , establishing their prices and minimising the cost of servicing public debt. It is the central government of a country which undertakes the selling and buying of government bonds and making timely changes in the structure and composition of public debt.

- **Creation and Expansion of Financial Institutions.** Another objective of monetary policy in an underdeveloped country is to speed up the process of economic development by improving the currency and credit system of the country. For this purpose, banks and financial institutions are to be established so as to provide larger credit facilities and to mobilise savings for productive purposes. In underdeveloped countries, there is dearth of banking and financial institutions. The monetary authority can help in the establishment and expansion of banks and financial institutions in urban and rural areas. This will obviously help in increasing the rate of economic development.

11.3.3 Objective and role of Monetary Policy in less developed countries (LDCs)

The problems of less developed countries are not the same as those of developed countries. The monetary policy and measures appropriate for a developed economy are, therefore, not always applicable to the solution of the typical problems faced by under-developed economies. The role of monetary policy in a developing economy is bound to be different from that in a developed economy because of differences in economic ends and means and conditions of developed and developing economies.

The main objective of a developing economy is to develop the economy from a stage of primary under-development to a stage of self-sustained growth. The monetary policy in such an economy should serve as an effective stimulant for economic growth. Among the objectives of monetary policy in a developing economy, top priority is to be given to achievement of economic growth While emphasis shifts from monetary and price stability and full employment in advanced economies to economic expansion or growth in under-developed countries, the importance of economic stability is not to be ignored. Other objectives, apart from growth and stability, which have a close bearing on economic expansion are the mobilisation and channelisation of domestic savings and the financing of investment. Since the last three items are directly or indirectly helpful in fostering economic growth, the main objectives of monetary policy in a developing economy can be reduced to two, *viz.*, economic growth and stability.

The objective of 'growth with stability', implying controlled expansion of money and credit, confers a special role on monetary policy and management in a developing economy for the following reasons:

- **Economic Development and Economic Planning.** Economic development in a developing economy needs economic planning; and economic planning assumes special importance as far as monetary policy is concerned. Monetary policy is a tool for economic planning and it is to be utilised for furthering the objective of planning and facilitating the attainment of growth with stability.

- **Economic Growth.** Since economic growth is the primary aim of an under developed economy, all policy measures should be directed to attain this objective. Monetary policy in this respect is important in the sense that increase in short-term and long-term credit would facilitate development. A growing volume of production and investment cannot be maintained without an increasing supply of money and credit. Therefore, the money supply should grow at a rate roughly equal to that of real income, so that prices may not fall as national income increases.

- **Increase in Financial Assets.** Growth brings an increase in financial assets, as deficit spending units (which invest) issue debt or equity securities to surplus-spending units (which save). One of the major tasks of monetary policy in development is to support the gradual expansion and proliferation of the machinery-commercial banks, saving banks, insurance companies, financial institutions, government bond market, private bond and share markets, etc., which link investors with the savers.

- **Proper Lines of Investment.** The monetary authority in a developing economy has the responsibility to guide the flow of funds quantitatively and qualitatively, to proper lines of investment. Because investments are necessary, it does not necessarily mean that all investments are good. In a period of inflationary pressure, investments may be directed to abnormal inventory building or to projects with very high profit expectations but not necessarily sound from the long--term or growth point of view. In such a case, credit must be made available to productive sectors and denied to sectors which are unproductive. Prof. Shaw has pointed out that credit is to be conducted to "those channels whose aggressive spending is likely to expand real output and to guide the flow of financial assets to those sectors the aggressive spending of which must be curtailed if the real resources of the country are to be utilised much more productively".

- **Create and Expand Banks and other Financial Institutions.** Another important function of the monetary authority is to create and expand banks and other financial institutions for the purpose of mobilising domestic savings for productive uses. An extension of banking will reduce imperfections in the money market and enable the central bank to regulate money market in an effective manner.

- **Meet the Financial Requirements of the Public Sector.** In order to meet a part of the financial requirements of the public sector, the monetary authority in a developing economy is required to perform an important role.

- **Proper Regulation of the Money Market.** For the development and proper regulation of the money market, the monetary policy is to be used for bringing about integration between the organised and the unorganised sectors of the money market. The monetary authority may also adopt effective measures for the development of a bill market in the economy, extension of banking facilities to the under-banked and unbanked areas, and to establish close cooperation amongst the various constituent units of the money market. The monetary authority has another important responsibility of setting up an integrated interest rate structure in the economy.

- **Extend the sphere of the monetised sector.** Most of the under-developed countries have a vast non- monetised sector where changes in the money supply or the interest rate do not have any effect on the nature of economic activity. The most important task of monetary authority in such a country is to extend the sphere of the monetised sector, so that monetary policy may work with greater efficiency and effectiveness.

11.4 Let us sum up

We learned that two important subdivisions of macroeconomic theory are the monetary policy and the fiscal policy. Monetary policy which comprises of the decisions of the Central Bank aims at controlling the money supply. We learned the role of monetary policy in a less developed country.

11.5 References

- Edward, Shapiro. Macroeconomic Analysis
- Seth, M.L. Macro Economics.
- Vaish, M.C. Macroeconomic Theory.

Examination oriented questions

- What is a monetary policy? What role does it play in macro-economic stability?
- What are the main objectives of monetary policy? How are the objectives different in developed and less developed nations? Justify your answer.

FISCAL POLICY - MEANING, OBJECTIVES AND ROLE IN LDCs

B.A. Sem 3rd **UNIT III**

EC - 301 **LESSON: 12**

STRUCTURE:

12.1 Objectives

After going through this lesson, you shall be able to:

- know the meaning of fiscal policy
- understand how the fiscal policy is helpful in bringing economic stabilisation and full-employment
- know about the role of fiscal policy in the distribution of income and wealth
- know about the role of fiscal policy in less developed countries.

12.2 Introduction

The term fiscal policy incorporates the tax and expenditure policies of the government. The fiscal policy operates through the control of government expenditures and tax receipts. It encompasses two separate but related decisions; public expenditure, and the level and structure of taxes. In a broader aspect, the taxation policy of the government relates to the programme of curbing private spending. Expenditure policy, on the other hand, deals with the channels by which government resources are pumped into the private economy. Fiscal policy in short refers to the budgetary policy.

12.3 Fiscal Policy – meaning, objectives and role in less developed countries (LDCs)

12.3.1 Meaning of Fiscal Policy :- The objective of every government is always to have a balanced budget. However, generally the expenditure exceeds the revenue income of the government. In order to meet this situation, the government imposes new taxes or increases existing taxes, takes internal or external loans or resorts to deficit financing by issuing fresh currency notes. Thus, the policies of imposing taxation, taking loans or deficit financing are collectively known as 'fiscal policy'. The term 'Fisc' in English language means *'treasury'*. Hence, policy concerning treasury or government exchequer is known as 'Fiscal Policy'.

In the words of Musgrave, "Fiscal Policy is concerned with those aspects of economic policy which arise in operation of the public budget."

According to Paul Samuelson, "Fiscal Policy means public expenditure and tax policy."

12.3.2 Objectives of Fiscal Policy in developing economies

The main objectives of Fiscal policy in developing economies are as under :

- **Maximise the level of Aggregate Savings.** The very first and foremost objective of fiscal policy in an underdeveloped country should be to maximize the level of aggregate savings by applying a cut to the actual and potential consumption at large.

- **Maximise the Rate of Capital Formation.** The second objective of fiscal policy in an underdeveloped economy should be to maximize the rate of capital formation, to break down economic stagnation and thus to lead the country to the path of rapid economic progress.

- **Divert Capital Resources.** The third objective of fiscal policy in an underdeveloped country should be to divert capital resources from less productive to more productive, and from socially less desirable to socially more desirable uses. The objective is implicit in planned economic development.

- **Increase Employment opportunities.** The fourth objective of fiscal policy in an underdeveloped country is to Increase employment opportunities in the country. The government should undertake local public works of community development involving more labour and less capital per head. Besides undertaking the establishment of public enterprises, the government should encourage private enterprises through tax holidays, concessions, cheap loans, subsidies etc. In the rural areas, efforts should be made to encourage domestic industries, by providing training, finance, marketing facilities and small machines connected with them.

- **Curb Inflationary Forces.** The fifth objective of fiscal policy in an underdeveloped country is to protect its economy from the demon of inflation. Inflation can prove ruinous to an underdeveloped economy. Hence, the fiscal policy of an underdeveloped country should be designed in such a manner as to curb inflationary forces arising during the process of economic growth.

- **Eliminate sectoral Imbalances.** The sixth objective of fiscal policy in an underdeveloped country should be to eliminate as far as possible, sectoral imbalances arising in the economy from time to time. Though the fiscal policy will help in maintaining price stability in the economy as a whole by curbing inflationary forces, there may arise sectoral price fluctuations in certain sectors of the economy on account of the existence

of several bottlenecks. Hence the fiscal policy should be devised in such a manner that it can correct such imbalances in time before they could inflict any damage on the economy of the country.

- **Eliminate the Glaring Inequalities of Income and Wealth.** The seventh objective of fiscal policy should be to eliminate, as far as possible, the glaring inequalities of income and wealth. These inequalities create social cleavages, which lead to economic and political instability and stand in the way of economic development. The fiscal policy should be designed in such a way that on one side it helps in increasing national income and on the other side it helps in reducing the inequalities of income and wealth in the economy. The economic growth of a country is meaningless if its fruits are not enjoyed by the lowest section (poorest among the poor) of the society. The fiscal policy should aim at the redistribution of income and wealth.

- **Increase National as well as per capita income.** The eighth objective of fiscal policy should be to increase both the national income of the country as well as per capita income. It can be done through effective tax system, effective increase in demand, and suitable economic policy.

12.3.3 Objective and role of fiscal policy in less developed countries (LDCs).

The fundamental task of fiscal policy in under-developed countries is to raise the rate of saving to national income. It is concerned with allocating more resources for investment and restraining consumption.

Economists maintain that the proper fiscal policy which is suitable for an under-developed economy should have the following objectives :

- **Taxation and Economic Development.** While speaking in relation to taxation policy in under developed countries, Dr. Baljit Singh remarks, "Consumption taxes become more important as they really activate the economic system." Thus, according to this statement, taxes fulfill the major aim of a fiscal policy in under-developed countries *i.e.,* to curb consumption and to encourage savings and

investment. But it does not mean that consumption should be severely curbed. Over-timing of consumption would reduce the consumption itself and would bring about a fall in the level of living. For raising standard of living alone, an increase in income is quite essential. Therefore, although indirect regressive taxes can help a great deal in the finance of development activities, their limits should not be crossed.

- **Public Expenditure and Economic Development.** Though taxation aspect of fiscal policy may not be so effective in stimulating the agricultural sector of the economy, public expenditure should have some favourable effect. Public expenditure may be of two types :

    - Direct investment on projects like irrigation, roads etc. and (2) Making a grant, or subsidy to encourage the production of some commodity or raw material. Both these types of public expenditure can be expected to stimulate economic growth in the rural sector.

    - Government can stimulate investment through the provision of overhead facilities like means of transportation, communications, ports, engineering industry, power installations, technical training etc. These are known as economic and social overheads which are important from the point of view of productivity. These investments have the effect of widening the market, raising the productivity of labour, reducing-costs of production in several sectors of economy and so on.

- **Public Debt and Economic Development.** A major characteristic of under-developed countries is the lack of capital resources. So the first task of such economies is to find out the resources for the financing of development programme. As the taxable capacity of these countries is very low, there is very meager collection of sums through taxation. Per-capita income is already low and people always resist the new taxes. Thus, taxation alone is not a sufficient source of capital in the developing phase of an economy. Therefore, the importance of public debt is specially great in these economies. Raising of loans inside the country is one of the safest and most convenient ways of financing the plans. Public debt generally activates the idle hoards of the people for development purposes. Even in many

cases the sacrifice of consumption to a considerable extent may take place and provide funds for developmental activities.

- **Deficit Financing and Economic Growth.** The technique of deficit financing is of the recent origin and has become popular in under-developed countries as a source of developmental finance. Though it is considered unproductive when used for financing the war, yet is very productive so far as developed countries are concerned if used properly. In under-developed countries, it generally proves to be inflationary as production processes do not respond to investment outlay as soon as money supply in the hands of the public increases. Deficit in the budgets or plan outlays are filled in by creation of new money which, according to the simple quantity of money, leads to rise in prices and this rise in prices becomes spiral in case of war finances.

12.4 Let us sum up

We learned that despite some shortcomings of fiscal policy, its role cannot be underestimated. Fiscal policy if properly implemented and coordinated, may yield desired results to bring economic stability. The less developed countries (LDCs) are facing the problems of implementation and collection of various taxes, political pressure, lack of tax morality and lack of honest administration.

But, we should kept in mind two major objective of fiscal policy as of redistribution of income and wealth and raising the level of national income in such a way that extreme inequalities in income and wealth are reduced in these economies. At the same time they may lead to economic growth and stability.

12.5 References

- Lekhi, R.K. Public Finance.
- Tripathy, R.N. Public Finance in Underdeveloped Country.

Examination oriented questions

- What is a fiscal policy? What are its major tools?

- How do the objectives of fiscal policy differ in more developed and less developed nations?
- Discuss the role of a fiscal policy in correcting price instability.

IS-LM MODEL

B.A. Sem 3rd **UNIT III**

EC - 301 **LESSON: 13**

STRUCTURE:

13.1 Objectives

After going through this lesson, you shall be able to:

- understand the IS-LM model
- know about the relationship between interest rate and real output both in goods market and money market

13.2 Introduction

The IS-LM model was first formulated by John Hicks in 1937 and later developed or extended by Alvin Hansen, hence this model is also known as 'Hicks- Hansen Model'. We'll now learn about this model.

13.3 IS-LM Model

The neo-Keynesian synthesis refers to the attempts of the neo -Keynesian economists like Hicks, Lerner and Hansen, to reconcile the loanable funds theory with the liquidity preference theory of interest. In the words of Hansen, "The neo-classical (loanable funds) formulation and the Keynesian formulation, taken together, do supply us with an adequate theory of the rate of interest.

Both the loanable funds theory and the liquidity preference theory virtually express the same thing though in different terms. Considered individually, both the theories are indeterminate. There is no reason not to consider the relevance of both sets of determinants-saving and investment and the liquidity preference. Furthermore, in order for a true equilibrium to exist, there must be equality between saving and investment and between the supply of money and the demand for it. The neo-Keynesian economists have, therefore, attempted to reconcile the two theories so as to provide a determinate theory of interest.

The neo-Keynesian analysis shows that income and the rate of interest are mutually determined by four factors: (I) the investment-demand schedule, (2) the consumption function, (3) the liquidity preference schedule, and (4) the quantity of money created by the monetary authority. Using the classical terminology, these four determinants of income and the rate of interest may be stated as: (I) productivity, (2) thrift, (3) desire for cash, and (4) the quantity of money. It combines both the real and the monetary factors. Earlier, the loanable funds theory had also attempted to integrate these factors, but the attempt did not succeed in presenting a determinate theory of interest. The neo-Keynesians have carried out the task with more success. They have combined the real and the monetary factors as well as the flow and the stock variables together as an explanation of interest rate determination and its relation to income.

According to the neo-Keynesian analysis, as stated by Hansen, "An equilibrium condition is reached when the desired volume of cash balances equals the quantity of money, when the marginal efficiency of capital is equal to the rate of Interest and finally when the volume of investment is equal to the normal or desired volume of saving. And these factors are interrelated.

Thus, for the determination of interest rate, the two equili-brium conditions are that total saving is equal to total investment (S = I) and the total demand for money is equal to the total supply of money (L=M). In other words, the real and the monetary sectors are in equilibrium. The equality between L and *S* shows the equilibrium between the flow variables in the real sector and the equality between L and M represents the equilibrium of the stock variables. When the marginal efficiency of capital is high enough to promote a level of investment adequate to balance the normal savings as determined by the thrift habits of the community, then the quantity of money will necessarily prove just sufficient to satisfy the community's desire to hold cash. The neo Keynesian synthesis has evolved two schedules, the IS schedule and the LM schedule, to explain the position.

13.3.1 The IS Schedule: The IS schedule denotes equilibrium in real sector, showing various combinations of the level of income *(Y)* and the rate of interest *(r)* at which there is equilibrium between aggregate real saving and real investment. When *IS* schedule represented diagrammatically, we get the *IS* curve.

The saving function is upward sloping; the higher the level of Income, the greater the amount of saving. The investment function is downward sloping; the lower the rate of interest, the greater the amount of investment. It follows that there will be a large number of different combinations of income *(Y)* and interest rate *(r)* that will equate saving and investment. For instance, let us assume in Figure 13.1. the point *A* designates a particular income-interest combination (Y_1 and r_1) that makes saving and investment equal. If income were greater than Y_1 say Y_2, then saving would be greater, and the rate of interest would have to be lower than r_1, say r_2, to bring investment up to saving.

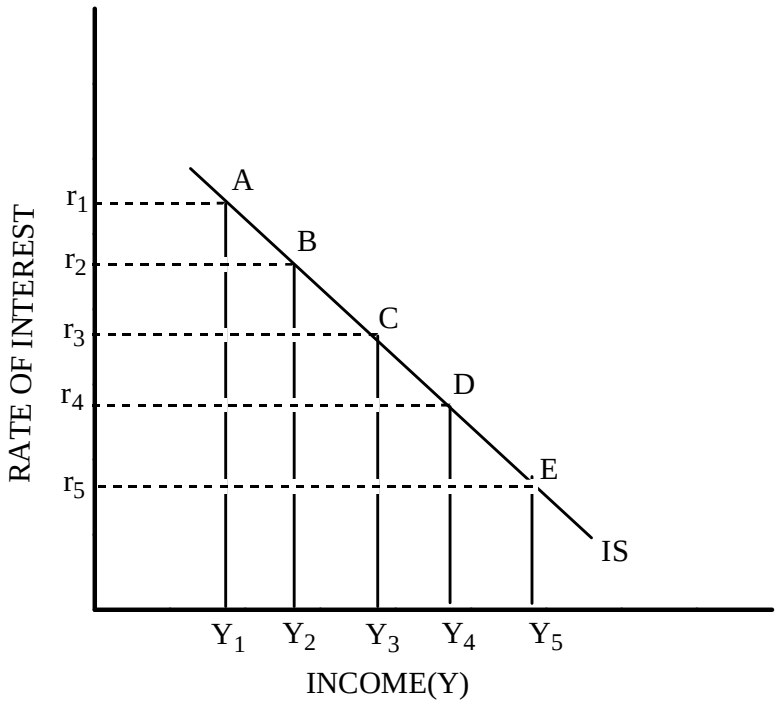

Fig. 13.1 The IS Schedule : Interest Rate-Income Combinations Equating Saving and Investment

Point B then marks another income-interest rate combination that satisfies the S = I equilibrium condition. The set of such combinations designated by A, B, C, etc. will form the negatively sloped line marked IS.

IS curve slopes downward to the right for the simple reason that at higher levels of income, saving is greater ; but the greater the saving, the lower the rate of interest. As the rate of interest declines, investment rise till saving equals investment. The slope of the IS curve depends upon the shape of the underlying saving and investment functions. The flatter the saving function (the smaller the marginal propensity to save), the flatter the *IS* curve. Similarly, the flatter the investment function, the flatter will be the *IS* curve. If the investment is completely interest-inelastic, *i.e.*, if the investment function is a vertical line, the *IS* line will also be vertical.

The *IS* curve shows that given the investment function and the consumption function, income (in real terms) is high at low rates of interest, and low at high rates of interest. This is so because a high rate of interest permits only a little investment, which means a low level of income even, where account is taken of the multiplier. At a low level rate of interest, on the other hand, investment will be larger, and so the level of income will be relatively high, account being taken of the multiplier.

13.3.2 The LM Schedule The liquidity preference function L and the money supply *M* also establish a relation between income and the rate of interest. The *LM* schedule shows different combinations of income and interest rate that fulfill the equilibrium condition that demand for money is equal to the supply of money. The supply of money is assumed to be fixed. To keep the demand for money equal to a given supply, any increase in income, which will raise the demand, must be exactly offset by some increase in the interest rate, which reduces the demand.

In fact, the *LM* schedule shows the relation that given a certain liquidity (L function) and a certain quantity of money fixed by the monetary authority, the rate of interest will be low when income is low and high when income in high. When L is equal to M, the desired cash equals the actual cash. The LM schedule presupposes equilibrium between L and M, in the same manner as the IS schedule presupposes equilibrium between I and S.

It is important to emphasise that LM curve is drawn up on the assumption that the total amount of M is fixed. The shape of the LM curve, therefore, depends upon the shape of the money demand or liquidity preference *(L)* function. At high levels of income, there is a large transactions demand for the limited quantity of money, leaving less *M* for people to hold as a wealth asset. This raises the interest rate steeply and the *LM* curve becomes highly inelastic with respect to the rate of interest at high income levels. At low income levels, on the other hand, there is a small transactions demand for the fixed quantity of money, there are large idle balances and the rate of interest is low. But since the *L* function is highly elastic at low interest rates (due to liquidity trap), the relative super abundance of the money supply at low income levels cannot drive the rate of interest below a certain minimum. In other words, at low income levels the *LM* curve becomes interest- elastic. The more interest-elastic the demand for money, the flatter the *LM* curve. The extreme flatness at low interest rates and steepness at high interest rates, as the curve drawn in Fig.

13.2 shows,

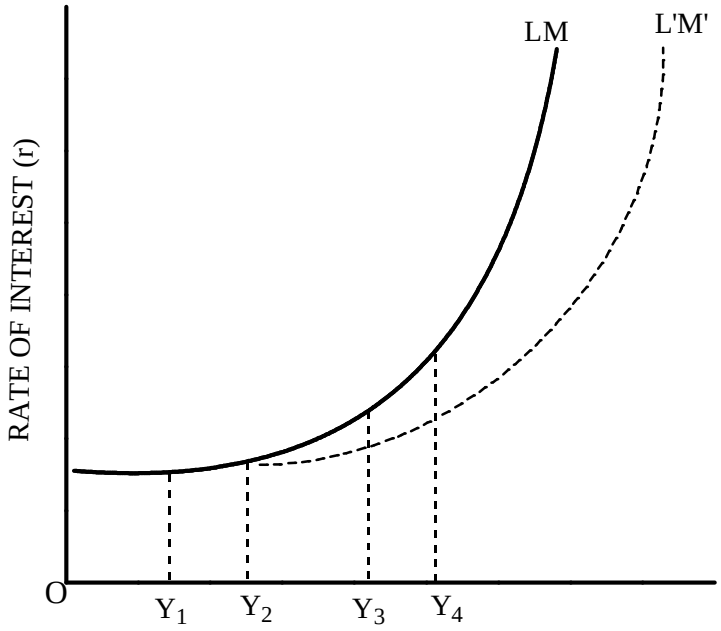

Fig. 13.2. The LM Schedule

reflects the hypothesis previously put forward that as the interest rate moves towards the extremes, expectations of a reverse movement will strengthen, making demand for money highly elastic at low rates of interest and very inelastic at high rates.

The relationship between the elasticity of the demand for money and the shape of LM curve can be seem in Figure 13.2. At low income level increase of income from Y_1 to Y_2 does not change the interest rate. The LM curve remains for equilibrium. As income rises further to Y_4 the equilibrium interest rate rises steeply and the LM curve becomes perfectly inelastic. Either an increase in the quantity of money M controlled by the monetary authority or a decrease in the liquidity preference will shift the LM curve to the right as shown in LM.

13.3.3 Determination of Equilibrium Interest Rate and Income

Income equilibrium requires that S = I. The IS curve

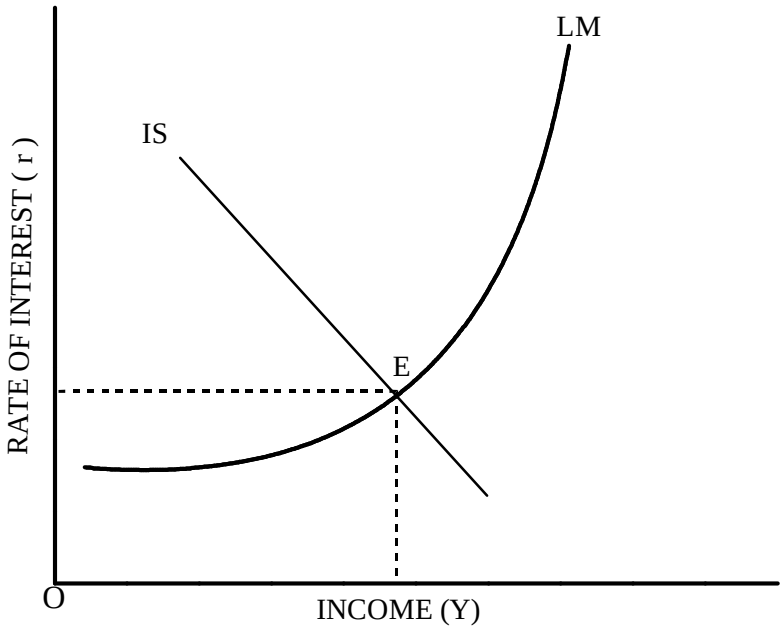

Fig. 13.3. Simultaneous Determination of Equilibrium Interest Rate and Income.

represents income-interest rate combinations that meet this equilibrium condition. Monetary equilibrium requires that $L=M$. The *LM* curve represents combinations that satisfy this second equilibrium condition. The sole combination that satisfies both conditions is given by the only point lying on both curves-the point at which they intersect. Their intersection determines the equilibrium level of income and interest rate for each given total of *M*. In Figure 13.3, *E* shows the point of equilibrium intersection. At this point, the existing amount of money produces just low enough interest rate and just high enough investment to lead to a maintainable level of income.

It is easy to see now how changes or shift in the IS or the LM schedules or both, and their respective positions determine the corresponding equilibrium rates of interest and income. This is indicated in Figure 13.4. The IS_1 curve intersects with the LM curve at a point of low income where IS is relatively interest-elastic and LM is highly interest-elastic. In this case, income cannot be raised by increasing the quantity of money. A rise in income will require a shift from IS_1 to IS_2. This can be achieved either by raising the marginal efficiency

schedule or the

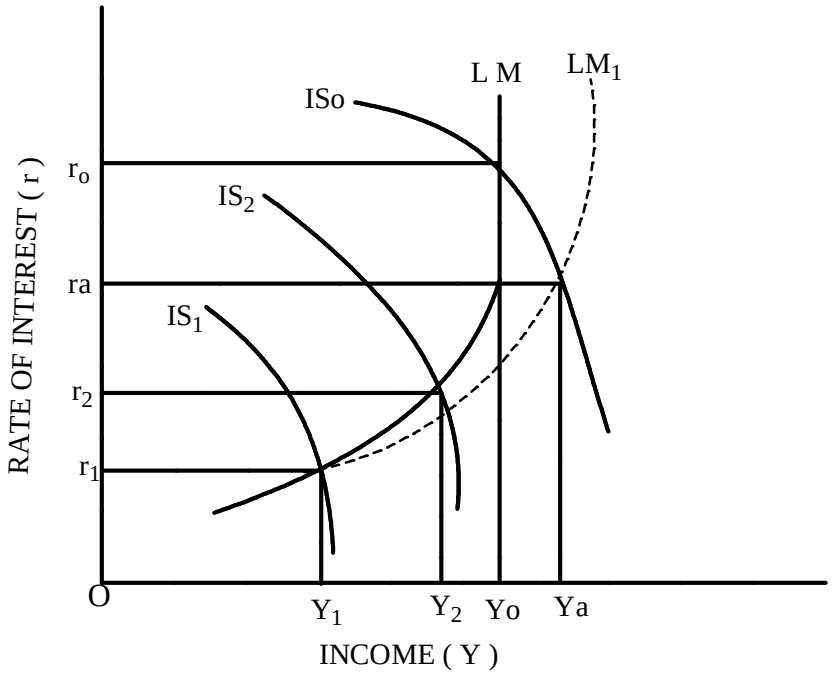

Fig. 13.4. Shifts in the IS and LM Schedules.

consumption function or both. At the point of intersection of the IS_2 and *LM* curves, the IS_2 schedule is interest-inelastic. An inelastic increase in money supply would now shift the *LM* curve to LM_1. This may lower the interest rates a little, but it would not have much effect on income. However, an increase in the quantity of money will have an expansionist effect when the IS curve is interest- elastic, as in the case of IS_O, while *LM* curve is interest-elastic. As a result of this, the rate of interest will decline to *ra* and income will rise to *Ya.* If *Yo* represents high employment, *Ya* would mean boom condition.

It is obvious that with· a given LM curve, when the IS is shifted to the right, it raises income and also the rate of interest. When the IS curve is constant and the LM curve is shifted to the right, the rate of interest falls, but the level of income rises, depending mainly on the elasticity of the investment demand function. The more responsive investors are to the interest rate, the greater will be the effect of changes in the money supply on the level of income.

It is also essential to bear in mind that it is the monetary policy which shifts the LM curve, while the IS curve can be shifted by fiscal policy. An increase in government expenditure, for example, will shift the IS schedule rightward and lead to a higher income level. The reduction of government expenditure, however, will not eliminate the monetary effect because it will not have any effect on LM_1. The fiscal effect is the result of an increase in a *flow*; and when the flow returns to its original rate, the fiscal effect disappears. The monetary effect is the result of an increase in a stock, and the stock continues at its increased level after the flow has been restored to its original level.

13.4 Let us sum up

In this lesson, we discussed in detail about IS-LM model.

13.4 References

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- Vaish, M.C. Macroeconomic Theory.

Examination oriented questions

- What is IS-LM model? How is it an improvement over both loanable funds theory and Keynes' liquidity preference theory of interest?
- Discuss the shape and slope of IS curve and LM curve.
- How does IS-LM model explain and bring about simultaneous equilibrium in money economy and real economy?
- Show the conditions required for an economy to reach equilibrium in IS-LM model.

TRADE CYCLES - NATURE AND CHARACTERISTICS

B.A. Sem 3rd **UNIT IV**

EC - 301 **LESSON: 14**

STRUCTURE:

14.1 Objectives

After going through this lesson, the learners should be able to : -

- understand the meaning of trade cycles
- understand the nature of trade cycles
- know the characteristics of trade cycles

14.2 Introduction

The economic development of capitalist economies has been marked by periodical and frequent fluctuations in the tempo of economic activities ; in investments, output,

income and employment. These countries are constantly experiencing such changes. According to their typical features, fluctuations or movements in economic life activity are classified as under:-

(a) Secular trends (b) Seasonal fluctuations (c) Cyclical fluctuations and (d) random movements.

Among these, cyclical fluctuations have attracted the main attention of economists, as they create significant disturbances in the functioning of the economic system and their causation is not easily perceived. Cyclical fluctuations are wave-like changes in economic activity characterised by recurring phases of expansion and contraction.

14.3 Trade Cycles – Nature and Characteristics

Unlike many cycles observed in nature, business cycles are not uniform in frequency, amplitude, or duration. No one cycle may be exactly similar to another. This is largely because of its being the net effect of a complex of forces and secondly because not one but innumerable cycles operate concurrently. All these cycles do not move in harmony; some lead the overall picture, some lag behind it. Economists, however, have concentrated their efforts on identifying different types of cycles.

American economists usually draw a distinction between a major cycle and a minor cycle. Harvard's economist Prof. Alvin H. Hansen observes that the full course duration of a major cycle, from trough to trough, varies from a minimum of 6 years to a maximum of 13 years. Minor cycles, on the other hand again measured from trough to trough, range in length from a minimum of 2 years to a maximum of 5 years. Taking examples from the economic history of the United States, Prof. Hansen indicated that from 1795 to 1937 there were seventeen major cycles of an average duration of 8 to 35 years.

The distinction between major and minor cycles in terms of their duration seems to be a matter of degree. Business cycles also differ in amplitude. Minor cycles are not as much dramatic or severe as major cycles. These are recognised as periods of 'oscillating equilibrium' rather than cyclical fluctuations. Thus, the major cycle is economically more significant and the public is concerned mainly with this cycle.

Clement Juglar, a French economist, made a pioneer work as early as in 1862 in establishing the cyclical nature of business fluctuations. In recognition of his contribution, major cycles (or cycles of approximately 9-10 years in length) are sometimes known as *Juglar Cycles.*

Joseph Kitchin, in a study published in 1923, distinguished between major and minor cycles. He found a strong tendency towards a minor cycle averaging 31 years or 40 months. He considered major cycles merely as aggregates, usually of two or less commonly of three minor cycles. These shorter or minor cycles of 40 months' duration are also known as *Kitchin Cycles.*

Kondratieff, a Russian economist, in 1925 collected and examined a great variety of time series covering· the period 1780-1920. The data seemed to establish $2\frac{1}{2}$ 'long waves' or long cycles each full cycle being in the vicinity of 50 years. Long cycles (lasting from 54 to 60 years) are usually referred to as *Kondratieff Cycles.*

Prof. Schumpeter has attempted to integrate the Juglars, the Kitchins and the Kondratieffs and has advanced a three-cycle hypothesis. According to him, each Juglar cycle is composed of three Kitchin cycles; and the Kondratieff cycle is made up of perhaps six Juglar cycles. Schumpeter has tried to show that the three types of cycles constantly interact with each other. The available empirical evidence, however, does not show any mechanical relationship between the cycles of varying lengths as envisaged by Schumpeter.

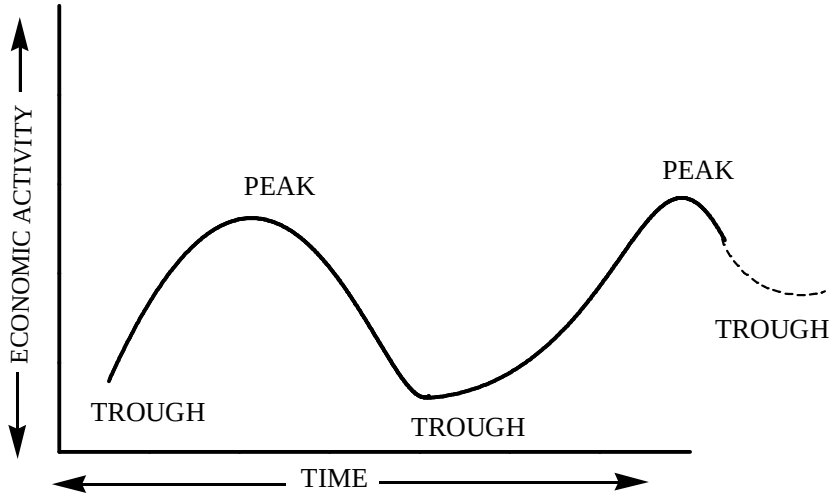
The National Bureau of Economic Research in the United States has carried out extensive investigations of the empirical evidence of business cycles. It has counted 26 distinct business cycles in the U.S. economy during the period 1854-1961; their average duration being forty nine months, and the more recent cycles are considerably shorter than the older ones. Thus, the cycles approximating 4 years' duration are firmly established statisti-cally. There is less evidence for 8 or 9 year cycles and little positive evidence for the 50, 60 years' cycles.

14.3.1 Characteristics of Trade Cycles :- Cyclical fluctuation is usually termed as 'trade cycle' by the British economists, while the American economists prefer to use the term 'business cycle'. In Prof. Lee's view, however, both the terms are misleading. The term

'trade cycle' is misleading in that it appears to give too much emphasis to retail transactions. Business cycle, on the other hand, reflects the overwhelming importance of private business or free enterprise in the economic life. Since the cycle is not limited to trade or business only, but covers every variety of economic activity, Prof. Lee prefers to call it economic cycle. In fact, what is more important for our purpose is a proper understanding of the general nature of cyclical fluctuations rather than its designation or terminology. Business cycle should not be literally conceived as limited to the fluctuations in business realm only; it pertains to the economic system as a whole, particularly employment, output, income and prices, etc.

The business cycle is viewed as having the following main characteristics :

- A business cycle is a wave· like movement, characterised by alteration of expansion (prosperity) and contraction (depression) in economic activity, which may be measured in terms of national income at current prices. The cyclical fluctuations contain oscillating movements in the form of waves from *peak* to *trough* and *trough* to *peak*, as illustrated in Figure 14.1. One complete period of such oscillations is called a cycle.



- A business cycle refers to cyclical fluctuations which are recurrent in nature. If prosperity is followed by depression, depression will again be followed by renewed prosperity. It is not an erratic type of fluctuation.

- It is not a periodic phenomenon ; in other words, the peaks and the troughs are not symmetrical. The movement from upward to downward direction is more sudden and violent than the change from downward to upward. In statistical terms, a business cycle relatively narrows at its peak and turns flatter at its trough.

- Business cycles are all-pervasive and synchronic in their effects. When one part of the economy suffers depression or enjoys prosperity this is transmitted to the other parts and thus affects the whole economy. Through the mechanism of free international trade, booms and depressions in one country are transmitted to other countries and hence the effects may be felt throughout the world.

- The process of expansion and contraction is of a cumulative self-reinforcing nature. Each upswing or downswing feeds on itself and generates further movement in the same direction till forces accumulate to reverse the direction.

- A business cycle contains self-generating forces which tend to terminate the phase of prosperity or of depression and start the reverse process. Thus, there cannot be either an indefinite depression or an eternal prosperity.

- Haberler points out two main features which can be observed in any cycle: the cyclical ups and downs move parallel with production; and monetary demand and the cyclical fluctuations are more marked in capital goods industry than in consumer goods industry.

- The business cycles have common pattern of phases which are sequential in nature; yet they differ in timing and amplitude and are not precisely predictable. In the words of Samuelson, “No two business cycles are quite the same. Yet they have much in common. They are not identical twins but they are recognizable as belonging to the same family”.

- The tendency to cyclical variation is seen in many aspects of business activity. The recurrent fluctuations in individual business activities may be called specific cycles. Since all the specific cycles are interrelated, a business cycle, to use Mitchell’s phrase, is “Congeries of interrelated phenomena.” Thus, business cycles are

fluctuations in general business activity that appear through the interrelated fluctuations of many specific cycles.

- Business cycles are the characteristic feature of the free enterprise business system. There is no evidence of such cycles in the controlled economies like that of Soviet Union.

- Finally, it is generally agreed that lags or time-intervals are an essential characteristic of the cycle. Changes take place but adjustments in the goods and money markets are not simultaneous and instantaneous.

14.3.2 Business cycles and other fluctuations On the basis of the characteristics of business cycles, as explained above, it may be possible to distinguish cyclical fluctuations from other types of fluctuations found in the economic activity. All types of fluctuations in the economic activity are not cyclical. A persistent upward or downward movement continuing in the same direction over a long period of time is called a secular trend. The variations in activity that take place within the period of a calendar year and are imposed upon business by the fixed rhythm of the seasons are known as seasonal fluctuations. These are characterised by a recognised periodicity in time. Irregular and uncyclical variations of activity caused by the incessant interference of all sorts of non-recurring accidental factors affecting business are called ran-dom fluctuations or accidental fluctuations. As distinguished from these different types of fluctuations, cyclical fluctuations are wavelike fluctuations of business activity characterized by recurring phases of expansion and contraction in periods longer than a year. Cyclical fluctuations are similar to seasonal fluctuations in that both are recurring, but they differ in their rhythm and periodicity. Seasonal fluctuations normally have a fixed rhythm and fixed periodicity and are, thus, easily predictable. Cyclical fluctuations, on the other hand, have a free rhythm and indefinite periodicity and, thus, show no regularity as to their recurrence.

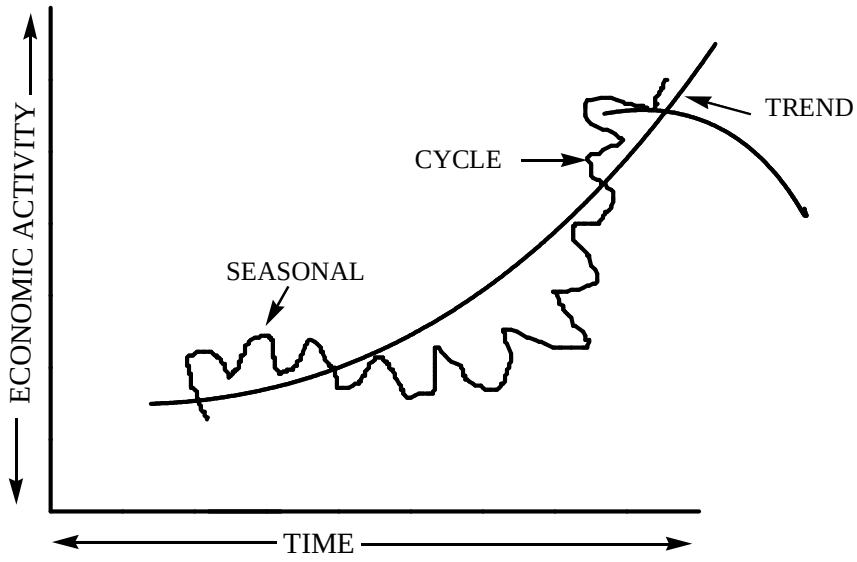


Fig. 14.2. The interrelationship of the trend, seasonal and cyclical movements

Business cycles also differ from trend movements because the latter refer to movements of economic data which are cumulative and move in one direction over a relatively long period of time. Figure 14.2 gives a diagrammatic summary of the relationship between secular trend, seasonal, and cyclical movements.

14.3.3 Phases of trade cycles.

Trade cycle is an alternate expansion and contraction in overall business activity, as evidenced by fluctuations in measures of aggregate economic activity, such as the gross product, the index of industrial production, and employment and income.

In the words of W.C. Mitchell, "Trade cycles are a species of fluctuations in the economy activities of organized communities. The adjective 'business' restricts the concept to fluctuations in activities which are systematically conducted on a commercial basis. The noun 'cycles' bars out fluctuations which do not recur with a measure of regularity".

According to Keynes, "A trade cycle is composed of periods of good trade characterized by rising prices and low unemployment percentages, altering with periods of bad trade characterized by falling prices and high unemployment percentages".

In the words of Frederic Benham, "A trade cycle may be defined…… as a period of prosperity followed by a period of depression. It is not surprising that economic process should be irregular, trade being good at some time and bad time at others."

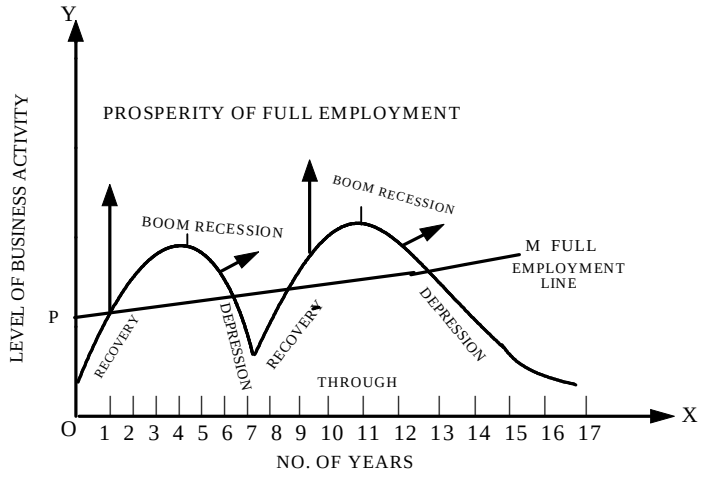


Fig. 14.3 Phases of a Business Cycle.

These five phases of a business cycle are shown in Figure 14.3. It may be seen that the different phases of a cycle are recurrent and follow in regular sequence. When prosperity ends, recession starts, which is followed by depression and recovery follows depression.

Prosperity starts again after recovery and the whole process continues, each phase appearing immediately after the preceding phase has run its course. It should be obvious, however, that any phase has no definite periodicity or time interval.

Since business cycle runs a continual round, it can hardly be said to have a beginning. We can start our analysis from any one of the five phases of a cycle.

1. The Depression Phase

Prof Haberler has defined depression as a "state of affairs in which real income consumed and the rate of employment are falling (or are subnormal) in the sense that there are idle resources and unused capacity, especially unused labour. Thus, depression period is characterised by a rise in the level of unemployment, shrinkage in the volume of industrial output, decline in trade and transactions, low prices, low wages, contraction of bank

credit, high bank reserves, low interest rates, low business inventories, many business failures, decline in investment and a feeling of pessimism and despair. The distribution of the national dividend during depression becomes distorted. Some industries like building, construction etc. come to a standstill, while the consumer goods industries are least affected. The price structure is also badly distorted. Prices of finished products are low relatively to wages but prices of the raw materials and the agricultural commodities happen to be lower even relatively to the prices of finished products. This is so because of inability of the farmers to adjust their output and supply according to demand in the market which is quite low. The terms of trade between manufacturers and agriculturists move in favour of the former, although as a result of low output and employment much of the benefit of the improvement in terms is denied to the manufacturing class.

In short, during depression, there is overall curtailment of aggregate economic activity at its bottom. The economic activity moves to the trough of the cycle. However, depression is not a permanent feature of an economy. As soon as the economic activity gathers momentum, the revival or recovery phase sets in. The two longest depressions in the U.S. history were those of 1873--1879 (65 months) and 1929-1933 (44 months).

2. The Recovery Phase

Revival or recovery phase refers to the lower turning point at which the economy undergoes changes from depression to prosperity. There is revival of business and economic activity. It could be initiated by new innovations, rise in government expenditure, changes in production techniques, investment in new regions, exploitation of new sources of energy, etc. There is a rise in the total volume of Investment. Bank loans and advances also increase as pessimism in business circles is replaced by an atmosphere there of all-round cautious hope. There is slow and steady improvement in the position of employment and output. Money incomes also rise leading to a rise in consumption and thus pushing up the demand further which in turn leads to rise in prices, profits, further investment, employment and income. An increase in stock prices favours expansion and hastens the revival. Thus, the wave of recovery, once initiated, begins to feed upon itself and the whole process is self-reinforcing and cumulative in nature. The recovery continues until business activity reaches approximately the same level that it had achieved before the decline set in. The rate and the periods of recovery are generally related to that of the preceding depression. The

more severe the depression, the more rapid will be recovery.

3. The Prosperity Phase

This is the phase of expansion or the upswing. Haberler defines prosperity as "a state of affairs in which the real income consumed, real income produced and level of employment are high or rising, and there are no idle resources of unemployed workers, or very few of either." Thus, the characteristic features of prosperity are: a high level of output, trade, employment and income, a high level of effective demand and a high marginal efficiency of capital, a large expansion of bank credit and a rising trend in prices, profits and interest rates. There is overall business optimism and the economy tends to be operating almost at full capacity along its production possibility frontier. During the prosperity phase, the dynamic forces operate in such a way that the expansion becomes cumulative, leading the economy towards the peak.

The prosperity phase does not end up with a stable state of full employment. It may continue even beyond this, leading to the emergence of boom and inflation. A rapid expansion in business activity leads to new high marks, resulting in high profits and high stock and commodity prices, increasing the tempo of boom to new heights. At this stage, bottlenecks begin to appear in the economy. Shortages of raw materials, labour and funds for investment begin to appear, tending to raise prices, wages and interest rates and thus distorting the cost calculations of the entrepreneurs. They now realize that they have over-stepped the mark and become over cautious. Their over-optimism paves way for their pessimism. It is actually profit inflation which increases the tempo of boom and this carries within itself the seeds of self-destruction.

4. Recession

Recession relates to a turning point rather than to a phase. Where prosperity ends, recession begins. It marks the point where the forces that make for contraction start winning over the forces of expansion. There is a decline in overall business activity. Liquidation in the stock market, repayments of bank loans and the decline of prices are its outward symptoms. During recession, banks and the people show a greater preference for liquidity.

There is contraction of credit and a rise in the rate of interest. There is a general cry to contract the scale of operations. Business expansion stops, orders are cancelled and workers are laid off. Unemployment appears in certain industries which spreads to other sectors because the multiplier starts working in the downward direction. Rising unemployment is followed by falling incomes, expenditure, price, profits and business. According to Prof. Lee, "A recession, once started, tends to build upon itself much as forest fire; once under way, tends to create its own draft and give impetus to its destructive ability." Ultimately, the entire economy is derailed and pushed back to depression.

5. Boom (or Overfull Employment)

It is the stage of rapid expansion in business activity to new high marks, resulting in high stocks and commodity prices, high profits and overfull employment.

The prosperity phase of the business cycle does not end up with a stable state of full employment ; it leads to the emergence of boom. The continuance of investment even after the stage of full employment results in a sharp inflationary rise of prices. This causes undue optimism among businessmen and industrialists who make additional investment in the various branches of the economy. This puts additional pressure on the factors of production which are already full employed, causing a sharp rise in their prices. Soon a situation develops in which the number of jobs exceeds the number of workers a available in the market. Such a situation is known as over full employment. Profits touch a new high. Attracted by the rising profits, the businessmen and industrialists further increase their capital investments. This adds fuel to the fire. Runaway inflation raises its head in all its ugliness. Prices rise sky-high. The tempo of the boom reaches new heights. There is an atmosphere of over optimism all around.

14.4 Let us sum up

We discussed that trade Cycles or business cycles are a prominent feature of capitalist – economy. Business cycles are regular fluctuations in income, output and employment which tend to be self reinforcing or cumulative. Once a change starts, it tends to gather speed . We can thus say that a trade cycle invariably starts in the industrial sector and then spreads itself over the other sectors quickly because in modern era, the different sectors are interrelated.

14.5 References

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- Mithani, D.N. Money, Banking, International trade and public finance.

Examination oriented/ practice questions

- What is a trade cycle? What are its characteristic features?
- Discuss and show diagrammatically the different phases of a trade cycle.
- How is a business fluctuation different from other fluctuations?
- Distinguish between recession and depression.
- Define Juglar cycles and Kitchin cycles.
- Explain different types of trade cycles.

CONTROL OF TRADE CYCLES: COUNTER - CYCLICAL POLICIES

B.A. Sem 3rd **UNIT IV**

EC - 301 **LESSON: 15**

STRUCTURE:

15.1 Objectives

After going through this lesson,you will be able to :

- know how to control the trade cycles.
- have knowledge about counter – cyclical policies

15.2 Introduction

Economic stabilisation is one of the most important remedies to effectively control or eliminate the periodic trade cycles which plague a capitalist economy. In order to ensure economic stability, a number of economic measures are being devised and implemented.

The main instruments used to control the trade cycles are : monetary policy, fiscal policy and direct controls.

15.3 Control of trade cycles:counter – cyclical policies

The following instruments or counter – cyclical policies can be adopted to control the trade cycles

15.3.1. Monetary Policy

The most commonly advocated policy of solving the problem of fluctuations is monetary policy. Monetary policy pertains to banking and credit, availability of loans to firms and households, interest rates, public debt and its management, and monetary management. However, the fundamental problem of monetary policy in relation to trade cycles is to control and regulate the volume of credit in such a way as to attain economic stability. During a depression, credit must be expanded and during an inflationary boom, its flow must be checked.

Monetary management is the function of the commercial banking system, and through it, its effects are primarily exerted on the economy as a whole. Monetary management directly affects the volume of cash reserves of banks, regulates the supply of money and credit in the economy, thereby influencing the structure of interest rates and availability of credit. Both these factors affect the components of aggregate demand (consumption plus investment) and the flow of expenditures in the economy. It is obvious that an expansion in bank credit causes an increasing flow of expenditure (in terms of money) and contraction in bank credit reduces it.

In the armoury of the central bank, there are quantitative as well as qualitative weapons to control the credit-creating activity of the banking system. They are bank rate, open market opera-tions and reserve ratios. These are interrelated to tools which operate on the reserves of member banks which influence the ability and willingness of the banks to expand credit. Selective credit controls are applied to regulate the extension' of credit for particular purposes.

15.3.2. Fiscal Policy

It is possible that monetary policy, taken alone, may not serve to check cyclical business fluctuations. It is, therefore, suggested that monetary policy should be properly

integrated with a suitable fiscal policy to achieve the desired results. Keynes and the Keynesian economists, like Hansen and others, have recommended compensatory finance or compensatory fiscal policy to bring about stabilization of business activity. Governmental activity, of late, has expanded so much that government is now in a position to exercise a very great influence on the total volume of output in a country. It is, therefore, suggested that the government should regulate its activities in such a manner as to offset the cyclical fluctuations in private business activity. The three main instruments of fiscal policy; namely, taxation, spending and borrowing, can be used by the government to achieve this purpose.

If business activity shows signs of slacking down, the government should at once enforce the three instruments of fiscal policy to check the downward-trend and ensure stability in the economy. At such a time, the government should not levy any new taxes on the people. Government should use expansionary fiscal policy. Even the existing taxes should be substantially reduced. This would leave more money in the hands of the people who should be encouraged to spend it on buying additional goods to offset the decline in demand and business activity.

The government, at a time of depression, should initiate public works projects of various kinds involving expenditure of money and additional investment of labour. The funds to finance the public works projects should be obtained either by printing more paper money or by borrowing from the banks. In either case, more money should be created and put into circulation, thus offsetting the deflationary effect of reduced business expenditure.

The government should, at such a time, follow the policy of deficit budgeting which alone will increase the flow of income-stream into the economy. The increased government outlays, consequent upon the deficit budget, shall inject fresh purchasing power into the economy helping it to fight depression and unemployment. Public borrowing can also be employed by the government as an instrument to fight depression and unemployment.

When the economy recovers and a wave of prosperity sets in, the government should follow an exactly opposite policy. Now it should raise the existing taxes and may even levy new taxes to check private spending. It should reduce its expenditure on public works and similar projects.

15.3.3. Direct Controls

Broadly speaking, direct controls are imposed by government which expressly forbids or restricts certain kinds of investment or economic activity. Sometimes, direct government controls over prices and wages as a measure against inflation have been advocated and implemented. During World War II, price wage controls were employed in conjunction with consumer rationing and materials allocation to curb generalised total excess demand and to direct productive resources into channels desired by the government. Monetary-fiscal controls may be used to curb excess demand in general but direct controls can be more useful when they are applied to specific scarcity areas.

15.3.4. Automatic Stabilizers.

The monetary and fiscal policies outlined above rely a good deal on the discretion of the government. They also presuppose a certain amount of alertness and promptness on the part of the government to enforce them at the right moment. What is required is that the government should act promptly with the right type of taxation, monetary and spending measures to check business cycle fluctuations. It is perhaps too much to expect the government officials to display the alertness and promptness required to deal with cyclical fluctuations. The economists have, therefore, suggested the introduction of a number of automatic stabilizers (or, built-in-stabilizer). It means an economic shock absorber that helps smooth the cyclical business fluctuations of its own accord, without requiring deliberate action on the part of the government. One such device in the U.S.A. is the federal progressive income tax. This tax is so devised that people in higher income brackets are taxed at a progressively higher rate than those in the lower income brackets. For example, a rich man with a very high income may have to pay a tax of 50 per cent, whereas a person with a low income may have to pay 5 per cent of his income. Such a progressive type of income tax tends automatically to offset cyclical fluctuations, because in an upswing, when incomes are rising, people would pay more taxes to the government and, thus, their expenditure would be checked; and in a downswing, when incomes are declining and tax percentage is low, people would pay less taxes to the government, leaving more funds for them to spend.

The superiority of the automatic stabilizers lies in the fact that they go into action immediately whenever the economy is confronted with economic fluctuations. Discretionary

policy, on the contrary, involves a certain amount of delay in reacting to the new situation. But the main limitation of automatic stabilizers is that they provide only a partial solution of the problem. Empirical research conducted in the U.K. and the U.S.A. suggests that automatic stabilizers can control not more than 50 per cent of the economic fluctuations in the economy. Hence, it is essential to supplement the automatic stabilizers with discretionary policy to secure effective and lasting stability in the national economy.

15.4 Let us sum up

We learned that there is no one fool-proof method to solve the difficult problem of trade cycles. Karl Marx considered trade cycles inevitable in the capitalist order and the rationale, to adopt the opinion of Marx was to overthrow the capitalist system. In recent years, whenever recessionary trends have appeared, both the monetary and fiscal policies as well as physical controls have been employed to control the cyclical fluctuations in the level of business activity.

15.5 References

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Examination oriented questions

- What measures can be adopted to control trade cycles?
- What is a contra-cyclical policy? Discuss an expansionary monetary and a contractionary fiscal policy.
- What are direct control measures?
- How do automatic stabilizers help in acting against business fluctuations? How are they superior to other measures?

INFLATION - TYPES, CAUSES OF DEMAND PULLAND COST PUSH INFLATION

B.A. Sem 3rd **UNIT IV**

EC - 301 **LESSON: 16**

STRUCTURE:

16.1 Objectives

After going through this lesson, the learners shall be able to:

- know the meaning of inflation
- know the types of inflation
- understand the causes of demand pull and cost – push inflation.

16.2 Introduction

Inflation means a steady and sustained rise in general prices. Coulborn said, "Inflation is too much money chasing too few goods". There are a number of factors that cause inflation in an economy and it is of various types.

16.3 Inflation – Types, Causes of demand pull and cost push inflation

16.3.1 Meaning of Inflation :- The situation of a steady and sustained rise in general prices is usually known as inflation. Paul Einzig distinguishes between 'Money inflation' and 'Price inflation'. When the prices rise due to an expansion of the money supply, it is money inflation but in the later phase more and more money supply will have to be expanded and this is known as Price inflation.

According to Coulborn, *"Inflation is too much money chasing too few goods."*

16.3.2 Types of Inflation

There are several types of inflation observable in an economy. These can be classified as under :

- **Creeping Inflation.** When the price rise is very slow like the pace of a snail or creeper, it is called creeping inflation. It is the mildest type of inflation. The government has sometimes to resort to creeping inflation to make the economy dynamic. This type of inflation serves as a tonic for a backward and underdeveloped economy.

- **Walking or Trotting Inflation.** When prices rise moderately and the annual inflation is in single digit, it is called walking or trotting inflation. The rate of the increase of the price level acquires greater speed and rapidity under walking inflation. Roughly speaking, the price level under walking inflation rises approximately by 5% annually. If proper control is not exercised over walking inflation in time, it can easily assume the form of running inflation.

- **Running Inflation.** When the prices rise rapidly like the running of a horse at a rate of speed 10 to 20 per cent per annum, it is called running inflation. The rate of the increase of price level gets further accelerated under running inflation.

- **Galloping Inflation or Hyperinflation.** When prices rise very fast at double or triple digit rates from more than 20 to 100% per annum or even more, it is called hyper or galloping inflation. In fact, this is the most dangerous type of inflation. Under this type of inflation, the prices rise every minute and there is no upward limit to which the price level may rise in course of time.

- **Comprehensive and Sporadic Inflations.** Comprehensive type of inflation occurs when the prices of all commodities register a rise in the economy. It is comprehensive inflation. Normally speaking, inflation, when it takes place, is comprehensive inflation. The prices of almost all the commodities show an upward trend during a period of inflationary spiral.

    - Sporadic inflation, on the other hand, is sectoral inflation. Under this type of inflation, the prices of all the commodities do not register a rise. Only the prices of a few commodities show an upward trend. The prices of a few commodities may rise upwards on account of certain physical bottlenecks which may impede any attempt to increase their production. For example, the prices of food grains may show an upward rise on account of the failure of crops, consequent upon the failure of rains. Hence, sporadic inflation is of a sectoral nature. It can be dealt with effectively if the government resorts to the imposition of direct price control on the sale of the affected commodities.

- **Open Inflation.** An inflation is said to be open when the government takes no steps to check the rise in the price level. Open inflation is allowed to continue unchecked without any attempt on the part of the government to hold the price line. Under open inflation, the market mechanism is allowed to work itself out fully without restrictions being imposed by the government.

- **Repressed Inflation.** An inflation may be said to be repressed inflation when the government actively intervenes to check the rise in the price level. The government may check the rising trend in the price level by resorting to price control and rationing of scarce items in the economy.

- **Full Inflation and Partial Inflation.** The increase in the supply of money after the point of full employment does not increase output and employment but leads to a sharp uninterrupted rise in the price level. Such a situation is referred to as the situation of full inflation.

    - Prof. Pigou has classified inflation into (i) full inflation, and (ii) partial inflation. According to Prof. Pigou, the price level consequent upon the expansion of money supply in the pre-full employment stage is referred to as partial inflation.

- **Peacetime, Wartime and Postwar Inflation.** By peacetime inflation, we mean the rise in the price level during peacetime. This type of inflation is very often the result of increased governmental expenditure on ambitious developmental projects in the economy. Such an inflation very often occurs during a period of planned economic development in backward and underdeveloped economies.

    - **Wartime inflation**, on the contrary, arises during a period of war. Modern wars, as is well known, are total wars, necessitating huge governmental expenditure.. During wartime, the increase in the output of goods and services does not keep pace with the expansion of money supply. An inflationary gap inevitably emerges which results in a rising price level.

    - **Postwar inflation** generally takes place immediately after the cessation of hostilities when the pent-up demand finds open expression on the relaxation of price and physical controls by the government. The rise in the price level under postwar inflation may be even more rapid than during wartime inflation.

- **Currency Inflation and Credit Inflation**

    - **Currency Inflation.** This is the classic type of inflation marked by an excess supply of money in relation to the available output of goods and services. Since the excessive supply of money is confronted with a limited supply of goods and services, it inevitably results in an inflationary rise in the price level. This type of inflation generally occurs at a time of war.

- **Credit Inflation**. Sometimes the government encourages an expansion of credit without expanding the supply of money in circu-lation. This is known as credit inflation.

16.3.3 Causes of demand pull inflation :- Demand pull inflation refers to inflation that arises as a result of excess demand in the economy. There are various factors that cause the emergence of excess demand in the economy. The emergence of excess demand in the economy can be attributed to two main factors : increase in the demand for goods and services, and decrease in the supply of goods and services.

According to the demand-pull theory, prices rise in response to an excess of aggregate demand over existing supply of goods and services. The demand-pull theorists point out that inflation (de-mand-pull) might be caused, in the first place, by an increase in the quantity of money, when the economy is operating at full employment level. As the quantity of money increases, the rate of interest will fall and, consequently, investment will increase. This increased investment expenditure will soon increase the income of the various factors of production. As a result, aggregate consumption expenditure will increase leading to an effective increase in the effective demand. With the economy already operating at the level of full employment, this will immediately raise prices, and inflationary forces may emerge. Thus, when the general mone-tary demand rises faster than the general supply, it *pulls up* price (commodity prices as well as factor prices, in general). Demand -pull inflation, therefore, manifests itself when there is active co-operation, or passive collusion, or a failure to take counteracting measures by monetary authorities.

Demand pull or just demand inflation may be defined as a situation where the total monetary demand persistently exceeds total supply of real goods and services at current prices, so that prices are pulled upward shift of the aggregate demand function. By using the aggregate demand and supply curves, in Fig. 16.1, the demand-pull process can be graphically illustrated.

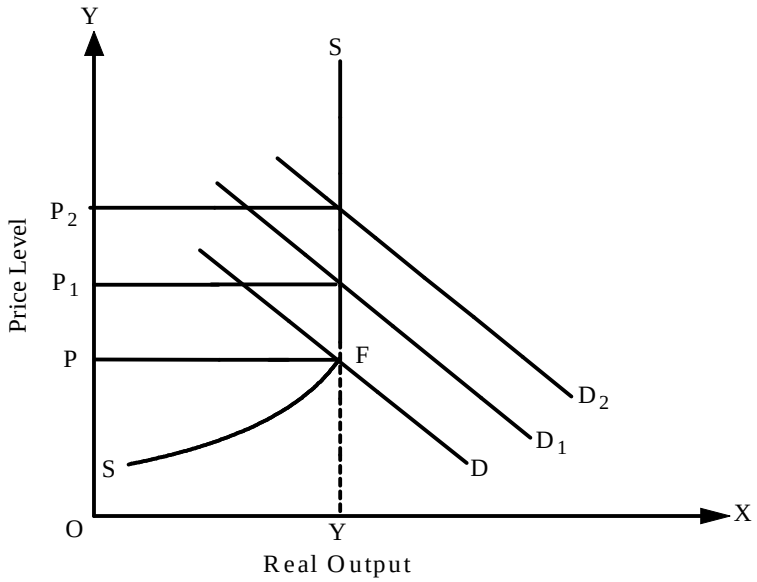

Fig. 16.1 Demand-pull Inflation.

In Fig. 16.1, the X-axis measures real output, and the Y-axis measures the price level. Curves D, Dl and D_2 represent the aggre-gate demand curves. The SS curve represents the aggregate supply function which slopes upward from left to right and, at point F it becomes a vertical straight line. The point F suggests that the economy has reached a level of full employment. Hence, the real output tends to be fixed or inelastic at this point. Assuming that the D curve intersects the S curve at point F, the real output or income is at full employment and the price level is OP. When there are increase in the aggregate demand function beyond D, either due to an increase in autonomous investment (I), or because of an increase in the propensity to consume (C), or government spending (G), represented by a shift in the aggregate demand curve, such as D_1, D_2, the supply of total real output being inelastic, the price level tends to rise from P to P_1 and then to P_2'.

However, demand-pull inflation can also occur without an increase in the money supply. This can happen when either the marginal efficiency of capital increases or the marginal propensity to consume rises, so that investment expenditures may rise, thereby leading to a rise in the aggregate demand which will exert its influence in raising prices beyond the level of full employment already attained in the economy.

Factors Causing an Increase in Demand

Following are the factors which cause an increase in the size of demand :

- **Increase in public expenditure.** An increase in the public expenditure consequent upon the outbreak of war or developmental planning invariably causes an increase in the demand for goods and services in the economy. In fact, this is an important cause giving rise to the emergence of excess demand in the country.
- **Increase in private expenditure.** An increase in private expenditure, consumption expenditure as well as investment expenditure, is an important cause of the emergence of excess demand in the economy. When business conditions are good, private entrepreneurs start investing more and more funds in new business enterprises, giving rise to an increase in the demand for the services of factors of production. This results in an increase in factor prices. When factor incomes increase, there is more and more of expenditure on consumption goods. The ultimate effect of an increase in private expenditure is to push up the demand for commodities as well as factors of production.
- **Increase in exports.** An increase in the foreign demand for the country's products reduces the stock of commodities available for home consumption. It is evident that when more and more of commodities are exported to foreign countries, less and less of them are available for domestic consumption. This naturally creates a situation of shortages in the economy, giving rise to inflationary pressures.
- **Reduction in taxation.** The reduction in taxation by the government can also be an important cause for the emergence of excess demand in the economy. When the government reduces taxes, it results in an increase in the purchasing power in the hands of the public. With increased purchasing power, the people are in a position to buy more and more of goods and services for private consumption.
- **Repayment of past internal debts.** When the government repays its past debts to the public it results in an increase of purchasing power which the latter uses for buying goods and services for consumption purposes. This naturally leads to an increase in aggregate demand in the economy.

- **Rapid growth of population.** A rapidly growing population has the effect of raising up the level of aggregate effective demand for goods and services in a country. This acts as an inflationary force and tends to raise the prices to higher levels.

- **Black Money.** The existence of huge amount of black money in the economy is also responsible for increase in demand. People spend such unearthed or easy money extravagantly on buildings, marriages, luxurious items etc., thereby creating demand for commodities.

- **Deficit Financing.** In order to meet its mounting expenses, the government resorts to deficit financing by borrowing from the public and printing notes in huge quantity. This raises aggregate demand in relation to aggregate supply.

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

- **Increase in Consumer Spending.** The demand for goods and services increases when the consumer spending increases. It may be due to easy availability of credit etc. It increases the demand for goods and services.

6.3.3.4 Causes of cost push inflation: Cost push inflation takes place when there is shortage of goods or a decrease in supply.

Economists hold the view that the process of inflation is initiated not by an excess of general demand but also by an increase in costs, as factors of production try to increase their share of the total product by raising their prices. Thus, it has been viewed that a rise in prices is initiated by growing factor costs. Therefore, such a price rise is termed as "cost push" inflation as prices are being pushed up by the rising factor costs.

Cost-push inflation, or cost inflation, as it is sometimes called, is induced by the wage-inflation process. It is believed that wages constitute nearly seventy per cent of the total cost of production. This is more true for a country like India, where labour intensive techniques are commonly used. Thus, a rise in wages leads to a rise in the total cost of production and a consequent rise in the price level, because fundamentally, prices are based on costs. It has been said that a rise in wages causing a rise in prices may, in turn,

generate an inflationary spiral because an increase would motivate the workers to demand higher wages. Indeed, any autono-mous increase in costs, such as a rise in the prices of imported com-ponents or an increase in indirect taxes (excise duties, etc.), may initiate a cost-push inflation, Basically, however, it is wage-push pressures which tend to accelerate the rising price spiral.

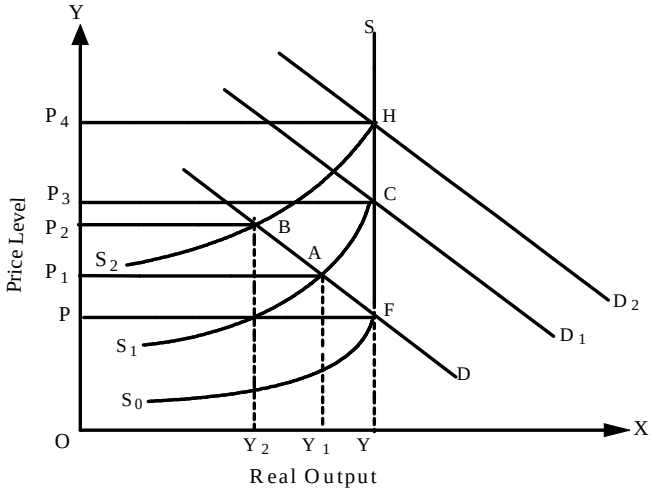

Fig. 16.2

The phenomenon of cost-push inflation is graphically illustrated in Fig. 16.2. In the figure, the D curves represent the aggregate demand function, and the S curves, the aggregate supply function. The full-employment level of income is OY, which can be maintain-ed only at rising price levels, P, PI, P_2, P_3.

Now, if we begin with price level P, F is the point of inter-section of the aggregate supply curve; *D* and SS_0. Let us assume that the aggregate supply function shifts upward as S_1, which be-comes a vertical straight line at point A, and merges with the SF line (the previous supply curve at full-employment level). The upward shift in the supply curve may be attributed to either an increase in money wages due to trade unions' successful collective bargaining, or to the profit motivated monopolists or oligopolists, who might have raised the prices of goods. Anyway, as the aggre-gate supply curve shifts to S_1, the new equilibrium point A is deter-mined at OY_1 level of real output, which is less than full-employ-ment level, at P_1 level of prices. This means that with a rise in the price level, unemployment

increases. It is regarded as the cost of holding the price level close to P. Similarly, a further shift in the aggregate supply curve to S_2 on account of a further wage-push, implies a new equilibrium point, B. This causes the income level to fall further to Y_2 and prices to rise to P_2. If, however, the government or monetary authority is committed to maintain full employment, there will be more public spending or more credit expansion, causing the price level to rise much more,such as from P to P_3 and P_4. In this case, the sequence of equilibrium points become A-B-G-H.

Cost push inflation may occur either due to wage-push or profit push. Cost-push analysis assumes monopoly elements, either in the labour market or in the product market. When there are monopolistic labour organizations, prices may rise due to wage-push. And, when there are monopolies in the product market, the mono-polists may be induced to raise the prices in order to fetch high profits. Then, there is profit push in raising the prices.

However, the cost-push hypothesis rarely considers autono-mous attempts to increase profits as an important inflationary element. Firstly, because profits are generally a small fraction of the total price, a rise in profits would have only a slight impact on prices. Secondly, the monopolists generally hesitate to raise prices in absence of obvious demand-pull elements. Finally, the motivation for profit-push is weak since, at least in corporations, those who make the decision to raise prices are not the direct beneficiaries of the price increase.

Hence, cost-push is generally conceived as synonymous with wage-push. When wages are pushed up, cost of production increases, to a considerable extent so that prices may rise. Since wages are pushed up by the demand for high wages by the labour unions, wage-push may be equated with union-push.

According to one variant of the cost-push theory, sectoral shifts in demand are prime movers in the inflationary process. Start-ing with an autonomous shift in demand, a rise in wages and prices could result in one sector and this rise could elicit further shifts of demand. This happens because there is a close link between diffe-rent goods through inputs. One good serves as an input in the pro-duction of the other goods, and consequently, when the price of the input rises, the prices of output will also rise. For instance, when due to a rise in wages in the steel industry, price of steel may rise, and this will raise the prices of

vehicles, machines, etc., using steel as input. The rise in the prices of vehicles may in turn raise the cost of transport and manufactured goods. Similarly, prices of tractors, etc. may increase due to high prices of steel so that costs of agriculture may rise, hence, food and raw material prices will also rise. All these ultimately raise the cost of living, leading to increase in wage rates. Thus, inflation once set in motion due to the pheno-menon of cost-push in one industry or sector, spreads throughout the economy.

Check your progress

- Write a short note on demand pull inflation.

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- Discuss the different factors to which we can attribute excess demand.

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Factors Causing a Decrease in Supply

Following are the factors which result in a reduction in the supply of goods and services :

- **Shortage of supplies of factors of production.** Occasionally, the economy of a country may be confronted with shortages of such factors as labour, capital equipment, raw materials, etc. These shortages are bound to reduce the production of goods and services for consumption purposes. In fact, the shortage of productive factors is a serious obstacle to any effort to increase production in the country.

- **Industrial Disputes.** In countries where trade unions are strong, they help in curtailing inflation. Trade unions resort to strikes and if they happen to be unreasonable from employers' point of view and are unreasonably prolonged,

they force the employers to declare lock-outs. In both the cases, industrial production falls, thereby reducing supply of goods.

- **Natural Calamities.** Natural calamities like floods, droughts etc. adversely affect the supplies of agricultural products. The latter, in turn, create shortage of food products and raw materials, thereby helping inflationary pressures.

- **Operation of Law of Diminishing Returns.** In industries in the country which are using old and obsolete machines and outdated methods of production, the law of diminishing returns operates. This raises cost per unit of production, thereby raising the prices of products leading to inflation.

- **Lop-sided Production.** If the stress is placed on the production of comfort and luxury goods, thereby neglecting essential and consumer goods in the country, it creates shortage of goods in the market and hence causes inflation.

- **Hoarding by traders.** At a time of shortages and rising prices, there is a tendency on the part of traders and merchants to hoard essential commodities for profiteering purposes. The stocks of essential goods often go underground during a period of inflation and rising prices, causing further scarcity of these goods in the market.

- **Hoarding by consumers.** It is not only the traders and the merchants who resort to hoarding at a time of inflation. The individual consumers also hoard essential commodities to avoid payment of higher prices in future. They also hoard essential commodities to ensure their uninterrupted availability for private consumption.

It is, however, impossible to state whether demand-pull or cost· push elements are the prime causes of an inflationary spiral. It rather seems that there may be a demand-cum-cost inflation as both entrepreneurs and workers use the mark-up technique of pricing. If demand-pull raises prices, the workers will mark up their wages to protect their share of total product. On the other hand, if wages rise, entrepreneurs will raise prices to adjust mark-up to the pre-vious level of profits. 'Thus, demand pull inflation may generate cost-push elements of inflation (as workers will demand high wages in view of rising Cost of living index), and the cost-push inflation may in turn generate demand pull inflationary elements (as workers' monetary demand for consumption goods will increase due to high

wages-incomes). Normally, thus, it is difficult to be precise as to whether an inflation is cost-push or demand-pull.

A cost-push inflation is much more difficult to control than a demand pull type. A demand-pull inflation can be controlled by adopting restrictive monetary and fiscal policies so as to drain off excessive monetary demand. But cost-push inflation is not susceptible to direct controls. In order to check cost-push inflation, there is a strong need on the part of labourers and entrepreneurs for restraint in their wage and pricing policies.

16.4 Let us sum up

We learned that inflation is a process of rising and not a state of high prices, showing a state of disequilibrium between the aggregate supply and aggregate demand at current prices necessitating a rise in the general price level in the economy. When the demand forces are strong, there arises demand-full inflation. Cost push inflation occurs when prices are pushed up by rising costs rather than by demand-pull forces.

16.5 References

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Examination oriented questions

- What do you mean by inflation? Discuss different types of inflation based on the degree of price rise.
- Distinguish between demand pull and cost push inflation. Also explain them diagrammatically.
- What are the factors responsible for inflation due to decrease in supply?
- Write short notes on the following:

- Sporadic inflation
- Comprehensive inflation
- Currency inflation
- War time inflation
- Sectoral inflation
- Repressed and open inflation

EFFECTS AND METHODS TO CONTROL INFLATION; CONCEPTS OF REFLATION AND DEFLATION

B.A. Sem 3rd **UNIT IV**

EC - 301 **LESSON: 17**

STRUCTURE:

17.1 Objectives

After going through this lesson, you are expected to:

- know various methods to control inflation
- understand the meaning of reflation and deflation

17.2 Introduction

Inflation is a complex phenomenon. It should be attacked from various angles. In this lesson, we shall discuss the effects of inflation, methods to control inflation and concepts of reflation and deflation.

17.3 Effects of inflation on different sectors of the economy

Inflation produces a deep impact on the distribution of income and wealth in society. A prolonged period of persistent inflation results in redistribution of income and wealth in favour of the already richer and more affluent classes of society. The distributive share accruing to the business classes increases much more than that of wage-earning classes. Businessmen, traders, merchants, and speculators reap rich harvests on account of windfall profits accruing to them as a result of the inflationary rise in prices. Prices under the pressure of inflation rise much more than the production costs. There is always a time lag between the rise in production costs and the rise in the price level. This time lag brings rich profits to the business classes. Moreover, the stocks and inventories of businessmen invariably go up in value because of the constantly rising price level under the impact of inflation. The business classes, thus, make all-round gains during a period of inflation. The fact of the matter is that the flexible income groups, such as, businessmen, merchants and traders are always the gainers in a period of inflation while the fixed-income groups, such as, workers, salaried employees, teachers, pensioners, etc., are always the losers on account of the inflationary rise in prices. Inflation is always unjust. It is like a steeply regressive tax. Inflation throws the economic burden on the shoulders of those sections of the community who are the least able to bear it.

The effects of inflation on various groups of society are as follows:

(1) Debtors and Creditors. During inflation, debtors are generally the gainers while the creditors are the losers. The reason is that the debtors had borrowed when the purchasing power of money was high and now return the loans when the purchasing power of money is low due to rising prices. In other words, the debtors while repaying their debts return less purchasing power to the creditors than what they had actually borrowed. Since the creditors receive less in *real terms*, they are the losers during inflation.

(2) Wage and Salary Earners. Wage and salary earners mostly suffer during inflation because wages and salaries generally do not rise in the same proportion in which the cost of living rises. Then there is the time lag between the rise in the cost of living and the rise in wages and salaries. If the workers and salary earners are well-organized into powerful trade unions, they may not suffer much during inflation, but if they are unorganized or ill-organized, as they generally are, they may suffer much as their wages and salaries

may not increase at all or may not increase in the proportion in which the cost of living increases.

(3) Fixed-income Groups. The fixed-income groups are the hardest hit during inflation because their incomes, being fixed, do not bear any relationship with the rising cost of living. Persons who live on past savings, pensioners, interest and rent receivers suffer most during inflation as their incomes remain fixed while the prices soar high.

(4) Entrepreneurs. Inflation is a boon to the entrepreneurs whether they are manufacturers, traders, merchants or businessmen, because it serves as a tonic for business enterprise. They experience windfall gains, as the prices of their inventories (stocks) suddenly go up. They also gain because their costs do not go up as rapidly as the prices of their products. The costs of labour, raw materials and equipment, etc. do not catch up with the rise in prices of products. Inflation converts the entrepreneurs into 'profiteers' who put the community to ransom through their profiteering and hoarding activities.

(5) Investors. Investors are generally of two types: (i) investors in equities (shares), and (ii) investors in fixed interest-yielding bonds and debentures. Inflation bestows favours on the former and is rather harsh on the latter. Dividends on equities increase with the increase in prices and corporate earnings and as such, the investors in equities are favourably affected. Incomes from bonds and debentures, however remain fixed and as such, investors in them are adversely affected. The small middle-class investors generally invest in fixed interest-yielding bonds and securities and therefore, have much to lose during inflation. Frequently, they find their savings largely, if not completely, wiped out as a result of the depreciation in the value of money. The rich-class investors, on the other hand, invest in equities on which the dividends go up during inflation and are thus beneficially affected.

(6) Farmers. Farmers are generally the gainers during inflation. The prices of farm products go up while the costs incurred by them (the farmers) do not go up to the same extent. Further, there is generally a time lag between the rise in prices and the increase in costs. Moreover, the farmers are generally debtors and can repay their debts during inflation in terms of less purchasing power. It should, however, be remembered that small farmers do not gain as much from high prices as the big farmers do, because the former do not have a considerable surplus to dispose off in the market.

Thus, inflation redistributes wealth and income in such a manner as to injure the interests of consumers, creditors, salary and wage earners, fixed-income groups, small investors, and to favour businessmen, merchants, traders and farmers. Socially, inflation is unjust. It transfers wealth to those sections who have already too much of it.

(7) Social and Political Consequences of Inflation. Continuous inflation in a country creates a breeding ground for social and political upheavals. Inflation redistributes income and wealth in favour of the rich, and widens the gap of inequality, thereby aggravating social injustice.

Inflation favours the rich and black marketeers only. The standards of business morality, therefore, decline in times of infla-tion, because businessmen get ample chances of making profit through unfair means. Furthermore, inflation produces a seller's market and, since sellers can sell anything, the quality of goods produced often deteriorate and traders are inclined to adulterate products. These practices produce discontent among the vast sec-tions of the community, who find that while unpatriotic people are being rewarded, the cautious and conservative people are penalised. Consequently, masses may lose their faith in the government. On the political front, inflation is a manifestation of the weakness in political discipline. The increasing grievances and hardships of the masses, in general, on account of inflation, may prepare them to revolt against society and the state. Inflation not only disrupts the economy but also prepares the ground for social and political up-heavals.

In view of above we may conclude that apart from these general evils, inflation poses a serious danger to underdeveloped countries. As is well known, an underdeveloped country needs huge capital resources for its speedy economic development. But inflation, by discouraging savings, slows down the process of capital accumulation in the economy. Inflation not only reduces domestic capital accumulation, but also discourages the inflow of foreign capital into the country.

17.4 Methods to control inflation.

There are various methods/measures to control inflation, but the most important methods/measures are as under :

Inflation is a complex phenomenon. It should be attacked from various angles. The following are the broad categories of instruments commonly used in order to control inflation in modern economy: (1) Monetary policy, (2) Fiscal policy, (3) Direct control and (4) Miscellaneous measures.

1 Monetary Policy. Inflation is primarily a monetary phenomenon. Hence, the most logical solution to check inflation is to check the flow of money supply by devising appropriate monetary policy and carefully implementing monetary measures.

Broadly speaking, to control inflation, it is necessary to con-trol total outlays because under conditions of full employment, increase in total outlays will be reflected in a general rise in prices, that is, inflation. Monetary policy used to control inflation is based on the assumption that a rise in prices (inflation) is due to excess of monetary demand for goods and services by the people because easy bank credit is available to them. Monetary policy, thus, pertains to banking and credit availability of loans to firms and house-holds, interest rates, public debt and its management, and the monetary standard.

Monetary management is aimed at the commercial banking system, and through this action, its effects are primarily felt in the economy as a whole. Monetary management, by directly affecting the volume of cash reserves of the banks, can regulate the supply of money and credit in the economy, thereby influencing the structure of interest rates and the availability of credit. Both these factors affect the components of aggregate demand (consumption plus investment) and the flow of expenditure in the economy.

The central bank's monetary management methods, the devices for decreasing or increasing the supply of money and credit for monetary stability is called monetary policy. Central banks gene-rally use three quantitative weapons, namely: *(i)* bank rate policy, *(ii)* open market operations, and (iii) variable reserve ratio to control the volume of credit in an economy.

To curb inflationary pressures, a dear money policy is usually followed by using the quantitative methods due to which the total volume of credit is depleted. In this regard, (i) bank rate may be raised; *(ii)* open market sales operation may be undertaken; and *(iii)* in severe cases, the reserve requirement ratio may be increased.

2. Fiscal Measures. Fiscal policy is now recognized as an important instrument to tackle an inflationary situation. The major anti--inflationary fiscal measures are the following:

(a) ***Government Expenditure.*** During inflation, as is well known, effective demand increases far too much due to unregulated private spending. The increased private expenditure presses heavily against the limited supply of goods and services available in the market. To counteract increased private spending, the government should, at such a time, reduce its own expenditure to the minimum extent possible to help limit the aggregate demand.

(b) ***Taxation.*** Taxation acquires increased importance as an anti-inflationary weapon during an inflationary boom. The problem during inflation is to reduce the size of disposable income in the hands of the general public in view of the limited supply of goods and services in the market. It is, therefore, necessary to take away the excess purchasing power from the public in the form of taxes. The rates of existing taxes should be steeply increased while new taxes should be imposed on commodities and services so as to leave less money supply with the public to spend. Perhaps the best anti-inflation tax is personal income tax with steep rates and high surcharges. This would reduce the spendable income in the hands of the public, and thus, help to curb inflationary pressures.

(c) ***Public Borrowing.*** Public borrowing is another anti-inflation weapon which is often utilized to contain inflationary pressures in the economy. The object of public borrowing is to take away from the public excess purchasing power which, if left free, would surely exert an upward pressure on the price level in view of the limited supplies of goods and services in the economy. Public borrowing may be *voluntary* or *compulsory.* Ordinarily, public borrowing is voluntary, left to the free will of the individuals.

(d) ***Debt Management.*** The existing public debt should be managed in such a manner as to reduce the existing money supply and prevent further credit expansion. Anti-inflation debt management usually requires the retirement or repayment of bank-held debt out of a budgetary surplus. The idea is that the government securities held by commercial banks should be retired by the government out of a budgetary surplus. This would check the power of commercial banks to encash their securities and add to their reserves for the purpose of credit expansion. There is, however, one snag here. At a time of inflation,

despite its best efforts, the government may not succeed in having a budgetary surplus. Due to the excessive increase in expenditure, the government may actually be faced with a *deficit* budget.

(e) ***Overvaluation.*** An overvaluation of domestic currency in terms of foreign currencies will also serve as an anti-inflationary measure.

3. Direct Controls. Direct controls refer to the regulatory measures undertaken to convert an open inflation into a repressed one. Such regulatory measures involve the use of direct control on prices and rationing of scarce goods. The function of price control is to fix a legal ceiling, beyond which the prices of particular goods may not increase. When ceiling prices are fixed and enforced, it means prices are not allowed to rise further and so, inflation is suppressed. Under price control, producers cannot raise the price beyond a prevailing level, even though there may be a pressure of excessive demand forcing it up. Wartime price control is an example of such attempts to suppress inflation.

In view of the severe scarcity of certain goods, particularly, food grains, government may have to enforce rationing, along with price control. The main function of rationing is to divert consump-tion from those commodities whose supply needs to be restricted for some special reasons, say, in order to make the commodity available to a larger number of people as possible. Thus, rationing becomes essential when necessities, such as foodgrains, are relatively scarce. Rationing has the effect of limiting the variety of quantity of goods available for the good cause of price stability and distributive justice.

4. Miscellaneous Measures. Among other measures, it has been suggested that production of certain articles of necessity, at the expense of luxury goods, can also serve as an anti-inflationary measure, since they will help to keep prices from rising rapidly.

Control of wages also often becomes necessary in order to stop a wage-price spiral. During galloping inflation, it may be necessary to apply a wage profit freeze. Ceilings on wages and profits keep control on disposable income and, therefore, also on the total effective demand for goods and services. An appropriate income policy should be devised.

In certain cases, relaxation of restrictions on imports may also help to increase supplies of essential commodities and ease the inflationary pressure. This, however, is

possible only to a limited extent, depending upon the balance of payments situation. Similarly, exports may also be reduced to increase the availability of the domestic supply of essential commodities so that inflation is eased. But a country with a deficit balance of payments cannot dare to cut exports and increase imports, because, in that case, the remedy will be worse than the disease itself.

Check your progress

- What are the different effects of inflation?

  _____

  _____

  _____

- Discuss the different measures to control inflation.

  _____

  _____

  _____

In an overpopulated country like India, it is also essential to check the growth of the population through an effective family planning programme, because this will help in reducing the increas-ing pressure on the general demand for goods and services. Again, the supply of real goods should be increased by producing more. Without increasing production, inflation just cannot be controlled.

In view of the above may say that all the above points of discussion suggest that an anti-inflationary policy should involve a many-sided programme, and cannot exclusively depend on a particular type of measures only.

17.5 Concepts of Reflation and Deflation.

Deflation is the opposite of inflation. In the words of Prof. Crowther, *"Deflation is that state of economy where the value of money is rising or the prices are falling."* This definition is not free from defects. From this definition, it appears that every fall in the price

level is deflation but actually this may not be so. Sometimes, the price level starts failing down without any contraction in the supply of money. Now such a fall in the price level cannot be called deflation.

There is still another definition of deflation. According to this definition, deflation may refer to that state of the economy where the supply of money at a particular time is *less* than its demand. In other words, the supply of money in the economy is not sufficient to meet business requirements of the economy. Deflation is bound to result in such a state of the economy. The prices of goods and services will fall and the value of the money will start rising. This definition has one important defect insofar as it does not tell us how to make an accurate estimate of the money requirements of the economy.

According to Prof. Pigou, "Deflation is that state of falling prices which occurs at that time when the output of goods and services increases more rapidly than the volume of money income in the economy." Thus, according to Pigou, every fall in the price level is not deflation. Deflation occurs at that time when the output of goods and services increases at a faster rate than the money income. A fall of prices in the following situations may be termed deflationary according to Pigou : (a) If the money income diminishes but the output remains constant. (b) If the money income and the output both diminish, but the money income -diminishes much more rapidly than the output. (c) If the volume of output increases but the money income remains constant. (d) If the volume of output and money income both increase, but the output increases faster than the money income. (e) If the volume of output increases but the volume of money income diminishes. In each of these cases, the fall in prices will be deflationary.

From the above definitions, we may say that a contraction in the supply of money causes a fall in the price level, or the fall in the money supply leads to a fall in the price level. This, however, may not be wholly true. The fall in the price level is not only the result of the fall in money supply, it can also be the cause of the contraction in the supply of money. If the prices continuously go on falling, the economy may not need as much money supply as before. Thus, the falling price level is both the result as well as the cause of the fall in the supply of money. From this point of view, Prof. Paul Einzig's definition appears to be the best definition of deflation. Deflation, according to Einzig, "is a state of disequilibrium in

which a contraction of purchasing power tends to cause, or is the effect of, a decline of the price level."

Reflation: Reflation is a situation marked by rising prices and expansion of money supply. Reflation is deliberately undertaken by the government to relieve a depression. As a result of this policy, income, output and employment continue to increase till the economy reaches the point of full employment.

Inflation is different from reflation in exactly the same manner as deflation is different from disinflation. According to G.D.H. Cole, "Reflation may be defined as inflation deliberately undertaken to relieve a depression."

Inflation and Reflation resemble each other in two respects :

1. In both, money supply increases.

2. Both lead to a rise in the price level.

But still there are some basic differences between inflation and reflation such as:-

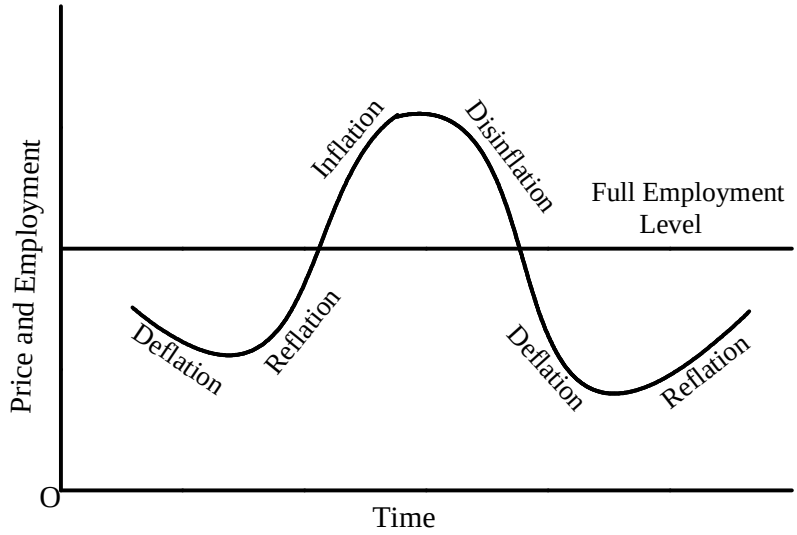
1. Whereas inflation causes a serious problem of rising prices without any increase in output and employment, reflation does not create such problem. It rather saves the already shattered economy from the problem of deflation.

2. Inflation may be due to natural factors or may be the result of deliberate policy of the government. But, reflation is always adopted by the government as a deliberate policy.

3. Inflation occurs after the level of full employment, whereas reflation occurs before the level of full employment.

4. Prices rise very rapidly under inflation, while they rise very slowly under reflation.

These terms inflation, deflation disinflation and reflation are explained better through the following diagram.



17.6 Let us sum up

We learned that inflation tends to increase inequalities in the distribution of income and wealth. The poor and middle classes suffer because their salaries or wages are fixed. During inflation, debtors gain and creditors lose. Inflation adversely affects production after the level of full employment. There are different methods employed to control inflation. We also learned about concepts of deflation, reflation, disinflation etc.

17.7 References

Jhingan, M.L. Money, Banking, International Trade and Public Finance.

Vaish, M.C. Macroeconomic Theory.

Examination oriented questions

- Discuss how monetary policy and fiscal policy can be applied in a contra-cyclical manner.
- What are the consequences of inflation? Who are the worst sufferers? Who gains the most during inflation?
- Distinguish between deflation and disinflation.
- Discuss the concept of reflation. Is it desirable?

DETERMINATION OF THE EQUILIBRIUM NATIONAL INCOME IN A SMALL OPEN ECONOMY

B.A. Sem 3rd **UNIT IV**

EC - 301 **LESSON: 18**

STRUCTURE:

18.1 Objectives

After going through this lesson, the learners should be able to : -

- know how the equilibrium national income is determined in a small open economy.
- know the assumptions on which national income determination based.

18.2 Introduction

In this lesson, we shall discuss how the national income is determined in an open economy. For this, we relax the assumptions that there are no exports or imports and government expenditures. This means that we shall have to add imports and exports and government expenditures like investment because they raise the demand for goods. They are injections in the national income. On the other hand, taxes are leakages in the national income like savings because they tend to reduce the demand for consumer goods. The impact of exports and imports is similar to that of the government expenditure. Exports are

injections because they increase the demand for goods in the same economy. Imports, on the other hand, are leakages in the national income because they represent the supply of goods to the given economy.

18.3 Determination of the equilibrium national income in a small open economy

The equilibrium national income determination in a small open economy is based on the following assumptions :

- The domestic economy's international trade is small relative to total world trade.
- There is less than full employment in the economy.
- The general price level is constant up to the full employment level.
- Exchange rates are fixed.
- There are no tariffs, trade and exchange restrictions.
- Gross exports are determined by external factors.
- Exports (X), investment (I) and government expenditure (G) are autonomous.
- Consumption (C), imports (M), savings (S) and taxes (T) are each a fixed proportion of income (Y) and their relationship with income are linear.

18.3.1 Determination of Equilibrium Level of Income

Given these assumptions, an open economy is in equilibrium when its national expenditure (E), is equal to its national income (Y). This can be shown in the following equation for the equilibrium level of income :

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

But $$Y = C + S + T$$

$$\therefore \quad C + S + T = C + I + G + (X - M)$$

Thus the equilibrium level of income in an open economy is determined when aggregate income or supply C + S + T equals aggregate expenditure or demand C + I + G + (X–M).

This is illustrated in Fig. 18.1(A) when C is the consumption function. On this curve, 'I' autonomous investment is superimposed to form the C+I function, and autonomous government expenditure is superimposed on C+I to form the C + I + G function. When net exports of X – M are superimposed on C + I + G, we get the aggregate demand function C + I + G + (X –M). The 45º line is the aggregate supply function which represents C + S + T.

It should be noted that so long as C + I + G + (X – M) > C + I + G, exports exceed imports and there is net addition to aggregate demand. At point D in Panel (A) of the figure, X –M =O. Beyond point D, C + I + G + (X–M) and imports exceed exports, and this gap continues to grow as income increase. This leads to net reduction is aggregate demand so that the aggregate demand function C+I+G+ (M–M) lies below the domestic demand function C + I + G.

The equilibrium level of income in an open economy OY is determined at point E where the aggregate demand function C + I + G + (X–M) intersects the aggregate supply function C + S + T.

This analysis shows that in the absence of foreign trade, the equilibrium level of income would have been at a higher level, as determined by the equality of C + I + G = C + S + T at point F whereas with foreign trade it is at a lower point E.

Panel (A) of the figure does not give a clear picture of how the nation's foreign trade and investment relate to the process of achieving equilibrium and government expenditures for current use (C + G) from both sides of equation (1) :

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

$$(Y - C - G) = (I - C - G) + (X - M) \qquad \text{.....(2)}$$

Or $$S = I_d + (X - M)$$

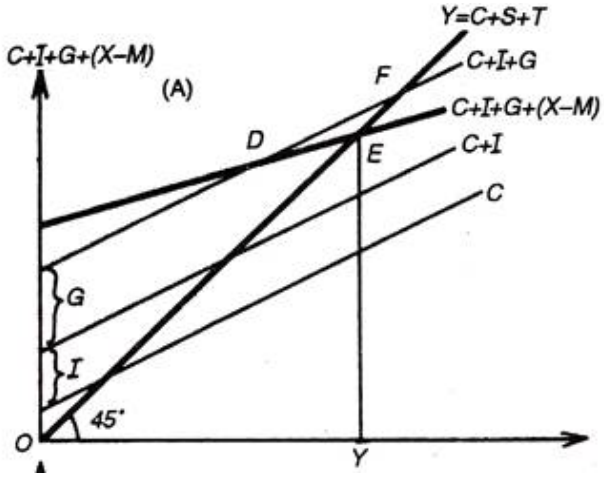


Figure. 18.1(a)

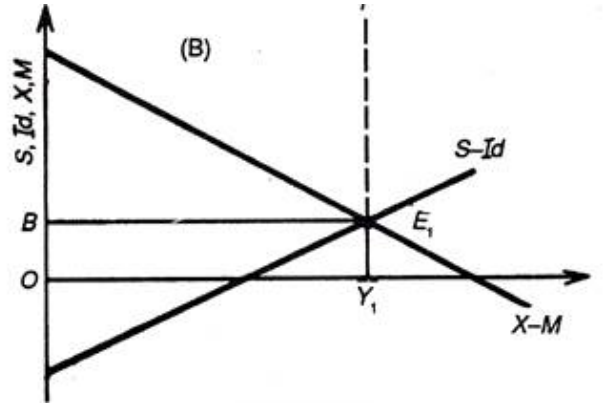


Figure. 18.1(b)

Where Id is domestic investment and X -M or If is net foreign investment.

The above equation (2) shows that the nation's saving(s) must equal its domestic investment plus its net foreign investment.

Rewrite equation (2) as

S - Id = X -M.

The above equation shows that the difference between savings and domestic investment must equal the balance of trade for an economy's equilibrium level of income.

In Panel (B) of the figure, the curve S -Id intersects the curve X-M at point El which determines the equilibrium level of national income OY1. The figure shows that the country has a current account surplus of OB with more exports than imports of goods and services.

18.4 Let us sum up

To sum up, an open economy is in equilibrium when its national expenditure is equal to its national income.

18.5 References

Bo Sodersten and Geoffrey Reed, International Economics

FOREIGN TRADE MULTIPLIER, EQUILIBRIUM IN THE GOODS MARKET

B.A. Sem 3rd **UNIT IV**

EC - 301 **LESSON: 19**

STRUCTURE:

19.1 Objectives

After going through this lesson, the learner should be able to understand:

- what is foreign trade multiplier
- how it works in an open economy
- how the equilibrium in goods market is achieved.

19.2 Introduction

Keynes developed his 'Investment Multiplier' in the context of a closed economy where neither exports nor imports of goods occur. Keynesian theory of multiplier has been extended to the open economy where flow of goods & services takes place between different countries of the world. As we have been seen in a closed economy, equilibrium

level of national income is determined by the equality of saving & investment. Likewise in a open economy, where exports & imports takes place, foreign Trade influences the determination of equilibrium level of national income.

19.3 Foreign trade multiplier, equilibrium in the goods market

19.3.1 Foreign Trade Multiplier

The foreign trade multiplier, also known as the export multiplier, operates like the investment multiplier of Keynes. The value of foreign trade multiplier depends not only on the marginal investment to save but also on the marginal to import. Therefore, we shall first explain the concept of import function and how marginal propensity of import is derived from it.

The Import Function : - In a open economy, consumers spend some part of their income on the purchase of important goods. The imports of a country depend on its level of income. Higher the level of income, the greater will be its imports, prices of imports & tastes of consumers remaining constant. The relationship between imports and level of national income is called 'Import function' expressed as : $M = f(Y)$

Where,

'M' is import

'Y' is income of a country

In the figure it will be seen that even at zero national income, some imports are undertaken by borrowing from abroad or by exporting some capital accumulated of the past.

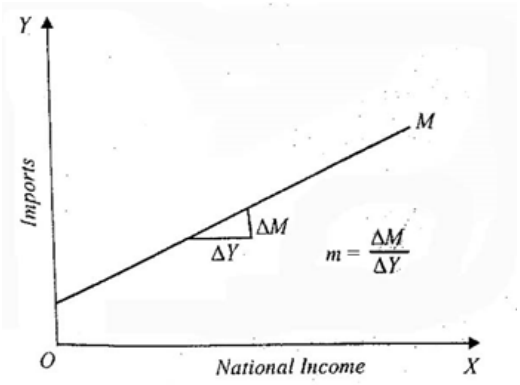


Fig. 19.1

The marginal propensity to import measures the change in import as a result of increase in national income and is algebraically expressed as:-

$$M = \frac{\Delta M}{\Delta Y} \text{ where,}$$

M - marginal propensity to import

ΔM – Change in value of imports

ΔY – Increase in national income.

The Foreign Trade Multiplier In a Open Economy

In a closed economy, equilibrium level of national. Income is determined at the level where savings are equal to investment. Savings represents leakage or withdrawal of money from the income flow, while investment is the injection of money into the income flow. In an open economy, the role of foreign trade (i.e. exports & imports of a country) plays an important role. Imports are other form of leakage and exports are the injection of money into the income flow of an open economy.

Therefore, equilibrium level of national income in an open economy is determined at the level at which total leakage, that is, saving plus imports (S+M) equal total injection, that is, investment plus exports (I + X) into the income flow.

Thus, in an open economy, national income is in equilibrium at the level at which

$$S + M = I + X$$

Any change on the left side of the above equation must be equal to the change on the right side. If the new equilibrium is to be achieved.

$$\Delta S + \Delta M = \Delta I + \Delta X \text{ ——————— (1)}$$

Now change in saving, $\Delta S = S.\Delta Y$

Where, S = Marginal propensity to save

ΔY = change in national income

Likewise, change in imports $\Delta M = m.\ \Delta Y$

Where,

M = marginal propensity to import

ΔY = change in national income

Now, rewriting equation (1), we have

$$S.\Delta Y + m.\Delta Y = \Delta I + \Delta X$$

$$\Delta Y\ (S + m) = \Delta I + \Delta X$$

$$\Delta Y = \frac{1}{S+m}\ (\Delta I + \Delta X) \qquad \text{——————} (2)$$

It is clear from equation (2) that change either in investment or in exports will cause increase in income by the multiple of $\frac{I}{S+m}$.

Thus, $\frac{I}{S+m}$ is the foreign trade multiplier which is generally denoted by K_f.

Hence, $K_f = \frac{I}{S+m}$

Thus, foreign trade multiplier is equal to the reciprocal of marginal propensity to save (s) plus marginal propensity to import (m). It is evident that smaller the leakages, that is, smaller the value of marginal propensity to save(s) and marginal propensity to import (m), the greater the value of foreign trade multiplier or export multiplier.

Graphic Representation of Foreign – Trade Multiplier or Export Multiplier

The Foreign – Trade multiplier can be shown in the figure where S + M is the saving plus import – function curve. X_O is the export curve. X_1 is the new export curve after change in exports. To simplify our analysis, we assume that there is no investment. The equilibrium level of national income will be therefore be determined by exports.

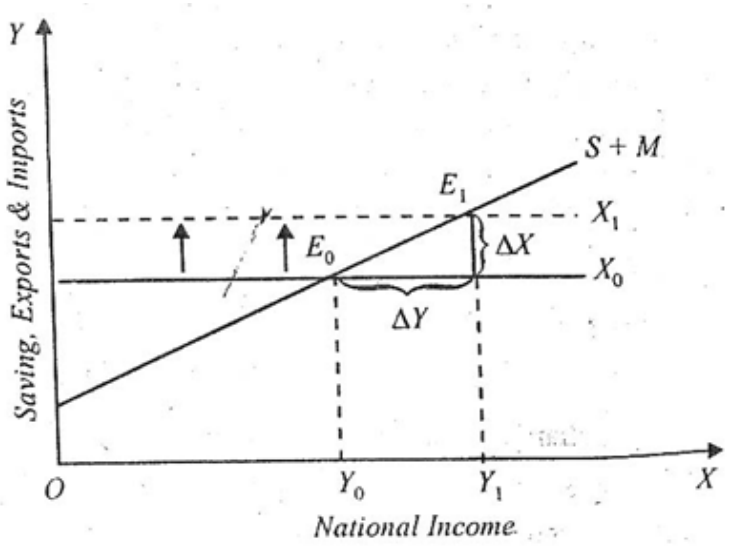


Fig. 19.2

Initially, the economy is in equilibrium at level of income Y_O where $S + M = X_O$, investment being zero. Suppose there is increase in exports so that export curve shifts upwards from X_O to X_1. Now the economy is at equilibrium at level of income Y_1 where $S + M = X\text{-}_1$.

Thus, increase in exports (ÄX) has led to the increase in income (ÄY) equal to $Y_1 Y_O$ which is much greater than change in exports (ÄX). $\frac{\Delta Y}{\Delta X}$ is the foreign – trade multiplier whose value depends on the slope of saving plus import function curve (S + M) which is equal to the reciprocal of sum of marginal propensity to save (s) and marginal propensity to import (m) i.e. $\left(\frac{1}{S + M}\right)$.

19.3.2 Equilibrium in Goods Market.

The equilibrium in the goods market (or Real market) or real sector is explained by the equality between aggregate saving and aggregate investment in the economy. It is natural that all those factors which cause variations or changes either in the aggregate saving(s) or

in the aggregate investment (I) will affect the determination of equilibrium in the good market or real sector.

We assume in this analysis, that investment is an inverse function of the rate of interest, while saving is a positive function of income level. Higher the rate of interest, lower the investment demand. Higher the level of income, higher the volume of savings. The equilibrium condition postulates an equality between saving and investment.

At this level of income (where S is equal to I), the aggregate demand for goods is equal to the aggregate supply of goods.

In figure, Panel (a) shows the relationship between the rate of interest and planned investment. The investment increases with a fall in the rate of interest and vice-versa. In Panel (b), with every increase in investment, there is an upward shift in the aggregate demand curve (consumption demand (C) + Investment demand (I)) resulting into a new equilibrium position. In panel (c), the equilibrium income is show against the interest rate. We obtain the IS curve by joining points A, B, C representing various interest – income combinations at which goods market is in equilibrium

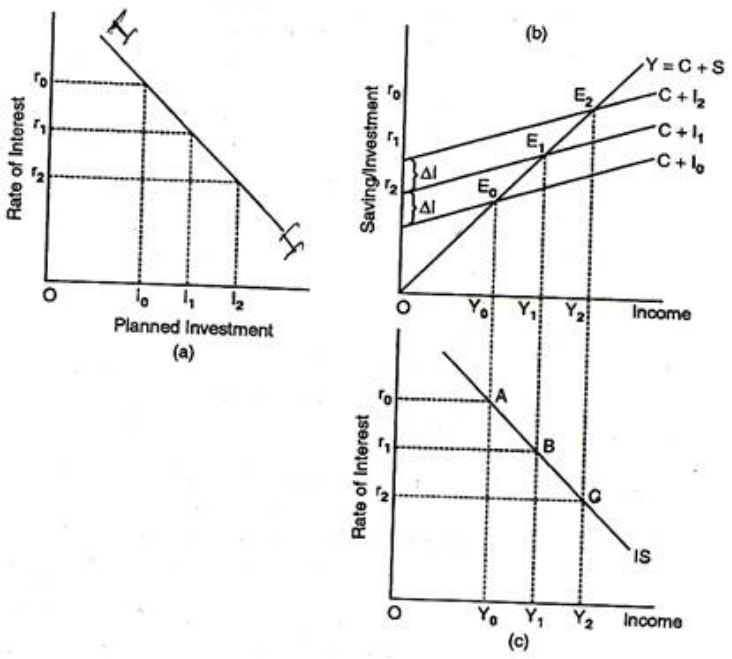


Fig. 19.3

Is curve represents the equilibrium of the goods market of the economy. IS curve is the locus of various combination of income (on x-axis) and rate of interest (on Y-axis) at which the aggregate saving is equal to aggregate investment.

IS curve shows that for each rate of interest, there is a different level of income at which saving is equal to investment. The higher the rate of interest, the lower is the level of income at which saving is equal to investment.

Investment is an inverse function of rate of interest. Saving is a positive function of income. Thus, lower the income, lower the saving; lower the saving, lower the investment. And lower investment is a result of high rate of interest. Hence a higher rate of interest is accompanied by lower level of income, according to IS curve.

Hence, the IS curve shows that at a higher rate of interest the good market of the economy will be the equilibrium at a lower level of income and vice-versa. This marks the IS curve downward sloping.

The Slope of the IS curve

Figure shows that IS curve slopes downwards from left to right. IS curve may be flat or steep depending on the sensitiveness of investment to changes in the rate of interest and also on the size of the multiplier.

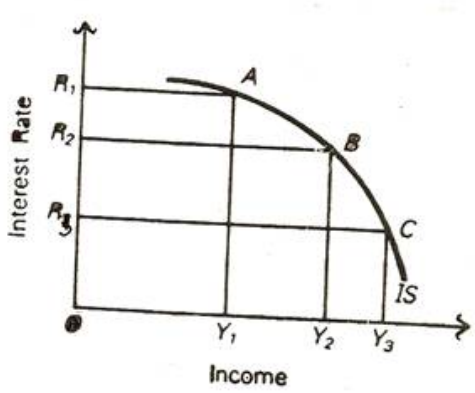


Fig. 19.4

If investment is very sensitive to the rate of interest, the IS curve is very flat. This is shown by the segment AB of the IS curve in figure, where a small fall in the rate of interest from B_1

to B_2 leads to a proportionately large size in income from Y_1 to Y_2. The IS curve is interest-elastic in AB segment of the curve.

On the other hand, if investment is not very sensitive to the rate of interest, the curve is relatively steep. This is shown by the segment BC of the IS curve, where a fall in the rate of interest from R_2 to R_3 leads to a proportionately small rise in income from Y_2 to Y_3.

The IS curve is less interest – elastic.

Any further fall in the rate of interest from R_3 will leads to no change in income because the IS curve is vertical in that range. It is interest – inelastic.

The shape of the IS curve also depends upon the size of the multiplier. If the size of the multiplier is large, income is more sensitive to changes in the interest – rate and IS curve is flatter.

Shifts in the IS curve

The IS curve shifts to the right, if the saving is reduced. Reduction in saving may be the result of increase in consumption. Consumers may like to buy new product by reducing saving. The consumers may start buying more in anticipation (expectation) of shortages of production or price rise in near future, thereby reducing saving.

The IS curve also shifts to the right, if there is increase in investment. The increase in investment may result from expectations of higher profits in the future or from expectation regarding increase in future demand for the product or from a rise of optimism in general. Moreover, government expenditure & tax policies have the effect of shifting the IS curve.

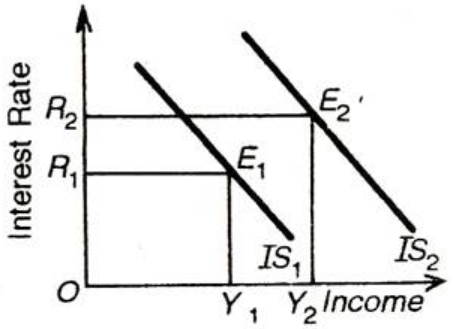


Fig. 19.5

With the increase in the autonomous investment or reduction in saving, the IS curve shifts from IS_1 to IS_2 and the new equilibrium is established at point E_2, which indicates a higher level of income Y_2, at a higher interest rate.

In the opposite case, when the investment falls or saving increases, the IS curve will shift to the left from IS_2 to IS_1 and the new equilibrium is established at point E_1, which indicates a lower level of income and interest – rate.

19.4 Let us sum up

To sum up, foreign trade multiplier has important implications for under-developed countries. The value of this multiplier helps in implementing various policies. It is particularly important in those countries where contribution of foreign trade to national income is high.

19.5 References

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