



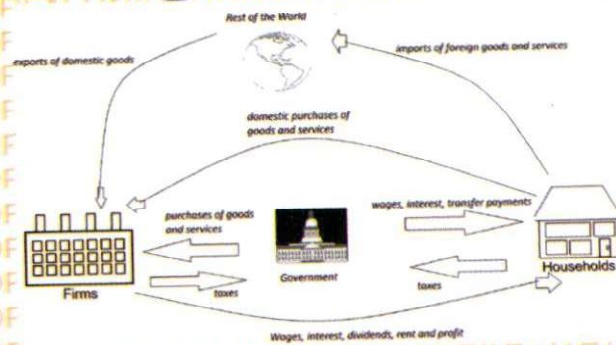
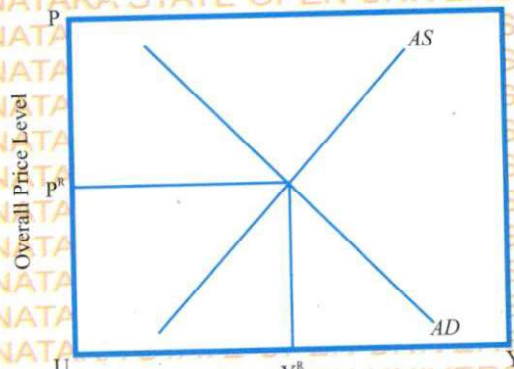
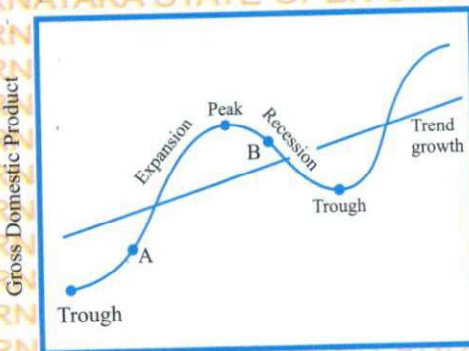
KARNATAKA STATE OPEN UNIVERSITY

Mukthagangotri, Mysore-570 006

ECONOMICS

M.A. (FINAL)

MACRO ECONOMICS



COURSE - 1

BLOCK - 1-7





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M.A. ECONOMICS
FINAL
COURSE - VI
Macro Economics

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M.A. ECONOMICS (FINAL)
COURSE - 6
MACRO ECONOMIC ANALYSIS

BLOCK -1 INTRODUCTION

Block 1 consists of two units. In unit 1 you are going to study the nature and scope of Macro Economics, differences between micro and macro economics, macro economics goals, its importance and its limitation. Unit 2 deals with National Income. In this Unit you are going to study the definition of national income, the various concepts of national income, its measurement and its importance.

BLOCK -2 INTRODUCTION

Block 2 consists of two units. In unit 3 you are going to study the Classical Theory of employment. In Unit 4 you are going to study the Say's Law of Market, and its implications.

BLOCK -3 INTRODUCTION

Block III consists of Keynes Theory of Employment. The theory is quite systematic in its composition. The various constituents of the theory are intimately related to each other. This block consists of four units. Unit 5 deals with effective demand and employment determination. Unit 6 deals with consumption function. Unit 7 deals with Multiplier and finally Unit 8 deals with investment function.

BLOCK -4 INTRODUCTION

This block consist of 7 units. In this block you are going to study the various aspects of supply and demand for money given by different economist. This block consists of following units.

- Unit 9 : Supply of Money
- Unit 10 : Demand for Money
- Unit 11 : Keynes theory of demand for money
- Unit 12 : Post Keynesian theories of demand for money
- Unit 13 : Milton Friedman's Wealth Theory of Demand for Money
- Unit 14 : Financial Intermediaries
- Unit 15 : Control of Money Supply

BLOCK - 5 INTRODUCTION

Right from Adam Smith to Samuelson we have indeed a vast literature explaining the nature and determination of the rate of interest. It is well known that the amount of investment undertaken by entrepreneurs in any given situation, given the marginal efficiency of capital, will be determined by the rate of interest. The practical importance of interest is too obvious to need any detailed mention. However, the rate of interest is one of the potential weapons in the hands of monetary authorities to tackle the problems of inflation, deflation and cyclical fluctuations in the system. In this way, the rate of interest is an important determinant of the volume of investment and hence the level of income and employment.

Just as rent is a payment for the use of land and wage is the price for the services of labour interest is a payment for the use of capital, expressed as a percentage of principal borrowed or loaned. Perhaps, the determination of interest rate is the most controversial issue in the whole theory of distribution. Regarding the determination of the rate of interest there are various theories viz, time preference theory, marginal productivity theory, agio theory, abstinence or waiting theory, classical theory, neo-classical theory, liquidity preference theory and modern theory. These diverse views on interest can be grouped into two broad classes: real theories and monetary theories. Real theories of interest are long run theories which explain only why interest arises. On the contrary, monetary theories are short-run theories which explain both how interest arises as well as how the rate of interest is determined. The modern link between real and monetary rate of interest should approximately be equal to the real rate plus (minus) the expected rate of price change (Inflation or deflation)

In this block we attempt an examination of three important monetary theories of interest rate determination in three units :

Unit 16 gives you an account of the Neo-classical or the Loanable Funds Theory of interest. Units 17 and 18 deal with the liquidity preference theory and modern theory of interest respectively.

BLOCK - 6 INTRODUCTION

This block consisting of seven units deals with the important theories of business cycle and economic instability in the form of inflation and deflation along with the stabilization policies of the government.

Unit 19 describes the concept, phases and features of business cycle.

Unit 20 explains Schumpeter and Kaldor's theories of business cycle.

Unit 21 illustrates the Samuelson's model of business cycle.

Unit 22 deals with the Hicksian theory of business cycle.

Unit 23 Examines the two important monetary theories of business cycle by Hawtrey and Hayak.

Unit 24 gives you an account of Inflation and deflation along with Philip's Curve analysis under the head line 'Economic Instability'.

Unit 25 examines the stabilization policies of the government.

BLOCK-7 INTRODUCTION

Modern economies are open; they export some of the goods and services they produce and import some of the goods and services they consume. They also borrow and lend in world financial markets and have become highly interdependent. Thus, world markets play a crucial role in modern economies. This block consisting of 05 units (26 to 30) deals with some of the important macro economic issues in an open economy. Besides, we also examine a radical Post - Keynesian development in macro economic thinking, namely the new classical approach along with its policy implications.

Unit 26 deals with an open economy model, namely, the Mundell - Fleming Model. Unit 27 deals with the Major Exchange - rate Systems and their adjustment. Unit 28 explains Monetary Approach to the balance of payments. In unit 29 we have discussed the New Classical Approach to macro economics and policy implications of the New Classical Approach are examined in Unit 30.

Chairperson

DOSR in Economics

Karnataka State Open University

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UNIT -1 NATURE AND SIGNIFICANCE OF MACRO ECONOMICS

Structure

- 1.1 Objectives
- 1.2 Introduction
- 1.3 Definition of Macro economics
- 1.4 Macro economics goals
- 1.5 Interdependence of Micro-Macro analysis
- 1.6 Macro economic variables
- 1.7 Scope of macro economics
- 1.8 Importance of macro economics
- 1.9 Limitations of macro economics
- 1.10 Let us sum up
- 1.11 Books for self study
- 1.12 Questions for self-study

1.1 OBJECTIVES

After reading this unit you will be in a position to explain

- What is macro economics
- Differences between macro and micro economics
- Scope of macro economics
- Importance of macro economics
- Limitations of macro economics

12. INTRODUCTION

Macroeconomics is the study of aggregate economic activity. In contrast to micro economics, which focuses on explaining the economic behaviour of small units, such as individual house holds, individual firms, individual markets etc. Macroeconomics is concerned with the performance of the economic system as a whole. It attempts to explain how, for the entire economic system, the level of employment and out put, the level of prices, the rate of growth of out put, and the rate of price level change are determined. Therefore, it is presumed that the macro economics provide government policy prescriptions for improving the performance of the economic system. Generally every economy faces macro economics problems like increase in price level, increase in unemployment, balance of payment deficits, fall in the output etc. There may be some disagreements on answers to these problems but, still macro economics can shed a great deal of light on these problems and provide answers to these problems.

1.3 DEFINITION OF MACRO ECONOMICS

Macro economics is the branch of economics which deals with aggregates According to Prof. Boulding, Macro economics deals not with individual quantities as such, but with aggregates of these quantities; not with individual incomes, but with the national income; not with individual prices, but with the price level; not with individual outputs, but the national out put". Mc. Connel says, "The level of Macro economics is concerned either with the economy as a whole or with the basic sub divisions or aggregates – such as, government, households and businesses – which make up the economy". In terms of Prof. Ackley, "Macro economic theory" is some what unattractive and awkward and the better title would be income employment analysis. From the above definitions we can say the macro economics is concerned with aggregate quantities and relationships, such as total consumption, investment and government expenditures. It measures economic aggregates and search for systematic explanation of

changes in these aggregates. National income and output, levels of employment, changes in the general price level, the capacity of economy-these are some of the major concerns of macro economics.

Since the days of Adam Smith, economists were concerned with micro analysis. The classical economist took the economy as a whole for granted and studied micro economic problems. They completely ignored the general price level, total employment and aggregate savings etc. It was T.R. Malthus who introduced macro economics in his study. But the analytical framework of macro economics has developed only after the Great Depression especially with the publication of Keynes 'The General Theory of Employment, interest and Money in 1936. The main objective of this analysis was to find out causes of fluctuations and to keep the economy operating near full employment. Besides Keynes, Walras, Wicksell and Fisher also contributed to development of macro economics.

1.4 MACRO ECONOMIC GOALS

Macro economics is concerned with the full use of resources, the growth of economy, and its stability. More specifically, macro economic goals include full employment, full employment output, maximum potential growth, price stability and external balance. These goals must be capable of measurement.

Full employment is one of the important goals of macro economics. Like other economic concepts, the concepts of full employment is a controversial one among the economists. Full employment means absence of any involuntary unemployment. Involuntary unemployment exists when some workers who are willing to work at the prevailing wages, employers are willing to pay cannot find employment. Thus, full employment exists when there are jobs available for all who are willing to work at the prevailing level of wages employers are willing to pay. Because of imperfections in the labour market like lack of information about jobs available, lack of mobility of labour etc some unemployment exists in the market. The important question for macro economics is how much measured unemployment we must tolerate at full employment due to these imperfections.

Another goal of macro economics is full employment output. The output will be maximum when all the work force in the economy is employed. Potential gross national product (out put) increases with time. Larger labour supply, better capital equipment, increased productivity increases potential gross national product.

Another macro economic goal is rapid economic growth. Economic growth is measured by percentage of rate of increase in output, percapita income, improvement in standard of living of the people. It has been widely recognised that rising levels of percapita income allows higher level of consumption, good education, increasing leisure, national defence etc.

It has been recognized that reasonable stability in the general price level is an important macro economic policy goal. Because prices serve a resource allocation function of economic system. Rising prices call additional productive resources into market and may result inflation. Therefore the goal of macro economic policy should restrict movement is the average or absolute price level and relative prices may be left free to change.

Maintaining equilibrium in balance of payment position in another goal of macro economic policy. Price instability affects not only domestic economy, but also the nations balance of payment position. Higher prices makes goods less competitive in the international market, so exports will fall and imports rise and create balance of payments problem. Even if external factors do not contribute directly to domestic problem, they may interfere with their solution. External balance is thus considered as one of the important macro economic goals.

1.5 INTERDEPENDENCE OF MICRO AND MACRO ANALYSIS

Micro economics deals with small constituents or components of the economy. It analyses the behaviour of the individual buyer or seller, the determination of price of a commodity for a single firm, the level of employment and wages in a firm or industry and so on. Micro economic analysis is applied in many branches of economics such as international trade and public finance. Incidence of tax on producers and consumers, gain from international trade and gains distributions among participant countries are found out through micro economic analysis. Macro economics is a study of aggregates. It is a study of overall conditions like total production, total income, total savings and total investment in the economy. Macro economics is indispensable for the formulation of successful government economic policies and these policies are directed towards the masses and not towards few chosen groups. Therefore, government must possess adequate knowledge of the aggregates like total national income, total consumption, total savings, total investments etc.

From the discussion we should not conclude that micro and macro economic studies are entirely different having separate existence and entities. In fact both the analysis are interdependent. Both the analysis are entirely separate for the simple reason that the price theory belongs to micro economics and the income theory belongs to macro economics. In fact both the analysis are interdependent because micro economic problems involve macro analysis and macro economic analysis necessarily involves micro analysis. For example determination of price level in the economy belongs to macro study. But the general price level in economy is the outcome of the study of relative prices of various products produced in the economy belongs to micro study. Similarly the payment of wages or determination of wages in a firm is a micro problem relating to a single firm. Normally the wage is determined on demand and supply of labour for that firm. But in practice the wages depends on the demand and supply of

labour in the locality. In fact wages which a firm have to pay will depend upon the demand for labour in the industry to which the firm belongs and also the demand for labour in the whole economy. Therefore, the wage determination, though micro economic problem depends on the study of macro problem.

Macro economics, as was noted, is concerned with aggregate quantities. One of the problem of aggregation is the classifying of widely, varying goods or activities into one general category and treating as a homogeneous variable. For example under consumption, expenditures are listed all goods and services consumed by house hold, from refrigerators to toothpaste. Here the failure to recognize the separate components of these aggregates results in faulty and misleading.

Economist have formulated micro-macro approaches because, what is true of an individual might not be true of the whole economy. It is called macro economic paradoxes. For example an individual employer can think of reducing wages of workers in order to reduce the cost of production and make profit. This is true at the unit level. But if wage cuts are made by all the firms and industries in the economy, it would reduce income of the workers, their purchasing power and result in the fall in demand for goods and services. When effective demand falls, there will be glut in the market and the employers may not reap expected profits. On the contrary there will be a reduction in production and retrenchment of workers. Similarly savings at individual levels are always good and considered as a virtue from the economic point of view. This will help capital accumulation. But more savings in the economy leads to less expenditure which actually leads to less income and less savings and this leads to depression and unemployment in the economy.

In the concluding remarks, Prof. Samuelson points out, "Very definitely, in the field of economics, it turns out that what seems to be true for individuals is not always true for a society as a whole; and conversely so, what seems to be true for all may be quite false for any one individual". In order to solve many of the paradoxes in economics we have to make a separate study of the economic system.

1.6 MACRO ECONOMIC VARIABLES

A Variable is a magnitude which can be measured on a scale and which varies. Macro economic variables are consumption, investment, the money supply, the price level, the interest rate and the wage rate. Macro economist can have any number of variables – depending ofcourse, upon what he wants to analyse. Variables are of three types, they are a stock, a flow and a ratio. A stock variable is one that has meaning only at a specific point of time. For example money stock on one particular day. Flow variables are those which can be expressed in terms of a time period. For example income per year, for 6 months or for 3 months etc. A ratio variable is one which expresses relationship between stocks and flows at a

certain point of time Variables are of great interest to macro economists in model building. Macro model describes the aggregate behaviour of consumers investors and holders of money. Macro economic model provide a device by which the aggregate behaviour of the economy is analysed in terms of the impact of economic policy measures upon variables such as employment, interest rates, income, prices balance of payments etc.

1.7 SCOPE OF MACRO ECONOMICS

With the onset of the 'Great Depression' due to the failure of free economy, macro study, gained importance as the weakness of micro economics was fully exposed. The study of macro economics assumed importance due to governmental intervention in economic policies because, its polices were directed towards masses not towards a few choosen groups. Therefore, the government must possess adequate knowledge of the aggregates like national income, total consumption, total savings, total investments etc. Therefore the scope of macro economics include

- (a) Theory of income, output, employment consisting of the theory of consumption, investment function and the theory of business cycle.
- (b) Theory of prices which consist of theories of inflation, deflation and refaltion.
- (c) The theory of economic growth which deals with growth of income, out put and employment.
- (d) Macro theory of distribution deals with the relative shares of wages and profits in the total national income. Macro economics is called theory income and employment theory because the study is mainly concerned with the economy's income and employment.

1.8 IMPORTANCE OF MACRO ECONOMICS

From the scope of the subject, we can very well understand the practical and usefulness of the macro economics. Prof. J.K. Mehta feels that so long as men live in society, the economist cannot afford to neglect the study of macro economy. The theoretical and the practical importance of macro economics would be clear from the following arguments.

1. Macro economic analysis is of paramount importance in getting us an idea of the functioning of an economic system. It helps the government in formulating and implementing economic polices. Monetary and fiscal polices of government are taken up on the basis of available aggregate data. Moreover the present governments deals not with individuals but with groups and masses. This establishes the importance of macro economics.
2. The study of macro economic is essential for the proper understanding of macro

economics. No micro economic law could be framed without a prior study of the aggregates. For example, the theory of individual firm has been formulated only after studying the behaviour pattern of several firms.

3. Economic fluctuations are a characteristic feature of the capitalist form of economy. Macro economics helps the government in controlling these fluctuations. The theory of economic fluctuations can be understood and built up only with the help of macro economics because here we take into consideration aggregate consumption, aggregate savings and investment in the economy.
4. Micro economics is of utmost important to analyse and understand the effects of inflation and deflation. Different sections of the economy are effected differently as a result of changes in the value of money. Macro economic analysis enables us to take certain steps to counteract the adverse influence of inflation and deflation.
5. It is the study of macro economics which has brought forward the importance of the studying of national income and social account. Almost all nations, particularly developing countries are eager to increase their national income. Therefore macro economics helps the government to formulate economic polices to increase national income of the country.
6. As a result of advanced study in macro economics, it has become possible to give more attention to the problem of development of under developed countries. It is only through macro approach that the problems of growth could be solved.

1.9 LIMITATIONS OF MACRO ECONOMICS

In spite of its importance in modern economics, macro analysis has certain draw backs and limitations. They are;

1. Macro analysis cannot be precise because of the heterogeneous elements composing it. It deals with such aggregates as total consumption, total savings total investment, total income etc. which are divergent in nature. In many cases, the failure to recognize the separate components of these aggregates results is faulty and misleading work. For example, under consumption expenditure are listed all goods and services consumed by households from refrigerators to toothpaste.
2. Too much of aggregations will make the analysis quite unintelligible Prof. Bouilding has pointed out that 2 apples + 3 apples = 5 apples is a meaningful aggregate- 2 apples + 3 Oranges = 5 fruits fairly meaningful, but 2 apples and 3 cars a meaningless aggregate. It is

the last aggregate which brings forth the fallacy of excessive macro thinking.

3. Macro analysis likely to overlook the different aspects of the aggregates. For example, macro analysis may reveal that national income of the country has increased by 50 percent. Though superficially one believes that the nation has developed well, but the real fact will be that majority of the people may be living in object poverty.
4. Composition of aggregates may be imperfect in macro analysis. Prices of many commodities would have fallen in the economy. But the prices of essential commodities might have risen many times. When they are added in analysis, the summation is likely to mislead.

But the above said limitations of macro analysis are in the nature of practical difficulties rather than inherent weakness. With the commencement of Keynes "General Theory and his basic equation $Y = C + I$ interest in the study of macro economics has deepened.

1.10 LET US SUM UP

Macro economics is a study of aggregates. It deals with aggregates namely national income, price level, national output etc. Macro economics drawn the attention of the economist after the Great Depression, especially with the publication of Keynes. 'The General Theory of Employment, Interest and Money' in 1936. Full employment, full employment out put, rapid economic growth, stability in general price level, mainting equilibrium in balance of payment are some of the goals of macro economics. Though macro economics is branch of economics, though micro and macro economics studies are different having separate entities, they are interdependent. The behaviour of an economy can be analysed through variables such as employment, income, prices etc. Macro economics helps us in understanding functioning of an economy, is understanding micro economics, in controlling economic fluctuations, in controlling inflation and deflation, in understand national income and in understanding the problem of economic development. Though there are some limitations of macro economics they are of practical difficulties rather than inherent weaknesses of macro economics.

1.11 BOOKS FOR SELF-STUDY

- | | | | |
|----|-------------------------------------|---|----------------------|
| 1. | Macro economics – Theory and Policy | - | Anthony and Campagna |
| 2. | Macro economics | - | J. Carl Poindexter |
| 3. | Macro economics | - | P.N.Chopra |

4.	Macro economic Theory	-	T.N. Hajela
5.	Macro economic Analysis	-	Edward Shapiro
6.	Macro economic Theory and Policy	-	William H. Branson
7.	Macro economics	-	John. H. Makin
8.	Macro Economics-Theory and Policy	-	H.L. Ahuja

1.12 QUESTIONS FOR SELF STUDY

1. Explain macro economic goals
2. Define macro economics, point out its importance and limitations.
3. Explain macro economics, describes economy in terms of macro economic variables.
4. Analyse the scope and importance of macro economics.

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UNIT – 2 NATIONAL INCOME AND ITS ACCOUNTING

Structure

- 2.1 Objectives
- 2.2 Introduction
- 2.3 Definition of National Income
- 2.4 Different Concepts of National Income
- 2.5 Measurement of National Income
- 2.6 Difficulties in the Measurement of National Income
- 2.7 Importance of National Income
- 2.8 Let us sum up
- 2.9 Questions for self-study
- 2.10 Books for self-study

2.1 OBJECTIVES

After reading this unit, it helps you in understanding

- What is national income?
- A nation's production capacity and economic strength
- The position of different sectors of the economy
- The different concepts of national income
- The importance of national income.

2.2 INTRODUCTION

The national income accounting is quite modern origin and they have been compiled and published on regular basis. This is an important date for macro economic analysis and policy. Like the accounting systems employed by private business firms, the national income attempt to provide a summary description of economic performance of the aggregate economy. As such, the values of a number of variables in which we measure national output, national income, consumption, investment and so on. The purpose of national income is to measure and describe aggregate economic activity. It is a system of expressing statistically the mutual relationship of the different sectors of the economy to have a clear picture of the economic health of the society as a whole. It does not only help in getting a view of the prosperity or adversity of the economy but also is having guidelines for future policy of the economy. Because of this reason national income has attracted the attention of economic thinkers and policy makers.

2.3 DEFINITION OF NATIONAL INCOME

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

Thus according to Marshall's definition, national income means;

1. All types of goods and services which are produced are included in the national income.
2. The cost of wear and tear of the machinery should be deducted from the total value of these

goods and services. The remainder would be national income.

3. Income from abroad has also be taken into account

Marshall's definition suffers from the following defects

1. The goods and services produced in the country are so many and of so many varieties that it is very difficult, though not impossible, to measure accurately the national income of a country.
2. There are some commodities, quite as substantial part of which does not become available for sale in the market. For eg. Produce consumed by farmer himself.
3. The aggregation of the out puts of goods and services is not easy, because of heterogeneous statistical units. For eg. wheat in tones, cloth in meter, petroleum in liter.
4. The danger of double counting. There is every possibility of certain terms being counted twice. For eg. cotton may be counted in agricultural production and also in industrial production when it is converted into cloth.

Pigou has defined national income as "that part of the objective income of the community, including of course, income derived from abroad which can be measured by money. This definition is clearly superior to that of Marshall. Because

1. Only goods and services exchanged for money are included in the national income
2. Income earned from investment in foreign countries has been included in national income.

Pigon's definition, however, suffered from the following defects.

The distinction between the goods exchanged for money and those are not exchanged for money is artificial. After all, the goods exchanged for money do not differ in kind in any fundamental way. If a housewife cooks the meal for her own family, her services do not form a part of the national income. But if the same services done in a hotel, it becomes part of national income.

This definition is not suitable for under developed countries where goods and services are exchanged without involving the use of money.

Keynes while explaining the concept of national income, has made a departure from the earlier thinking on this concept. He has adopted a approach which helped in aggregative analysis of income and employment. According to him national income can be computed through.

1. Expenditure method. According to this method national income is equal to total consumption expenditure and total investment expenditure. It can be expressed as

$$Y = C + I$$

Where Y is national income, C is consumption expenditure and I is investment expenditure.

2. Factor-Income method. According to this method national income is the total of income of all the factors of production. It can be expressed as

$$Y = F + E_p$$

Where Y is national income, F are the payments received by owners of factors of production and E_p are entrepreneurial profits.

3. Sale – Minus – Cost method. According to this method national income is equal to the total sale proceeds minus user cost if can be expressed as

$$Y = A - U$$

Where Y is the national income, A is gross national product and U is the aggregate user cost.

Modern economists have considered the concept of national income in its three aspects namely, product aspect, income aspect and expenditure aspect and they stress upon the existence of fundamental identity between them. They view national income as a flow of output, income and expenditure. When goods are produced by firms the owners of various inputs receive income in the form of wages, profits, interest, rent etc. A part of this income is spent on consumption and remaining is saved. The amount saved by the house holders is mobilized by the producers for investment spending. Thus there is circular flow of production, income and expenditure. These three flows as always equal per unit of time. Hence Total output = Total income = Total expenditure.

Thus the analysis of the definitions we have discussed brings out three important points. They are (1) national income refers to the income of a country, (2) its measurement refers to a specified period of time and (3) national income includes all types of goods and services which have an exchange value, counting each one of them only once.

2.4 DIFFERENT CONCEPTS OF NATIONAL INCOME

Under national income accounting we have to study several concepts which have become integral parts of the national income analysis. We shall study about these aggregates and their interrelationship.

2.4.1 National Product

It is the economy's total current output of goods and services valued at prevailing market prices. The output can be expressed roughly as the number of units produced multiplied by its market price. In cases of services the total payment made by buyers can be taken as the value of production. This procedure, however assumes the existence free competition and perfect competition. But there are some difficulties in assessing the correct national product. There are certain services which are not sold like commodities such as defence, education etc. Here the charge is not directly collected from the buyers and the cost met out of tax collected. Similarly, there is difficulty of assessing the value of services rendered by housewives to their families. Since it is very difficult to impute money value to these services, these are generally left out in the calculation of national output.

Therefore calculating the aggregate output, the quantities of commodities produced are to be multiplied by their prices, the services provided by public authorities are to be included according to their cost. To avoid double counting only final products are to be taken into account and not intermediate products or value added computation method should be adopted in value added method output estimates are made sector-wise and then added. During the course of production, every sector adds some value to the inputs received from other sectors. If these additional values are added, the total will represent the value of aggregate output.

2.4.2 Gross National Product (GNP)

Gross national product may be defined as the market value of goods and services produced in a country during a given year. It is evaluated in terms of market prices. This definition market value eliminates non economic things, produced in a given year final goods and services eliminates intermediate goods. Thus here we take into account the money value of final goods and services produced in the economy to avoid double counting. GNP is the most frequently used national income concept. It is better index than any other concept. It is also a simple concept as it takes no account of depreciation and replacement problems. Computation of GNP for several years and comparing them will tell us whether there has been a long run growth or decline in the economy.

But care should be taken in comparing GDP's of different years as price changes would deceive us. Here economic growth, reflected in rising GNP is not enough. Because (1) There is no consensus on what types of goods will increase human welfare (2) we do not know how our production of goods affects environment (3) it is not increase in total GNP affects human welfare but it is the percapita GNP (4) More attention must be given to the distribution of national output. These issues may cause social unrest and they are not illuminated by the summary accounts.

2.4.3 Net National Product (NNP)

Net National Product refers to the net production of goods and services in a country during the year. It is the GNP minus the value of capital consumed or depreciation during the year. $GNP - \text{Depreciation} = NNP$. NNP is also called National income at market prices and this consists of indirect business taxes and subsidies. The great merit of NNP is that it clarifies the net increased current consumption and current investments. It signifies the long run improvement in physical productivity of capital. But this concept has to complex problem of fixing appropriate rates of depreciation for plants, equipments etc in the economy.

2.4.4 National Income [NI]

National income is the total of all income payments received by the factors of production – land, labour, capital and organisation. It is also known as national income at factor cost. National income can be derived from N.N.P.

$N.I = N.NP - \text{Indirect taxes} + \text{Subsidies}$. The concept of N.I is an important concept in economics. It throws length on the distribution side of the national output. It tells us how the national output is distributed among the various factors of production in lieu of the services rendered by them.

2.4.5 Personal Income [P.I]

Personal income is the actual income received by the individuals and households in the country from all sources. It denotes aggregate money payments received by the people by way of wages, interest, profits and rents. It is the spendable income at current prices available to individuals. This aggregate amount will be different from the national income at factor cost. National income at factor cost is what is earned and personal income is what is received. The undistributed corporate profits, corporate income taxes, payments towards social security will not be available for the individuals. Hence, these amounts have to be deducted from what is earned. Conversely, there are certain incomes which are not currently earned but paid to individuals. For eg. old age pensions, widow pensions, and other welfare measures- accrue to individuals. These are called transfer payments by government. These income have to be added.

Thus personal income is arrived at as follows.

$PI = N.I - \text{corporate income taxes} - \text{minus undistributed corporate- Profits} - \text{minus social-security by government} - \text{Plus transfer payments}$.

2.4.6 Disposable Personal Income [D.P.I]

That part of personal income which is left behind after payment of personal direct taxes is called disposable personal income. The whole of the personal income is not available to individuals or households. Because part of personal income has to be paid to the government by way of personal direct taxes.

$DPI = PI - \text{personal direct taxes}$. The whole of DPI is not spent on consumption, but a part of it is saved. Therefore $DPI = \text{Consumption} \& \text{Savings}$.

2.4.7 Percapita Income

Per capita income is the income that is available to individuals in a country. When national income, is divided by the population of the country we get the per capita income of the country in a given year. But it should be noted that an increase in national income does not guarantee an increase in the standard of living of all the people, unless the national income is properly distributed among all sections of population.

2.5 MEASUREMENT OF NATIONAL INCOME

National income can be measured in three ways. They are (a) product method, (b) Income method and (c) Expenditure method.

2.5.1 Product method

In this method we have to make use of production or output statistics to estimate national income. The total products produced in the economy are calculated for the year and the value of this flow is equated to the market price avoiding double counting. The economy is classified conveniently into different sectors, namely, agriculture, industry, direct services and foreign transaction. In each sector we make an inventory of goods produced and find out the end product making an addition to the value of goods. The data comes mainly from the census of production supplemented by various surveys, company reports, market reports, trade statistics and other information. The census of production shows the value – added of each industry or economic activity.

2.5.2 Income Method

This method consists in adding together all the incomes accruing to the factors of production by way of payments in the form of wages, rent, interest and profits. The most important income share is that of labour. Labour is variously paid in the form of wages, salaries, supplements, compensations. All these payments when aggregated give us the share of wages. The second share is that of capital rentals. To arrive at this we have to find out the net interest, rent, dividends, undistributed profits of corporations,

profits earned by state enterprises and co operatives. The third share in the income of self employed persons which may consists of wages, rent interest or profits. When all the three shares are added we get net national income. When we add depreciation, we get gross national income.

2.5.3 Expenditure Method

In this method estimate of national income is made from the expenditure side. The expenditure includes

- (a) Expenditure by consumers on goods and services
- (b) Expenditure by private manufactures on capital or investment goods
- (c) Expenditure by government on consumption as well as capital goods

2.6 DIFFICULTIES IN THE MEASUREMENT OF NATIONAL INCOME

Although all methods are used almost in all countries to calculate national income, yet the calculation is a complex affair and is beset with conceptual and statistical difficulties.

2.6.1 Conceptual Difficulties

1. There has been difference of opinion regarding the term nation in the concept of national income. It has to be defined exactly, whether it is the geographical entity of the country or the nationals including those residing abroad.
2. In developing country there is an overlapping of occupation in rural sector which makes it difficult to know the income by origin. A worker during the peak season works in a farm, drives a cart during off – season and takes up unskilled work in the town.
3. In the rural sector the cultivators, artisans and cottage industry workers do not have a fair idea of the expenses of their occupation. Hence, the net value of the products cannot be estimated precisely.
4. When there is non monetised sector and barter dealings, the problem of imputing the value of the commodities dealt outside the monetised sector creates a problem leading to much of guess work and approximation.

2.6.2 Statistical Difficulties

1. Due to ignorance and illiteracy of the people in rural sector of backward economies, the data may not be available and even if it is available it will be unreliable. The village officials and block officials do not keep correct and current data.