7 National Income

Fig. 7.1

Introduction :

National Income is one of the important subject matter of macroeconomics. The national economy comprises of all the firms and factories, shops and markets, banks and financial institutions, various departments and their offices etc. National income is a composite measure of all economic activities such as production, distribution, exchange and consumption, but is also an objective indicator of economic welfare of the people in a country.

In India, establishment of the National Income Committee (NIC) in 1949 marked the beginning of Government efforts for regular compilation of National Income estimates. At present, Central Statistical Organisation (CSO) compiles and publishes data on national income and allied aggregates every year.

Meaning :

Modern economy is a money economy. Hence, national income of a country is expressed in terms of money.

The total income of the nation is called national income.

In real terms, national income is the flow of goods and services produced in an economy during a year.

Definitions of National Income :

Following are some of the important definitions of national income :

1) **National Income Committee (NIC) :** The National Income Commitee was appointed by the Government of India in August 1949 with Prof. P. C. Mahalanobis as Chairman and Prof. D. R. Gadgil and Dr. V. K. R. V. Rao as the members.

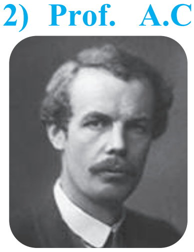
P.C.Mahalanobis

V. K. R. V. Rao

D. R. Gadgil

According to NIC "A national estimate measures the volume of commodities and services turned out during a given period counted without duplication."

2) **Prof. A.C. Pigou :** "National dividend is that part of objective income of the community including of course income derived from abroad which can be measured in money."



5) **Prof. Irving Fisher :** "National dividend or income consists solely of services as received by ultimate consumers, whether from their material or from their human environments."

Features of National Income :

1) **Macro Economic concept :** National income represents income of the economy as a whole rather than that of an individual. Hence it is a macro economic concept.

2) **Value of only final goods and services :** In order to avoid double counting in national income, the value of only final goods and

services produced in the economy are considered. The value of intermediate goods or raw materials is not considered. For example, while estimating the production of shirts, there is no need to take the value of cotton, as it is already included in the price of the shirts.

3) **Net aggregate value :** National income includes net value of goods and services produced and does not include depreciation cost. (i.e. wear and tear of capital assets)

4) **Net income from abroad :** National income includes net income from abroad i.e. difference between export value and import value (X-M) and net difference between receipts from abroad and payments made abroad (R-P).

5) **Financial year :** National income is always expressed with reference to a time period. In India, it is from 1st April to 31st March.

6) **Flow concept :** National income is a flow concept as it shows flow of goods and services produced in the economy during a year.

7) **Money value :** National income is always expressed in monetary terms. It represents only those goods and services which are exchanged for money.

Circular Flow of National Income :

Circular flow of income is the basic concept in macro economics. The circular flow of income refers to the process whereby an economy's money receipts and payments flow in a circular manner continuously through time.

Circular flow of income can be determined for the following :

1) Two sector Economy (Households and Business Firms.) $Y = C + I$

2) Three sector Economy (Households, Business Firms and Government sector) $Y = C + I + G$

3) Four Sector Economy (Households, Business Firms, Government and Foreign sector) $Y = C + I + G + (X-M)$

The circular flow of goods and money in a two sector model is explained below :

Two sector model of Circular flow of National Income :

There are two sectors, households and firms. It divides the diagram into two parts. The upper half represents the factor market and the lower half represents the commodity market.

Fig. no. 7.2 explaines circular flow of income and expenditure in a two sector model.

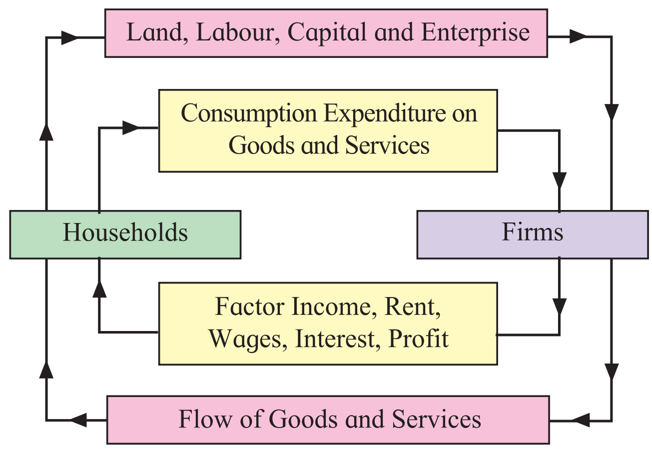


Fig. 7.2

In the above figure 7.2, the factors of production flow from the households to the firms. The firms use these factors to produce goods and services required by the households. Thus, goods flow from the households to the firms and from the firms back to the households. It is called product flows.

In the same way, money flows from the firms to the households in the form of factor payments such as rent, wages, interest and profit. Households use this income to purchase goods and services. Thus, money flows from the firms to the households and from the households back to the firms. It is called money flows.

In the circular flow of income, production generates factor income, which is converted into expenditure. This flow of income continues as production is a continuous activity due to never ending human wants. It makes the flow of income circular

Do you know?

I) Three Sector Model of Circular Flow of National Income : Under a three sector model, the government sector is added to the existing two sectors i.e. households and business firms.

II) Four Sector Model of Circular Income : In an four sector model, foreign sector is added to the existing three sectors i.e. households, business firms and government sector.

Different Concepts of National Income :

Following are some of the important concepts related to national income.

1) **Gross Domestic Product (GDP) :** Gross Domestic Product is the gross market value of all final goods and services produced within the domestic territory of a country, during a period of one year.

$\therefore$ GDP = C + I + G + (X-M) ,

Where C = Private consumption expenditure

I = Domestic Private Investment

G = Government's consumption and Investment Expenditures

X - M = Net export value (Value of Exports - Value of imports

2) **Net Domestic Product (NDP) :** Net Domestic Product is the net market value of all final goods and services produced, within the territorial boundaries of a country, during a period of one year.

$\therefore$ NDP = GDP – Depreciation.

3) **Gross National Product (GNP) :** Gross National Product means the gross value of final goods and services produced annually in a country, which is estimated according to the price prevailing in the market.

$\therefore$ GNP = C + I + G + (X-M) + (R-P).

(R = receipts from abroad and P = payments made abroad)

4) **Net National Product (NNP) :** Net National Product is the net market value of all final goods and services produced by the residents of a country, during a period of one year.

$\therefore$ NNP = GNP – Depreciation.

Find out :

India's GDP data.

You should know :

Concept of Green GNP :

It is defined as, "Green GNP is an indicator of sustainable use of natural environment and equitable distribution of benefits of development."

Gross National product does not take into consideration the cost in terms of (i) Environmental pollution, (ii) Depletion of natural resources caused by production of output. Mere increase in GNP will not reflect improvement in quality of life, when it increases environmental pollution or reduce available resources for future generations. So Green GNP has been introduced while measuring economic welfare.

Following are the characteristics of Green GNP :

1) Sustainable economic development, i.e. development which should not cause environmental degradation (pollution) and depletion of natural resources.
2) Equitable distribution of benefits of its development.
3) Promotes economic welfare for a long period of time.

Measurement :

Green GNP = GNP - (Net fall in stock of natural capital + pollution load.)

Find out :

Names of five countries making use of the concept of Green GNP.

Methods of Measurment of National Income :

There are three methods of measuring national income.

1) Output Method/Product Method
2) Income Method
3) Expenditure Method

Methods of Measurement of National Income → Output Method
→ Income Method
→ Expenditure Method

1) Output Method :

This method of measuring national income is also known as product method or inventory method.

This method approaches national income from the output side. According to this method, the economy is divided into different sectors, such as agriculture, mining, manufacturing, small enterprises, commerce, transport, communication and other services. The output or product method is followed either by valuing all the final goods and services, produced during a year, at their market price or by adding up all the values at each higher stage of production, until these products are turned into final products.

While using this method utmost care must be taken to avoid multiple or double counting. To avoid double counting this method suggests two alternative approaches for the measurement of GNP.

i) **Final Goods Approach / The Final Product Approach :** Final goods are those goods which are ready for final consumption. According to this approach, value of all final goods and services produced in primary, secondary and tertiary sector are included and the value of all intermediate transactions are ignored. Intermediate goods are involved in the process of producing final goods, that is, the final flow of output purchased by consumers. Hence, the value of final output includes the value of intermediate products.

For example, the price of bread includes, the cost of wheat, making of flour, etc., wheat and flour are both intermediate goods. Their values are paid up during the process of production. In the final product i.e. bread, the values of intermediate goods are already included.

Thus, a separate accounting of the values of intermediate goods, along with the accounting of the value of final product, would mean double counting. To avoid this, the value of only the final product or goods must be computed.

ii) **Value Added Approach / The Value Added Method :** In order to avoid double counting value added approach is used. According to this approach, the value added at each stage of the production process is included. The difference between the value of final outputs and inputs, at each stage of production is called the value added. Thus, GNP is obtained as the sum total of the values added by all the different, stages of the production process, till the final output is reached in the hands of consumers, to meet the final demand. This can be illustrated with the help of the following table.

Table No. 7.1 - Value Added Method

Production stage	Value of output ₹	Value of input ₹	Value added ₹
Cotton	150	0	150
Yarn	250	150	100
Cloth	400	250	150
Shirt (final goods)	500	400	100
Total value			500

Value added at each stage is calculated by deducting the value of inputs from the value of output produced. The sum total added at different stages make GNP. In the above table the value of final good (Shirt) is ₹ 500. The sum total of value added at each stage of production is also ₹ 500. Thus the total value added is equal to the value of final goods. (150 + 100 + 150 + 100 = 500)

Precautions :

While estimating national income by output method, following precautions should be taken:

1) To avoid double counting, only the value of final goods and services must be taken into account.
2) Goods used for self consumption by farmers should be estimated by a guess work. Imputed value of goods produced for self consumption is included in national income.
3) Indirect taxes included in the market prices are to be deducted and subsidies given by the government to certain products should be added for accurate estimation of national income.
4) While evaluating output, changes in the price level between different years must be taken into account.
5) Value of exports should be added and value of imports should be deducted.
6) Depreciation of capital assets should be deducted.
7) Sale and purchase of second hand goods should be ignored as it is not a part of current production.

Output method is widely used in the underdeveloped countries. However, it is less reliable because of the margin of error. In India, this method is applied to agriculture, mining and manufacturers, including handicrafts. But it is not applied for transport, commerce and communication sectors in India.

2) Income Method :

This method of measuring national income is also known as factor cost method. This method estimates national income from the distribution side.

According to this method, the income payments received by all citizens of a country, in a particular year, are added up, that is, incomes that accrue to all factors of production by way of rents, wages, interest and profits are all added together, but income received in the form of transfer payments are ignored. The data pertaining to income are obtained from different sources, for instance, from income tax returns, reports, books of accounts, as well as estimates for small income.

GNP can be treated as the sum of factor incomes, earned as a result of undertaking economic activity, on the part of resource owners and reflected in the production of the total output of goods and services during any given time period.

Thus, GNP, according to income method, is calculated as follows:

NI = Rent + Wages + Interest + Profit + Mixed Income + Net export + Net receipts from abroad.

$NI = R + W + I + P + MI + (X–M) + (R–P)$

Precautions :

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

1) Transfer incomes or transfer payments like scholarships, gifts, donations, charity, old age pensions, unemployment allowance etc., should be ignored.
2) All unpaid services like services of a housewife, teacher teaching her/his child, should be ignored.
3) Any income from sale of second hand goods like car, house etc., should be ignored.
4) Income from sale of shares and bonds should be ignored, as they do not add anything to the real national income.
5) Revenue received by the government through direct taxes, should be ignored, as it is only a transfer of income.
6) Undistributed profits of companies, income from government property and profits from public enterprise, such as water supply, should be included.
7) Imputed value of production kept for self-consumption and imputed rent of owner occupied houses should be included.

In India, the National Income Committee

of the Central Statistical Organization, uses the income method for adding up the income arising from trade, transport, professional and liberal arts, public administration and domestic services.

3) Expenditure Method :

This method of measuring national income is also known as Outlay Method.

According to this method, the total expenditure incurred by the society, in a particular year, is added together. Income can be spent either on consumer goods or on capital goods. Thus, we can get national income by summing up all consumption expenditure and investment expenditure made by all individuals, firms as well as the government of a country during a year.

Thus, gross national product is found by adding up $NI = C + I + G + (X–M) + (R–P)$

1) **Private Final Consumption Expenditure (C) :** Private Final Consumption Expenditure (C) by households on non-durable goods, such as food, which are used immediately; expenditure on durable goods such as car, computer, television set, washing machine etc., which are generally used for a longer period of time; and expenditure on services like transport services, medical services, etc.

2) **Gross Domestic Private Investment Expenditure (I) :** It refers to expenditure made by private businesses on replacement, renewals and new investment (I).

3) **Government Final Consumption and Investment Expenditure (G) :**

i) Government's final consumption expenditure refers to the expenditure incurred by government on various administrative services like, law and order, defence, education, health etc.

ii) Government's investment expenditure refers to the expenditure incurred by government, on creating infrastructural facilities like construction of roads, railways, bridges, dams, canals, which are used by the business sector for production of goods and services in any economy (G).

4) **Net Foreign Investment/Net Exports :** It refers to the difference between exports and imports of a country during a period of one year.

5) **Net Receipts (R-P) :** The difference between expenditure incurred by foreigners on domestic goods and services (R) and expenditure incurred abroad by residents on foreign goods and services (P).

Precautions:

While estimating national income by Expenditure Method, the following precautions should be taken.

1) Expenditure on all intermediate goods and services should be ignored, in order to avoid double counting.
2) Expenditure on the repurchase of second hand goods, should be ignored, as it is not incurred on currently produced goods.
3) Expenditure on transfer payments like scholarships, old age pensions, unemployment allowance etc., should be ignored.
4) Expenditure on repurchase of financial assets such as shares, bonds, debentures etc., should not be included, as such transactions do not add to the flow of goods and services.
5) Indirect taxes should be deducted.
6) Expenditure on final goods and services should be included.
7) Subsidies should be included.

Out of these methods, the Output Method and Income Method are extensively used. In advanced countries like U.S.A. and U.K. the Income Method is popular. Expenditure Method is rarely used by any country because of its practical difficulties. In India, the Central Statistical Organization (CSO) adopts a combination of both output method and income method to estimate national income of India.

You should know :

Mixed income refers to the incomes of self employed persons who use their own land, labour, capital and entrepreneurship to produce various goods and services.

Difficulties in the Measurement of National Income :

There are various difficulties in the measurement of national income.

A) Theoretical Difficulties or Conceptual Difficulties :

1) **Transfer payments :** Individuals get pension, unemployment allowance etc. but whether these transfer payments should be included in national income or not, is a major problem. On one hand they are a part of individual income and on the other hand, they are part of Government expenditure. Hence, these transfer payments are not included in national income.

2) **Illegal income :** Illegal incomes like income from gambling, black marketing, theft, smuggling etc. are not included in national income.

3) **Unpaid services :** For the purpose of calculating national income, only paid goods and services are considered. However, there are a number of unpaid services which are not accounted for in the calculation of national income. For example, services of housewives and the services provided out of love, affection, mercy, sympathy, charity etc. are not included in national income.

4) **Production for self consumption :** The products kept for self consumption by the farmers and other allied producers do not enter the market. Hence, it is not accounted for in the national Income.

5) **Income of foreign firms :** According to IMF, income of a foreign firm, should be included in the national income of the country, where the firm actually undertakes the production work.

6) **Valuation of Government Services :** Government provides a number of public services such as law and order, defence, public administration, education, health services etc. The calculation of these services at market price is difficult, as the real value of these services is not known. Therefore, it is difficult to calculate national Income.

7) **Changing price level :** Difficulties in calculating national income also arise due to changes in price levels. For example, when the price level rises, the national income may show an increase even though the production may have decreased. Also, when the price level falls, the national income may show a decrease even though there may be an increase in production.

B) Practical Difficulties or Statistical Difficulties :

In practice, a number of difficulties arise in the collection of statistical data required for estimation of national income. Some of the practical difficulties are as follows :

1) **Problem of double counting :** The greatest difficulty in calculating national income is of double counting. It arises from the failure to distinguish properly, between a final and an intermediate product. For example, flour used by a bakery is an intermediate product and that by a household is final product.

2) **Existence of non-monetized sector :** In India, especially in rural areas, there exists the non-monetized sector. Agriculture, still being in the nature of subsistence farming, a major part of production is partly exchanged for other goods and services. It is excluded while counting national income.

3) **Inadequate and unreliable data :** Adequate and correct data on production and cost data relating to crops, fisheries, animal husbandry, forestry, construction workers, small enterprises etc., are not available in

a developing country. Besides this, data on unearned incomes, consumption and investment expenditure of rural and urban population are also not available. This does not reveal the actual size of national income.

4) **Depreciation :** Depreciation refers to wear and tear of capital assets, due to their use in the process of production. There are no uniform, common or accepted standard rates of depreciation applicable to the various capital assets. Thus, it is difficult to make correct deductions for depreciation.

5) **Capital gains or losses :** Capital gains or capital losses, which accrue to the property owners by increase or decrease in the market value of their capital assets or changes in demand, are not included in the national income because these changes do not result from current economic activities.

6) **Illiteracy and ignorance :** Due to ignorance and illiteracy, small producers do not keep an account of their production. So they cannot give information about the quantity or value of their output.

7) **Difficulties in the classification of working population :** In India, working population is not clearly defined. For instance, farmers in India are not engaged in agriculture round the year. Obviously, in the off season, they engage themselves in alternative occupations. In such a case, it is very difficult to identify their incomes from a particular occupation.

8) **Valuation of inventories :** Raw materials, intermediate goods, semi-finished and finished products in the stock of the producers are known as inventories. Any mistake in measuring the value of inventory, will distort the value of the final production of the producer. Therefore, valuation of inventories requires careful assessment.

Importance of National Income :

The following points explain the importance of the National Income :

1) **For the Economy :** National income data are important for the economy of a country. In present times, the national income data are regarded as accounts of the economy, which are known as 'Social Accounts'. It tells us how the aggregates of a nation's income, output and product result from the income of different individuals, products of industries and transactions of international trade.

2) **National policies :** National income data forms the basis of national policies such as employment policy, industrial policy, agricultural policy etc. These figures enable us to know the direction in which the industrial output, investment and saving etc., change. National Income also helps to generate economic models like growth model, investment models etc. Thus, proper measures can be adopted to bring the economy to the right path.

3) **Economic planning :** For economic planning, data pertaining to national income is very essential. This includes data related to a country's gross income, output, savings, investment and consumption which can be obtained from different sources.

4) **Economic Research :** National income data are also used by the research scholars of economics. They make use of various data of the country's input, output, income, savings, consumption, investment employment etc., which are obtained from social accounts.

5) **Comparison of Standard of Living :** National income data helps us to compare the standards of living of people in different countries and of people living in the same country at different times.

6) **Distribution of Income :** National income statistics enables us to know about the distribution of income in the country from the data related to wages, rent, interest and profits. We understand the disparities in the incomes of different sections of the society.

EXERCISE

Q. 1. Complete the following statements :

1) While estimating national income, we include only value of final goods and services in order to ....
   a) make computation easier
   b) avoid double counting
   c) maximize national welfare of the people
   d) evaluate the total economic performance of a nation

2) NDP is obtained by ....
   a) deducting depreciation from GNP
   b) deducting depreciation from GDP
   c) including depreciation in GDP
   d) including depreciation in GNP

3) In India, national income is estimated using ....
   a) output method
   b) income method
   c) expenditure method
   d) combination of output and income method

Q. 2. Complete the Correlation :

1) $\boxed{\quad}$: C + I + G + (X-M) :: GNP : C + I + G + (X-M) + (R-P).
2) Output method : $\boxed{\quad}$ :: Income method : Factor cost method
3) Theoretical difficulty : Transfer payments :: $\boxed{\quad}$: Valuation of Inventories

Q. 3. Identify the incorrect pair :

a) National Income Committee – 1949
b) Financial year – 1st April to 31st March
c) Income method – National Income = Rent +Wages+Interest+Profit + Mixed income + Net Income from abroad
d) Expenditure method – National Income = Rent + Wages + Interest + Profit

Options : 1) a 2) b 3) c 4) d

Q. 4. Identify and Explain the following concepts :

1) Vrinda receives monthly pension of Rs.5,000/- from the State Government.
2) Viru kept aside 100 kgs. out of 500 kgs. of wheat produced in his farm for his family.
3) Sheetal purchased wheat flour for her bakery from the flour mill.
4) Shobha collected data regarding the money value of all final goods and services produced in the country for the financial year 2018-2019.
5) Rajendra has a total stock of 500 gel pens in his shop which includes 200 gel pens produced in the previous financial year.

Q. 5. Answer the following :

1) Explain the two sector model of circular flow of national income.
2) Explain the importance of national income.
3) Explain the features of national income.
4) Explain the concept of Green GNP.

Q. 6. State with reasons, whether you agree or disagree with the following statements :

1) There are many theoretical difficulties in the measurement of national income.
2) Under output method, value added approach is used to avoid double counting.

Q. 7. Answer in detail :

1) Explain the practical difficulties involved in the measurement of national income.
2) Explain the income method and expenditure method of measuring national income.