

## LESSON 16

### MEASUREMENT OF NATIONAL INCOME

It is very essential to take precaution while measuring National Income. For accurate calculation of National Income, it is necessary to have complete theoretical knowledge. Economic analysis, future production, formulation and implementation of policies, depend upon the measurement of National Income. Method of calculating national income depends upon various approaches. It is evident from previous chapters, that in a country, there is a circular flow of income. Because of this circular flow, one person's expenditure (like household) becomes income of another (like business). It is important to have understanding about various methods of calculating National Income.

#### Methods of measuring National Income

There are three main methods of measuring of National Income:-

- 1- Production method or Value added method.
- 2- Income method.
- 3- Expenditure method

The aggregate flow of National Income remains the same, irrespective of any of the three methods used. The basic reason behind this equality is as follows:-

The amount of money received by sale of the total production in a country. This total amount is received in the form of income by the owners of factors of production for their contribution, (Land, labour, Capital, organisation and entrepreneur) the expenditure by the people of the country is equal to their income.

Thus, the total output or production in a country becomes the total income of the country. The people of a country do expenditure equivalent to their income. Thus the total income of a country changes to total expenditure of the country. In this way:-

Gross National Product = Gross National Income  
= Gross National Expenditure

#### Production Method or Value Added Method:-

In most of the countries National Income is measured by the production method. This is the simplest method

of measuring National Income. To measure the National Income of any country by production method, the final consumption of goods and services produced by the agriculture, minerals, industries, and various services of tertiary sector are included. It should be remembered here that a consumer does the consumption of final goods and services. in order to satisfy daily wants and by a producer, for production (investment) purpose.

An important estimate which we have to make in this method is to make a detailed list of final goods and services. This list has mention the name of of goods and services, their quantity & prevalent market price. The quantity of goods and services produced by the particular industry is multiplied by their market prices to obtain the value of output (Table 16.1). Then summing up the value of output of all the producing sectors, national output (product) is measured.

Table 16.1

S. No.	Production Goods Name of Service	Quantity	Market Value	Price (in Rs.)
1.	A	20	2	40
2.	B	30	8	240
3.	C	10	6	60
4.	D	40	4	160
5.	E	10	2	20
—	—	—	—	—
—	—	—	—	—
Gross National Production				520

Some goods are intermediate or semi-finished good.

They are used as input in the production process. To measure National Income, such intermediate goods are not included, because there is fear of double counting of National Income.

Many precautions should be taken while measuring National Income through production method, to avoid double counting of national income, the value of only final consumable goods and services are counted. Value

added method is used to avoid double counting of national income. By value added method exact value of production at each stage is estimated.

To calculate the true value of Gross National Product from the value of output, the expenditure on factors of production is deducted i.e. The value of product is deducted at the first stage the following example helps to understand it :

### **Example of double counting or value added method :-**

Suppose a baker sells 1 kg bread packet for Rs 60/-. For baking bread, he purchased 1 kg flour / maida from the flour mill for ₹ 40/-. flour mill owner purchased wheat from a farmer for ₹30/- per kg. In this situation it will be fallacious to add the total value of bread, the flour and wheat for 1 kg each, i.e.  $60+40+30=130$ . As a matter of fact, the total production is only one kg. Therefore, the actual value of production will be equal to the value of production of farmer + actual value of production of flour mill + actual value of production of bakery (confectionary)- (value of production of bakery - value of production of flour mill) + (value of production of flour mill - value of production of farmer) + value of production of farmer =  $20+10+30=60$  Rupees. Thus, in this way the exact value of 1 kg output is not ₹ 130 but only Rupees 60. Thus, this precaution is to be kept in mind otherwise the national income will depict wrong estimates, which will be misleading.

### **DEPRECIATION :-**

Production is a continuous process. During production there is wear and tear, depreciation and other types of losses. There is wear and tear of capital (machines etc). With the invention of new technology, the older appliances (machines) become obsolete. The fertility of land declines due to production. Thus, depreciation is type of loss (reduction in value of an asset over time) in process of production, it is necessary to consider it for the measurement of net national income. Thus the depreciation is deducted from gross national income.

### **Income Method**

Calculation of national income through Income Method provides the information of distribution of

income in a country. The production is done by the factors of production (Land, labour, capital etc.). Production is done by creation of utility or increase in utility in goods or services. The distribution is in the form of Wages-price of labour, Interest – price of use of capital, Rent- price of use of land and Profit service of entrepreneur. The production is wholly distributed amongst the factors of production. The factors of payments are classified as follows:-

1-Wages – compensation of labour.

2- interest –

3-Rent – operational surplus

4-Profit –

5-Mixed income - In the form of salary and commission.

Thus, the remuneration received by the owners of factors (land labour, capital etc.) on account of complete distribution of production, is known as factor income. Thus, in the income method of measuring National Income, the factor incomes are summed up. In this way, gross national income is estimated by adding gross wages, gross interest, gross profit etc.

Gross national income = Wages + Interest + Rent + Profit + Depreciation

National Income ( $NNP_{FC}$ )  $NI = W + I + R + P +$  Net factor income from abroad.

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

Where, W-wages, I-Interest, R- Rent, P- Profit.

**Precautions in measurement of National Income:-** While estimating national income by income method, many precautions should be taken like wages paid in kind instead of cash for goods and services, house accommodation by self, some part of production kept for self consumption, income shown less to the government or very often not apprised (informed). Thus, while measuring National Income through income method all these items should be included.

### **Expenditure method**

When expenditure method is used to measure National Income to estimate the Gross National Expenditure, all the expenditures during a year for example, subsistence living, expenditure on consumable

goods, for capital consumption, for more production, for private expenditure on capital goods, expenditure by the government and net export expenditure, and depreciation are added.

The chief components of expenditure method to measure National Income are as follows:-

- 1- Private consumption
- 2- Investments/inventories
- 3- Government expenditure
- 4- Net exports (X-M)

#### **1-Private consumption expenditure:-**

Expenditure on consumer goods and services by individuals and households is called private consumption expenditure. The goods and services included in private consumption expenditure are as follows –

- 1-Temporary consumer goods
- 2-Durable consumer goods
- 3-Consumer services

#### **2-Investment Expenditure:-**

Investment is a type of expenditure made on production. It is the expenditure incurred on capital goods and inventories or stock by the business sectors. There is increase in stock due to investment during a fixed period. During the production process there is depreciation of capital along with other factors of production. There is provision made for the depreciation which is called as Capital Consumption Allowance (CCA)

#### **The Investment includes:-**

- 1-Commercial fixed – investment
- 2-Investment in inventories (Addition to stock)
- 3-Investment in home-construction
- 4-Government investment

#### **3- Government Expenditure:**

The government provides various goods and services in a country. The expenditure of the government is included in production. The government expenditure includes expenditure on education, health care, defence, maintenance of law and order etc. Besides government purchases, there are many other types of expenditure. Government to satisfy collective wants and create future

benefits, such as infrastructure investment is called Gross Fixed Capital Formation. Government also makes transfer- payments to the public for social security. It should be remembered that many transfer payments are made for which no economic activities are performed. Hence while measuring the National Income transfer -payments are not included.

#### **4-Net-Export Expenditure:-**

For a definite period net export is calculated on the basis of difference of import and exports. The expenditure incurred by the individuals, business and government of a country on imports is deducted from the exports of a country, to derive the net exports. The Gross Domestic Expenditure is calculated with inclusion of net export expenditure in following manner:

Gross Domestic Expenditure = Household consumption expenditure + private investment expenditure + government expenditure + net export expenditure.

$$GNP_{MP} = C+I+G+(X-M)$$

Where C = Consumption expenditure, I= Private investment expenditure, G=Government expenditure, X-M= Net export.

#### **Difficulties in measurement of National Income :-**

There are several problems in the measurement of national income. There are not only theoretical problems but also many practical problems. In developing countries, most of the people are illiterate, most of the production is exchanged through Barter system. Many transactions conducted outside the market do not come to the knowledge of the government. In backward countries, there is lack of division of labour and specialization. The information regarding National Income is not easily available. Inadequacy, unreliability and unavailability of statistics, also makes it difficult to measure National Income.

#### **Relationship between National Income and Economic Welfare:-**

Welfare refers to a condition when both the individual and the society are happy and satisfied. According to economists, economic welfare means the

welfare which can be measured directly and indirectly by means of money.

The close relationship between National Income and Economic Welfare can be visualised. It is assumed that with the increase in national income the economic welfare of people of the country also increases.

The level of National Income increases with increase in production. The national expenditure also increases with the increase in production. The increase in national expenditure leads to increase in economic welfare. The economic welfare of the people of a country increases because of consumption of more goods and services. Similarly, the distribution of income amongst the people of a country should be just.

Generally it is assumed that there is a close relationship between satisfaction/happiness of the people and national income of a country. The more equal and just is the distribution of national income, greater will be the magnitude of economic welfare. Due to inequalities in distribution of national income, many economic inefficiencies arise, which hinder the economic development. Besides the distribution of income, the manner of earning income, the manner of spending of the income and conditions at working place also influence the economic welfare.

Nowadays, economic welfare has been linked with the environmental conditions. A new terminology 'Green Accounting' is in prevalence. Green accounting studies the loss (depletion) of the environment. Environment adjusted national income is calculated by deduction of environmental depletion (loss) cost from the national income. At present this new concept of environment adjusted national income is adopted. Every country attempts to move forward by just (equal) distribution of national income and maintenance of environmental conditions. Both these conditions are necessary for sustainable development of the country.

Sustainable economic development is known as a continuous development which attempts to satisfy present human needs without compromising the ability to meet the needs of future generations.

### Important Points

- Production Method or value added, Income method and Expenditure method are three methods of calculating National Income.
- Gross national Production = Gross national income = Gross national Expenditure.
- While using production method or value added method for measuring national income, production of only final goods and services are taken into account.
- Value added method is used to avoid double counting in National Income.
- In the process of production, wear and tear of factors of production, depreciation and other such types of losses occur which are also called as Capital Consumption Allowances. (CCA)
- While using income method for measurement of National Income the gross wages, gross interest, gross rent, gross profit etc. are also added.
- While calculating National Income through expenditure method, the expenses in a year (private consumption, investment, government expenditure, net exports ) and depreciation are added.
- The theoretical and other difficulties while measuring National Income are due to illiteracy and barter exchange system and transactions outside market.
- Along with increase in National Income, economic welfare also increases. Greater the equality in distribution of income, greater will be the economic welfare, so many economic inefficiencies crop up due to disparity of National Income.
- Nowadays economic welfare is linked to new terminology 'Green accounting' which is widely used. By the deduction of loss of environmental cost from the National Income. Environment adjusted National Income is estimated.



## Exercise Questions

### Objective Type Questions :-

- 1- Methods of measurement of national income are—
  - (A) Production Method.
  - (B) Income Method
  - (C) Expenditure Method
  - (D) All of these.
- 2- Which goods and services are included in the calculation of National Income in India –
  - (A) Intermediate goods and services
  - (B) Semi finished goods and services
  - (C) Finally consumable goods and services
  - (D) Raw material.
- 3- In which method of measurement of national income possibilities of double counting is more?
  - (A) Expenditure method
  - (B) Production Method
  - (C) Income Method
  - (D) None of these.
- 4- Which is not the component of measurement of National Income through income method-
  - (A) Wages and Interest
  - (B) Rent
  - (C) Mixed income
  - (D) Final consumption
- 5- What is included in Green-Accounting –
  - (A) Irrational industrialization
  - (B) Higher growth rate of employment
  - (C) Depletion of environment
  - (D) Rapid increase in personal consumption.

### Very Short Answer Type Questions :-

- 1- What are the methods of calculation of National Income ?
- 2- What type of goods and services are included in the measurement of National Income?
- 3- Which method is used to avoid double counting of National Income?

- 4- What are the components of measuring National Income by income method?
- 5- What is Green-Accounting?
- 6- What type of distribution of national income causes increase in economic welfare?

### Short Answer Type Questions :-

- 1- Explain in brief the methods of measurement of National Income.
- 2- How is value added method useful in avoiding Double Counting? Explain with an example.
- 3- Explain in brief the measurement of National Income by income method.
- 4- What are the problems faced while measuring National Income? Explain in brief.
- 5- Explain the relationship between economic welfare and distribution of National Income.

### Essay Type Questions :-

- 1- Explain in detail the various methods of measurement of National Income.
- 2- Explain in detail the measurement of National Income by Income Method.
- 3- Explain in detail the measurement of National Income by Expenditure Method?
- 4- “Increase in National Income increases the economic welfare.” Do you agree? Explain.

### Answer Table

1	2	3	4	5
D	C	B	D	C