12
NATIONAL INCOME : MEASUREMENT

12.1 INTRODUCTION

In the previous lessons, you have learnt about the various concepts relating to national income. Understanding of these concepts is very necessary for understanding and measuring national income.

In this lesson, you will learn how national income is measured. In lesson No.10, you have learnt that national income is a flow. This flow can be looked at from three different angles. Hence, there are three different methods of measuring national income. Each one of these methods is explained in details in this lesson.

12.2 OBJECTIVES

After going through this lesson you will be able to :

- define national income;
- look at national income from three different angles;
- explain the classification of production units located in the economic territory of a country into distinct industrial sectors;
- explain the meaning of the primary, secondary and tertiary sectors;
- explain the production method (or value added method) of measuring national income;
- explain the precautions to be taken while measuring national income by production method;
- explain the income distribution method of measuring national income;
- explain the precautions to be taken while measuring national income by income distribution method;
- explain the final expenditure method of estimating national income;
- explain the precautions to be taken while measuring national income by final expenditure method;
- show that all the three methods of measuring national income lead to the same result.

12.3 MEANING OF NATIONAL INCOME

National income of a country is defined as the sum total of factor incomes accruing to the residents of that country from the production activity performed by them both within and outside the economic territory in a year. The factor incomes are in the form of compensation of employees, rent, interest and profits.

There are three angles of looking at national income : (a) the value added angle, (b) the income distribution angle and (c) the final expenditure angle. The above definition is from the income distribution angle.

From the value added angle, national income is defined as the sum total of the net value added at factor cost in a year by all production units located within the economic territory, whether owned by the residents or by the non-residents, plus the net factor income received from abroad. So,

National Income = Sum total of NVAfc by production units
+ Net factor income received from abroad

From the final expenditure angle, it is the sum total of final expenditure on consumption and investment minus the consumption of fixed capital and indirect taxes, plus the subsidies and net factor income from abroad. So,

National Income = Final expenditure on goods and services produced in the economic territory
- consumption of fixed capital
- indirect taxes
+ subsidies
+ net factor income from abroad.

These three angles of looking at national income lead to the three methods of measuring national income.

12.4 THE THREE ANGLES OF LOOKING AT NATIONAL INCOME

The production units produce goods and services. For this purpose they employ the owners of the four factors of production viz., labour, land, capital and entrepreneurship. When these factors of production jointly produce goods and services, it leads to the creation of income termed as 'value added'. This angle, i.e. the value added angle, is the first angle of looking at the flow of national income. The national income measured from this angle is said to be measured through the 'Value Added' or the 'Production' method.

The income created in the production units is distributed among the owners of the factors of production in the form of compensation of employees, rent, interest and profit. When we add all these factor incomes we get domestic income. This is the second angle leading to the 'Income Distribution' method of estimating national income.

The incomes received by the owners of the factors of production are spent on purchasing of goods and services from the production units for the purpose of consumption and investment. The national income measured by adding the final expenditure is the third angle leading to the 'Final Expenditure' method of measuring national income.

To conclude, national income can be measured when it is created (production method); or when distributed among the claimants (income distribution method) or when spent on consumption and investment (final expenditure method).

The first step in the measurement of national income, irrespective of the method adopted, is to classify the production units located within the economic territory of country into the distinct industrial groups or sectors.

12.5 INDUSTRIAL CLASSIFICATION OF PRODUCTION UNITS

All the production units located within the economic territory are first classified into homogeneous groups or sectors. For example, the entire farming and the related activity can be classified as the agricultural sector. Similarly all production units in the banking business can be classified as the banking sector. After classification, national income originating in each sector is estimated separately. The sum of national income originating in each sector is the domestic income.

Conceptually, the entire production activity of a country is classified into three broad sectors namely the primary, the secondary and the territory sectors.

(a) Primary Sector

The primary sector includes all production units engaged in exploiting natural resources like the units engaged in farming, forestry, fishing, mining, dairy farming etc. This sector is treated as the sector of first importance because it is a source of all materials needed for producing goods and services.

(b) Secondary Sector

All production units engaged in transforming one good into another are classified as the secondary sector units. All manufacturing units or factories producing goods from the use of materials come under this category. The production units producing wheat flour, tinned foods, clothes, shoes, electrical goods, furnitures, books, electricity etc., are some of the examples of production units of this sector.

The growth of this sector depends on the availability of raw materials from the primary sector. That is why this sector is considered the sector of second importance.

(c) Tertiary Sector

All production units engaged in producing services are classified as the tertiary sector units. The banks, insurance companies, government administrative departments producing police, military and other services for the people, domestic servants, transport companies, trading firms are some examples of production units of this sector.

The growth of this sector depends mainly on the growth of the primary and the secondary sectors of the economy. That is why this sector is considered the sector of third importance.

The above three sectors are only the broad groups. These are further subdivided into sub-groups or sub-sectors. For example, the Indian economy is classified into the following sectors and sub-sectors.

A. Primary Sector

1. Agriculture.
2. Forestry and logging.
3. Fishing.
4. Mining and quarring.

B. Secondary Sector

5. Registered manufacturing.
6. Unregistered manufacturing.
7. Construction.
8. Electricity, gas and water supply.

C. Tertiary Sector

9. Trade, hotels and restaurants.
10. Transport, storage and communication.
11. Banking and insurance.
12. Real estate, ownership of dwellings and business services.
13. Public administration and defence.
14. Other services.

POINTS TO REMEMBER

- National income of a country is the sum total of factoı incomes accruing to the residents of that country.
- From the production angle, national income is the sum total of value added at factor cost by all production units located within the economic territory increased by the net factor income received from abroad.
- From the expenditure angle, national income is the sum total of final expenditure on consumption and investment reduced by the consumption of fixed capital and indirect taxes and increased by subsidies and net factor income received from abroad.
- National income of a country can be measured by three methods: production, income distribution and final expenditure. It can be measured when it is created (production method); or when distributed among the claimants (income distribution method) or when spent on consumption and investment (final expenditure method).
- The first step in the measurement of national income is to classify the economy into distinct industrial sectors. Broadly, the entire economy is classified into the primary, secondary and tertiary sectors.
- The primary sector includes all production units engaged in the exploitation of natural resources.
- The secondary sector includes all production units engaged in transforming one good into another.
- The tertiary sector includes all units engaged in producing services.
- The three broad sectors are further subdivided into sub-sectors. The Indian economy is divided into 14 sub-sectors.

INTEXT QUESTIONS 12.1

Fill in the blanks from the clues given:

tertiary, primary, secondary, income, expenditure, national income

(i) The value added, final expenditure and ____________ distribution are the three angles of looking at national income.

(ii) The first step in estimating ______________________ is to classify production units.

(iii) The production units engaged in manufacturing are classified as __________ sector.

(iv) Banking is a part of the __________ sector.

(v) Fishing is a part of the __________ sector.

12.6 METHODS OF MEASUREMENT OF NATIONAL INCOME

We have already observed above that there are three methods of measuring national income. These methods are explained below :

(A) Production Method (Value Added Method)

This method approaches the measurement of national income through the value added angle. The main steps involved in measuring national income through this method are as follows:

(a) Classify the production units located within the economic territory into the distinct industrial groups like agriculture, mining, manufacturing, banking, trade etc.

(b) Estimate the net value added at factor cost by the each industrial sector by taking the following sub steps:

   (i) Estimate the value of output.

   (ii) Estimate the value of intermediate consumption and deduct the same from the value of output to arrive at gross value added at market price.

   (iii) Deduct consumption of fixed capital and indirect taxes from and add subsidies to the gross value added at market price to obtain the net value added at factor cost. To summarise: Gross value added at market/price
   = Value of output - Value of intermediate consumption.
   Net value added at factor cost
   = (Gross value added at market price + subsidies) –
   (Consumption of fixed capital + Net indirect taxes)

(c) Take the sum of net value added at factor cost by all the industrial sectors to arrive at net domestic product at factor cost.

(d) Add net factor income received from abroad to the Net Domestic Product at factor cost to obtain Net National Product at factor cost which is the National Income

Precautions

The following precautions are necessary while estimating national income by production method :

(a) Avoid double counting of production. To do so instead of taking the value of total output, take only the value added by each production unit. In this way double counting in the estimation of national income is avoided.

(b) That output which is produced for self-consumption and whose value can be estimated, must be included in the estimates of production. It will save national income from under-estimation. For example, suppose a farmer produced wheat and retains the same for meeting his family needs, instead of selling it. The value of such self-consumed output must be included in production.

(c) The sale of second hand goods should not be included in current production because the value of these goods had already been included earlier. However, the value of services rendered in their sales must be counted because these services are freshly produced. For example, suppose you sell your old bicycle. The value of such bicycle will not be included in the value of output because it was already counted as part of output when purchased new.

(B) Income Distribution Method

In this method, national income is measured at the stage when factor incomes are paid out by the production units to the owners of the factors of production. The main steps involved in this method are as follows:

(a) Classify the production units into distinct industrial sectors like agriculture, forestry, manufacturing, banking, trade etc.

(b) Estimate the following factor incomes paid out by the production units in each industrial sector :

(i) Compensation of employees
(ii) Rent
(iii) Interest
(iv) Profit

The sum total of the above factor incomes paid out is the same as net value added at factor cost by the industrial sector.

(c) Take the sum of factor payments by all the industrial sectors to arrive at the net domestic product at factor cost.

(d) Add net factor income from abroad to the net domestic product at factor cost to arrive at the net national product at factor cost.

Precautions

The following are some of the main precautions which must be taken while estimating national income by the income distribution method :

(a) While estimating compensation of employees all benefits accruing to the employees whether in cash or in kind must be included. It should not include only cash payments to the employees.

(b) In estimating interest, the interest on only those loans should be included which are taken for production. The interest on loans taken to meet consumption expenditure is a non-factor income and so is not included in national income.

(c) Gifts, donations, charaties, taxes, fines, winnings from lotteries etc., are not factor incomes but transfer incomes. These should not be included in estimating national income.

(C) Final Expenditure Method

National income can also be measured at the point of expenditure. According to this method, we first estimate gross domestic product at market price which is the total expenditure incurred on the final products produced within economic territory and used for consumption and investment. From this we deduct consumption of fixed capital and net indirect taxes and add net factor income received from abroad to get national income.

The final expenditure on consumption is classified into (i) consumption expenditure of households and consumption expenditure of the general government. The expenditure on investment is classified into (i) investment within the economic territory and (ii) investment outside the economic territory.

The main steps involved in measuring national income by this method are :

(a) Estimate the following expenditure incurred on the final products of all the sectors of the economy.

(i) Private final consumption expenditure.
(ii) Government final consumption expenditure.
(iii) Gross domestic capital formation.
(iv) Net exports (Exports - imports).

The sum total of all the above expenditure on final products of all the sectors of the economy gives us gross domestic product at market price.

(b) Deduct consumption of fixed capital, indirect taxes and add subsidies to the gross domestic product at market price to get net domestic product at factor cost.

NDPfc = GDPmp - consumption of fixed capital - indirect taxes + subsidies

(c) Add net factor income from abroad to the net domestic product at factor cost to obtain net national product at factor cost which is the national income.

NNPfc = NDPfc + net factor income from abroad = National Income.

Precautions

The main precautions required to be taken in estimating national income by expenditure method are :

(a) Avoid double counting of expenditure by not including expenditure on intermediate products. Include only the expenditure on final products.

(b) Expenditure on gifts, donation, taxes, scholarships etc. is not the expenditure on final products. These are transfer expenditure and should not be included in final expenditure.

(c) Expenditure incurred on purchase of second hand goods should not be included as the expenditure on these has been included when bought for the first time.

Reconciliation of the three methods

The three methods are summarized in the following table:

Value Added Method	Income Distribution Method	Final Expenditure Method
Sum of GVAmp of all industrial sectors	Compensation of employees + Rent + Interest + Profit	Private final consumption expenditure. + Government final consumption expenditure + Gross domestic capital formation + Net exports
= GDPmp – consumption of fixed capital – indirect taxes + subsidies		= GDPmp – consumption of fixed capital – indirect taxes + subsidies

+ Net factor income from abroad	+ Net factor income from abroad	+ Net factor income from abroad
= NNPfc	= NNPfc	= NNPfc

POINTS TO REMEMBER

- The main steps involved in the measurement of national income through the value added approach is to classify the production units into the industrial sectors; estimate net value added at factor cost by each sector; add net factor income from abroad.
- Main precautions in the value added approach are : avoid double counting; include output produced for self-consumption, and do not include sale of second hand goods.
- The main steps in the income distribution method are: classify production units into industrial sectors; estimate factor income paid out by each sector; add net factor income from abroad.
- The main precautions in the income distribution method are: include all cash and kind benefits to employees in compensation of employees; include only that interest payment which is made against loan taken for production; and do not include transfer income in the form of gifts, donations, taxes etc.
- The main steps in the final expenditure method are: estimates final expenditure on consumption and investment; deduct consumption of fixed capital and indirect taxes and add subsidies; add net factor income from abroad.
- The main precautions in the final expenditure method are: do not include intermediate expenditure; do not include transfer expenditure on gifts, donations, taxes, etc., and do not include expenditure on second hand goods.

INTEXT QUESTIONS 12.2

Fill in the blanks :

tertiary, secondary, capital, compensation, included, consumption.

(i) Output produced for self consumption is ____________ in the value of output.

(ii) Interest payment on loans taken to meet ____________ expenditure is not treated as factor income.

(iii) Bonus received by the employees is a part of the ____________ of employees.

(iv) The expenditure on purchasing furniture by a production unit is a part of ____________ formation.

(v) Employing of domestic servant is a part of ____________ sector.

WHAT YOU HAVE LEARNT

- There are three angles of looking at the flow of national income. Accordingly there are three methods of measurement of national income: value added or production method, income distribution method and final expenditure method.
- The first step in the measurement of national income of a country is to classify its production units into distinct industrial sectors and sub-sectors. The primary sector includes all units engaged in exploiting natural resources. The secondary sector transforms one good into another good. The units in the services sector produce services.
- The main steps in the value added method are: estimate NVAfc by all sectors and add them to arrive NDPfc. Add net factor income from abroad to NDPfc to obtain NNPfc.
- The main steps in the income distribution method are: estimate factor incomes paid out by each sector; take the sum of these incomes paid out by all the sectors to get NDPfc; add net factor income from abroad to get NNPfc.
- The main steps in the final expenditure method are: estimate the sum of final expenditure on consumption and investment to get GDPmp, deduct consumption of fixed capital and indirect taxes from and add subsidies to GDPmp to arrive at NDPfc, add net factor income from abroad to NDPfc to get NNPfc.

TERMINAL EXERCISE

1. Explain the three angles of looking at national income.
2. Explain the nature of functions of primary, secondary and tertiary sectors.
3. Explain the steps taken in measuring national income through the value added method.
4. What are the main precautions required to be taken in estimating national income by the value added method.?
5. Explain the steps taken in estimating national income through the income distribution method.
6. What are the main precautions required to be taken in estimating national income by the income distribution method.?
7. What are the main steps in the expenditure method of estimating national income.?
8. Point out some of the precautions taken in estimating national income through the final expenditure method.

ANSWERS

Intext Questions 12.1

(i) income (ii) national income (iii) secondary

(iv) tertiary (v) primary

Intext Questions 12.2

(i) included (ii) consumption (iii) compensation
(iv) capital (v) tertiary

Terminal Exercise: Hints

1. Read section 12.4
2. Read section 12.5
3. Read section 12.6 (A)
4. Read section 12.6 (A)
5. Read section 12.6 (B)
6. Read section 12.6 (B)
7. Read section 12.6 (C)
8. Read section 12.6 (C)