

# 9

## CHAPTER

### NATIONAL INCOME

#### 9.1. Introduction

National income is one of the basic concepts in macroeconomic theory. In fact, the key questions of macroeconomics are : how the national income of a country is determined, how it can be influenced by public policies, etc. In this chapter we shall consider the question how national income is *measured*. We know what the income of a person means. National income is nothing but the income of a nation or a country. However, we shall see that the computation of national income is not an easy proposition. The task of aggregating the incomes of all the earning units (firms, persons, etc.) of a country is a formidable one. How this task is performed by economists is the subject matter of this chapter.

#### 9.2. National income

National income is one of the basic concepts in macroeconomic theory. In fact, the key questions of macroeconomics are : how the national income of a country is determined, how it can be influenced by public policies, etc. In this chapter we shall consider the question how national income is *measured*. We know what the income of a person means. National income is nothing but the income of a nation or a country. However, we shall see that the computation of national income is not an easy proposition. The task of aggregating the incomes of all the earning units (firms, persons, etc.) of a country is a formidable one. How this task is performed by economists is the subject matter of this chapter.

Let us think of a hypothetical country and let there be only two goods (say, A and B) that are produced in that country using the factors like land, labour, capital and organisation at any given time period. Let us also assume that there is no wastage of any factor of production. Thus, with the help of these factors available within a country, the country produces a certain amount of commodity A and B. Let 5 units of A and 3 units of B have been produced in a year. Therefore, we can say that the Gross National Product(GNP) =  $5A + 3B$ .

However, if 'A' is 'petrol' and 'B' is 'rice' then their measuring units would be different (viz., petrol is quantified in terms of gallon and rice is measured in terms of quintal). So, it becomes difficult to add them up. This difficulty is avoided by expressing the value of different goods in terms of their market prices (i.e., in money terms). Thus GNP is the money value of all the goods and services produced in a country within a year with the help of all the indigenous factors of production. Let the money value of  $5A + 3B$  be Rs. 800 crore. This value also

indicates the claims of different factors of production used in the production of  $5A + 3B$ .

Therefore,  $\text{GNP} = \text{claims of land-owners}$  (i.e., total rent income)

+

claims of the owners of labour-power (i.e., total wage income)

+

claims of the owners of capital (i.e., total interest income)

+

claims of the persons having organising capability  
(i.e., total profit income)

$\therefore \text{GNP} = \text{rent} + \text{wage} + \text{interest} + \text{profit}$

= incomes of all factors at any particular time period.

Thus, GNP can be measured either in terms of the value of the total goods and services produced in a country with the help of indigenous factors of production in any year (i.e., the Output Census Method), or in terms of the total expenditure spent on purchasing those goods and services (i.e., Expenditure Census Method), or in terms of the sum of money income of different factor-owners in a country within a particular year (i.e., Income Census Method).

■ **Definition of National income :** *The aggregate value of all final goods and services produced by the residents of a country, operating both within the national boundary and abroad, in any particular year, is called the national income of the country.*

Here, it is important to note that :

- (1) National income is estimated in monetary terms. This may be expressed at current prices or some base year prices.
- (2) Only the value of final goods and service are taken into account for measuring national income.
- (3) National income is always expressed with respect to a given time period. Hence, it is a 'flow' concept.
- (4) All types of '*pure exchange transactions*' are excluded from national income accounting. In case of pure exchange transactions, nothing new is produced in the current year. For instance, second-hand sales, purchase and sale of securities (shares and debentures), transfer payments (such as unemployment dole, pension payments), etc. are regarded as pure exchange transactions. All such transactions are not concerned with current year production. So, they are excluded from national income estimates.
- (5) National income is not simply the sum of all personal incomes in a country. These concepts will be discussed in the subsequent subsections.

### 9.2.1. Domestic income and national income

*Domestic income is the income earned by the residents and non-residents within the domestic territory of a country during any particular year. However, national income refers to the income earned by the resident of a country both within and*

outside the country. Thus, the domestic income is a *geographic concept*, while national income is an *economic concept*. The national income includes net factor income from abroad.

Here, net factor income from abroad is the difference between the income received by the residents from abroad for rendering factor services (e.g., banking and insurance services, other financial services, engineering services, etc.) and the income paid for the factor services rendered by the non-residents in the domestic territory of a country. Thus net factor income from abroad includes :

- (a) net salaries and wages earned by the residents working abroad,
- (b) net income from property and entrepreneurship (i.e., interest, rent, profits, and dividends); and
- (c) net retained earnings of resident companies abroad.

The differences between the domestic income and national income are shown in Table-1

**Table-1**  
**Differences between Domestic Income and National Income**

National Income	Domestic Income
<ol style="list-style-type: none"> <li>1. It includes income earned by the residents only.</li> <li>2. It consists of income earned both within and outside the domestic territory of a country.</li> <li>3. It is an economic concept.</li> <li>4. It includes net factor income from abroad.</li> <li>5. <math>\text{National income} = \text{Domestic income} + \text{Net factor income from abroad.}</math></li> </ol>	<ol style="list-style-type: none"> <li>1. It includes income earned by the residents as well as non-residents.</li> <li>2. It consists of income earned only within the domestic territory.</li> <li>3. It is a geographic concept.</li> <li>4. It does not include net factor income from abroad.</li> <li>5. <math>\text{Domestic income} = \text{National income} - \text{Net factor income from abroad.}</math></li> </ol>

### 9.3. Circular flow of national income

In a simple economy, if there exist only two sectors, viz., the household sector (say, H) and the firm sector (say, F), then transaction between these two sectors will lead to a circular flow of income. This is shown in Fig.-1. Here the 'F' sector produces goods, and these are consumed by the 'H'-sector. The 'H'-sector supplies labour to the 'F'-sector, and the 'F'-sector makes wage payment to the 'H'-sector for purchasing labour power. On the other hand, the 'H'-sector makes payment for the goods they purchase from the 'F'-sector. Thus, this circular flow of income can be measured in three ways :

- (i) By estimating the total value of goods and services generated during a given time period ;

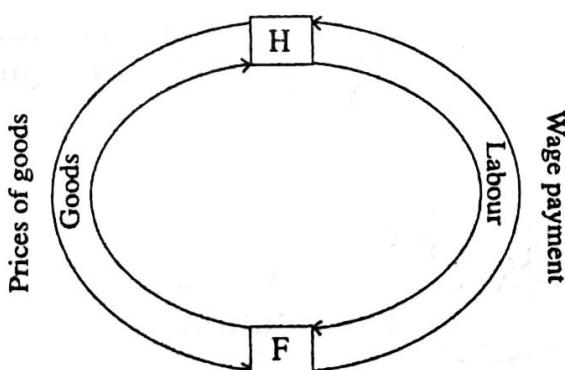


Fig.-1

- (ii) By estimating the total expenditure made by those sectors during that time period ; and
- (iii) By estimating the income of all earning units of these two sectors during that time period.

Let us assume that the 'F'-sector spends Rs. 10 crore for purchasing labour power from the 'H'-sector. So, the income of the 'H'-sector within that time span will be Rs. 10 crore. The 'H'-Sector in turn, would spend that amount on purchasing goods produced by the 'F'-sector. Hence, that amount again flows to the 'F'-sector, and the income of the 'F'-sector will be Rs. 10 crore. Here, we have assumed that the expenditure of any sector is just equal to its income. If this much of transaction takes place within a given time span, then national income can be calculated as follows :

- (1) Total value of goods (i.e., Rs. 10 crore) produced by the F-sector within that time span : Thus, the aggregate value of goods would be Rs. 10 crore ;
- (2) Total expenditure made by the 'H'-sector (i.e., Rs. 10 crore) : Thus, aggregate expenditure would also be to the extent of Rs. 10 crore ; and
- (3) Total factor income of all earning units in the 'H' sector (i.e., Rs. 10 crore) : Thus, the aggregate value of income would be Rs. 10 crore.

This simple analysis shows that the national income of a country can be estimated either by (a) aggregating the value of goods and services produced within the economy during any year (also called, the *production census* method), or, (b) aggregating the value of incomes of all earning units during any year (called as the *income census* method), or (c) aggregating the value of expenditure made by different spending units during any year (called as the *expenditure census* method).

From the above analysis, it becomes clear that production gives rise to income ; income creates demand for goods and services ; and this demand, in turn, gives rise to expenditure. This expenditure again causes further production, and this process continues. Thus, this circular flow of production, income and expenditure represents three related phases, viz., *production* (i.e., flow of goods and services), *distribution* (i.e., flow of income between sectors), and *disposition* (i.e., flow of expenditure between sectors). This is shown in Fig.-2.

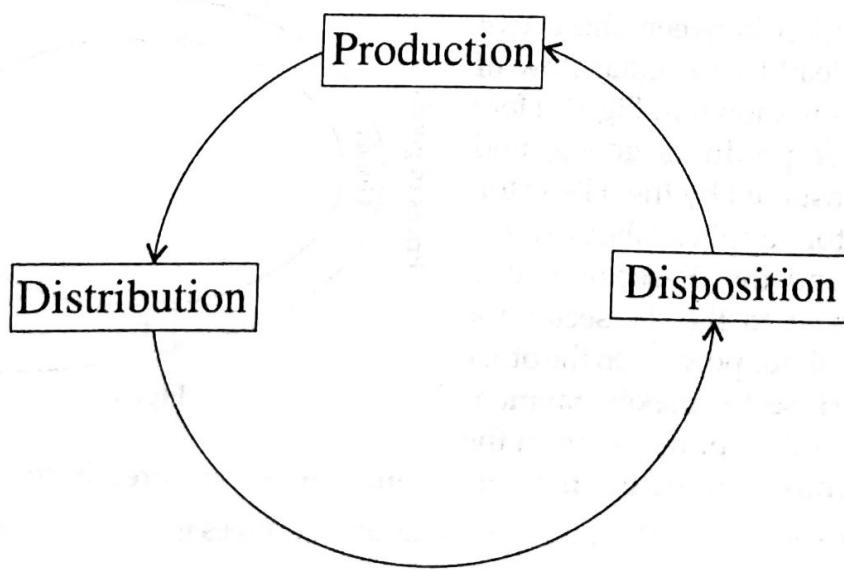


Fig.-2

Thus, we can look at national income as a flow of goods and services produced in an economy during any particular time period. We can also consider national income as a flow of income or as a flow of expenditure on those goods and services. So, there are three phases in the circular flow of national income, viz., production, distribution and disposition. If we want to measure national income at the phase of production, we have to find out the sum total of net value added (i.e., total value of output minus the costs of inputs) by all the producing units (including the Government) of the country. Similarly, if we want to measure national income at the phase of income distributed, we are to find out the total income generated in the production of those goods and services. Again, if we want to measure national income at the phase of disposition, we have to calculate the aggregate expenditure of the three spending units in the economy, viz., the producers, the consumers, and the Government.

#### **9.4. Nature of goods and services produced**

In any economy, the enterprises produce goods and services since there is a demand for these goods and services.

■ **Durable and Non-durable goods :** All such goods and services can be divided into two groups ; (a) durable goods, and (b) non-durable goods and services. This classification is made on the basis of the durability of those goods and services. The durable goods can be used over and over again for a number of years. For example, bicycles, machines, buildings, buses, cars, etc.

On the other hand, the non-durable goods cannot be used more than once. For example, edible oil, bread, rice, milk, fish, cereals, fertilisers, writing paper, inks, etc. The goods lose their identity and value at the very moment of their use.

By a *service* we mean an item which is not physically tangible but which satisfies human wants. The functions performed by lawyers, doctors, teachers, auditors, accountants, etc. are all examples of such *services*. These services are also non-durable in nature. For example, the service rendered by a doctor during a particular time period, cannot be preserved.

##### **9.4.1. End-use classifications of goods**

All the goods and services produced in an economy during any particular time period, can again be classified on the basis of their uses.

(a) **Consumer goods :** The goods which are used for consumption purposes, are called consumer goods. They are used for direct consumption, and not for producing any other goods. The durable goods such as television, washing machines, radios, tape recorders, refrigerators, air-coolers, air-conditioners, etc. are used by the consumer households for consumption purposes. Similar goods are also purchased by the Government for defence, law and order, public health, etc. purposes. This is a part of the final consumption of the Government.

However, the expected life of some consumer goods is one year or slightly more. They are not of relatively great value. These consumer goods are called consumer semidurables. For example, clothings, some electrical appliances, etc.

Again, there are non-durable goods and services (e.g., soaps, cloths, edible oils, writing papers, foodgrains, medical services, banking and insurance services, tourism services, judicial services, etc.) which are used by the

consumer households as well as the Government as a part of their final consumption.

- (b) **Intermediate goods** : The goods which are used at some point in the production process of other goods (rather than final consumption), are treated as intermediate goods. For example, a farmer purchases high yielding varieties of seeds, fertilisers, diesel oil for running the pump-set or tractor, etc. These are used by the farmers to produce agricultural goods. Hence, those inputs are called as intermediate goods. Generally all non-durable goods and services used by the producing sectors [viz., the corporate or quasi-corporate enterprises, the households (including unincorporated enterprises and private non-profit institutions serving households), and the Government] of an economy for producing some goods and services, are termed as intermediate goods. In the corporate and quasi-corporate sector, the non-durable goods and services used in production include repair and maintenance of capital stock (e.g., replacement of spare parts of a machine). Again, the durable goods such as trucks, airfields, aircrafts, submarines, war-ships, etc. meant primarily for military purposes by the Government, are also treated as intermediate goods (since they are used to produce defence service. It is produced for the benefit of all people in a country, and not for market sale).
- (c) **Capital goods** : All the durable goods such as machines, buildings, trucks, ships, airfields, aircrafts, etc. used to produce goods and services *for sale in the market*, are treated as capital goods. Thus all produced goods which are used as the means of production (in future productive processes), are treated as *capital goods*. Some semi-finished and finished products, stocks of raw materials, etc. lying with the producers at the end of an accounting year, are also considered as capital goods. Please note that the aircrafts, airfields, motor vehicles, etc. used by the Government for military purposes, are treated as intermediate goods. But when these goods are used by any transport company, they are treated as capital goods.

Those intermediate goods and capital goods together, are treated as *producer goods*. This end-use classification of goods and services has also been shown in Fig.-3.

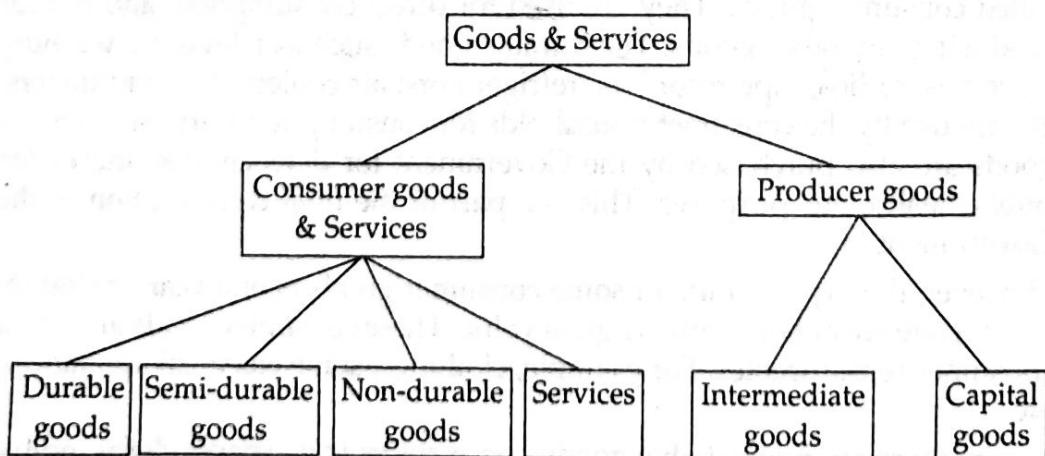


Fig.-3

■ **Examples :** The end-use classification of goods and services can easily be understood with the help of some examples :

- (a) A motor vehicle should be treated as consumer goods if it is purchased by a consumer household mainly for consumption purposes. However, it should be treated as capital goods when it is purchased by a company for business purposes. If that vehicle is purchased by the Government for military purposes, then it would be treated as intermediate goods.
- (b) The non-durable goods such as writing papers, pens, pencils, erasers, etc. purchased by any consumer household, are treated as consumer goods. When the same goods are used by any business enterprise, they would be treated as intermediate goods.
- (c) The services of a doctor, lawyer, teacher, tax consultant, etc. used by any consumer household, are considered as consumer services. But if these services are used by any manufacturing company for producing some goods or services, they would be treated as intermediate goods.

■ **Final goods :** Final goods refer to those goods which are only used for consumption purposes. Both the household and Government sectors purchase some durable and non-durable goods to satisfy their consumption needs. These goods and services form part of their final consumption. These goods and services are not used as inputs by the producers. So, the final goods cross the production boundary and they are used for final consumption.

The differences between the intermediate goods and final goods are shown in Table-2.

**Table-2**  
**Differences between Final goods and Intermediate Goods**

Final Goods	Intermediate Goods
<ol style="list-style-type: none"> <li>1. Used for final consumption (for example, coal used at home for cooking.)</li> <li>2. These goods have direct demand.</li> <li>3. These goods are included in the calculation of national income.</li> <li>4. These goods cross the production boundary.</li> </ol>	<ol style="list-style-type: none"> <li>1. Used for producing other goods (e.g., coal used in a factory).</li> <li>2. These goods have derived demand.</li> <li>3. These goods are not included in the calculation of national income.</li> <li>4. These goods do not cross the production boundary.</li> </ol>

### 9.5. The concept of value added

One of the major concepts of national income is Gross National Product or GNP. In order to define GNP, we must start from a more basic idea, called the *value added* by a producer. In short, by value added, we mean the total value of the output produced in a year by a producer *minus* the cost of raw materials and intermediate inputs used during the year. Consider, for instance, a bakery which produces bread, sells bread in the market and purchases the wheat to be used as inputs. Suppose, for simplicity, that wheat is the only non-labour input here. Then the value added by the bakery is the value of bread produced *minus* the cost of the wheat purchased.

Thus, when we deduct the value of intermediate consumption from the value of output, we get the gross value added.

$\therefore \text{Gross value added} = \text{Value of gross output} - \text{intermediate consumption.}$

However, there are two concepts of value added : (1) Gross Value Added ; and (2) Net Value Added. If the value of consumption of fixed capital (or the depreciation cost) is deducted from the gross value added, we get the net value added. This depreciation allowance is required to keep the productivity of capital intact. Thus, a part of the output of capital goods is kept aside for this purpose. Unless the fixed capital is kept intact (i.e., worn out capital is replaced with new fixed capital), there will be a fall in total output.

$\therefore \text{Net value added} = (\text{Gross value added}) - (\text{Consumption of fixed capital})$

At the national level, the consumption of fixed capital is defined as *current replacement cost* of the fixed assets used up during a particular year as a result of normal wear and tear, and natural obsolescence of capital.

#### 9.5.1. Value added at factor cost and value added at market price

*Value added at factor cost* refers to the addition made to the value of inputs by the contributions of various factors of production. However, when this value added is valued in terms of market prices of goods and services, it is called *value added at market prices*. Now if we *deduct indirect business taxes* (e.g., excise duties, sales tax, etc.), and *add subsidy* to the value added at market prices, we get the value added at factor cost. In fact, market prices include these indirect taxes, imposed by the Government upon the enterprises, but these taxes do not flow to the factors as income. So, indirect taxes are to be deducted from the value added at market prices to arrive at the value added at factor cost. Again, market prices do not include subsidy. The Government makes subsidy payment to the enterprises to encourage production (or export promotion). This subsidy amount flows to the factors as their income. So, this amount is added to the value added at market prices to arrive at value added at factor cost.

Here, if we deduct subsidy from the indirect taxes, we get net indirect taxes. It shows the net effect on the price of any commodity (since, *indirect taxes raise the price, while subsidy amount reduces it*).

$\therefore \text{Value added at market price} - \text{net indirect taxes} = \text{Value added at factor cost}$

Similarly we can say,

$\begin{aligned} & \text{Value added at factor cost} (-) \text{Consumption of fixed capital or depreciation cost} \\ & = \text{Net value added at factor cost} \\ & = \text{Factor income (rent + wages + interest + profits).} \end{aligned}$

In fact, production actually means addition made to the value of inputs by the collective efforts of the factors of production (i.e., land, labour, capital, and entrepreneurship). In return for their contribution, they get paid in the form of rent, wages, interest and profits. Thus, net value added would be equal to the total factor income.

## 9.6. National income aggregates and their relationship

We shall now discuss the national income aggregates in brief and their relations.

- (a) **Gross Domestic Product (at market prices)** : The Gross Domestic Product at market price ( $GDP_{mp}$ ) indicates the value of all final goods and services produced within the domestic territory of a country during any particular year. These goods and services are valued at the prevailing market prices of those goods and services.
- (b) **Net Domestic Product (at market prices)** : The Net Domestic Product at market prices ( $NDP_{mp}$ ) refers to the value of all final goods and services at the prevailing market prices within the domestic territory of a country during any particular year after making allowance for the consumption of fixed capital or depreciation allowance.

$$\therefore NDP_{mp} = GDP_{mp} - \text{Depreciation allowance}$$

- (c) **Gross National Product (at market price)** : The Gross National Product at market prices ( $GNP_{mp}$ ) refers to the aggregate market value of all final goods and services produced by the residents of a country during any particular year.

### ■ Difference between GNP and GDP (at market prices) :

The difference of Gross Domestic Product (GDP) from Gross National Product (GNP) should be carefully noted. If a citizen of India produces something in a foreign country, the value added (i.e., the total value of output minus the cost of raw materials) produced by him or her will be a part of India's GNP. But it will not be a part of India's GDP (because, it is not produced within the geographical boundary of India).

Thus, for India,  $(GNP - GDP) = \text{values added by Indian citizens residing abroad.}$

In fact, total output produced in an economy, measured by the GDP, differs from total income received, measured by the GNP because of the net property-income of the factors (F) received from abroad. This net property income represents the difference between the factor-incomes earned abroad and the factor-incomes of the foreigners earned in the country in question. Salaries and wages earned by the citizens of a country who work abroad, interest and profit-income on domestic capital invested abroad, etc., constitute such factor-incomes earned abroad. We have already discussed this notion. Similarly, the salaries and wages paid to the foreign workers, interest and profit-income on foreign capital invested in the country, etc. denote the factor-incomes of foreigners earned in the country.

$\therefore$  Net property income of the factors earned abroad (denoted by F)

= Factor-incomes earned abroad (by the citizens of the country)

(-) Factor-incomes of the foreigners earned in the country in question.

$\therefore GNP (\text{at market prices}) = GDP (\text{at market prices}) + F$

or,  $GNP_{mp} = GDP_{mp} + F$

If  $F > 0$  then  $GNP > GDP$ . It implies that the residents of the country are earning more from abroad than the foreigners' earnings in the country in question. On the other hand if  $F < 0$ , then  $GNP < GDP$ . For instance, the GDP measure in India has been higher than the GNP measure because of such negative net property income of the factors (earned abroad). It implies that the factor incomes earned abroad by the citizens of India are less than the factor incomes of foreigners who work in our country.

- (d) **Net National Product (at market prices)** : The net National Product at market prices ( $NNP_{mp}$ ) refers to the market value of all final goods and services produced by the residents of a country after allowing for the depreciation of fixed capital during any particular year. Thus, if we deduct the consumption of fixed capital or the depreciation allowance from the  $GNP_{mp}$ , we get  $NNP_{mp}$ .

$$\therefore NNP_{mp} = GNP_{mp} - \text{Depreciation allowance.}$$

Why should we deduct the depreciation of capital from GNP? We know that the physical capital stock of a country (for instance, machines in factories and offices) depreciates (i.e., its productive powers diminish gradually) because of the wear and tear that it undergoes in the process of production. If we do not set aside a sum of money every year and put this money into a depreciation fund, we cannot make good this loss of productive power. The amount of depreciation of a machine in a year (i.e., the money put in the depreciation fund each year) should be such that, when the machine becomes totally unproductive, it can be replaced by a new machine by utilising the accumulated sum in the depreciation fund.

Thus, GNP is not a proper measure of the productive capacity of a country because it does not take account of the fact that productive capacity of capital stock depreciates through time. In other words, it does not measure *sustainable production*.

It is for this reason that we want to deduct depreciation of the capital stock from GNP in order to get a more accurate measure of *the sustainable production of goods and services in a country in a given year*.

- (e) **Gross Domestic Product (at factor cost)** : The Gross Domestic Product at factor cost ( $GDP_{fc}$ ) refers to the estimation of GDP in terms of the aggregate earnings of factors of production. It is the aggregate earnings of different factors of production within the domestic territory of a country during any year. In this estimate, there is provision for depreciation allowance or the consumption of fixed capital. It can also be defined as the sum of net value added by all the producers within the domestic territory of a country *plus* the depreciation allowance during any particular year.

$$\therefore GDP_{fc} = \text{Sum of net value added} + \text{Depreciation allowance.}$$

- **Difference between  $GDP_{fc}$  and  $GDP_{mp}$**  : We have already discussed that market price includes indirect business taxes but they do not accrue to the factor

income. However, market price does not include subsidy element, but this amount flows to the factors as factor income. Thus, if we deduct net indirect business taxes from the  $GDP_{mp}$ , we get  $GDP_{fc}$ .

$$\begin{aligned}\therefore GDP_{fc} &= GDP_{mp} - \text{net indirect business taxes} \\ &= GDP_{mp} - \text{indirect business taxes} + \text{Subsidy} \\ &= GDP_{mp} - (\text{indirect business taxes} - \text{Subsidy}) \\ \text{or, } GDP_{mp} &= GDP_{fc} + \text{net indirect business taxes.}\end{aligned}$$

- (f) **Gross National Product (at factor cost)** : The Gross National Product at factor cost ( $GNP_{fc}$ ) refers to the GNP in terms of factor incomes. It is the aggregate earnings received by different factors of production (i.e., wages, rent, interest and profits) supplied by the residents of a country during any particular year.

There is a difference between GNP at market prices (i.e.,  $GNP_{mp}$ ) and  $GNP_{fc}$ . If we deduct the net indirect business taxes from the  $GNP_{mp}$  (the explanation being the same as before), we get the  $GNP_{fc}$ .

$$\begin{aligned}\therefore GNP_{fc} &= GNP_{mp} - \text{net indirect business taxes.} \\ \text{or, } GNP_{mp} &= GNP_{fc} + \text{net indirect business taxes.}\end{aligned}$$

- (g) **Net Domestic Product (at factor cost)** : The Net domestic product at factor cost ( $NDP_{fc}$ ) estimates the NDP in terms of the aggregate factor incomes of the residents and non-residents within the domestic territory of a country during any particular year. It is actually the sum total of net value added in the corporate and quasi-corporate enterprises, Government sector and households within the domestic territory of a country during any particular year. It is also called as 'Domestic Factor Income'.

If we deduct depreciation allowance from the  $GDP_{fc}$ , we get  $NDP_{fc}$ .

$$\therefore NDP_{fc} = GDP_{fc} - \text{depreciation allowance.}$$

This  $NDP_{fc}$  or the domestic factor income consists of the following three components :

- (1) Compensation of employees ;
- (2) Operating surplus ; and
- (3) Mixed income of the self-employed.

■ **Compensation of employees** : The payments of wages and salaries (either in cash or in kind) made by the producers to their employees, and the contributions of the producers or employers to the social security schemes in respect of their employees (say, insurance and provident fund contributions), are termed as compensation of employees.

■ **Operating surplus** : It is defined as the excess of value added of the producers over the sum of intermediate consumption, mixed income of self-employed persons, domestic compensation of employees, net indirect taxes and depreciation allowance (i.e., consumption of fixed capital). Alternatively speaking, it is the sum total of property income and income from entrepreneurship.

$\therefore$  Operating surplus = gross value added at market prices – (Intermediate consumption + compensation of employees + mixed income of self-employed persons + net indirect taxes + depreciation allowance)

or, Operating surplus = Property income + Income from entrepreneurship  
 = Rent + Interest + Profits.

It is important to note that there is no operating surplus in the Government sector.

■ **Mixed income of self-employed** : It refers to the mixed income of self employed persons who work for their selves. Since a self-employed generally supplies own land, capital and labour (instead of hiring these factors), it becomes difficult to segregate this income into rent, interest and profits. For example, the self-employed persons like the doctors or lawyers do not separate the labour income from property income. The mixed income of the self-employed covers total income of the own-account workers as well as the profits generated in the unincorporated enterprises.

$\therefore \text{NDP}_{fc} = \text{Compensation of employees}$   
 + Operating surplus  
 + Mixed income of the self-employed  
 = (wages and salaries + employers' contribution social security schemes)  
 + (Rent + Interest + Profits)  
 + (Mixed income of the self-employed).

(h) **Net National Product (at factor cost)** : The Net National Product at factor cost ( $NNP_{mp}$ ) refers to the value of all final goods and services produced by the residents of a country, whether operating within the domestic territory or outside it, at their factor costs. It is also termed as the National Income of a country.

If we deduct net indirect business taxes from the  $NNP_{mp}$ , we get  $NNP_{fc}$ .

$\therefore \text{NNP}_{fc} = \text{NNP}_{mp} - \text{Net indirect business taxes.}$   
 = National income

Alternatively, the  $NNP_{fc}$  or the national income can be defined as the sum total of 'domestic factor income' (i.e.,  $NDP_{fc}$ ) and net factor income earned abroad.

$\therefore$  National income or  $NNP_{fc} = \text{Domestic factor income or } NDP_{fc} + \text{Net factor income earned abroad.}$

### 9.6.1. Relationship between the national income aggregates

Now, the relationship between those national income aggregates is shown in Fig.-4

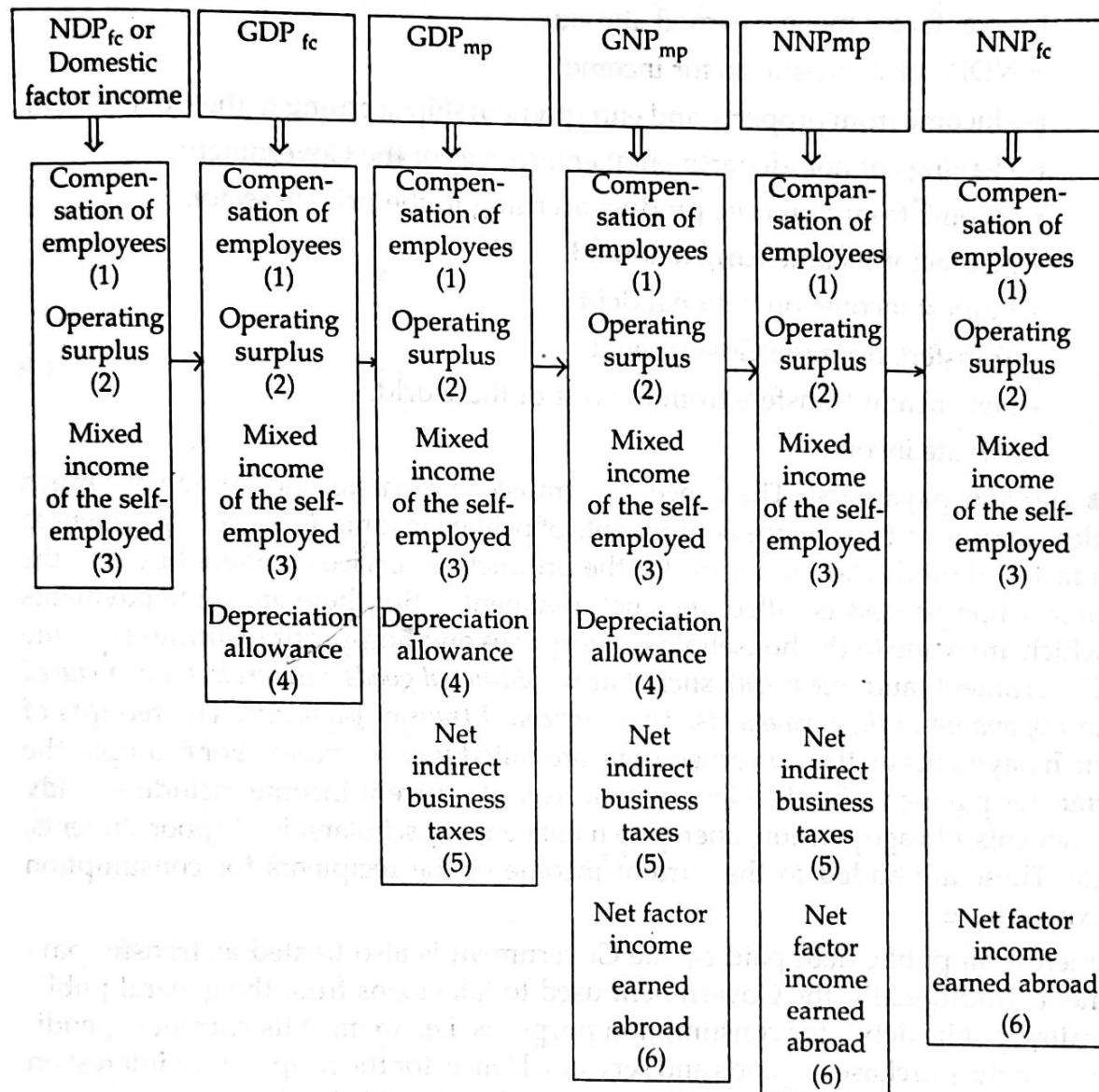


Fig.-4

### 9.6.2. Concepts of private income and personal income

■ **Private income :** The *private income* refers to the factor incomes earned within the domestic territory and abroad by the private enterprises and workers (i.e., factor owners in the private sector), current transfers from the Government and net transfers from the rest of the world.

In fact, all the domestic factor incomes generated within a given year, do not flow to the private sector. *Income from property and entrepreneurship accruing to the departmental commercial enterprises of the Government*, is retained by the Government. Further, the *non-departmental enterprises of the Government save a part of their profits for future expansion*. These profits are also not available for distribution. If these two sums are deducted from the  $NDP_{fc}$  or domestic factor income, we get *income from domestic product accruing to the private sector*.

Now, the private income can be calculated from the national income of a country as follows :

NNP<sub>fc</sub> or National income

(-) Net factor income earned abroad

= NDP<sub>fc</sub> or Domestic factor income

(-) Income from property and entrepreneurship accruing to the Government.

(-) Savings of non-departmental enterprises of the Government.

= Income from domestic product accruing to the private sector.

+ Net factor income earned abroad.

+ Interest income on national debt

+ Transfers from the Government

+ Net current transfers from the rest of the world.

= Private income.

■ **Transfer payments** : The concept of transfer payments should be very much clear for understanding the components of private income. Generally, payment to a factor of production in return for the productive services rendered by it in the production process is called 'income' (payments). But there are some payments which are made to the households, enterprises and non-profit institutions by the Government (and vice versa), such that no additional goods and services are produced corresponding to those payments. These are called transfer payments. The receipts of such payments by the concerned units are called transfer income. For example, the transfer payments by the Government from its current income include subsidy payments, old age pension, unemployment benefits, scholarships to poor students, etc. These are added to the current income of the recipients for consumption expenditure.

Interest on public debt paid by the Government is also treated as transfer payment. Traditionally, the Government used to take loans from the general public (called public debt) for consumption purposes, i.e., to meet its current expenditure on the purchase of goods and services. Hence, for the recipients of interest on public debt (i.e., the holders of Government bonds), this is a transfer income.

Such current transfers also take place between countries. For instance, the Government or the households and private non-profit institutions of India may send gifts to the residents of other countries in the form of clothes, food, medicines, etc. in times of natural calamities. The Government or the households and private non-profit institutions of some foreign countries may also send such gifts to India. If we deduct such current transfer payments from the transfer receipts, we get the net current transfer income of the private sector of a country from the rest of the world.

*These transfer incomes are not included in national income, but they are included in the private income.*

■ **Personal income** : The personal income is defined as the current income of persons or households from all sources. If we want to estimate personal income from the private income, then we have to deduct those parts of the private income which do not accrue to the resident individuals as personal income.

We have to deduct undistributed profits of the enterprises (or the savings of enterprises), the net retained earnings of the foreign enterprises, the contributions of enterprises towards social security schemes (say, group insurance or employees' state insurance schemes), and the corporate taxes paid by the enterprises from the private income for this estimation.

$$\therefore \text{Personal income} = \text{Private income}$$

- (-) Undistributed profits of the enterprises
- (-) net retained earnings of the foreign enterprises
- (-) contribution of the enterprises towards social security schemes
- (-) corporate taxes.

■ **Personal disposable income :** It is not possible for the households to spend the entire personal income. The Government takes away a part of it by way of income tax and other miscellaneous taxes (e.g., the municipality taxes). So, these taxes are deducted from the personal income to arrive at personal disposable income.

$$\therefore \text{Personal disposable income} = \text{Personal income} - \text{Direct taxes paid by the households} - \text{Other miscellaneous taxes.}$$

From the above discussion, it becomes clear that personal disposable income can be calculated from the national income involving the following steps :

#### **National income**

- (-) Net factor income earned abroad

#### **= Domestic factor income**

- (-) Income from property and entrepreneurship accruing to the Government

- (-) Savings of non-departmental enterprises of the Government.

#### **= Income from domestic product accruing to the private sector**

- (+) Net factor income earned abroad

- (+) Interest income on national debt

- (+) Transfers from the Government

- (+) Net current transfers from the rest of the world.

#### **= Private income**

- (-) Undistributed profits

- (-) Net retained earnings of the foreign enterprises

- (-) Contribution of the enterprises towards social security schemes

- (-) Corporate taxes

#### **= Personal income**

- (-) Direct taxes paid by the households

- (-) Other miscellaneous taxes

#### **= Personal disposable income**

- = Personal consumption expenditure + Personal savings.

### 9.6.3. Per capita income

*Per capita income* is the national income of a country divided by the population of the country : Per capita income =  $\frac{\text{National Income}}{\text{Population}}$

Thus, it is a measure of the *average income* of a person in a country.

### 9.6.4. Nominal and real GNP

When GNP of any year is valued in terms of the prices of that year, it is termed as *nominal GNP* or GNP measured at *current prices*. For instance, GNP (at factor cost) of India was about Rs. 14,13,231 crore, measured at current prices, in 1997-98. The nominal GNP changes from one year to another primarily because of two reasons : (i) changes in physical output during any period, and (ii) changes in the prices of different goods and services during that period.

The *real GNP*, on the other hand, measures the changes in physical output in an economy over the years by valuing the goods and services at *constant prices* or at the prices of some *base year*. If the base year is considered to be 1993-94 then real GNP in 1997-98 = (prices of 1993-94)  $\times$  (volume of goods and services produced in 1997-98).

Thus, if there is an increase in real GNP, it surely signifies an increase in the physical output in 1997-98 as compared to 1993-94.

For instance, GNP (at factor cost) of India, when measured at 1993-94 prices, increased from Rs. 7,86,997 crore in 1993-94 to about Rs. 10,38,692 crore in 1997-98.

$$\begin{aligned} \text{Now, } & \frac{\text{Nominal GNP in 1997-98}}{\text{Real GNP in 1997-98}} \times 100 \\ &= \frac{\text{Rs. 14,13,231}}{\text{Rs. 10,38,692}} \times 100 = 136 \end{aligned}$$

The result is known as *GNP deflator*. It signifies that in relation to the base year (i.e., 1993-94), the price level in the current year (i.e., 1997-98) has increased by 36 per cent. Thus, GNP deflator is a measure of inflation during the said period.

## 9.7. Measurement of national income

National income can be measured in different ways. There are basically *three* methods of measuring national income : (1) the product method (also known as the *value added method*), (2) the income method, and (3) the expenditure method. Each of these methods is discussed below :

### 9.7.1. Product (or value-added) method

In this product census method, a complete census of all products produced by different members of a nation during a given year is taken into account, and the sum total of these values gives us an estimation of GNP. Since different goods and services are measured in different units, so their money value is taken into consideration.

Production occurs in stages and outputs of some firms are used as inputs by other firms, and these other firms in turn produce outputs which are also used as inputs by yet other firms. If we merely add up the market values of outputs produced by