

INTRODUCTION

National income is the money value of all the final goods and services produced by a country during a period of one year. National income consists of a collection of different types of goods and services of different types. Since these goods are measured in different physical units it is not possible to add them together. Thus we cannot state national income is so many millions of metres of cloth, so many million litres of milk, etc. Therefore, there is no way except to reduce them to a common measure. This common measure is money. The value of all goods and services produced is measured in money. For example, if the value of a metre of cloth is Rs. 20 and the total cloth produced is 100 metres, then the money value of cloth is Rs. 2000. In this way we can find out the value of other goods and services and the total value of all the goods and services produced during one year. This gives us a single measure of the final goods and services produced by the country in that year which is nothing but the value of national income or national product.

3.0 BASIC CONCEPTS IN NATIONAL INCOME AND OUTPUT

- (1) **Gross Domestic Product (GDP)** : Gross domestic product is the money value of all final goods and services produced in the domestic territory of a country during an accounting year. The concept of domestic territory has a special meaning in national income accounting. Domestic territory is defined to include the following:
 - (i) Territory lying within the political frontiers, including territorial waters of the country.
 - (ii) Ships and aircrafts operated by the residents of the country between two or more countries.
 - (iii) Fishing vessels, oil and natural gas rigs, and floating platforms operated by the residents of the country in the international waters or engaged in extraction in areas in which the country has exclusive rights of exploitation.
 - (iv) Embassies, consulates and military establishments of the country located abroad.
- (2) **GDP at Constant Prices and at Current Prices** : GDP can be estimated at current prices and at constant prices. If the domestic product is estimated on the basis of the prevailing

prices it is called gross domestic product at current prices. Thus when we say that GDP of India at current prices in 2003-04 is Rs. 25,43,396 crores, we are measuring GDP on the basis of the prices prevailing in 2003-04. On the other hand, if GDP is measured on the basis of some fixed prices, that is prices prevailing at a point of time or in some base year it is known as GDP at constant prices or real gross domestic product. Thus when we say that GDP in 2003-04 is Rs. 22,26,041 crores at 1999-00 prices, we are measuring GDP on the basis of the prices prevailing in 1999-2000.

- (3) **GDP at Factor Cost and GDP at Market Price :** The contribution of each producing unit to the current flow of goods and services is known as the net value added. GDP at factor cost is estimated as the sum of net value added by the different producing units and the consumption of fixed capital. Since the net value added gets distributed as income to the owners of factors of production, we can also estimate GDP as the sum of domestic factor incomes and consumption of fixed capital. Conceptually, the value of GDP whether estimated at market price or factor cost must be identical. This is because the final value of goods and services (i.e. market price) must be equal to the cost involved in their production (factor cost). However, the market value of goods and services is not the same as the earnings of the factors of production. GDP at market price includes indirect taxes and excludes the subsidies given by the government. Therefore, in order to arrive at GDP at factor income we must subtract indirect taxes from and add subsidies to GDP at market price.

$$\text{In brief} \quad \text{GDP}_{\text{FC}} = \text{GDP}_{\text{M.P.}} - \text{IT} + \text{S}$$

Where IT = Indirect Taxes

S = Subsidies

- (4) **Net Domestic Product :** While calculating GDP no provision is made for depreciation allowance (also called capital consumption allowance). In such a situation gross domestic product will not reveal complete flow of goods and services through various sectors.

It is a matter of common knowledge that capital goods like machines, equipment, tools, buildings, tractors etc., get depreciated during the process of production. After some time these capital goods need replacement. A part of capital is therefore, set aside in the form of depreciation allowance. When depreciation allowance is subtracted from gross domestic product we get net domestic product.

In brief

$$\text{NDP} = \text{GDP} - \text{depreciation}$$

- (5) **Gross National Product (GNP) :** It has already been seen that whatever is produced within the domestic territory of a country in a year is its gross domestic product. It, however, includes, the contribution made by non-resident producers by way of wages, rent, interest and profits. The non-residents work in the domestic territory of some other country and earn factor incomes. For example, Indian residents go abroad to work. Indian banks are functioning abroad. Indians own property in foreign countries. The income of all these people is the factor income earned from abroad. In other words, it is factor income earned from abroad by the residents of India by rendering factor services abroad. Similarly, factor services are rendered by non-residents within the domestic territory of India. Net factor

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income from abroad is the difference between the income received from abroad for rendering factor services and the income paid for the factor services rendered by non-residents in the domestic territory of a country.

Gross national product is defined as the sum of the gross domestic product and net factor incomes from abroad. Thus in order to estimate the gross national product of India we have to add net factor income from abroad i.e., income earned by Indian residents abroad minus income earned by non-residents in India to form the gross domestic product of India.

In brief $GNP = GDP + NFIA$ (where NFIA is the net factor income from abroad).

- (6) **Net National Product (NNP)** : It can be derived by subtracting depreciation allowance from GNP. It can also be found out by adding the net factor income from abroad to the net domestic product. If the net factor income from abroad is positive i.e., the inflow of factor income from abroad is more than the outflow, NNP will be more than NDP; conversely, if net factor income from abroad is negative, NNP will be less than NDP and it would be equal to NDP in case the net factor income from abroad is zero. Symbolically,

$$NNP = NDP + NFIA$$

- (7) **NNP at factor cost or National Income** : NNP at factor cost is the volume of commodities and services turned out during an accounting year, counted without duplication. It can also be defined as the net value added at factor cost (by the residents) in an economy during an accounting year. In terms of income earned by the factors of production, NNP at factor cost or national income is defined as the sum of domestic factor incomes and net factor income from abroad. If NNP figure is available at market prices we will subtract indirect taxes and add subsidies to the figure to get NNP at factor cost or national income of the economy.

$$\text{Symbolically, } NNP \text{ at FC} = \text{National Income} = FID + NFIA$$

where FID is factor income earned in the domestic territory of a country and NFIA is the net factor income from abroad.

There are two more concepts: Personal Income and Personal Disposal Income. Personal income is the sum of all incomes actually received by individuals during a given year. In order to estimate it we subtract from national income the sum total of social security contribution and corporate income taxes and undistributed corporate profits and add personal payments which are incomes received but not currently earned.

After the deduction of personal taxes from personal income of the individuals what is left is called personal disposable income which is equal to consumption plus saving.

The following statements mathematically summarise the various concepts discussed above and the relationship among them:

$GNP \text{ at market price} - \text{depreciation}$

$= NNP \text{ at market price.}$

$GNP \text{ at market price} - \text{net income from abroad}$

$= GDP \text{ at market price.}$

$GNP \text{ at market price} - \text{net indirect taxes}$

$= GNP \text{ at factor cost.}$



NNP at market price - net income from abroad	= NDP at market price.
NNP at market price - net indirect taxes	= NNP at factor cost.
GDP at market price - net indirect taxes	= GDP at factor cost.
GNP at factor cost - depreciation	= NNP at factor cost.
NDP at market price - net indirect taxes	= NDP at factor cost.
GDP at factor cost - depreciation	= NDP at factor cost.

3.1 METHODS OF MEASURING NATIONAL INCOME

Production and sale of goods and services and the generation of income which accompanies these activities are processes that go on continuously. Production gives rise to income; income again expenditure leads to further production; and demand in turn gives rises to expenditure; expenditure represents three related phases, namely, production, distribution and disposition. These three phases enable us to look at national income in three ways - as a flow of goods and services, as a flow of incomes or as a flow of expenditure on goods and services. To measure it at each phase, we require different data and methods. If we want to measure it at the phase of production, we have to find out the sum of net values added by all the producing enterprises of the country. If we want to measure it at the phase of income distributed, we have to find out the total income generated in the production of goods and services. Finally, if we want to measure it at the phase of disposition, we have to know the sum of expenditures of the three spending units in the economy, namely, government, consumer households, and producing enterprises.

Corresponding to the three phases, there are three methods of measuring national income. They are:

- (i) Value Added Method (alternatively known as Product Method);
 - (ii) Income Method; and
 - (iii) Expenditure Method.
- (i) **Value Added Method:** Value added method measures the contribution of each producing enterprise in the domestic territory of the country. This method involves the following steps:
- (a) Identifying the producing enterprise and classifying them into industrial sectors according to their activities.
 - (b) Estimating net value added by each producing enterprise as well as each industrial sector and adding up the net value added by all the sectors.

All the producing enterprises are broadly classified into three main sectors namely: (1) Primary sector which includes agriculture and allied activities; (2) Secondary sector which includes manufacturing units and (3) Tertiary sector which include services like banking, insurance, transport and communications, trade and professions. These sectors are further divided into sub-sectors and each sub-sector is further divided into commodity group or service-group.

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For calculating the net product of the industrial sector we need to know about gross output of the sector, the raw materials and intermediate goods and services used by the sector and the amount of depreciation. For an individual unit, we subtract from the value of its gross output, the value of the raw material and intermediate goods and services used by it and, from this, we subtract the amount of depreciation to get net product or value added by each unit. Adding value-added by all the units in one sub-sector, we get value-added by the sub-sector. Again adding value-added or net products of all the sub-sectors of a sector we get value-added or net product of that sector. For the economy as a whole, we add net products contributed by each sector to get Net Domestic Product. If the information regarding the final output and intermediate goods is available in terms of market prices we can easily convert it in terms of factor costs by subtracting (or adding as the case may be) net indirect taxes to it. If we add or subtract net income from abroad we get Net National Product at factor cost which is nothing but National Income.

Care should be taken to include the value of the following items :

- (a) Own account production of fixed assets by government, enterprises and households.
- (b) Production for self-consumption.
- (c) Imputed rent of owner occupied houses.

Care should also be taken not to include sale of second-hand machines because they were counted as a part of production in the year in which they were produced. However, brokerage and commission earned by the dealers of second-hand goods are a part of production and hence included while calculating total value-added. There is a difference of opinion among the national income accountants regarding raw materials, intermediate goods and depreciation. For example, a question arises whether government services are final (because they add to satisfaction) or intermediate (because they are essential for economic activity). In India, we treat them as final services but in Soviet Union (now called Commonwealth of Independent States) these are treated as intermediate services. Similarly, it is very difficult to ascertain the actual amount of depreciation because a fall in the value of capital stock depends upon many factors which are difficult to measure.

Moreover, large areas of production activities are excluded for varying reasons. Their net products cannot be valued either because there is no acceptable way of valuing them (which is true in the case of services of housewives or self-services in homes or services of friends) or because of the difficulty of securing data of the subsistence producing units particularly in underdeveloped countries.

Similarly, adequate data regarding output, raw materials etc. are not often available from many proprietorships, partnerships, non-profit institutions and governments. Lack of adequate and reliable data is a serious problem in the measurement of the national incomes of underdeveloped countries.

The product method thus gives information about the industrial origins of national income. Additionally, net income from abroad should also be included or subtracted to get a true picture of national income.

- (ii) **Income Method** : Different factors of production pool their services for carrying out production activities. These factors of production, in return, are paid for their services in



the form of factor incomes. Thus labour gets wages, land gets rent, capital gets interest and entrepreneur gets profits. In other words, whatever is produced by a producing unit is distributed among the factors of production for their services and aggregate of factor incomes of all the factors of production of all the producing units form the subject matter of calculation of national income by income method.

Only incomes earned by owners of primary factors of production are included in national income. Transfer incomes are excluded from national income. Thus, while wages of labourers will be included, pensions of retired workers will be excluded from national income. Labour income includes, apart from wages and salaries, bonus, commission, employers' contribution to provident fund and compensations in kind. Non-labour income includes dividends, undistributed profits of corporations before taxes, interest, rent, royalties and profits of unincorporated enterprises and of government enterprises.

However, normally, it is difficult to separate labour income from capital income because in many instances people provide both labour and capital services. Such is the case with self-employed people like lawyers, engineers, traders, proprietors etc. In economies where subsistence production and small commodity production is dominant most of the incomes of people would be of mixed type. In sectors such as agriculture, trade, transport etc. in underdeveloped countries (including India), it is difficult to differentiate between labour element and capital element of incomes of the people. In order to overcome this difficulty a new category of incomes, called mixed income is introduced which includes all those incomes which are difficult to separate. Care has to be taken to see that transfer incomes do not get included in national income. In this context it is worthwhile to note that personal income which is income of household sector should not be confused with national income. While personal income includes transfer payments, national income does not. Similarly, illegal incomes, windfall gains, death duties, gift tax and sale proceeds of second-hand goods are not included while calculating national income.

Net income from abroad need not be added separately since the incomes received by people include net foreign incomes as well. But if national income is calculated not from incomes received by the people but from data regarding incomes paid out by producers then net income from abroad would have to be added separately because incomes paid by producers would total to domestic income. To arrive at national income, net income from abroad should be added to domestic income.

(iii) **Expenditure Method:** The various sectors - household sector, business sector and government sector either spend their incomes on consumer goods and services or save a part of their incomes or we can say that they spend a part of their incomes on non-consumption goods (or capital goods).

Total expenditure in an economy consists of expenditure on financial assets, on goods produced in preceding periods, on raw materials and intermediate goods and services and on final goods and services produced in the current period.

Expenditure on financial assets which are produced and owned within the country is excluded but expenditure on financial assets of foreign countries is included in national expenditure. However, only the net expenditure i.e., the difference between expenditure on foreign financial

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assets by residents and expenditure on the country's financial assets by non-residents or foreigners is incorporated. This difference is also called net foreign investment. Goods produced in preceding years are also excluded from national income because they have been accounted for in the national incomes of the periods when they were produced. Similarly, expenditure on raw materials and intermediate goods and services are excluded because otherwise there would be double counting of some of the items included in the national income. Government expenditure on pensions, scholarships, unemployment allowance etc. should be excluded because these are transfer payments.

Thus, only expenditure on final goods and services produced in the period for which national income is to be measured and net foreign investment are included in the expenditure method of calculating national income.

Expenditure on final goods and services is broadly classified into expenditure on consumer goods and service (also called consumption expenditure) and expenditure on capital goods (also called investment expenditure). Consumption expenditure is classified into private consumption expenditure of the household sector and government consumption expenditure; and investment expenditure is classified into private investment expenditure by business sector and investment expenditure by government. To the total domestic investment we add net foreign investment in order to arrive at national investment. Thus, the aggregates resulting from the expenditure method measured at market prices are as follows:

~~Gross national expenditure = Consumption expenditure + net domestic investment + net foreign investment + replacement expenditure (i.e., expenditure on replacement investment).~~

~~Net national expenditure = Consumption expenditure + net domestic investment + net foreign investment.~~

~~Net domestic expenditure = Consumption expenditure + net domestic investment.~~

All the three methods mentioned above should ideally lead to the same figure of national income and therefore national income of a country should be measured by these methods separately to get a three dimensional view of the economy. This helps the government to analyse the level of production and economic welfare in the economy, to analyse stability and growth of the economy and to formulate appropriate economic policies of the government. Moreover, each method provides a check on the accuracy of the other methods. However, it is easier said than done. Because of lack of proper and reliable data it is very difficult to estimate national income by each method separately. This is especially so in underdeveloped economies.

As a matter of fact, countries like India are unable to estimate their national income wholly by one method. The contributions of different sectors to the total national income are estimated by different methods. Thus, in agricultural sector net value added is estimated by the production method, in small scale sector net value added is estimated by the income method and in construction sector net value added is estimated by the expenditure method.

Income method may be most suitable for developed economies where people properly file their income tax returns. With the growing facility in the use of the commodity flow method of estimating expenditures, an increasing proportion of the national income is being estimated by the expenditure method.