

## NATIONAL INCOME AND ECONOMIC ACCOUNTING

### INTRODUCTION

National income is an uncertain term which is used interchangeably with national dividend, national output and national expenditure. On this basis, national income has been defined in a number of ways. In common parlance, national income means the total value of goods and services produced annually in a country. In other words, the total amount of income accruing to a country from economic activities in a year's time, is known as national income. It includes payments made to all resources in the form of wages, interest, rent and profits.

### CONCEPTS OF NATIONAL INCOME

There are a number of concepts pertaining to national income. For instance, Gross National Product, Net National Product, Net National Income at Factor Cost, Net Domestic Product at Factor Cost, Personal Income, Disposable Income, and Real Income. One by one, these concepts are discussed below.

#### Gross National Product (GNP)

GNP is the total measure of the flow of goods and services at market value resulting from current production during a year in a country, including net income from abroad. GNP includes four types of final goods and services:

- (1) Consumers' goods and services to satisfy the immediate wants of the people;
- (2) Gross private domestic investment in capital goods consisting of fixed capital formation, residential construction and inventories of finished and unfinished goods;
- (3) Goods and services produced by the government; and
- (4) Net exports of goods and services, *i.e.*, the difference between value of exports and imports of goods and services, known as net income from abroad.

In this concept of GNP there are certain factors that have to be taken into consideration.

**First**, GNP is the measure of money, in which all kinds of goods and services produced in a country during one year are measured in terms of money at current prices and then added together.

**Second**, in estimating GNP of the economy, the market price of only the final products should be taken into account. Many of the products pass through a number of stages therefore they are ultimately purchased by consumers. If those products were counted at every stage, they would be included many a time in the national product and consequently the GNP would increase too much. To avoid double counting, therefore, only the final products, and not the intermediary goods should be taken into account.

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**Third.** goods and services rendered free of charge are not included in GNP., because it is not possible to have a correct estimate of their market prices. For example, the bringing up of a child by the mother, imparting instructions to his son by a teacher, recitals to his friends by a musician, sculpturing as a hobby by a sculptor, etc.

**Fourth,** the transactions which do not arise from the produce of current year or which do not contribute in any way to production, are not included in GNP. The sale and purchase of old goods, and of shares, bonds and assets of existing companies are not included in GNP.

**Fifth,** the profits earned or losses incurred on account of changes in capital assets as a result of fluctuations in market prices, are not included in the GNP if they are not responsible for current production or economic activity.

**Last,** the income earned through illegal activities is not included in the GNP. Although the goods sold in the black-market are priced and fulfill the needs of the people, but as they are not useful from the social point of view, the income received from their sale and purchase is always excluded from the GNP.

### **Three Approaches to GNP**

Three approaches are employed for estimation of GNP. *One*, the income method to GNP; *two*, the expenditure method to GNP; and *three*, value added method to GNP. Since the gross income equals the gross expenditure, GNP estimated by all these methods would be the same with appropriate adjustments.

### **Income Approaches to GNP**

The income approach to GNP consists of the remuneration paid in terms of money to the factors of production annually in a country. Thus GNP is the sum total of the following items:

(i) **Wages and salaries.** Under this head fall all forms of wages and salaries earned through productive activities by workers and entrepreneurs. It includes all sums received or deposited during a year by way of all types of contributions like overtime, commission, provident fund, insurance etc.

(ii) **Rents.** Total rent includes the rents of land, shop, house, factory, etc. and the estimated rents of all such assets as are used by the owners themselves.

(iii) **Interest.** Under interest comes the income by way of interest received by the individual of a country from different sources. To this is added the estimated interest on that private capital which is invested and not borrowed by the businessman in his personal business. But the interest received on governmental loans has to be excluded, because it is a mere transfer of national income.

(iv) **Dividends.** Dividends earned by the shareholders from companies are included in the GNP.

(v) **Undistributed corporate profits.** Profits which are not distributed by companies and are retained by them are included in the GNP.

(vi) **Mixed incomes.** These include profits of unincorporated businesses, self-employed persons and partnerships. They form part of GNP.

(vii) **Direct taxes.** Taxes levied on individuals, corporations and other businesses are included in the GNP.

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(viii) **Indirect taxes.** The government levies a number of indirect taxes, like excise duties and sales tax. These taxes are included in the prices of commodities. But revenue from these goes to the government treasury and not to the factors of production. Therefore, the income due to such taxes is added to the national income.

(ix) **Depreciation.** Every corporation makes allowance for expenditure on wearing out and depreciation of machines, plants and other capital equipment. Since this sum also is not a part of the income received by the factors of production, it is, therefore, also included in GNP.

(x) **Net income earned from abroad.** This is the difference between the value of exports of goods and services and the value of imports of goods and services. If this difference is positive, then it is added to GNP and if it is negative it is deducted from GNP.

**Thus GNP according to Income Method** = Wages and Salaries + Rents + Interest + Dividends + Undistributed Corporate Profits + Mixed Incomes + Direct Taxes + Indirect Taxes + Depreciation + Net Income from abroad.

**Expenditure Approach to GNP**

From the expenditure viewpoint, GNP is the sum total of expenditure incurred on goods and services during one year in a country. It includes the following items:

(i) **Private consumption expenditure.** It includes all types of expenditure on personal consumption by the individuals of a country. It comprises expenses on durable goods like watch, bicycle, radio etc., expenditure on single-used consumers' goods like milk, bread, ghee, clothes etc., as also the expenditure incurred on services of all kinds like fees for school, doctor, lawyer and transport. All these are taken as final goods.

(ii) **Gross domestic private investment.** Under this comes the expenditure incurred by private enterprise on new investment and on replacement of old capital. It includes expenditure on house-construction, factory-buildings, all types of machinery, plants and capital equipment.

(iii) **Net foreign investment.** It means the difference between exports and imports or export surplus. Every country exports to or imports from certain foreign countries. The imported goods are not produced 'within the country and hence cannot be included in national income, but the exported goods are manufactured within the country. Therefore, the difference of value between exports ( $X$ ) and imports ( $M$ ), whether positive or negative, is included in the GNP

(iv) **Government expenditure on goods and services.** The expenditure incurred by the government on goods and services is a part of GNP. Central, State or Local governments spend a lot on their employees, police and army. To run the offices the governments have also to spend on contingencies which include paper, pen, pencil and various types of stationery, cloth, furniture, cars etc. It also includes the expenditure on government enterprises. But expenditure on transfer payments is not added, because these payments are not in exchange for goods and services produced during the current year.

**Thus GNP according to Expenditure Method** = Private Consumption Expenditure ( $C$ ) + Gross Domestic Private Investment ( $I$ ) + Net Foreign Investment ( $X - M$ ) + Government Expenditure on Goods and Services ( $G$ ) =  $C + I + (X - M) + G$ .

As already pointed out above, GNP estimated by either the income or the expenditure method would work out to be the same, if all the items are correctly calculated.

***Value Added Approach to GNP***

Another method of measuring GNP is by value added. In calculating GNP the money value of final goods and services produced at current prices during a year is taken into account. This is one of the ways to avoid double counting. But it is difficult to distinguish properly between a final product and an intermediate product. For instance, raw materials, semi-finished products, fuels and services, etc. are sold as inputs by one industry to the other. They may be final goods for one industry and intermediate for others. So, to avoid duplication, the value of *intermediate products* used in manufacturing final products must be subtracted from the value of total output of each industry in the economy. Thus the difference between the value of material outputs and inputs at each stage of production is called the value added. If all such differences are added up for all industries in the economy, we arrive at the GNP by value added.

**GNP at Market Prices**

When we multiply the total output produced in one year by their market prices prevalent during that year in a country, we get the Gross National Product at market prices. Thus GNP at market prices means the gross value of final goods and services produced annually in a country *plus* net income from abroad.

**GNP at Factor Cost**

GNP at factor cost is the sum of the money value of the income produced by and accruing to the various factors of production in one year in a country. It includes all items mentioned above under Income Approach to GNP *less* indirect taxes. GNP at market prices always includes indirect taxes levied by the government on goods which raise their prices. But GNP at factor cost is the income which the factors of production receive in return for their services alone. It is the cost of production. Thus GNP at market prices is always higher than GNP at factor cost. Therefore, in order to arrive at GNP at factor cost, we deduct indirect taxes from

$$\text{GNP at Factor cost} = \text{GNP at Market Prices} - \text{Indirect Taxes} + \text{Subsidies.}$$

**Net National Product (NNP)**

GNP includes the value of total output of consumption goods and Investment goods. But the process of production uses up a certain amount of fixed capital. Some fixed equipment wears out, its other components are damaged or destroyed, and still others are rendered obsolete through technological changes. All this process is termed *depreciation or capital consumption allowance*. In order to arrive at NNP, we deduct depreciation from GNP. The word 'net' refers to the exclusion of that part of total output which represents depreciation. So

$$\text{NNP} = \text{GNP} - \text{Depreciation.}$$

**NNP at Market Prices**

Net National Product at market prices is the *net* value of final goods and services evaluated at market prices in the course of one year in a country. If we deduct depreciation from GNP at market prices, we get NNP at market prices.

**So NNP at Market Prices = GNP at Market Prices—Depreciation.**

### **NNP at Factor Cost**

Net National Product at factor cost is the *net* output evaluated at factor prices. It includes income earned by factors of production through participation in the production process such as wages and salaries, rents, profits, etc. It is also called *National Income*. This measure differs from NNP at market prices in that indirect taxes are deducted and subsidies are added to NNP at market prices in order to arrive at NNP at factor cost.

**Thus NNP at Factor Cost = NNP at Market Prices—Indirect taxes + Subsidies.**

= GNP at Market Prices— Depreciation—Indirect taxes + Subsidies.

=National Income.

Normally, NNP at market prices is higher than NNP at factor cost because indirect taxes exceed government subsidies. However, NNP at market prices can be less than NNP at factor cost when government subsidies exceed indirect taxes.

### **Per Capita Income**

The average income of the people of a country in a particular year is called Per Capita Income for that year. This concept also refers to the measurement of income at current prices, and at constant prices. For instance, in order to find out the per capita income for 1981, at current prices, the national income of a country is divided by the population of the country in that year

$$\text{Per Capita Income for 1981} = \frac{\text{National income for 1981}}{\text{Population in 1981}}$$

## **METHODS OF MEASURING NATIONAL INCOME**

There are four methods of measuring national income. Which method is to be employed depends on the availability of data in a country and the purpose in hand.

**Product Method.** According to this method, the total value of final goods and services produced in a country during a year is calculated at market prices. To find out the GNP, the data of all productive activities, such as agricultural products, wood received from forests, mineral received from mines, commodities produced by industries, the contributions to production made by transport, communications, insurance companies, lawyers, doctors, teachers etc. are collected and assessed at market prices. Only the final goods and services are included and the intermediary goods and services are left out.

**Income Method.** According to this method, the net income payments received by all citizens of a country in a particular year are added up, *i.e.* net incomes that accrue to all factors of production by way of net rents, net wages, net interest and net profits are all added together but incomes received in the form of transfer payments are not included in it. The data pertaining to income are obtained from different sources, for instance, from income tax department in respect of high income groups and in case of workers from their wages bills.

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**Expenditure Method.** According to this method, the total expenditure incurred by the society in a particular year is added together and includes personal consumption expenditure, net domestic investment, government expenditure on goods and services, and net foreign investment. This concept is based on the assumption that national income equals national expenditure.

**Value Added Method.** Another method of measuring national income is the value added by industries. The difference between the value of material outputs and inputs at each stage of production is the value added. If all such differences are added up for all industries in the economy, we arrive at the gross domestic product.

### **DIFFICULTIES IN THE MEASUREMENT OF NATIONAL INCOME**

To calculate the national income of a country is a complicated problem and is beset with the following difficulties:

(1) first there is the difficulty of defining 'nation' in national income. Every nation has its political boundaries, but in the national income is also included the income earned by the nationals of a country in a foreign country beyond the territorial boundaries of that country.

(2) National income is always measured in money, but there are a number of goods and services which are difficult to be assessed in terms of money, e.g., painting as a hobby by an individual, the bringing up of children by the mother. Similarly, when the owner of a firm gets married to his lady secretary, her services, though a part of national income, are not included in it. By excluding all such services from  $i_t$ , the national income will work out to be less than what it actually is.

(3) The greatest difficulty in calculating the national income is of double counting, which arises from the failure to distinguish properly between a final and an intermediate product. There always exists the fear of a good or a service being included more than once. If it so happens, the national income would work out to be many times the actual. Flour used by a bakery is an intermediate product and that by a household the final product. To solve this difficulty, only the final goods and services are taken into account, and that is not so easy a task.

(4) Income earned through illegal activities such as gambling, or illicit extraction of wine, etc is not included in national income. Such goods and services do have value and meet the needs of the consumers. But by leaving them out, the national income works out to less than the actual.

(5) Then there arises the difficulty of including transfer payments in the national income. Individuals get pension, unemployment allowance and interest on public loans, but whether these should be included in national income is a difficult problem. On the one hand, these earnings are a part of individual income and on the other, they are government expenditure. To avoid this difficulty, these are deducted from national income.

(6) Capital gains or losses which accrue to property owners by increases or decreases in the market value of their capital assets or changes in demand are excluded from the GNP because such changes do not result from current economic activities. It is only when capital

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gains or losses are the result of the current flow or non-flow of productive activities that they are included in the GNP.

(7) All *inventory changes* whether negative or positive are included in the GNP. The procedure is to take positive or negative changes in physical units of inventories and multiply them by current prices. But the problem is that firms record inventories at their original costs rather than at replacement costs. When prices rise there are gains in the book value of inventories. Contrariwise, there are losses when prices fall. So the book value of inventories overstates or understates the actual inventories.

(8) When we deduct capital *depreciation* from GNP, the resulting measure is NNP. Depreciation is a charge on profits which lowers national income. But the problem of estimating the current depreciated value of a piece of capital whose expected life is fifty years is very difficult.

(9) Another difficulty in calculating national income is that of price-changes which fail to keep stable the measuring rod of money for national income. When the price level in the country rises, the national income also shows an increase even though the production might have fallen. On the contrary, with a fall in price level, the national income shows a decline even though the production might have gone up.

(10) Moreover, the calculation of national income in terms of money is under-estimation of real national income. It does not include the leisure foregone in the process of production of a commodity. The income earned by two individuals may be equal, but if one of them works for longer hours than the other, would it be correct to some extent to say that the real income of the former has been understated.

(11) In calculating national income, a good number of public services are also taken which cannot be estimated correctly. How should the police and military services be estimated? In the days of war, the forces are active, but during peace they rest in cantonments. Similarly, to estimate the contribution made to national income by profits earned on irrigation and power projects in terms of money is also a difficult problem.

### Problems of Measurement in a Developing Economy

In a developing economy, complete and reliable information relating to the various methods of estimating national income are not available due to the following problems:

**1. Non-monetized Sector.** There is a large non-monetized sector in a developing economy. This is the subsistence sector in rural areas in which a large portion of production is partly exchanged for the other goods and is partly kept for personal consumption. Such production and consumption cannot be calculated in national income.

**2. Lack of Occupational Specialisation.** There is the lack of occupational specialization in such a country which makes the calculation of national income by product method difficult. Besides the crop, farmers in a developing country are engaged in supplementary occupations like dairying, poultry, cloth making, etc. But income from such productive activities is not included in the national income estimates.

**3. Non-market Transactions.** People living in rural areas in a developing country are able to avoid expenses by building their own huts, tools, implements, garments and other essential commodities. Similarly, people in urban areas having kitchen gardens produce vegetables which they consume themselves. All such productive activities do not enter the

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market transactions and hence are not included in the national income estimates.

**4. Illiteracy.** The majority of people in such a country are illiterate and they do not keep any accounts about the production and sales of their products. Under the circumstances, the estimates of production and earned incomes are simply guesses.

**5. Non-availability of Data.** Adequate and correct production and Cost data are not available in a developing country. Such data relate to crops, forestry, fisheries, animal husbandry, and the activities of petty shopkeepers, small enterprises, construction workers, etc. For estimating national income by the income method, data on unearned incomes and on persons employed in the service sector are not available. Moreover, data on consumption and investment expenditures of the rural and urban population are not available for the estimation of national income by the expenditure method. Moreover, there is no machinery for the collection of data in such countries.