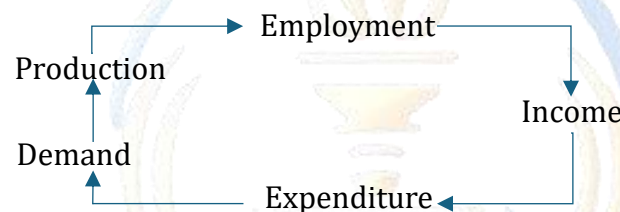


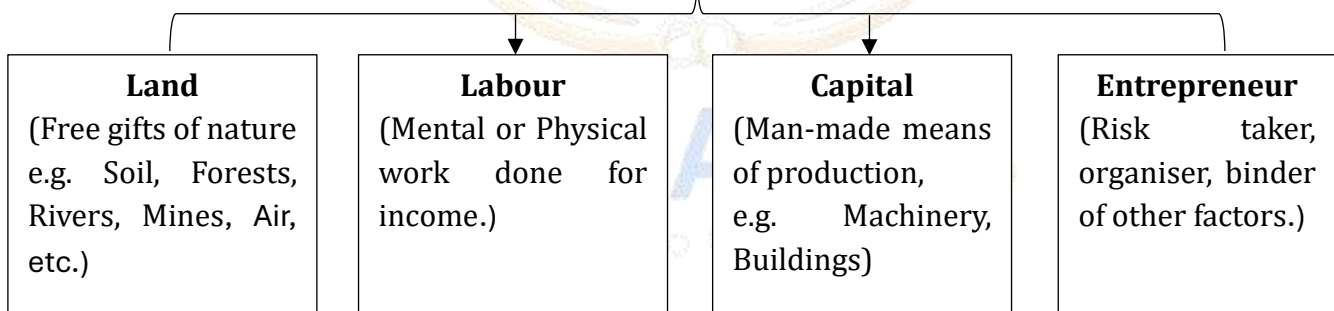


National Income and Related Agreements

National income is a measure of money value of production activity of a country. It is in the production process of goods and services that income is generated or we can say production generates income. Remember, production is the result of combined efforts of four primary inputs, also called factors of production land, labour, capital and enterprise. Whatever is produced jointly by factors of production (i.e., net value added' at factor cost), the same gets distributed among them as factor income in the form of rent, wages, interest and profit. Since factors of production are paid their remuneration out of what they have produced. It is said that income is generated in the production process. This is how income is first generated in the production process and then distributed among factor owners for rendering productive services. Income gives rise to expenditure for purchase of goods and services to satisfy wants. Expenditure, in turn, leads to further production. In this way, there are three phases in circular flow of national income-production phase, income phase and expenditure phase. Accordingly, national income can be defined in three different ways as a flow of goods and services produced, as a flow of income (distributed) and as a flow of expenditures described here:



Factor of Production



❖ **National Income at Current Prices and Constant Prices**

(Nominal NI and Real NI)

National income can be measured in terms of money in two ways-at current prices and at constant prices. When we say that national income is a single measure of economic growth of a country, we mean national income at constant prices and not national income at current prices.

(a) National income at current prices (or nominal national income): It is the money value of all the final goods and services produced in a year measured at current prices, i.e.. prices prevailing in that particular year. Current prices refer to the prices prevailing in the year in which goods and



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services are produced. For example, when goods and services produced during the year 2012-13 are valued at prices of the same year. I.e., 2012-13, it will be called national income at current prices for the year 2012-13. Clearly, in determining national income at current prices, not only physical output produced during the year is important, but also the prices prevailing in that year are equally important.

National income at current prices is called nominal national income.

(b) National income at constant prices (Real National Income): It is the money value of all the final goods and services produced in a year measured at fixed prices, i.e., prices of the base year, we get national income at constant prices. Constant prices refer to the prices prevailing in the base year. A base year is a carefully chosen year which is a normal year free from price fluctuations. (In India at present 2004-05 is treated as base year.) For instance, if goods and services produced during the year 2008-09 are valued at the prices of the base year (i.e., 2004-05), it will be called national income at constant prices for the year 2012-13. Evidently, it is change in volume of physical output produced during the year which affects national income at constant prices because prices remain fixed (constant). National income at constant prices is called Real National Income

(c) Significance of difference between current prices and constant prices:

(i) National income at current prices is affected by two factors, namely, (a) change in prices and (b) change in physical output (amount of goods and services produced). If the current prices rise rapidly, national income at current prices will also inflate even if there is no increase in the level of physical output. Consequently, national income at current prices is deceptive and fails to reflect the growth in real national output. For example, in 1979-80, India's national income at current prices increased by 9.1% but at constant prices it decreased by 5.2%.

(ii) National income at constant prices is affected by only one factor, namely, change in physical output. It can rise only when there is an increase in the level of physical output because here prices are kept constant or fixed. Since a country is interested in its physical output, it is considered proper and desirable to estimate national income at constant prices because it reflects truly the real change in physical output of a country. When there is continuous rise in national income at constant prices for a number of years, it means there is economic growth. However, the same increase in national income at current prices is not an indicator of economic growth.

Advantages of Real National Income/GNP

(iii) National income measured at constant prices truly reflects the real change in physical output of a country whereas national income at current prices does not. It is useful in finding out the real development capacity of the economy.

(iv) Real national income (or for that matter GNP) enables us to make a year to year comparison of changes in the volume of output of goods and services.

(v) Real national income is also helpful in making international comparisons of economic performance of different countries.

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Real and Nominal GNP - GNP calculated at constant prices is called Real GNP whereas calculated at current prices, it is called Nominal GNP.).

❖ **Final Goods and Intermediate Goods :**

Simply put, goods purchased and used up in production process or resold during the same year are intermediate goods whereas goods purchased for consumption or for investment are called final goods.

(i) Final goods: All goods which are meant either **(a)** for consumption by consumers or **(b)** for investment by firms are called final goods. They are meant for final use and the final use of a product is only for consumption or investment. Thus, they do not undergo any further transformation (change) in production. In other words, final goods are acquired for own use, i.e., by consumers for satisfaction of their wants and by producers for capital formation.

(ii) Intermediate goods: All goods which are used **(a)** as raw material for further production of other goods or **(b)** for resale in the same year are known as intermediate goods. Such goods are purchased by one firm from the other for use as raw material or for resale. Examples are ;

(i) Raw material purchased for use in a factory,

(ii) Machine purchased for resale. Alternatively defined, "Goods which are used up during the process of production of other goods are called intermediate goods." The expenditure on them is called intermediate cost or intermediate expenditure.

It needs to be noted that no good is always final or intermediate because it is the use made of the good which makes it final or intermediate. Let us take the example of manufacturing biscuits. Biscuits are final goods but flour, milk, sugar, salt, etc. used in making biscuits are intermediate goods. Similarly, cloth purchased by the household for the daily use is a final good but acquired by dress makers for making dresses is an intermediate good. Likewise, bread when purchased by a household is a final good but when used by the bakery for making patties is an intermediate good.

The basis of above distinction is not the commodity itself but the use made of it. For example, coal used in a factory is an intermediate good but used at home for cooking is a final good. Similarly, milk used by a Halwai is an intermediate good but used by a household is a final good.

The significance of distinction between final goods and intermediate goods lies in the fact that national income includes value of only final goods (and not of intermediate goods). Its reason is that value of intermediate goods is already included in the value of final good when these are converted into final good. Likewise, bread when purchased by a household is a final good but when used by the bakery for making patties is an intermediate good.

❖ **Depreciation:** It means loss of value of fixed asset (like building, machinery) due to its normal wear and tear in the process of production. We know that fixed capital such as machines, tools, buildings, rail engines, etc. wear out over time when repeatedly used leading to fall in value. This depreciation or fall in value due to normal wear and tear is called consumption of fixed capital. Therefore, every enterprise makes annual provision of funds called depreciation provision to the tune of estimated value of depreciation. The fund thus accumulated over the lifetime of asset is used to replace it when

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it wears out completely. That is why depreciation is also sometimes called current replacement cost. In short, gross investment is inclusive of depreciation (or consumption of fixed capital).

- ❖ **Net investment:** It is a measure of net addition to economy's capital stock after taking into account depreciation of existing stock. By deducting depreciation from gross investment, we get net investment. Symbolically:

$$\text{Net investment} = \text{Gross investment} - \text{Depreciation}$$

Note that new addition to the capital stock in the economy is measured by net investment (and not by gross investment).

- ❖ **Per Capita Income :**

Per capita income is the average per capita national income. It is income per head of population. It is measured by dividing national income by mid-year population of a country. Symbolically:

$$\text{Per Capita Income} = \frac{\text{National Income}}{\text{Mid-year Population}}$$

Like national income, per capita income is also calculated both at current prices as well as at constant prices. But it is per capita real income (i.e., per capita income at constant prices and not at current prices) which is a better index or measure of economic growth. Increase in per capita real income is considered to be a better measure of economic growth because it gives some idea about the rising standard of living. Prosperity of a country depends not only on the size of its national income, but also on the number of people (population) who would share it. The standard of living per person in a country with large national income Having smaller population will be higher than the one of a country with equally large national income but having large population.

- ❖ **Factor Cost us Market Price (MP = FC+ NIT) :**

Money value of final goods and services can be estimated in two wayer indiretor Cost (FC) and at Market Price (MP). Briefly, the difference between FC and MP is 'net indirect tax' (NIT). And net indirect tax is the difference between indirect tax and subsidy.

(i) Factor cost refers to all factor payments made by the producing unit (firm) to the factors of production who join hands in the production of goods and services Whatever income is generated, is distributed among factors in the form of rent, wages, interest and profit. It is called factor cost because it is cost incurred by the producer who pays to the factors.

(ii) Market price is the price at which a commodity is sold and purchased in the market. It is the price what the buyers pay actually, not what the producers actually get. The point to be noted is that when a product goes to the market for sale, government levies indirect taxes (like sales tax, excise duty, etc.) which is added to the factor cost of the commodity Consequently, market price becomes



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higher than factor cost. Similarly, sometimes government gives subsidy on sale of certain goods (like sugar, rice, LPG cylinder) which is subtracted from factor cost. As a result, MP becomes lower than Factor Cost (FC). The difference between indirect tax and subsidy is known as net indirect tax as explained below:

(a) Indirect taxes: Taxes which are levied by the government on production and sale of commodities are called indirect taxes, e.g., excise duty, sales tax, customs duty, octroi, etc. These are called indirect taxes because buyer of a taxed commodity pays the tax indirectly which in fact is included in the price. Leaving aside the aims of the government in levying indirect taxes, we study here the effect of an indirect tax on the price of a commodity on which tax is levied.

What is the effect of indirect tax on the price of a commodity on which it is levied? The effect of indirect tax is that it increases the price of a commodity. Let us take the example of electrical appliances on which government has levied Central Sales Tax @10% in Delhi. A ceiling fan, which was being sold at 1.000 before levying of sale tax, will now be sold at 1.100 (= 1,000+ S.Tax 100). Similarly, at present, the price of Maruti (Standard) car in Delhi is 1,84,000 without Sales Tax but with Sales Tax @12% the price has gone up to 2,06,080. In short, an indirect tax on a commodity increases its price. The market price of a commodity which does not include indirect tax (or subsidy) is called at factor cost. The price is called at Factor Cost (FC) because it is the cost incurred by the enterprise which it pays to the factors of production for their contribution in the production of a commodity. Thus, in the above example, the market price of a ceiling fan is 1,100 whereas the price at FC is 1.000.

(b) Subsidies: These are cash grants given by the government to the enterprises to encourage production of certain commodities or to promote exports or to sell goods at prices lower than the free market prices. Subsidies are opposite of indirect taxes.

What is the effect of a subsidy on the price of a commodity on which it is granted? The effect of subsidy is fall in the price of a commodity. For example, Delhi Milk Scheme sells 1 litre poly bag of toned milk for 38.00 whereas the same costs it 39.00. The difference or loss of ₹1.00 is made good by the government by granting subsidy of 1.00 per litre on toned milk. Thus, the market price of a subsidised commodity becomes lower than its factor cost when subsidy is granted.

Significance of Net Indirect Taxes (To differentiate between MP and FC): Net Indirect Tax Is the difference between the indirect tax and subsidy. To find out Market Prices (MP), indirect taxes are added and subsidies are subtracted from Factor Cost (FC) as explained above.

Symbolically:

$$\begin{aligned} \text{Market Price} &= \text{Factor Cost} + \text{Indirect taxes} - \text{Subsidies} \\ &= \text{Factor Cost} + \text{Net indirect taxes} \end{aligned}$$

In short, MP includes net indirect tax whereas FC does not. Thus, FC becomes MP when net indirect taxes are added to FC. In the absence of indirect taxes and subsidies, MP and FC are the same.

Why subsidies are added and indirect taxes are deducted from domestic product at MP to arrive at domestic product at FC?



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❖ **Net Factor Income from Abroad (NFIA) :**

We now take up another important concept, namely, net factor income earned from abroad which is used to differentiate between national income and domestic income. Alternatively, NFIA is the difference between factor income received from abroad and factor income paid abroad. Net factor income from abroad is the difference between the factor income earned from abroad by normal residents of a country (say, India) and the factor income earned by non-residents (foreigners) in the domestic territory of that country (i.e., India). CSO defines it as "**Income attributable to factor services rendered by the normal residents of the country to the rest of the world, less factor services rendered to them by the rest of the world.**" Symbolically,

NFIA = Factor income earned from abroad by residents - Factor income of non-residents in domestic territory.

The normal residents of a country earn factor income not only within the domestic territory of a country but outside it also. Income from outside can be earned mainly in two ways, namely,

- (i) income from work and
- (ii) income from property and entrepreneurship as shown below. Mind, it is a two-way affair since foreigners also earn income by working in domestic territory of other country.

❖ **Sectors of an Economy (Industrial Classification) :**

Industrial classification means grouping production units into distinct industrial groups. It is a general practice to classify all production units into three sectors: primary, secondary and tertiary as explained below:

- (i) **Primary sector** (also called Agricultural sector): This sector includes all production units which produce goods by exploiting natural resources. These include resources like water, forests, agricultural land, coal, iron ore and other minerals, etc. Thus, this sector consists of man's primary occupations such as farming, fishing, mining, etc. This sector supplies basic raw material to secondary sector.
- (ii) **Secondary sector** (also called Manufacturing sector): This sector includes all production units which are engaged in producing goods by transforming raw material (received from primary sector) into finished products or one type of commodity into another type of commodity. Examples are cloth mills, sugar mills, steel industry, shoe factory, biscuit factory, construction, power generation, etc.
- (iii) **Tertiary sector** (also called Service sector): This sector consists of producing units which are engaged in producing services. For example, banks, transport companies, insurance companies, educational and medical institutions, hotels, restaurants, government administration, etc. Thus, tertiary sector provides useful services to the other two sectors.



❖ **Aggregates related to National Income :**

National income is the sum of money value of net flow of all the final goods and services produced by normal residents of a country within and outside the country during a year. In the words of Central Statistical Organisation (a government agency which estimates India's national income). "National income is the sum of factor incomes earned by normal residents of a country in the form of wages, rent, interest and profit in an accounting year."

National income and related aggregates are basically measures of value of production activity of a country. There are four variants of national income—two of domestic and two of national—but each can be expressed at market price (MP) as well as at factor cost (FC). The result is eight aggregates as shown below. Be it noted that national income at the level of production of goods and services is called national product and at the level of distribution of income is called national income. Thus, product aggregates and income aggregates are used interchangeably because they are values of the same physical products.

(i) Gross Domestic Product	(GDP)	} at Market Price (MP)
(ii) Net Domestic Product	(NDP)	
(iii) Gross National Product	(GNP)	
(iv) Net National Product	(NNP)	
(v) Gross Domestic Product	(GDP)	} at Factor Cost (FC)
(vi) Net Domestic Product	(NDP)	
(vii) Gross National Product	(GNP)	
(viii) Net National Product	(NNP)	

Out of the above mentioned eight aggregates, it is only Net National Product at Factor Cost (NNPFC) which is called National Income. Similarly, NDP at FC is called Domestic Income. Mind, national income at the level of production is called national product and at the level of distribution of income is called national income. Normally, in practical estimates domestic product is estimated first and then national product is derived from domestic product by adding Net Factor Income from Abroad.

Three Formulas: The following three concepts in the form of formulas are used for deriving the above aggregates and their inter-relationship.

1. Depreciation (Net = Gross - Depreciation): The concept of depreciation (also called consumption of fixed capital) is used to differentiate between gross and net. Difference between gross and net is the value of depreciation. The term 'gross' means that the value of produce includes depreciation whereas 'net' excludes depreciation. Net is obtained after deducting depreciation from gross, e.g..

$$\begin{aligned}\text{Net Product} &= \text{Gross Product} - \text{Depreciation} \\ \text{Net Value added} &= \text{Gross value added} - \text{Depreciation} \\ \text{Net Investment} &= \text{Gross Investment} - \text{Depreciation}\end{aligned}$$



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2. Net Indirect Taxes (Market Price Factor Cost + NIT): This is used to find out the difference between market price and factor cost. Market Price (MP) is the price paid by the buyer of a commodity in the market whereas Factor Cost (FC) is the cost paid by the producer to the factors of production for their services rendered in the production of the commodity. Market price includes factor cost, indirect taxes and subsidies. To find out MP indirect taxes are added and subsidies are subtracted from factor cost. Symbolically:

$$\begin{aligned} \text{Market Price} &= \text{Factor cost} + \text{Indirect taxes} - \text{Subsidies} \\ \text{Factor cost} + \text{Net indirect taxes} &= \text{Market Price} \\ \text{Factor Cost} &= \text{Market price} - \text{Net indirect taxes} \\ \text{Gross Domestic Product at FC} &= \text{GDP at MP} - \text{Net indirect taxes} \\ \text{Net value added at FC} &= \text{Net value added at MP} - \text{Net indirect taxes} \\ \text{Gross National Product at MP} &= \text{GNP at FC} + \text{Net Indirect taxes} \end{aligned}$$

3. Net Factor Income from Abroad (National income Domestic income + NFIA): It is used to differentiate between national income and domestic income. Domestic income refers to income originating in production units located within the domestic territory of a country during a year. In a way, it is a territorial concept. National income is the sum total of factor incomes earned by normal residents of a country within and outside the country during a year. Thus, it is an economic concept. By adding net factor income from abroad to domestic Income, we get national income. e.g.

$$\begin{aligned} \text{National Income} &= \text{Domestic Income} + \text{Net factor income from abroad} \\ \text{Domestic Income} &= \text{National Income} - \text{NFIA} \\ \text{Gross National Product} &= \text{Gross Domestic Product} + \text{NFIA} \end{aligned}$$

Again remember that factor income to abroad implies factor income flowing out of the country and factor income from abroad means factor income flowing into the country.

❖ **Meaning of Different Aggregates and their Inter-relationship :**

Now, with the help of the above-mentioned three formulas, we are in a position to explain the different aggregates and their inter-relationship. First of all, we start with the aggregate of Gross Domestic Product at market price (GDP) since the basis of all aggregates is the value of production within the domestic territory of a country. GDP is the primary measure which is used by economists to assess the rate of growth of an economy during a year. If we get the value of GDP at MP we can derive other aggregates with the help of the above cited three formulas. Basically, national income and its related aggregates are a measure of production activity.

(1) Gross Domestic Product: "GDP is the market value of all the final goods and services produced by all producing units located in the domestic territory of a country during a period of one year." Being gross, it includes depreciation: being at MP it includes net indirect taxes and being domestic it includes value of output produced within domestic territory by all production units. Again remember, GDP always means GDP at MP unless stated otherwise. The term product refers to value of output value of intermediate consumption.

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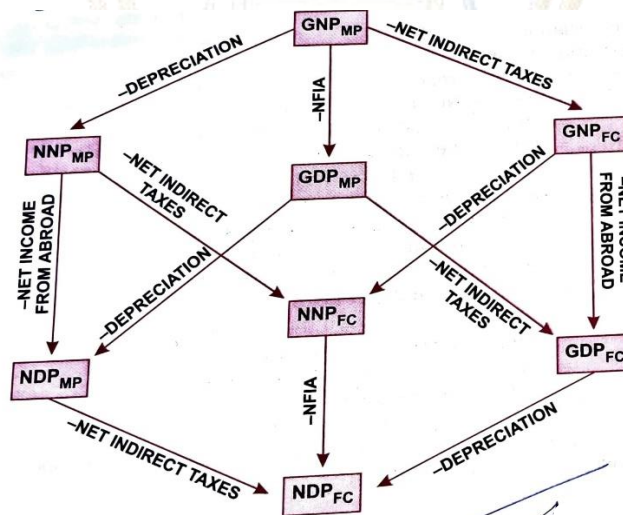
GDP is generally recognised as the primary measure because it is an indicator of growth of an economy. Once we estimate value of GDP we can easily derive other aggregates as shown below with the help of the above-mentioned three formulas.

- (ii) $NDP_{MP} = GDP_{MP} - \text{Depreciation}$
- (iii) $GNP_{MP} = GDP_{MP} + \text{Net factor income from abroad}$
- (iv) $NNP_{MP} = GNP_{MP} - \text{Depreciation}$
- (v) $GDP_{FC} = GDP_{MP} - \text{Net indirect taxes}$
- (vi) $NDP_{FC} = GDP_{FC} - \text{Depreciation}$
- (vii) $GNP_{FC} = GDP_{FC} + \text{Net factor income from abroad}$
- (viii) $NNP_{FC} = GNP_{FC} - \text{Depreciation}$

(In addition to the above-mentioned important aggregates, there are many other aggregates related to national income such as private income, personal income, personal disposable income, national disposable income, etc.

❖ Inter-relationship among Different Aggregates :

The inter-relationship among different aggregates concerning national income has been depicted in Fig. below :



❖ Methods of Measurement of National Income

(a) Three Phases in Circular Flow of National Income: There are three different phases in circular flow of national income, viz. production, income and expenditure. They represent three related aspects, namely, production (i.e.. generation of income), distribution (of income) and disposition (of income, i.e., expenditure). How? Production of goods and services is the result of combined efforts of factors of production (land, labour, capital and enterprise). The net output emerging from production process gets distributed as remuneration in the form of money income (rent, wages, interest and profit) among factors of production for rendering productive service in the production of output.

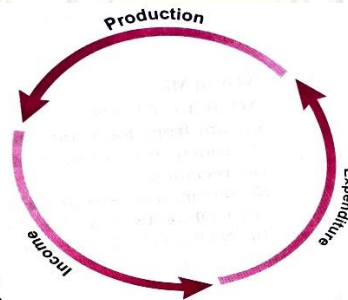


Thus, production generates Income or production flow gives rise to income flow. With this income factors of production purchase goods and services for final consumption and investment.

In this way, income creates expenditure or income flow gives rise to expenditure flow. In this way, income is generated, distributed and spent. Mind, circular flow of production, income and expenditure does not end here because expenditure, in turn, gives rise to further production. In short, production generates income, income creates expenditure and expenditure, in turn, calls forth production. Thus, incomes which originate in production units ultimately come back to them by way of expenditure on goods and services by factor owners. This makes the circular flow of production, income and Circular flow of production, income and expenditure complete as shown in Fig. below;

We can look at national income as a flow of goods and services, as a flow of income or as a flow of expenditure. Data required in different phases: For measurement of national income, we can approach from three different angles, viz. as a flow of production, as a flow of income and as a flow of expenditure. To measure it at each phase, different data and methods are required.

- (I) To measure at the phase of production, data regarding net value added at FC by all producing units are required.
- (II) At the phase of income, data regarding factor income (rent, wages, interest and profit) generated in production of goods and services are required.
- (III) At expenditure (disposition) phase, data of final expenditure (on consumption and investment) by all the three spending units-producing enterprises, general government and consumer households in the economy are needed.



National income data collected through

- (i) Production Method reflects relative significance of different industrial sectors of economy.
- (ii) Income method indicates distribution of income among factors of production which help to produce,
- (III) Expenditure method reflects the standard of living of the people and the pattern of investment.

(b) Methods of Measurement: In fact, methods of measurement of national income originate from three different phases in circular flow of national income. Corresponding to the above-mentioned three phases, there are three methods of measuring national income as shown below:

- (i) Value Added Method (Traditionally called Production Method)
- (ii) Income Method
- (iii) Expenditure Method



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Methods of Measuring National Income

Value added method

(Net value added by all producing units is measured)

Income method

(Sum of all factor incomes is measured)

Expenditure method

(Sum of all items of final expenditure is measured)

Since the above three methods are only different viewpoints of the same flow of goods and services, totals from each method should, therefore, be equal to each other. We now take up each method one by one and try to understand the procedure involved in each method. In every method we first estimate Domestic Income and then derive National Income by adding NFIA to domestic income.

Nett value added at FC = Gross output-intermediate consumption-depreciation-net indirect taxes

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