

## CHAPTER

## TWELVE

## NATIONAL INCOME

## 1. NATIONAL INCOME AND ITS CONCEPTS

Simon Kuznets (Nobel Prize in Economics in 1971) introduced the national accounting system. National income is a term which is used interchangeably with national output (product) and national expenditure. We can understand this with an example. We go to a shop to buy a product for a price of Rs. 50 now this Rs. 50 will have three different names, i.e.

- Income of the shopkeeper = Rs. 50
- Expenditure of the consumer = Rs. 50
- Money value of product = Rs. 50

On this basis, different economists have defined national income in different ways:

**Dr. Alfred Marshall**

Dr. Marshall has defined national income according to Product Method.

**"National income is the total sum of money value (market value) of all final goods and services, produced in an economy in specific time period of one year"**

Goods mean all kinds of material things, which are being produced in any sector, i.e. agriculture, industry, trade, minerals, forests, transport and communication etc. Services mean economic activities of doctors, engineers, teachers, judges etc. So, value of all goods and services is national income.

**P. A. Samuelson**

Samuelson has also defined national income according to Product Method.

**"National income is the money value of annual flow of goods and services in an economy"**

**Ackley**

Ackley has defined national income according to Income method

**"Individuals income is the amount of his earnings from the productive services currently provided by him or by his property. So, national income is the sum of all individuals' incomes"**

Ackley has divided Individuals income into two groups:

- Reward for the productive services of individuals and
- Reward for the productive services provided by individuals' property

Generally in a society an individual performs his productive services as a **labourer** or as an **entrepreneur** and gets his reward in the form of **wage** and **profit** respectively.

Those who are unable to get their income by their productive services, earn their income through services by their property (**land** and **capital**) in the form of **rent** and **interest**. Thus, an individual can have his income in any one of the four forms, i.e. wage, profit, rent, interest.

Brooman

Brooman has defined national income according to Expenditure Method.

**"National expenditure becomes the total expenditure of consumer spending, public authorities spending and capital formation at home and overseas, i.e. the sum of final expenditure by the residents of the country"**

Brooman's definition of national income shows the aggregate expenditure by the people on consumer goods and capital goods and also similar expenditure by the government at home and abroad in one year become part of the total expenditure and hence national income.

#### ✓ Irving Fisher

Irving Fisher has defined national income according to Expenditure method

**"The quantity of goods and services which is consumed in one year is called national income"**

We have noted that all the definitions are explaining the same thing i.e. national income. The reason for this is that national income is represented by the money value of all final goods and services, produced in an economy. Since these goods and services are produced by the factors of production through out the year so money value of all these goods and services is distributed among the four factors of production as rewards. And the four factors of production spend their reward to purchase these goods and services. Therefore, national income is a term which can be used interchangeably with national output (product) and national expenditure.

## CONCEPTS OF NATIONAL INCOME

Following are the basic concepts of National Income:

### 1. GROSS DOMESTIC PRODUCT (GDP)

GDP measures the total output in the domestic economy. GDP consists of all output produced within the boundaries of country. GDP counts income according to where it is earned rather than who owns the factors of production.

**GDP measures the market value of total output produced in an economy but includes only that output produced by economic resources located within that country.**

**Gross Domestic Product (GDP) is a measure of income or output produced in an economy in a specified period. It is defined as the market value of all final goods and services produced domestically during a specific period.**

Note that only final goods are added in GDP; intermediate and primary goods are not added to avoid double counting because the values of these goods are included in the value of final goods. For example, the market value of bread already includes market value of wheat that has gone into making bread.

Only goods produced in a specific period are included. For example, GDP of 2006 will not include sales of old houses built in say 2000. Re-sale of previously produced goods are not included.

A good to be included in the U.S. GDP must have been produced within the geographical boundary of the U.S., irrespective of whether the producing firm is owned by a U.S. citizen or not. Thus, cars produced within the U.S. by Toyota are included in the U.S. GDP, but not in the Japanese GDP. Similarly, cars produced in Mexico by a plant owned by G.M. are not accounted in the U.S. GDP, but they are accounted in the Mexican GDP.

**In equation form:**

$$\checkmark \text{GDP} = C + I_g + G + (X - M)$$

$$\text{GDP} = \text{GNP} - \text{NFI} \quad \text{Net foreign Investment}$$

Where:

- $\checkmark$  C = Consumption expenditure
- $\checkmark$   $I_g$  = Gross investment (Net investment + Depreciation Allowances)
- G = Government Expenditure
- X = Export
- M = Import
- X - M = Export surplus or Net Exports or cumulative exports (NX)

### MEASUREMENT OF GDP

The **expenditures approach** adds up expenditures of all the four sectors of the economy: consumption expenditures, investment expenditures, government purchases, and net exports - these are also called the four components of GDP.  $\text{GDP} = C + I + G + NX$ . Note that this sum is the total amount of sales in the Goods and Services Market. This sum is also the total revenue of the firms producing goods and services.

### RESOURCE COST - INCOME APPROACH

The circular flow diagram shows that the total revenues of the firms are distributed as resource costs or incomes of resource owners, including depreciation and indirect business taxes as costs.

The **resource cost-income approach** adds up incomes to resource owners and costs to producers to calculate GDP. Note that incomes to resource owners include net incomes from abroad, which should not be accounted in GDP.

$\text{GDP} = \text{wages} + \text{rents} + \text{profits} + \text{interest} + \text{depreciation} + \text{indirect taxes} - \text{net factor income earned from abroad.}$

## 2. GROSS NATIONAL PRODUCT (GNP)

GNP includes all output produced by the country's economic resources regardless of their location i.e. whether the resources are located inside or outside the country.

Gross National Product (GNP) is the market value of all final goods and services produced by the "nationals" of a country during a specific period.

GNP is similar to GDP except that the GDP accounts only goods produced with the territory of a country, irrespective of the nationality of the producer, whereas GNP accounts for goods produced by the nationals, irrespective of the territory where they are produced. For example, cars produced by GM in Mexico are included in GNP but excluded in GDP. Lectures on economics produced by a foreigner in Pakistan are included in the Pakistan GDP but not in the Pakistan GNP because he is not a Pakistani citizen.

In equation from:

$$\text{GNP} = C + I_g + G + (X - M) + \text{Net Factor Income from Abroad}$$

Where:

C = Consumption expenditure

I<sub>g</sub> = Gross investment

G = Government Expenditure

X = Export

M = Import

X - M = Export surplus or Net exports or cumulative exports (NX)

Net factor Income from Abroad = Income received by residents from abroad for factor services  
- Payments made to the non-residents who contribute to the domestic economy.

So, NFI is the difference between the income foreign investors earn from their assets in Pakistan and what Pakistani investors earn from their (foreign) assets abroad.

$$\text{GNP} = \text{GDP} + \text{NFI}$$

- If NFI = 0, GNP = GDP
- If NFI = +ive, GNP > GDP
- If NFI = -ive, GNP < GDP

GDP and GNP are same if when all resources owned by the residents of that country are producing output in that country. GNP is greater than GDP when the residents of that country employ their resources to produce output outside that country.

GNP reflects **citizenship** whereas GDP reflects **residency**. So, the production of a Mexican company located in the US will be part of the GDP of the United States, and it will also be part of the GNP of Mexico

### 3. NET DOMESTIC PRODUCT (NDP)

GDP is gross output and it ignores depreciation of capital goods in the production process. If depreciation is deducted from GDP, we get the Net Domestic Product (NDP).

In equation from:

$$\begin{aligned} \text{NDP} &= \text{C} + \text{I}_g + \text{G} + (\text{X} - \text{M}) - \text{Depreciation Allowance} \\ \text{NDP} &= \text{C} + \text{I}_n + \text{G} + (\text{X} - \text{M}) \end{aligned}$$

Where:

C = Consumption expenditure

I<sub>n</sub> = Net investment (Gross investment - Depreciation Allowances)

G = Government Expenditure

### 4. NET NATIONAL PRODUCT (NNP)

GNP is gross output and it ignores depreciation of capital goods in the production process. If depreciation is deducted from GNP, we get the Net National Product (NNP).

In equation from:

$$\begin{aligned} \text{NNP} &= \text{GNP} - \text{Depreciation Allowances} \\ \text{NNP} &= \text{C} + \text{I}_g + \text{G} + (\text{X} - \text{M}) + \text{NFI} - \text{Depreciation Allowances} \\ \text{NNP} &= \text{C} + \text{I}_n + \text{G} + (\text{X} - \text{M}) + \text{NFI} \end{aligned}$$

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C = Consumption expenditure

In = Net investment (Gross investment - Depreciation Allowances)

G = Government Expenditure

X = Export

M = Import

X - M = Export surplus or Net exports or cumulative exports (NX)

### CAPITAL CONSUMPTION ALLOWANCES

Capital Consumption Allowances (CCAs) are the total costs of the wear and tear or depreciation of the capital stock i.e. machinery, tools, plants, roads, power grids, buildings, bus fleet, trains, railways etc within an economy usually within a given year. Another name for the CCAs is the depreciation of capital stock or its depreciation costs.

### 5. NATIONAL INCOME (NI)

**National income is the income received by households in the form of wages, rents, profits, and interest, irrespective of whether they are earned domestically or abroad.**

It is the market value of all final goods and services produced in an economy in one year after deducting depreciation allowances and indirect taxes and adding subsidy in GNP. Note that the national income includes net income earned from abroad

**In equation from:**

$$NI = C + In + G + (X - M) + NFI - \text{Indirect taxes} + \text{Subsidy}$$

$$NI = NNP - \text{Indirect taxes} + \text{Subsidy}$$

$$NI = R + W + I + \pi$$

#### Subsidies

Subsidies are government expenses that are generally extended to business firms, farmers among other groups to defray their production costs or to reduce prices for consumers. Subsidies are also called **negative taxes** because they impose expenses on government budgets instead of contributing revenues.

#### Indirect Taxes

Indirect Taxes are government revenues that result from taxes that are not received directly from the earned incomes of households, businesses etc. Thus sales taxes, highway tolls, excise taxes etc are forms of indirect taxes as opposed to direct taxes that are take out from earned incomes.

If subsidy is not added, the value of national income would be undervalued. So, subsidy is added to calculate the exact value of national income.

Similarly, if taxes are not deducted, the value of national income would be overvalued. So, taxes are deducted to calculate the exact value of national income.

### 6. PERSONAL INCOME (PI)

**Personal income is national income net of deductions for corporate and social security taxes. But personal income includes any income transfers from the people and government such as gifts, food stamps etc.**

In equation from:

$$PI = NI + \text{Transfer payments} - \text{undistributed corporate profit (un-dividends)} - \text{corporate income taxes} - \text{social security contributions (Reserve fund)}$$

**Transfer payments**

Transfer payments are the income received by an individual with out performing any economic activity such as, zakat, gifts, pension, scholarships etc.

**Dividends**

Dividends are the amount of profit, which is distributed among share holders in joint stock companies.

**Un-dividends**

Un-dividends are the amount of profit, which is not distributed among share holders in joint stock companies.

**Corporate Income tax**

It is a tax on income or profit of corporation.

**7. DISPOSABLE PERSONAL INCOME (DPI)**

DPI is the amount of income individuals receive and have available for spending. All income paid to the factors of production is not received by individuals and available for consumer spending. It is the amount which is left with the individuals after paying the direct taxes to the govt. Thus the remaining amount (DPI) can be spent or save.

In equation from:

$$DPI = PI - \text{Direct taxes (Personal taxes)}$$

$$DPI = \text{Consumption} + \text{Saving}$$

**8. ACTUAL GDP**

Actual GDP is the monetary value of all final goods and services which are really being produced in an economy by existing employed resources.

**9. POTENTIAL GDP**

Potential GDP is the monetary value of all final goods and services that can be produced in an economy at full employment of labor force.

**10. GDP GAP**

The difference between potential and actual GDP is called the GDP Gap.

$$GDP \text{ Gap} = \text{Potential GDP} - \text{Actual GDP}$$

GDP Gap can be positive, negative or zero.

- If Potential GDP = Actual GDP then GDP Gap = Zero
- If Potential GDP > Actual GDP then GDP Gap = Positive
- If Potential GDP < Actual GDP then GDP Gap = Negative

**11. REAL AND NOMINAL GDP**

There are two types of GDP: nominal and real. Nominal GDP is measured in current dollars, i.e., goods are valued at current prices. Consider a single good in simplicity. Nominal GDP = Price x Quantity of the good produced. If nominal GDP

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increases from \$100 in 1997 to \$110 in 1998, this increase may either be coming from price level increase or quantity increase or both. If quantity has not increased and only the price level has increased, output has not increased in real terms; the increase is only nominal, in dollar terms. **Real GDP is a measure of the real level of output, adjusted for effects of inflation. Real GDP is the GDP measured in constant dollars, in prices of the base year.**

• **NOMINAL GDP**

Nominal GDP measures the value of goods and services during a given period at the prices of that period e.g., in 1990, Nominal GDP measures the value of goods and services produced in 1990 at the market prices that prevail in 1990.

Nominal GDP changes from year to year for two reasons:

- Physical output of goods changes
- Market price changes

Nominal GDP is also called **GDP at current prices.**

• **REAL GDP**

Real GDP is a measure that attempts to isolate changes in physical output in the economy between different time periods by valuing all goods produced in the two periods at the same prices. **Real GDP is also called GDP at constant prices.**

We can elaborate the concept of Nominal GDP and real GDP with the help of following schedule. Consider a simple closed economy that produces only for categories of products: A, B, C, D.

Products	Nominal GDP 1990			Nominal GDP 1995			Real GDP 1995 (at 1990 prices)
	P <sub>1990</sub>	Q <sub>1990</sub>	P <sub>1990</sub> x Q <sub>1990</sub>	P <sub>1995</sub>	Q <sub>1995</sub>	P <sub>1995</sub> x Q <sub>1995</sub>	P <sub>1990</sub> x Q <sub>1995</sub>
A	\$10	5	\$ 50	\$12	6	\$72	\$ 60
B	2	50	100	3	60	180	120
C	5	4	20	6	5	30	25
D	4	20	80	5	25	125	100
			<b>\$250</b>			<b>\$407</b>	<b>\$305</b>

The value of the 1990 GDP in current (1990) prices is \$250: Nominal GDP

The value of the 1995 GDP in current (1995) prices is \$407: Nominal GDP

The value of the 1995 GDP in 1990 prices is \$305: adjusted or Real GDP

The difference between these two values reflects the price inflation between the two years.

**GDP DEFLATOR**

GDP deflator is a price index that reveals the cost of purchasing the items included in the GDP during the specified period, relative to the cost of purchasing those same items during a base year.

We can measure the inflation rate between the two years by dividing the nominal GDP by the real GDP and multiplying it by 100.

$$\frac{\text{Nominal GDP}}{\text{Real GDP}} \times 100 = \frac{407}{305} \times 100$$

$$\text{GDP price index (or GDP deflator)} = \frac{\text{Nominal GDP}}{\text{Real GDP}} \times 100 = \frac{330}{305} \times 100 = 133.44$$

From this equation we can write:

$$\text{Real GDP} = \frac{\text{Nominal GDP}}{\text{GDP price index}} \times 100$$

The GDP price index (or GDP deflator) allows us to adjust the nominal GDP for inflation and determine the (real) GDP in terms of the (constant) prices of a certain reference (base) year.

### 13. PER-CAPITA INCOME

Per-capita income means average income per person. It is calculated by following formula:

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

## 2. MEASUREMENT OF NATIONAL INCOME

### NATIONAL INCOME

Various economists defined National Income as follows:

- Alfred Marshall has defined national income as "National income is the total sum of money value (market value) of all final goods and services, produced in the economy in specific time period of one year"
- Ackley defined national income as "Individual's income is the amount of earnings from the productive services currently provided by him or by his property. So, national income is the sum of all individuals' incomes"
- Irving Fisher has defined national income "The quantity of goods and services which is consumed in one year is called national income"

### MEASUREMENT OF NATIONAL INCOME

There are three aggregate measures of the economy's output. These measures are as follows:

1. Output Approach
2. Income Approach
3. Expenditure Approach

#### 1) OUTPUT APPROACH

This approach is also called Product method or National income at current or market prices. According to this method, economy is divided into different sectors, as agriculture, mining, manufacturing, commerce, transport and other services. The money value of all goods and services produced, in a country in one year is added up to find national income. Therefore the money value of primary and intermediate goods and services is not to be added to find national income.

According to this method, we add up the money value of all final goods and services to



GNP from which depreciation allowances are subtracted and we get NNP. We add Subsidy to and subtract Indirect Taxes from NNP to arrive at national income.

$$N.I = GNP - \text{Depreciation Allowances} - \text{Indirect Taxes} + \text{Subsidies}$$

Now we make a hypothetical table to explain the measurement of national income through product approach.

Goods and Services	Total product (Q)	Current Prices (P)	Total Value (In thousands Rs)
Wheat	100 metric ton	Rs. 1 thousand per metric ton	100
Rice	500 metric ton	Rs. 1 thousand per metric ton	500
Cotton	100 bales	Rs. 2 thousand per bale	200
Radio	2000 units	Rs. 1 hundred per unit	200
Computer	1000 units	Rs. 1 hundred per unit	100
Coal	40 metric ton	Rs. 1 thousand per metric ton	40
Cement	100 metric ton	Rs. 1 thousand per metric ton	100
Doctors	10 persons	Rs. 50 thousand annual earnings	500
Teachers	25 persons	Rs. 30 thousand annual earnings	750
	GNP minus D.A = NNP		2490 -90 2400
	NNP + Subsidy - Indirect Taxes = N.I		2400 + 100 - 500 = 2000

#### ADVANTAGE

Product method is useful to know the relative importance of various sectors of economy by showing their respective contribution to the national income.

#### PRECAUTIONS

Measurement of national income through this method requires some safety measures which are as follows:

##### 1. AVOID DOUBLE COUNTING

While calculating the national income of a country, we must avoid the mistake of double counting i.e., we must not add the value of any good or service more than once. There are two ways to avoid double counting.

The **first method** is that we should count the value of only the final goods and services leaving aside the money value of primary and intermediate goods that are used to produce the final goods, i.e. if we are to calculate the money value of a shirt, we must leave aside the money value of cotton as it has already been counted in the value of shirt.

The **Second method** is the **VALUE ADDED method** that is the calculation of the value of goods and services at each and every stage or process. Value added of any producer is the

value of its output minus the value of inputs it purchases from other producers. We explain this with the help of a following example:

**AN EXAMPLE**

	Sales Value	Value added
A tree is cut from the forest and sold to a mill as timber for \$50.	\$50	\$50
The mill cuts the timber into lumber and sells it to a furniture company for \$80.	80	30
The furniture company makes a chair out the lumber and sells it to a retailer for \$150.	150	70
The retailer (furniture store) sells the chair to a consumer for \$200.	\$200	50
		\$200

Note that the sum of the added values is same as the price of the final product. The last added in the production process the chair in this simple example is \$50 worth of real service provided by the retailer.

**2- AVOID COUNTING FREE SERVICES**

The value of such services should not be counted which are offered without any reward as a hobby e.g., services of housewives, self-gardening or self-shaving etc.

**3- DEPRECIATION ALLOWANCES**

Depreciation allowances should be deducted from the total value of GNP.

**4- INDIRECT TAXES**

Indirect taxes (sales tax, excise duty etc) should be subtracted from the market value of goods and services.

**5- SUBSIDY**

Subsidy should be added in the market value of goods and services.

**2) INCOME APPROACH**

This approach is also called **Income method** or **National income at factor cost**

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method explains the concept of national income as "the sum total of the incomes of all persons of a country during one year" The income method shows the **distributional aspect of national income.**

This method measures the national income after it has been distributed and appears as income earned or received by individuals of the country. According to this method national income is obtained by adding up the incomes of all the individuals in the country. Individuals earn income by contributing their own services and the services of their property. So the national income is calculated by adding up the rent of land, wages and salaries of employees, interest on capital, profits of entrepreneurs, and income of self-employed people.

An economy's **national income** consists of labor compensation (wages, salaries and other benefits), rents, interest incomes, and profits.

**Labor compensation** includes wages and salaries paid by businesses and government to workers as well as all other benefit payments by employers such as payments towards social security, pension funds and health insurance.

**Rent** incomes are *net* rents received by landlords. Rents are paid by households, businesses and government.

**Interest** incomes include interest payments households receive on their bank deposits or bonds.

**Profits** can be classified into **proprietors' income and corporate profits.**

Proprietors' incomes are their reported net profits. Corporate profits are corporations' net earnings after business expenses.

Corporate profits are divided into three parts:

- Corporate income taxes
- Distributed dividends
- Retained (undistributed) profits

The sum of **labor compensation, rents, interest, proprietors' income, and corporate profits** would give us the **national income**; all incomes earned from Pakistan supplied resources at home and abroad.

#### ADVANTAGE

The advantage of this method of measurement is that it indicates the distribution of national income among different income groups. Therefore this method is called **National Income by Distributive Shares.**

#### PRECAUTIONS

Measurement of national income through this method requires following safety measures:

##### 1. TRANSFER PAYMENTS

Transfer Payments such as gifts, Zakat, charity, pocket money, and scholarships should not be included because these are already counted as part of the rewards. Transfer Payments, no doubt, are source of personal incomes for some people but they do not make any addition to national income in true sense. These are payments received without performing any economic activity.

**2- ILLEGAL INCOMES**

Illegal Incomes such as smuggling, theft, bribery, hoardings should not be added.

**3) EXPENDITURE APPROACH**

National income can also be computed by adding the total expenditure done by the people and government during a year. Every rupee spent on a good or service is income to somebody, that is, to every rupee of income there is a rupee of expenditure.

Income can be spent either on consumer goods or capital goods. Therefore we can get national income by summing up all consumption expenditure and investment expenditure made by all individuals and government during a year.

In order to arrive at the national expenditure (National income) we calculate various expenditures which are as follow:

- Personal consumption Expenditure
- Personal investment Expenditure
- Public consumption Expenditure
- Public investment Expenditure
- Export Surplus

**a) PERSONAL CONSUMPTION EXPENDITURE**

Personal consumption expenditure is the total expenditures of the people living in a country on consumer goods and services in one year, e.g. food, clothing and entertainment etc.

**b) PERSONAL INVESTMENT EXPENDITURE**

Personal investment Expenditure is the total of all investment expenditures of the people living in a country in one year, e.g. on the construction of new factories, new shopping centers and new cinema houses etc.

**c) PUBLIC CONSUMPTION EXPENDITURE**

Public consumption expenditure can take place in the following ways:

- (i) Expenditure on the purchase of goods and services from private business firms take place, e.g. typewriter, official cars etc.
- (ii) Expenditure on government employees, e.g. defense, Police, education etc.
- (iii) Governmental transfer payments such as pensions, unemployment allowances, scholarships etc.

**d) PUBLIC INVESTMENT EXPENDITURE**

Public investment expenditure includes construction of new roads, new dams etc.

**e) EXPORT SURPLUS**

Export surplus is the surplus obtained by subtracting the value of imports from the value of exports.

The total of all the annual expenditure on above items is called GDP of a country. Adding the net factor income from abroad, we get GNP and subtracting depreciation allowance, we will arrive at NNP. With NNP, we add subsidies and subtract indirect taxes and get National income.

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Measurement of national income through this method requires safety measure which is as follows:

### AVOID DOUBLE COUNTING

To escape from the mistake of double counting, we should count only the expenditure on final commodities. The amount of spending by the ultimate purchases of output should be added only.

## 3. CIRCULAR FLOW OF NATIONAL INCOME (IN A TWO-SECTOR ECONOMY)

Receiving of income and production of goods are two sides of one activity. There will be income only if goods and services are produced. A person doing nothing cannot earn income although he may receive money as gift, pension, unemployment benefit, etc. In economics, receiving of money is called income only if goods of equal value match it. Income is earned only to be spent. There is a direct link between production of goods or services and spending of incomes. With the help of a simple model of economy, we can explain this phenomenon.

### ASSUMPTIONS

In order to understand the circular flow of national income in a simple model of economy, following assumptions are to be made.

#### 1. TWO SECTORS

It is assumed that the economy consists of two sectors i.e., Household sector and Business sector.

#### 2. FACTORS OF PRODUCTION

It is assumed that household sector is the sole owner of the factors of production.

#### 3. BUSINESS SECTOR

It is assumed that business sector is the only producer of goods and services in the economy. Business firms hire the factors of production owned by the household sector.

#### 4. HOUSEHOLD SECTOR

It is assumed that household sector is the sole buyer of goods and services produced by the business sector. It spends its entire income on the purchase of goods and services.

#### 5. INVENTORIES

It is assumed that business firms sell entire output to households so there are no inventories.

#### 6. SAVINGS AND INVESTMENT

It is assumed that there are no savings and investments in the economy.

#### 7. GOVERNMENT

It is assumed that government does not exist for all such practical purposes i.e., no public expenditures, no taxes, no subsidies, no social insurance contributions etc.

#### CLOSED ECONOMY

It is assumed that the economy is closed one. It has no trade relations with other countries.

**CIRCULAR FLOW OF NATIONAL INCOME**

Firms represent the production side and perform two kinds of activities.

- ❖ Business firms produce all kinds of goods and services demanded by the people. They sell their output in the product market and receive money payments.
- ❖ The money so received by firms is distributed among the factors employed, in the form of wages, rent, interest and profit.

The receipts from the sale of output are always equal to the payments to factors of production.

Household represents consumption side and also performs dual functions.

- Households provide factor services to business firms through factor market and in return they receive income.
- Households become buyers in the product market and spend all of their income on the purchase of goods and services.

This shows that there are two types of flows in the economy i.e., real flow and money flow.

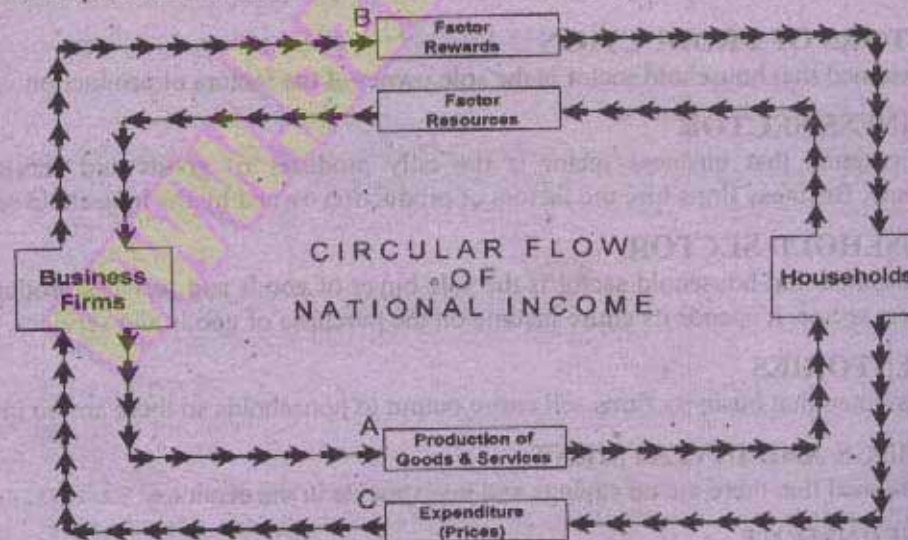
**REAL FLOW**

Services of labor, land, capital, and entrepreneur move from households to business firms while goods and services move from business firms to households.

**MONEY FLOW**

Firms make payments to households for factors' services and households pay the price for goods and services to business firms.

The relationship between these two types of flows is shown in the following diagram.



This diagram shows households on the right hand side and business firms on the left hand side. Two circular lines have been drawn linking these two sectors. The inner link is anti-clockwise and the outer link is clockwise. The upper side of the inner-link shows the flow of factors

resources from households to business firms. With the help of these resources, business firms produce goods and services, which flow to the household as is shown by the lower part of the inner-link.

The upper side of the outer-link shows that business firms pay rewards to the households for the services of factors of production. These rewards are the incomes of the households, which are spent on the purchase of goods and services produced by the firms as is shown by the lower part of the outer-link.

All firms distribute factor-rewards equal to the market value of their produce during a given year. Therefore households can pay for all the goods and services supplied to them through market mechanism.

Three important factors of national income can be seen in the above diagram.

- ❖ At point 'A' the aggregate value of goods and services produced and supplied by the business firms is the national income.
- ❖ At point 'B' the sum total of factor incomes is also the national income.
- ❖ At point 'C' the total of household expenditure must also be equal to the national income since the households have to spend all of their incomes to purchase all the goods and services of the business firms.

This shows that in capitalistic economy, we can compute national income by three methods, which are as follows.

- ❖ The Product Method (Aggregate value of production at market prices)
- ❖ The Income Method (Aggregate value of factor rewards)
- ❖ The Expenditure Method (Aggregate value of the household expenditure)

#### 4. DIFFICULTIES OR PITFALLS IN THE MEASUREMENT OF NATIONAL INCOME

Measurement of national income of a country is not a simple task. There are practical and conceptual difficulties. These difficulties are as follows;

##### 1. NON-AVAILABILITY OF RELIABLE DATA

Exact measurement of national income requires reliable and authentic data about income and expenditure in all economic sectors. In under-developed countries like Pakistan, sufficient and up-to-date data are not available for many economic activities; scientific methods are not used for collecting information. So, only rough estimates of productive sectors like agriculture, forestry and small business are made. This created a difference between the true income of a country and its estimate.

##### 2. LACK OF CO-OPERATION

In under-developed countries like Pakistan individuals and private institutions do not cooperate with data collecting agencies. This non-cooperation may be due to lack of responsibility or they want to avoid possible of tax. Many businessmen prepare double record of their transactions; genuine one for their own use and the fake one for the tax authorities and income enumerators. This lack of public cooperation makes the correct measurement of national income difficult in under-developed countries like Pakistan.

##### 3. LACK OF OCCUPATIONAL SPECIALIZATION

In under-developed countries like Pakistan million of workers are engaged in more than one profession to supplement their incomes. So these workers have no occupational identity. Incomes of earning individuals are counted with reference to their respective occupations for the purpose of measuring national income. But where there is no occupational specialization, incomes from different occupations cannot be included in the national income accounts.

#### 4. PRODUCTION FOR SELF USE

In rural areas almost all the farmers set aside a part of their agricultural produce for their personal consumption and remaining produce is sold in the market. The marketed produce is duly accounted for but the non-marketed produce can neither be valued in monetary terms nor can its value be included in national income. Services of housewife, teaching of own children, growing of vegetables for home use, production of milk for farmer's self etc. are some more examples. These services are ignored because it is difficult to calculate the money value of them. This practice gives an underestimate of national income.

#### 5. NON-MONETIZED SECTOR OF THE ECONOMY

Some times goods are exchanged for goods in remote areas of developing countries and money is involved. It is difficult to find the correct money value of barter trade products. Since national income is calculated in money term, the inclusion of barter traded goods and services creates problem. In some cases, indirect methods are used to estimate the value yet these provide only approximate measure.

#### 6. LACK OF TRAINED STAFF

Collection of data requires trained and qualified persons. However, the under-developed countries like Pakistan do not have trained staff in sufficient number. Government cannot afford to employ a large number of enumerators. So, services of low paid employees of different departments are obtained to collect the data. Many of these employees are primary school teachers who are ignorant of the importance of their assignment. National income is, therefore, a rough estimate in less developed countries like Pakistan.

#### 7. ILLEGAL BUSINESS

In Pakistan, there is a vast empire of underground black business which is beyond the control of law enforcing agencies. Magnitude of this business is very large. Since the value of this kind of business is unknown, therefore it cannot be included in national income estimates.

#### 8. GOVERNMENTAL EXPENDITURE

While measuring national income, estimates for consumption and investment are also required. However, it is difficult to decide about the nature of governmental expenditures on education, health, defense, etc. Whether these expenditures are a part of consumption or investment? The practice followed is that the expenditures on defense, police and public administration are taken as consumption while expenditures on education or health are taken as investment. But no clear line can be drawn between the two types of expenditure.

#### 9. ILLITERACY



Due to illiteracy most of the producers have no idea of quantity and the value of their output. They do not keep regular accounts. This creates difficulty in correct estimation of national income.

#### 10. FOREIGN FIRMS

Incomes of foreign firms in Pakistan also create a difficulty. Should their incomes be added to national income of Pakistan or be considered a part of the national income of home countries of the firms.

#### 11. ENVIRONMENTAL FACTORS

Because of modern methods of production, pollution of air, soil, and water is taking place i.e. there is degradation of the environment. But such environmental costs are not recorded. This factor reduces the real value of national income.

#### 12. QUALITY OF PRODUCT

The quality of goods and services changes over time. Some new products, which did not exist previously, come into use. This makes the use of GNP statistics as an indicator of changes in welfare a difficult task.

#### 13. TRANSFER PAYMENTS

Transfer payments like pensions or social security measures should be included only once either as the income of the receiver or the payer. If these payments are included twice, the national income would be over estimated.

#### 14. RATE OF DEPRECIATION

Net national income is estimated after deducting depreciation allowance on fixed assets used in productive process; whereas the rate of depreciation has not been fixed. Therefore, the correct national income is not estimated.

### 5. IMPORTANCE OF THE NATIONAL INCOME STATISTICS

National income estimates are used as indicators of economic growth, social welfare and for economic comparison with other countries. It is due to such key importance that national accounting is done on regular basis in all countries of the world. National income statistics are in fact an essential tool of economic policy in modern times.

The following facts indicate the value of study of national income.

#### PERFORMANCE OF THE ECONOMY

It is the national income statistics, which provide knowledge about the overall production performance of an economy. A measure of GNP gives us an idea of the wealth of a country and its achievements in economic field. All economic policies of a country are based on estimates of production of goods and services.

#### PER CAPITA INCOME

Economic welfare of the people of a country is directly related to the level of per capita income. Study of national income becomes essential for the solution of the problem of low per capita income and poverty. By comparing the per capita income over some years, we

come to know the changes taking place in the standard of living of the people.

### 3. RATE OF ECONOMIC DEVELOPMENT

To know whether an economy is developing, standing still or sliding down, we need to compare the national income estimates of different years. An economy is said to be developing if national income shows rising trend. When national income decreases, it is a sign that economy is deteriorating.

### 4. CONTRIBUTION OF VARIOUS SECTORS

The study of national income estimates reveals the contribution made by various sectors of the economy such as agriculture, industry, transport and communication, mining, etc. This information is helpful to judge the balance in the economy. National income estimates reveal the relative importance of various sectors in the economy.

### 5. ECONOMIC COMPARISON OF COUNTRIES

National income estimates are also used to compare the living standards of the people of different countries of the world. If the country shows a lower per capita income compared to the per capita income of developed countries, it is called under developed economy.

### 6. INFORMATION ABOUT CONSUMPTION, SAVING AND INVESTMENT

The economic future of a nation is determined by its rate of investment. National income statistics shows that what part of it is being consumed and saved. In order to raise standard of living in future, a nation must cut its current consumption. It should save and invest its resources in the present.

### 7. ECONOMIC POLICY

The study of national income provides guidance for economic policies. To tackle economic problems such as inflation, unemployment, poverty and low exports, information about national income is required. Regulation and control of the economy to accelerate national development is impossible without detailed figures of national income.

### 8. TO GET FOREIGN LOANS

Governments, before giving loans and economic aid, get information about the national income of a country. A country has better chances of getting sufficient foreign aid if it shows steady growth in national income.

### 9. ECONOMIC PLANNING

Almost every country of the world today has adopted economic planning. However, formulation of good economic plans is not possible unless the planners have up-to-date statistics of national income and its component parts.

### 10. NATIONAL BUDGET

A budget gives us a summary what a country wants to do in economic field in a particular year. It highlights weak and strong points of the economy. It contains proposals for the good budget can be prepared only if the finance ministry has knowledge about national income and its various parts.

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**11. GLOBALIZATION**

Because of fast progress in information technology and communication networks, the whole world has become a global village. Competition has increased. To live in such a world every country must know its strengths and weaknesses in comparison to other economies.

**12. AGGREGATE OUTPUT**

National income estimates give an idea of GNP. The monetary value of aggregate output is an important indicator of the level of economic growth in the country. National income statistics can be applied to compare the levels of economic activities at two different time periods. A comparatively higher income shows an economic progress and vice versa.

**13. DISTRIBUTION OF NATIONAL INCOME**

A factor analysis of national income throws light on how the national income is distributed among the various sections of productions. It indicates the economic level of the factors of production. If the share of labor shows an increase, it indicates that economic inequality has lessened. It helps the government in estimating the economic status of the various sections of the society.

**14. BUSINESS DECISIONS**

A study of national income and its various components enables a business firm to take business decisions. While formulating business plans national income statistics provide a sound basis.

**6. FACTORS OR DETERMINANTS OF NATIONAL INCOME**

There are many factors which influence the size of national income. These factors are as follows:

**1. NATURAL RESOURCES**

The basic factor affecting development is the quantity and quality of natural resources which a country possesses. These include land, forests, minerals, water and power resources, climate and geographical location. The more are these natural resources, the higher would be the national income. The countries that are rich in natural resources enjoy higher standards of living.

**2. CAPITAL ACCUMULATION**

Capital means the stock of materials, machines, equipment, vehicles, buildings and social overheads like roads, canals, power hoses, and gas and telephone lines. Capital increases productivity of human labor. It is with the help of capital goods that country's natural resources can be properly exploited. Capital accumulates when savings are invested. Capital accumulation leads to expansion in industry, agriculture, commerce, and transport and energy generation. Greater the capital accumulation more will be the level of production and employment in a country.

**3. TECHNOLOGY**

Technology also plays an important role in economic development. Technology means the methods of production. Improvement in technology makes human labor and capital goods more productive. If a country is well aware of the modern and latest technology then the country can utilize the natural resources properly and national income of the country increases.

#### 4. HUMAN RESOURCES

Human resources, along with natural resources, also play an important role to accelerate the national income of a country. If the people are educated, skilled, and trained they can better utilize the natural resources of the country to increase the national income.

#### 5. SOCIAL AND CULTURAL FACTORS

Socio-cultural factors have deep influence on the rate of economic development. Every society has a certain social set up. It follows a particular family system, occupational structure, social attitudes, habits, customs and cultural patterns. These factors determine their habits about work, saving, consumption, working of women and family planning. If in a society people believe in merit, there is dignity of labor and work is properly rewarded, rate of development will be high. Caste system, nepotism, corruption, ignorance, superstitions and immobility of labor are the things which retard development.

#### 6. POLITICAL STABILITY

The size of income and prosperity of the country greatly depends on political stability. If there is political stability in the country, country makes progress to a great extent. The country can maintain production at the highest level through investment.

#### 7. DEVOTION TO WORK

If the people are dedicated to their duties and they want to develop their country then they will make the better use of available resources. In this way they will increase the size of national income and as a result per capita income and living standard of the masses will increase.

#### 8. DIVISION OF LABOUR

If the scale of production is large, division of labor and specialization process will start which is very useful to increase the production level.

#### 9. ENTREPRENEURIAL EFFICIENCY

The size of income also depends upon the number and skill of the entrepreneurs. If the managers or organizers of the industries are efficient, they will combine the various factors of production optimally and so the volume of total production will be quite large.

#### 10. TRANSPORT AND COMMUNICATION

Means of transport and communication are the best infra-structure of the economy of a country. If the means of transport and communication are advanced in a country, country will make more progress otherwise not.

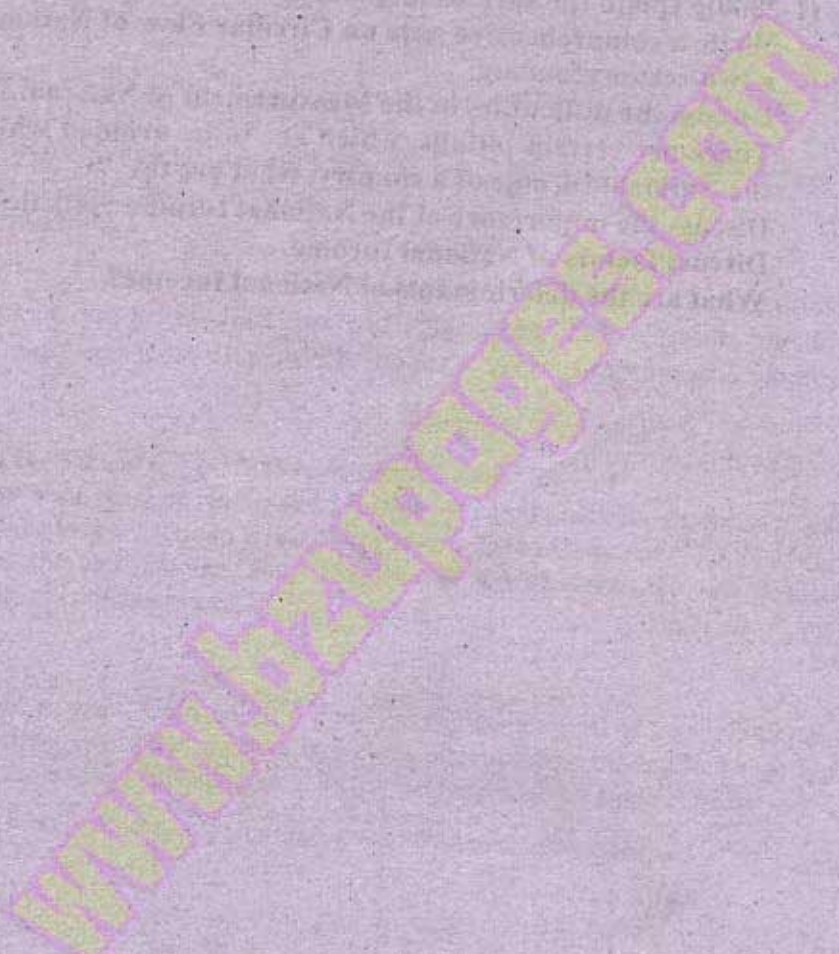
#### 11. DISTRIBUTION OF NATIONAL INCOME

If there is just distribution of national income, then everybody can at least make arrangements for his basic requirements. When the people are financially well off then they

would work hard and increase the national income.

12. GOVERNMENT PATRONAGE

Clean and efficient administration stimulates development. A popular government can infuse new spirit among the people and thus create favorable atmosphere for development activities. Corruption in political or official circles kills the incentive for work.



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