

National Income and Related Aggregate

National income is the sum total of goods and services produced in an economy during an accounting year.

OR

Accounting to CSO, "National Income is the sum total of the factor income earned by the residents of a country in the form of rent, interest wages and profit during an accounting year.

Features:

- It is calculated annually during an accounting year i.e. April to March.
- It measures the flow of goods and services in terms of monetary value.

National Income Accounting: it is the method of preparing and presenting the national income data by dividing the whole economy into functional sectors.

Features:

- It is the method of preparing and presenting the national income data
- It divides the whole economy into the functional sector such as household, firm government and foreign sector.
- It establish inter-sectoral and intra sectoral relationship.
- It includes only productive activities in an economy.
- It is based upon double entry system of accounting.

Domestic Territory: It is the geographical or territorial area in which economic activities are performed for the economic interest of that particular country.

It includes the following:

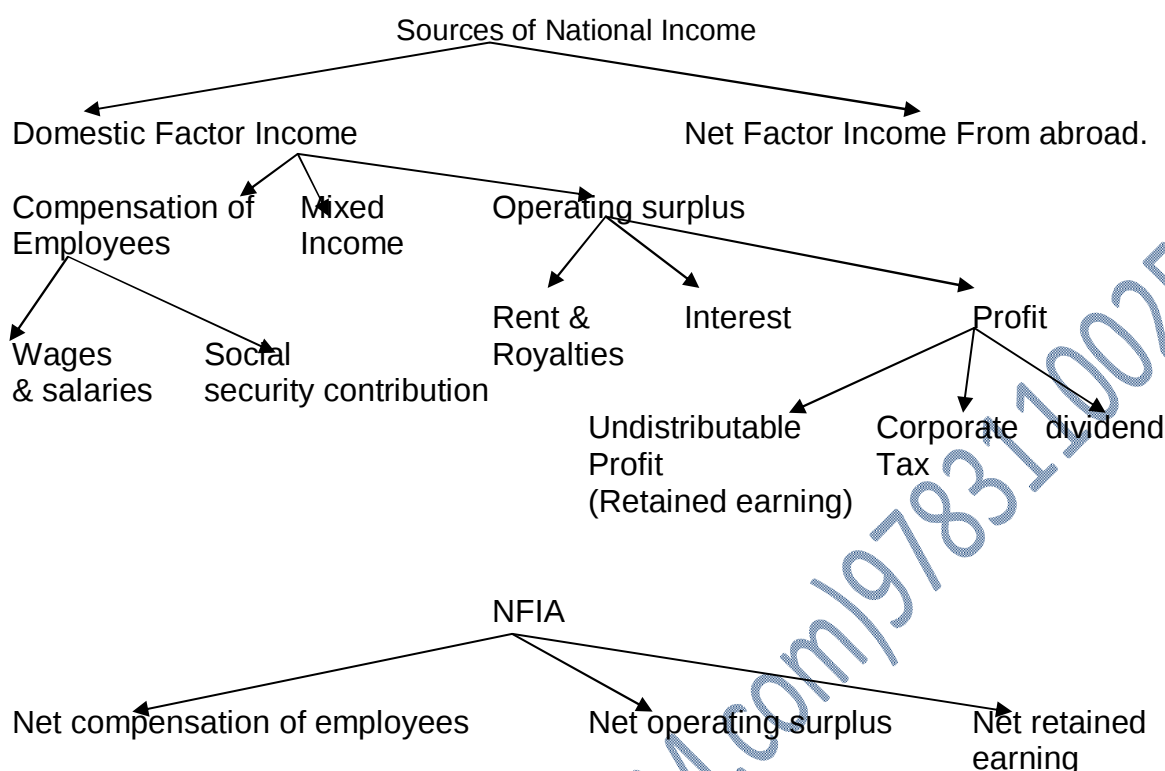
- Political & geographical boundaries of the country.
- Embassies, consulates and military establishment of the country located abroad.
- Ships and aircrafts operated by residents of the country across different parts of the world.
- Fishing venal, oil & natural gas rigs and floating platforms operated by the residents of the country in the international water or areas.

Income earned within the domestic territory of a country is called Domestic Income.

Normal resident:- It is a person or institution who ordinarily resides in a country for more than 1 year and whose centre of economic interest lies in that country.

It includes:

- Citizen of that country.
- Citizen of other country whose economic interest lies in that country.
- Indians employed in WHO and IMF
- Ambassador for India in USA.
- Officials, diplomats and members of armed forces of India posted in other country.



Domestic factor income: It is the sum total of the factor income earned within a domestic territory of a country by Indian residents or by foreign residents. It is divided into 3 parts:

1. **Compensation of employees:-** It is the total contribution given by employer to the employees in terms of cash as well as kind including the social security benefits.
 - **Wages & Salaries:** It includes all monetary and non-monetary benefits given by the employer to the employees. Compensation in cash includes basic salary, bonus, dearness allowance, HRA, commission etc. Compensation in kind includes free medical, housing education, LTC, free meals etc.
 - **Social security contribution:** It is given by the employer to employees as social security benefits, such as pension, PF, insurance, gratuity etc.

Compensation of employees does not include:

- T.A. [Travelling allowances].
 - D.A. [Daily allowances].
2. **Mixed income:-** It is the income of the self-employed person using their own labor, land, capital and entrepreneurship to produce goods & services. Their income is a mixture of wages, rent, interest and profit.
 3. **Operating surplus-** It is the sum total of income earned from the property and entrepreneurship.
 - **Rent & Royalties:** Rent is the amount paid to the landlord by the tenant for the use of fixed assets.

Royalty is amount paid for the use of natural resources such as mines, forest minerals. It is also paid for the use of copyrights, patents & trademarks.

- **Interest** : It is the amount paid by the borrower to the lender on the borrowed fund as interest.
- **Profit**: It is the amount earned by the business man for bearing the risk and uncertainty of the business. It is divided into 3 parts:
 - a) **Dividend**: It is the part of profit paid to the shareholders.
 - b) **Corporate tax**: It is that part of the profit which is paid to the government as tax.
 - c) **Undistributable Profit**: It is that part of the profit which is kept by the company as a reserve to meet an unforeseen situations and future expansions.

Net Factor income from Abroad (NFIA) : It is the difference between factor income earned by our residents from abroad and similar payment made to the rest of the world.

It's components are as follows:

- Net compensation of employees: It is the difference between compensation received by Indian residents from abroad and similar payment made to the rest of the world.
- Net operating surplus: It is the difference between the income in the form of rent interest and profit received by the residents of a country and similar payment made to the rest of the world.
- Net retained earning: It is the difference between the retained earnings of resident companies located a broad and retained earnings of foreign companies located with in the domestic territory of a country.

Transfer Payments: These are the payments which transfer from one sector to another or from one country to another. These do not contribute to the flow of goods and services in an economy. These are one sided payment(unilateral payment).

Features:

- It is simply re-distribution of income.
- These are not earnings instead these are receipts.
- These are not included in N.Y.

Types:

Current transfer	Capital transfer
These are these transfer which are given from the current income of the payer and added in the current income of the recipients.	These are those transfer which are given from the capital stock of the payer and added in the capital stock of the recipients.
These are used for short term purposes.	These are used for long –term purposes.
For eg: Income tax, scholarship, donation etc.	For eg: capital gain tax, land allotted to medical etc.
Compulsory transfer	Voluntary transfer

These are given compulsory by the household and firm to the government without any choice.	These are given voluntary by one sector to another and vice-versa.
Legal action will be taken against the non-payment of such transfer.	There is no legal bindings on these transfer.
For eg: direct and indirect taxes.	For eg: donation, scholarship, old-age pension etc.

Interest on National debt- government can borrow the funds from the public by issuing the securities and bonds in the market. On these, government has to pay the interest and such interest is called interest on National debt. It is a type of current transfer from government to household.

Factor Payments	Transfer payments
it is productive in nature.	It is unproductive in nature
It causes production of goods and services in an economy.	It do not causes production of goods and services in an economy.
It is a bi-lateral payment i.e. two-sided.	It is unilateral payment. i.e. one-sided.
There is a distribution of income.	There is re-distribution of income.
These are earnings	These are receipts.
It is included in N.Y.	It is excluded in N.Y. but included in private income.

Consumption of Fixed capital i.e. depreciation of F.A. It is a loss to the value of FA while these are being used in the process of production. It occurs on account of :

- Normal wear and tear
- Accidental damage
- Expected obsolescence- loss of value of FA. due to
- Change in technology
- Change in demand.

Unexpected obsolescence:- it occurs due to.

- Natural calamities
- Fall in market value of the assets during the period of economic recession.

Capital loss: It is a loss of value of F.A. due to unexpected obsolescence. No provision can be made for it.

Net indirect tax:- it is the difference between indirect tax paid by the firms to the government and subsidies received by the firms from the government.

IDT are paid in the form of sales tax, custom duty, excise duty etc. It's effect is to increase the price of a commodity.

Subsidies are the financial helps or grants or exemptions given by the government to the needy industries such as handicraft, export oriented etc. It's effect is to reduce the price of a commodity.

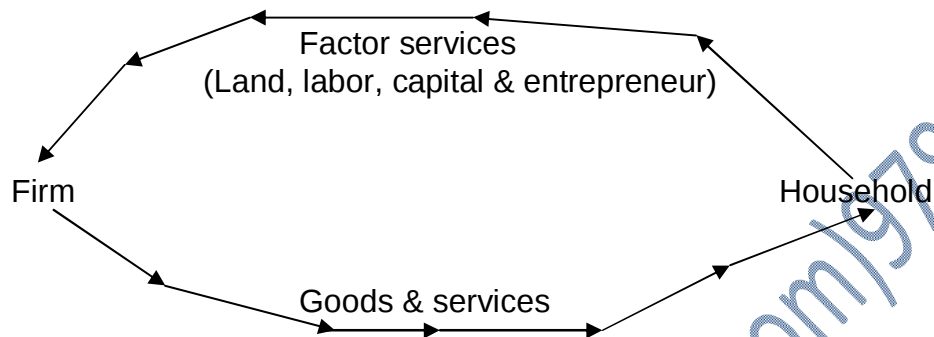
NIT = IT-subsidies.

Flow of income refers to the flow of money.

Flow of produce refers to the flow of goods & services.

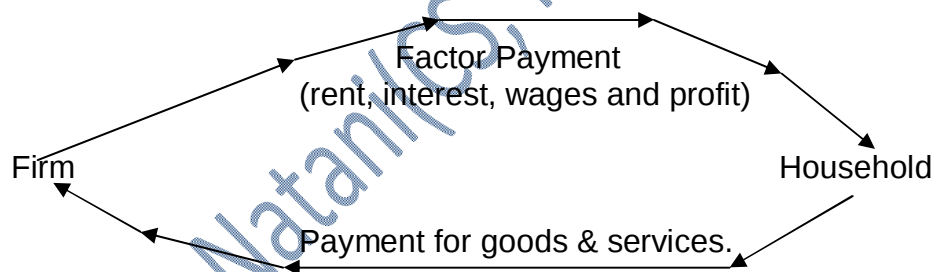
Real flow – when there is a flow of goods and services in an economy from one sector to another and vice-versa, then this is called 'real flow'.

Flow of factor services from the household sector to the producing sector while flow of goods and services from the producing sector to the household sector.



Money flow: When there is a flow of goods & services in an economy from one sector to another and vice-versa with the help of money or monetary terms, then this is called money flow.

Flow of income spent on goods & services from the household sector to the producing sector the household sector.



A. Circular flow of income in Two sector economy:

It's assumptions:

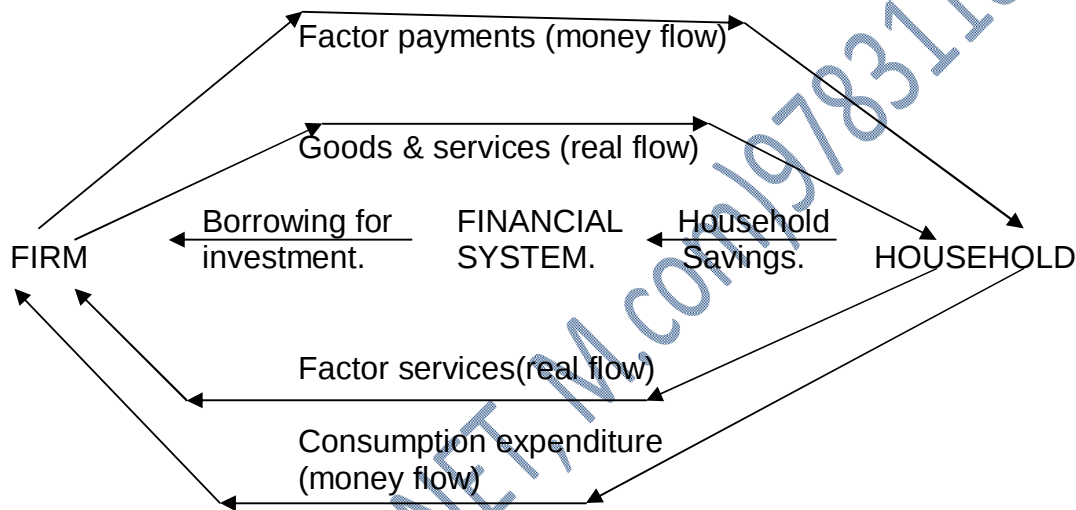
- There are only two sector in the economy i.e. household and firms.
- All income is spent on consumption. There is no saving in the economy.
- There is no government.
- It is a closed economy with no exports and imports.

Observations:

- Household is the factor supplier to the firm in the form of L.L.C.E. and in return it receives the factor payment in the form of W.R,I.P.

- Firm is the supplier of goods and services to the household and in return it receives the payment for these goods and services.
- Total production of goods and services by firms = total consumption of goods and services by the household
- Factor payments by the firms = factor income of the households.
- Total income of the households = total expenditure of the households.
- Real flow of goods and services = money flow of goods and services.
- There is no financial sector government and rest of the world.\

B. Circular flow of income in two sector economy with financial sector.



Emergence of a financial system refers to the existence of a money market in the economy in the form of banks, insurance co., mutual funds, financial co., etc. It serves as a link between savers and investors.

Now both the firm and household would save. Such saving flows into the financial system and from where these flows in the form of borrowings.

Observations:

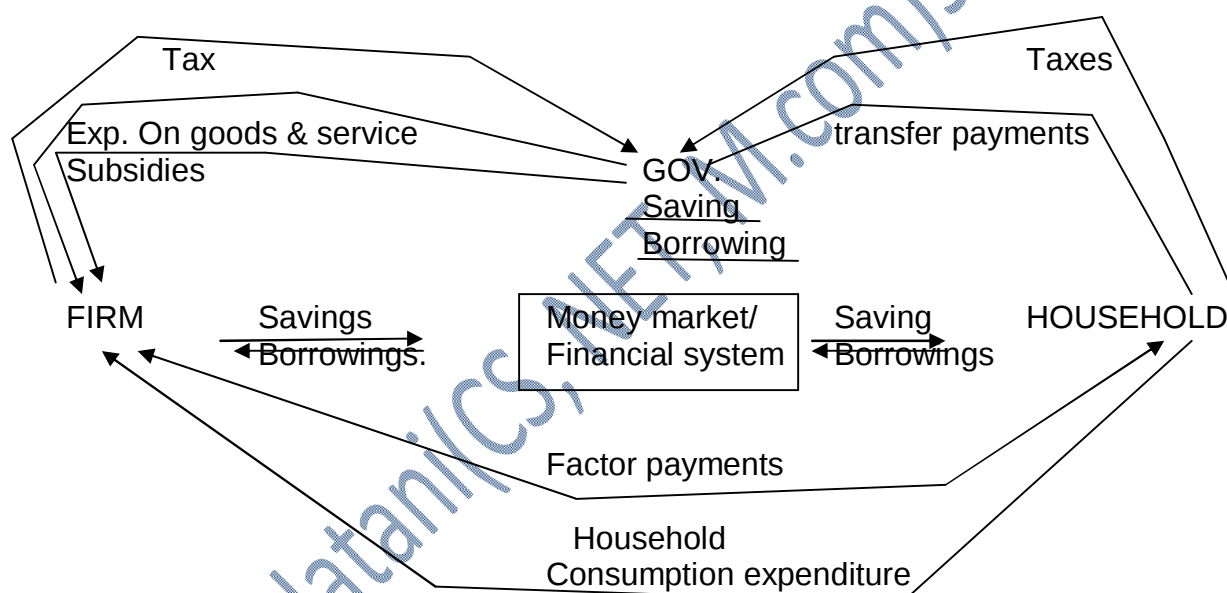
1. Total income of the household = consumption expenditure and saving of the household.
 $Y = C + S$.
2. Such saving will be converted into investments (I) by the firms.
 $S = I$.
3. Now on concluding point 1 and 2.
 $Y = C + I$

C. Circular flow of income in three sector economy with financial sector.

Government sector includes all the government offices, departments, organization and agencies.

Observations:

- The government levies taxes on the households (Income tax) i.e. money flows from the household to the government.
- The government levies taxes on the firms (excise duty, sales tax) i.e. money flows from the firms to the government.
- The government offers financial help to the households in the form of old age pension, unemployment allowances etc. i.e. money flows from the government to the households.
- The government offers subsidies to the firms. i.e. money flows from the government to the firm.
- For the production of various public services such as law and order, administration, defence, education etc. The government has to buy various goods & services from the firms.
- Government can deposit their surplus funds with the financial sector and government can borrow the funds at the time of needs from the money/capital market.



D. Circular flow of income in 4 sector economy with financial sector.

Observations :

- Our firms export their goods and services to the rest of the world i.e. money flows from foreign sector to the firm [export receipts].
- The firm import goods and services from the rest of the world i.e. money flows from the firm to the foreign sector [import payments].
- Household receives gifts/ transfer payment from the rest of the world and also make gifts/ transfer payments to the rest of the world i.e. Transfer payment received (-) transfer payments made

= Net transfer payments.

- Household receives factor payments (R,I,P,W) from the rest of the world and they make similar payment to them.

Concept of leakages and injections.

Injections- these are transactions which have a positive impact on the production process of an economy. It generates demand for the produced goods and services in an economy such as:

- Investment
- Exports
- Consumption expenditure

Leakages:- These are those transactions which have a negative impact on the process of production in an economy. It do not contribute to the flow of goods and services in an economy such as:-

- Savings
- Taxes
- Imports

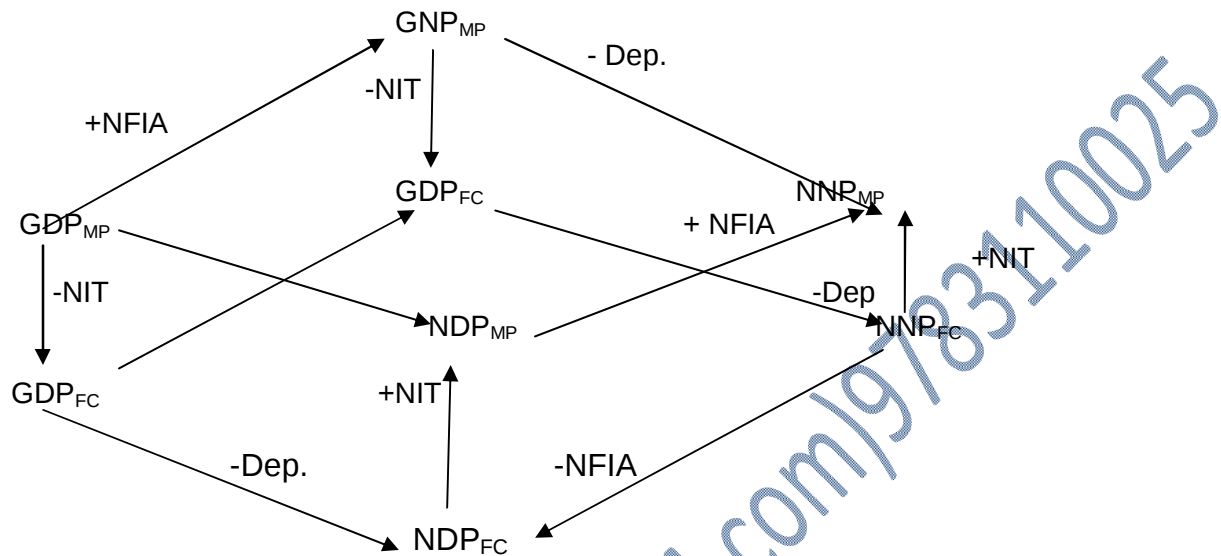
National income and related aggregates.

1. **Gross domestic product[GDP] :-** It is the market value of final goods and services produced within the domestic territory of a country during an accounting year. It may be earned either by Indian resident or foreign resident within in the domestic territory of a country.
2. **Gross national product [GNP] :-** It is the market value of the final goods and services produced by normal residents of a country in an economy during an accounting year. It may be earned by the normal residents with the country or earned from abroad.
3. **Net Domestic Product [NDP] :-** It is the net value of goods and services produced within the domestic territory of a country during an accounting year. It may be earned by Indian residents or by foreign residents.
4. **Net National Product [NNP] :-** It is the net value of goods and services produced by the normal resident of a country during an accounting year. It is earned within the country as well as from abroad.

Important concepts:

1. Gross (-) Dep. = Net
2. Net (+) Dep. = Gross
3. Domestic (+) NFIA = National
4. National (-) NFIA = Domestic.
5. FC (Factor cost) (+) NIT = MP [Market Price]

6. $MP (-) NIT = F.C.$
7. NIT (Net Indirect Tax) = IT (Indirect Tax) $(-)$ Subsidies.
8. $NFIA$ = Net factor income from Abroad.



5. Private Income: it is the income of the private sector obtained from any sources. It include both factor income (earned Income) as well as transfer income. (unearned income).

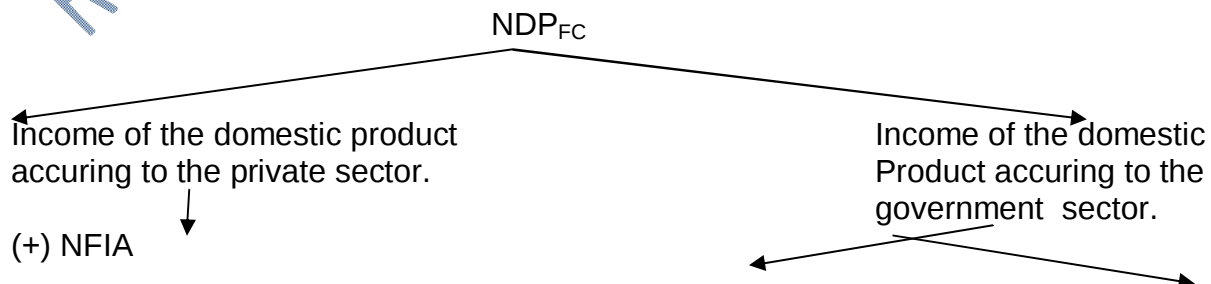
Or.

It is the total of factor income from all sources and current transfer from the gov. and rest of the world accruing to private sector.

6. Personal income:- It is the income actually received by the individuals and household from all sources in the form of factor income and current transfer.
7. Personal Disposable Income:- It is the part of personal income which can be used by the households either on consumption or on savings.
8. National disposable income: It is that part of the NY which is available for disposable for a country. It is divided into 2 parts:-
 - a) Income of the domestic product accruing to the private sector.
 - b) Income of the domestic product accruing to the government sector.

Or

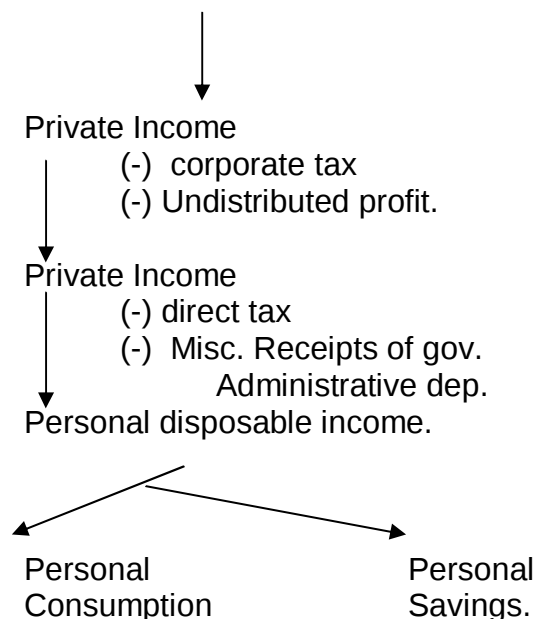
It is the sum total of net domestic income at factor cost, NIT , $NFIA$, and net current transfers from the rest of the world.



- (+) Net current transfer from gov.
- (+) Net current transfer from the rest Of the world.
- (+) Interest on National Debt.

Income from
property &
Entrepreneurship
Accruing to gov.
Administrative dep.

saving of non
departmental
public enter-
Prises.



Methods to measure national income:

1. Value added or output method: In this method, we measure N.Y. with the help of the total output produced by each producers in an economy during an accounting year.

Some important terms to be discussed.

- Production: It is the activity in which goods and services are produced with the combined efforts of the factors of productions.
- Factors of productions :- It can be discussed into 2 parts :
 - a) Primary Inputs(Factor Inputs) :- These are the main factors of productions which are used by the particular firm in an economy during an accounting year. For eg:- land, labor, capital, and entrepreneur.
 - b) Secondary inputs (Non-Factor inputs) :- These are the supporting factors of productions which can be used by the firm for the productions of goods and services. The consumption. For eg:- raw-materials, fuel, power, electricity etc.
- Change in Stock :- It is the difference between the closing stock and opening stock of raw-material, semi-material, and finished goods and services.

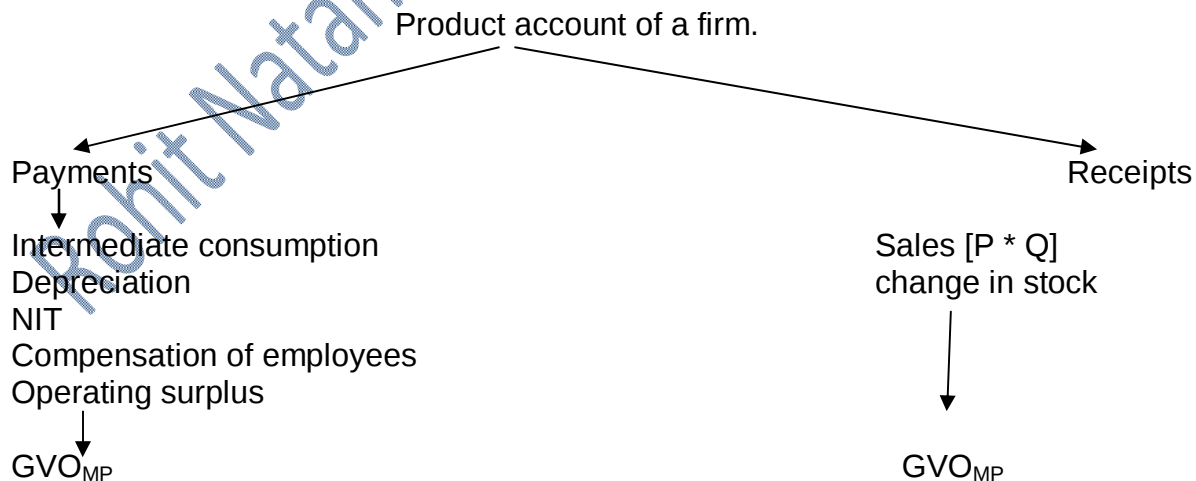
$$\text{Change in stock} = \text{Closing Stock} - \text{Opening Stock}$$
- Value of output- It refers to the market value of the goods and services produced by a firm during an accounting year.

$$\text{Value of output} = \text{Sales} + \text{change in Stock}$$
- Value addition - : It is the difference between value of output of an enterprise and the value of it's intermediate consumption. For eg:

A – Farmer produces wheat = Rs. 100
 ↓
 B- Flour mill produces flour = Rs. 120.
 ↓
 C – Baker produces bread = Rs. 150.
 ↓
 D- Shopkeeper sells bread = Rs. 190.
 ↓
 Final consumption = Rs. 190.

Value addition → A = Rs. 100
 B= 20
 C= 30
 D= 40
 Final consumption - Rs. 190 - GDP_{MP}.

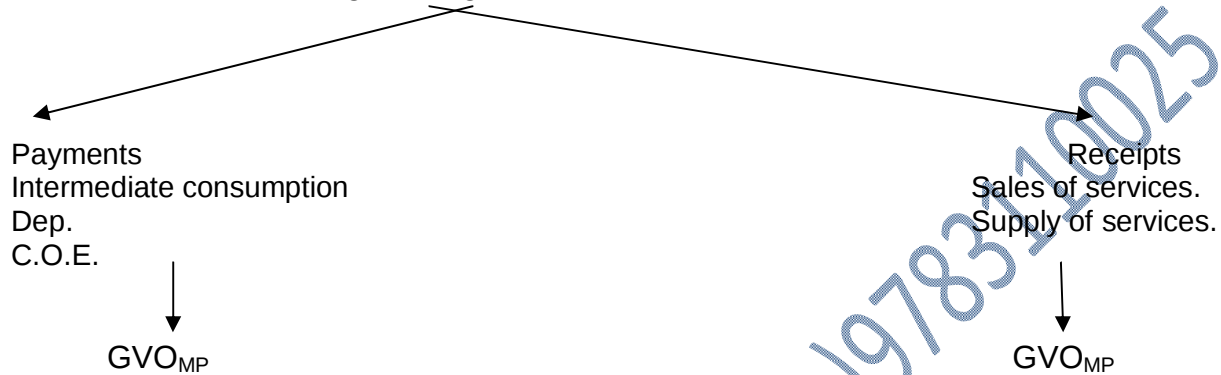
Intermediate goods	Final goods
These are the goods which are with in the boundary line of production and are not ready for use by their final users.	These are the good which have crossed the boundary line of production and are ready for use by their final users.
These are used as raw-materials for further productions	These are not used as raw-material, but by the final users as end products.
These goods are not included in the N.Y.	These goods are included in the N.Y.



1. $GVO_{MP} = \text{Sales} + \text{Change in stock.}$

2. $GVA_{MP} = GVO_{MP} + \text{intermediate} + \text{consumption}$
3. $NVA_{MP} = GVA_{MP} - \text{depreciation}$
4. $NVA_{FC} = NVA_{MP} - \text{NIT}$
5. $\text{Income generation} = \text{Operating surplus} + \text{compensation of employees (NDP}_{FC})$.

Productions account of general government.



Steps to measure N.Y. by value added methods.

- Identifying the producing enterprises and classify them into primary, secondary and tertiary sector & their sub-sector.
 - a) Primary sector:- It includes all those activities which are based upon the exploitation of natural resources such as mining, fishing, agriculture etc.
 - b) Secondary sector:- It includes all those activities in which primary goods are converted into secondary goods such as construction industry etc.
 - c) Tertiary sector :- It includes all those activities which are based upon the services such as banking transport etc.
- Calculate the value of output of all enterprises $GVO_{MP} = \text{Sales (P*Q)} + \text{change in stock. (closing stock - opening stock)}$.
- Calculate NVA_{FC} of each enterprises.
 $NVA_{FC} = GVO_{MP} - \text{Int. cons.} - \text{Dep.} - \text{NIT}$.
- Add NVA_{FC} of each enterprises which is equal to NDP_{FC} at the country level.
- Add NFIA to NDP_{FC} to get the value equal to N.Y.

Precaution of value added method:-

1. Value of sale and purchase of second hand goods should not be included in N.Y. because this value is already included in that year in which these goods are produced.
2. Value of sale and purchase of shares, bonds, and debentures should not be included in N.Y. because this capital is simply the paper claims which do not contributed to the production of goods and services.
3. Commission earned on the sale and purchase of second- hand goods or shares and bonds should be included in N.Y. because services of the commission agent is productive.

4. Production for self-consumption of goods should be included in N.Y. because these goods are produced in an economy, no matter these are used for self-consumption.
5. Value of intermediate goods should not be included in N.Y. because such value is reflected in the final goods.
6. Own account production of F.A. should be included in N.Y. for eg:- construction of roads by the government for public consumption because such production has taken place in an economy with the help of own resources, but it is not sold out.

Problem of double counting :- It is the problem of estimating the value of goods and services more than once.

OR

It is the counting of the value of commodity more than once.

A =	Rs. 100	Double counting income.
↓		
B =	Rs. 140	A = 100
↓		B = 140
C =	Rs. 180	C = 180
↓		D = 250
D =	Rs. 250	<u>670</u>
↓		
Final consumption	Actual Income	
		A = 100
		B = 40
		C = 40
		D = 70
		<u>250</u>

How to avoid double counting?

- 1) Final output approach :- In this approach only final goods and services are to be considered i.e. goods which are ready for use by their final users (consumers or producers) intermediate goods are not to be considered.
- 2) Value added approach :- In this N.Y. is calculated with the help of value addition made by each enterprises in an economy during an accounting year. It is an effective approach to avoid double counting.
2. Income method:- In this method, N.Y. is measured in terms of factor payments (R,W,I&P) made by each enterprises in an economy during an accounting year.

Steps :-

- Identifying the producing enterprises and classify them into primary, secondary and tertiary sectors and their sub-sectors.

- Classify the factor payments made by each enterprises into COE, mixed income and operating surplus.
- Add these 3 items to get NDP_{FC} .
- Add NFIA in NDP_{FC} to get N.Y.

Precautions:

- a) Income from the sale of second hand goods should not be included.
- b) Income from the sale of shares, bonds, and debentures should not be included.
- c) Income from illegal activities should not be included.
- d) Income from the windfall gains such as lotteries should not be included because there is no productive work.
- e) Income from transfer payments should not be included such as scholarship, old – age pension etc. Because there is no contribution of flow of goods and services i.e. unproductive.

3. Expenditure method:- In this method, N.Y. is measured with the help of total expenditure made by the household as well as non-profit earning institute serving to household.

OR

N.Y. is measured in terms of expenditure on the purchase of final goods and services produced in an economy during an accounting year.

It is also known as consumption and investment method or income disposal method.

It's components are :-

- Private final consumption exp[C] :- It refers to the expenditure on final goods and services by the individuals households and non-profit institutions serving society. It includes:
 - Consumer services. [clubs, charitable institutions etc.]
 - Consumer durable goods [furniture , A.C. etc]
 - Consumer non-durable goods [milk, vegetables etc]
 - Government final consumption Exp.[G] :- It refers to the exp. On final goods and services by the gov. For providing various public welfare services such as law & order, defence, health care etc.
Gov. Final consumption exp = int. Consumption + C.O.E + direct purchase made by gov. from abroad – sales.
 - Gross domestic capital formation (I) :- It is the total capital formation takes place in a country during an accounting year in the form of F.A. as well as inventories.
1. Gross domestic fixed capital formation:- It refers to the expenditure on F.A. during an accounting year. It can takes place in following parts :-
 - a) Business fixed investment:- This investment is done by the business firm on the purchase of P&M, tools and equipments etc.
 - b) Public investments :- This is done by the gov. On various public properties such as roads, bridges, telephone lines etc.
 - c) Residential construction :- This construction is done by the households on various housing units such as flats, houses, villas etc.

2. Inventory investment :- It is the difference between closing stock and opening stock of raw- materials, semi- finished and finished goods at the end of an accounting year.

- Net exports (X-M) :- It is the difference between exports and imports of goods and services during an accounting year.

Export is that quantity which is produced within a country with the help of own resources but consumed by the non-residents.

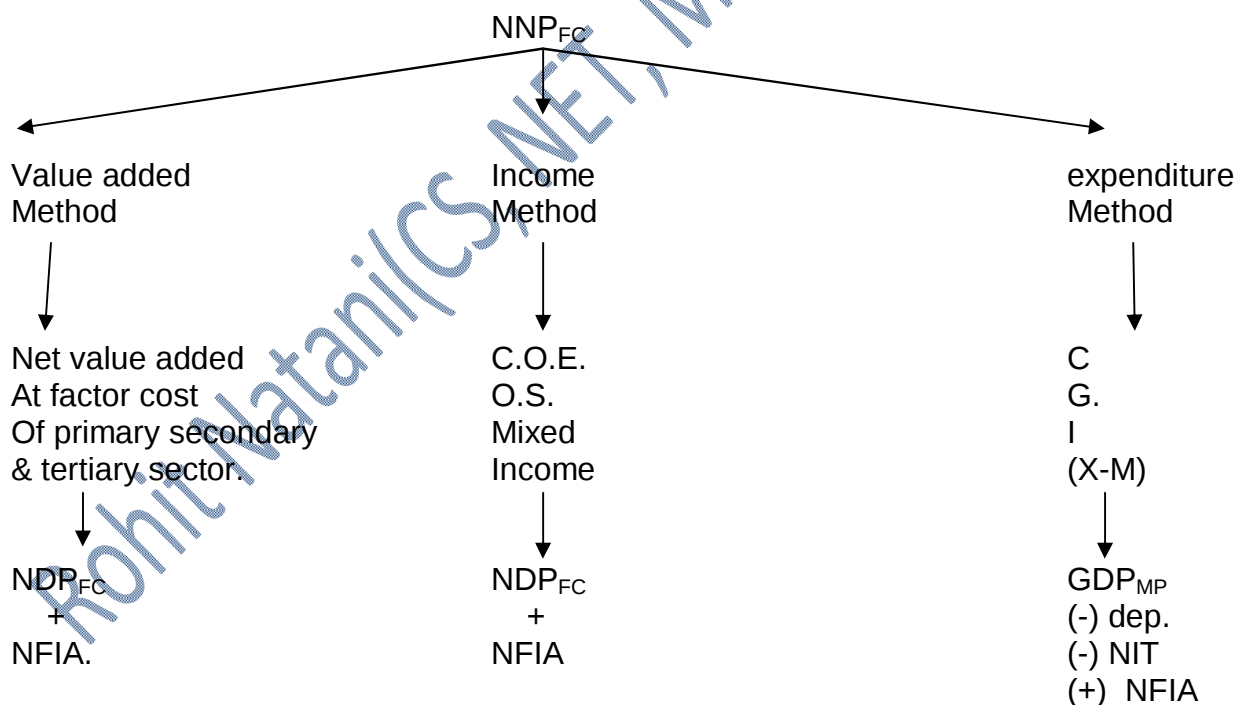
Import is that quantity which is produced in abroad but consumed by Indian residents.

$$C+G+I + (X-M) = \text{GDP}_{MP}$$

$$\begin{aligned} & (-) \text{ Dep.} \\ & (-) \text{ NIT} \\ & (+) \text{ NFIA} \\ & = \text{NATIONAL INCOME} \end{aligned}$$

Precautions of expenditure method:

- Exp. On the purchase of second-hand goods should not be included.
- Exp. On the purchase of shares, bonds, and debentures should not be included.
- Exp. On the purchase of intermediate goods should not be included.
- Exp. On transfer payments should not be included.



N.Y. at constant price – It is the market value of final goods and services produced in an economy during an accounting year, calculated on the basis of base year price.

N.Y. at current price- It is the market value of goods and services produced in an economy during an accounting year. Calculated on the basis of current year price.

1993-94 [Base Year]			
Commodities	Price	Output	Income
A	5	10,000	50,000
B	10	5,000	50,000
C	20	3,000	<u>60,000</u>
			<u>1,60,000</u>

2008-09[Current Year]			
Commodities	Price	Output	Income
A	9	12,000	1,08,000
B	20	6,000	1,20,000
C	30	5,000	<u>1,50,000</u>
			<u>3,78,000</u>

1993-94.

N.Y. at constant price = Rs. 1,60,000

N.Y., at current price = Rs. 1,60,000

2008-09

N.Y. at constant Price = $(12,000 \times 5) + (6,000 \times 10) + (5,000 \times 20)$
 = 60,000+60,000+1,00,000
 = 2,20,000

N.Y. at current price = Rs. 3,78,000

We can say that N.Y. at current price has been increased by Rs. 2,18,000 [3,78,000-1,60,000] during the period 1993 – 94 to 2008-09.

During the same period, N.Y. at constant price has been increased by Rs. 60,000 (2,20,000 – 1,60,000).

Hence, we can say that our N.Y. has been increased by Rs. 1,58,000 (2,18,000-60,000) due to price rise which is not the real growth of the economy.

Per capital income. It is the avg. Income of an individual of a country.

$$\text{Per capita income} = \frac{\text{N.Y.}}{\text{Total population}}$$

Real index of growth – per capita income at constant price is the real indication of growth because it controls.

- Price effect - when income is converted at constant price.
- Population effect - when income is calculated per capita.

N.Y. at constant price	N.Y. at current price
It is calculated on the basis of base year price.	It is calculated on the basis of current year price.
It increases due to increase in output.	It increases due to increase in price and output both.
It is also called real income because it shows the real changes.	It is also called monetary income because it shows the monetary changes.

Conversion of N.Y. at Constant price from current price.

$$\text{N.Y. at constant price} = \frac{\text{N.Y. at current price}}{\text{Price index no.}} \times 100$$

GNP deflator - It is the change in avg. Price level of various goods and services in an economy during an accounting year.

$$\text{GNP Deflator} = \frac{\text{Nominal GNP}}{\text{Real GNP}} \times 100$$

Commodity	Output	P ₀	P ₁	Real GNP	Nominal GNP
A	10,000	5	6	50,000	60,000
B	15,000	10	12	1,50,000	1,80,000
C	20,000	3	5	60,000	1,00,000
				2,60,000	3,40,000

$$\begin{aligned} \text{GNP Deflator} &= \frac{3,40,000}{2,60,000} \times 100 \\ &= 130.77 \end{aligned}$$

Stock	Flow
It is a quantity measured at a particular	It is a quantity measured over a specified

point of time	period of time.
It is not time dimensional.	It is time dimensional.
For eg :- water in the tank.	Leakage of water from the tank.
Distance between Delhi and Mumbai	Car going from Delhi to Mumbai.

Rohit Natani(CS, NET, M.com)/9783110025