National Income

National Income: The aggregate money value of all final goods and services resulting from the economic activities of the people of a country over a period of one year.

However, making a reliable measure of national income is an extremely complex and difficult task as it involves many conceptual problems. The problem arises because the term ‘national income’ is used in a variety of senses depending on (i) what is a productive and non-productive activity? (ii) within the productive activities, what is economic and what is non-economic production? (iii) what is to be included in, and what should be excluded from, the national income concept? (iv) what methods are to be used to measure national income?

Hence, prior to discussing the methods of measuring national income, it is essential to have a clear understanding of the various concepts used in its measurement

All productive activities of human beings create goods and/or services, but all goods and services produced by human activities are not included in the national income accounting. For the purpose of national income accounting, goods and services produced by human beings are classified under two categories:

i) Economic Production: It refers to the goods and services which are produced for sale and have a market value, and the goods and services which are produced and provided to the people jointly by the government and public organizations. Economic production includes both marketable and non-marketable production. Goods and services produced by farmers, firms, factories, shops, hoteliers, tailors, lawyers, medical practitioners, etc., fall in the category of marketable production. The goods and services produced and supplied by the government, public institutions, social organizations, NGOs, social service clubs, charitable societies etc., fall in the category of non-marketable production. The government provides administrative services, law, and order, judiciary services, national defense etc. These services cannot be provided individually, and they do not have a market and market price. But, all these services use national resources- land and labour, which have an economic cost, and they add to the production capacity, and to the welfare of the society. Production of all these goods and services falls in the category of Economic Production. It must be noted that all marketable production is economic production but all economic production is not marketable, eg. Public goods. But all the goods and services of this category are included in national income accounting.

ii) Non-economic Production: It includes the production of goods and services that are not meant to be sold, nor is there any market for them, nor do they have a market price, even though they add to human welfare. To this category, below mainly the following services

- Services rendered to self, e.g. exercising, acquiring knowledge, shaving, washing one's own clothes, self-entertainments, hobbies, cooking for self etc.
- Services provided by the family members to the family members e.g. housewives cooking for the family and looking after the household, parents teaching their own children, doctors treating their own family members etc.
- Services provided by the neighbours to each other e.g. helping each other on festivals, marriage occasions, social works etc.

National Income Concepts

- **GDP (Gross Domestic Product):** Sum of the market value of all the final goods and services produced in a country during a specific period of time, generally one year. The income earned by foreigners in the country is included and the income earned by the residents abroad and remitted to the home country is excluded. GDP includes income earned by foreigners in the country and excludes income earned abroad by the residents.
- GDP= Market value of domestically produced goods and services+ the incomes earned in the country by the foreigners-the incomes received by the residents of a country from abroad

- The market value of the domestic product is obtained at both constant and current prices. Accordingly, GDP is known as ‘GDP at constant prices’ and ‘GDP at current prices’ respectively.

- **GNP (Gross National Product)** is another measure of national income. The concept of GNP is similar to that of GDP but it includes the income of the resident nationals which they receive abroad and excludes the incomes generated locally but accruing to the non-nationals.

GNP= Market value of domestically produced goods and services+ the incomes earned by the residents in the foreign countries- the incomes earned by the foreigners in the country

- NNP (Net National Product): GNP- Depreciation or capital consumption

OR

NNP= Personal income+ Undistributed Corporate Profits+ Surplus of public undertakings+ Rentals of public properties

- PI (Personal Income): Sum of all kinds of incomes received by a person from all sources of income. It includes wages and salaries, fees and commissions, bonus, fringe benefits, dividends, interest earnings, and earnings from self-employment. It also includes transfer payments like pensions, old age allowances etc., and the incomes earned through illegal means like smuggling, cheating, theft etc.
- Disposable Income= PI –(Personal Income Tax+ Fees+Fines)
- Private Income: Broadly speaking, all personal incomes are private incomes. However, the term private income is used in contrast to public income. For the purpose of national income accounting, NNP is generally divided into a) private income and b) public income.

Public income: This accrues to the public sector, including the government administrative units and the government official undertakings. Thus, income accruing to the public sector is called public income. In contrast, incomes accruing to individuals, including private sector earnings, transfer payments, and undistributed profits of private companies are called personal income.

Private income: NET DOMESTIC PRODUCT (NDP)-PUBLIC INCOME

Gross And Net:

Gross And Net:

The concept of GNP includes the output of both final consumer goods and capital goods. However, a part of capital goods is used up or consumed in the process of production of these goods. This is called depreciation or capital consumption

1. Gross means the value of product including depreciation. Net means the value of product excluding depreciation.

2. The difference between these two terms is depreciation.

3. Where depreciation is the expected decrease in the value of fixed capital assets due to its general use.

4. It is the result of the production process.

Gross = Net + Depreciation

Net = Gross – Depreciation

Note: Other names of depreciation are:

(a) Consumption of fixed capital (b) Capital consumption allowance

(c) Current replacement cost.

National Income And Domestic Income:

1. National Income refers to net money value of all the final goods and services produced by the normal residents of a country during an accounting year.

2. Domestic Income refers to the total factor incomes earned by the factors of production within the domestic territory of a country during an accounting year.

3. The difference between these two incomes is Net Factor Income from abroad (NFIA), which is included in National Income (NY) and excluded from Domestic Income (DY).

4. The NFIA is **calculated by subtracting the income earned by foreigners in India from the income earned by Indians in foreign countries**.

Where NFIA is the difference between income earned by normal residents from the rest of the world and similar payments made to Non-residents within the domestic territory i.e.,

NFIA= Factor income earned from abroad – Factor income paid abroad.

- NY = DY + NFIA
- DY = NY – NFIA

Factor Cost And Market Price:

1. Factor Cost (FC): It refers to amount paid to factors of production for their contribution in the production process.

2. Market Price (MP): It refers to the price at which product is actually sold in the market. The difference between these two is Net Indirect Taxes (NIT) which is included in MP and excluded from FC. Where NIT is the difference between indirect taxes and subsidies.

- NIT = IT – Subsidies

Where, Indirect Taxes are the taxes which are levied by the government on production and sale of commodity. Sales tax, excise duty, custom duty, etc. are some of the indirect taxes, and subsidies are the cash grants given by the government to the enterprises to encourage production of certain commodities, to promote exports or to sell goods at prices lower than the free market Price. In India, LPG cylinder is sold at subsidized rates.

- MP = FC + NIT (Indirect Taxes – Subsidies)
- FC = MP – NIT (Indirect Taxes – Subsidies)

Aggregate Of National Income

1. Gross Domestic Product at Market Price (GDPMP): GDPMP is defined as the gross market value of the final goods and services produced within the domestic territory of a country during an accounting year by all production units.

(a) 'Gross' in GDPMP signifies that depreciation is included, i.e., no provision has been made for depreciation.

(b) 'Domestic' in GDPMP signifies that it includes all the final goods and services produced by all the production units located within the economic territory (irrespective of the fact whether produced by residents or non-residents).

(c) 'Market Price' in GDPMP signifies that indirect taxes are included and subsidies are excluded, i.e., it shows that Net Indirect Taxes (NIT) have been included.

(d) 'Product' in GDPMP signifies that only final goods and services have to be included and intermediate goods should not be included to avoid the double counting.

2. Gross Domestic Product at Factor Cost (GDPFC): GDPFC is defined as the gross factor value of the final goods and services produced within the domestic territory of a country during an accounting year by all production units excluding Net Indirect Tax.

- GDPFC = GDPMP – Net Indirect Taxes

3. Net Domestic Product at Market Price (NDPMP)

NDPMP is defined as the net market value of all the final goods and services produced within the domestic territory of a country by its normal residents and non-residents during an accounting year.

NDPMP =GDPMP – Depreciation

4. Net Domestic Product at Factor Cost (NDPFC)

NDPFC refers to a total factor income earned by the factor of production within the domestic territory of a country during an accounting year.

NDPFC = GDPMP – Depreciation – Net Indirect Taxes.

= GDPFC- Depriciation

NDPFC is also known as Domestic Income or Domestic factor income.

5. Gross National Product at Market Price (GNPMP)

GNPMP refers to market value of all the final goods and services produced by the normal residents of a country during an accounting year.

GNPMP = GDPMP + Net factor income from abroad

It must be noted that GNPMP can be less than GDPMP when NFIA is negative. However, GNPMP will be more than GDPMP when NFIA is positive.

6. Gross National Product at Factor Cost (GDPFC) or Gross National Income GNPFC: It refers to gross factor value of all the final goods and services produced by the normal residents of a country during an accounting year.

- GDPFC = GNPMP – Net Indirect Taxes

7. Net National Product at Market Price (NNPMP): NNPMP refers to net market value of all the final goods and services produced by the normal residents of a country during an accounting year.

- NNPMP = GNPMP – Depreciation

8. Net National Product at Factor Cost (NNPFC).

- NNPFC refers to net money value of all the final goods and services produced by the normal residents of a country during an accounting year.
- NNPFC = GNPMP – Depreciation – Net Indirect Taxes. It must be noted that NNPFC is also known as National Income

Real, Nominal Aggregates, Activities Excluded From GDP And Does GDP Measures Social Welfare:

1. National Income at Constant Price:

(a) If national income is calculated on the basis of base year price index, then it is known as National income at constant price.

(b) It is also called Real National Income as it fluctuates due to the fluctuation in the flow of goods and services and price remains constant.

2. National Income at Current Price:

(a) If National Income is calculated on the basis of current year price index, then it is known as national income at current price.

(b) It is also called Monetary National Income as it fluctuates due to the fluctuation in the flow of goods and services along with the price of the commodity.

3. GNP at current MP: When final goods and services included in GNP are valued at current MP, i.e., prices prevailing in the year for which GNP is being measured, it is called GNP at current MP or Nominal GNP.

4. GNP at constant MP: When final goods and services included in GNP are valued at constant prices, i.e. prices of the base year, it is called GNP at constant MP or Real GNP.

5. GNP Deflator: GNP Deflator measures the average level of the prices of all the final goods and services that are produced within the domestic territory of an economy including NFIA. GNP deflator is measured as the ratio of nominal GNP to real GNP, multiplied by 100.

Price Index Number: It measures the general changes in the prices of goods. It compares the level of prices between two different time periods**.**

Conversion from Nominal to Real

- GNP deflator is essentially an adjustment factor used to convert nominal GNP into real GNP. The GNP deflator can also be stated as the ratio of price index number (PIN) of a chosen year to the price index number of the base year i.e. 100.
- GNP Deflator= PIN of the chosen year /100
- Real GNP= Nominal GNP/GNP Deflator

Real GNP= Nominal GNP/ PIN of the chosen year /100

Suppose nominal GNP of a country i.e. GNP estimated at current prices, in year 2012 is given at INR 500 billion and PIN is given as base year 2012=100. Now let the nominal GNP increase to INR 600 billion in year 2017 and PIN rises to 110. Given this data, GNP deflator for a country can be

GNP Deflator= PIN (2017)/PIN (2012) =110/100=1.10

Given the GNP deflator at 1.10, the real GNP for the year 2017 :

Real GNP (2017)= INR 600billion/1.10= INR 545.45 billion

6. Green GNP: Green GNP refers to GNP adjusted for loss of value due to,

(a) Environmental degradation; and

(b) Depletion of natural resources on account of overall production activity in the economy.

7. Activities excluded from GDPMP: The activities are as follows:

a) Purely financial transactions

(i) Buying and selling of securities:

• In financial markets potential savers and investors buy and sell financial assets such as shares and bonds.

• While someone buys a share, there is only a transfer of ownership right. It is a claim to ownership of assets.

• Trading in financial instruments does not imply production of final goods and services. As such these are not included in the GNP.

(ii) Government Transfer payments

• Transfer Payments are payments for which no goods and services are provided in exchange. Pension payments employees social security measures, etc. are examples for Government Transfer Payment as there is no production of final goods and services in response to transfer Payment, transfer payments are not included in GNP.

(iii) Private Transfer Payments:

(a) Items such as pocket money given by parents to their children, and elders gifting money to the young ones are private transfer payments.

This is merely a transfer of money from one individual to another. Hence, this is not included in GNP.

(b) Transfer of used goods:

(i) GNP refers to the value of the final goods and services produced in a given year. Hence, goods produced in the previous time period cannot be included in the GNP. For example, Mr A sells his old bike to Mr B for rs. 30,000 on 25th April 2011 which was purchased by Mr A on 1st March 2010 for Rs. 45,000. This transaction should not be included as it has already been included in the 2010 GNP and if we again include it, then it will create the problem of double counting.

(c) Non-market goods and services:

(i) Many final goods and services are not acquired through regular market transaction. Vegetables can be grown in the backyard instead of buying them from the super market or an electrical fault can be repaired by the house owner himself instead of hiring an electrician.

(ii) These are examples of Non-marketed goods and services that have been consumed with using organized markets as GNP includes only those transactions that occur through market activities.

(d) Illegal Activities: Activities like gambling, black-marketing etc., should be excluded because all unlawful activities are beyond the scope of NY and also because there is statistical problem of their estimation.

(e) Leisure Time Activities: Activities like painting, growing of flowers in kitchen garden, etc. is not included as their aim is not to earn money but to pass away free time in one's hobby or entertainment, again there is statistical problem of measuring their satisfaction derived in painting or any other leisure activities.

Limitations of using GDP as an index of welfare of a country

(a) Many goods and services contributing economic welfare are not included in GDP or Non-Monetary exchanges:

(i) There are many goods and services which are left out of estimation of national income on account of practical estimation difficulties e.g., services of housewives and other members, own account production, etc.

(ii) These are left on account of non-availability of data and problem in valuation.

(iii) It is generally agreed that these items contribute to economic welfare.

(iv) So, if we depend only on GDP, we would be underestimating economic welfare.

(b) Externality:

(i) When the activities of somebody result in benefits or harms to others with no payment received for the benefit and na payment made for the harm done, such benefits and harms are called externalities.

(ii) Activities resulting in benefits to others are positive externalities and increase welfare; and those resulting in harm to others are called negative externalities, and thus decrease welfare.

(iii) GDP does not take into account these externalities. For example, construction of a flyover or a highway reduces transport cost and journey time of its users who have not contributed anything towards its cost. Expenditure on construction is included in GDP but not the positive externalities flowing from it. GDP and positive externalities both increase welfare. Therefore, taking only GDP as an index of welfare understates welfare. It means that welfare is much more than it is indicated by GDP.

(iv) Similarly, GDP also does not take into account negative externalities. For examples, factories produce goods but at the same time create pollution of water and air. River Yamuna, now a drain, is a living example. The pollution harms people. The factories are not required to pay anything for harming people. Producing goods increases welfare but creating pollution reduces welfare. Therefore, taking only GDP as an index of welfare overstates welfare. In this case, welfare is much less than indicated by GDP.

(c) Change in the distribution of income (GDP) may affect welfare:

(i) All people do not earn the same amount of income. Some earn more and some earn less. In other words, there is unequal distribution of income.

(ii) At the same time, it is also true that in the event of rise in 'per capita real income' all are not better off equally. 'Per capita' is only an average. Income of some may rise by less and of some by more than the national average. In case of some it may even fall.

(iii) It means that the inequality in the distribution of income may increase or decrease.

(iv) If it increase it implies that rich become more rich and the poor become more poor.

(v) Utility of a rupee of income to the poor is more than to the rich. Suppose, the income of the poor declines by one rupee and that of the rich increases by one rupee. In such a case, the decline in welfare of the poor will be more than the increase in welfare of the rich.

(vi) Therefore, if the rise in per capita real income inequality increases, it may lead to a decline in welfare (in the macro sense).

(d) All products may not contribute equally to economic welfare:

(i) GDP includes different types of products, like food articles, houses, clothes, police services, military services, etc.

(ii) Some of these products contribute more to the welfare of the people, like food, clothes, houses, etc. Other products like police services, military services etc. may comparatively contribute less and may not directly affect the standard of living of the people.

(iii) Therefore, how much is the economic welfare would depend more on the types of goods and services produced, and not simply how much is produced.

(iv) It means that if GDP rises, the increase in welfare may not be in the same proportion.

(e) Contribution of some products may be negative:

(i) GDP includes all final products whether it is milk or liquor.

(ii) Milk may provide both immediate and ultimate satisfaction to consumers. On the other hand, liquor may provide some immediate satisfaction, but because of its harmful effects on health it may lead to decline in welfare.

(iii) GDP include only the monetary values of the products and not their contribution to welfare.

(iv) Therefore, economic welfare depends not only on the volume of consumption but also on the type or goods and services consumed.

Methods Of National Income And How To Determine National Income By Income Method

- There are three methods of calculating national income.
- These are:

(a) Income Method

(b) Expenditure Method

(c) Value Added Method/Product Method/Output Method

- National Income determination under income method:

(a) “Production creates income”. If we want to calculate National Income by Income method, then we have to add the different factor of income from the economy.

(b) The addition of all these factor incomes gives us the calculation near by the

National Income, i.e., Net Domestic Product at FC (NDPfc).

(c) Components of Income Method: Labour income, Capital Income, Mixed income

1. Compensation Of Employees (COE)/Emoluments of employees: The amount earned by employees from their employers, whether in cash or in kind or through any other social security scheme is known as compensation of employees.

- This is broadly divided into the following three components:

(a) Wages and Salaries payable in Cash:

(i) Wages and salaries receivable by the employees in respect of their work.

(ii) Special allowances for working overtime.

(iiij Cost of travel to and from work, and car parking.

(iv) Bonuses

(v) Commissions, gratuities, tips, cost of living (i.e., dearness allowance paid in our country) honorarium, vacation, sick leave allowance etc.

(vi) Pensions at the time of retirement (Deferred Wage): Pensions at the time of retirement are related to factor services rendered by recipient prior to their retirement. It is also known as deferred wage.

- Any expenses incurred by the employees and thereafter reimbursed by the business enterprise should be excluded from Compensation Of Employees (COE) as such expenses are part of intermediate consumption of business enterprise.

(b) Wages and Salaries in Kind: Remuneration in kind consists of goods and services that are not necessary for work and can be used by employees at their own discretion, for the satisfaction of their needs or wants or those of other members of their households. It includes:

(i) Meals and drinks including those consumed when travelling for business

(ii) Accommodation.

(iii) The services of vehicles or other durables provided for the personal use of the employees.

(iv) Goods and services produced as outputs from the employer's own process of production such as free travel for the employees of railways or airlines, or free coal for miners.

(v) Sports, recreation or holiday facilities for employees and their families.

(vi) Creches for children of employees.

(vii) Value of the interest foregone by employers when they provide loans to employees at reduced, or even zero rates of interest for the purposes of buying houses, furniture or other goods and services.

- It should be kept in mind that it does not include any facilities which are necessary for work and in which employees do not have any discretion. For example, uniforms or other forms of special clothing to be used for work only. Examples are uniforms for police, uniforms of drivers, uniforms for nurses in the hospital. It's so because such payments are intermediate consumption of business enterprises.

(c) Employers' Contribution to Social Security Schemes: Employers' make payments to social security schemes like life insurance, causality insurance, pension schemes etc. For example, there is a Contributory provident Fund Scheme for employees of educational institutions and public sector undertakings. The contribution made by the employers for such schemes is a part of compensation of employees.

The thing which has to be remembered is that, employers' contribution towards social security scheme should be included whereas employees' contribution towards Social Security Scheme should not be included as COE is that what the employer pays to employee and if anything borne by employee himself should not be included under COE.

2. Operating Surplus: The CSO (Central Statistical Organization) has defined operating surplus as "value of gross output less the sum of intermediate consumption, compensation of employees, mixed income, depreciation and NIT."

- Operating Surplus = GVOMP – Intermediate consumption – COE – Mixed Income – Depreciation – NIT

In other words, it is the sum of income from property and income from entrepreneurship. Operating surplus have the following two components:

(a) Income from property: It is the income which has been arisen from rent, interest and royalty.

- It is divided into three components:

(i) Rent: The income arising from ownership of land and building is known as rent. It also includes imputed rent. If a person living in his own house, then it is assumed in an economy that he is paying rent to himself. This concept is known as imputed rent.

(ii) Royalty: Royalties are the payments made for the use of mineral deposits such as coal, oil, etc. or for the use of patents, copyrights, trademarks, etc.

(iii) Interest: It is the amount earned for lending funds to the production units. It also includes imputed interest of funds provided by entrepreneur. But interest income includes interest on loan taken for productive services only.

(b) Income from entrepreneurship: It is a return of the entrepreneur after paying all the other factors of production. It is of the following three types:

(i) Distributed Profit (Dividend): It is that part of total profit which is given to shareholders.

- The thing to be noted here is that profit earned by one firm to another should not be included under this head because it is already included in the profit of the firm which pays it.

(ii) Undistributed Profit (Saving of private corporate sector or Retained Earnings):

- It is that part of total profit which is not given to shareholders and kept as a reserve for future uncertainties.

(iii) Corporation Tax (Profit Tax): It is that part of total profit which is given by a firm to the government as Tax.

- The concept of operating surplus is applicable to all producing enterprises, whether they belong to the private sector or to the government. The government enterprises also are expected to earn reasonable rate of profit on the funds invested.
- But, operating surplus does not arise in the general government sector as they produce goods and services for the social welfare of the country and not for profit motive i.e., why rent, interest and profit are zero in general government sector.

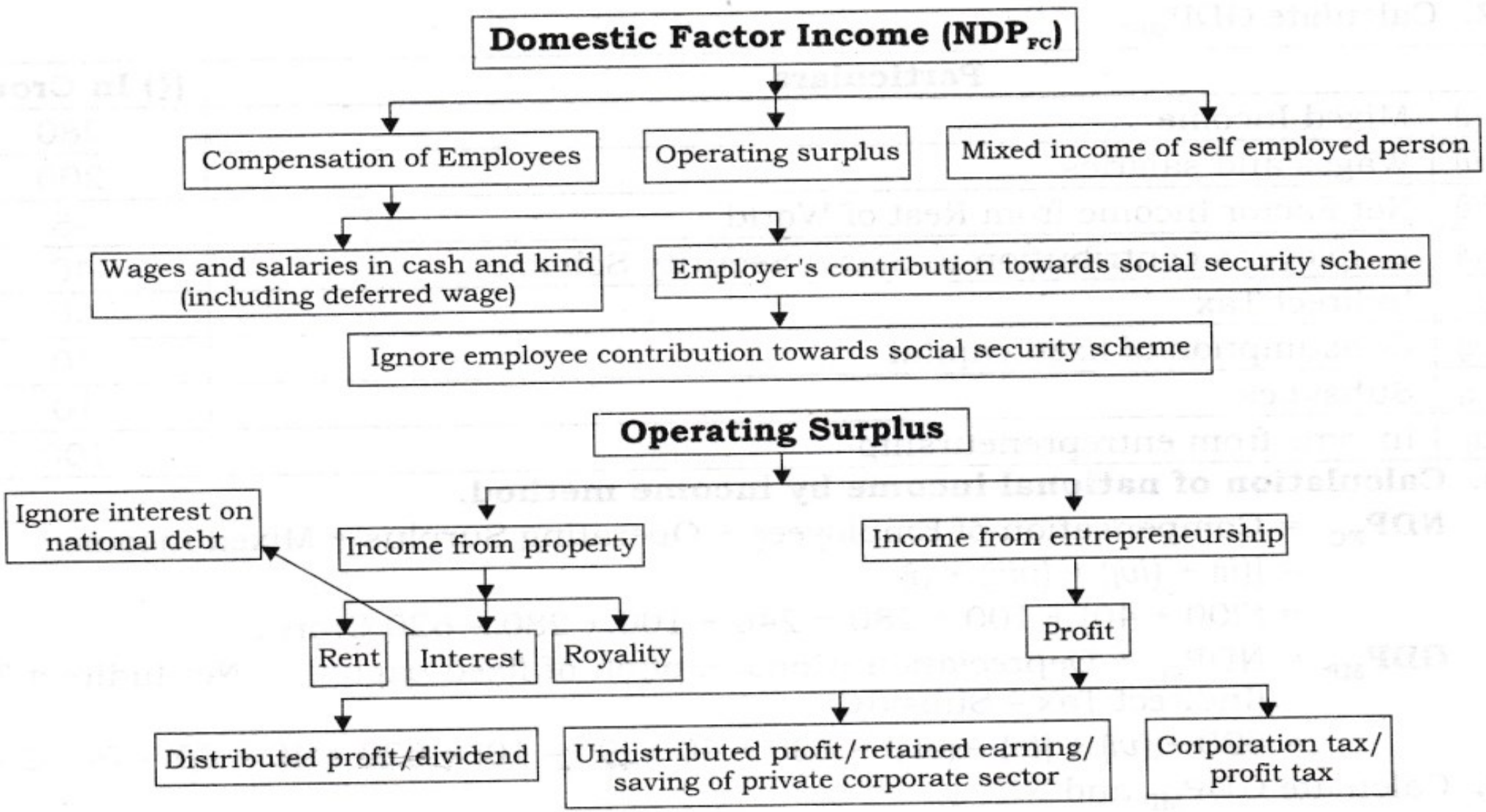
However, the following categories of interest should not be included :

• Interest on national debt or interest paid by the government on national debt should not be included as it is assumed that such interest is paid on loans taken for consumption purpose.

• Interest paid by one firm to another firm as it is already included in the profit of the firm which pays it.

3. Mixed Income: Income of own account workers (like farmers, doctors, barbers, etc.) and unincorporated enterprises (like small shopkeepers, repair shops) is known as mixed income. They do not maintain proper accounts. They do not generally hire factor services from the market rather use their own resources like land, labour, funds, etc. As the result of, it becomes difficult to classify their income distinctly among rent, wages, interest and profit.

- NDPFC Compensation of employees (COE) + Operating surplus (OS) + Mixed Income (MY)


Domestic Factor Income (NDP_{FC})
Compensation of Employees
Operating surplus
Mixed income of self employed person
Wages and salaries in cash and kind (including deferred wage)
Employer's contribution towards social security scheme
Ignore employee contribution towards social security scheme
Operating Surplus
Ignore interest on national debt
Income from property
Income from entrepreneurship
Rent
Interest
Royality
Profit
Distributed profit/dividend
Undistributed profit/retained earning/ saving of private corporate sector
Corporation tax/ profit tax

- Steps for calculating national income by income method:

Step 1: To identify enterprises which employ primary factors (Land, Labour, Capital, enterprise).

Step 2: To classify various types of factor income like:

(a) Compensation of employees: The amount earned by employees from their employer, whether in cash or in kind or through any other social security scheme is known as compensation of employees.

(b) Operating Surplus: It is the sum of income from property and income from entrepreneurship.

(c) Mixed Income: Income of own account workers (like farmers, doctors, barbers, etc.) and unincorporated enterprises (like small shopkeepers, repair shops) is known as mixed income.

Step 3: To estimate amount of factor payments made by each producing unit.

Step 4: To add all factor incomes / payments within domestic territory to get domestic income, i.e., NDPFC .

- NDPFC = Compensation of employees + Operating Surplus + Mixed Income
- Step 5: Addition of NFIA to NDPFC to get NY, i.e., NNPFC .

$$\mathbf{NNP_{FC} = NDP_{FC} + NFIA}$$

- Precautions of income method.

(a) Avoid transfers: National income includes only factor payments, i.e., payment for the services rendered to the production units by the owners of factors. Any payment for which no service is rendered is called a transfer, not a production activity. Gifts, donations etc. are main examples. Since transfers are not a production activity it must not be included in national income.

(b) Avoid capital gain: Capital gain refers to the income from the sale of second hand goods and financial assets. Income from the sale of old cars, old house, bonds, debentures, etc. are some examples. These transactions are not production transactions. So, any income arising to the owners of such things is not a factor income.

(c) Include income from self-consumed output: When a house owner lives in his house, he does not pay any rent. But infact he pays rent to himself. Since, rent is a payment for services rendered, even though rendered to the owner itself, it must be counted as a factor payment.

(d) Include free services provided by the owners of the production units: Owners work in their own unit but do not charge salary. Owners provide finance but do not charge any interest. Owners do production in their own buildings but do not charge rent. Although they do not charge, yet the services have been performed. The imputed value of these must be included in national income.

How To Determine National Income By Expenditure Method

- National income determination by Expenditure method:

(a) “Production creates income, income creates expenditure”. If we want to calculate National Income by this method, we have to add different final expenditures from an economy.

(b) The addition of all those final expenditure gives us the calculation near by the National Income, i.e. GDPMP .

In order to estimate the aggregate expenditure, any of the following 2 methods may be followed:

Income Disposal Method: In this method, all the money expenditures at market prices are added up together to obtain the total final expenditure. Items of expenditure that are taken into account

- Private consumption expenditure
- Direct tax payments
- Payments made to the non-profit institutions and charitable institutions like schools, hospitals, orphanage, etc.
- Private savings (or investments)

Product Disposal Method: The value of the products finally disposed of are computed and added together. It gives a measure of the total final expenditure, and, hence, a measure of the national income by expenditure method. Items of expenditure are included:

- Private consumer goods and services
- Private investment goods
- Public goods and services
- Net investment abroad

Components of Expenditure Method

1. Government Final Consumption Expenditure (GFCE): The expenditure made by a general government on current expenditure on goods and services like public health, defence, law and order, education, etc. These goods and services generate no income because it is produce by a general government without any profit motive.

- These goods and services are valued at their cost to the government as they are not sold to the citizen and have been produced for the social welfare of the citizens. So, GFCE = Intermediate consumption of government + Compensation of employees (wages and salaries in cash and in kind) by government + Direct purchases made abroad by government (purchases made by embassies and consulates located in foreign countries) + Consumption of fixed capital (depreciation) – Sale of goods and services by government.

$$NNP_{FC} = GDP_{MP} - Deprecation + NFIA - Net\ Indirect\ Tax$$

Where, GDP_{MP} = Private Final Consumption Expenditure + Government Final Consumption Expenditure + Gross Domestic Capital Formation + Net Exports (Exports – Imports)

Where, Gross Domestic Capital Formation = Gross Domestic Fixed Capital Formation + Change in Stock (Closing Stock – Opening Stock)

Note If net domestic capital formation is given, the outcome will be NDP_{MP}.

2. Private Final Consumption Expenditure (PFCE): Private final consumption expenditure is defined as consumption expenditure by consumer households (household final consumption expenditure) and private NPISH (Non-profit Institution serving households) on all types of consumer goods.

- PFCE = Household final consumption expenditure + Private non-profit Institution serving households final consumption expenditure.
- The value of following items is measured for getting private final Consumption Expenditure.

(a) Purchases of currently produced goods and services in the domestic market by consumer households and NPISH.

(b) Direct purchases made abroad by resident households are added but direct purchases in domestic market by non-resident households and extra territorial bodies are deducted.

- PFCE = Purchases of currently produced goods and services in the domestic Market by consumer households and NPISH households + direct purchases made abroad by resident households – direct purchases in domestic market by non¬resident households.

3. Gross Domestic Capital Formation or Gross Investment or Investment Expenditure:

- It refers to additions to the physical stock of capital during a period of time. It includes building machinery, Housing construction, construction of factories, etc. It has been classified into the following categories.

(a) Gross Domestic Fixed Capital Formation (GDFCF): It is the expenditure incurred on purchase of fixed assets. It is of three types:

(i) Gross Business Fixed Investment: It is the amount that the business units spend on purchase of newly produced capital goods like plant and equipments. Gross business fixed investment is the gross amount spent on newly produced fixed capital goods. When depreciation is deducted from it, we obtain Net Business fixed Investment.

- Gross Business Fixed Investment = Net Business fixed Investment + Depreciation

(ii) Gross Residential Construction Investment: This is the amount spent on construction of flats and residential houses. The investment is said to be gross when depreciation is not deducted and Net when depreciation is deducted.

(iii) Gross Public Investment: This includes capital formation by government in the form of building of roads, bridges, schools, hospitals, etc. This investment is called Gross when depreciation is not deducted and Net when depreciation is subtracted.

(b) Change In Stock (Closing Stock – Opening Stock) Or Inventory Investment: The difference between goods produced (production) and goods sold (sales) in a given year is called **inventory investment**. It is the net change in inventories of final goods, finished goods, semi-finished goods and raw material. These are included as they represent currently produced goods, which are not included in the current sale of final output. It is a difference between closing stock and the opening stock of the year.

(c) Net Acquisition Of Valuables: These are those high value durable goods like gold, silver, antiques, etc. which are taken at market price.

- GDCF = Gross domestic fixed capital formation (GDFCF) + Change in Stock (Closing Stock – Opening Stock) + Net acquisition of valuables

Or

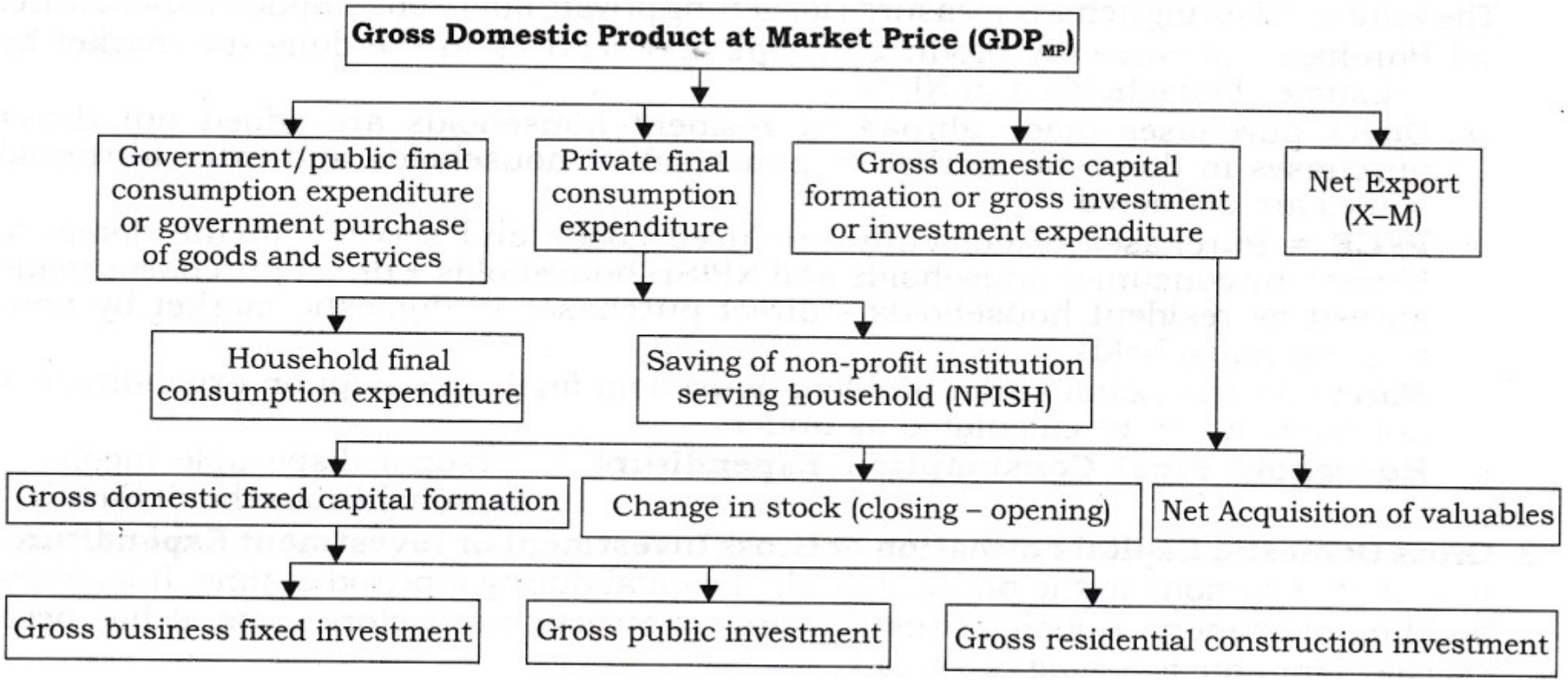
- GDCF = GDFCF (Gross Business Fixed Investment + Gross Residential Construction + Gross Public Investment) + Inventory Investment + Net Acquisition of Valuables

4. Net Export (Export – Import): It shows the difference between Domestic spending on foreign goods (i.e., imports) and foreign spending on domestic goods (i.e., exports).

Thus, the difference between exports and imports of a country is called Net Exports.

Net Exports = Export – Import

- GDPMP = Government final consumption expenditure + Private final consumption expenditure + Gross domestic capital formation + Net export


Gross Domestic Product at Market Price (GDP_{MP})
Government/public final consumption expenditure or government purchase of goods and services
Private final consumption expenditure
Gross domestic capital formation or gross investment or investment expenditure
Net Export (X–M)
Household final consumption expenditure
Saving of non-profit institution serving household (NPISH)
Gross domestic fixed capital formation
Change in stock (closing – opening)
Net Acquisition of valuables
Gross business fixed investment
Gross public investment
Gross residential construction investment

Value Added Method/Product Method/Output Method

- By this method, the total value of all the final goods and services produced in an economy during a given time period are estimated to obtain the value of domestic income. Value added refers to the addition of value to the raw material (intermediate goods) by a firm, by virtue of its productive activities. It is the contribution of an enterprise to the current flow of goods and services. It is calculated as the difference between value of output and value of intermediate consumption.
- Suppose a baker needs only flour to produce bread. He purchases flour as inputs worth Rs 500 from the miller and then by virtue of its productive activities, converts the flour into bread and sells the bread for Rs. 700

National Income (NNP_{FC}) = Gross Value Added by all the Production Enterprises within the Domestic Territory of the Country – Depreciation – Net Indirect Taxes + Net Factor Income from Abroad

[Where, Net Indirect Taxes = Indirect tax – Subsidies]

[Gross Value Added = Value of Output – Intermediate Consumption]

Value of Output = Sales + Change in Stock

Where, Change in Stock = Closing Stock – Opening Stock

Note If entire output is sold within the year, then value of output will be equal to sales itself.

or

Value of Output = Price × Quantity Sold

Product	Value of Inputs	Value of Final Output	Gross Value Added (Column 3 – Column 2)
Wheat	500	1000	500
Flour	1000	1500	500
Bread	1500	2000	500
Sandwich	2000	3000	1000
Total	4500	7500	2500

Precautions While Using Value Added Method

(i) The value of intermediate goods should not be included.

(ii) Purchase and sale of second hand goods should not be included.

(iii) Imputed value of self-consumed goods should be included, but self-consumed services should not be included.

(iv) Own account production should be included.

(v) Commission earned on account of sale and purchase of second hand goods is included.

(vi) If sales are given, then exports are not included separately.

(vii) If intermediate purchases are given, then imports are not included

1. Calculate sales from the following data

S.No.	Contents	₹ (in lakhs)
(i)	Subsidies	200
(ii)	Opening Stock	100
(iii)	Closing Stock	600
(iv)	Intermediate Consumption	3000
(v)	Consumption of Fixed Capital	700
(vi)	Profit	750
(vii)	Net Value Added at Factor Cost	2000

Ans. GVA_{MP} = Net Value Added at Factor Cost (NVA_{FC}) – Subsidies + Consumption of Fixed Capital

GVA_{MP} = 2000 – 200 + 700 = ₹ 2500 lakh

Gross Value Added at Market Price (GVA_{MP}) = Value of Output (Sales + Change in Stock) – Intermediate Consumption

2500 = Sales + (600 – 100) – 3000 (2)

Sales = 2500 + 3000 – 500 = 5500 – 500

∴ Sales = ₹ 5000 lakh (1)

2. Calculate sales from the following data

S.No.	Contents	₹ (in lakhs)
(i)	Intermediate Cost	700
(ii)	Consumption of Fixed Capital	80
(iii)	Change in Stock	(–)50
(iv)	Subsidy	60
(v)	Net Value Added at Factor Cost	1300
(vi)	Exports	50

Ans. Gross Value Added at Market Price (GVA_{MP}) = Net Value Added at Factor Cost (NVA_{FC}) – Subsidies + Consumption of Fixed Capital

GVA_{MP} = ₹ 1300 – 60 + 80

= ₹ 1320 lakh

GVA_{MP} = Value of Output (Sales + change in Stock) – Intermediate Cost (2)

1320 = Sales + (–50) – 700

Sales = 1320 + 50 + 700

Sales = ₹ 2070 lakh (1)

From the following data calculate Net Value Added at Factor Cost

S.No.	Contents	₹ (in crores)
(i)	Net Factor Income to Abroad	30
(ii)	Sales	3500
(iii)	Purchase of Intermediate Goods	2000
(iv)	Consumption of Fixed Capital	500
(v)	Exports	400
(vi)	Indirect Taxes	350
(vii)	Change in Stock	50

- Net Value Added at Factor Cost (NVAFC) = Value of Output (Sales + Change in Stock)-Purchase of
- Intermediate Goods – Consumption of Fixed Capital – Indirect Taxes
- = 3500 + 50 – 2000 – 500 – 350
- = 3550-2850 = Rs. 700 crore

Calculate Net Domestic Product at Factor Cost and Net National Disposable Income from the following

S. No.	Contents	₹ (in arab)
(i)	Net Current Transfers to Abroad	5
(ii)	Government Final Consumption Expenditure	100
(iii)	Net Indirect Tax	80
(iv)	Private Final Consumption Expenditure	300
(v)	Consumption of Fixed Capital	20
(vi)	Gross Domestic Fixed Capital Formation	50
(vii)	Net Imports	10
(viii)	Closing Stock	25
(ix)	Opening Stock	25
(x)	Net Factor Income to Abroad	10

Ans. (a) **Net Domestic Product at Factor Cost** (NDP_{FC})

= Private Final Consumption Expenditure + Government Final Consumption Expenditure + Gross Domestic Fixed Capital Formation + Change in Stock (Closing stock – opening stock) – Net Imports – Net Indirect Tax – Consumption of Fixed Capital

= 300 + 100 + 50 + (25 – 25) – (– 10) – 80 – 20

= 460 – 100 = ₹ 360 arab (3)

(b) **Net National Disposable Income** (NNDI)

= (NDP_{FC}) + Net Indirect Tax – Net Factor Income to Abroad – Net Current Transfers to Abroad

= 360 + 80 – 10 – 5 = ₹ 425 arab (3)

- 32. Giving reason explain how should the following be treated in estimating Gross Domestic Product at Market Price ?

(i) Fees to a mechanic paid by a firm.

(ii) Interest paid by an individual on a car loan taken from a bank.

(iii) Expenditure on purchasing a car for use by a firm

Ans. (i) it is included in the GDPMP, as it is a part of government final consumption expenditure.

(ii) It is not included in the estimation of GDPMP because loans are not used for production purpose.

(iii) It is included in the estimation of GDPMP because it is a part of final expenditure by a firm.

Circular Flow of Income in a Two-Sector Economy:

- According to circular flow of income in a two-sector economy, there are only two sectors of the economy, i.e., household sector and business sector. Government does not exist at all, therefore, there is no public expenditure, no taxes, no subsidies, no social security contribution, etc. The economy is a closed one, having no international trade relations. Now we will discuss each of the two sectors:

- (i) Household Sector: The household sector is the sole buyer of goods and services, and the sole supplier of factors of production, i.e., land, labour, capital and organisation. It spends its entire income on the purchase of goods and services produced by the business sector. Since the household sector spends the whole income on the purchase of goods and services, therefore, there are no savings and investments. The household sector receives income from business sector by providing the factors of production owned by it.

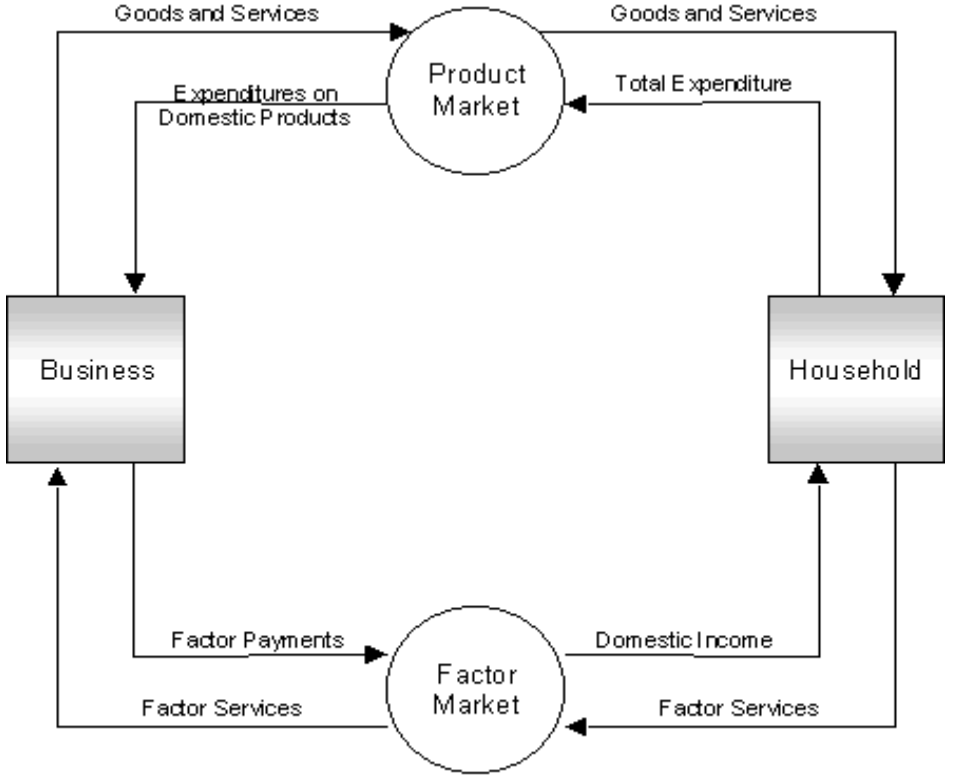


Figure 1 – Circular Flow of Income in a Two-Sector Economy

Circular Flow of Income in a Two-Sector Economy (Saving Economy)

- In a two-sector macro-economy, if there is saving by the household sector out of its income, the goods of the business sector will remain unsold by the amount of savings. Production will be reduced and so the income of the households will fall. In case the savings of the households is loaned to the business sector for capital expansion, then the gap created in income flow will be filled by investment. Through investment, the equilibrium level between income and output is maintained at the original level. It is illustrated in the following figure:

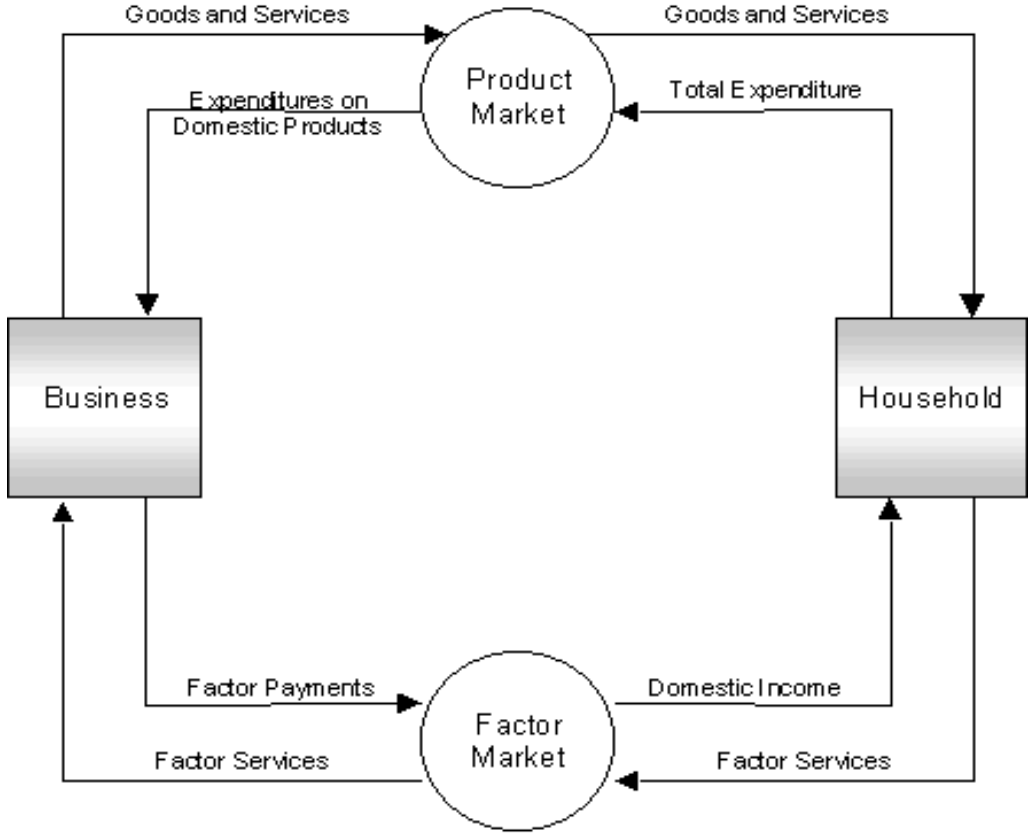


Figure 2 – Circular Flow of Income in a Two-Sector Economy (Saving)

- The equilibrium condition for two-sector economy with saving is as follows:

- $Y = C + S$ or $Y = C + I$ or $C + S = C + I$

or

- $S = I$
- Where Y is Income, C is Consumption, S is Saving, and I is Investment.

- When saving and investment are added to the circular flow, there are two paths by which funds can travel on their way from households to product markets. One path is direct, via consumption expenditures. The other is indirect, via saving, financial markets, and investment.

- Savings: On the average, households spend less each year than they receive in income. The portion of household income that is not used to buy goods and services or to pay taxes is termed 'Saving'. Since there is no government in a two-sector economy, therefore, there are no taxes in this economy.
- The most familiar form of saving is the use of part of a household's income to make deposits in bank accounts or to buy stocks, bonds, or other financial instruments, rather than to buy goods and services. However, economists take a broader view of saving. They also consider households to be saving when they repay debts. Debt repayments are a form of saving because they, too, are income that is not devoted to consumption or taxes.
- Investment: Whereas households, on the average, spend less each year than they receive in income, business firms, on the average, spend more each year than they receive from the sale of their products. They do so because, in addition to paying for the productive resources they need to carry out production at its current level, they desire to undertake investment. Investment includes all spending that is directed toward increasing the economy's stock of capital.

Saving-Investment Identity in National Income Accounts in a Two Sector Economy:

- In a simple economy which has neither government, nor foreign trade, the value of output produced which we denote by Y is equal to the value of output sold. Since the value of output sold in a simple two sector economy is equal to the sum of consumption expenditure and investment expenditure. Hence, $Y \equiv C + I$ ----------(i)

where Y = Value of aggregate output, C = Consumption expenditure and I = Investment expenditure.

- A pertinent question which arises here is what happens to the unsold output. The unsold output leads to the increase in the inventories of goods and in national income accounting increase in inventories of goods is treated as a part of actual investment. This may be considered as the firms selling the goods to themselves to add to their inventories. Thus, gross national product (GNP) produced is used either for consumption or for investment.

- Now, look at the gross national product or income in the simple economy from the viewpoint of its allocation between consumption and saving. Since national income (which is equal to GNP) can be either consumed or saved,. We have Y Ξ C+ S------(ii)

- From the identities (i) and (ii) we get
- C+ I Ξ Y Ξ C+ S-------(iii)
- The left hand side of the identity (iii), namely C + I = Y shows the components of aggregate demand (that is, aggregate expenditure on goods and services produced) and the right-hand side of the identity (iii) namely Y = C + S shows the allocation of national income to either consumption or saving. Thus, the identity (iii) shows that the value of output produced or sold is equal to the total income received. It is income received that is spent on goods and services produced.
- Now subtracting the consumption (C) from both sides of the identity (iii) we have
- I Ξ Y Ξ S

or I = S

- Thus, in our two sector simple economy with neither government, nor foreign trade, investment is identically equal to saving.