Chapter -6 National Income Fast Track/ Marathon

National Income: Basics

a) National Income measure **short-run performance of an economy.**
b) National income gives us an idea of the working of an economy .
c) National income accounts provide a **comprehensive, conceptual and accounting framework.**
d) National Accounts help us to understand **how the various transactions from the stage of production of goods and services to the stage of their final disposal are interrelated.**
e) It helps to meet the needs of **Government, private analysts,policy makers** and **decision takers.**
f) National Income Accounting was pioneered by the Nobel prize-winning economists **Simon Kuznets and Richard Stone**
g) The task to measure National Income is undertaken by **Central Statistical Organization (CSO)**, a department of The **Ministry** of Statisticsand **Programme Implementation (MoSP&I)**
h) At the State level, **State Directorates of Economics and Statistics (DESs)** have the responsibility of compiling their State Domestic Product and other aggregates.

Distinguish between Non-economic activities and economic activities

1. Economic Activities- Goods and services that **can be purchased / exchanged with money.**
2. Non-economic activities are those which **produce goods and services but are not exchanged** in a market.

What is the national Income ?

National Income is defined as money value[1] of final goods and services[2] produced by the normal residents[3] of a country, whether operating within the domestic territory[4] of the country or outside produced within in an accounting year[5].

a. **Expressed in Money Value-**
   - It becomes necessary to measure their value against some commonlyaccepted denominator.
   - Thus, money being the measuring rod.

b. **Final Value of Goods and services-**
   1. Value final goods and services are included to avoid double counting.
   2. *Intermediate goods are those goods and services which are used by producers as input into further stage of production*

The final products are of two types- Consumer Goods and Services and Producer Goods-

1. Consumer Goods- Where the goods and services are used for final consumption bythe consumer, it is called as Consumer Goods and services.
   E.g. - TV, Food, Home appliances.

2. Producers Goods- Where the final product is used in production of othergoods/ service in future, it is called as Producers goods.
   E.g. Computer used for developing programs or software, Plant and Machinery used in manufacturing of goods

c. Normal resident-

1. Normal resident of a country refers to an individual or an institution who ordinarily resides inthe country and whose center of economic interest also lies in that country.
2. Normal residents include both, individuals and institutions.
3. Here the word 'Resident' is used and not the word 'Citizen'. Hence, they may or may not be citizen of that country

d. Domestic territory:

1. Domestic territory refers to geographical or political boundary of country.
2. It however does not include- international institutional (United nations, WHO, WTO) and foreign embassies located within geographical territory but includes embassies of this country located outside itsgeographical territory
3. Indian Ship and Indian aircrafts performing operations outside countryis also included in domestic territory.

e. Current output:

While calculating National income value of only current production is included, this is because the value of previous year's production is included in Previous year's National Income.

National income does not include the following transactions:

1. Pure purchase transaction such as sale and purchase of used goods/ second- hand goods, this is because nothing new is produced in the current year.
   However, where the goods are refurbished the added value must be taken in calculation of National Income.
2. Sale, purchase of securities is also excluded because it is just a change of ownership.
3. Transfer payments are included as there is no economic activity involved. E.g Pocket money by Parents, Gift to Son in law.

Transfer Payment-

1) Transfer payments are unilateral payments for which no productiveservices are rendered in return in the current year.
2) The recipient of this transfer payment does not make any contribution to current production in return for these payments
3) E.g Pension is given to a person in C.Y for rendering services in past,Unemployment allowance.

There are two types of transfer payments Viz. Current transfer and Capital transfer

4) Current transfer refers to the transfer made out of current income of payer and is added to current income of payee.
5) Capital transfer refers to transfer made out of the wealth of the payer and added to wealth of the receiver. (not in our syllabus).

Flow concept vs stock concept

Flow concept: - National income is a flow concept because it is measured over a period of time.

USEFULNESS OF NATIONAL INCOME ESTIMATES

- It is helpful in many ways such as

a) Helps business Businesses to forecast the future demand for their products.

b) shows the composition and structure of different sectors and the broad sectoral shifts in an economy over time.

a) Shows income distribution and the possible inequity in the distribution among different income categories .

b) Helps government to make various sector-specific development policies, make macroeconomic modeling, comparisons of structural statistics and analysis to increase growth rates.

c) Policy Formulation -Combined with financial and monetary data, national income data provides a guide to makepolicies for growth and inflation.

c) International comparisons in respect of incomes and living standards assist

Limitation of National Income

1. Income Distribution is not clearly reflected: implies that the gap between richand poor is widening
2. If the increase in GDP is on account of long working hours, Employment of child labour, and polluted working environment, exclusion of leisure such increase in GDP is not the real sign of welfare.
3. 'How much is produced' determines GDP. It does not reflect 'what is produced'.
4. If more of capital goods are produced the GDP will rise but the welfare may not increase in same manner.
5. Avoids importance of Non-Market Transaction- Example, Such as providing music class to society children for fun and other similar activity.

Explain the conceptual difficulties or challenges in measurement of national Income

The conceptual difficulties or challenges in measurement of national Income are:

1. Lack of an agreed definition of National Income. (like GDP, GNP, NDP, NNP etc)
2. Non-availability of accurate distinction between final and intermediate goods.
3. Issue of transfer payments.
4. Service of durable goods.
5. Valuation of New goods at constant price
6. Valuation of Government services -
7. Data available are either inadequacy or unreliable for calculation of national Income
8. Presence of non-monetize sector
9. Production for self-consumption

6: GDP AND WELFARE

Can the GDP of a country be taken as an index of the welfare of people in that country?

Answer:

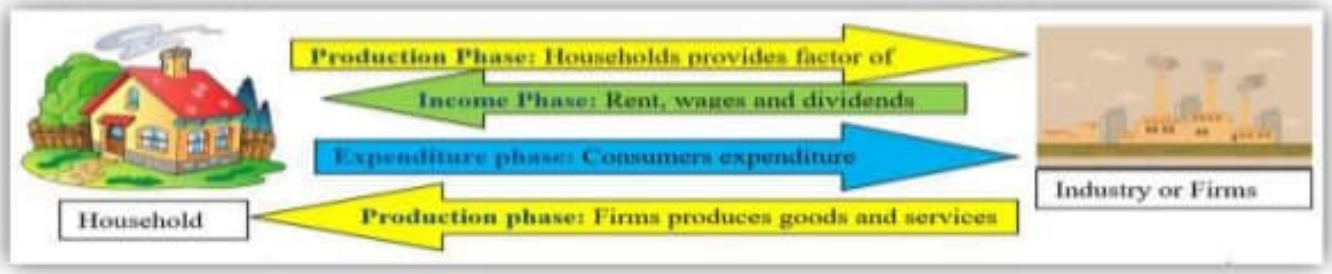
GDP is the sign of welfare increase in GDP Increases welfare yet.

- Countries may have Same national income and per capital income but their welfare may vary significantly .
- Welfare may increase many times but not GDP.
- GDP may increase many times but not Welfare -

THE SYSTEM OF REGIONAL ACCOUNTS IN INDIA

1. All the states and union territories of India compute state income estimates and district level estimates.
2. Regional accounts provide an integrated database on the many transactions taking place at state level.
3. State Income or Net State Domestic Product (NSDP)- volume of all goods and services produced in the state.
4. The state level estimates are prepared by respective State Directorates of Economics and Statistics (DESs) with assistance of The Central Statistical Organization assists the States.
5. Per Capita State Income = NSDP (State Income) / midyear projected population of the state
6. Certain activities such as are railways, communications, banking and insurance and central government administration, gives services to many states and their economic contribution cannot be assigned to any one state directly are known as the 'Supra-regional sectors' of the economy. The estimated value in these cases calculated and distributed to the states on the basis of relevant indicators

CIRCULAR FLOW OF INCOME



- Circular flow of income refers to the continuous circulation of production, income generation and expenditure involving different sectors of the economy.
- There are three different interlinked phases in a circular flow of income, namely: production, distribution and disposition.

1. In Production phase- firms produce goods and services with the help of factor services.
2. In Income or distribution phase, the flow of factor incomes in the form of rent, wages, interest and profits from firms to the households occurs
3. In Expenditure or disposition phase, the income received by different factors of production is spent on consumption of goods and services and investment goods. This expenditure leads to further production of goods and services and sustains the circular flow.

Circular flow of income can be viewed from two different angles-

1. *What is Real Flow?* Real flow consists of flow of factor service and flow of goods and services among different sector of economy- ***Yellow Arrows***
2. *What is Money flow?* Money flow consists of flow of money for factor services in form of wages, rent, dividend (Green arrow) and money expenditure incurred on purchase of goods and services **(Blue arrow/green)**.

ECONOMIC SECTORS OF AN ECONOMY

1. Household Sector:
2. Business Sectors/ Firm/ Producer:
3. Government Sector:
4. Foreign Sector/ Rest of the World

Models of circular flow of Economy

2 Sector	3 Sector	4 Sector
Household Sector Firm Sector	Household Sector Firm Sector Government	Household Sector Firm Sector Government Rest of the world
	Closed Economy	Open economy

Two Sector Model without savings- Refer Diagram below

Assumptions:

1. There are only two sectors in an economy. Householdsand the firms.
2. No savings is made by either by Household or by Firm.
3. Households spend entire income on goods and servicesand firm distributes entire proceeds in the form of factor payments.

In this two-sector model without investment it is assumed that all the income earned by the Household is spent on buying Consumer Goods from the firm, while all the proceed are distributed as factor payments to households. Thus, the equilibrium will be achieved.

In other words, there is no leakage in income and the below mentioned equations hold good-

1. Total production of Goods and services by firm= Total consumption of goods and services by households.
2. Factor Income of household= Total factor payments.
3. Income of the firm= Expenditure of the households.
4. Real flow = Money flow

Two Sector Model with Savings and Investment

Assumptions

1. *We have assumed that savings is done only byHouseholds and not firms.*
2. *All the savings made by the households are invested in capital Market.*

Savings, Leakage, reduction in flow of income and investment S=I

Savings made by the households and the investments may not be equal in all the time. There are three

possible situations mentioned below-

i. If Savings= Investment, equilibrium is achieved
ii. Is Savings > Investment, the flow of income declines
iii. Is Savings < Investment, the flow of income rises

Three Sector Model of circular flow of income

The three-sector model consists of Households, Firmsand Government.

1. The equilibrium condition of circular flow of income in 3 sector economy model is: S+T = I+G.
2. If (S+T)> (I+G)- Decline in flow of income
3. If (S+T)< (I+G)- Increase in flow of income

Four Sector Model of circular flow of income

It is also called as open economy model as it is engaged in international operations too.

Explanation:

- Export is denoted by X while Import is denoted by M.

Thus, it can be said that X constitutes injection while M creates leakage into circular flow of income.

1. At equilibrium = S+T+M = I+G+X
2. If S+T+M > I+G+X, there is decline in flow of income.
3. If S+T+M < I+G+X, there is increase in flow of income

Distinction between three and four sector Economy model:

Importance of Circular Flow of Income

1. Easy to view the entire system as circular flow of income.
2. Circular flow of income pinpoints the condition of macroeconomics equilibrium.
3. It gives an idea as to how different sectors of economy interacts
4. It shows how different sectors of economy (Household sector, Business sector, Government and Rest of the world) are interdependent and are interrelated.
5. It helps in determining size of income. We can estimate national income with the help of output, income and expenditure phases of circular flow of income

Thus,

National Income refers to -

1. Money Value of all the final goods and services produced by a country during a year. (Production Phase)
2. Total Flow of Earnings of the Factor Owners, in the form of Wages, Salaries, Rent, Interest and Profits, which they receive through the production of goods and services. (Income Generation Phase)

Unit 2- National Income Aggregates

Domestic Product and National Product (Domestic income and National Income)

Particulars	Domestic Products	National Products
Meaning	Money value of Final Goods and service producedby both, nationals of the country as well as foreign national located within domestic territory of a country during a year	Money value of Final Goods and service produced by Normal Resident of a country whether operating within domestic territory of a country or outside.
Basis of differentaition	▲ Addressed with the question of where theincome is generated. ▲ It is geography or territory oriented	▲ It can be addressed with the question of who generates the income. ▲ It is Nationality Oriented. ▲ It excludes foreign national

Net factor Income Earned from Abroad

Net factor Income Earned from Abroad or **NFIA** is the difference between the factor income received and the factor income accruing to rest of the world

National Product at Market Price and National Product at Factor Cost

1) Factor cost refers to factor payment made by the business to the owners of factor of production in the form of rent, wages, interest and profit
2) *National product at Market price = National Product at factor cost + Indirect tax* - Subsidies, or*
3) *National product at Market price = National Product at factor cost + Net Indirect tax***

Factor Cost vs Basic Price vs Market Price

1) **Factor cost = Sum total of factor income in form of rent, wages, interest and profit**
2) **Base Price: = Factor cost + Production tax (License, Stamp duty, municipal tax, property tax) - Production subsidies**
3) **Market price = base price + Product tax (Indirect tax/ GST) - product subsidy**
4) **Market Price:** Basic Price + Product tax - Product Subsidy = Market Price.
5) **MP = FC + Net Indirect tax (when production tax and production subsidies are not given)**

Gross Vs Net

Net domestic Product = Gross domestic Product - Depreciation

Net national Product = Gross national Product - Depreciation

1- Gross Domestic Product at Market Price - GDP^{MP}

2- Gross National Product at Market Price - GNPMP

3- Net Domestic Product at Market Price - NDPMP

4- Net National Product at Market Price - NNPMP

5- Gross Domestic product at Factor cost - GDPFC

6- Gross National product at Factor cost - GNPFC

7- Net Domestic product at Factor cost - NDPFC

8- Net National product at Factor cost - NNPFC

Why NNP at factor cost is better measure of National Income than NNP at Market Price?
Answer: *NNP at Market price is affected by factor called as Net indirect tax. If there is change in tax rate and subsidy then NNP at market price figure will change accordingly* ***without*** *actual increasein Factor cost. Also, different countries have different tax rate and thus for* ***internationalcomparison*** *of relative income level.*

Types of Income:	
Disposable income	Income available for disposable and it **includes transfer payments.** *Example, Income may be 10,000 but one may also receive transfer payment which will increase the money received by him to the extent of transfer payment say 2000. Therefore, Income is 10000 while Disposable income is 12000* *Thus,* **Disposable income= Income + Net Transfer payment**** **Disposable income may be more or less depending upon whether Net transferpayment is positive or negative**
National Disposable Income	**National Disposable income is the sum total of National Income at Market priceand net of Current transfer received from rest of the world** **GNDI = GNP_{MP} + Net transfer Payments received from rest of the world** **NNDI = NNP_{MP} + Net transfer Payments received from rest of the world** **NNDI = GNP_{MP} + Net transfer Payments received from rest of the world- depreciation**
Disposable income of Private sectors	There are three disposable income aggregates, namely- 1. Private Income 2. Personal Income 3. Personal Disposable income

	Less	Miscellaneous receipts of Govt. department. Fines, fees etc.	30
	Less	Personal taxation	60
		Personal Income	640

Per Capital Income	a) It serves as an indicator of the standard of living of a country. b) Per capita income = $\frac{NNP_{FC}}{}$ Population

Summary
GNDI = GDP_{MP} + Net transfer payment received from rest of the world
NNDI = NDP_{MP} + Net transfer payment received from rest of the world
Private Income = NNP_{FC} - Income from property and entrepreneurship accruing to govt. commercial enterprises and admin department- Savings of non- Departmental enterprises of government +Interest on national debt +Net Current Transfer payment received from Govt. dept +Net transfer payment received from rest of the world
Personal Income = Private Income - Undistributed profits- Corporate taxes
Personal disposable income = Personal income- Personal taxes- Miscellaneous receipts of Govt. department.

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*Interest that Govt. pays on National debt: Sometimes govt. borrows fund from private institutionand pays the interest on the same. The interest shall be included in factor payment by it is argued that the monies are utilized for welfare purpose and thus shall be treated as Transfer payment.

**The private sector receives transfer payment both from Govt. and rest of the world. Reverse is also true in many cases.

	Nominal GDP	Real GDP
Also known as	GDP at Current price	GDP at Constant price
Meaning	GDP at Current price is the value of all final goods and services produced within the domestic territory of a country by normal residents, whether nationals or non- nationals, inclusive of depreciation during a year at market price prevailing in that year	GDP at Constant price is the value of all final goods and services produced within the domestic territory of a country by normal residents, whether nationals or non- nationals, inclusive of depreciation during a year at market price prevailing in base year
		GDP at constant price = $\frac{\text{GDP at Current price}}{\text{Price index of current year}} \times 100$

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GDP Deflator: It is the ratio of Nominal GDP (at Current Prices) to Real GDP (at Constant price)

GDP Deflator: $\frac{\text{Nominal GDP}}{\text{Real GDP}}$

a) GDP Deflator takes out the Inflation out of Nominal GDP. It deflates the GDP.

b) It converts Nominal GDP to Real GPD

Inflation:

a) Using the GDP deflator, the inflation rate between two consecutive years can be compute using the following procedure:

b) Inflation rate in year 2 = $\frac{\text{GDP deflator in year 2 - GDP deflator in year 1}}{\text{GDP deflator in year 1}} \times 100$

Methods of Measuring National Income

There are three ways to measure National Income

1. Product method or Value-added method- Flow of Goods andservices
2. Income Method- Flow of income generated
3. Expenditure Method- Flow of Expenditure on Goods andservices

Net product or Value-Added Method

Meaning	National income by value added method is the sum total of net value added at factor cost across all producing units of the economy less intermediate purchases from all other industries.
Steps 1	Identifying the producing enterprises and classifying them into different sectorsaccording to the nature of their activities (i) Primary sector- production units which produces goods and commodities by exploiting natural resources. Examples- farming, Mining, Fishing, etc. (ii) Secondary sector- This sector transforms one for of commodity into other formsuch as manufacturing (iii) Tertiary sector or service sector- Provides services which are intangible in nature.
Step 2	Estimating the gross value added (GVA **MP**) by each producing enterprise. Gross value added (GVA MP) = Gross Value of production - value of Purchase = Value of output - Intermediate consumption = (Sales + change in stock) -Intermediate consumption. This will Give us GDPMP
Step 3	Conversion: • GDP_{MP}- depreciation= NDP_{MP} • NDP_{MP}- Net indirect tax = NDP_{FC} • NDP_{FC}+ NFIA= NNP_{FC}
Inclusion and exclusions	Precaution in Estimation of National Income by Value-added Method- 1. Production for self- consumption 2. Own account production of fixed assets. 3. Imputed rent of owner-occupied houses. 4. Service of House wives shall. 5. Sale and purchase of existing commodities or second-hand goods shall not beincluded. However. 6. Sale and purchase of Share and Bonds

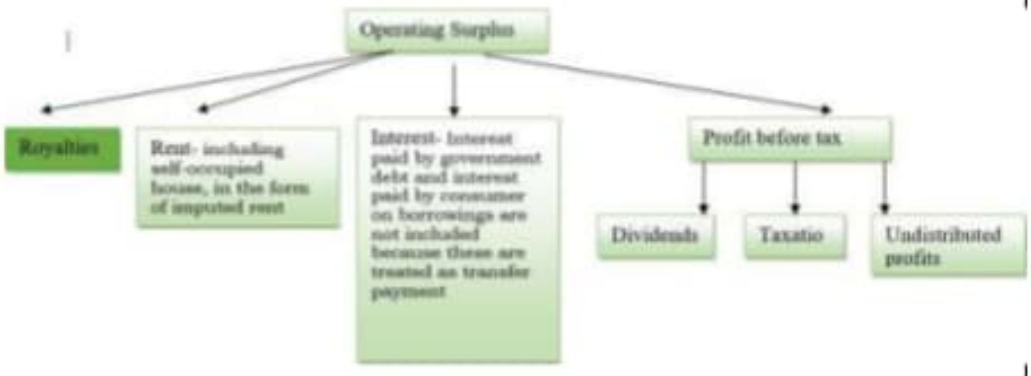
Income Method/ Factor Payment Method/ Distributed Share Method

Meaning	National income is calculated by summation offactor incomes paid out by all production unitswithin the domestic territory of a country as wages and salaries, rent, interest, and profit.
Steps 1	Classify the income into appropriate income categories namely, 1. Labour Income or Compensation to employees 2. Capital or Property income or Operating surplus

	3. Mixed Income of self employed This will give NDP^{FC}
Step 3	The above exercise will give NDP_{FC}. The adjustment of NFIA will give National Income
Labour Income	➢ This is the *compensation paid to the labour/ employee* for the servicerendered by them. ➢ It is the payment made by the producer to employees or labour, for the services rendered by them, in cash, kind and social security benefits.

Included	Excluded
Salaries and wages in cash including Bonus, DA, HRA	Old age pension shall not be considered while calculating Labour income as it is a transfer payment
Current year pension provision shall be considered.	TA shall be excluded if it is for business work or on reimbursement basis.
Travelling allowance shall be included if it is for travel form office tohome and home to work	Contribution of employee to social security fund shall not be added as it is already part of salary.
Contribution of employer to social security fund shall be added. E.g. Provident fund	Interest free loan given to employee
Commission paid to sales staff	Old age pension
Payment in kind- Rent free accommodation, Free Meal coupon	Income tax of employee
LIC premium paid by employer	Old age pension shall not be considered while calculating Labour income as it is a transfer payment

Operating Surplus



It is the income earned from **ownership and control of Capital**. Therefore, it is alsoknown as income from **property** and **entrepreneurship**.

It includes

- Rent- including self-occupied house, in the form of imputed rent
- Interest
- Royalties for
- Profit before tax

Note:

- ✓ If the question mentions about Profit before tax than Undistributed profit,dividend and corporate taxes shall be ignore.
- ✓ If the question does not mention about the profit before tax- add all three
- ✓ If nothing if prefixed to profit, assume it to be PBT
- ✓ Interest paid by government debt and interest paid by consumer on borrowingsare not included because these are treated as transfer payment

Mixed Income

- ➢ Mixed income is the income generated by own account workers and income of unincorporated enterprises.
- ➢ Example of such mixed income are legal service, agriculture, trading, proprietorship, Plumber, carpenter etc.
- ➢ Mixed income contains both components of income namely capital income and labour income of those who provides capital and labour service in production process.
- ➢ It is the composite of both labor income and capital income and arises in case where it is difficult to differentiate between labour element and capital element I factor of production.

Example of such incomes are own account workers like CA, Lawyer, Shopkeeper etc.

Inclusion and exclusion

Include	Exclude
Imputed rent of self-occupied house by owner of this house	Transfer payment- Refer earlier part of the chapter
Value of production for self-consumption	Illegal Income like, smuggling, drug dealing etc.
Imputed value of service provided byowner of production unit	Interest on loan taken for meeting consumption expenditure- eg. Loan to buy house, loan to buy car, etc.
Interest on loan taken for meeting business needs	Interest on national debt- refer earlier discussion
Brokerage service in facilitating the transaction of second-hand goods	Income in respect of second-hand commodities
Income tax and TDS to show gross income	Income arising from transfer of shares and other securities.

Difficulties

1. It is very difficult to estimate Mixed income in vast country with unincorporated sectors and un-organized sector.
2. Many economists criticize the non-inclusion of interest on national debt in calculation of national Income.
3. The data collected for calculation of NI is highly unreliable and

	understated.

Expenditure Method/ Income disposal Method

Meaning	In the expenditure approach, national income is the aggregate final expenditure in an economy during anaccounting year. This approach gives GDP at market price.
Explanation:	Expenditure on final goods and services in the economy is divided into four broad categories, namely 1. Private final consumption expenditure- Consumption expenditure done by households. 2. Investment Expenditure- Investment expenditure done by producers and Government in an economy. 3. Government final consumption expenditure- Consumption expenditure done bygovernment. 4. Net exports- foreign component of expenditure in the form of net exports.
Private Final consumption expenditure Denoted By C	The volume of final sales of goods and services to consumer households and nonprofit institutions serving households acquired for consumption (not for use in production) are multiplied by market prices and then summation is done. It also includes the value of primary products which are produced for own consumption by the households, payments for domestic services which one household renders to another.
Government final consumption expenditure Denoted By G	Government means general government and not the government enterprises Since the collective services provided by the governments such as defense,education, healthcare etc. are not sold in the market, the only way they can bevalued in money terms is by adding up the money spent by the government in theproduction of these services. This total expenditure is treated as consumptionexpenditure of the government. Government expenditure on pensions, scholarships, unemployment allowance etc. should be excluded because these are transfer payments.
Investment Expenditure Denoted By I	Gross domestic fixed capital formation includes final expenditure on machinery and equipment and own account production of machinery and equipment, expenditure on construction, expenditure on changes in inventories, and expenditure on the acquisition of valuables such as, jewelry and works of art. It comprises of- 1. Gross fixed investment- Expenditure on machinery and equipment, expenditure on construction, and expenditure on the acquisition of valuables such as, jewelry and works of art. 2. Inventory Investment- This means change in inventory. 3. Expenditure on residential investment- Expenditure on purchase or construction of new houses. Own account production of houses, expenditure on major repairs and renovation are to be included in

	expenditure on residential houses
Net Export Denoted by X-M	Net exports are the difference between exports and imports of a country during the accounting year. It can be positive or negative.
Formula	$GDP_{MP} = C+I+G+(X-M)$ Therefor National Income $Y = C + I + G + (X-M)$ +NFIA- Depreciation- NIT
Precautions	1. Goods meant for self-consumption shall be added and proper value shall beassigned in that case. 2. Own account production of machinery and equipment shall be added to calculatefinal expenditure on machinery and equipment. 3. Transfer payments shall be excluded. 4. Expenditure on second-hand goods should be excluded. 5. Expenditure on intermediate products should be excluded.

Question: Why are net exports added when computing national income by expenditure Method?

Choice of Different method

In many economies, it may not be possible to estimate National Income using any one method exclusively.

a) **Income Method** is more suitable in **Developed Economies**.

b) **If Commodity Flow and Expenditure** then Expenditure Methodcan be used.

c) An effective procedure is to arrive at National Income using all these three approaches / methods, which serves the following purposes -
   i. to permit cross-checking of different methods, ensuring greater accuracy of data,.
   ii. to provide more details and insights - e.g. Sectoral Contribution to Production, Income Group Distribution, Consumption and Investment Patterns, etc .

In India, a **combination of the three methods** is used, e.g. *Production Method is used for Agricultural Sector, Income Method is used for Small Scale Sector* and *Expenditure Method is used for Construction Sector*, to determine Net Value Added in that Sector.

Keynesian Theory of Income determination

Background:

- The Great Depression of the 1930's, was the greatest economic crisis the western world had experienced.
- Many economists then recommended **government spending** as a way of reducing unemployment, but they had no macroeconomic theory by which to justify their recommendations.
- A comprehensive theory to explain Income determination was first put forward by the British economist John Maynard Keynes in his masterpiece 'The General Theory of Employment Interest and Money' published in 1936.

- The Keynesian theory of income determination is presented in two sector model, three sector model and four sector mode.
- *Equilibrium output occur when the desired amount of output demanded by all the agents in the economy exactly equals the amount produced in a given time period. In other words, an economy is said to be in equilibrium when the production plans of the firms and the expenditure plans of the households match.*

Key Words:

Consumption Function	1. Functional relationship between aggregate consumption expenditure and aggregate disposable income, expressed as $C = f(Y)$. shows the level of consumption (C) corresponding to each level of disposable income (Y). 2. The consumption function describes the functional relationship between ***consumption spending and disposable income***.
Saving Function	Income not spent on consumption is saved. Thus, saving function denotes the balance after impact of consumption
Marginal Propensity to consume	The concept of MPC describes the relationship between change in consumption (ΔC) and the change in income (ΔY). The value of the increment to consumer expenditure per unit of increment to income is termed the Marginal Propensity to Consume (MPC). MPC = Consumption / Income
Marginal propensity to Save (MPS)	(1 - b) is called (Marginal Propensity to Save) MPS. MPS = S/ Y
Average propensity to consume	The average propensity to consume is a ratio of consumption defining income consumption relationship. The ratio of total consumption to total income is known as the average propensity to consume (APC) APC = Total consumption/ Total income

Income (Y)	Consumption (C)	APC (C/Y)	MPC (ΔC /ΔY)	MPS (ΔS/ΔY) =(1-MPC)
0	500	500/0 =∞	-	-
1000	1250	1250/1000 = 1.25	750/1000 = 0.75	0.25
2000	2000	2000/2000 = 1.00	750/1000 = 0.75	0.25
3000	2750	2750/3000 = 0.92	750/1000 = 0.75	0.25
6000	5000	5000/6000 = 0.83	1500/2000 = 0.75	0.25
10,000	8000	8000/10,000 = 0.80	3000/4000 = 0.75	0.25

Autonomous Expenditure	Autonomous consumption expenditure is the minimum expenditure to sustain life irrespective of size of income, thus it is income inelastic. The expenditure which do not vary with the level of income. They are determined by factors other than income such as business expectations and economic policy. They are generally made by ----- in the public sector with a view to provide public utilities & to make maximum social benefit.

Keynesian theory of determination of National Income in two Sector Model.

i. According to Keynes **AD=AS** (1)
ii. AD = C+ I (2)
iii. Aggregate Supply in terms of Money = Quantity Produced x Price.
iv. Value of Aggregate Supply = National Income (3)
v. Income (Y) = C+ S (4)
vi. Therefore from (1), (2), (3) & (4)
vii. C+S = C+I
viii. S=I
ix. C = a + by

- Why any other point cannot be Equilibrium NI?
- **Case 1:** AS > AD i.e C+S > C+I

  Ans: The firm will not be able to sell its stock & firm will reduce the production and cut down on expenditure, as a result demand for factor of production will decrease, in case of Factor will reduce and thus spending will fall. This process will continue till equilibrium is reached.

- **Case 2:** AS<AD i.e C+S < C+I

  Ans: Here Demand is greater than supply and hence producer will increase the production leading to higher National income. This will cause upward moment along the line to achieve the equilibrium

Keynesian theory of determination of National Income in three Sector Model.

Y= AS = C + S + T (2)
Ad = C + I + G (3)

∴ Consumption will be- C = a + b (Yd)

Keynesian theory of determination of NI in Four Sector Model.

In 4 Sector Economy

AS = AD
C + S + T = C + I + G + (x - m)
S + T = I + G + (x - m)
OR S + I + m = I + G + x

Investment Multiplier:

1. The multiplier refers to the phenomenon whereby a change in an injection of expenditure wil leadto a proportionately larger change (or multiple change) in the level of national income.
2. Multiplier explains how many times the aggregate income increases as a result of an increase in investment.
3. The ratio of ΔY to ΔI is called the investment multiplier, k.
4. Δ Y = k ΔI.

5. **The value of the multiplier is found from the equation k = 1/ (1– MPC). Or K = 1/ MPS**
6. **The multiplier shows how shocks to one sector are transmitted throughout the economy.**

Effect of Changes in Autonomous Investment

1. an increase in autonomous investment by ΔI shifts the aggregate demand schedule from $C+I$ to $C+I+\Delta I$.
2. Correspondingly, the equilibrium shifts from E to E^1 and the equilibrium income increases more than proportionately from Y_0 to Y_1.

Till how long these processes go?

1. The more powerful these leakages are, the smaller the value of the multiplier. The leakages are caused due to:
   a) **Progressive rates of taxation**
   b) **High liquidity preference and idle saving or holding of cash balances**
   c) **Demand met out of the existing stocks or through imports.**
   d) Additional income spent on **purchasing existing wealth or purchase of government securities and shares from shareholders or bondholders, income used for payment of debts**
   e) case of full employment additional investment will only lead to inflation, and scarcity of goods and services despite having high MPC

In underdeveloped countries value of multiplier is low, due to structural inadequacies, increase in consumption expenditure is not generally accompanied by increase in production.

Relationship between Investment Multiplier and Marginal Propensity to consumer

Higher the MPC, Higher will be the Value of Multiplier, and Vice versa. Maximum Value of Multiple will be Infinite when MPC is 1. We conclude that value of Multiplier is reciprocal of MPS (1-MPC)

Deflationary Gap

1. If the aggregate demand is for an amount of output less than the full employment level of output, then we say there is deficient demand.
2. Deficient demand gives rise to a 'deflationary gap' or 'recessionary gap'.
3. Recessionary gap also known as 'contractionary gap' arises in the Keynesian model of the macro economy when the equilibrium level of aggregate production achieved in the short-run falls short of what could be produced at full employment.
4. Recessionary gap occurs when the economy is in a business- cycle contraction or recession.