NATIONAL INCOME ACCOUNTING

- ✓ Concepts
- ➢ Methods

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Need for National Income Accounting

- Indicates Economic Growth:
  - it indicates performance and the level of economic growth in an economy. The data on national income and per capita display the true picture of the health of an economy. If both are increasing continuously, it surely reflects an increase in economic welfare, otherwise not.
- Helps in Policy Formulation:
  - Statistical data on national income not only helps in making economic analysis but also helps in policy formulation. Moreover it not only helps in formulating fiscal policy, monetary policy, foreign trade policy but also helps in making modifications and amendments wherever necessary.

Need for National Income Accounting

- Helpful in Making Comparisons
  - it helps us in comparing national income and per capita income of our country with those of other countries. This may lead us to make suitable changes in our plans and approach to achieve rapid economic development of our country.
- Helpful to Trade Unions
  - National accounts throw light on distribution of factor incomes which is very helpful to trade unions and other labour organizations in making rational analysis of the remuneration the labourers are getting.
- Distribution of income
  - National income accounting describes distribution of national income in terms of factors like interest, rent, profit & wages. It also shows the relative significance of the factors of production in the economy.

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Need for National Income Accounting

- Helpful in economic planning
  - National income accounting is helpful in economic planning. The planning commission comes to know about the resources available for economic planning.
- Structural changes in the economy
  - National income accounting is helpful in providing knowledge of structural changes in the economy. We are able to know that decrease or increase in share of agriculture and industry in national income.
- Facilitates forecasting
  - National income accounting is helpful in forecasting the effect of economic policies on the level of production & employment.

GDP and WELFARE

- GDP is a measure of the economic prosperity of a country compiled as output or income. There is a strong correlation between the development in GDP and changes in several important social factors, including tax payments and unemployment and, to a lesser extent, health and education. However, GDP is regularly criticised for not presenting a fair view of welfare. If GDP is a poor measure of welfare, focusing one-sidedly on increasing GDP may lead to misguided political decisions

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- The first criticism is that GDP is hopelessly flawed as a measure of human welfare. For example, the argument goes, it takes no account of pollution.
  - GDP has always been a measure of output, not of welfare. Using current prices, it measures the value of goods and services produced for final consumption, private and public, present and future.
  - But GDP can be considered a component of welfare.
- The second criticism is that GDP ignores distribution. In a rich country like the US, some say, the typical person or family has seen little or no benefit from growth since the 1970s. At the same time, inequality has risen sharply.
- The third criticism is that above a certain level, a higher material standard of living does not make people happier. This view concludes that we should

Importance of GDP:

(i) Study of economic growth: The GDP has not only a theoretic importance but also practical importance. Harris is of the opinion that the study of national income can be split up into two parts, one for the Ion term analysis and the other for short term study. If GDP increases ova years, it shows that we are heading towards prosperity and if it is stagnant or is falling, it indicates that the economy is declining.

(ii) Unequal distribution of wealth: The GDP throws light on the earnings of the various factors of production and the total output of the country. If the output is less and there is unequal distribution of wealth, the economist can suggest measures to increase output and to bridge the income gap between the rich and the poor.

(iii) Problems of inflation and deflation: The GDP statistics can help the economists a lot in solving the problems of inflation in the country.

(iv) The share of government in economic progress: In a centrally controlled economy, all the factors of production are awarded and are fully controlled by the state. In a mixed economy, the state as well as the people in cooperation with each other can take part in the economic advancement of the country, GDP shows the role which state is playing for the economic progress of the people.

(v) Comparison with developed countries of the world: The GDP figures help us to know the economic position of the people of the various countries. If the standard of living of the people in one country is low, they can take measures to increase the standard of living of the people.

(vi) Estimate of the purchasing power: The importance of the GDP can also be judged from the fact that it throws light in the purchasing power of the people, their power to save and the ability lo pay taxes to the government.

(vii) Guide to economic planning: The GDP figure is very helpful for the government to frame short and long term economic policies according to the prevailing conditions in the country.

(viii) Economy's structure: The GDP indicates the share of various sectors to the economy. If in a particular sector, the share is less and it is desired to be raised, then steps can be taken to increase it. GDP thus gives us a clear idea about the structure of the economy.

(ix) Public Sector: GDP studies help us to know the relative roles of public and private sector in the economy.

Problems of Measuring National Output

- Non marketed items: GDP ignores transactions that do not take place in organized markets. For example, the services performed in the home such as cleaning, cooking, child care, painting of houses by the residents themselves etc., go unrecorded. GDP statistics, thus, understate the true level of production in the country.
- Ignores the underground economy: There are certain economic activities that should have been included in the GDP account but they are not shown up because the activity is either illegal or unreported. For instance, a teacher doing tuition work at home but does not declare income to evade taxes. The waiters and waitresses do not report all their tips to avoid paying tax. The profits of illegal trade such as drugs sale etc. also go unrecorded.
- Human cost of productions: If GDP increases as a result of people having to work for longer hours and in unhygienic conditions, its net benefit will be less to the citizens of a country.
- GDP ignores externalities: When there is industrial growth in the country, its side effects such as pollution of air, water etc., are not taken into account.

Product Method

- Known as value added method
  - Value added is the difference between the value of goods as they leave a stage of production and the cost of the goods as they entered that stage.
  - Value added is the increase in value that a firm contributes to a product or service.
  - It is calculated by subtracting intermediate goods from the value of its sales.
  - We use the value added method to avoid the double counting.

Value added method

- STEPS
  1. Classification of Productive Enterprises
     - (a) Primary Sector: It produces goods by exploiting natural resources like land, water, forests, rivers, etc. It includes all agricultural and allied activities like fishing, forestry, mining and quarrying.
     - (b) Secondary Sector: It is also known as manufacturing sector. It transforms one type of commodity into another using men, machines and materials. For example, manufacturing of fabric from cotton and sugar from sugarcane.
     - (c) Tertiary Sector: It is also known as services sector which provides services like banking, insurance, transport, communication, trade and commerce, etc, to primary and secondary sectors.

2. Calculation of Value Added
   - Value of Output (-) Value of Intermediate Consumption
3. Calculation of Domestic Income
   - NDP_{FC}
4. Calculation of National Income
   - NFIA

Value Addition

Stage of Production	Value of intermediate good	Value of Sales	Value-added
Farmer - Palay		12,000	12,000
Rice Miller -Milled Rice	12,000	15,000	3,000
Retailers - Rice	15,000	20,000	5,000
GDP= Total Value Added			20,000

Participants	Cost of Materials	Value of Sales	Value Added
Farmer	$ 0	$ 100	$ 100
Cone factory and ice cream-maker	100	250	150
Middleperson	250	400	150
Vendor	400	500	100
Totals	$ 750	$1,250	$500

- In product method we calculate the aggregate annual value of goods and services produced in a year. It is also known as the Value Added method. In this method GDP is the sum of Gross Value Added by the entire production units in the economy. The term that is used to denote the net contribution made by a firm is called its value added.

- Simply it is the difference between value of output and input/ raw material/ intermediate product at each stage of production is called value added.

- the value added (value addition) of a firm = value of production of the firm (-) value of intermediate goods used by the firm.

- Gross Value Added = (gross)Value of Output – (gross)Value of intermediate goods
  - value of output =[sales + change in stock] –intermediate consumption
  - If we include depreciation in value added, then the measure of value added that we obtain Gross Value Added. If we deduct the value of depreciation from Gross Value Added, we obtain Net Value Added.

- Net Value Added (NVA or NDP_{FC}) = Value of output – Intermediate consumption – Consumption of fixed capital – Net indirect taxes
- Net Value Added at Market Price = Net Domestic Product at Market Price = Gross Value Added at Market Price – Depreciation
- Net Value Added at Factor Cost = Net Domestic Product at Factor Cost = Net Domestic Product at Market Price – Net Indirect Tax

Procedure

- Under this method, the economy is divided into different industrial sectors such as agriculture, fishing, mining, construction, manufacturing, trade and commerce, transport, communication and other services (primary, secondary, tertiary sectors)
- Then, the net value added at factor cost (NVA_{FC}) by each productive enterprise as well as by each industry or sector is estimated.

- in order to arrive at the net value added at factor cost by an enterprise we have to subtract the following from the value of output of an enterprise
  - Intermediate consumption which is the value of goods such as raw materials, fuels purchased from other firms
  - Consumption of fixed capital (depreciation)
  - Net indirect taxes.

- Summing up the net values added at factor cost (NVA_{FC}) by all productive enterprises of an industry or sector gives us the net value added at factor cost of each industry or sector.
- We then add up net values added at factor cost by all industries or sectors to get net domestic product at factor cost (NDP_{FC}).
- Lastly, to the net domestic product we add the net factor income from abroad to get net national product at factor cost (NNP_{FC}) which is also called national income.

NNP_{FC} (N.I) = GDP_{MP} (-) consumption of fixed capital (Depreciation) (+) Net Factor Income from Abroad (-) Net indirect Tax.

- GVA_{MP} = VOO(Value of output) in primary sector + VOO in secondary sector + VOO in tertiary sector – cost of intermediate consumption
- NVA_{FC}(NDP_{FC}) = GVA_{MP} – CFC(Depreciation) – NIT(Net Indirect Tax)
- National income(NNP_{FC}) = NDP_{FC} + NFIA

Items included and excluded in National Income Estimation by Value Added Method

Items Included	Items Excluded
1. Service of free government dispensary (it is a productive service).	1. Receipt from sale of land (only ownership has changed, no addition to national product has been made).
2. Production done for self-consumption.	2. Intermediate goods (as they cause double counting).
3. Final goods produced in an accounting year.	3. Sale of second hand goods (it also leads to double counting).
4. Rent paid by the tenant (it is a factor income).	4. Purchase of rented house by the tenants (only ownership changes like those of financial transactions).

Precautions to be taken in Product Method

- ✓ Imputed rent values of self-occupied houses should be included in the value of output. Though these payments are not made to others, their values can be easily estimated from prevailing values in the market.

- ✓ Sale and purchase of second-hand goods should not be included in measuring value of output of a year because their values were counted in the year of output of the year of their production. Of course, commission or brokerage earned in their sale and purchase has to be included because this is a new service rendered in the current year.

- ✓ Value of production for self-consumption are be counted while measuring national income. In this method, the production for self-consumption should be valued at the prevailing market prices.

- ✓ Value of services of housewives are not included because it is not easy to find out correctly the value of their services.

- ✓ Value of intermediate goods must not be counted while measuring value added because this will amount to double counting.

Suppose the GDP at market price of a country in a particular year was Rs 1,100 crores. Net Factor Income from Abroad was Rs 100 crores. The value of Indirect taxes – Subsidies was Rs 150 crores and National Income was Rs 850 crores. Calculate the **aggregate value of depreciation.**

Answer

As per question, GDPMP=1100 crores, NFIA =100 crores, NIT =150 crores, NNPFC = 850 crores

$\therefore GDP_{FC} = GDP_{MP} - NIT$

$= 1100 - 150 = 950$ crores.

$GNP_{FC} = GDP_{FC} + NFIA$

$= 950 + 100 = 1050$ crores.

$NNP_{FC} = GNP_{FC} + Depreciation$

$1050 = 850 + Depreciation$

Depreciation = 1050 – 850 = 200 crores.

Calculate net value added at market price of a firm: -

ITEMS	*(Rs. IN THOUSAND)*
i. Sale	*700*
ii. Change in stock	*40*
iii. Depriciation	*80*
iv. Net in direct taxes	*100*
v. Purchasse of machinery	*250*
vi. Purchase of intermediate product.	*400*

FORMULA: -

***Value of Output** = Sale + change in stock*

700 + 40=740

***NVAat mp** = Value of output - purchase of intermediate product - depreciation*

740 - 400 - 80 = 260 thousands

***Ans.** 260/- thousand*

Calculate net value added at market price of a firm

ITEMS	*(Rs. IN THOUSAND)*
i. Sale	*300*
ii. Change in stock	*-10*
iii. Depreciation	*20*
iv. Net in direct taxes	*30*
v. Purchase of machinery	*100*
vi. Purchase of intermediate product.	*150*

Value of output : - Sale + Change in stock (300+(-)10 = 290/-)

Gross Value added at mp = Value of output - Purchase of intermediate product.

290 - 150 = 140/-

Net Value added at mp = Gross Value added at mp - . Depreciation

140 - 20 = 120 thousands

ans.: - Rs. 120 thousands.

2. Calculate sales from the following data (Delhi 2013)

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)

GVA_{FC} ????

S.No.	Contents	₹ (in crores)
(i)	Units of Output Sold (units)	1000
(ii)	Price Per Unit of Output	30
(iii)	Depreciation	1000
(iv)	Intermediate Cost	12000
(v)	Closing Stock	3000
(vi)	Opening Stock	2000
(vii)	Excise Duty	2500
(viii)	Sales Tax	3500

Ans. Sales = Units of Output × Price Per Unit of Output

= 1000 × 30

= ₹ 30000 crore

Value of Output = Sales + Change in Stock

= 30000 + (3000 – 2000) = ₹ 31000 crore (1½)

Change in Stock = Closing Stock – Opening Stock

Hence, Gross Value Added at Factor Cost (GVA_{FC})

= Value of Output – Intermediate Cost – Net Indirect Taxes (Excise Duty + Sales Tax)

= 31000 – 12000 – (2500 + 3500)

Gross Value Added at Factor Cost (GVA_{FC}) = ₹ 13000 crore

FIND NVA_{MP}

S.No.	Contents	₹ (in crores)
(i)	Output Sold (units)	800
(ii)	Price Per Unit of Output	20
(iii)	Excise	1600
(iv)	Import Duty	400
(v)	Net Change in Stock	(–) 500
(vi)	Depreciation	1000
(vii)	Intermediate Cost	8000

Ans. Sales = Output Sold × Price Per Unit of Output = 800 × 20 = ₹ 16000 crore

Now, Value of Output = Sales + Net Change in Stock

= 16000 + (–500) = ₹ 15500 crore

Now, Gross Value Added at Market Price (GVA_{MP}) = Value of Output – Intermediate Cost

= 15500 – 8000 crore = ₹ 7500 crore

Hence, Net Value Added at Market Price (NVA_{MP}) = GVA_{MP} – Depreciation

= 7500 – 1000 crore

= ₹ 6500 crore

FIND NVA_{FC}

S.No.	Contents	₹ (in crores)
(i)	Price Per Unit of Output	25
(ii)	Output Sold (units)	1000
(iii)	Excise Duty	5000
(iv)	Depreciation	1000
(v)	Change in Stock	(–) 500
(vi)	Intermediate Cost	7000

Ans. Net Value Added at Factor Cost (NVA_{FC}) = (Price Per Unit of Output × Output Sold)
+ Change in Stock – Intermediate Cost – Depreciation
– Excise Duty

= (25 × 1000) – 500 – 7000 – 1000 – 5000

= 25000 – 13500

= ₹ 11500 crore

Calculate intermediate consumption

S.No.	Contents	₹ (in lakhs)
(i)	Value of Output	200
(ii)	Net value Added at Factor Cost	80
(iii)	Sales Tax	15
(iv)	Subsidy	5
(v)	Depreciation	20

Ans. Intermediate Consumption = Value of Output – Net Value Added at Factor Cost (NVA_{FC})+ Depreciation + (Sales Tax-Subsidy)

= 200-[80+ 20+ (15 -5)]

= Rs. 90 lakh

Calculate net value added at factor cost from the following data.

Items	Rs. In crores
Purchase of materials	30
Depreciation	12
Sales	200
Excise tax	20
Opening stock	15
Intermediate consumption	48
Closing stock	10

GVA_{MP} = Value of output – Intermediate Consumption

= Sales + change in stock – Intermediate Consumption

= 200+ (10 -15) – 48

= 200 - 5 - 48

= 200 - 53

= Rs.147 Crores

NVA_{MP} = GVA_{MP} –Depreciation

= Rs. 147 – 12

= Rs. 135 crores

NVA_{FC} = NVA_{MP} – Indirect tax

= 135 – 20

= Rs. 115 Crores

Income Method

By this method the total sum of the Factor payments received during a given period is estimated to obtain National Income. Depending on the way the income is earned, it can be classified into following components;

- Compensation to Employees
- Operating Surplus (rent, profit and interest)
- Mixed Income of Self-employed

Computation of National Income (By Income Method)

$$\text{National Income } (NNP_{FC}) = \text{Net Domestic Product at Factor Cost } (NDP_{FC}) + \text{Net Factor Income from Abroad}$$

$$\text{Where, } NDP_{FC} = \text{Compensation of Employees} + \text{Operating Surplus} + \text{Mixed Income}$$

$$\text{Operating Surplus} = \text{Rent} + \text{Interest} + \text{Profit}$$

- The income approach: A method of computing GDP that measures the income wages, rents, interest, and profits received by all factors of production in producing final goods.
- The income method measures national income from the side of payments made to the primary factors of production in the form of rent, wages ,interest and profit for their productive services in an accounting year.
- Components of domestic income
  - Compensation of employees (This is the reward or compensation paid to employees for rendering productive services**. It includes wages and salaries, Employer's contribution to social security schemes, dearness allowance, bonus, city allowance, house rent allowance, leave travelling allowance etc**.)
  - Operating surplus:- It includes rent, profit and interest. Profit includes corporate tax, dividend and undistributed profit.
  - Mixed income of self employed:- Income of own account workers like farmers, doctors, barbers etc, and unincorporated enterprises like small shopkeepers, repair shops retail traders etc, is known as mixed income.

Income

- Personal Income
- NNP_{FC} – UNDISTRIBUTED PROFITS – NET INTEREST MADE BY HPUSEHOLDS – CORPORATATION TAX + TRANSFER PAYMENTS
- Personal income is the income received by households after paying social insurance taxes but before paying personal income taxes.

- Personal Disposable Income
- PI - Personal Taxes
- Disposable personal income is what people have readily available to spend.

4. Precautions While Using Income Method

(i) Income from illegal activities like smuggling, theft, gambling, etc, should not be included.

(ii) Corresponding to production for self consumption, the generation of income of economy to be taken into account.

(iii) Brokerage on the sale/purchase of shares and bonds is to be included.

(iv) Income in terms of windfall gains should not be included.

(v) Transfer earnings like old age pensions, unemployment allowances, scholarships, pocket expenses, etc, should not be included.

From the following data, calculate national income

Items	In cr.
Compensation of employees	800
Mixed income of self employed	900
Net factor income from abroad	-50
Rent	350
Profit	600
Consumption of fixed capital	200
Net indirect taxes	250
Interest	450
Operating Surplus	1400

GDP_{MP} = Compensation of employees + mixed income of self employed + operating surplus + depreciation + net indirect taxes

=200+250+800+ 1400 (350+600+450)+900 =3550

GNP_{MP} = GDP_{MP} + NFIA

= 3550 +(-50)

= 3500

NNP_{MP} = GNP_{MP} – Dep.

= 3500- 200

= 3300

NNP_{FC} = NNP_{MP}- NIT

=3300- 250

=Rs. 3050 crores

Calculate NNP_{FC} and Private Income

S. No.	Contents	₹ (in arab)
(i)	National Debt Interest	60
(ii)	Wages and Salaries	600
(iii)	Net Current Transfers to Abroad	20
(iv)	Rent	200
(v)	Transfer Payments by Government	70
(vi)	Interest	300
(vii)	Net Domestic Product at Factor Cost Accruing to Government	400
(viii)	Social Security Contributions by Employers	100
(ix)	Net Factor Income Paid to Abroad	50
(x)	Profits	300

(a) **Net National Product at Factor Cost** (NNP_{FC})

= Wages and Salaries + Rent + Interest + Profits + Social Security Contributions by Employers – Net Factor Income Paid to Abroad

= 600 + 200 + 300 + 300 + 100 – 50 = 1500 – 50 = ₹ 1450 arab **(3)**

(b) **Private Income** = NNP_{FC} – Net domestic product at factor cost accruing to government + Transfer payment by government – Net current transfer to abroad + National debt interest

= 1450 – 400 + 70 – 20 + 60 = 1580 – 420 = ₹1160 arab **(3)**

From the following data, calculate national income

S. No.	Contents	₹ (in arab)
(i)	Social Security Contributions by Employees	90
(ii)	Wages and Salaries	800
(iii)	Net Current Transfers to Abroad	(–) 30
(iv)	Rent and Royalty	300
(v)	Net Factor Income to Abroad	50
(vi)	Social Security Contributions by Employers	100
(vii)	Profit	500
(viii)	Interest	400
(ix)	Consumption of Fixed Capital	200
(x)	Net Indirect Tax	250

Ans. (i) **Net National Product at Factor Cost** (NNP_{FC})

= Wages and Salaries + Social Security Contribution by Employers + Rent and Royalty + Profit + Interest – Net Factor Income to Abroad

= 800 + 100 + 300 + 500 + 400 – 50 = ₹ 2050 arab (3)

Calculate national income

S. No.	Contents	₹ (in arab)
(i)	Net Current Transfers to Abroad	(–) 15
(ii)	Private Final Consumption Expenditure	600
(iii)	Subsidies	20
(iv)	Government Final Consumption Expenditure	100
(v)	Indirect Tax	120
(vi)	Net Imports	20
(vii)	Consumption of Fixed Capital	35
(viii)	Net Change in Stocks	(–) 10
(ix)	Net Factor Income to Abroad	5
(x)	Net Domestic Capital Formation	110

Ans. (a) National Income (NNP_{FC})= Private Final Consumption Expenditure + Government Final Consumption Expenditure + Net Domestic Capital Formation – Net Imports – Net Indirect Tax- Net Factor Income to Abroad

= 600 + 100 + 110-20-(120-20)-5

= 810- 125 = Rs. 685 arab

(b) Gross National Disposable Income (GNDI)

= NNP_{FC} + Net Indirect Tax + Consumption of Fixed Capital – Net Current Transfer to Abroad = 685 + (120-20) + 35 -(- 15)

= Rs. 835 arab

Find personal disposable income

S. No.	Contents	₹ (in crores)
(i)	Net Domestic Product at Factor Cost accruing to private sector	700
(ii)	Corporation Tax	40
(iii)	Net Factor Income from Abroad	(–) 20
(iv)	Depreciation	50
(v)	Savings of Private Corporate Sector	150
(vi)	Current Transfers from Government	80
(vii)	National Debt Interest	60
(viii)	Direct Taxes Paid by Households	70
(ix)	Net Current Transfers to Abroad	(–) 10

Ans. Private Income = Net Domestic Product at Factor Cost Accuring to Private Sector + NFIA + Current Transfer from Government + National Debt Interest + Net Current Transfers from Abroad

= 700+ (-20)+ 80+ 60+ 10

= Rs. 830 crore

Personal Disposable Income = Private Income – Corporation Tax – Corporate Savings – Direct Tax

= 830-40-150-70 = Rs. 570 crore

Expenditure Method

In this method the total sum of expenditure on the purchase of final goods and services produced during an accounting year within an economy is estimated to obtain the value of domestic income. Final Expenditure is the expenditure on the purchase of final goods and services during an accounting year. It is broadly classified into 4 categories;

- Private final consumption expenditure
- Government final consumption expenditure
- Investment expenditure or gross domestic capital formation
- Net exports (exports – imports)

The expenditure approach: A method of computing GDP that measures the amount spent on all final goods during a given period.

Expenditure categories:

Personal consumption expenditures (C)—household spending on consumer goods.

Gross private domestic investment (I)—spending by firms and households on new capital: plant, equipment, inventory, and new residential structures.

Government consumption and gross investment (G)

Net exports (EX – IM)—net spending by the rest of the world, or exports (EX) minus imports (IM)

The expenditure approach calculates GDP by adding together these four components of spending. In equation form:

$$GDP = C + I + G + (X - M)$$

Computation of National Income (By Expenditure Method)

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

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}.

8. Precautions While Using Expenditure Method

(i) Only final expenditure is to be taken into account to avoid error of double counting.

(ii) Expenditure on second hand goods is not to be included.

(iii) Expenditure on transfer payments by the government is not to be included.

(iv) Imputed value of expenditure on goods produced for self consumption should be taken into account.

(v) Expenditure on shares and bonds is not to be included in Total Expenditure.

Items	Rs. In crores
Compensation of employees	1,200
Net factor income from	- 20
Net indirect taxes	120
Profit	800
Private final consumption expenditure	2,000
Net domestic capital formation	770
Consumption of fixed capital	130
Rent	400
Interest	620
Mixed income of self employed	700
Net export	-30
Govt. final consumption expenditure	1100
Operating surplus	1820
Employer’s contribution to social security scheme	300

GDPMP = Depreciation + private final consumption expenditure + net domestic capital formation + net exports + Govt. final consumption expenditure.

= 130 + 2,000 + 770 + (- 30) + 1,100

= 3,970 crore

GNPMP = GDPMP + NFIA

=3,970 + (-20)

=3,950 crore

NNPMP = GNPMP – Depreciation

= 3,950 – 130

= 3,820 crore

NNPFC = NNPMP – NIT

= 3,820 – 120

= Rs.3,700 crore

Calculate NNP_{MP}

S. No.	Contents	₹ (in arab)
(i)	Closing Stocks	10
(ii)	Consumption of Fixed Capital	40
(iii)	Private Final Consumption Expenditure	600
(iv)	Exports	50
(v)	Opening Stock	20
(vi)	Government Final Consumption Expenditure	100
(vii)	Imports	60
(viii)	Net Domestic Fixed Capital Formation	80
(ix)	Net Current Transfers to Abroad	(–)10
(x)	Net Factor Income to Abroad	30

Ans. (a) **Net National Product at Market Price** (NNP_{MP})

= Private Final Consumption Expenditure + Government Final Consumption Expenditure + Net Domestic Fixed Capital Formation + Change in Stock (Closing Stock – Opening Stock) + Net Exports (Exports – Imports) – Net Factor Income to abroad

= 600 + 100 + 80 + (10 – 20) + (50 – 60) – 30

= 780 – 50 = ₹ 730 arab (3)

Calculate Net Domestic Product at FC and Net National Disposable Income

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)**

Find NNP_{FC}

S.No.	Contents	₹ (in crores)
(i)	Private Final Consumption Expenditure	900
(ii)	Profit	100
(iii)	Government Final Consumption Expenditure	400
(iv)	Net Indirect Taxes	100
(v)	Gross Domestic Capital Formation	250
(vi)	Change in Stock	50
(vii)	Net Factor Income From Abroad	(–) 40
(viii)	Consumption of Fixed Capital	20
(ix)	Net Imports	30

Ans. National Income (NNP_{FC})

= Private Final Consumption Expenditure + Government Final Consumption Expenditure + Gross Domestic Capital Formation – Net Imports – Net Indirect Taxes – Consumption of Fixed Capital + Net Factor Income from Abroad

= 900 + 400 + 250-30-100-20 + (-40)

= 1550 – 190 = Rs. 1360 crore

Georgi Mathew Varughese

Difficulties in Measuring National Income in India

- Non-monetized Sector
- Lack of distinct differentiation in economic activities
- Conceptual problems
- Black money
- Inter-regional differences
- Non-availability of data about certain incomes
- Mass Illiteracy
- Difficulty in obtaining data about income
- Difficulties of sampling technique
- Misc. difficulties

Green GDP

- National income or output adjusted for the depletion of natural resources and degradation of environment.
- Eg. National Income is 100000 and the cost of pollution is 30000 then the Green GDP is 100000 – 30000 = 70000

National Disposable Income (NDI)

- National disposable income = National income + Net indirect taxes + Net current transfers from rest of the world
- Net Disposable Income Is the Income which is at the disposal of the nation as a whole for spending or disposal.
- National disposable income is the maximum available income (earned and transfer incomes) from all sources that a nation can spend on consumption and saving without disposing off its assets to finance its expenditure.

- National Disposable Income = NNPMP + other current transfers from the rest of the world, where current transfers from the rest of the world include items such as gifts, aids etc.

- Net Disposable Income (NDI) can be net and gross. Gross NDI includes depreciation whereas Net NDI is exclusive of depreciation. Net National Disposable Income is the sum of NNP at MP and net current transfers from rest of the world.

- As against it Gross National Disposable Income is the sum of Gross National Product at MP (GNP at MP) and net current transfers from rest of the world. The difference between the two is consumption of fixed capital at national level (i.e., national depreciation). Symbolically:
- Gross NDI = GNP at MP + Net current transfers from rest of the world
- Net NDI = NNP at MP + Net current transfers from rest of the world = Gross NDI – Depreciation

Private Income

- Factor income from net domestic product accruing to the private sector + national debt interest + net factor income from abroad + current transfers from government + other net transfers from the rest of the world

Questions

1. Calculation of national income , explain 3 methods
2. GDP and welfare how these are related
3. Explain circular flow of income

Write any 2 of this (3 marks each)

4. Calculate Nominal, Real GDP and GDP deflator from the table. (3 mark)

Year	Price of rice	Qty of rice	Price of wheat	Qty of wheat
2010	1	100	2	50
2011	2	150	3	100
2012	3	200	4	150
* Use 2010 as base year				

Nominal GDP

2010 – (1*100) + (2*50) = 200

2011 – (2*150) + (3*100) = 600

2012 – (3*200) + (4*150) = 1200

Real GDP

2010 – (1*100) + (2*50) = 200

2011 – (1*150) + (2*100) = 350

2012 – (1*200) + (2*150) = 500

GDP deflator

2010 – (200/ 200) * 100 = 100

2011 – (600/ 350) * 100 = 171

2012 – (1200 / 500) * 100 = 240

5. Calculate personal income (2 mark)

S.No.	Contents	₹ (in crores)
(i)	Retained Earnings of Private Corporations	20
(ii)	Miscellaneous Receipts of Government Administrative Departments	50
(iii)	Personal Disposable Income	200
(iv)	Personal Taxes	30
(v)	Corporate Profit Tax	10

Personal Income = Personal Disposable Income + Personal Taxes + Miscellaneous Receipts of Government Administrative Departments

= 200 + 30 + 50 = Rs. 280 crore

6. From the following data, calculate Personal Income and Personal Disposable Income. (Values are in crore) (4 mark)

(a) Net Domestic Product at factor cost 8,000

(b) Net Factor Income from abroad 200

(c) Undisbursed Profit 1,000

(d) Corporate Tax 500

(e) Interest Received by Households 1,500

(f) Interest Paid by Households 1,200

(g) Transfer Income 300

(h) Personal Tax 500

$NNP_{FC} = NDP_{FC} + NFIA = 8000 + 200 = 8200$

PI = NNP_{FC} – undistributed profits – corporate tax – net interest paid by households + transfer payments

= 8200 – 1000 – 500 – (-300) + 300 = 7300

7. Calculate Gross National Disposable Income and personal income from the following data (5 mark)

S.No.	Contents	₹ (in crores)
(i)	Net Factor Income from Abroad	(–) 50
(ii)	Net Indirect Taxes	110
(iii)	Current Transfers by Government	40
(iv)	Corporation Tax	60
(v)	Net Domestic Product at Factor Cost	800
(vi)	National Debt Interest	80
(vii)	Net Current Transfers to Abroad	10
(viii)	Consumption of Fixed Capital	50
(ix)	Domestic Product Accruing to Government	70
(x)	Retained Earnings of Private Corporations	10

Gross National Disposable Income = Net Domestic Product at Factor Cost (NDP_{FC}) + Net Factor Income from Abroad + Net Indirect Taxes – Net Current Transfers to Abroad + Consumption of Fixed Capital

= 800 + (–50) + 110 – 10 + 50

= ₹ 900 crore (2)

Personal Income

= Net Domestic Product at Factor Cost (NDP_{FC}) – Domestic Product Accruing to Government + Net Factor Income from Abroad + Current Transfers by Government – Net Current Transfers to Abroad + National Debt Interest – Corporation Tax – Retained Earnings of Private Corporations

= 800 – 70 + (–50) + 40 – 10 + 80 – 60 – 10

= 920 – 200

= ₹ 720 crore (2)

8. Net National Product at Factor Cost and Gross National Disposable Income from the following data (6 mark)

S.No.	Contents	₹ (in crores)
(i)	Savings of Non-departmental Enterprises	50
(ii)	Income From Property and Entrepreneurship Accruing to the Government Administrative Departments	70
(iii)	Personal Tax	90
(iv)	National Debt interest	20
(v)	Retained Earnings of Private Corporate Sector	10
(vi)	Current Transfer Payments by Government	40
(vii)	Consumption of Fixed Capital	60
(viii)	Corporation Tax	30
(ix)	Net Indirect Tax	80
(x)	Net Current Transfers from Rest of the World	(–) 10
(xi)	Personal Disposable Income	1000
(xii)	Net Factor Income to Abroad	(–) 10

- Income Accruing to Private Sector = Personal Disposable Income + Personal Tax + Retained Earnings of Private Corporate Sector + Corporation Tax – National Debt Interest – Current Transfer Payments by Government – Net Current Transfers from Rest of the World + Net Factor Income to Abroad

  = 1000 + 90 +10 + 30 – 20-40-(-10)+(-10) = Rs. 1070 crore

- NDP_{FC} = Income Accruing to Private Sector+ Saving of Non-departmental Enterprises + Income from Property and Entrepreneurship Accruing to the Government Administrative Departments

  = 1070 + 50 + 70 = Rs. 1190 crore

- NNP_{FC} = NDP_{FC} - NFIA = 1190 - (-10) = 1200 cr
- Gross National Disposable Income = NNP_{FC} + NIT + net current transfers from the rest of the world + Depreciation

  = 1200 + 80 + (10) + 60 = 1330ct

Calculate NNP at market price and Private Income from the data

S.No.	Contents	₹ (in crores)
(i)	Net Factor Income From Abroad	(–) 5
(ii)	Private Final Consumption Expenditure	100
(iii)	Personal Tax	20
(iv)	Gross National Disposable Income	170
(v)	Government Final Consumption Expenditure	20
(vi)	Corporation Tax	15
(vii)	Gross Domestic Capital Formation	30
(viii)	Personal Disposable Income	70
(ix)	Net Exports	(–) 10
(x)	Savings of Private Corporate Sector	5
(xi)	Net National Disposable Income	145

GDP = C + I + G + X – M = 100 + 30 + 20 + (-10) = 140

GNP = GDP + NFIA = 140 + (-5) = 135

NNP_{MP} = GNP_{MP} – Depreciation = GNP_{MP} - DFI = 135 – 25 = 110

(domestic factor income = gross NDI – net NDI = 170 – 145 = 25)

Private income = PDI + Personal Tax + corporation tax + savings of private corporate sector

= 70+20+15+5 = 110