CHAPTER – I
SOME BASIC CONCEPTS OF MACROECONOMICS

Macroeconomics is the study of economic problems at the macro level, or at the level of the economy as a whole.

Types of Goods Produced in the Economy

1. **Final & Goods**

These are those goods which have crossed the boundary line of production and are ready for use by their final users. **Who are the final users?** These are (i) consumers, and (ii) producers. Accordingly, final goods are often classified as: (i) Final consumer goods; and (ii) Final producer goods.

Final consumer goods are finally purchased by the consumers for the satisfaction of their wants. Final producer goods are finally purchased by the producers and are generally used as fixed assets in the process of production.

Expenditure on final consumer goods by the households is called consumption expenditure. Expenditure on final goods by the producers is called investment expenditure.

Accordingly, expenditure on final goods = consumption expenditure + investment expenditure.

2. **Consumer Goods**

Consumer goods (also called consumption goods) are those goods which are directly used for the satisfaction of human wants.

(i) **Durable Consumer Goods:** Durable consumer goods are those goods which can be used for several years and are of relatively high value.

(ii) **Semi-durable Consumer Goods:** Semi-durable consumer goods are those goods which can be used for a period of one year or slightly more.

(iii) **Non-durable or Single-use Consumer Goods:** Non-durable or single-use consumer goods are those goods which are used-up in a single act of consumption.

(iv) **Services:** Services are those non-material goods which directly satisfy human wants.

3. **Capital Goods**

Capital goods, as final goods, are fixed assets of the producers. These goods like plant and machinery, are repeatedly used in the process of production for several years.

4. **intermediate Goods**

In other words, intermediate goods are those goods which are purchased by one firm from the other firm: (i) as raw material, or (ii) as goods for resale.

Shirts purchased by firm X from firm Y for resale are intermediate goods.

Concept of Investment

Investment refers to a process of increase in the stock of capital.

1. **Fixed Investment** — Fixed investment refers to increase in the stock of fixed assets of the producers during an accounting year. Example If at the beginning of the year 2009 a producer has stock of 5 machines and at the end of 2009 he has stock of 7 machines. then the stock of his fixed assets increase by 2 machines during the years.

   Significance of Fixed Investment — We know fixed investment implies increase in the stock of fixed assets of the producers. It implies increase in the number (or size) of plants and machinery. Accordingly, it implies increase in the scale of production.
   Increase in the scale of output means increase in the level of output. Thus, fixed capital formation raises the level of output in the economy, It is a sign of growth and development.

   Fixed investment is also called fixed capital formation.

1. **Inventory Investment** — At a point of time producers have stock of goods is called inventory investment.

   Inventory Investment = Inventory stock of the end of the accounting year — Inventory stock at the beginning of the accounting year.

   Significance of Inventory Investment — Inventory is maintained with a view to coping with uncertainties of the market. Inventory of raw material is essential to cope with shortage of supplies. And, inventory of finished goods is maintained to cope with increase in demand.

1. **Gross Investment** = Expenditure on the purchase of fixed assets or on inventory stock during the year is called gross investment.
   Gross Investment = Expenditure on the purchase of fixed assets during the accounting years + Expenditure on the inventory stock during the accounting year.

2. **Net Investment** — It refers to the net availability of new capital after taking into account the wear and tear of the existing capital. Thus

   Net Investment = Gross Investment — Depreciation

Stocks and Flows

1. **Meaning of stock:** A stock is a quantity measured at a particular point of time.
2. **Meaning of Flow:** A flow is a quantity measured over a specified period of time.

Stock	Flow
1. Wealth	1. Income
2. Labour Force	2. Expenditure of Money
3. Capital	3. Capital Formation
4. Quantity/Supply of Money in a Country	4.Change in the Supply of Money in a Country
	5. Interest on Capital
5. Bank Deposits	6. Leakage of water from the overhead tank
6. Water in the overhead tank	
7. Distance between Delhi and Mumbai	7. Speed of a car going from Delhi to Mumbai
8. Rice stored in a godown.	8. Sales of rice.
9. Population of a country.	9. Number of births.

Stock and Flow—The Difference

Stock	Flow
(i) Stock refers to the value of a variable at a point of time. (ii) Stock is not time dimensional. It is measured at a specific point of time. (iii) Stock impacts the flow. Greater the stock of capital, greater is the flow of goods and services,	(i) Flow refers to the value of a variable during a period of time. (ii) Flow is time dimensional. It is measured, per hour, per month or per year. (iii) Flow impacts the stock. Greater the flow of income, greater is the stock of wealth with the people.

Factor Income and Transfer Income

Factor Income

Factor income refers to the income received by the factors of production for rendering factor service in the process of production. For example. rent. wages, interest and profit. Such factor incomes are received for providing factor services of land, Labour, capital aid enterprise. Factor income of the normal residents of a country is included in the National Income.

Factors of Production are the primary inputs. which are needed to produce goods and services. They are broadly categorized under four heads: (i) Land. (ii) Labour (iii) Capital and (iv) Entrepreneur.

Transfer Income

Transfer income refers to the income received without rendering any productive service in return. For example. old age pension. Scholarship. Unemployment allowance, pocket money. etc. Transfer income is a unilateral (one-sided) payment. Transfer incomes are not included in National Income as they do not reflect any production of goods and services.

CHAPTER – II
NATIONAL INCOME

National income is the sum total of factor incomes earned by normal residents of a country during the period of an accounting year.

1. **Factor Income**

   Factor incomes are related to factor services or factors of production (land, labour, capital and entrepreneurship). Households are the owners of factors of production (or factor services)

   In the estimation of national income, we include only these factor payments. Transfer payments are not included because transfer payments (like charity or grants) are unilateral (one-sided) payments. These are not related to any kind of work (or services) rendered by the owners of the factors of production.

2. **Normal Residents**

   A normal resident is said to be one who ordinarily resides in the country concerned and whose centre of economics interest lies in that country.

   The following observations are of underlined significance:

   (i) Normal residents include both individual as well as institutions.

   (ii) It is not necessary that normal resident of a country is also a citizen of that country. A person may be a normal resident of one country even when he is a citizen of the other. For example, if an Indian is living in USA for more than one year and his centre of economic interest lies in that country, he would be deemed as a normal resident of USA even when he continue to be a citizen of India.

   (iii) Citizens of our country who are living abroad, but not for a period exceeding one year and whose centre of economic interest lies in their home country.

Domestic Income

Domestic income is the sum total of factor incomes generated within the domestic territory of a country during the periods of an accounting year. It includes factor income of both the residents as well as non-residents in the domestic territory of a country.

Domestic Territory of a Country

Income territory is the geographical territory administered by a government within which persons, goods an capital circulate freely.

Accordingly, domestic territory (economic territory) of a nation includes the following:

(i) Embassies, consulates and military establishments of the country located abroad. For example, the Indian embassy in the United States of America is a part of the domestic territory of India and the embassy of USA in India is a part of the domestic territory of United States of America.

Domestic Income = Domestic Product

Accordingly, the equation that:

Domestic income + Net factor income from abroad = National Income can also be written as

Domestic producer + Net factor income from abroad = National Product

3. **Domestic Product at Market Price and at Factor Cost**

There is no difference between 'domestic product at market price' and 'domestic product at factor cost' so long as we are considering a two sector economy including (i) producer sector, and (ii) household sector. But the difference emerges when we consider the government sector as well. The government imposes taxes on goods (called indirect taxes). This increases the market price of the goods. The government also offers subsidies on goods. This lowers market price of the goods. 'Thus, market price of the goods is raised because of indirect taxes and lowered because of subsidy. The true market price (or the price that the producers actually receive) is estimated by deducting indirect taxes and adding subsidies to the prevailing market price. Once market price is adjusted for indirect taxes and subsidies, the difference between domestic product at market price and domestic product at factor cost disappears.

Domestic product (gross/net) at market price
— Indirect taxes
+ Subsidies
= Domestic Product (gross/net) at factor cost

Or

Domestic product (gross/net) at market price
— Net indirect taxes
= Domestic Product (gross/net) at factor cost "

[**Note**: Net indirect taxes = Indirect taxes — Subsidies]

Related Aggregates

1. **Gross Domestic product at market Price (GDP_{MP})**

Gross Domestic product is the market value of all the final goods & services which are produced in a domestic territory of a country in a financial year Inclusive of depreciation.

$GDP_{MP} = NDP_{MP}$ + Depreciation

$GDP_{MP} = GNP_{MP}$ - NFIA

$GDP_{MP} = GDP_{MP}$ + Indirect tax Subsidy

or

GDP_{MP} = GDP_{FC} + NIT

GDP_{MP} = NNP_{FC} -- Depreciation – NIFA + NIT

2. **Gross National product at market price (GNP_{MP})**

   Gross national product at market price (GNP_{MP}) is the market tine of the final goods & services produced by normal residents of a country during a financial year inclusive of deprecation. GDP_{MP} becomes GNP_{MP} when net factor income from abroad is added

   GNP_{MP} = GDP_{MP} + NFIA

   GNP_{MP} = NNP_{MP} + Depreciation

   GNP_{MP} = GNP_{FC} + Indirect Tax — Subsidy

3. **Net Domestic Product at MP (NDP_{MP})**

   NDP_{MP} is the market value of all the final goods & services produced within the domestic territory of a country during a financial year exclusive of depreciation

   NDP_{MP} = NNP_{MP} - NFIA

   NDP_{MP} = GDP_{MP} — Depreciation

   NDP_{MP} = NDP_{FC} + Indirect Tax Subsidy

4. **Net National Product at market Price (NNP_{MP})**

   Net National Product at Market price is the market value of all the final goods and services produced by normal residents of a country during an accounting year. Exclusive of depreciation.

   NNP_{MP} = GNP_{MP} - Depreciation

   NNP_{MP} = NDP_{MP} + NFIA

   NNP_{MP} = NNP_{FC} -- Indirect Tax — Subsidy.

5. **Net Domestic Income or Net Domestic Product at Factor cost (NDP_{FC})**

   Net Domestic Income or NDP_{FC} is the sum total of factor incomes (rent + Profit + Wages
+ Interest) generated with in the domestic territory of a country during an accounting year exclusive of depreciation.

   NDP_{FC} = NDP_{MP} — Indirect Tax + Subsidies

   NDP_{FC} = NDP_{MP} — NIT

   NDP_{FC} = GDP_{MP} —Depreciation

Note = It is briefly called Domestic Income/Net Domestic Income

6. **Gross Domestic Product at Factor Cost (GDP_{FC})**

   GDP_{FC} is the sum total of factor incomes generated with in the domestic territory of a country along with consumption of fixed capital during an accounting year.

   GDP_{FC} = GDP_{MP} — Indirect Tax + Subsidy

   GDP_{FC} = GDP_{MP} — NIT

$GDP_{FC} = NDP_{FC}$ + Depreciation

7. **Net National Product at Factor cost (NNP_{FC})**

   NNP_{FC} is the Sum total of factor incomes earned by normal residents of a country during the period of a financial year exclusive of depreciation.

   $NNP_{FC} = NNP_{MP}$ — Indirect Tax + Subsidy
   $NNP_{FC} = NNP_{MP}$ — Net Indirect Tax
   $NNP_{FC} = NDP_{FC}$ + NFIA

8. **Cross National Product at Factor Cost(GNP_{FC})**

   GNP_{FC} is the sum total of factor income earned by normal residents of a country inclusive of depreciation during an accounting year

   $GNP_{FC} = GNP_{MP}$ — Indirect Tax + Subsidy
   $GNP_{FC} = GNP_{MP}$ - NIT
   $GNP_{FC} = NNP_{FC}$ + Dep.

1. Calculate Net National Disposable Income from the following data:

	Items	(Rs in crore)
(i)	National income	3,000
(ii)	Savings of private corporate sector	30
(iii)	Corporation tax	80
(iv)	Current transfers from government administrative departments	60
(v)	Income from property and entrepreneurship accruing to the government administrative departments	150
(vi)	Current transfers from rest of the world	50
(vii)	Saving of non-departmental government enterprises	40
(viii)	Net indirect taxes	250
(ix)	Direct taxes paid by households	100
(x)	Net factor income from abroad	(—) 10

Ans. Net national disposable income = Rs 3,300 crore.

2. Calculate Gross National Disposable Income from the following data:

	Items	(Rs in crore)
(i)	National income	2,000
(ii)	Net current transfers from rest of the world	200
(iii)	Consumption of fixed capital	100
(iv)	Net factor income from abroad	(—) 50
(v)	Net indirect taxes	250

Ans. Gross national disposable income = Rs 2,550 crore.

3. Find out Personal Income from the following data:

Items	(Rs in crore)
(i) Private income	6,500
(ii) Saving of corporations in the private sector (less net retained earnings of foreign companies)	500
(iii) Corporation tax	300

Ans. Personal income = Rs 5,700 crore.

4. From the following data, calculate Personal Disposable Income:

Items	(Rs in crore)
(i) Personal income	70,000
(ii) Direct taxes	500
(iii) Miscellaneous receipts of the government (fees, fines, etc.)	800

Ans. Personal disposable income = Rs 68,700 crore.

Product Method or Value Added Method

Product Method or Value Added Method is that method, which measures national income in terms of value addition by each producing enterprise in the economy during an accounting year.

What is Value of Output?

It refers to market value of the goods (or services) produced by a firm during an accounting year. If the entire output of the year is sold during the year, value of output = sales.

Value of Output = Sales, if entire output of the year is sold during the year.

If some output remains unsold, it is added to the firm's inventory stock. It is expressed as change in stock (∆stock) during the year.

Value of Output = Sales + ∆Stock, if some output remains unsold during the year.

What is Change in Stock (∆Stock)?

It is measured as the difference between 'closing stock of the accounting year and opening stock of the accounting year.

∆Stock = Closing Stock — Opening Stock

What is Intermediate Consumption?

It refers to value of non—factor inputs (all inputs other than factor inputs of land, labour, capital and entrepreneurship). Primarily, it includes value of raw material used in the process of production.

Calculate of Domestic Income (GVA_{MP} or GDP_{MP})

GVA_{MP} or GDP_{MP} = Value of output – I.C

Calculate of National Income (NNP_{FC})

NNP = GDP – Depreciation + NFIA - NIT

1. Calculate Value Added by firm A and firm B, given the following information:

Items	(Rs in crore)
(i) Purchases by firm A from abroad	60
(ii) Sales by firm B	180
(iii) Purchases by firm A from firm B	100
(iv) Domestic sales by firm A	220
(v) Exports by firm A	60
(vi) Excess of opening stock over closing stock of firm A	20
(vii) Excess of closing stock over opening stock of firm B	30
(viii) Purchases by firm B from firm A	100

Ans. Value added by firm A = Rs 100 lakh. , Value added by firm B = Rs 110 lakh.

2. Calculate 'Value of Output' from the following data:

Items	(Rs in lakh)
(i) Net value added at factor cost	100
(ii) Intermediate consumption	75
(iii) Excise duty	20
(iv) Subsidy	5
(v) Depreciation	10

Ans. Value of output = Rs 200 lakh.

3. Calculate 'Intermediate Consumption' from the following data:

Items	(Rs in lakh)
(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 = Rs 90 lakh.

4. Calculate 'Sales' from the following data:

Items	(Rs in lakh)
(i) Net value added at factor cost	300
(ii) Intermediate consumption	200
(iii) Indirect tax	20
(iv) Depreciation	30

(v)	Change in stocks	(−) 50

Ans. Sales = Rs 600 Iakh.

5. Find Net Value Added at Factor Cost:

	Items	(Rs in lakh)
(i)	Sales	100
(ii)	Closing stock	20
(iii)	Excise	15
(iv)	Opening stock	10
(v)	Depreciation	12
(vi)	Intermediate consumption	50

Ans. Net value added at factor cost = Rs 33 Iakh.

Income Method

According to this method, national income is measured in terms of factor payments (compensation of employees, rent, interest and profit) to the owners of factors of production (labour, land, capital and enterprise) during an accounting year.

Classification (or Types) of Factor Incomes

Factor incomes are broadly classified as under:

1. **Compensation of Employees:** It includes the following components:

(i) **Wages and Salaries in Cash:** It refers to cash paid or transferred to the salary account of the employees by the employers as a reward for the work done during the period of an accounting year.

(ii) **Payments in Kind**: It refers to benefits in kind (like rent-free accommodation) given to the employees by the employers.

(iii) **Employers' Contribution to Social Security**: It refers to such payments as provident fund contributions by the employers on behalf of the employees.

(iv) **Pension on Retirement**: To be specific, it does not refer to old-age pensions. It only refers to pension payments as a part of the 'Service- Contract' between the employer and the employees.

2. **Operating Surplus:** It refers to income from property and entrepreneurship. It includes the following items:

   (a) Rent, (b) Interest, and (c) Profit.

   Profit is further split into three components as under:

(i) **Dividend**': That part of the profit which is distributed among the shareholders. It is also called 'distributed profit'.

(ii) **Corporate/Corporation Profit Tax**: That part of the profit which is paid to the government by way of 'profit tax'.

(iii) **Undistributed Profit**: That part of the profit which is retained by the firms for future use.

3. **Mixed Income**: Mixed income refers to the incomes of the self-employed persons using their own labour, land, capital and entrepreneurship to produce goods and services. These incomes are a mixture of wages, rent, interest and profit.

Calculate of Domestic Income

Compensation of Employees + Operating Surplus + Mixed Income = NDP_{FC}

Calculate of National Income

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

1. Calculate National Income.

Particular	**Rs in crores**
(i) Mixed income of self employed	200
(ii) Old age pension	20
(iii) Dividends	100
(iv) Operating surplus	900
(v) Wages and salaries	500
(vi) Profits	400
(vii) Employer's contribution to social security schemes	50
(viii) Net factor income from abroad	−10
(ix) Consumption of fixed capital	50
(x) Net indirect taxes	50

National Income = Rs 1,640 crores

2. Calculate NNP at FC.

Particular	**Rs in crores**
(i) Net current transfers from rest of the world	80
(ii) Wages and Salaries	600
(iii) Net indirect taxes	75
(iv) Net Factor income from abroad	−20
(v) Rent and interest	160
(vi) Corporation tax	40
(vii) Mixed Income of the self-employed	280
(viii) Undistributed profit	60
(ix) Dividend	20
(x) Consumption of fixed capital	120

NNP_{FC} = Rs 1,140 crores

3. Calculate GNP at MP.

Particular	Rs in crores
(i) Employee Compensation	600
(ii) Rent and interest	350
(iii) Profit	200
(iv) Indirect Tax	160
(v) Consumption of fixed capital	200
(vi) Mixed Income of the self-employed	850
(vii) Subsidies	40
(viii) Net current transfers from rest of the world	850
(ix) Net Factor income from abroad	(—) 100

GNP at MP = Rs 2,220 crores

Expenditure Method

According to this method, national income is measured in terms of expenditure on the purchase of final goods and services produced in the economy during an accounting year.

Classification o Final Expenditure

1. **Private Final Consumption Expenditure (C)**

It refers to expenditure on final goods and services by the individual, households and non-profit private institutions serving society (like Help-age).

(i) consumer services.
(ii) consumer non-durable goods, that is, goods which are not repeatedly used like butter or milk.
(iii) consumer durable goods which are repeatedly used for several years, like furniture and washing machines.

2. **Government Final Consumption Expenditure (G)**

It refers to expenditure on final goods and services by the government, like expenditure on the purchase of goods for consumption by the defence personnel.

3. **Investment Expenditure (I)**

It refers to expenditure on the purchase of final goods by the producers. hese goods are to be further used in the process of production.

Investment expenditure is further classified as under:
(i) Fixed investment, and
(ii) Inventory investment.

(i) **Fixed Investment:** Fixed investment refers to expenditure by the producers on the purchase of fixed assets like plant and machinery. Economists often classify fixed investment as: (a) business fixed investment, (b) fixed investment by the households in terms of construction of houses, and (c) public fixed investment or fixed investment by the government, like expenditure by the government on the construction of roads, dams and bridges.

(ii) **Inventory Investment:** It refers to change in stock during the year. As noted earlier, it is estimated as the difference between 'closing stock of the year' and 'opening stock of the year'.

4. Net Exports (X — M)

Net exports refer to the difference between exports and imports :ring an accounting year.

Calculate of Domestic Income

Private Final Consumption Expenditure (C) + Government Final Consumption Expenditure (G) + Investment Expenditure (I) + Net Export (X – M) = GDP_{MP}

Calculate of National Income (NNP_{FC})

NNP_{FC} = GDP – Depreciation + NFIA - NIT

1. Calculate GNP at MR

Particular	Rs in crores
(i) Personal consumption expenditure	27,500
(ii) Fall in stock	3,000
(iii) Export of goods and services	2,500
(iv) Depreciation	500
(v) Net indirect taxes	—250
(vi) Government consumption expenditure	250
(vii) Gross domestic fixed capital formation	300
(viii) Import of goods and services	450
(ix) Net factor income from abroad	1,000
(x) Subsidy	1,000

GNP at MP Rs 32,400

2. Calculate NDP at FC.

Particular	Rs in crores
(i) Private final consumption expenditure	400
(ii) Gross domestic capital formation	100
(iii) Change in stocks	20
(iv) Net indirect taxes	60
(v) Net factor income from abroad	10
(vi) Net exports	(—)20
(vii) Consumption of fixed capital	20
(viii) Government final consumption expenditure	100

NDP at FC = Rs 500 crores

3. Calculate National Income.

Particular	Rs in crores
(i) Private Final Consumption Expenditure	2,000
(ii) Government Final Consumption Expenditure	700
(iii) Gross domestic Capital formation	200
(iv) Net Exports	300
(v) Net Factor income from abroad	400
(vi) Consumption of fixed capital	200
(vii) Net indirect tax	50

National Income = Rs 3,350 crores

Nominal and Real GDP

Nominal GDP

It refers to GDP at current prices. It is the market value of the final goods and services produced within the domestic territory of a country during an accounting year, as estimated using the current year prices.

Nominal GDP = Q x P

Q = Quantity of final goods and services produced during an accounting year
P = Prices prevailing during the accounting year.

Real GDP

It refers to GDP at constant prices. It is the market value of the final goods and services produced within the domestic territory of a country during an accounting year, as estimated using the base year prices.

Real GDP = Q x P*

Here, Q = Quantity of final goods and services produced during an accounting year
p* = Prices prevailing during the base year.

Assumptions: (i) The economy produces wheat, cloth and sugar only, and
(ii) Output remains constant (Rs in crore)

Year	Commodity	Quantity	Price	GDP_{MP} (Nominal)
2011-12	Wheat Cloth Sugar	20 tonnes 100 metres 5 tonnes	100 per tonne 5 per metre 500 per tonne	2,000 500 2,500
			Total Market	**5,000**

			Value	
2015-16	Wheat Cloth Sugar	20 tonnes 100 metres 5 tonnes	1,000 per tonne 20 per metre 1,600 per tonne	20,000 2,000 8,000
			Total Market Value	**30,000**

Conversion of Nominal GDP into Real GDP
Real GDP or GDP at Constant Prices

$$= \frac{\textbf{GDP at Current Prices}}{\textbf{Price Index}} \textbf{ x 100}$$

We may also estimate nominal GDP, if real GDP and price index are known to us, using the following formula:

$$\textbf{Nominal GDP = Real GDP x } \frac{\textbf{Price Index}}{\textbf{100}}$$

GDP and Welfare

Real GDP is considered as an index of welfare of the people. Welfare of the people is measured in terms of the availability of goods and services per person. Increase in real GDP means increase in the level of output in the economy.

Limitations

But there are certain limitations related to the positive relationship between GDP and welfare. These are as under:

1. **Distribution of Income:** If distribution of income turns unequal. GDP growth fails to reflect a rise in social welfare. India is facing this situation at present. While per capita GDP is rising, starvation deaths are hitting the headlines more often than ever before. Reason: Distribution of income is becoming increasingly unequal.

2. **Composition of GDP**: Composition of GDP may not be welfare- oriented. Example: Increase in the production of defence goods does not lead to any direct increase in welfare of the people. [Of course, strong defence offers a peaceful environment in the country. But, it contributes to social welfare only indirectly.]

3. **Non-monetary Exchanges:** In rural economies, barter system of exchange still prevails to some extent. Payments for farm labour are often made in kind rather than cash. All such transactions remain unrecorded. This causes underestimation

of GDP. To the extent GDP remains underestimated, it remains an inappropriate index of welfare.

4. **Externalities:** Externalities refer to good and bad impact of an economic " activity without paying the price or penalty for that. There are both positive and negative externalities. Positive externalities occur when, for example, Mr. X maintains a beautiful garden and Mr. Y (neighbour of Mr. X) enjoys it. It adds to welfare of Mr. Y but he does not pay for it. Negative externalities occur when, for example, stubble burning by the farmers lead to air pollution. It causes a loss of social welfare. But, most farmers do not pay the penalty. GDP fails to account for the impact of positive and negative externalities on social welfare. Hence, it is an inappropriate index of welfare.

   Thus, there are serious limitations of GDP as an index of welfare. These limitations reduce the significance of GDP as an index of welfare.

Let us discuss the various items 'not included'

No.	Items not Included in National Income	Reason
1.	**Transfer Income and Payments** like scholarship. old age pension, unemployment allowance, gifts, expenditure on birthday/marriage, pocket money, Remittance from abroad, financial help to earthquake victims, beggars, meals to beggars, compensation given to accident victims etc.	They are not connected with any productive activity and there is no value addition.
2.	**Compulsory Transfer Payments** like wealth tax, death duty, capital gains tax, indirect taxes like custom duty, excise duty, sales tax etc.	They are paid out of the wealth or past savings of the tax payers.
3.	**Sale and purchase of financial assets** like shares bonds, debentures etc.	These transactions do not add to the flow of goods and services. Such financial assets are mere paper claims and do not contribute to the production of goods and services.
4.	**Windfall Gains** like winning lottery, horse race. contests etc.	There is no productive activity involved with windfall gains.
5.	**Non-Market Transactions** like services of a housewife, kitchen gardening. a parent teaching his	It is difficult to ascertain their market value and such services are not rendered for the purpose of

	child or leisure time activities like painting.	earning income.
6.	**Intermediate Consumption Expenditure** like purchase by raw materials by a firm. vegetables purchased by a restaurant, milk purchased by a dairy shop, electricity or advertisement expenses of a production unit, purchase of cold drinks by a school canteen, expenditure on the repair of assets etc.	Such expenditures are already included in the final expenditure.
7.	**Sale or Purchase of second hand goods** like sale/purchase of an old house, old machinery, old car etc.	They have already been included in the year of their original sale or purchase.
8.	**Capital Loss** like destruction of building, machinery etc by earthquake.	There do not affect the national product directly.
9.	**Capital Gains** like profit due to increase in the price of land. building, shares or income from the sale of second hand goods and financial assets etc.	They do not add to the flow of goods and services in the economy.
10.	**National debt interest** or interest paid by households to the commercial banks.	Interest paid on the loans taken for consumption is not included.
11.	**Inter-firm payments** like payment of interest or dividend from one firm to another.	It has already been included in the profit of the firm which makes the payment of interest/ dividend to the other firm.
12.	**Inventory of stock**	It is a stock concept and does not affect the national product.

Items 'Included in the National Income'.

No.	**Items Included in National Income**	**Reason**
1.	Brokers' Commission on the sale/purchase of second-hand	Services rendered by the brokers are productive.

	goods or financial assets.	
2.	**Services provided by the owners of production units** like imputed rent of owner-occupied house. Interest on own capital. production for self consumption etc.	They contribute to the current output of goods and services. Imputed values v ill he included in the national income as they are related to production activities.
3.	**Capital Formation (Investment)** like purchase machinery by a firm, construction of a new house. water pump purchased by a farmer. construction of a new bridge, expenditure on additional assets. addition to stock. etc.	As they are a part of the gross domestic capital formation.
4.	**Payment of bonus**, retirement pension, contribution to provident fund by employer, free clothes given to workers, subsidized lunch served to workers, free medical facilities provided to employees, house rent allowance, festival gift given by the employer.	These are a part of the compensation given to employees by the employers for their productive services.
5.	**Payment of bus fare by households,** examination fees paid by students, insurance premium paid by employees, durable goods (T.V.. scooter) purchased by a household, payment of telephone bill etc.	As they are a part of the private final consumption expenditure.
6.	**Product earned by an Indian company from its branches abroad**, profits earned by a branch of Indian bank in London, wages received by Indian employees working in foreign embassies, rent received by Indian residents on their buildings rented out to foreigners.	As they are a part of the factor income from abroad.
7.	**Free services (dispensary, education) by government**, government expenditure on street	They are a part of the Government final consumption expenditure.

	lighting.	
8.	**Expenditure Incurred by a foreign tourist** in the country.	As the exported goods are produced within the country's domestic territory. They are included for determining the output of the economy.
9.	**Interest on loans paid by Commercial Banks**.	Interest is paid on loans taken by commercial banks for productive purposes.

Item included / excluded in National Income

1. **Construction of a new house —**
   Yes, it will be included in the national income as it is a part of capital formation and leads to production of goods and services in the economy.
2. **Winning of a lottery price —**
   No. it will not be included in the national income as it does not add to the flow of goods and services in the economy.
3. **Increase in the prices of stocks lying with a trader —**
   No, it will not be included in the national income as it does not amount to any flow of goods.
4. **National debt interest —**
   No, it is not included in the national income as it is the interest paid on loans taken for consumption purposes.
5. **Rent-free house given to an employee by an employer (CBSE, Delhi 2008)**
   Yes, It is included in the national income by income Method since it is a part of 'wages in kind' paid to employees.
6. **Profit earned by foreign banks in India —**
   No, it is not included in the national income as it is a part of the factor income paid abroad, it is subtracted from domestic income to get national income.
7. **Purchases by foreign tourists (CBSE. Delhi 2008)**
   Or
   Food Purchased by a foreign tourist at a hotel in New Delhi.
   Yes, purchases by foreign tourists are exports' and, therefore, they are included in the national income through the Expenditure Method.
8. **Rent received by Indian residents on their buildings rented out to foreigners in India-**
   Yes, it will be included in the national income as it is a part of the factor income from abroad.
9. **Payment of fees to a lawyer engaged by a firm (CBSE, Delhi 2008)**
   It is an intermediate expenditure for the firm because it involves purchase of services by one production unit (firm) from another production unit (lawyer). So

it is deducted from the value of output of the firm to arrive at the value added. So it is not included in national income.

10. **Free medical facilities provided to employees**
    Yes, it will he included in the national income as it is a part of the compensation of employees.
11. **Gifts received from abroad —**
    No, it will not be included in national income as gifts received are transfer incomes.
12. **Profits of Reliance industries from its chemicals business in Australia —**
    Yes, it will be included in the national income as it is a part of the factor income from abroad.
13. **Salaries received by Indian residents working in Russian Embassy in India. (CBSE 2009)**
    Yes, it will be included in the national income as it is a part of factor income from abroad.
14. **Subsidized lunch served to workers in a factory.**

    Or

    Firm incurred expenditure on medical treatment of employee's family.
    Yes, it is a part of the compensation of employees and, therefore, it will included in the national income.
15. **Old age pension —**
    No, it will not be included in the national income as it is a transfer payment made by the government and a transfer income for the receiver. Old age pension must not be confused with retirement pension. Old age pension is not included in national income as it is a transfer. On the other hand. Retirement pension is included in national income as it is a part of COE.
16. **Durable goods purchased by a household —**
    Yes, it will be included in the national income as it is a part of the private final consumption expenditure.
17. **Profits earned by an Indian bank from its branches abroad. (CBSE Delhi 2009)**
    Yes, they will be included in the national income as they are a part of the factor income from abroad,
18. **Earnings of shareholders from the sale of shares (CBSE All India 2008)**
    No, it will not be included in the national income as it is a financial claim and does not contribute to any productive activity.
19. **Expenditure on advertisement by a firm**

    Or

    Commodities used in scientific research.
    No. it will not be included in the national income as it is a part of intermediate consumption expenditure.

20. **Value of wood purchases for manufacturing a table.**

Or

Expenditures on the purchase of cold drink by a school canteen from the manufacturer

No, it will not be included in the national income as it is a part of intermediate consumption expenditure.

21. **Cash relief given to earthquake victims —**

No, it will not be included in the national income as it is a transfer payment.

22. **Value of machine purchased by a factory —**

Yes, it will be included in the national income as it is a part of the gross domestic capital formation.

23. **Royalty** —

royalty is a productive income and, therefore, it will be included in the national income.

24. **Commission on sale of second-hand goods —**

It is the income of a middleman for his productive services to various parties and, therefore, it will be included in the national income.

25. **Purchases of car by a household —**

Yes, it will be included in the national income as it is a part of the private final consumption expenditure.

26. **Purchase of raw materials by a production unit.**

Or

Milk purchased by a sweet shop to make milk-cake.

No, it will not be included in the national income as it is a part of the intermediate consumption expenditure.

27. **Expenditure by the Government on scholarships to students. —**

No, it is not included in the national income because it is a transfer payment by the Government.

28. **Money received from sale of second-hand goods (CBSE, Delhi 2002)**

No, it will not be included in the national income because receipts from the sale of second-hand goods are by virtue of transfer of an already existing object.

29. **Rent of an owner occupied house** —

It amounts to generation of economic services and. therefore, its imputed rent will be included in the national income.

30. **Contribution to provident fund by employer** —

Yes, it will be included in the national income as it is part of the compensation of employees.

31. **Wheat grown by a farmer but used entirely for family's consumption. (CBSEAll India (2008)**

Yes, it is included in the national income because it adds o the current flow of goods and services. Therefore. its imputed value should he included.

32. **Commission received by a dealer from the buyer and seller of a house.(CBSE Delhi 2002)**
    Yes. it will he included in the national income as it is the income of the dealer for his services.
33. **Growing vegetable in a kitchen garden of the house —**
    No, it will not be included in the national income as it is difficult to estimate the value of production (it is a non-market transaction).
34. **Services rendered by family members to each other (CBSE foreign 2008)**
    No, it will not be included in the national income as it is difficult to determine the value of services provided by family member to each other.
35. **Expenditure by government in providing free education (CBSE, All India 2008)**
    Yes, it will be included in the national income as it is a part of the government final consumption expenditure.
36. **Wealth tax —**
    No, it will not be included in the national income because it is a compulsory transfer payment.
37. **Insurance premium paid by employees**

    Or

    School examination fee paid by student
    Yes, it is included in the national income as it is a part of the private final consumption expenditure.
38. **Purchase of a truck to carry goods by a production unit (CBSE, foreign 2008)**
    Yes, it will be included in the national income as it is a part of the gross domestic capital formation.
39. **Payment of income tax by a production unit (CBSE, foreign 2008)**
    No, it will not be included separately in the national income as it is a part of compensation of employees (COE) and COE is counted while estimating national income by income method.
40. **Payment of wealth tax (CBSE. Delhi 2002)**

    Or

    Payment of Death duty
    No. it will not be included in the national income as it is a compulsory transfer payment to the government.
41. **Entertainment tax received by the Government. (CBSE, Delhi 2009)**
    No. it will not be included in the national income as it is an indirect tax and compulsory transfer payment received by the government.

PRACTISE SET

1. Calculate the value added by firm A and firm B.

Particular	Rs in crores
(i) Domestic Sales by firm A	4,000
(ii) Exports by firm A	1,000
(iii) Purchase by firm A	200
(iv) Sales by firm B	2,940
(v) Purchase by firm B	1,390

Ans. A = Rs 4,800 B = Rs1,640

2. From the information giver below, calculate:
   - Value added by firm A and firm B;
   - Gross Domestic product at market price;
   - Net value added at factor cost.

Particular	Rs in crores
(i) Sales by firm B to general government	100
(ii) Sales by firm A	500
(iii) Sales by firm B to households	350
(iv) Change in stock of firm A	20
(v) Closing stock of firm B	40
(vi) Opening stock of firm B	30
(vii) Purchases by firm A	320
(viii) Indirect Taxes paid by both the firms	75
(ix) Consumption of fixed capital	120
(x) Sales by firm A to B	200

Ans. Value added by firm A = Rs 200 crores
Value added by firm B = Rs 260 crores
Gross Domestic product at market price = Rs 460 Crores

3. From the following data about a firm 'X' for the year 2000-01, calculate the net value added at market price during that year:

Particular	Rs in crores
(i) Sales	90
(ii) Closing stock	25
(iii) Opening stock	15
(iv) Indirect taxes	10
(v) Depreciation	20
(vi) Intermediate consumption	40
(vii) Purchase of raw materials	15
(viii) Rent	5

Ans. Rs 40 crores

4. From the following information, estimate: (i) Value of output; (ii) Net value added at factor cost; (iii) Prove that income generated is equal to net value added at factor cost.

Particular		Rs in crores
(i)	Increase in unsold stock	600
(ii)	Sales	10,625
(iii)	Purchase of raw materials	2,625
(iv)	Indirect Taxes	1,200
(v)	Subsidies	400
(vi)	Operating surplus	3,740
(vii)	Mixed incomes	100
(viii)	Wages and Salaries	3,460
(ix)	Depreciation	500

Ans.(i) Value of output = Rs 11,225 crores (ii) Net value added at factor cost = Rs 7,300
(iii) Prove that income generated is equal to net value added at factor cost = Rs 7,300

5. Calculate the Operating Surplus.

Particular		Rs in crores
(i)	Sales	4,000
(ii)	Compensation of employees	800
(iii)	Intermediate consumption	600
(iv)	Rent	400
(v)	Interest	300
(vi)	Net indirect taxes	500
(vii)	Consumption of fixed capital	200
(viii)	Mixed income	400

Ans. Rs 1,500 crores.

6. Calculate 'Gross Domestic Product of Factor Cost' from the following data:

Particular		Rs in crores
(i)	Private final consumption expenditure	800
(ii)	Net domestic capital formation	150
(iii)	Change in stock	30
(iv)	Net factor income from abroad	(—) 20
(v)	Net indirect tax	120
(vi)	Government final consumption expenditure	450
(vii)	Net Exports	(—)30
(viii)	Consumption of fixed capital	50

Ans. Rs 1,300 crores

7. Calculate National Income by Income and Expenditure method.

Particular	Rs in crores
(i) Final Consumption Expenditure	
— Private Sector	350
— Government Sector	100
(ii) Mixed income of self employed	35
(iii) Gross domestic fixed capital formation	70
(iv) Opening stock	15
(v) Compensation of employees	250
(vi) Closing stock	25
(vii) Imports	20
(viii) Rent	75
(ix) Consumption of fixed capital	10
(x) Net indirect taxes	25
(xi) Interest	25
(xii) Net factor income from abroad	−5
(xiii) Exports	10
(xiv) Profit	100

Ans. Rs 480 crores

8. Calculate National Income by Income and Expenditure method.

Particular	Rs in crores
(i) Compensation of employees	250
(ii) Imports	20
(iii) Mixed income of self employed	50
(iv) Gross fixed capital formation	120
(v) Private final consumption expenditure	550
(vi) Consumption of fixed capital	10
(vii) Net factor income from abroad	20
(viii) Indirect taxes	100
(ix) Change in stock	20
(x) Subsidies	20
(xi) Rent	100
(xii) Interest	200
(xiii) Profit	50
(xiv) Exports	10
(xv) Government final consumption expenditure	60

Ans. Rs 670 crores

9. From the following data, calculate National Income by (a) Income method and (b) Expenditure method:

Particular		Rs in crores
(i)	Private final consumption expenditure	2,000
(ii)	Net capital formation	400
(iii)	Change in stock	50
(iv)	Compensation of employees	1,900
(v)	Rent	200
(vi)	Interest	150
(vii)	Operating surplus	720
(viii)	Net indirect tax	400
(ix)	Employers' contribution to social security schemes	100
(x)	Net exports	20
(xi)	Net factor income from abroad	(−) 20
(xii)	Government final consumption expenditure	600
(xiii)	Consumption of fixed capital	100

Ans. Rs 2,600 crores

10. From the data given below, calculate: (a) National income by expenditure method; and (b) National income using the aggregate of 'Personal Disposable Income'.

Particular		Rs in crores
(i)	Consumption of fixed capital	130
(ii)	Net indirect taxes	220
(iii)	Personal disposable income	1,570
(iv)	Imports of goods and services	200
(v)	Exports of goods and services	130
(vi)	Savings of non-departmental enterprises	20
(vii)	Interest on national debt	20
(viii)	Saving of private corporate sector	10
(ix)	Direct taxes paid by households	25
(x)	Household final consumption expenditure	1,100
(xi)	Change in stocks	60
(xii)	Gross domestic fixed capital formation	400
(xiii)	Net earned income from abroad	−10
(xiv)	Net current transfers from government administrative departments	50
(xv)	Government final consumption expenditure	210
(xvi)	Income from entrepreneurship property accruing to government administrative departments	30
(xvii)	Corporate tax	35
(xviii)	Net current transfers from abroad	40
(xix)	Private Non-Profit Serving Households Final	240

Consumption Expenditure	

Ans. Rs 1,580 crores

11. Calculate National Income (NNP_{FC}) by income and output method.

Particular	Rs in crores
(i) Value of output of primary sector	1,000
(ii) Value of output of other sectors	400
(iii) Raw material of primary sector	500
(iv) Raw material of other sectors	300
(v) Factor income received from the rest of the world	10
(vi) Factor income paid to the rest of the world	15
(vii) Depreciation	55
(viii) Indirect taxes	ioo
(ix) Subsides	20
(x) Mixed income of the self employed	200
(xi) Compensation of employees	170
(xii) Rent	40
(xiii) Interest	30
(xiv) Profit	25

Ans. Rs 460 crores

12. Calculate (a) National Income and (b) National Disposable Income:

Particular	Rs in crores
(i) Rent	60
(ii) Interest	40
(iii) Profits net of corporate profit tax	20
(iv) Corporate profit tax	5
(v) Net factor income received from abroad	(—) 5
(vi) Net current transfer paid to rest of the world	(—) 25
(vii) Indirect taxes	80
(viii) Subsidies	10
(ix) Dividend	7
(x) Compensation of employees	600

Ans. (a) National Income = Rs 720 crores (b) National Disposable Income = Rs 815 crores

13. From the following data, calculate: (a) Private Income; (b) Personal Income; and (c) National Disposable Income.

Particular	Rs in crores
(i) Rent and interest	25
(ii) Net factor income paid to abroad	2
(iii) Wages and salaries in kind	140

(iv)	Net indirect taxes	23
(v)	Employer's contribution to social security	6
(vi)	Share of government in domestic income	3
(vii)	Bonus	4
(viii)	Current transfer from government	6
(ix)	Net current transfers to rest of the world	3
(x)	Dividend	6
(xi)	Corporate tax	3
(xii)	Interest on public debt	5
(xiii)	Savings of non-departmental enterprises	1
(xiv)	Retained Earnings	2

Ans. : (a) Private Income = Rs 189 crores (b) Personal Income = Rs 184 crores (c) National Disposable Income = Rs 204 crores

14. Calculate (a) Gross domesting product at market price (b) Factor income from abroad from the following data.

	Particulars	Rs in Crores
(i)	Profits	500
(ii)	Exports	40
(iii)	Compensation of employees	1500
(iv)	Gross national product at factor cost	2800
(v)	Net Current transfer from rest of the world	90
(vi)	Rent	300
(vii)	Interest	400
(viii)	Factor income to abroad	120
(ix)	Net indirect taxes	250
(x)	Gross fixed capital formation	700
(xi)	Change in stock	50
(xii)	Net domestic capital formation	650

Ans, (a) GDPmp = Rs 3050 crores and (b) Factor Income from abroad Rs 120 crores.

15. From the following data calculate (a) Gross domestic product at market price and (b) Factor income from abroad.

	Particulars	Rs in Crores
(i)	Gross national product at factor cost	6150
(ii)	Net export	(-)50
(iii)	Compensation of employees	3000
(iv)	Rent	800
(v)	Interest	900
(vi)	Profits	1300

(vii)	Net indirect tax	300
(viii)	Net domestic capital formation	800
(ix)	Gross fixed capital formation	850
(x)	Change in stock	50
(xi)	Dividend	300
(xii)	Factor income to abroad	80

Ans. (a) GDPmp = Rs 6400 Crores (b) F.I. From abroad = Rs 130 Crores

16. How will you treat the following while estimating national income of India? Give reasons for your answer.
    (i) Salaries received by Indian residents working in Russian Embassy in India.
    (ii) Profits earned by an Indian bank from its branches abroad
    (iii) Entertainment tax received by the govt.

17. Giving reasons explain how the following are treated in estimating national Income.
    (i) Wheat grown by a farmer but used entirely for family's consumption
    (ii) Earnings of the shareholders from the sale of shares
    (iii) Expenditures by government on providing free education

18. Giving reasons explain how the following are treated while estimating national income.
    (i) Payment of fees to a lawyer engaged by a firm
    (ii) Rent free house to an employee by an employer.
    (iii) Purchase by foreign tourists.