Macro Economics
&
National Income Accounting

Samir K Mahajan

MACROECONOMICS

(Ragner Frisch)

Macroeconomics **looks at the economy as an organic whole.**

Macroeconomics studies economic aggregates

such as: total output, total demand, aggregate income, total savings, total investment, total employment, rise and fall in general price level, interest rates.

MACROECONOMICS

- **Macro Economic Theory**
  - **Theory of Income and Employment**
    - **Theory of Consumption**
    - **Theory of Investment**
    - **Theory of Trade or Business Cycles**
  - **Theory of General Price Level and Inflation**
  - **Theory of Econmic Growth**
  - **Macro Theory of Distribution (Relative Share of Wages and Profits)**

Some Definitions of Economy

- An economy is the system of earning livelihood (Brown).

- An economy is just a group of people dealing with one another as they go about their lives.

- Another more common definition: Economy is a system of four basic economic activities such as: production, distribution, consumption and investment of goods and services.

In nutshell,

An economy is the sum total of all economic (activities which are rewarded/paid) of the society. These activities create utilities i.e. produce goods and services. Thus economy consists of cultivation, manufacturing, construction, mining, trade and business, transportation and all other productive activities.

RESOURCES / MEANS OF PRODUCTION/ FACTORS OF PRODUCTION / INPUTS OF PRODUCTION

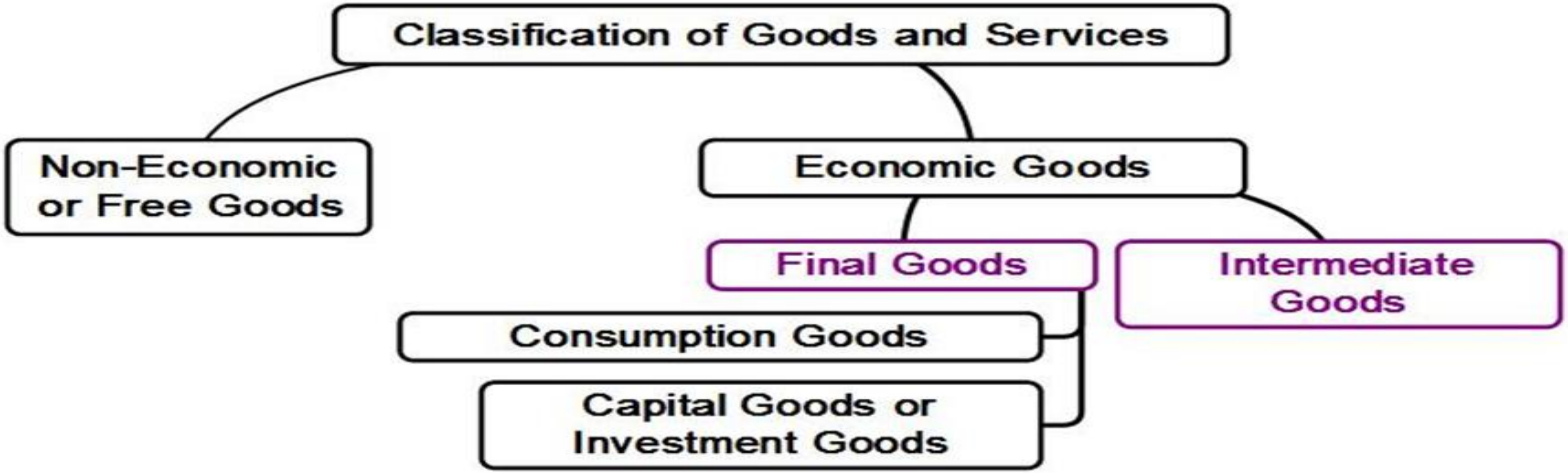
Resources are the inputs into the production of goods and services which includes the followings:

- **Human Resources: *Labour*, Entrepreneurship. It All forms of human input, both physical and mental, into current production. The labour force is limited both in number and in skills.**

- **Natural Resources: *Land, mineral resources and Raw Materials*. These are inputs into production that are provided by nature: e.g. unimproved land and mineral deposits in the ground. The world's land area is limited, as are its raw materials.**

- **Manufactured Resources: *Capital*. Capital consists of all those inputs in production that have themselves been produced: e.g. factories, machines, transport equipments and tools. The world has a limited stock/supply of capital: The productivity of capital is limited by the state of technology.**

Classification of Goods and Services



Some Basic Concepts

- **Consumption Goods:**

Consumption Goods are goods and services used directly by individuals/households for satisfaction of wants.

Some Basic Concepts

Capital Goods or investment goods:

Investment or capital goods are goods used in the manufacture of other goods. These are goods used for future or further productive activities such as roads, buildings, roads and bridges, transport equipments, machines

Some Basic Concepts

❑ Intermediate goods:

Intermediate goods are goods that have to pass through further production process or meant for resale during an accounting year.

These are goods meant **neither for consumption nor for investment**.

e.g. raw materials, fuels, electricity etc.

Intermediate goods are not considered in the calculation of national income.

Some Basic Concepts

Final goods:

Final goods consists of consumption goods and investment goods.

Final goods are considered in the calculation of national income.

Producer Good:

Producer Goods consists of Capital goods and intermediate goods.

Wheat : Rs 10 | Farmer → Flour: Rs 20 | Flour Mill → Biscuits: 30 | Bakery → Biscuits: 40 | Retailers → Consumer

Value of Final goods = Rs. 40 (Biscuits sold to consumer)

Valued added by farmer = Rs 10
Valued added by Flour Mills = Rs 20 – Rs10= Rs 10
Value added by Bakery = Rs. 30 – Rs. 20= Rs 10
Value added by Retailers = Rs 40 – Rs 30 = 10

Value added by all production units = Rs. 40 (Final value of goods)

Here GDP at MP = Value of Final goods = Value added by all ((Final value of goods) = Rs. 40

ECONOMY AND BASIC ECONOMIC ACTIVITIES

An economy is the system of earning livelihood (Brown).

An economy is just a group of people dealing with one another as they go about their lives.

Another more common definition: Economy is a system of four basic economic activities

such as: production, distribution, consumption and investment of goods and services.

ECONOMY AND BASIC ECONOMIC ACTIVITIES

- **Production** is transformation of inputs into output/finished products. It is creation or addition of utilities.

- ✓ **We can not produce matter. Matters are free gift of nature.**

- ✓ **We make them more useful by transforming them into finished goods.**

Consumption

- **Consumption** is use of goods and services for satisfaction of immediate wants. It is destruction or decrease in utility in a particular commodity.

Distribution

Distribution is the sharing of produced goods and services among the various individuals that comprises a society.

Investment or Capital Formation

Investment also called captain formation is the production of new capital goods.

It is addition to existing capital stock of a society or economy.

Investment is Excess of production over consumption which is used for further productive activities during an accounting period.

Concepts of Capital formation or investment

- ✓ **GROSS DOMESTIC CAPITAL FORMATION or GROSS DOMESTIC INVESTMENT (I_g)**
- ✓ **NET DOMESTIC CAPITAL FORMATION or NET DOMESTIC INVESTMENT (I_n)**

GROSS DOMESTIC CAPITAL FORMATION : Gross capital formation is value of newly produced capital goods during an accounting year.

i.e. **Gross Domestic Capital Formation** = Gross Domestic **Fixed** Capital formation + **Change in stock**

Gross domestic fixed capital formation is the value of newly produced **fixed capital goods** (assets) within the country such as: roads, buildings, roads and bridges, transport equipments machineries and equipments.

Change in stock is the change stock of inventories of raw materials, finished and semi-finished goods lying with the producers at the end of accounting year

✓ **NET DOMESTIC CAPITAL FORMATION= Gross Domestic Capital Formation– Depreciation**

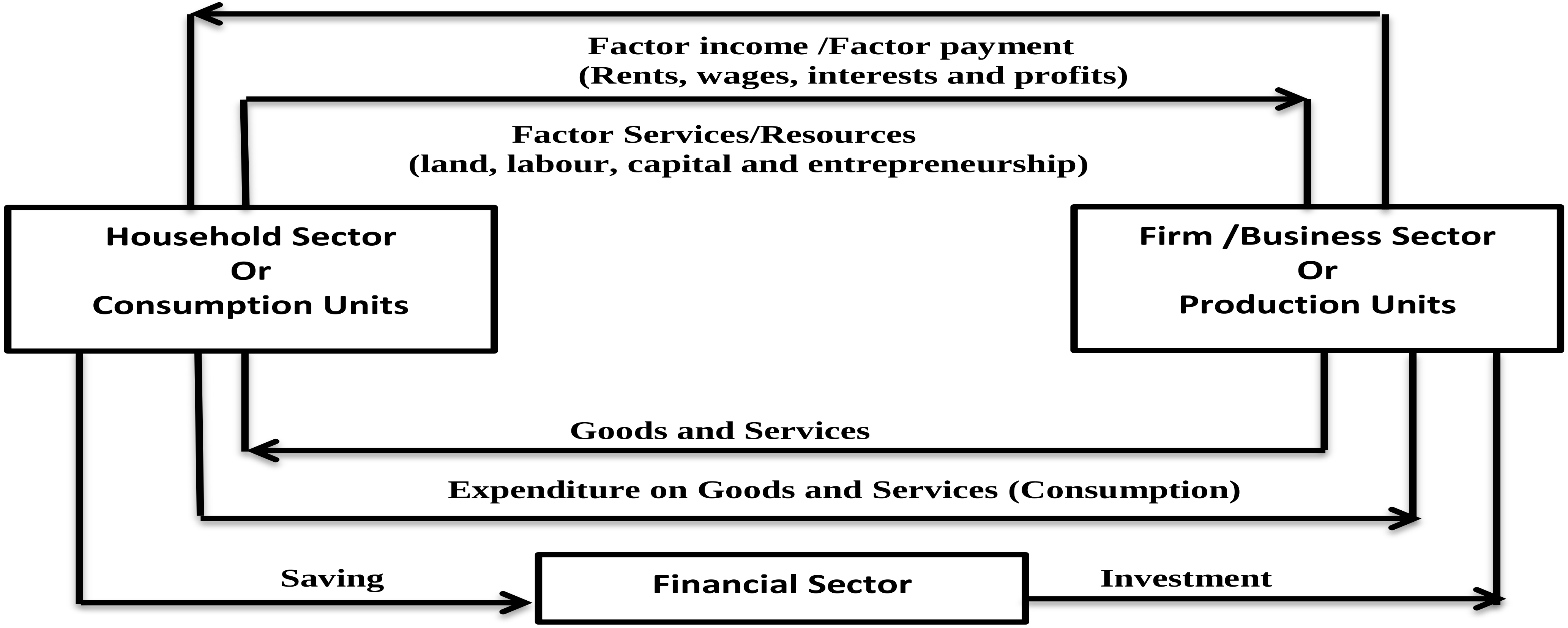
Where, Depreciation (D) or Consumption of Fixed Capital is decrease in the value of fixed capital assets due to normal wear and tear out.

$$I_g = I_n + D$$

CONVERSIONS

NET	(+)Depreciation → ← (-)Depreciation	Gross

CIRCULAR FLOW (TWO SECTOR MODEL)



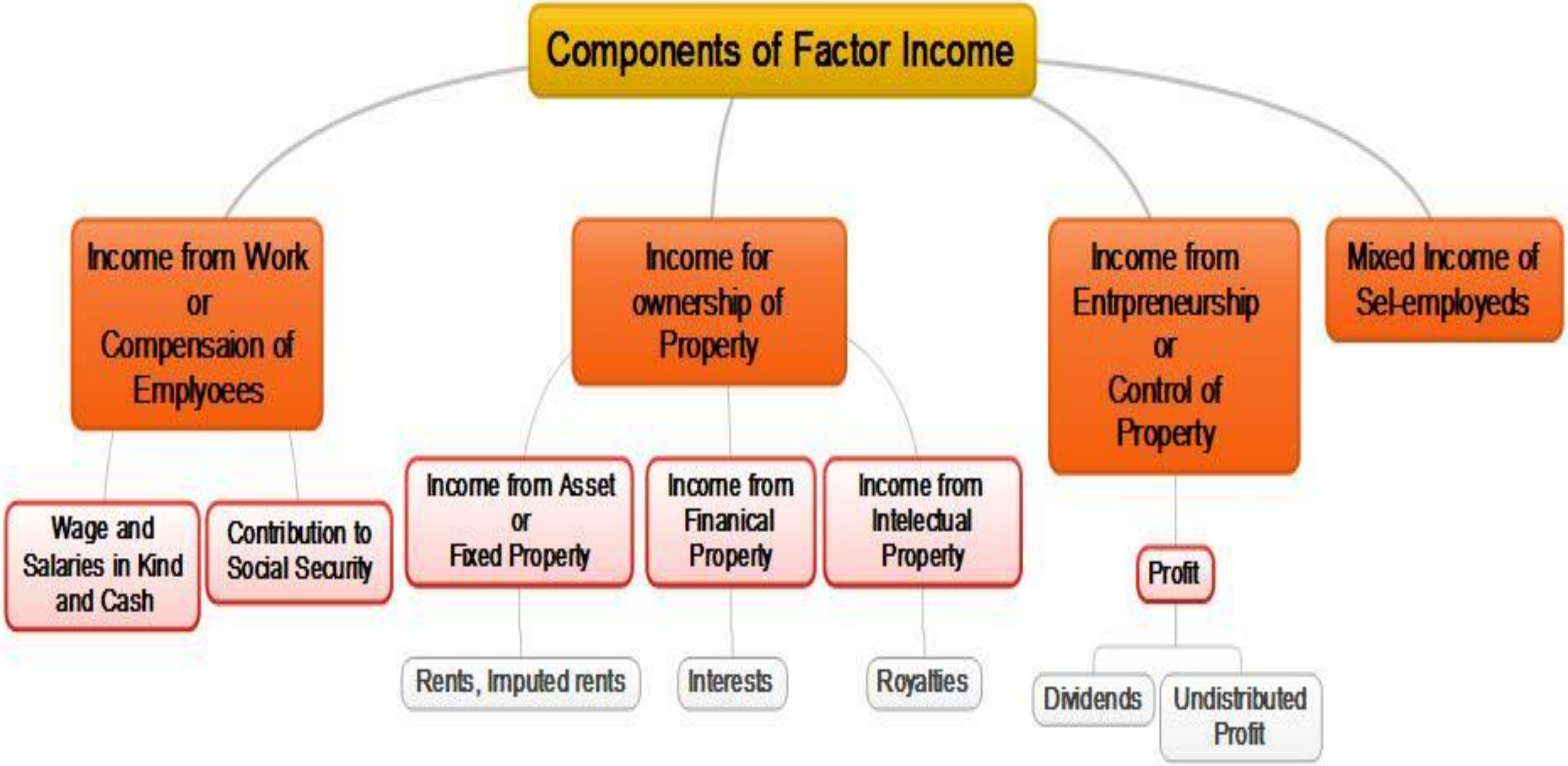
Aggregate Output = Aggregate Factor Income = Aggregate Expenditure = Consumption + Investment

Samir K Mahajan

Factor Income and Non-factor income

Factor incomes are the incomes generated and earned by the owners of factors of production. These includes wages, rents, interest, profits etc.

Non-factor income or Transfer payments are payments received without contributing anything to production process e.g. unemployment benefits, old-age benefits, taxes, windfall profits from speculation activities say lottery , pocket money, gifts etc.


Components of Factor Income
Income from Work or Compensaion of Emplyoees
Income for ownership of Property
Income from Entrpreneurship or Control of Property
Mixed Income of Sel-employeds
Wage and Salaries in Kind and Cash
Contribution to Social Security
Income from Asset or Fixed Property
Income from Finanical Property
Income from Intelectual Property
Profit
Rents, Imputed rents
Interests
Royalties
Dividends
Undistributed Profit

Some Basic Concepts

- **Export:** Export is ale of goods and services to foreign countries.

- **Import:** Import is purchase of goods and services from foreign countries.

- **Net Export:** = Export – Import

- **Net factor income from Abroad (NFIA) =** factor income received from abroad – factor income paid to abroad.

Some Basic Concepts contd.

- **Direct Taxes:** Direct Taxes are taxes imposed on income and capital.
- **Indirect taxes:** Indirect taxes are Taxes imposed on goods and services.
- **Subsidies:** Subsidies are economic grants provided to certain cover up the losses suffered when cost of production is more than the market prices.
- **Net Indirect Tax** = Indirect Tax – Subsidies

PRODUCING SECTOR OF THE ECONOMY

In order to determine the output of the economy , the economy is classified into three broad industrial sectors such as primary sector , secondary sector and tertiary sector.

- **Primary sector includes**
  - ✓ **Agriculture**
  - ✓ **Mining and quarrying**
  - ✓ **Fishing and Animal Husbandry**

- **Secondary Sector which includes**
  - ✓ **Construction**
  - ✓ **Manufacturing**

Producing Sector of the Economy contd.

❑ Tertiary sectors which includes

- ✓ Transportation, communication, storage and other public utilities
- ✓ Trade
- ✓ Hotels and restaurants
- ✓ Banking , insurance and finance

- ✓ Professions and business services including accounting; software development; data processing services; business and management consultancy; architectural, engineering and other technical consultancy; advertisement and other business services

- ✓ Real estate and Ownership of dwellings
- ✓ Public administration and defence
- ✓ Other services including education, medical and health, religious and other community services, legal services, recreation and entertainment services

CONCEPTS OF NATIONAL INCOME

Gross Domestic Product (GDP) at market price: Gross Domestic Product (GDP) at market price is the total money value of all final goods and services currently produced within the domestic territory of a country annually. Algebraically,

GDP at Market Price = $\sum P * Q$ = $\sum Value\ Added$

- ✓ Where, P= Market price of each final good or service
  Q=Quantity of each final good or service produced

- ✓ GDP has the following components

  - ✓ Value of final consumer goods and services produced during an accounting year (C)
  - ✓ Gross domestic private capital formation or investment during an accounting year (I_g)
  - ✓ Value of purchases of goods and services by government during the accounting year (G)
  - ✓ Net Export = Export (X) – Import (M) during an accounting year

Thus, GDP at Market price = C + I_g + G + (X-M)

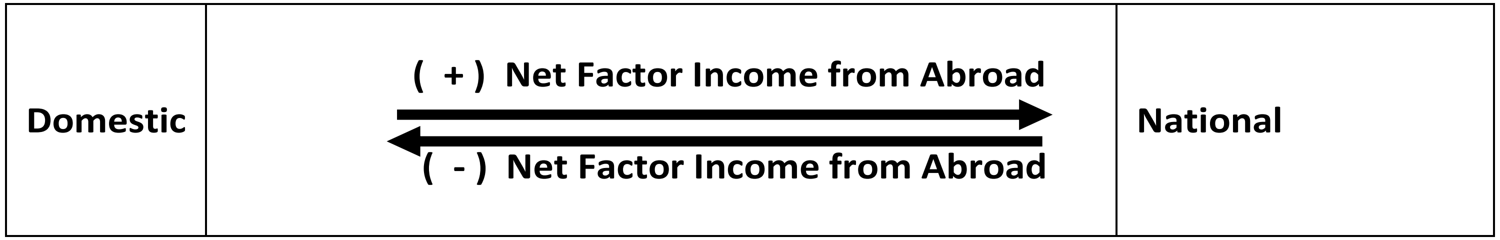
❑ Gross National Product (GNP) at market price:

Gross National Product at market price is total money value of all final goods and services produced annually in a country plus net factor income from abroad.

Thus, GNP at Market price = GDP at Market price + NFIA

$$= C + I_g + G + (X-M) + NFIA$$

Where, NFIA is net factor income from abroad



❑ Net Domestic Product (NDP) at market price:

Net Domestic Product at market price is the money value of all final goods and services produced within the country after providing for depreciation. Algebraically,

NDP at market = GDP at Market price – Depreciation

$$= C + I_g + G + (X-M) - D$$
$$= C + (I_g - D) + G + (X-M)$$
$$= C + I_n + G + (X-M)$$

Here, D is deprecation

I_n is net domestic capital formation or investment

❑ Net National Product (NNP) at market price:

Net National Product at market price is the money value of all final goods and services of a country after providing for depreciation.

Thus, NNP at Market price= GNP at market price – Deprecation

= NDP at market price + NFIA

= C + Ig + G + (X-M) + NFIA – D

= C + (Ig – D)+ G + (X-M) + NFIA

= C + I_n + G + (X-M) + NFIA

Here, D is deprecation

I_n is net domestic capital formation or investment

- **Domestic Factor Income or Net Domestic Product at Factor Cost :** Domestic Factor Income or Net Domestic product at factor cost is the sum total factor income generated and earned by suppliers/owners of factors of production within the domestic territory of country during a year.

Domestic Factor Income or NDP at factor cost = Wages and salaries in kind and cash
+ Contribution to social security
+ Rents including imputed rents
+ Royalties + Interests
+ Undistributed Profits + dividends
+ Mixed incomes of self-employed

- **National Income (NI) or NNP at Factor Cost :** National Income (NI) or NNP at Factor Cost is the sum total factor income generated and earned by suppliers/owners of factors of production in a country during a year.

National income or NNP at factor cost = **Domestic Factor Income + Net factor income from abroad**

= Wages and salaries in kind and cash
+ Contribution to social security
+ Rents including imputed rents + royalties + Interests
+ Undistributed Profits + dividends
+ Mixed incomes of self-employed
+ Net factor income from abroad

Domestic	(+) Net Factor Income from Abroad → ← (-) Net Factor Income from Abroad	National

❑ Relationship between NDP at market price and NDP at factor Cost

Had there been no government intervention in the economy, both NDP at market price NDP at factor Cost would have been equal to each other. As the government interferes with the economy through imposition of indirect taxes on goods and services, and provision of subsidies to productive enterprises, these cause market prices of output to be different from the factor income resulting from it. Hence, there arises difference between NDP at market price and NDP at factor cost (Domestic income) .

In accounting sense,

✓ NDP at factor cost - subsidies = NDP at market price – indirect taxes

Or, NDP at factor cost = NDP at market price – indirect taxes + subsidies
= NDP at market price – (indirect taxes – subsidies)
= NDP at market price – Net Indirect taxes

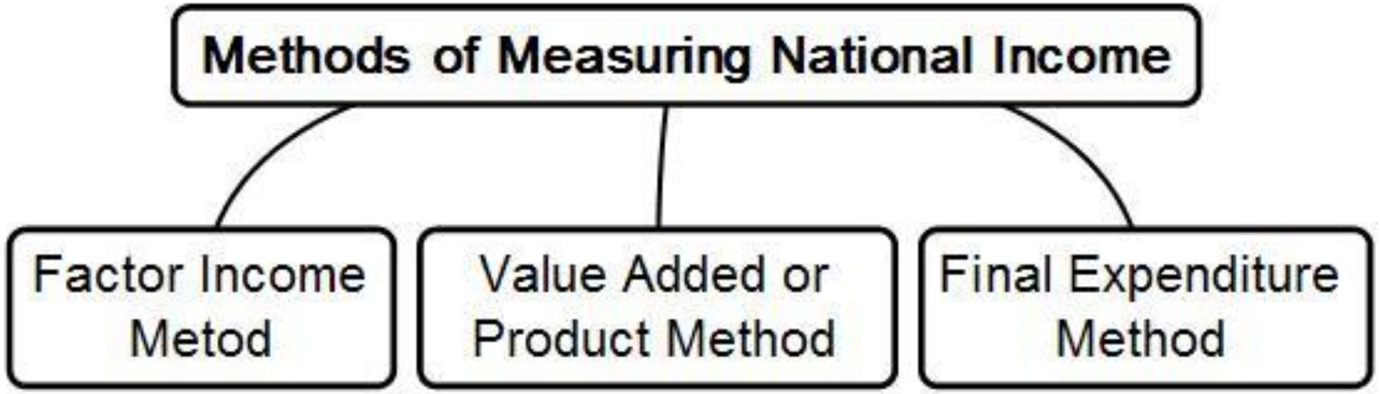
❑ Relationship between NDP at market price and NDP at factor Cost contd.

Similarly,

- **GDP at factor cost = GDP at market price - indirect tax + subsidies**
- **NNP at factor cost = NNP at market price - indirect tax + subsidies**
- **GNP at factor cost = GNP at market price – indirect taxes + subsidies**

Factor Cost	**(+) Net Indirect Tax** → ← **(-) Net Indirect Tax**	**Market Price**

METHOD OF MEASUREMENT OF NATIONAL INCOME



❑ Value added Method or Product Method of Measuring National Income

Value added method measures final money value of all goods and services produced in a country during a year. It adds up valued added by all productive sectors of the sectors of the economy annually.

The mains steps involved in value method are as follows:

Step I: Identification and classification of production units located within the economic territories into three distinct industrial sectors on activity basis such as: primary, secondary and tertiary sectors.

Final value of goods and services produced by these sectors are measured.

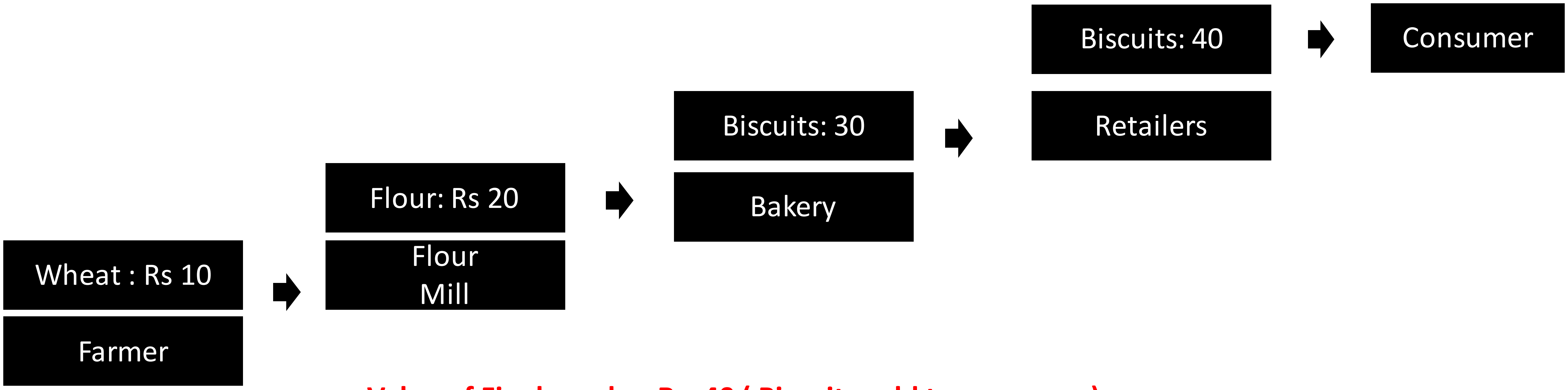
- Value added Method or Product Method of Measuring National Income contd.

Step II: Estimation of Value Added by each production units in the industrial sector.

For this the following information are collected

- Value of output
- Intermediate consumption

Now, valued added = Value of Output – Intermediate consumption



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Value added Method or Product Method contd.

Step III: Estimation of GNP at market price. Value added by all the production units in different industrial sectors is added to ascertain GDP at market price. Adding NFIA to GPP at Market price, we arrive at GNP at market price.

GDP at market price = $\sum \boldsymbol{Value\ added}$

Adding NFIA with GDP at market price, we have GNP at market price

i.e. GDP at market price + NFIA = GNP at market price

More on Value Added

Value of output = Sales + Changes in stock

Value added= Value of output - Intermediate consumption

Net value added = Value added – Depreciation

$$GDP_{MP} = \sum \boldsymbol{Value\ added}$$

$$NDP_{MP} = \sum \boldsymbol{Net\ value\ added}$$

$$NDP_{MP} = GDP_{MP} - \text{Depreciation}$$

❑ Income Method of Measuring National Income

Income Method sums up all the factor incomes earned by suppliers /owners of factors of production annually. Factor of productions are engaged in production process and remunerated for their contribution.

The mains steps involved in production method are as follows:

Step I: Identification and classification of production units located within the economic territories into three distinct industrial sectors on activity basis such as: primary, secondary and tertiary sectors.

Income Method of Measuring National Income contd.

Step II: Classification of factor income earned by each factor separately in different sector of the economy. Factor incomes includes

- income from work which includes wages and salaries in kind, contribution to social security
- income form ownership of property which includes rents, royalties and interests
- Income from control of property i.e. profits which includes dividends and undistributed profits
- mixed incomes of self employed
- net factor income from abroad (NFIA)

Income Method contd.

Step III: Estimation of National Income. Factor incomes paid out by each industrial sector are ascertained. Summation of factors income paid out by all the industrial sectors NDP at factor cost (Domestic Income). By adding NFIA to NDP at factor cost, we arrive at national income.

i.e. NDP at factor cost or Domestic Factor income= wages and salaries in kind and cash
+ contributions to social security
+ rents including imputed rents + royalties + interests
+ dividends + undistributed profits
+ mixed incomes

Income Method contd.

Adding NFIA with NDP at factor cost, we arrive at NNP at factor cost or national income.

i.e. NDP at factor cost + NFIA = NNP at factor cost or National Income

Similarly, GNP at factor Cost or Gross National Income= National income + Depreciation

Final Expenditure Method

Final Expenditure Method sums up expenditure incurred by different economic units on final output (final goods and service) of the economy annually.

The mains steps involved in final expenditure are as follows:

Step I: Identification and classicisation of economic units into household sector , producer sector, government sector and rest of the world sector.

Final Expenditure Method contd.

Step II: Classification of final expenditure. Final expenditure are classified as

- **Private final consumption expenditure by household sector**
- **Private gross domestic capital formation by producer sector**
- **Government final expenditure**
- **Net exports =Export –Import**

- **Final Expenditure Method contd.**

Step III: Estimation of Gross Domestic Expenditure (GDE) and Gross National Expenditure (GNE). Final expenditures are summed up to arrive at GDE . GDE is equivalent to GDP at market price.

Thus, GDE= GDP at market price = Private final consumption expenditure
+ Private gross domestic capital formation
+ Government final expenditure
+ Net Exports

- **Final Expenditure Method contd.**

Adding net factor income from abroad (NFIA) to GDE, we arrive at GNE or GNP at market price.

That i.e. , GNE = GNP at market price = GDE + NFIA