

SAMPURNA JUNE 2024

ECONOMICS

Chapter-6

Determination of National Income

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Lecture No.- 03 ✓



RECAP OF PREVIOUS LECTURE

1) National Income Accounting



TOPICS TO BE COVERED

1) National Income Accounting



$$\text{Gross} - \text{Dep.} = \text{Net}$$

$$\text{Net} + \text{Dep} = \text{Gross}$$

$$\text{GDP}_{mp} - \text{Dep} = \text{NDP}_{mp}$$

$$\text{NDP}_{mp} + \text{Dep.} = \text{GDP}_{mp}$$

Domestic + NFIA = National
National - NFIA = Domestic

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

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

$$FC + NIT = MP$$

$$MP - NIT = FC$$

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

$$GDP_{FC} + NIT = GDP_{MP}$$

$$NIT = IT - sub$$

$$= \underset{\downarrow}{GST} - sub$$

QUIZ!

#Q. Gross National Product at market prices is

$$GNP_{mp} = ?$$

(A) ✓ $GNP_{mp} = GDP_{mp} + NFIA$

1. GDP_{MP} + Net Factor Income from Abroad

2. GDP_{MP} - Net Factor Income from Abroad

3. GDP_{MP} - Depreciation

4. GDP_{MP} + Net Indirect Taxes

#Q. The basis of distinction between market price and factor cost is

$$\underline{\underline{MP}} = \underline{\underline{FC}} + \text{NIT}$$

1. net factor income from abroad
2. net indirect taxes (i.e., Indirect taxes - Subsidies) **B**
3. net indirect taxes (i.e., Indirect taxes **+** Subsidies)
4. depreciation (consumption of fixed capital)

#Q. From the following data calculate (a) Gross Domestic Product at Market price:

Items	₹ in Crores
GDP at FC	61,00
Net exports	(-) 50
Compensation of employees	3000
Rent	800
Interest	900
Profit	1,300
Net indirect taxes	300
Net domestic capital formation	800
Gross domestic capital formation	900
Factor income to abroad	80

NIT →

GDP_{mp}

$$\begin{aligned}
 \underline{\text{GDP}}_{\text{mp}} &= \underline{\text{GDP}}_{\text{FC}} + \underline{\text{NIT}} \\
 &= 6100 + 300 \\
 &= \underline{6400}
 \end{aligned}$$

(a) Gross Domestic Product at Market Price

$$= \text{GDP at factor cost} + \text{Net Indirect taxes} = ₹ 6100$$
$$+ ₹ 300$$
$$= 6400 \text{ Crores}$$

National income is Sum total of all factor incomes earned by residents of a country during an accounting year.

$$\text{National income} = \boxed{\text{NNP}_{\text{FC}}}$$

$$\text{Domestic income} = \text{NDP}_{\text{FC}}$$

Who calculates national income in India?

Ministry of Statistics & Programme Implementation (MoSPI)

↓
Central Statistics Office (CSO)

↓
National Accounts Statistics (NAS) ✓

- The performance of an economy depends on the output of goods and services produced by it, which is measured by National Income.
- According to the Central Statistical Organisation (CSO) 'National income is the sum total of factor incomes generated by the normal residents of a country in the form of wages, rent, interest and profit in an accounting year'.
- Concepts of national income accounting were first guided (pioneered) by the Nobel price winning economists Simon kuznets and Richard stone.

Usefulness And Significance Of National Income Estimates

- 1) It provides a framework for analyzing the short-run performance.
- 2) The distribution pattern of national income helps businesses to forecast future demand.
- 3) Economic welfare depends on magnitude & distribution of national income
- 4) NI shows composition and structure of NI of different sectors & variations in them. Helps to make comparisons of trend and speed of development
- 5) Provides quantitative basis for assessing, choosing & evaluating economic policies
- 6) NI Shows income distribution and possible inequality in its distribution. Make comparisons of statistics, such as ratios of investment, taxes, to GDP
- 7) Provides guide to make policies for growth and inflation

methods of calculating national income

✓ 1. income / factor income method

2. Expenditure method

3. Value Added method

Income method



① Sabse Pehle hum

Calculate krenge →

NDP_{FC}

Domestic
income

② Uske baad NFIA ko Add
kar denge

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

Income method

NDP_{FC}

$$\text{Domestic income} + \text{NFIA} = \text{NI} \quad \text{NNP}_{FC}$$

- ① Compensation of Employees CoE
- ② Operating Surplus
- ③ Mixed Income of Self Employed $MISE$

Income method

COE

- wages & salaries
- Bonus
- Employer's Contribution to Social Security scheme
- Gratuity, kind etc.

Income method

Mixed income



Income method



⇒ Operating Surplus

} income from
Property &
Entrepreneurship

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

$$\begin{array}{l} \text{Operating} \\ \text{Surplus} \end{array} = \overset{10}{\text{Rent}} + \overset{10}{\text{Interest}} + \overset{10}{\text{Profit}} + \overset{10}{\underline{\underline{\text{Royalty}}}}$$

40

$$\begin{array}{l} \text{Operating} \\ \text{Surplus} \\ 20 \end{array} = \begin{array}{l} 10 \\ \text{Rent} \end{array} + \begin{array}{l} \times \\ \text{Interest} \end{array} + \begin{array}{l} 10 \\ \text{Profit} \end{array} + \begin{array}{l} \underline{\underline{\times}} \\ \text{Royalty} \end{array}$$

$$\text{Operating Surplus} = \overset{10}{\text{Rent}} + \overset{10}{\text{Interest}} + \text{Profit} + \text{Royalty}$$

(Note: 'Profit' and 'Royalty' are underlined in the original image. 'Profit' is also circled in yellow.)

↓
Corp. tax + dividend
+ undistributed
Profit



$$\text{Profit} = \text{Corporate tax} + \text{Dividend} + \text{Undistributed Profit}$$

$$70 = 20 + 10 + 40$$

$$\text{NNP}_{\text{FC}} = \underbrace{\text{COE} + \text{DS} + \text{MISE}}_{\text{NDP}_{\text{FC}}} + \text{NFIA}$$

#Q.

Calculate NI — income method

Items

₹ in Crores

Compensation of employees	<u>COE</u>	1,200
Net factor income from Abroad		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	<u>MISE</u>	700
Net export		30
Govt. final consumption expenditure		1100
Operating surplus		1820
Employer's contribution to social security scheme		300

$$\begin{array}{r}
 3720 + 20 = \underline{\underline{3740}} \\
 \text{NDP}_{FC} + \text{NFIA} \\
 \downarrow \\
 \textcircled{1} \text{COE} \quad 1200 \\
 \textcircled{2} \text{O.S} \quad 1820 \\
 \textcircled{3} \text{MISE} \quad 700 \\
 \hline
 3720
 \end{array}$$

By Income method

$$\begin{aligned} \text{NNP}_{\text{FC}} \text{ or NI} &= \text{compensation of employees} + \text{operating surplus} + \text{Mixed} \\ &\quad \text{income of self - employed} + \text{NFIA} \\ &= 1200 + 1820 + 700 + 20 \\ &= \underline{3740 \text{ Crores}} \end{aligned}$$

$$\underline{\text{Operating Surplus}} = \underline{R + I + P + R}$$

$$\checkmark \text{NDP}_{FC} = \checkmark \text{COE} + \boxed{\text{OS}} + \checkmark \text{MISE}$$

$$\downarrow \quad \quad \downarrow \quad \quad \downarrow$$

$$2700 = 800 + \boxed{\text{OS}} + 400$$

$$2700 - 1200 = \text{OS}$$

$$\boxed{1500 = \text{OS}}$$

#Q. Calculate the Operating Surplus with the help of following data

Particulars	₹ in Crores
Sales	4000
Compensation of employees	800
<u>GDP_{MP}</u>	<u>3400</u>
Rent	400
Interest	300
Net indirect tax	500
Consumption of Fixed Capital	200
<u>Mixed Income</u>	<u>400</u>

$$\underline{\underline{NDP_{FC}}} = \underline{\underline{GDP_{MP}}} - \underline{\underline{NIT}} - \underline{\underline{Dep.}}$$

$$= 3400 - 500 - 200$$

$$= \underline{\underline{2700}}$$

(A) 1500 (A)

(B) 1600

(C) 2900

$$\text{GDP}_{\text{MP}} = 3400 \text{ Crores}$$

$$\begin{aligned}\text{NDP}_{\text{MP}} &= \text{GDP}_{\text{MP}} - \text{consumption of fixed capital} \\ &= 3400 - 200 \\ &= 3200 \text{ Crores}\end{aligned}$$

$$\begin{aligned}\text{NDP}_{\text{FC}} &= \text{NDP}_{\text{MP}} - \text{NIT} \\ &= 3200 - 500 = 2700 \text{ Crores}\end{aligned}$$

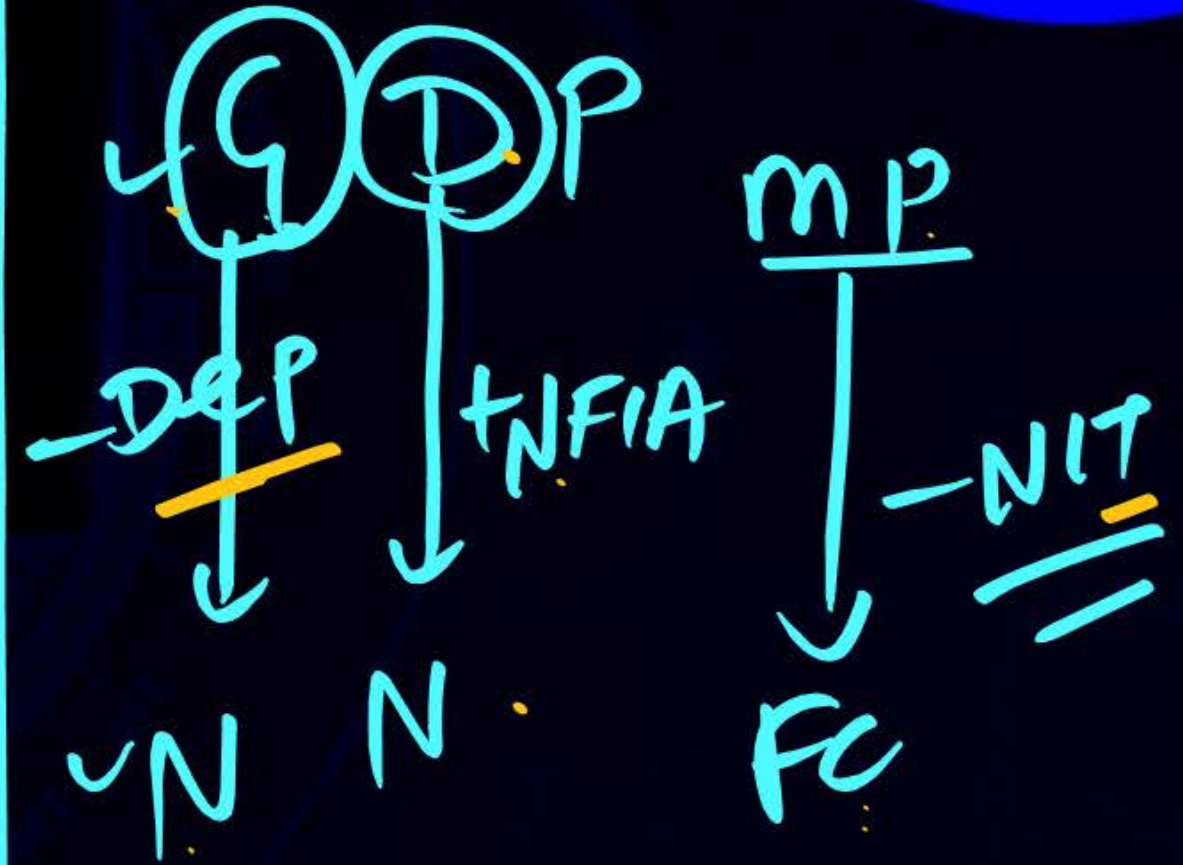
$$\begin{aligned}\text{NDP}_{\text{FC}} &= \text{Compensation of employees} + \text{Operating surplus} + \text{Mixed income} \\ 2700 &= 800 + \text{Operating Surplus} + 400\end{aligned}$$

$$\text{Operating surplus} = 1500 \text{ Crores}$$



$$\text{Big} = \text{Small} + \text{O}$$

$$\underline{\text{Small}} = \text{Big} - \text{O}$$



$$\Rightarrow \underline{\underline{GDP_{mp} = 100}}$$

$$\underline{NNP_{fc} = ?}$$

$$\underline{NNP_{fc} = GDP_{mp} - Dep. + NFIA - NIT}$$

Expenditure method

① Sabse pehle Calculate

Karo \rightarrow GDP_{mp}

$$\textcircled{2} \quad NNP_{FC} = GDP_{mp} - Dep. + NFIA - NIT$$

Total Expⁿ of Country



Aggregate Expⁿ



Aggregate Demand AD ✓



GDP_{mp}

Public → Pvt. final consumption expⁿ

Govt. + Govt. final consumption expⁿ ⇒ C

Firms ⇒ Investment expⁿ (I)

foreign sector ⇒ Net exports (NX)

$$GDP_{mp} = C + I + Nx$$

Pvt.

Govt.

- Household
- Non-profit Institutions

Gross Domestic Capital formation

$$Nx = \text{Export} - \text{import}$$

Net import = 80	-70
$Nx = -80$	+70

Expn method \rightarrow GDP_{mp} = C + I + N_x

- ① Pvt. final consumⁿ expⁿ
 - ② Govt. final consumⁿ expⁿ
 - ③ Gross Domestic Capital formⁿ
 - ④ Net Export. (N_x)
- } \Rightarrow [C]
} \Rightarrow [I]

Net Domestic
 Cap. formⁿ = 10
 +
 Dep. = 2
12

(An arrow points from the circled 12 to the 'I' in the list above)

#Q. Calculate NI → Expⁿ method

Items	₹ in Crores
Compensation of employees	1,200
<u>Net factor income from Abroad</u>	<u>20</u>
<u>Net indirect taxes</u>	<u>120</u>
Profit	800
<u>Private final consumption expenditure</u> ①	<u>2,000</u>
<u>Net domestic capital formation</u> + Dep. = I	770
<u>Consumption of fixed capital</u>	<u>130</u>
Rent	400
Interest	620
Mixed income of self-employed	700
<u>Net export</u> ④	<u>30</u>
<u>Govt. final consumption expenditure</u> ②	<u>1100</u>
Operating surplus	1820
Employer's contribution to social security scheme	300

$$\begin{aligned}
 \text{NNP}_{FC} &= \text{GDP}_{mp} - \text{Dep.} + \text{NFIA} - \text{NIT} \\
 &= 4030 - 130 + 20 - 120 \\
 &= \underline{\underline{3800}}
 \end{aligned}$$

$$770 + 130 = 900 = \text{I} \text{ ③}$$

2000
1100
900
30
<hr/>
4030 → GDP _{mp}
<hr/>

$$GDP_{mp} = \textcircled{1} + \textcircled{2} + \textcircled{3} + \textcircled{4}$$

$$\textcircled{I}$$

↓

$$I = \text{Gross Domestic Cap. form}^n$$

$$= \text{Net Domestic Cap. form}^n + \text{Dep.}$$

$$= \text{Gross } \underline{\text{fixed}} \text{ Cap. form}^n + \underline{\text{change in stock}}$$

↓

closing - opening

Net fixed cap. formⁿ → 10
 + Dep. → 2
 + change in stocks → 1

 (13) → (I)

Investment

- ① Residential investment
 - ② Business investment
 - ③ Govt. / Public investment
 - ④ change in stock / inventory investment
- Gross fixed cap. form

Home work

Illustration

5 and 15 ✓

2 mins Summary

Income method

$$\text{NDP}_{fc} + \text{NFIA} = \text{NNP}_{fc}$$

COE
+ OS
+ mise

Expⁿ method

$$\text{GDP}_{mp} - \text{Dep} + \text{NFIA} - \text{NIT} = \text{NNP}_{fc}$$

$$\textcircled{1} + \textcircled{2} + \textcircled{3} + \textcircled{4}$$

$$\textcircled{C} + I + \text{NX}$$



Thank You



MARKET

PROFIT

SERVICE

Vertical text on the right side of the slide, including the word 'MARKET' and other illegible characters.