

Chapter - 05

DETERMINATION OF NATIONAL INCOME

unit - 01 : NATIONAL INCOME ACCOUNTING

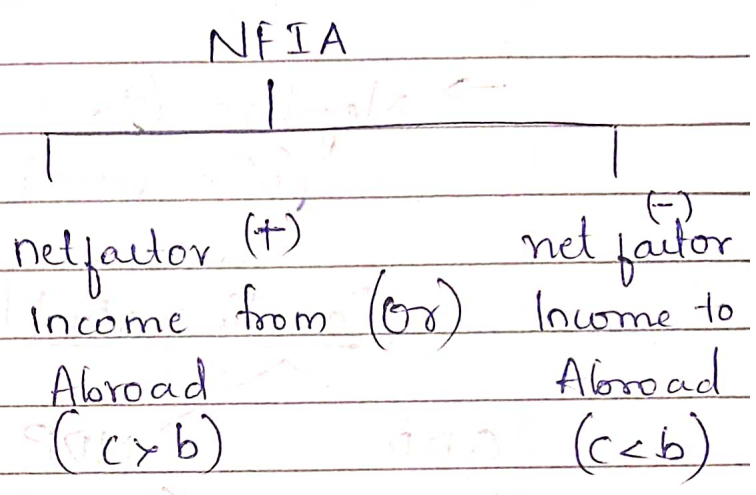
- Income from
  - Goods } only these
  - Services } 2 considered
  - Pension X

fundamental part of NI

$$(a+b) + (c-b) = (a+c)$$

$$DP + NFIA = NP$$

Good & Services = Product = Income

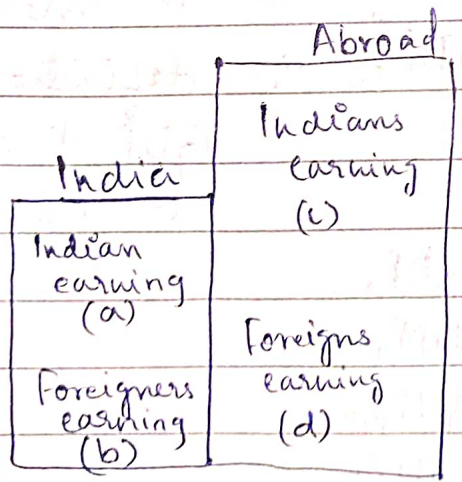


Domestic product = Indians earning in India + foreigners earning in India

earning refers to producing goods

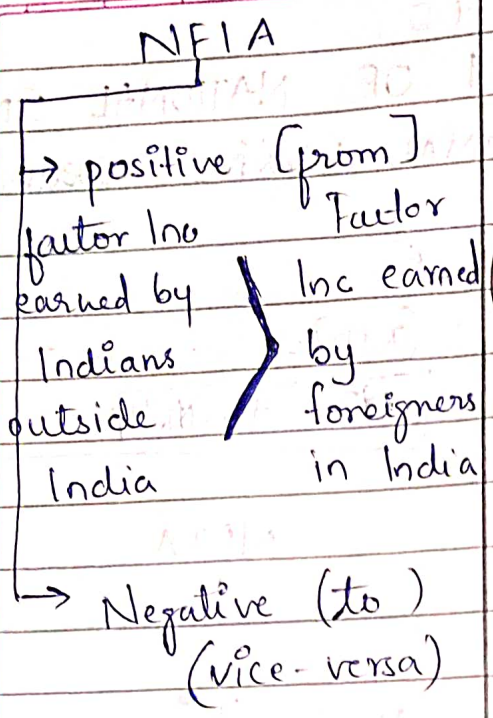
National Product = Indians earning in India (as well as) + in Abroad

Domestic product :-  
 It is aggregate value of all final goods & services produced within domestic boundaries of country in particular period



National product :-  
 It is the aggregate value of all final goods & services produced by normal residents (indian) of country in particular period.

Domestic product = a + b  
 National product = a + c



GDP :: definition of DP + including dep.

NDP : definition of DP + Excluding dep

Same for NNP & GNP

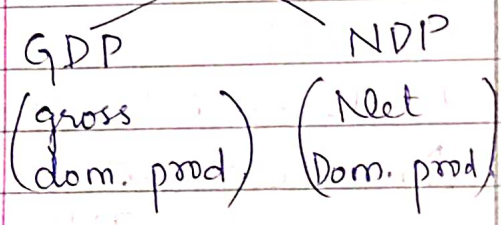
$$\boxed{NNP - Dep + NFIA = GDP}$$

Factory price & Market price

$$FP + (\text{indirect tax} - \text{Subsidy}) = MP$$

$$FP + (\text{net indirect tax}) = MP$$

**Domestic product**



\*  $\boxed{\text{Gross} - \text{Dep} = \text{Net}}$

Depreciation = Capital Consumption Allowance

\*  $GDP - Dep = NNP$

\*  $NNP + Dep = GNP$

\*  $GDP - Dep + NFIA = NNP$

**National Product**

GNP

NNP

(Gross Nat. pro.)

(Net Nat. prod)

(i)  $GDP_{mp}$  : definition of GDP + measured @ market price

(ii)  $GDP_{fc}$  : definition of GDP + measured @ factory price

(iii)  $NDP_{fc}$

(iv)  $NDP_{mp}$

(v)  $GNP_{mp}$

(vi)  $GNP_{fc}$

(vii)  $NNP_{mp}$

(viii)  $NNP_{fc}$  → used for calculation of National Income

**NNP<sub>FC</sub> = National Income**

- \* If NFIA is positive  
→ NP > DP
- \* If NFIA is negative  
→ NP < DP

⇒ NNP<sub>FC</sub> = National Inc

⇒ GNP<sub>FC</sub> - C.C.A = NNP<sub>FC</sub>

⇒ 100 - 30 = 70 = NNP<sub>FC</sub>

MCQ

- (a) GDP + NFIA = GNP
- (b) NNP<sub>FC</sub> + Dep = GNP<sub>FC</sub>
- (c) GDP<sub>mp</sub> = £1000  
IT = £500  
Subsidies = £200 } 300  
Net factor Inc to Abroad = £100 -ve  
C.C. Allowance = £20  
Find NNP<sub>FC</sub>

- (e) NDP<sub>FC</sub> = 600  
NIT = 30  
Subsidy = 10  
Dep = 20  
NFI to Abroad = 50 (-ve)  
Find GNP<sub>mp</sub>

⇒

⇒ NDP<sub>FC</sub> + Dep + NIFA + net indirect tax = GNP<sub>mp</sub>

= 600 + 20 + (-50) + 30 = 600

GDP<sub>mp</sub> - C.C. Allow + NFIA - net indirect tax = NNP<sub>FC</sub>

⇒ 1000 - 20 + (-100) + 300 = 580

GDP Deflator (Price Index)

=  $\frac{\text{Nominal GDP}}{\text{Real GDP}} \times 100$

- (d) GNP<sub>FC</sub> = 100  
NIT = 20  
Subsidy = 10  
CC. Allow = £30  
NFIA from abroad = 10  
NI = ?

Nominal GDP (2023) = CY price (2023) × CY Qty (2023)

Real GDP (2023) = BY price (2018) × CY Qty (2023)

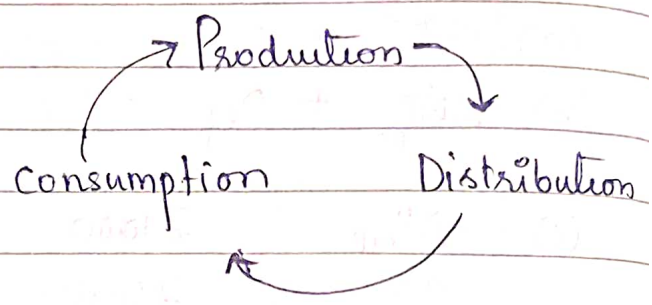
Indirect tax: tax imposed on goods & services

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- \* GDP deflator ~~increases~~ measures impact of inflation
- \* Real GDP eliminates impact of inflation

- contains 3 phases
  - Production (of goods & services)
  - Distribution of Income (paying Rent, wages, profit, Interest)
  - Consumption / Expenditure

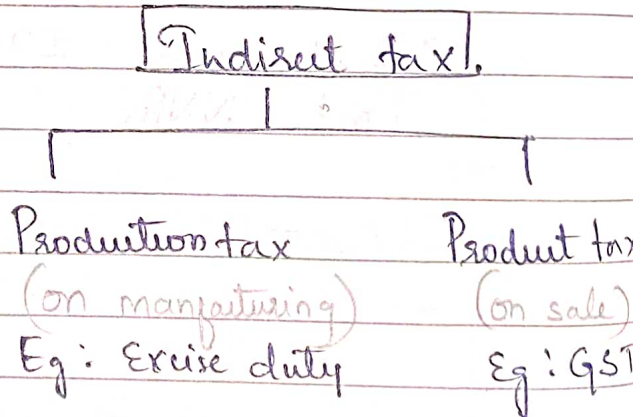
Q Who is responsible for NI estimator in India?



⇒ @ central level  
CSO [Central Statistics Org.] in the ministry of statistics & Prog. Imp. (MOSPI)

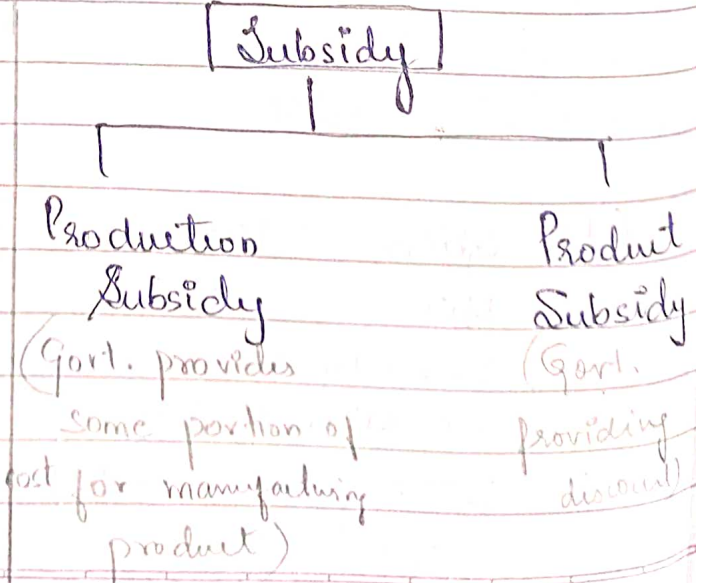
Basic Price, Factor Price, Market Price

@ state level  
→ @ State directorate of Eco & Stats



Circular flow of Income

- continuous cycle of
  - production
  - Distribution
  - Consumption



$$\boxed{\text{Intermediate consumption}} = \boxed{\text{Value of Input}} = \boxed{\text{direct exp on goods}} \rightarrow \text{Expenses on}$$

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Dr. side of Trading A/c)

- \* Factor cost + Production tax - Production subsidy = Basic price
- \* Basic price + Product tax - Product Subsidy = Market price
- \* Factory price + Indirect tax - Subsidy = Market price

$$\boxed{\text{Factory price} + \text{Net indirect tax} = \text{Market Price}}$$

Measurement of National Income

By 3 methods

- Value Added method or Product method (Production units)
- Income Method (Factor owners)
- Expenditure method (Consumption & Investment)

OR: Compute  $GVA_{mp}$  for each sector.

$GVA_{mp}$ : Gross value added @ market price

$$GVA_{mp} = (\text{output}) - (\text{Input})$$

$$GVA_{mp} = \boxed{\text{value of output}} - \boxed{\text{Intermediate consumption}}$$

$$= (\text{sales} + \text{CS} - \text{OS}) - \boxed{\text{Intermediate consumption}}$$

$$= \text{sales} + \text{change in stock} - \text{Intermediate consumption}$$

Value Added Method

$$\textcircled{03} \Rightarrow GVA_{mp} (Ps) + GVA_{mp} (Ss) + GVA_{mp} (Ts) = \text{GDP}_{mp}$$

- Steps:
- ① Classify sectors
    - Primary (Agriculture)
    - Secondary (Industry)
    - Tertiary (service)

$$\Rightarrow \text{GDP}_{mp} - \text{Dep} + \text{NFIA} - \text{NIT}$$

$$= \text{NNP}_{FC} \text{ (National Income)}$$

Note: Goods produced for both self consumption or selling is included in national income but for services (for other) is incl.

Income Method

Steps: (01) Classify 4 types of Income

(i) Compensation of Employees (COE)

= Salary in cash + kind + Employer's contribution to social security scheme

operating surplus (05) (ii) Rent, Royalty, Interest.

(iii) Profit = Corporate tax (tax given to Govt) + Retained earnings (part of profit retained) + Dividend

(iv) Mixed Income of self employed (MISE) (One person earning income from diff. fields where it is difficult to segregate)

\* Sum of 2<sup>nd</sup> & 3<sup>rd</sup> type i.e Rent + Royalty + Interest + profit = Operating Surplus

(02)  $COE + OS + MISE = NDP_{FC}$

(03) Computing  $NDP_{FC}$  from  $NDP_{FC}$

$NDP_{FC} + NFIA = NNP_{FC}$  (National Income)

Expenditure Method

Steps (01) types of sectors under Expenditure Method

(i) Household sector

- Consumption Exp.
- Investment Exp

(ii) Firms (Business)

- Investment Exp

(iii) Government

- Govt. Expenditure

Consumption Exp

Investment Exp

(iv) Rest of world

Net Exports = Export - Import

(02) Grouping same Expenditure under one name & adding them

Expenditure nature = consumption Exp [household + Government]

+ Gross Domestic Capital formation

Cap<sup>ital</sup> consumption allowance = Consumption of fixed Cap  
= Depreciation

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Gross Dom Cap. Formation

(Inv. by Household, firms, Govt.)

+

Net Exports

=

**GDP<sub>mp</sub>**

$$GDP_{mp} - Dep - NIT = NDP_{FC}$$

$$3400 - 200 - 500 = NDP_{FC}$$

$$NDP_{FC} = 2700$$

$$\therefore COE + OS + MISE = NDP_{FC}$$

$$800 + OS + 400 = 2700$$

$$\boxed{\text{Operating Surplus} = 1500}$$

(03)  $GDP_{mp} - Dep + NFIA - NIT$

$$= \text{NNP}_{FC}$$

(National Inc)

Note:

For Expenditure method in 2<sup>nd</sup> step  
Cons. Exp + net domestic Cap. for + net Exports = NDP<sub>mp</sub>

Q. Calculate operating surplus

Sales = 4000

Compensation of Emp = 800

Intermidate Cons = 600

Rent = 400

Interest = 300

Net Indirect tax = 500

(Dep) Cons. of fixed Cap = 200

Mixed Income = 400

Q. Rent + Royalty + Interest + Profit = Operating Surplus

Q. Profit = Corporate tax + Retained Earnings + Divident

Q.  $GVA_{mp} (PS) + GVA_{mp} (SS) + GVA_{mp} (TS) = \underline{GDP_{mp}}$

Given and Step of Income method

$\Rightarrow COE + OS + MISE = NDP_{FC}$

But  $NDP_{FC} = ?$

Sales + change in stock - Inter. cons =  $GVA_{mp}$

$4000 + 0 - 600 = GVA_{mp}$

$GVA_{mp} = 3400 = GDP_{mp}$

(Since no information is given from other sectors)

Q. Goods produced for self consumption is not included in N.I  
True / False

Q At national level which body compiles national income data  
⇒ Central Statistics Org.

Q If Cons. Exp = 400  
Gross Dom. Cap. For = 200  
Net Exports = (100)  
Dep = 50  
find  $GNP_{mp}$ ,  $NDP_{mp}$

$$\Rightarrow \text{Con. Exp} + \text{GDCF} + \text{NE} = \text{GDP}_{mp}$$

$$400 + 200 + (-100) = \text{GDP}_{mp}$$

$$500 = \text{GDP}_{mp}$$

$$\text{GDP}_{mp} + \text{NFA} = \text{GNP}_{mp}$$

$$500 + 0 = \text{GNP}_{mp}$$

$$\boxed{\text{GNP}_{mp} = 500}$$

$$\Rightarrow \text{C.E} + \text{GDCF} + \text{NE} = \text{GDP}_{mp}$$

$$\text{GDP}_{mp} = 500$$

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

$$500 - 50 = \text{NDP}_{mp}$$

$$\boxed{\text{NDP}_{mp} = 450}$$

## Factor vs Transfer payment/Income

Factor Payment/Income: two sides  
Eg: When you sell goods to one person & income you get in return is factor income

Transfer Income/Payment: One side  
Eg: Pension, Gift

\* Only factor income is included in National Income

## Per Capita Income

$$= \text{Avg Income} = \frac{\text{National Income (Total Income)}}{\text{Total population}}$$

## Personal Income: (Household Inc.)

= National Inc - undistributed pf  
- Corporate tax - net interest payment made by household  
+ Transfer payment from firm & Govt.

## Personal Disposal Income

= Personal Income - Personal tax - non tax payments

→ Income that household is able to spend for their needs other than taxes



Q At national level which body compiles national income data  
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Q If Cons. Exp = 400  
 Gross Dom. Cap. For = 200  
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$$\boxed{\text{GNP}_{mp} = 500}$$

$$\Rightarrow \text{C.E} + \text{GDCF} + \text{NE} = \text{GDP}_{mp}$$

$$\text{GDP}_{mp} = 500$$

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

$$500 - 50 = \text{NDP}_{mp}$$

$$\boxed{\text{NDP}_{mp} = 450}$$

Factor vs Transfer payment/Income

Factor Income: two sides

Eg: when you sell goods to one person & income you get in return is factor income

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Per Capita Income

$$= \text{Avg Income} = \frac{\text{National Income}}{\text{Total population}}$$

Personal Income: (Household Inc.)

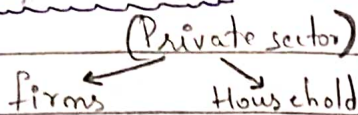
$$= \text{National Inc} - \text{undistributed Pft} - \text{Corporate tax} - \text{net interest payment made by household} + \text{Transfer payment from firm \& Govt.}$$

Personal Disposal Income

$$= \text{Personal Income} - \text{Personal tax} - \text{non tax payments}$$

→ Income that household is able to spend for their needs other than taxes

Private Income



= factor Income from  
 NDP + NFIA +  
 national debt Interest  
 + current transfers  
 from govt. [subsidy]  
 + other net transfer  
 from rest of world

=> (NI)  
 $NNP_{mp} - NIT = NNP_{FC}$   
 $1891 - (175 - 30) = NNP_{FC}$   
 $NNP_{FC} = ₹1746 \text{ cr}$

=>  $NP_{FC} + (i) - (ii) + (iii) + (iv) + (v) - (vi) - (vii)$   
 $= 1746 + 45 - 10 + 15 + 35 + 20 - 25 - 25$   
 $= ₹1711 \text{ crores}$

Personal Inc. = ₹1711 cr.

Q. Compute National Income & personal Income.

Is GDP a reliable measure of welfare

Items	₹ (crore)
• $NNP_{mp}$	1891
• Inc. from property & Entrepreneurship accruing to Govt. Adm. Dep	45 <sup>(1)</sup>
• Indirect tax	175
• Subsidy	30
(not Inc. to household) Savings of non-debt Enterprises	10 <sup>(2)</sup>
(Inc. to household) Int. on national debt	15 <sup>(3)</sup>
(Inc. to household) Current transfer from Govt	35 <sup>(4)</sup>
(household) -  - from rest of world	20 <sup>(5)</sup>
(not Inc.) Savings of Pvt. Sec	25 <sup>(6)</sup>
(not Inc.) Corporate tax	25 <sup>(7)</sup>

Ans: NO

Because of → Distribution of GDP  
 → Externalities  
 → non monetary transactions  
 → kinds goods of produced

(i) Distribution of Income  
 → (2023) 100 peoples  
 99 people earns 99 L      1 people earn 401 lakhs  
 Total GDP = 99 + 401 = 500 L  
 → (2024) 100 peoples  
 99 people earns 80 L      1 people 600 L  
 Total GDP = 80 + 600 = 680 L

Henceforth, GDP is increased from 2023 to 2024 where rich's are getting more richer & poor's are getting still poor so, this will not increase welfare

#### (iv) Kinds of Goods produced

Eg: Russia vs Ukraine for war bombs production  
Guns -11- ↑  
Hence: GDP ↑, welfare ↓

∴ Welfare & GDP are not related

#### (ii) Externalities

Advantage or Disadv. that society has to bear.

- Advantage:
  - Positive Externality  
Welfare ↑, GDP(K)  
(Parks establishment)
- Disadvantage:
  - Negative Externality  
welfare ↓, GDP(K)  
(over pollution)

\* Items not be included in national income

- Service for self consumption (service of housewife)
- Buying & selling of shares & debentures
- Buying & selling of second hand goods
- Transfer Income

\* Items to be included in national income

- Brokerage / commission on sale / purchase of share, debenture, 2nd hand goods
- Anything results in creation of <sup>new</sup> goods & services

#### (iii) Non-monetary transactions

(Housewife helping her family is not considered in national income