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ECONOMY

National Income Accounting

What is National Income ? [CSE 2013]

- It is the **total monetary value of all final goods and services** produced by the residents of a country during a given period (usually a year).
- Statistically, **calculated at Factor Price**, but the Government of **India** calculates on **Market Price**.

Facts About Estimation of National Income

British India

- **The first estimate** was made by **Dadabhai Naoroji** for the financial year 1867-68.
- **First scientific estimate** (with proper statistical techniques) was made by **Prof. V.K.R.V. Rao** for the financial year 1931-32.

After Independence

- The Government of India established the **National Income Committee in 1949** to provide regular national income estimates, headed by **Prof. P.C. Mahalanobis,** with **Prof. D.R. Gadgil and Prof. V.K.R.V. Rao as members**.
- Following its recommended methodology, the **Central Statistical Organisation (CSO)** prepared the first official national income estimates using **1948–49 as the base year,** published with current-price estimates and Public Authorities' accounts in Estimates of National Income **(1956).**

Factors of Production

- These are **basic inputs** used in the production of goods and services. Income generated from these factors is known as **factor income**.
- It is the **only** income that is counted while calculating GDP.

Factors	Description	Award/Income
Land	All the **natural resources** available for production.	**Rent**
Labour	**Human effort** (physical and mental) used in production.	**Wages**
Capital	All **man-made resources** used in the production process. Includes the physical assets.	**Interest**
Entrepreneurship	Ability to **organise and combine factors of production** to create goods and services while taking **risks**.	**Profit**

Methods of Calculating National Income

Method	Description
Value Added Method	• Estimates national income by **calculating the total value of all final goods and services produced domestically** in a year, **excluding intermediate** goods to avoid double counting. • **Gross Value Added**: Value of Output – Value of Intermediate Goods. • **Net Value Added:** Obtained by deducting **depreciation** from Gross Value Added.
Expenditure Method	• Measures national income by **summing all final expenditures** in an economy during a year, **excluding** intermediate goods to prevent double counting.

	○ **GDP = C + I + G + (X − M)** **Where,** C = private final consumption expenditure I = investment or gross capital formation G = government final consumption expenditure X = exports M = imports
Income Method	• Calculates the national income by **summing up all factor incomes** earned by the normal residents of a country during a year. ○ **Factor Incomes**: Wages and salaries; rent; interest; profit and mixed income of self employed.

Items Included & Excluded in National Income

Items Included in National Income	Items Not Included in National Income
Wages and Salaries	Transfer Payments (Scholarship, Unemployment Allowance)
Rent (Actual + Imputed rent of owner - occupied houses)	Windfall Gains (Lottery, Gifts, Inheritance)
Interest on loans and deposits	Intermediate Goods
Profits of firms (Dividend, Retained Earnings, Corporate Tax)	Sale and Purchase of Old/Second hand goods
Mixed Income of Self Employed (like farmers, shopkeepers, professionals)	Capital Gains & Capital losses
Net Factor Income from Abroad	Value of Household Services (Housewife services)
	Illegal Incomes (Smuggling, Black Money)

Some Concepts Related to National Income

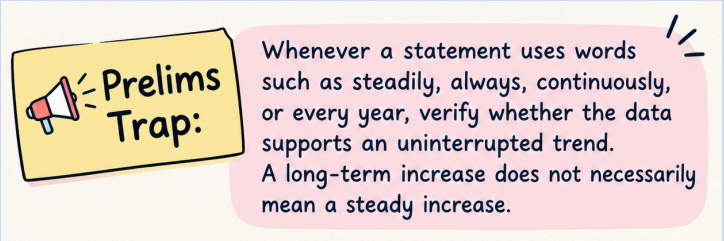
- **Net Factor Income From Abroad (NFIA):** It is the **difference** between the factor incomes **received** by the residents of a country from abroad and factor incomes **paid** to non-residents within the domestic territory.
  - **Inflows (Factor Income Earned from Abroad):**Wages and Salaries earned by Indian professionals, Investment Income (Interest & Dividends) from overseas shares,Profits of Indian Companies abroad,etc.
  - **Outflows (Factor Income Paid to Non-Residents within India):** Wages and Salaries to foreign professionals,Profits/dividends repatriated (Foreign companies such as Unilever, Samsung, etc transfer profits earned in India to overseas shareholders), Interest earned by Foreign banks or bondholders on loans or investments inside India.
- **Factor Cost**:Cost incurred on **factors of production** i.e. rent, wage and salaries, interest and profit on land, labour, capital and entrepreneurship respectively.
- **Market Price** :Cost at which the product is **actually sold** in the market.
- **Net Indirect Taxes** are calculated by deducting subsidies from indirect taxes.

Market Price = Factor Cost + Net Indirect Tax (Indirect Tax - Subsidies)
Factor Cost = Market Price - Net Indirect Tax (Indirect Tax - Subsidies)

- **Depreciation:** It is the **gradual reduction** in the value of a tangible asset over time due to **wear and tear.** Also known as **'consumption of fixed capital'**.
- GDP measures production within **India's borders**, while national income includes **net factor income** earned by Indian residents from abroad. **[CAPF 2023]**
- The **Economic Survey 2020–21** described India's recovery as V-shaped, indicating a sharp economic rebound after the steep GDP contraction in Q1 (−23.9%) and Q2 (−7.5%) of FY 2020–21. **[CAPF 2022]**
    - **V-shaped recovery:** Sharp economic decline followed by a rapid recovery.
    - **U-shaped recovery:** Economic decline followed by a prolonged period of stagnation before recovery.
    - **K-shaped recovery:** Different sectors or groups recover differently; some improve while others worsen.
    - **W-shaped recovery:** Economic decline followed by recovery, a second decline, and another recovery.

National Income Aggregates

Aggregates	Description

Gross Domestic Product (GDP)	• Money value of **all final goods and services** produced in the **domestic territory** of a country during a financial year. (called **GDP_{MP}** if calculated at market price)
	• **Domestic territory includes: Political boundaries** including territorial waters; indian **embassies** and consulates; military establishments; income from **international territory** by ships, oil rigs, aircrafts etc.(**it does not include individual or private property held abroad)**
	• **Ex:** Income earned by Air India operating local flights in the US will be included in US GDP.
	• **GDP at Market Price:**Based on the **actual price paid by the consume**r in the market. It **includes indirect taxes** (such as GST, sales tax, and excise duties) and **excludes government subsidies.**
	• **GDP at Factor Cost:** Measured by the **cost of the factors of production** (wages for labor, rent for land, interest for capital, and profits for entrepreneurs).It **excludes indirect taxes and includes government subsidies.**
	  ○ **GDP_{FC}: GDP_{MP}-Net indirect tax (Indirect Taxes-Subsidies)**
	• **Nominal GDP (Current Price):**Calculated using the **prices prevailing** in the year of measurement.It reflects both change in output (production) and change in prices (inflation or deflation).
	  ○ GDP at market price has steadily increased between 2005-2015. **[CSE 2015]**
	• **Real GDP (Constant Price) :** National income is calculated using the **prices of a fixed base year** and not the current year. Removes the effect of inflation and deflation and shows real growth.
	  ○ The base year for GDP estimates is **2022–23.**
	
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	• The **National Statistical Office (NSO),** under the Ministry of Statistics and Programme Implementation (MoSPI), is responsible for compiling and releasing India's quarterly and annual GDP estimate.
Net Domestic Product (NDP)	• **NDP = GDP - Depreciation** • **NDP_{MP}**:Net value of domestic production **using the actual prices** paid by buyers in the market. ○ It allows policy makers to **estimate how much the country has to spend** just to maintain the current GDP. • **NDP_{FC}:** Represent the actual cost of the inputs used in production. • **$NDP_{FC:}$ NDP_{MP}-Net Indirect** Taxes (Net Product Taxes and Net Production Taxes).
Gross National Product (GNP) [CSE 2018]	• Money value of all final goods and services produced **by the nationals or normal residents** of a country. Here, the **focus is on residents and not domestic territory.** (called **GNP_{MP}** if calculated at market price) • Incomes **earned by Indians residing abroad are also included**, irrespective of whether they remit all or part of that income back to India. • **Ex:** Income earned by a company owned by an Indian but operating in Nigeria will be included in India's GNP. • Increase in absolute and per capita real GNP **do not connote a higher level of economic development** if poverty and unemployment increases. **[CSE 2018].** • GNP is calculated by **adding NFIA** in GDP. • **GNP_{FC}:** It measures the value of output received by the **factors of production** belonging to a country in a year. Calculated by **deducting net indirect tax from $GNP_{MP.}$**
Net National Product (NNP)	• Total market value of all final goods and services produced **by the normal residents** of a country in a year, after deducting depreciation. • **NNP =** GNP - Depreciation • **NNP_{MP}**: **GNP_{MP}** - Depreciation • **NNP_{FC}**: NNP_{MP}-Net indirect tax • **NNP_{FC} is also called National Income**, it is the total income earned by all factors of production (wages, rent, interest, and profits) belonging to the residents of the country in a year. [According to NCERT] • However National Income is calculated at **market price.** This is confirmed by the National Statistical Office in the Annual Report of the MoSPI • **NNP_{MP}**: Measures how much a country **can consume** in a given period of time. Measures output **regardless of where that production has taken place** (in domestic territory or abroad).
Gross Value Added (GVA)	• **GVA** measures the **individual contribution** of producers, industries or sectors to the economy. • **GVA**:Value of output − intermediate consumption. • **GDP:**Sum of GVA across resident sectors **+ product taxes − product subsidies.** • GDP of any nation represents the sum total of GVA (i.e, without discounting for capital consumption or depreciation) in all the sectors of that economy during the said year after adjusting for taxes and subsidies. • **GVA at Basic Prices:** Replaced GVA at factor cost**(2015)** in sector-wise estimates, following **UN System of National Accounts** (SNA 1993/2008).

	○ **GVA at Basic Prices**:GVA at Factor Cost + Net production taxes (production taxes − production Subsidies). ○ **GVA at market prices**:GVA at basic prices + Net product taxes (product taxes -product subsidies) ○ **GDP at Market Prices:**GVA at Basic Prices + product taxes − product subsidies. ● **Examples:** ○ Production taxes: Land revenue, stamp duty, professional tax. ○ Product taxes: Excise duty, sales tax, import/export duties. ○ Production subsidies: Railway and agricultural input subsidies. ○ Product subsidies: Food, petroleum and fertiliser subsidies.

Base Year of GDP

- As per National Accounts Statistics, the base year is the **reference year whose prices are used to calculate real growth**.
- **Rebasing** is the process of updating the base year using revised and improved data to reflect the current structure of the economy.
- Base year for GDP Estimates has been revised from **2011–12 to 2022–23** to better reflect India's evolving economic structure.,
- It was recommended by the **Advisory Committee on National Accounts Statistics (ACNAS)**, chaired by **Biswanath Goldar.**

Why was GDP Base Year Revised to 2022–23?



- **Normal Post-COVID Year:** Reflects a more stable economy, avoiding pandemic-related distortions of 2019–20 and 2020–21.
- **Improved Data Sources:** Uses e-Vahan (vehicle registrations), GST network,Public Financial Management System (PFMS),etc, reducing reliance on proxies and outdated benchmarks.
- **Updated Sectoral Coverage:**
  - Includes **hired domestic workers** and digital, **platform and gig economy activities.**
  - Accounts for the **National Pension System (NPS**) alongside the Old Pension Scheme (OPS), government-provided accommodation, and improved **coverage of local bodies and autonomous institutions.**
  - **Product Subsidies**: Uses the volume extrapolation method for constant-price estimates.
- **Methodological Improvements:**
  - **Double deflation** for **manufacturing and agriculture**; single deflation discontinued.
  - **Integration of Supply and Use Tables (SUT) framework** to reduce discrepancies between production- and expenditure-based GDP estimates.
  - Improved Estimation of Private Final Consumption Expenditure,
  - Allocates value added of multi-activity corporations using corporate filings.

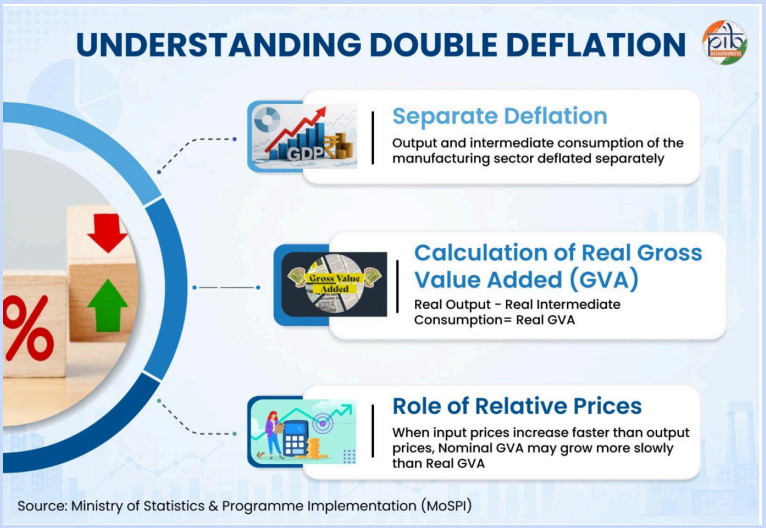
Updated GDP Series

- On 31 August 2026, the updated series of annual and quarterly GDP estimates with 2022-23 as the base year was released.
- The estimates incorporate the new **Output Producer Price Index** and **Banking Services Price Index**, both based on 2022-23, along with updated administrative data.

- Two concepts are important in the latest GDP series: **revision of the base year** and adoption of **double deflation for manufacturing.**

Double deflation

- IMF describes double deflation as the preferred method for calculating GDP in volume terms.
- A new method adopted for various manufacturing industries to calculate real Gross Value Added (GVA) more accurately.
- Deflation removes the effect of price changes between two time periods from a current-price (nominal) value to get its value at constant prices (real value).
- Double deflation means adjusting the prices of both goods produced (output) and raw materials used (inputs) separately to remove the effect of price changes.



Example:
Suppose a factory produces goods worth ₹1,000 and uses raw materials worth ₹800.
- Output: The value of goods produced increases to ₹1,200.
- Inputs: The cost of raw materials increases to ₹976.
- Nominal GVA: ₹1,200 − ₹976 = ₹224.

To calculate Real GVA, the government separately adjusts both output and input values for price changes, then subtracts real inputs from real output.

Why is it needed? If raw material prices rise faster than selling prices, simply comparing money values may give a misleading picture of actual production growth.

Tax-to-GDP Ratio [CDS 2024]

- It measures the **proportion of a country's total tax** revenue relative to its GDP. It reflects the **government's ability to mobilise resources** from the economy and is widely used to assess fiscal capacity and efficiency.
- A **decrease in tax to GDP ratio** indicates slowing economic growth rate and not distribution of national income. **[CSE 2015]**
- **Tax-to-GDP Ratio =** Total Tax Revenue / GDPP
-
- **Latest Trends in India**
  - **Budget 2026–27** indicates a **decline** in gross tax-to-GDP ratio to about **11.2%**.
  - **Direct tax-to-GDP ratio has improved** to approximately 6.8%–7.1%, reflecting better compliance and formalisation
  - **Indirect tax-to-GDP ratio** stands at around **4.9%**, influenced by GST rate rationalisation and base effects.

GDP Deflator

- It is a measure of the **overall level of price changes** i.e. inflation and deflation in an economy. Shows how much of the increase in GDP is due to higher prices rather than higher production.

Formula:

$$\text{GDP Deflator} = \left(\frac{\text{Nominal GDP}}{\text{Real GDP}}\right) \times 100$$

- **Nominal GDP**: GDP calculated at current market prices.
- **Real GDP**: GDP adjusted for inflation, calculated at constant base-year prices.

Potential GDP [CSE 2020]

- It is the **maximum value of goods and services an economy can produce when it is operating at full capacity**, using all its resources efficiently, without causing accelerating inflation.
- It is also called potential output or full-employment output. It is the difference between actual GDP and potential GDP is called the **output gap:**
  - If actual GDP > potential GDP → economy overheated → inflationary pressures
  - If actual GDP < potential GDP → underutilization → unemployment rises

Gross Material Product (GMP)

- GMP under the Material Product System (MPS) includes **only the output of the "material sphere"** i.e. the production of material goods and certain "material services" and not other kinds of goods and services.
- **GDP vs. GMP:**GDP measures the **monetary value of all final goods and services** produced in an economy, including **both** material goods and **all** kinds of services.

Per Capita Income

- It is the measure of the **amount of money earned per person** in a national or geographic region.
- It is **calculated** by dividing the country's national income by its population.
- **India's Per Capita Income = $2696 (World Bank)**

Descending order(Largest to smallest) source of demand in India: [CAPF 2024]

1. **Private Consumption (PFCE):** Household spending on goods and services.
2. **Gross Fixed Capital Formation (GFCF):** Investment in buildings, machinery and infrastructure.
3. **Government Consumption (GFCE):** Government spending on goods and services.
4. **Net Exports:** Exports minus imports; often negative for India.

Types of Incomes

Income	Description
Personal Income	• Total income actually **received by individuals or households** in a country during a year, whether **earned or unearned**. • It also **includes Transfer Payments** (pensions, scholarship, remittance) etc. • Does **not include undistributed profits** (part of company's profit not given to shareholders) • **Personal Income** = National Income - Undistributed Profits - Corporate Taxes - Net Interest Payments made by households + Transfer Payments to households from the Government and Firms
Personal Disposable Income	• Amount of income **left with the households after paying direct personal taxes** like income tax etc and **non tax payments** like fines. • It is the **actual take home income** available for consumption and savings. • **Personal Disposable Income** = Personal Income - (Personal Tax Payments + Non Tax Payments)

National Disposable Income	• Total income available to the **nation** **for spending on consumption** and saving during a year. • It shows how much income a country's residents can **actually use** after accounting for depreciation and net current transfers from the rest of the world. • **National Disposable Income** = Net National Product at Market Price + Net Current Transfers from the Rest of the World
Private Income	• **Total income received by the private sector** i.e. households and private businesses of a country, from all sources before paying direct taxes. • It includes **both** **earned** incomes (factor incomes) and **unearned** incomes **(Transfer Payments).** • **Private Income =** Factor Income from Net Domestic Product accruing to the Private sector + National Debt Interest + NFIA + Current Transfers from Government + Other net transfers from the Rest of the World

Circular Flow of Income

- It is the **continuous** **movement** of money, goods and services, and factors of production between households and firms (producers) in an economy.
- **Households earn income** from factors of production and **spend** it on goods and services produced by firms which develop a circular flow.
- Spending by the households to buy goods and services is the flow **of payments.**

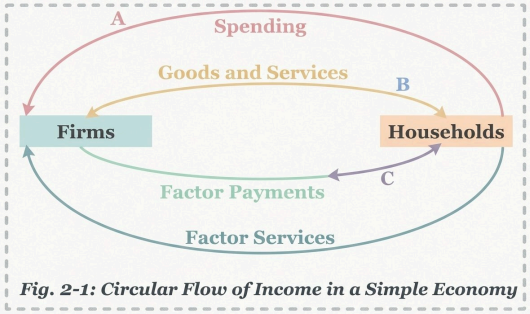


Fig. 2-1: Circular Flow of Income in a Simple Economy

A Macroeconomic Model

"If the households decide to spend more then their income will rise exactly by the amount which is necessary to carry out the extra spending".

Illustration:
If the people spend more on the goods and services → the firms will produce more goods and services to meet this extra demand → since they will produce more, the firms must also pay the factors of production extra remunerations → thus the households will eventually get the extra earnings required to support the initial additional spending that they had undertaken.

Perhaps, the government also follows this analogy while disbursing money under schemes for countering a **slowdown in the economy**. As more money in the hands of people will generate more demand, which in turn will increase production and employment.

Transfer Payments

- These are financial distributions primarily **from government** programs to individuals **without requiring a return exchange of goods or services.**
  Example:Pensions, scholarship, remittance,etc.
- These payments **differ from corporate assistance** like **bailouts** or **subsidies**, which aren't typically labeled as transfer payments

Average Propensity To Save (APS)

- It refers to the proportion of income that is **saved rather than spent** on current goods and services.
- Also known as the **savings ratio**, it is usually expressed as a percentage of total household disposable income (income minus taxes).
- APS expresses society's overall preference for **investing** in the future over consuming in the

present.

- The inverse of APS is the **average propensity to consume (APC).**

Relation with MPS: MPS (Marginal Propensity to Save) measures the proportion of **an additional unit** of income that is saved.

India's GDP Performance (PIB PRiSM September)

- India's economy began 2026-27 on a strong note, with real GDP growth accelerating to 7.8% in Q1, riding on manufacturing and services, while real GVA rose 8.2%.
- Economic activity in the first quarter was supported by a sharp rise in **investment, firm household consumption and stronger exports.**
    - **Investment (Capital Formation):** More spending on factories, machinery and infrastructure, driven by government capital expenditure (CapEx) and private-sector investment.
    - **Household Consumption (Domestic Demand):** People spent more on goods and services, supported by income growth, rural demand, employment and lower inflation.
    - **Exports (External Demand):** India sold more goods and services abroad, supported by global demand, competitive pricing and services exports.