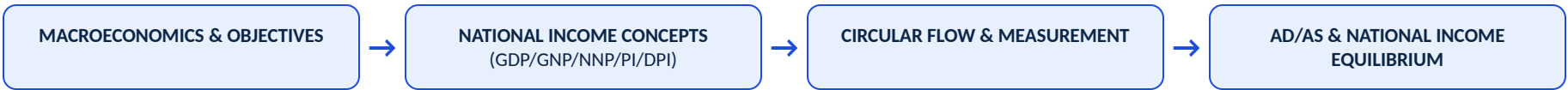


1 CHAPTER ROADMAP



Theme: this is our first Macroeconomics chapter – moving from individual markets to the economy as a whole. It builds the vocabulary to measure a country's total output (GDP/GNP/NNP), traces how income circulates between firms and households, and shows how Aggregate Demand and Aggregate Supply together determine the equilibrium level of national income and price.

2 KEY DEFINITIONS

Macroeconomics Studies the behaviour of the economy as a whole (aggregate output, unemployment, inflation) – contrasts with microeconomics' individual-market focus.	National Income (Samuelson) The market value of all final goods and services produced in a country during a given period, usually one year.
Effective Demand (Keynes) Actual expenditure in an economy based on EXISTING/actual income – not on the assumption that all resources are fully utilised.	Full Employment (Yf) Situation where all available resources of an economy are fully utilized – no more production is possible.
Aggregate Demand (AD) Total amount of goods and services demanded in an economy at a given price level, in a given time period.	Aggregate Supply (AS) Total supply of goods and services produced within an economy at a given price level, in a given time period.
Output Gap Difference between an economy's actual output and its production potential (Yf).	Circular Flow of Income Continuous flow of payments between firms (which pay for factors of production) and households (which pay for goods/services).

3 MACROECONOMIC OBJECTIVES

ECONOMIC GROWTH Raises national wealth & standard of living	LOW PRICE INFLATION Some inflation is normal; high inflation erodes wealth & confidence	LOW UNEMPLOYMENT Wasted resource + social cost; higher employment ↑ AD & growth
EQUILIBRIUM IN BALANCE OF PAYMENTS Balance between earnings from exports/inflows and payments for imports/outflows		

4 NATIONAL INCOME BUILDING BLOCKS – FORMULA CHAIN

GROSS DOMESTIC PRODUCT

GDP = C + I + G + (X – M)

Value of output produced WITHIN the country's borders (domestic resources only) – excludes nationals' income earned abroad

GROSS NATIONAL PRODUCT

GNP = GDP + Net Income from Abroad

Broader than GDP – includes ALL income earned by a country's nationals, at home or abroad

REAL GDP (GDP DEFLATOR)

Real GDP = Nominal GDP ÷ GDP Deflator

Nominal GDP = current prices (includes inflation) | Real GDP = inflation-adjusted, base-year prices – the accurate growth indicator

NET NATIONAL PRODUCT

NNP = GNP – Depreciation

Depreciation = capital consumption (wear/decline in asset value used to produce output)

5 WORKED EXAMPLE: GDP → GNP → NNP

Item	Rs. bn
GDP	500
+ Net income from abroad (250 received – 200 paid)	+50
= GNP	550
– Depreciation (plant 20 + building 30)	–50
= NNP	500

6 KEY RULES FOR NATIONAL INCOME ACCOUNTING

- National income, national output, and national product are synonyms
- Only MONEY VALUE is used (physical units can't be added/subtracted)
- Only FINAL goods and services are counted (avoid double counting)
- Measured for ONE YEAR only
- Only LEGAL production is included

7 MARKET PRICE VS FACTOR COST

CONVERTING BETWEEN MP AND FC

$$NNP_{fc} = NNP_{mp} - \text{Indirect Tax} + \text{Subsidies} \quad | \quad NNP_{mp} = NNP_{fc} + \text{Indirect Tax} - \text{Subsidies}$$

Indirect tax (sales tax, excise duty) takes income away from producers; subsidies give it back

8 PERSONAL INCOME & DISPOSABLE PERSONAL INCOME

PERSONAL INCOME (PI)

$$PI = NI - \text{Corporate Profit Tax} - \text{Undistributed Profit} - \text{Social Security Contributions} + \text{Transfer Payments}$$

Transfer payments = "unearned income" (pensions, gifts, scholarships) received without any economic activity

DISPOSABLE PERSONAL INCOME (DPI OR YD)

$$DPI = PI - \text{Personal Taxes} \quad (\text{or}) \quad Y_d = Y - T$$

The net amount households can freely save or consume, after direct/personal taxes

Step	Rs. bn
National Income	500
– Corporate profit tax (50) – Undistributed profit (30) – Social security (25)	–105
+ Transfer payments	+45
= Personal Income	440
– Personal taxes (income tax 80 + property tax 60)	–140
= Disposable Personal Income	300

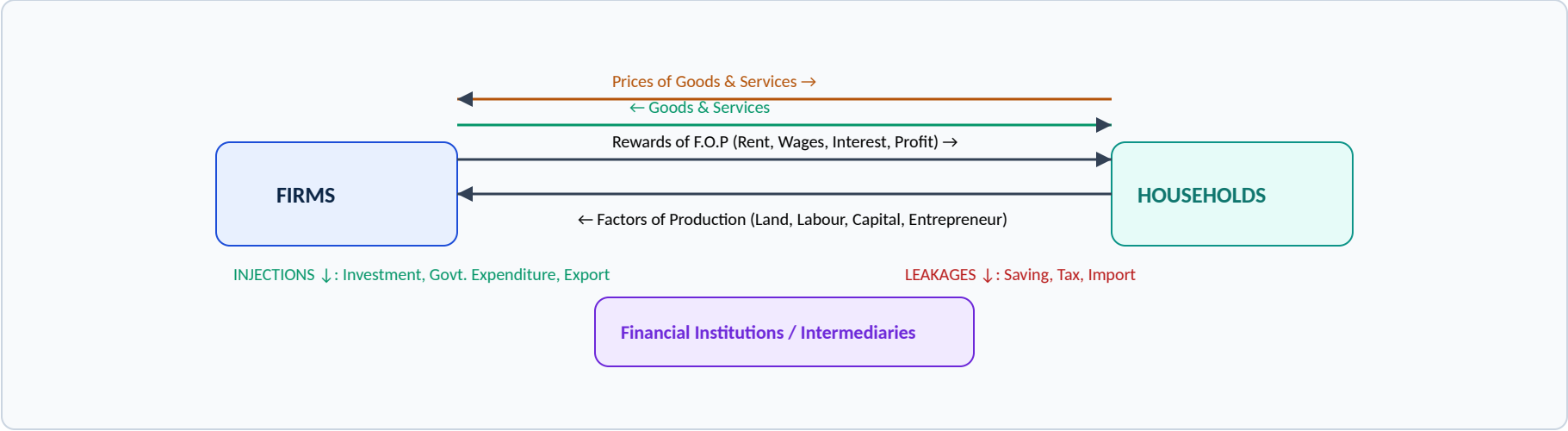
9 PER-CAPITA INCOME

PER-CAPITA INCOME

$$\text{Per Capita Income} = \text{National Income} \div \text{Population}$$

Proxy for average standard of living | Example: Rs.240bn ÷ 120 million = Rs.2,000

10 CIRCULAR FLOW OF NATIONAL INCOME



Households supply factors of production to firms and receive rewards (rent, wages, interest, profit); they spend this income on goods & services, which becomes firms' revenue. **Injections** (investment, govt. spending, exports) add to the flow via financial institutions; **leakages** (saving, tax, imports) withdraw from it.

11 INJECTIONS VS LEAKAGES

Injections (add to circular flow)	Leakages (withdraw from circular flow)
Investment (I)	Saving (S)
Government Expenditure (G)	Tax (T)
Exports (X)	Imports (M)

Money value of final goods & services = aggregate rewards to factors of production, IF all rewards are paid in full – this equivalence is the basis for all 3 measurement approaches (next page).

12 THREE APPROACHES TO MEASURE NATIONAL INCOME

MEASURING NATIONAL INCOME

Product Approach

Add money value of FINAL goods & services from agriculture, manufacturing, individual & institutional services. GDPmp → +Net income abroad = GNPmp → -Depreciation = NNPmp.

Income Approach

Add rewards received by ALL factors of production: Rent + Wages + Interest + Pre-tax Profit = National Income at FACTOR COST. Excludes transfer payments & illegal income.

Expenditure Approach

Add total expenditure by all agents: $Y = C + I + G + (X - M)$. Excludes spending on used/second-hand goods.

If all precautions are correctly applied, all THREE approaches give the SAME national income figure.

13 VALUE-ADDED APPROACH – AVOIDING DOUBLE COUNTING

Stage	Total Output (market value)	Value Added
Cotton	100	100
Yarn	200	100
Fabric	250	50
Shirt	380	130
Total	Wrongly = 700 if summed directly (double-counts inputs)	Correctly = 380 (sum of value added = final product value)

Exam clue: the sum of all value-added at each production stage always equals the market value of the FINAL product – this is how double/multiple counting is avoided.

14 PRECAUTIONS IN NATIONAL INCOME MEASUREMENT

PRODUCT APPROACH

- Avoid double counting
- Exclude free/unpaid services (housework, etc.)
- Exclude sale of old/used goods

INCOME APPROACH

- Exclude transfer payments
- Exclude income from illegal activities

EXPENDITURE APPROACH

- Avoid double counting
- Only NEWLY produced goods (exclude resold/used goods)

15 DIFFICULTIES IN MEASURING NATIONAL INCOME

- Lack of trained statistical staff
- Illiteracy / unreliable record-keeping by producers
- Inadequate data-collection infrastructure
- Illegal activities excluded (undocumented/black/shadow economy)
- Barter transactions ignored or estimated
- Frequent price fluctuations complicate accurate calculation
- Foreign firms' earnings hard to classify (in/out of national income)

16 IMPORTANCE OF NATIONAL INCOME MEASUREMENT

ASSESS PERFORMANCE

- Rising NI = economy growing

LIVING STANDARDS

- Per-capita income ($NI \div \text{population}$)

INCOME DISTRIBUTION

- How output is shared among factors of production

ECONOMIC PLANNING

- Basis for monetary, fiscal & commercial policy

INTERNATIONAL COMPARISON

- Compare growth across countries

17 MEASUREMENT APPROACHES – QUICK REFERENCE

Approach	What's Added	Gives You
Product	Agriculture + Manufacturing + Services	GDPmp → GNPmp → NNPmp
Income	Wages + Rent + Interest + Profit (excl. transfers)	National Income at FACTOR COST
Expenditure	Consumption + Investment + (Exports–Imports)	GNP (less Indirect Tax + Subsidies for FC)

18 AGGREGATE DEMAND (AD) – COMPONENTS & SHIFTS

COMPONENTS OF AGGREGATE DEMAND

$AD = C + I + G + (X - M)$

Same components as GDP – AD is a measure of everything demanded/spent in the economy

Consumer income ↑ / Firms optimistic (invest more) / Govt. spending ↑ / Exports more attractive / Imports less desirable



AD curve SHIFTS RIGHT (AD1→AD2), same price level

AD curve: downward sloping (price level on Y-axis, real national output on X-axis) – like a regular demand curve, but for the WHOLE economy.

19 AGGREGATE SUPPLY (AS) – SRAS VS LRAS

	Short-Run AS (SRAS)	Long-Run AS (LRAS)
Slope	Upward sloping (like normal supply)	VERTICAL at full employment (Yf)
Price dependency	Positively related to price level	Independent of price level
Represents	Output firms will supply at current prices/costs	The economy's maximum productive potential
Shift factors	Factor productivity, capital stock, labour force, wages, producer taxes/subsidies, inflation expectations	Labour skills, technology, new natural resources

Keynesian AS view: AS is flat/elastic BELOW full employment (spare capacity absorbs extra output without raising prices) and becomes vertical only once the economy nears full employment/Yf.

PRC-3 – ECONOMICS | Chapter 5: National Income and Its Determination

20 NATIONAL INCOME EQUILIBRIUM & OUTPUT GAPS

Equilibrium occurs where AD = SRAS (and ideally close to LRAS, the full-employment potential Yf).

Gap Type	Condition	Cause	Effect on Price Level
Negative / Deflationary Gap	$AD < Y_f$ (potential output)	Recession – resources under-utilised, low AD	Price level FALLS
Positive / Inflationary Gap	$AD > Y_f$ (potential output)	Expansionary boom – AD outstrips available resources	Price level RISES

Recession (e.g. COVID-19) → consumption & investment shrink

→

AD falls (AD0→AD1) → price level falls (P0→P1) → Deflationary Gap

Investor optimism / rapid growth

→

AD rises beyond Yf → resources insufficient → price level rises → Inflationary Gap

21 CHANGES IN AD & SRAS – EFFECT ON EQUILIBRIUM

Change	Effect on Price	Effect on Output
AD increases (shifts right)	Rises	Rises (movement along SRAS)
SRAS increases (shifts right)	Falls	Rises (movement along AD)

22 EXAM PATTERNS & MCQ QUICK CLUES

"Market value of ALL final goods/services in a year"

→

National Income / GDP

"Includes nationals' income earned abroad"

→

GNP (not GDP)

"Deduct capital consumption"

→

NNP = GNP – Depreciation

"AD > potential/full-employment output"

→

Inflationary (positive) gap

"Curve is vertical, independent of price"

→

LRAS (at full employment)

"Unearned income, no economic activity performed"

→

Transfer payment

⚠ ECONOMICS EXAM TRAPS

Trap: Confusing GDP (domestic resources only) with GNP (includes nationals' income earned abroad).

Trap: Forgetting to exclude transfer payments and illegal income when using the Income Approach.

Trap: Mixing up Market Price (includes indirect tax, excludes subsidy effect) vs Factor Cost adjustments – remember $NNP_{fc} = NNP_{mp} - \text{Indirect Tax} + \text{Subsidies}$.

Trap: Treating SRAS and LRAS the same – SRAS is upward-sloping and price-dependent; LRAS is VERTICAL and price-independent.

Trap: Reversing deflationary vs inflationary gap – $AD < Y_f$ is deflationary (price falls); $AD > Y_f$ is inflationary (price rises).

23 COMPLETE CHAPTER DECISION TREE

QUESTION GIVEN → Which concept (GDP/GNP/NNP/PI/DPI, measurement approach, or AD/AS)? → Identify given figures → Select the relevant formula → Substitute & calculate step by step → For AD/AS: identify shift cause & direction → Determine effect on price & output → Interpret & select final answer

PRC-3 ECONOMICS – CHAPTER 5 IN 60 SECONDS

- $GDP = C+I+G+(X-M)$; domestic resources only.
 - $GNP = GDP + \text{net income from abroad}$.
 - $NNP = GNP - \text{Depreciation}$.
 - $NNP_{fc} = NNP_{mp} - \text{Indirect Tax} + \text{Subsidies}$.
 - $PI = NI - \text{corp. tax} - \text{undistributed profit} - \text{social security} + \text{transfers}$.
 - $DPI = PI - \text{personal taxes}$.
- **Per-capita income** = $NI \div \text{Population}$.
 - **3 approaches:** Product, Income, Expenditure – all give the same NI if precautions followed.
 - **Injections:** I, G, X. **Leakages:** S, T, M.
 - AD downward sloping; SRAS upward sloping; LRAS vertical at Y_f .
 - **Deflationary gap:** $AD < Y_f$, price falls. **Inflationary gap:** $AD > Y_f$, price rises.

24 CHAPTER MEMORY MAP

