The macroeconomy (AS)

National income statistics (real and nominal GDP, GNI, per head and PPP), the circular flow, aggregate demand and supply analysis, economic growth, unemployment and price stability (inflation measures and effects).

Macroeconomics studies the **economy as a whole**: output, employment, prices and the balance of payments.

4.1 National income statistics

Gross domestic product (GDP) is the **total value of goods and services produced within a country in a period**. **Gross national income (GNI)** is GDP **plus net income from abroad** (profits, interest and wages earned abroad minus those paid to foreigners).

Measure	Meaning
Nominal GDP	at **current prices**; rises with **inflation** and output
Real GDP	**adjusted for inflation** (constant prices); shows the **change in output**
GDP per head	**GDP ÷ population**: the average output per person

> **Real GDP = nominal GDP ÷ price index × 100. Nominal GDP $660bn with a price index of 110 gives real GDP = $600bn. Real GDP per head is the usual measure of living standards.**

Purchasing power parity (PPP) adjusts for **differences in the cost of living** so that **incomes** in different countries can be **compared** more fairly than at market exchange rates.

Limitations of GDP as a measure of welfare: ignores **the informal economy** and **unpaid work**, **distribution of income**, **environmental damage**, **leisure**, **quality of life** and **what** is produced. Other measures include the **Human Development Index (HDI)**, which combines **income, education and health**.

4.2 Introduction to the circular flow of income

The **circular flow** shows **money moving between households and firms**: households **supply factors** and receive **income**; firms produce and receive **spending**.

- **Injections** add to the flow: **investment (I)**, **government spending (G)** and **exports (X)**.
- **Withdrawals (leakages)** remove: **saving (S)**, **taxation (T)** and **imports (M)**.

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Equilibrium national income occurs when injections = withdrawals: I + G + X = S + T + M. If injections exceed withdrawals, national income rises (and the reverse).

Three ways to measure national income: **output**, **income** and **expenditure**, all giving the **same total**.

4.3 Aggregate demand and aggregate supply analysis

Aggregate demand (AD)

AD is total planned spending on the economy's output at each price level.

AD = C + I + G + (X − M): consumption, investment, government spending and net exports.

The **AD curve slopes down** because of the **wealth effect**, the **interest rate effect** (lower prices lower rates, raising investment and consumption) and the **international trade effect** (lower prices raise exports).

Shifts in AD (right = increase): **consumer confidence** and **wealth**, **interest rates**, **taxes and benefits**, **government spending**, **exchange rates**, **world growth**, **business confidence** and **expectations**.

Aggregate supply (AS)

Short-run aggregate supply (SRAS) is the **total output firms are willing to supply at each price level**, **given costs of production**. It slopes up because **higher prices raise profit** while **input costs are fixed in the short run**. **Shifts**: **costs of raw materials and wages**, **taxes**, **exchange rates**, **energy prices**.

Long-run aggregate supply (LRAS) shows the **economy's productive capacity**. The **Keynesian** view has LRAS **horizontal at low output** (spare capacity) then **rising**, then **vertical at full employment**; the **classical (monetarist)** view has LRAS **vertical** at the **full-employment level** of output. **Shifts of LRAS** come from **more or better resources**, **productivity**, **technology**, **education** and **institutions**.

Equilibrium

Macroeconomic equilibrium is where **AD meets AS**. An increase in **AD** raises **real output and the price level** (more output if there is **spare capacity**, mostly **price** rises near full employment). A **rise in costs** (SRAS left) causes **stagflation**: **higher prices and lower output**. A rise in **LRAS** brings **growth with lower inflationary pressure**.

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> The economy has spare capacity. Why would an increase in AD raise output more than prices?
>
> There are **unused resources**, so firms can **raise output without large cost increases** (the **horizontal** section of the Keynesian AS).

4.4 Economic growth

Economic growth is an **increase in an economy's output over time**: the **percentage change in real GDP**.

	Meaning
Actual growth	rise in **real GDP**
Potential growth	rise in **productive capacity** (the PPC / LRAS shifts out)

Causes: more and better resources, **investment**, **technology**, **education and training**, **institutions**, **trade** and **stable policy**.

Benefits: higher **living standards**, more **jobs**, more **government revenue**, **options** to improve services. **Costs: environmental damage**, **resource depletion**, **inequality**, **congestion**, **inflation** if growth is too fast, and **structural change**.

The business cycle: boom → slowdown → recession (two quarters of falling output) → recovery. **Output gaps:** the **difference between actual and potential output**: a **negative** gap means **spare capacity**; a **positive** gap signals **overheating** and **inflation**.

Nominal GDP growth includes the effect of **rising prices**; **real GDP** growth shows the change in **output only**. Nominal growth of 7% with 4% inflation means **real growth of about 3%**.

4.5 Unemployment

> **The unemployment rate = number unemployed ÷ labour force × 100. The labour force is the employed plus the unemployed who are actively seeking work.**

The **claimant count** (people receiving benefits) and the **labour force survey** (ILO definition) measure it. Problems: **hidden** unemployment (discouraged workers, **underemployment**).

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Type	Cause
Frictional	**between jobs**; time to search
Structural	**decline of industries** or a **mismatch of skills** or place
Cyclical (demand-deficient)	**fall in AD** in a recession
Seasonal	work varies by season
Technological	**machines or new technology replace workers** (automation), and their skills are no longer needed
Voluntary	people **choose not to work** at the going wage, or are **not willing to accept** available jobs
Real wage (classical)	wages **above equilibrium**

Costs: lost output (below the PPC), **lost income and tax**, **higher benefit spending**, **hardship and social problems**, and **wasted skills**. **Benefits** (a little): **flexibility** and **search** for better matches.

Measures of unemployment: the **claimant count** (people claiming unemployment benefit, easy to measure but **excludes** those not claiming) and the **labour force survey** (an ILO survey of people **without work, available and looking**, more consistent internationally). **Difficulties: hidden unemployment** (discouraged workers who stop looking), **underemployment** (part-time workers wanting more hours), **informal work** and **people claiming who are working**.

Consequences of unemployment: for **individuals**, **lost income, poverty, stress and loss of skills**; for the **economy**, **lost output** (below the PPC), **lower tax revenue**, **higher benefit spending** and **wasted resources**; for **society**, **crime, inequality** and **social tension**. A **little** unemployment allows **labour to move** to better jobs.

4.6 Price stability

Inflation is a **sustained rise in the general price level**; **deflation** is a sustained **fall**; **disinflation** is a **fall in the rate of inflation**.

Measuring inflation

The **consumer price index (CPI)** tracks the **cost of a typical basket** of goods and services using **weights** based on spending. Inflation is the **% change in the index**. **Limitations: weights differ across people**, the basket **changes over time**, **quality changes**, **new products**, **regional differences**.

> **Weighted index:** **multiply each price change by its weight and add. If food (weight 30%) rises**

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10% and everything else (70%) rises 2%, the overall change = 0.3 × 10 + 0.7 × 2 = 4.4%.

Causes of inflation

- **Demand-pull: AD rises faster than AS** (excess demand).
- **Cost-push: higher costs** (wages, raw materials, imports, taxes) shift **SRAS left**.
- **Imported inflation** and **expectations**; a **wage-price spiral**.

Effects

Group	Effect
Consumers	**fall in real income** and purchasing power
Savers	**real value of savings falls** if interest is below inflation
Borrowers	**real debt falls** (gain)
Firms	**uncertainty**, **menu costs**, **loss of international competitiveness**
Government	**real value of tax revenue and debt**; may **raise interest rates**

Deflation can **delay spending**, raise **real debt** and cause a **spiral** of falling output. **Price stability** is a key **aim** (a **target** of about 2% in many countries).

Nominal (money) values are measured at **current prices**; **real** values are adjusted for inflation, so only real data show **changes in purchasing power**. **Difficulties in measuring prices:** the **basket and weights** differ from person to person, **quality improves**, **new goods appear**, shopping habits change and prices vary across regions.

Consequences of inflation: falling real incomes for those on fixed incomes, a **fall in the real value of savings** and **debt**, **uncertainty** that discourages investment, **menu and shoe-leather costs**, **loss of competitiveness** (exports dearer) and a **wage–price spiral**. **Deflation** can lead to **postponed spending** and **rising real debt**.

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