Macroeconomic activity, objectives and policy

IB DP Economics Unit 3 macroeconomics: measurement, AD/AS, objectives, inequality and policy

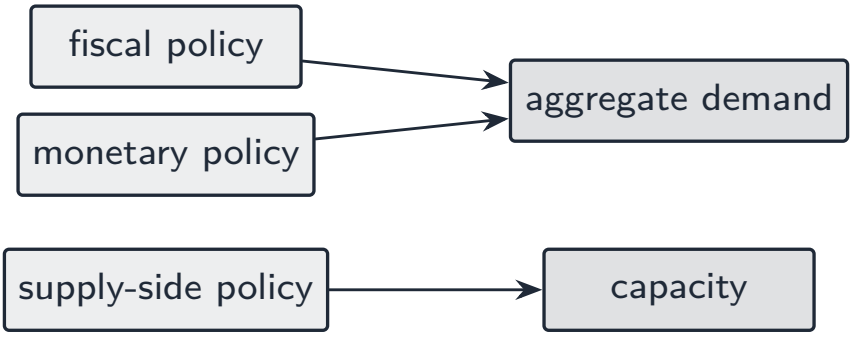
Macroeconomic activity, objectives and policy

- measure economic activity with GDP and other indicators, and describe the **business cycle**;
- use **aggregate demand** and aggregate supply to explain output gaps, and the HL **multiplier**;
- explain the objectives of low unemployment, low and stable inflation, growth and sustainable debt;

Macroeconomic activity, objectives and policy (2)

- measure inequality and poverty and evaluate policies to reduce them;
- evaluate monetary, fiscal and **supply-side policies**.

Figure: Macroeconomic activity, objectives and policy



- Fiscal and **monetary policy** act on demand; supply-side on capacity
- Match each part of the diagram to the text.

Measuring economic activity

- the **output method**: add the value of what each industry produces;
- the **income method**: add all incomes (wages, rent, interest, profit);
- the **expenditure method**: add all spending, $C + I + G + (X - M)$.

Measuring economic activity (2)

- **Nominal GDP** uses each year's own prices.
- **Real GDP** removes the effect of price changes: **real GDP** $=$ **nominal GDP** $\div$ price deflator $\times 100$.
- **GDP per capita** divides by the population, which is better for comparing living standards.

Measuring economic activity (3)

- **Purchasing power parity** (PPP) converts currencies at rates that buy the same basket of goods in each country. A dollar buys more haircuts in Chengdu than in London, so PPP figures compare real living standards more fairly.
- **Real GDP** in year 1 $= 500 \div 125 \times 100 = 400$.
- Real GDP in year 2 $= 540 \div 130 \times 100 \approx 415.4$.

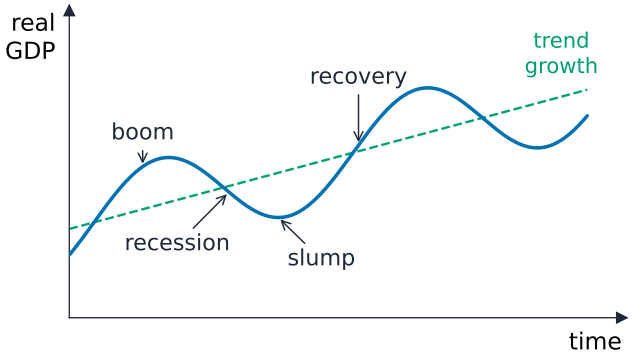
Measuring economic activity (4)

- Real growth $= (415.4 - 400) \div 400 \times 100 \approx 3.8\%$, although **nominal GDP** rose by 8%.
- the **Human Development Index** (HDI), which combines **income** per head (GNI per capita at PPP), health (life expectancy) and education (years of schooling);
- the OECD Better Life Index, the Happy Planet Index and the Genuine Progress Indicator, which add measures such as the environment, health, work-life balance and how satisfied people say they are.

Measuring economic activity (5)

- In a **boom** , output is above **trend**, unemployment is low and **inflation** tends to rise.
- In a **recession** , **real GDP** falls. Often this means two quarters in a row of falling output. Unemployment rises.
- At the bottom (the slump), output is furthest below trend.
- In the **recovery** , output and jobs grow again.

Figure: Measuring economic activity



- **Real GDP** rises and falls around its long-term **trend**
- Match each part of the diagram to the text.

Aggregate demand and aggregate supply

- In the **monetarist** (new classical) view, the **long-run aggregate supply** (LRAS) curve is vertical at **potential output** . In the long run wages adjust, so the economy returns to full employment by itself. Demand changes only move the price level.
- In the **Keynesian** view, the economy can stay stuck below full employment. When there is a lot of spare capacity, AS is flat: more demand raises output without raising prices. Near full capacity, bottlenecks push prices up, and at full employment AS is vertical.
- Equilibrium: $90 - Y/2 = 20 + Y/2$, so $Y = 70$ and $P = 55$.

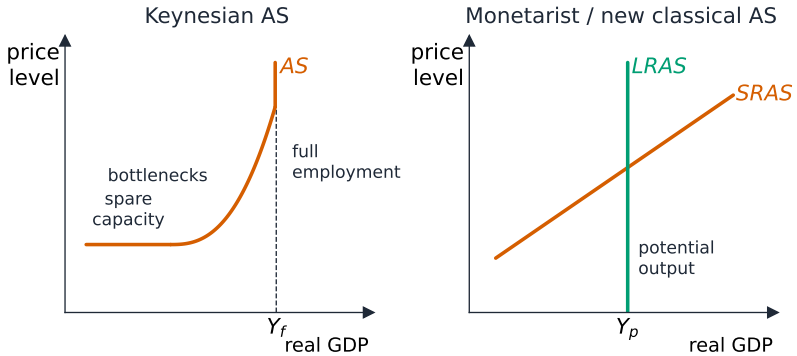
$$AD = C + I + G + (X - M)$$

Aggregate demand and aggregate supply (2)

- Output is 10 below full employment. This is a **recessionary gap** (also called a deflationary gap), with cyclical unemployment.
- If AD rises to $P = 105 - Y/2$: $105 - Y/2 = 20 + Y/2$, so $Y = 85$ and $P = 62.5$. Output is 5 above full employment. This is an **inflationary gap** : the price level is pushed up.

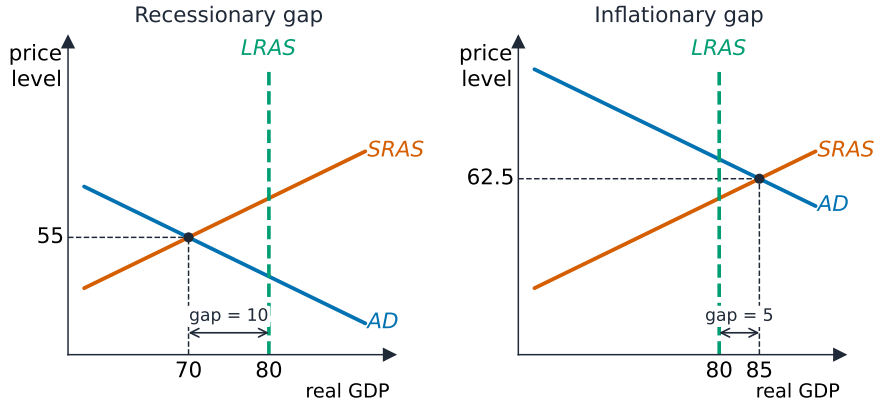
$$k = \frac{1}{1 - MPC} = \frac{1}{MPS + MPT + MPM}$$

Figure: Aggregate demand and aggregate supply



- **Keynesian** and **monetarist** views of aggregate supply
- Read the axes and units first.

Figure: Aggregate demand and aggregate supply ·



- A **recessionary gap** and an **inflationary gap** on the same SRAS and LRAS
- Match each part of the diagram to the text.

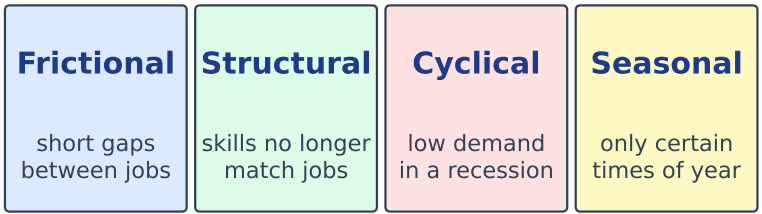
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Macroeconomic objectives

- **Demand-pull inflation** : AD grows faster than the economy can produce (an **inflationary gap**).
- **Cost-push inflation** : firms' costs rise (oil, wages, imported materials) and SRAS shifts left. Prices rise while output falls.

$$\text{unemployment rate} = \frac{\text{number unemployed}}{\text{labour force}} \times 100$$

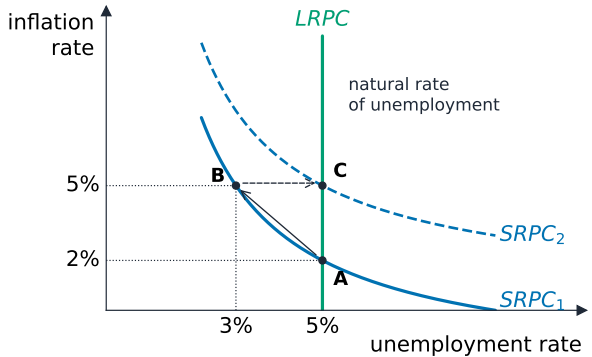
Figure: Macroeconomic objectives



Exam: name the type + cause — match policy to cause; results depend on vacancies and spare capacity

- The four types of unemployment: frictional (between jobs), structural (skills no longer match), cyclical (low demand in a **recession**) and seasonal
- Match each part of the diagram to the text.

Figure: Macroeconomic objectives ·



- Pushing unemployment below the natural rate buys only a short-run gain
- Read the axes and units first.

The economics of inequality and poverty

- **Absolute poverty** : **income** too low to buy basic needs. The World Bank's international poverty line is 3.00 US dollars a day per person (at 2021 PPP prices).
- **Relative poverty** : income far below others in the same country, often below 50% or 60% of the median income.
- The **Multidimensional Poverty Index** (MPI) counts lack of health, education and living standards (such as clean water, electricity and cooking fuel), not only income.

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The economics of inequality and poverty (2)

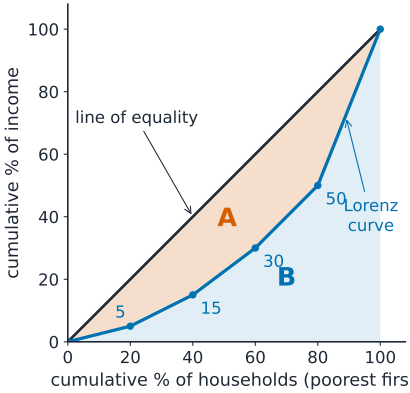
- **Progressive taxes** : richer people pay a higher share of their **income**. A **regressive tax** takes a larger share from the poor (**indirect taxes** such as VAT often do). A proportional tax takes the same share from everyone.
- **Transfer payments** : pensions, unemployment benefits and child benefits.
- Spending on education and health, so that poor children get the same chances.

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The economics of inequality and poverty (3)

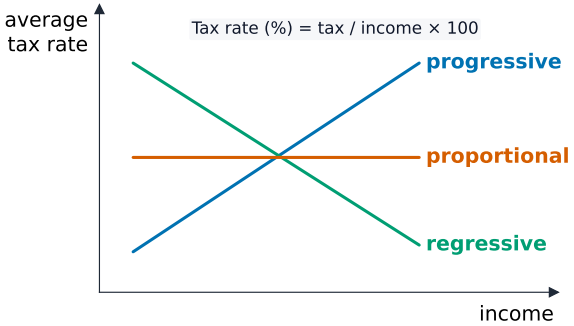
- A minimum wage, and laws against discrimination.
- Tax $= 0 + 0.2 \times 30{,}000 + 0.4 \times 10{,}000 = 6{,}000 + 4{,}000 = 10{,}000.$
- The **average tax rate** $= 10{,}000 \div 50{,}000 = 20\%.$
- The **marginal tax rate** (the rate on the next dollar) is 40%.

Figure: The economics of inequality and poverty



- The quintile shares give a **Gini coefficient** of 0.40
- Axes: share of households and of **income**.

Figure: The economics of inequality and poverty ·

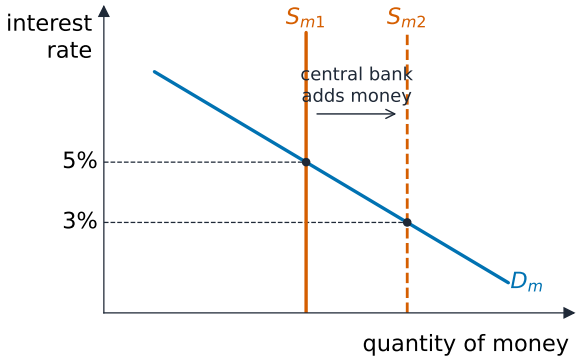


- Under a progressive tax the average rate rises with **income**; under a **regressive tax** it falls; under a proportional tax it stays the same.
- Read the axes and units first.

Monetary policy

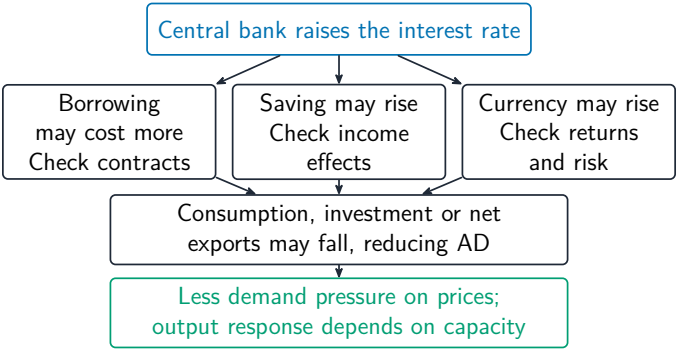
- the **policy interest rate** (the rate at which the **central bank** lends to commercial banks);
- **open market operations** : buying or selling government bonds to change the **money supply**;
- **minimum reserve requirements** : the share of deposits banks must keep and cannot lend. Lowering it lets banks lend more;
- **quantitative easing** (QE): large-scale bond buying with newly created money, used when interest rates are already near zero.

Figure: Monetary policy



- More **money supply** lowers the equilibrium interest rate
- Read the axes and units first.

Figure: Monetary policy ·



- A rise in the interest rate reaches **aggregate demand** through several channels
- Read the axes and units first.

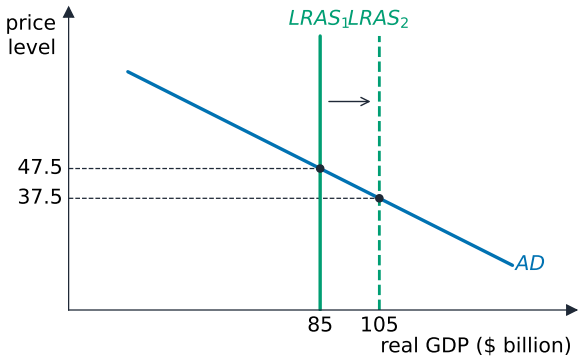
Fiscal policy

- Government revenue: **direct taxes** (on **income** and profits), **indirect taxes** (on spending, such as VAT), the sale of goods and services, and the sale of state-owned firms.
- Government spending: **current spending** (wages of teachers and doctors, medicines), **capital spending** (roads, schools, railways) and **transfer payments** (pensions, benefits).
- A **budget deficit** means spending is greater than revenue; a **budget surplus** means revenue is greater.

Supply-side policies

- **Supply-side policies** aim to raise the economy's productive capacity, shifting LRAS to the right.
- **Worked example.** LRAS shifts from 85 to 105 along AD $P = 90 - Y/2$.
- The price level falls from $90 - 85/2 = 47.5$ to $90 - 105/2 = 37.5$ while **real GDP** rises by 20.
- Unlike demand-side policy, this gives growth without **inflation**.

Figure: Supply-side policies



- Supply-side policy raises output and lowers the price level
- Match each part of the diagram to the text.

Sources for this lesson

- International Baccalaureate, *Economics guide* (first assessment 2022).
- US Bureau of Labor Statistics, *The Employment Situation* (April 2020) and ***Consumer Price Index*** (June 2022).
- Board of Governors of the Federal Reserve System, FOMC statements, March 2022 to July 2023.

Sources for this lesson (2)

- International Monetary Fund, *World Economic Outlook* database.
- A. W. Phillips, "The Relation between Unemployment and the Rate of Change of Money Wage Rates in the United Kingdom, 1861–1957", *Economica* (1958).

Common errors

- Confusing nominal and **real GDP**; use the price index to remove **inflation** before comparing years.
- Saying a fall in the price level shifts AD; it is a movement along AD. Only a change in C, I, G or (X − M) at the same price level shifts it.
- Drawing LRAS anywhere other than at full-employment output, or forgetting to label the **output gap**.

Common errors (2)

- Writing "**deflation**" when **inflation** has only fallen (**disinflation**); deflation means prices fall.
- Using the multiplier with the wrong leakages: at HL, $k = 1/(MPS + MPT + MPM)$.
- Treating monetary, fiscal and supply-side policy as interchangeable: they work through different channels, at different speeds, with different side effects.

Key terms

- **Gross domestic product (GDP)**: the total value of final goods and services produced in an economy in a year.
- **Aggregate demand**: total planned spending on an economy's output at each price level: $C + I + G + (X - M)$.
- **Output gap**: the difference between actual output and full-employment (potential) output.

Key terms (2)

- **Multiplier**: the ratio of the final change in national **income** to the initial change in spending.
- **Natural rate of unemployment**: the rate of unemployment when the labour market is in equilibrium, made up of frictional, structural and seasonal unemployment.
- **Monetary policy**: the **central bank**'s use of interest rates and the **money supply** to influence aggregate demand.
- **Supply-side policy**: policy that aims to increase the economy's productive capacity (LRAS).

Check yourself

- 1.
- **Nominal GDP** is 540 billion and the GDP deflator is 130.
- Calculate **real GDP**. 2.
- On the model, find the equilibrium output and price level, and the size of the **output gap**. 3.