Macroeconomic activity, objectives and policy

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

Why macroeconomics?

> Output, jobs and prices move together; policy tries to steer them.

- Unit 3: measuring the economy, AD and AS, objectives, inequality and policy.
- One model runs through the examples: AD $P = 90 - Y/2$, SRAS $P = 20 + Y/2$.

The circular flow of income

Leakages S, T, M leave the flow; **injections** I, G, X come back in.

- Households sell **factors of production** to firms and earn incomes.
- Injections above leakages: national income grows.

Three ways to measure GDP

> Output = **income** = expenditure.

- GDP: the value of all final goods and services produced in a year.
- GNI adds residents' income from abroad and subtracts foreigners' income here.

Nominal and real GDP

1. **Year 1** $500 \div 125 \times 100 = 400$
2. **Year 2** $540 \div 130 \times 100 \approx 415.4$
3. **Real growth** $(415.4 - 400) \div 400 \approx 3.8\%$

Decision

Nominal GDP rose 8%, but real output grew only 3.8%.

Comparing living standards

Measure	What it does
nominal GDP	uses each year's own prices
real GDP	removes the effect of price changes
GDP per capita	divides by the population
PPP	converts at what money really buys

What GDP leaves out

GDP misses

Unpaid work and the **informal economy**.

How **income** is shared.

Pollution damage, leisure, quality.

HDI combines

Income: GNI per head at PPP.

Health: life expectancy.

Education: years of schooling.

The business cycle

Real GDP waves around a rising **trend**.

- A **recession**: often two quarters in a row of falling real GDP.
- The output gap: actual minus potential output.

Aggregate demand

Part	What changes it
consumption C	**income**, interest rates, confidence
investment I	interest rates, confidence, technology
government G	priorities, the state of the economy
net exports X − M	incomes abroad, the exchange rate

Two views of aggregate supply

Monetarist

LRAS is vertical at **potential output**.

Wages adjust; the economy returns to full employment by itself.

Keynesian

AS is flat with spare capacity, then curves up, then vertical.

The economy can stay stuck below full employment.

Equilibrium and output gaps

At 70 there is a **recessionary gap** of 10; a higher AD gives 85, an **inflationary gap** of 5.

- AD $P = 90 - Y/2$ meets SRAS $P = 20 + Y/2$ at $Y = 70$, $P = 55$.
- Full-employment output is 80.

Do gaps close by themselves?

Monetarist: yes

Unemployed workers accept lower wages; SRAS shifts right; output returns to 80.

Keynesian: not soon

Wages rarely fall, so a **recession** can last for years unless the government acts.

The multiplier

10 billion of new spending raises national **income** by 20 billion.

- $k = 1 \div (1 - MPC) = 1 \div (MPS + MPT + MPM)$.
- Save 0.1, tax 0.2, imports 0.2: $MPC = 0.5$, so $k = 2$.

Unemployment

Type	Cause	Example
cyclical	AD falls in a **recession**	factory jobs cut
structural	skills no longer match	miners after closures
frictional	moving between jobs	a graduate searching
seasonal	demand changes by season	ski instructors in summer

Measuring inflation: the CPI

1. **Indices** food 110, housing 100, transport 120 (base 100)
2. **Weighted sum** $50 \times 110 + 30 \times 100 + 20 \times 120 = 10{,}900$
3. **CPI** $10{,}900 \div 100 = 109$

Decision

Inflation was 9% over the year.

Two causes of inflation

Demand-pull

AD grows faster than the economy can produce.

An **inflationary gap**: output and prices rise.

Cost-push

Oil, wages or imported materials cost more.

SRAS shifts left: prices rise while output falls.

The Phillips curve

A to B is a short-run gain; expectations take the economy to C.

- Short run: lower unemployment comes with higher inflation.
- Long run: vertical at the natural rate.

Growth and government debt

Growth

Short run: more AD uses spare capacity.

Long run: more or better factors.

Aim: sustainable growth.

High debt costs

Interest takes money from schools.

Lenders demand higher rates.

A lower credit rating.

The Lorenz curve and Gini

Cumulative shares 5, 15, 30, 50, 100 give a Gini of 0.40.

- Quintile shares 5, 10, 15, 20 and 50% of **income**.
- Gini $= A \div (A + B)$: 0 is equality, 1 is one person has all.

Poverty

Measure	Meaning
absolute poverty	below $3.00 a day at PPP
relative poverty	below 50-60% of the median
MPI	lack of health, education, living standards

Policies to reduce inequality

Higher marginal rates can weaken the reward for work.

- A **regressive tax**, such as VAT, takes a larger share from the poor.
- Redistribution trades **equity** against **efficiency**.

Average and marginal tax rates

1. **Tax on 50,000** $0 + 0.2 \times 30{,}000 + 0.4 \times 10{,}000 = 10{,}000$
2. **Average rate** $10{,}000 \div 50{,}000 = 20\%$
3. **Marginal rate** the next dollar is taxed at 40%

Decision

Average 20%, marginal 40%.

The central bank's tools

Tool	What it does
policy interest rate	the rate for lending to banks
open market operations	buy or sell bonds
reserve requirements	the share banks cannot lend
quantitative easing	bond buying with new money

The money market

More **money supply** lowers the interest rate from 5% to 3%.

- Money supply is vertical: the **central bank** sets it.
- Money demand slopes down: cash gives up interest.

How a rate rise reaches AD

Dearer borrowing, more saving and a stronger currency shift AD left.

- **Contractionary** policy fights inflation; **expansionary** fights **recession**.
- The full effect takes 18 months or more.

Monetary policy: strengths and limits

Strengths

Quick, in small steps.

Independent of politics.

Limits

18 months or more to work.

In a deep **recession** people will not borrow.

Fiscal policy

Revenue

Direct taxes on **income** and profits.

Indirect taxes such as VAT.

Sales of goods and state firms.

Spending

Current: teachers, medicines.

Capital: roads, schools, railways.

Transfers: pensions, benefits.

Automatic stabilisers

In a recession

Tax revenue falls and benefit spending rises: AD is supported.

In a boom

Tax revenue rises and benefit spending falls: AD is held back.

Closing the gap with G

$Y = 80$, $P = 60$: output rises by only 10, because prices rise too.

- Gap of 10, **multiplier** 2: add 10 billion of G.
- AD shifts right by 20, from $P = 90 - Y/2$ to $P = 100 - Y/2$.

Fiscal policy: strengths and limits

Strengths

Targets regions or groups.

Works in a deep **recession**.

Limits

Crowding out of private investment.

Long time lags; rising debt.

Supply-side policy

LRAS 85 to 105: output up 20, price level down from 47.5 to 37.5.

- Supply-side policy raises productive capacity: LRAS shifts right.
- AD stays $P = 90 - Y/2$.

Two kinds of supply-side policy

Interventionist	Market-based
Education and training; healthcare.	Lower **income** and business taxes.
Infrastructure; R&D grants.	Flexible labour laws; deregulation.
Industrial policy.	Privatisation; competition policy.

Check yourself

