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2.2 How the macroeconomy works

You need to know

- how the circular flow of income model works
- what national income measures
- how aggregate demand (AD) is measured and determined
- how short-run, long-run and Keynesian aggregate supply (AS) is measured and determined
- how to calculate the size of the multiplier effect
- how macroeconomic equilibrium is determined
- how the economy is affected by demand and supply shocks

Circular flow of income

National income is measured by three methods:

- income method
- output method
- expenditure method
- Each method gives the same value.

$$\text{national income} = \text{national output} = \text{national expenditure}$$

Real national income

- Increases in national income are separated into **real** and **nominal** increases.

$$\text{real GDP} = \text{nominal GDP} \times \left(\frac{\text{price level in previous year}}{\text{price level in current year}} \right)$$

Example:

- If nominal GDP increases from £2000 to £2200 billion and the price level has risen from 114 to 120 over the same period, then:

$$\text{real GDP is } £2200 \text{ billion} \times \left(\frac{114}{120} \right) = £2090 \text{ billion}$$

$$\text{real economic growth is } \left(\frac{£2090\text{bn} - £2000\text{bn}}{£2090\text{bn}} \right) \times 100 = 4.5\%$$

Key terms

Real national income

National income adjusted to take into account inflation.

Nominal income

National income unadjusted for price changes.

The circular flow of income model

- Income and expenditure are monetary flows circulating around the economy:
 - money flows from households to firms as expenditure
 - money flows back from firms to households as incomes
- **Injections** add money into the circular flow:
 - investment (I)
 - government expenditure (G)
 - exports (X)
- **Withdrawals** take money out of the circular flow:
 - savings (S)
 - taxation (T)
 - imports (M)

The full circular flow model is shown in Figure 56.

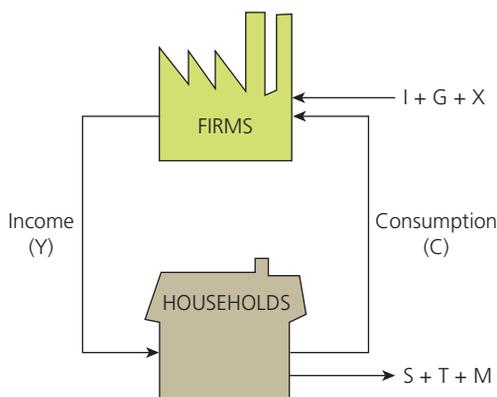


Figure 56 The full model of the circular flow of income, with money withdrawn in the form of savings and injected back into the flow in the form of investment

- Macroeconomic equilibrium is where total injections = total withdrawals.
 - If injections > withdrawals: national income increases.
 - If injections < withdrawals: national income decreases.

Aggregate demand

Determinants of aggregate demand

- **Consumption (C)** by households
- Investment (I) by businesses
- Government expenditure (G)
- Net exports (exports (X) – imports (M)) by UK and foreign consumers/producers
- The formula is:

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

Key terms

Circular flow of income

A model of the economy showing flows of income and expenditure.

Injection Money entering the circular flow from governments, businesses or the foreign sector.

Withdrawals Money leaving the circular flow, either for savings, taxation or spending on imports.

Aggregate demand (AD)

Total planned expenditure at any given price level ($C + G + I + X - M$).

Consumption Spending by households on consumer goods and services.

2 National and international economy

- The aggregate demand (AD) curve shows the relationship between AD (total expenditure) and the price level in an economy. It shifts if any component of AD increases (rightward shift) or decreases (leftward shift), as shown in Figure 57.

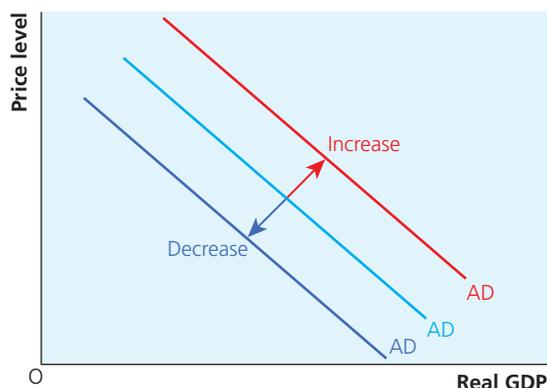


Figure 57 Aggregate demand (AD) showing the amounts of planned expenditure that would occur at different price levels

Exam tip

Although it appears similar to a microeconomic demand curve, the AD curve slopes for different reasons.

Determinants of consumption

- Income (higher income means higher consumption)
- Interest rates:
 - higher interest rates encourage saving — and vice versa
 - higher interest rates reduce credit-financed consumption — and vice versa
 - higher interest rates mean higher mortgage repayments so less available to spend — and vice versa
- Consumer confidence
- Taxation (on incomes)
- **Wealth effect**
- Unemployment

Key term

Wealth effect A rise in consumption due to the individual feeling wealthier when their assets owned increase in value.

Determinants of saving

- income
- interest rates
- tax (on interest received from saving)
- consumer confidence
- government regulation (e.g. contractual savings, such as pension contributions)

Determinants of investment

- Interest rates
- Business confidence
- Tax (on profits)
- Advances in technology

Exam tip

The components of AD are not equally sized. Consumption accounts for over two-thirds of AD, so changes in this matter more than, say, changes in exports when looking at the effects of a change in AD.

The accelerator process

Investment is affected by changes in national income.

- The accelerator process is where changes in national income will lead to greater changes in the level of investment.
- Increases in national income generate more investment as businesses expand their productive capacity.

Determinants of government expenditure and net exports

Government spending affects AD and the ability to achieve economic objectives.

- Increases in government spending boost economic growth and reduce unemployment.
- Decreases in government spending reduce inflation.

Factors affecting government spending are covered in Section 2.5. See Section 2.6 for determinants of exports and imports (net exports).

The multiplier process

- Changes in AD normally lead to larger than proportional changes explains in real GDP because of the **multiplier process**.
- The multiplier process explains how changes in spending lead to changes in income, leading to further changes in spending and so on.
 - For example, if an increase in injections of £200m leads to an increase in national income of £600m, then the size of the multiplier is $\text{£}600\text{m}/\text{£}200\text{m} = 3$.
- The size of the multiplier is affected by the marginal propensity to consume (MPC).
- The multiplier is calculated as follows:

$$\frac{1}{(1 - \text{MPC})}$$

- The multiplier can work in a positive or negative way — increasing or decreasing national income.
- If the MPC increases, then the size of the multiplier increases.
- If the MPC decreases, the size of the multiplier decreases.
 - For example, if the MPC is 0.75 (i.e. 75% of any additional income is consumed) then the size of the multiplier would be:

$$\frac{1}{(1 - 0.75)} = 4$$

- If the MPC falls to 0.6, the size of the multiplier falls to:

$$\frac{1}{(1 - 0.6)} = 2.5$$

Exam tip

Saving and investment have different meanings in economics from their everyday use. Investment, in economics, is spending by businesses on additions to their capital stock.

Key terms

Investment Spending by businesses on additions to the capital stock of the economy.

Capital stock The value of all productive investment goods at a point in time.

Multiplier process How a change in expenditure results in a greater overall change in national income.

Aggregate Supply

Short-run aggregate supply (SRAS)

Determinants of SRAS

- wage rates
- other input costs
- indirect taxes
- exchange rate
- productivity

Shifts in the SRAS curve

- If any determinant of SRAS changes, the SRAS curve shifts leftwards or rightwards (Figure 58).
 - Increases in production costs reduce the profitability of production — SRAS curve shifts leftwards (SRAS₁ TO SRAS₂).
 - Decreases in production costs increase the profitability of production — SRAS curve shifts rightwards (SRAS₁ TO SRAS₃).
- Movements along the SRAS curve occur when there is a shift in AD.

Long-run aggregate supply (LRAS)

- Long-run aggregate supply (LRAS) shows the level of output if the economy is operating at its *full* capacity level.
- The LRAS curve is vertical, meaning the capacity level of output is the same at all price levels (i.e. it is fixed).
- Increases in full capacity output are achieved through long-run changes to the economy, as shown in Figure 59 by LRAS₁ shifting to LRAS₂.

Determinants of LRAS

- quantity and quality of factors of production
- technology
- productivity
- factor mobility
- enterprise
- economic incentives and attitudes
- supply-side policies

Institutional structure of the economy

- LRAS is affected by the institutional structure of the economy, e.g. the legal and financial systems.

Key terms

Aggregate supply (AS)

The total level of output of all businesses at any given price level.

Short-run aggregate supply (SRAS)

The level of output supplied by businesses in the short run.

Long-run aggregate supply (LRAS)

The maximum potential level of output for an economy in the long run.

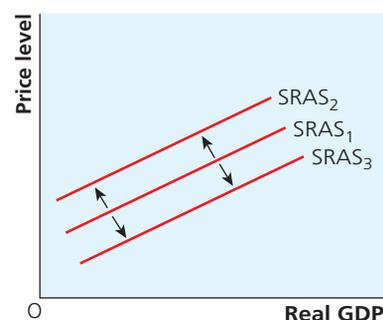


Figure 58 Shifts in the SRAS curve

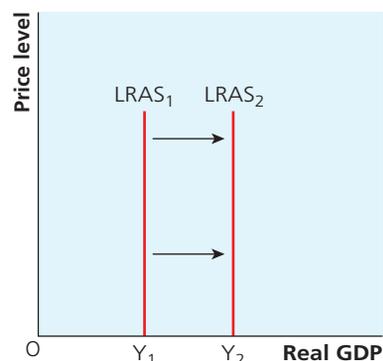


Figure 59 Shifts in a vertical LRAS curve

- Ensuring the institutional structure works efficiently and fairly helps increase LRAS.
- After the 2008 financial crisis, the UK government intervened to help banks continue lending money to businesses.

The Keynesian AS curve

- An alternative AS curve to the SRAS and LRAS is the Keynesian AS curve (Figure 60).
- No distinction is made between short-run and long-run AS curves.
- At low levels, real GDP can be increased with no upward pressure on prices.
- As the economy gets close to capacity level, prices begin rising — on the diagram, the AS curve begins to slope upwards.
- The AS curve is perfectly inelastic at the full capacity output, and increases in AD lead to higher price levels.

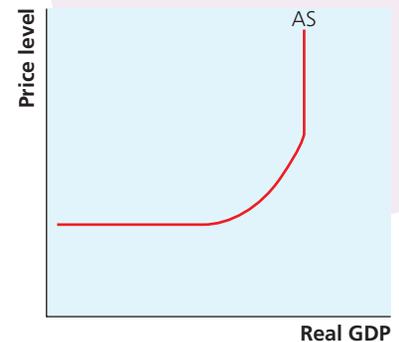


Figure 60 The Keynesian AS curve

Macroeconomic equilibrium

Short-run equilibrium

- Short-run macroeconomic equilibrium — measured by the price level and real GDP level — is determined by interaction between SRAS and AD.
- Any change in AD or SRAS changes the equilibrium position.
 - An increase in AD increases both real GDP and the price level, shown in Figure 61 by the shift from AD_1 to AD_2 .
 - A decrease in SRAS decreases real GDP but increases the price level, shown in Figure 62 by the shift from $SRAS_1$ to $SRAS_2$.

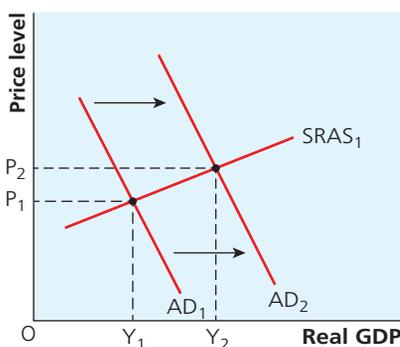


Figure 61 The effect of an increase in AD

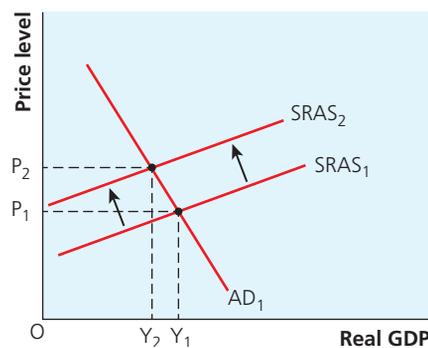


Figure 62 The effect of an increase in SRAS

Long-run equilibrium

- Long-run equilibrium occurs where LRAS and AD intersect.
- The price level varies but the level of real GDP is constant.

2 National and international economy

- The long-run equilibrium level of real GDP is always at the full capacity output level (sometimes called **full employment output**).
- This is shown in Figure 63 where LRAS and AD intersect.

Economic shocks

- Shocks affect real GDP, unemployment and inflation.
- Shocks are either **demand-side** or **supply-side** (or both).

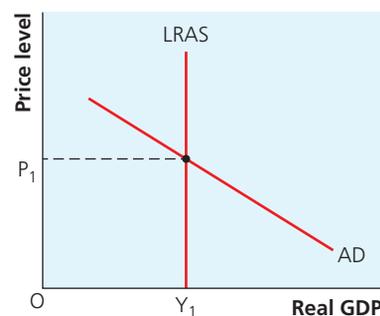


Figure 63 Long-run equilibrium

Demand-side shocks	Supply-side shocks
These affect AD	These affect LRAS
Examples include the 2008 financial crisis, a large fall in the exchange rate or an unexpectedly large change to interest rates	Examples include the massive oil price rises of the 1970s, a significant crop failure or a significant change to the price of an important commodity

Key terms

Demand-side shock An unexpected, sudden or large change to aggregate demand.

Supply-side shock An unexpected, sudden or large change to aggregate supply.

Do you know?

- 1 If the MPC is 0.75, calculate the size of the multiplier.
- 2 Show, on an AD/AS diagram, the effects of an increase in consumer confidence.
- 3 Using an AS/AD diagram, explain the effects of increasing the retirement age in the UK.
- 4 Distinguish between the LRAS and the Keynesian AS curves.
- 5 Explain the impact of the financial crisis in 2008 on macroeconomic equilibrium.

2.3 Economic performance

You need to know

- types of economic growth and the benefits and drawbacks of growth
- the economic cycle — its characteristics and explanations
- the causes and consequences of unemployment and the policies used to reduce it
- the causes and consequences of inflation and deflation and the policies used to target them
- how policy conflicts arise and are resolved, such as that shown on the Phillips curve