Output measures, spending and the multiplier

Edexcel IAL Economics WEC12 sections 2.3.1-2.3.5 full package

Output measures, spending and the multiplier

- measure economic performance: **real GDP**, **inflation**, **unemployment** and the balance of payments;
- explain the components of aggregate demand and what shifts them;
- distinguish short-run and long-run aggregate supply, Keynesian and classical;

Output measures, spending and the multiplier (2)

- use the circular flow, **injections**, **withdrawals** and the multiplier;
- explain actual and **potential growth**, output gaps and the costs of growth.

Measures of economic performance

- **nominal** 名义的 (at current prices) versus **real** 实际的 (with price changes removed);
- **total** versus **per capita** 人均 (divided by population);
- **value** (money) versus **volume** (quantity).

Measures of economic performance (2)

- Known: **nominal GDP** index 112, GDP deflator 108, population index 102 (all with base year = 100).
- **Real GDP** index $= \frac{112}{108} \times 100 = 103.7$: **real** growth of 3.7%.
- Real GDP per head $= \frac{103.7}{102} \times 100 = 101.7$: living standards rose by only 1.7%.

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Measures of economic performance (3)

- Most of the **nominal** rise was prices; a growing population took another part.
- Three goods with weights 50%, 30% and 20% have price indexes 110, 100 and 120.
- CPI $= 0.5 \times 110 + 0.3 \times 100 + 0.2 \times 120 = 55 + 30 + 24 = 109$.

Measures of economic performance (4)

- **Inflation** over the period is 9%.
- **demand-pull 需求拉动**: **aggregate demand** grows faster than capacity;
- **cost-push 成本推动**: costs such as energy or wages rise. When gas prices soared after Russia invaded Ukraine, UK CPI inflation reached 11.1% in October 2022;

Measures of economic performance (5)

- **excessive growth of the money supply**: in 2008 Zimbabwe printed money to pay its bills, and prices doubled roughly every day at the peak.
- consumers' **real** incomes and the value of savings;
- government tax receipts and the real value of its debt;

Measures of economic performance (6)

- firms' planning and costs;
- workers' **real** wages;
- the distribution of income: borrowers gain and lenders lose from unexpected **inflation**;

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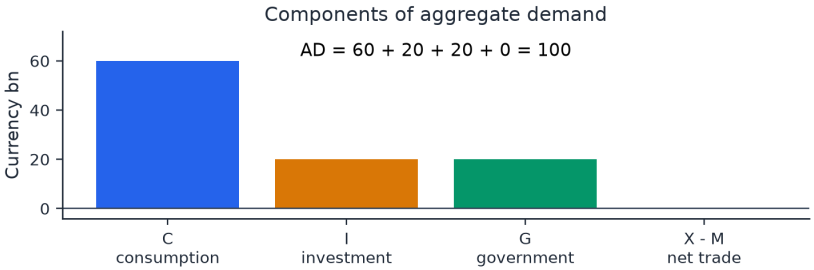
Measures of economic performance (7)

- **investment**, which falls when the future is uncertain;
- international competitiveness and the **current account**.
- **frictional** 摩擦性: between jobs;

Measures of economic performance (8)

- **seasonal 季节性**: ski instructors in summer;
- **structural 结构性**: workers' skills no longer match the jobs available. When China restructured its state-owned enterprises in the late 1990s, tens of millions of workers were laid off, many in the old industrial north-east;
- **demand-deficient 需求不足型**: too little total spending, as in a **recession**;
- **real-wage inflexibility**: wages stuck above the level that clears the labour market.

Figure: Measures of economic performance



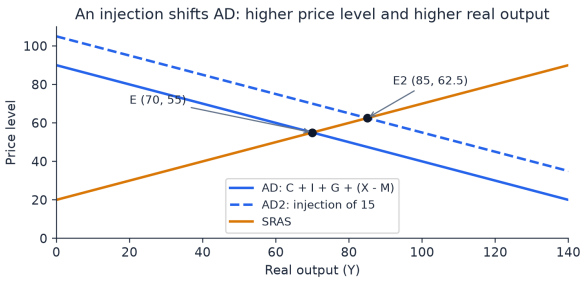
- In the model economy, **consumption** is 60, **investment** 20, **government spending** 20 and net exports 0, so AD is 100
- Match each part of the diagram to the text.

Aggregate demand

- **Consumption** 消费 (C) depends on disposable income, interest rates, confidence, **wealth** and credit. The **savings ratio** 储蓄率 is saving as a share of disposable income; Chinese households save about a third.
- **Investment** 投资 (I) is spending on capital goods; **net investment** is gross investment minus depreciation. It depends on growth, interest rates, business confidence, credit and corporation tax.
- **Government spending** 政府支出 (G) depends on fiscal policy, the state of the economy and political priorities.
- **Net exports** (X − M) depend on income at home, the exchange rate, growth abroad, protectionism and quality.

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

Figure: Aggregate demand



- An injection shifts AD right: equilibrium moves from **real** output 70 at price level 55 to 85 at 62.5
- Match each part of the diagram to the text.

Aggregate supply

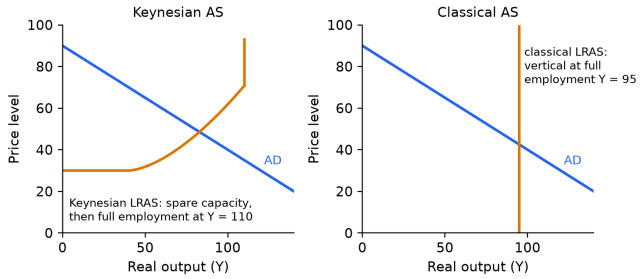
- the cost of raw materials and energy (the 1973 oil shock quadrupled oil prices and shifted AS left across the world);
- exchange rates, which change the cost of imported inputs;
- tax rates on firms.

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Aggregate supply (2)

- the **Keynesian** 凯恩斯主义 LRAS is horizontal when there is lots of spare capacity, curves upward as the economy approaches full employment, and becomes vertical at full capacity. More demand can raise output a lot in a deep **recession**;
- the **classical** 古典 LRAS is vertical at full-employment output. The economy always returns there, so more demand only raises prices in the long run.

Figure: Aggregate supply



- The same rise in AD raises output on the flat part of the **Keynesian** curve but only the price level on the vertical **classical** curve
- Match each part of the diagram to the text.

National income and the multiplier

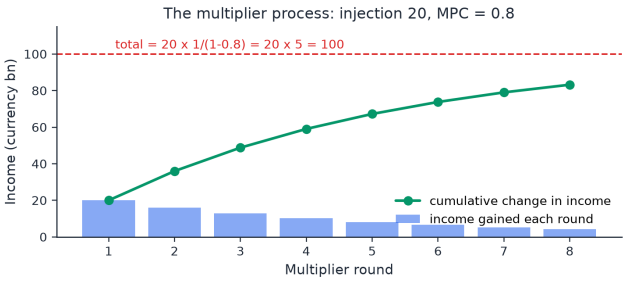
- **Injections 注入** add to the flow: **investment** (I), **government spending** (G) and exports (X).
- **Withdrawals 漏出** take money out: saving (S), taxes (T) and imports (M).
- MPS = 0.1, MPT = 0.15, MPM = 0.25, so MPW = 0.5 and $k = \frac{1}{0.5} = 2$.

$$k = \frac{1}{1 - MPC} = \frac{1}{MPW}$$

National income and the multiplier (2)

- A £30 billion rise in **investment** raises national income by $2 \times 30 = £60$ billion.
- If MPC were 0.8, $k = \frac{1}{0.2} = 5$. An injection of 20 then gives rounds of spending of 20, 16, 12.8, 10.24, … which add up to 100.
- The same stimulus works less well in a very open economy, where much of each round leaks into imports. That is one reason the ¥4 trillion stimulus had such a strong effect in 2009: most of it went on Chinese steel, cement and labour.

Figure: National income and the multiplier



- With MPC $= 0.8$, each round of spending is 80% of the last; the total rise in income approaches $20 \times 5 = 100$
- Match each part of the diagram to the text.

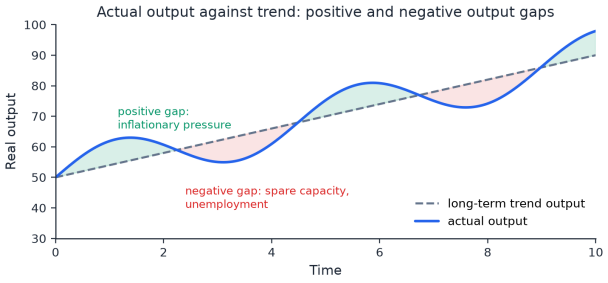
Economic growth

- **Actual growth** in the short run comes from any part of AD: **consumption**, **investment**, government spending or net exports. **Export-led growth** adds demand from abroad; China's exports grew from about 4% of world exports in 2001, when it joined the WTO, to about 13% by 2015.
- Potential growth comes from investment (domestic and **foreign direct investment 外国直接投资**), innovation, a growing labour force and stronger competition. In the long run, **productivity 生产率** — output per worker — matters most. South Korea's GDP per head rose from about the same as Ghana's in 1960 to a high-income level by the 1990s, largely through investment in education and machinery.
- opportunity cost: investing more means consuming less today;

Economic growth (2)

- environmental damage, such as smog and carbon emissions;
- current-account deficits if imports rise faster than exports;
- wider inequality;
- **inflation** if demand grows faster than capacity.

Figure: Economic growth



- Actual output swings around its trend: above trend is a positive gap, below is a negative gap
- Read the axes and units first.

Data-response practice (Section B style)

- (a) Ireland's **nominal GDP** rose from €200 billion to €262 billion in a year in which the GDP deflator rose from 100 to 104. Calculate the rate of **real GDP** growth. [3]
- (b) Explain the difference between GDP and GNI. [3]
- (c) Using the extract, explain why GDP per head may overstate living standards in Ireland. [6]

Data-response practice (Section B style) (2)

- (d) Examine **two** problems in comparing living standards between countries using GDP per head. [8]
- (e) Evaluate whether GDP is a good measure of a country's economic performance. [12]

Sources for this lesson

- State Council of the PRC, announcement of the stimulus package (9 November 2008); National Bureau of Statistics, statistical communiqués (2009, 2023).
- Office for National Statistics, UK consumer price **inflation** (October 2022).
- IMF World Economic Outlook database (GDP at market prices and at PPP).

Sources for this lesson (2)

- Central Statistics Office Ireland, modified GNI (GNI*) releases.
- Pearson Edexcel International AS Economics specification (WEC12), Issue 2, sections 2.3.1–2.3.5, and the WEC12 Sample Assessment Materials.

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Common errors

- Comparing **nominal GDP** figures across years without deflating them.
- Calling **disinflation** "**deflation**". If the inflation rate falls from 6% to 2%, prices are still rising.
- Listing AD components without saying which way the curve shifts and why.

Common errors (2)

- Drawing a change in the price level as a shift of AD. It is a movement along the curve.
- Forgetting that imports are a withdrawal. A high MPM makes the multiplier small.
- Confusing **actual growth** (using spare capacity) with **potential growth** (more capacity).

Key terms

- **Real GDP**: output measured at constant prices.
- **CPI**: a weighted index of the prices a typical household pays.
- **ILO unemployment**: without work, available and actively seeking work.

Key terms (2)

- **Current account**: trade in goods and services plus primary and secondary income.
- **Aggregate demand**: $C + I + G + (X - M)$.
- **Multiplier**: the ratio of the final change in national income to the injection that caused it, $1/MPW$.
- **Output gap**: actual output minus trend output.

Check yourself

- 1.
- **Nominal GDP** rises by 8% while the deflator rises by 5%.
- Roughly how fast did **real GDP** grow? 2.
- A basket has weights 60% food and 40% housing.