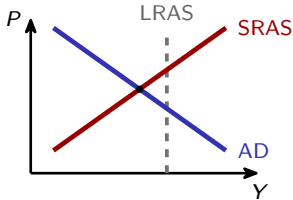


National Income & Price Determination

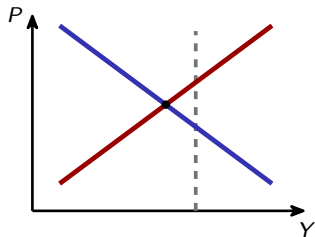
AP Macroeconomics ■ Unit 3

AP Macroeconomics

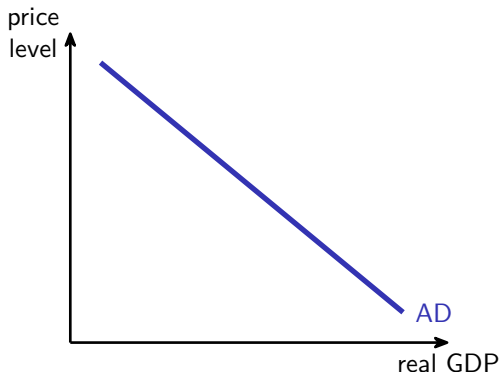


What we will cover

- 1 Aggregate demand (AD)
- 2 The multiplier
- 3 Short-run aggregate supply (SRAS)
- 4 Long-run aggregate supply (LRAS)
- 5 AD-AS equilibrium and gaps
- 6 Demand and supply shocks
- 7 Long-run self-adjustment
- 8 Fiscal policy and stabilizers



Aggregate demand slopes down



Aggregate demand 总需求: total output all buyers want at each price level. It slopes down for **three economy-wide reasons**:

- **wealth effect** 财富效应 – money held is worth more
- **interest-rate effect** 利率效应 – more lending, cheaper borrowing
- **exchange-rate effect** 汇率效应 – weaker currency lifts net exports

Not substitution – AD covers every good at once.

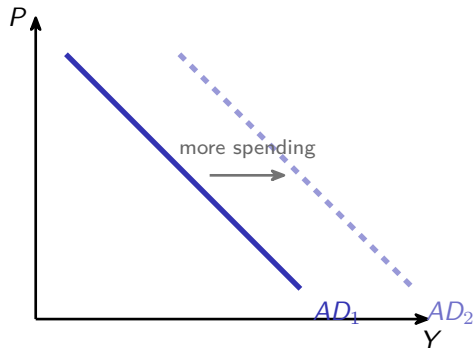
What shifts AD?

Four spending components

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

consumption, investment, government, net exports.

Price level changes $\Rightarrow$ move **along**.
A change in C , I , G or $(X - M)$ $\Rightarrow$ the whole curve **shifts**.



What shifts AD?

$X - M$
G
I
C

net exports: exports — imports

government spending

investment - spending by firms on capital

consumption - spending by households (the biggest part)

$AD = C + I + G + (X - M)$: total spending on a country's goods and services

The multiplier effect

One person's spending is another's income, re-spent again and again:

Key fractions

$$MPC + MPS = 1$$

$$\text{spending mult.} = \frac{1}{1 - MPC} = \frac{1}{MPS}$$

$$\text{tax mult.} = -\frac{MPC}{1 - MPC}$$

Worked example ($MPC = 0.75$)

$$\text{Spending multiplier} = \frac{1}{1 - 0.75} = 4.$$

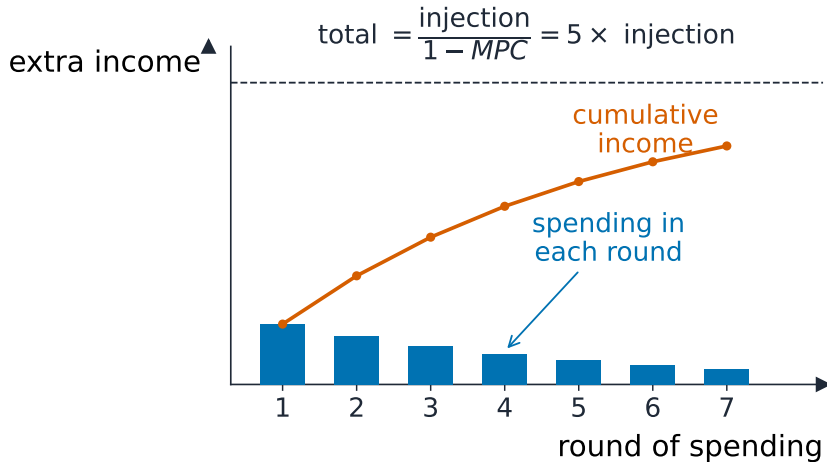
$$\Delta G = 50 \Rightarrow \Delta \text{GDP} = 4 \times 50 = 200$$

$$\text{Tax multiplier} = -\frac{0.75}{0.25} = -3:$$

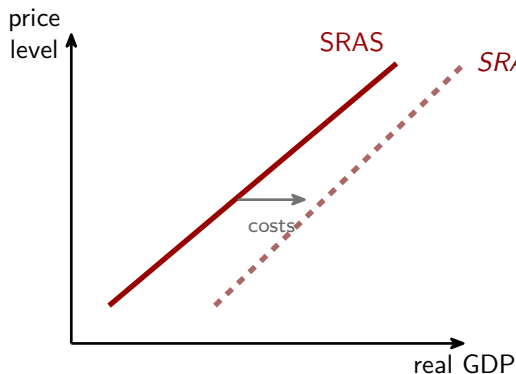
$$\Delta T = -50 \Rightarrow \Delta \text{GDP} = 150$$

A tax cut is weaker – part is saved first.

The multiplier effect



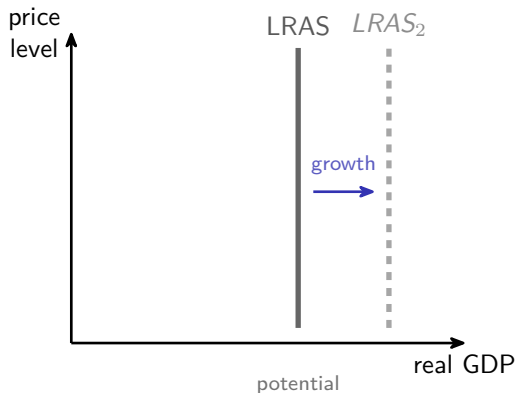
Short-run aggregate supply



In the short run some costs are **sticky** 粘性— above all **nominal wages** 名义工资. A higher price level with fixed wages $\Rightarrow$ more profit per unit $\Rightarrow$ more output. So SRAS slopes **up**. Shifters: input prices, **productivity** 生产率, **supply shocks** 供给冲击.

- higher costs $\Rightarrow$ shift **left**
- better productivity $\Rightarrow$ shift **right**

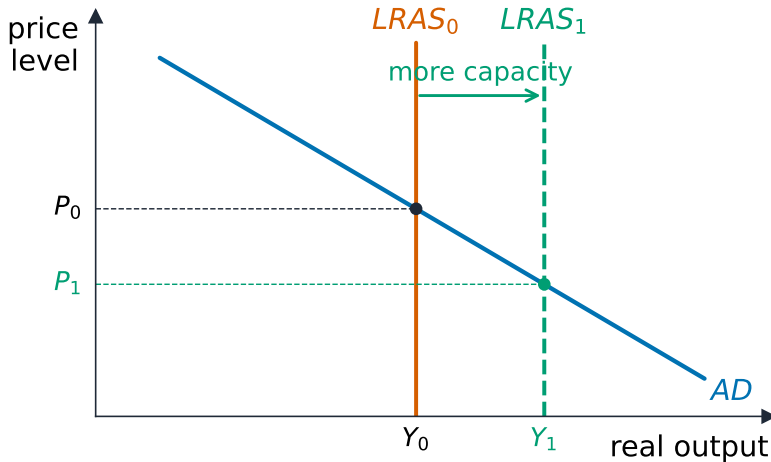
Long-run aggregate supply



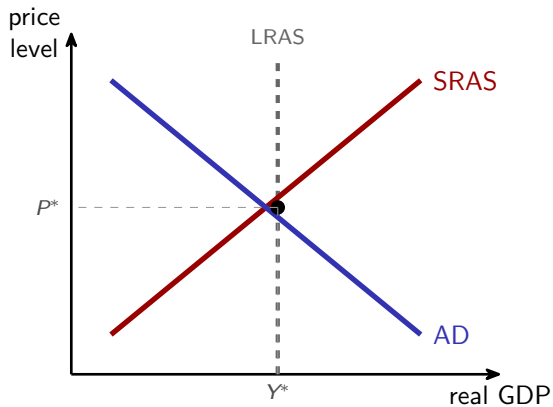
In the long run wages and prices are **fully flexible** 完全灵活, so output settles at **potential GDP** 潜在 GDP – the **full-employment output** 充分就业产出. LRAS is **vertical**: the same real output at any price level.

More resources, capital, or better technology shift LRAS **right** – that is **economic growth** 经济增长.

Long-run aggregate supply



AD-AS equilibrium

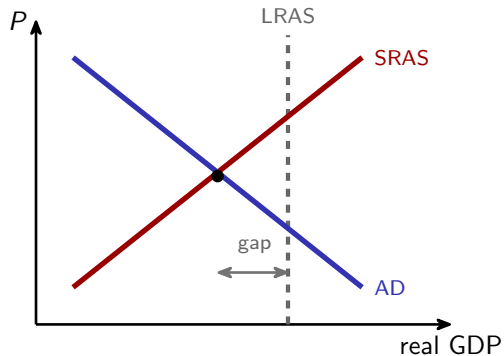


Short-run

equilibrium 短期宏观经济均衡 is where **AD crosses SRAS**. Read the price level and real output straight off the axes.

Compare Y^* with LRAS (potential): **on** it = full employment; **left** = recessionary gap; **right** = inflationary gap.

Recessionary vs inflationary gap

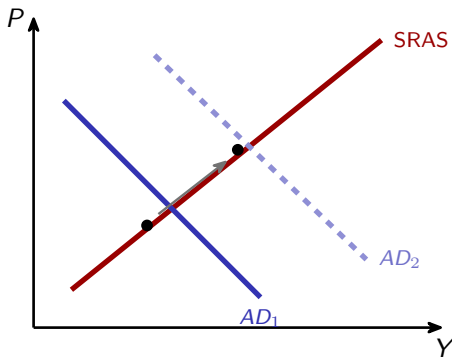


The **output gap** 产出缺口 is the distance from Y^* to LRAS.

- Y^* **below** potential – **recessionary gap** 衰退缺口, high unemployment
- Y^* **above** potential – **inflationary gap** 通货膨胀缺口, prices pushed up

Example: potential 1,000, actual 920 $\Rightarrow$ recessionary gap of 80.

A shift in AD – demand-pull inflation

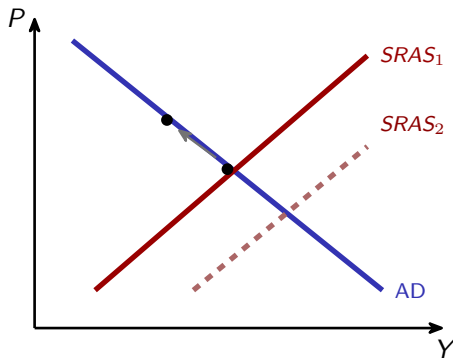


AD shifts **right** (more confidence, a tax cut, more G). Along $SRAS$ the crossing rises:

- price level **rises** – **demand-pull inflation** 需求拉动型通货膨胀
- real output **rises**, unemployment falls

An AD shift moves price and output the **same** way.

A supply shock – stagflation

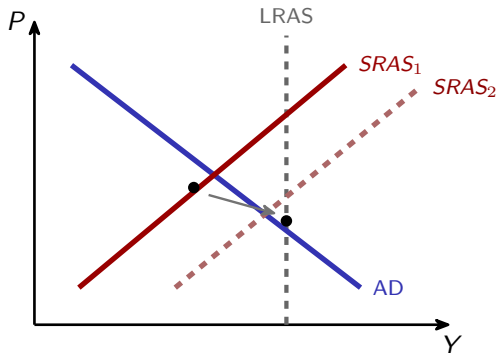


A negative supply shock (oil jumps) shifts SRAS **left**. Along AD:

- price level **rises**
- real output **falls**, unemployment rises

Stagflation 滞胀: rising prices *with* falling output. A shock moves them **opposite** ways – and it is hard to cure.

Long-run self-adjustment



Left alone, a gap heals by moving **SRAS** (not AD):

- recessionary gap: high unemployment $\Rightarrow$ wages fall $\Rightarrow$ SRAS **right**
- inflationary gap: scarce labour $\Rightarrow$ wages rise $\Rightarrow$ SRAS **left**

Output returns to potential; the price level ends **lower** (or higher) – but slowly.

Fiscal policy

Fiscal policy 财政政策: the government uses *spending and taxes* to steer AD.

Expansionary: raise G / cut T
 $\Rightarrow$ AD right (for a recession-ary gap)

Contractionary: cut G / raise T
 $\Rightarrow$ AD left (for an inflation-ary gap)

Worked example

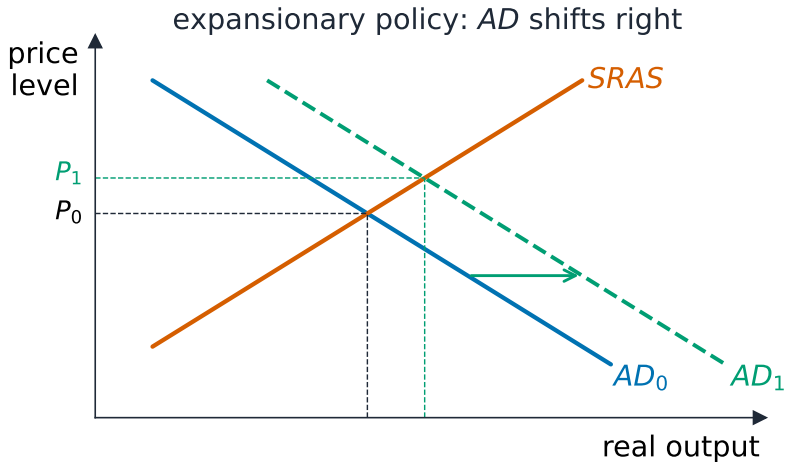
Gap = 200, $MPC = 0.8$ so multiplier = 5.

$$\Delta G = \frac{200}{5} = 40$$



Spending and taxes steer aggregate demand

Fiscal policy



Automatic stabilizers

Automatic stabilizers 自动稳定器 dampen the business cycle **with no new law**:

Progressive taxes 累进税: collect more in booms, less in slumps

Transfer payments 转移支付: benefits rise automatically in a recession

Automatic: instant, built into law – no **legislative lag** 立法时滞.

Discretionary 相机抉择: a new bill – precise, but slow to pass.

Unit 3 – key takeaways

1

AD & AS

AD down (3 effects); SRAS up (sticky wages); LRAS vertical at potential

2

Multiplier

$1/(1 - MPC)$; tax multiplier smaller and negative

3

Shocks

AD shift moves P and Y together; supply shock moves them apart

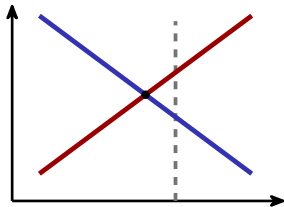
4

Policy

expansionary for recession, contractionary for inflation; stabilizers act alone

Check yourself

- 1 With $MPC = 0.8$, what is the spending multiplier?
- 2 Which curve is vertical, and at what output?
- 3 A supply shock: which way do P and Y move?
- 4 To close a recessionary gap, which fiscal policy?



Answers 1. 5 2. LRAS, at potential output 3. opposite ways (stagflation) 4. expansionary