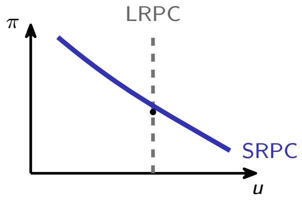
Long-Run Consequences of Stabilization Policies

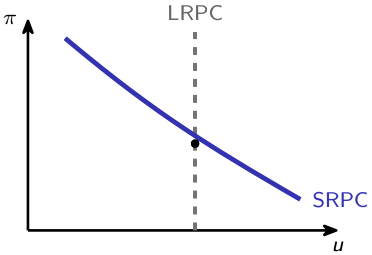
AP Macroeconomics ▪ Unit 5

AP Macroeconomics



What we will cover

1. Combining fiscal and monetary policy
2. The Phillips curve
3. Money growth and inflation
4. Deficits and the national debt
5. Crowding out
6. Economic growth
7. Public policy for growth



1 Combining policy

Fiscal and monetary policy together

Both tools move **aggregate demand** 总需求. The monetary chain runs:

Transmission

$$MS \uparrow \Rightarrow i \downarrow \Rightarrow I \uparrow \Rightarrow AD \rightarrow$$

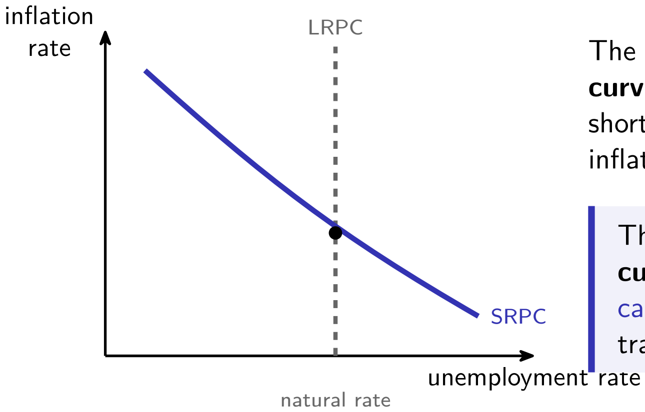
Two goals of **stabilization policy** 稳定政策: **full employment** 充分就业 and price stability.

> To fight a deep recession, cut taxes *and* lower interest rates – both push AD right, so the effects add up.

Combined policy closes a gap faster than either tool alone.

2 Phillips curve

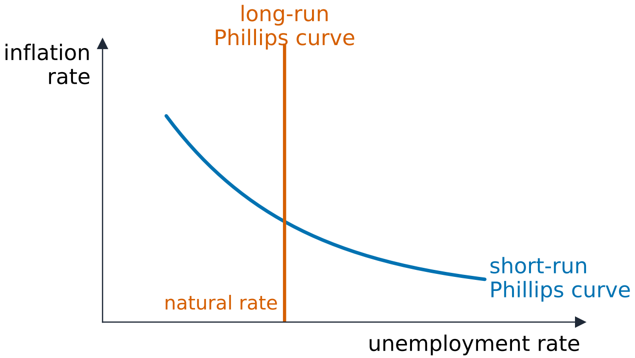
The Phillips curve



The **short-run Phillips curve** 短期菲利普斯曲线 slopes down: a short-run **trade-off** 权衡取舍 between inflation and unemployment.

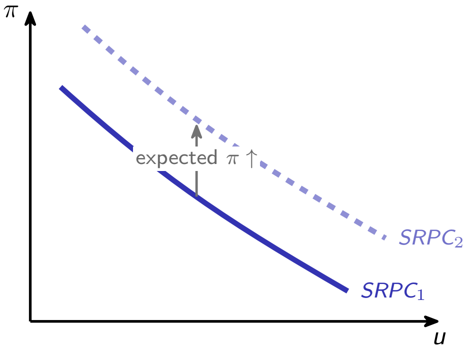
> The **long-run Phillips curve** 长期菲利普斯曲线 is vertical at the natural rate – no lasting trade-off. It mirrors LRAS.

The short-run and long-run Phillips curves



The short-run and long-run Phillips curves

What shifts the Phillips curve



The SRPC shifts when either changes:

- higher **inflationary expectations** 通货膨胀预期 $\Rightarrow$ SRPC shifts up
- a negative **supply shock** 供给冲击 $\Rightarrow$ SRPC shifts right (stagflation)

Push u below natural: inflation rises, then expectations catch up and u returns – only inflation is left higher.

3 Money & inflation

Money growth and inflation

The **quantity theory of money** 货币数量论 starts from an identity:

The equation of exchange

$$M \cdot V = P \cdot Q$$

$V =$ **velocity** 货币流通速度. In the long run V and Q are steady.

$$\text{inflation} \approx \%\Delta M - \%\Delta Q$$

Worked example

M grows 10%, output Q grows 3%:

$$\text{inflation} \approx 10\% - 3\% = 7\%$$

Neutrality of money 货币中性: in the long run more money raises only prices, not real output.

4 Deficits & debt

Deficits vs the national debt

- **Budget deficit** 预算赤字: a yearly shortfall (a *flow*)
- **National debt** 国家债务: total of past borrowing (a *stock*)

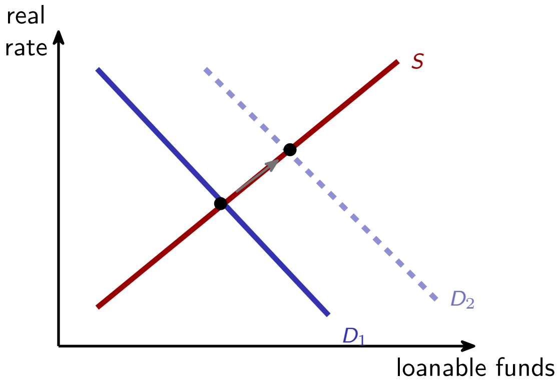
new debt = old debt + this year's deficit

Persistent deficits pile up the debt: interest costs, future taxpayers, crowding out.

Deficits add; the debt is the stock

5 Crowding out

Crowding out

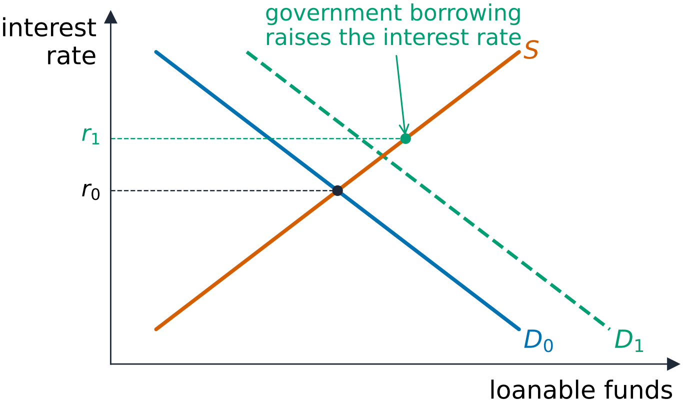


Government borrowing shifts loanable-funds demand right:

$$\text{deficit} \Rightarrow r\uparrow \Rightarrow I_{\text{private}}\downarrow$$

Crowding out 挤出效应: a higher real rate squeezes out private investment, so the **capital stock** 资本存量 grows slower and long-run growth is weaker.

Government borrowing raises interest rates and



Government borrowing raises interest rates and crowds out private investment

6 Growth

Economic growth

Economic growth 经济增长 = a rise in real GDP **per capita** 人均实际国内生产总值 over time. Two sources:

- more & better resources (labour, capital, human capital)
- higher **productivity** 生产率 – more output per input

> Growth = the PPC shifting outward and LRAS shifting right – the same event.

More capital and productivity raise living standards

Public policy for growth

Governments raise long-run growth by building resources or lifting productivity:

Capital
physical 实物资本 (roads, machines) & **human capital** 人力资本 (schools, health)

Technology
R&D 研究与开发, universities, **patents** 专利 – more output per input

Institutions
property rights 产权, honest courts, good incentives

Each shifts LRAS right and the PPC outward.

Money Growth and Inflation, continued

More money chasing goods: sustained money growth tends to raise the price level over time

The two Phillips curves, and policy for growth

the short-run Phillips curve 短期菲利普斯曲线	a trade-off: lower unemployment comes with higher inflation
the long-run Phillips curve 长期菲利普斯曲线	vertical at the **natural rate of unemployment 自然失业率** – no trade-off in the long run
what shifts SRPC	a change in expected inflation, or a supply shock
linking the graphs	a recessionary gap in AD–AS corresponds to a point up and left on the SRPC – high unemployment, low inflation
hyperinflation 恶性通货膨胀	what sustained excessive money growth produces
long-run growth policy	investment in infrastructure, human capital and technology, and secure property rights

Draw the AD–AS and Phillips graphs side by side and move both. Every question in this unit checks that the two pictures agree.

Two Phillips curves, one economy

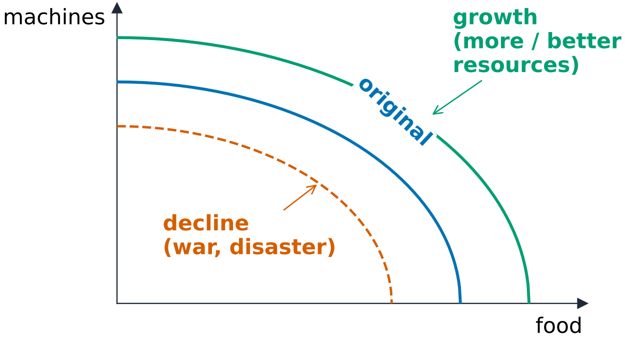
Short-run	The **short-run Phillips curve (SRPC) 短期菲利普斯曲线** slopes down: with expectations fixed, lower unemployment comes with higher inflation.
Long-run	The **long-run Phillips curve (LRPC) 长期菲利普斯曲线** is vertical at the natural rate – no permanent trade-off, whatever inflation is.
Moving between	An AD increase moves *along* the SRPC; when expectations catch up, the SRPC shifts and unemployment returns to the natural rate.
Budget words	A budget **surplus 盈余** is revenue above spending; deficits accumulate into the national debt.

> SRPC and AD–AS tell the same story twice. Whatever moves one moves the other – say which, in both diagrams.

Fiscal and Monetary Policy in the Short Run

A parliament building: governments use spending and taxes as fiscal policy tools

Economic Growth, continued



Economic growth shifts the production possibilities curve outward

Exam tips

- The short-run **Phillips curve** shows the inflation–unemployment trade-off; the long-run curve is **vertical** at the natural rate.
- In the long run inflation is a **monetary** phenomenon (money growth beyond output growth $\rightarrow$ inflation).
- Show **crowding out** on the loanable-funds graph: government borrowing raises the real rate and cuts private investment.
- Growth comes from more/better resources – physical capital, human capital, technology – shifting LRAS right.
- A supply shock moves inflation and unemployment the same way (stagflation), unlike a demand shock.

7 Recap

Unit 5 – key takeaways

1 Phillips curve

short-run trade-off; LRPC vertical at the natural rate

2 Money & inflation

$MV = PQ$; long-run money growth just raises prices

3 Deficits

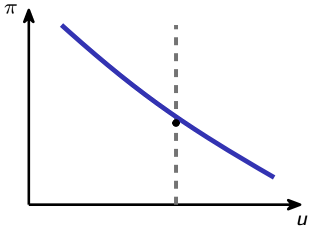
a deficit is a flow; the debt is the stock it builds

4 Growth

from resources and productivity; crowding out slows it

Check yourself

1. Is the long-run Phillips curve sloped or vertical?
2. M grows 8%, output 2%. Roughly what is inflation?
3. Deficit or debt: which is a yearly flow?
4. Crowding out reduces which kind of spending?



Answers **1.** vertical (at the natural rate) **2.** about 6% **3.** the deficit **4.** private investment