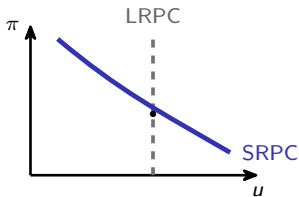


Long-Run Consequences of Stabilization Policies

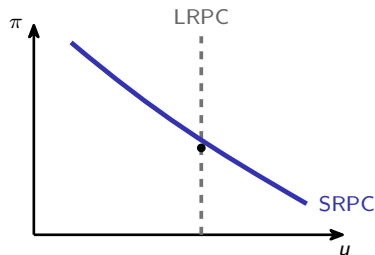
AP Macroeconomics ■ Unit 5

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





Fiscal and monetary policy together

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

Transmission

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

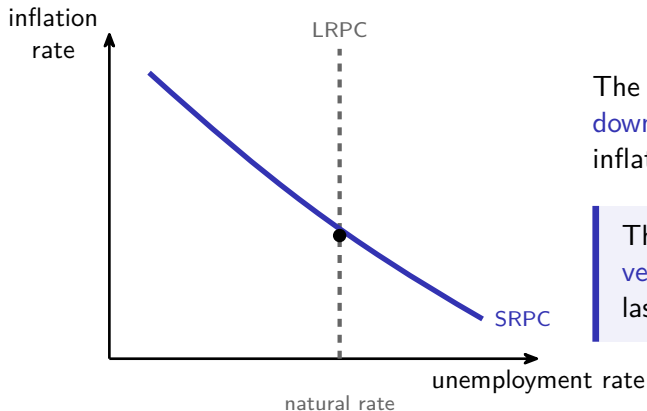
Two goals of **stabilization policy** : **full employment** and **price stability**.

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.



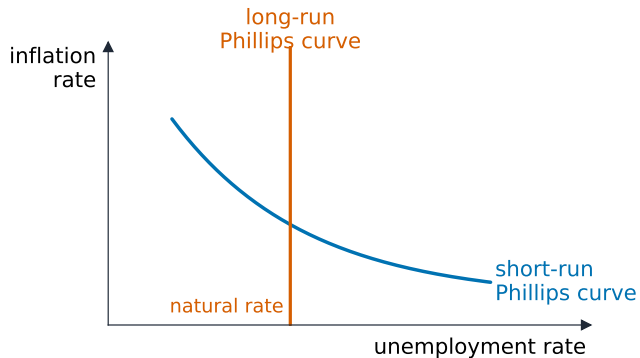
The Phillips curve



The **short-run Phillips curve** slopes **down**: a short-run **trade-off** between inflation and unemployment.

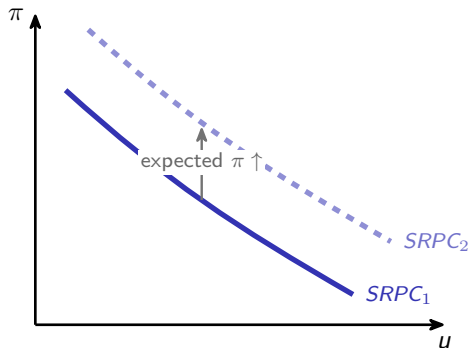
The **long-run Phillips curve** is **vertical** at the natural rate – no lasting trade-off. It mirrors LRAS.

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** $\Rightarrow$ SRPC shifts **up**
- a negative **supply shock** $\Rightarrow$ SRPC shifts **right** (stagflation)

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



Money growth and inflation

The **quantity theory of money** starts from an identity:

The equation of exchange

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

V = **velocity** . 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 : in the long run more money raises only **prices**, not real output.



Deficits vs the national debt

- **Budget deficit** : a *yearly* shortfall (a *flow*)
- **National debt** : *total* of past borrowing (a *stock*)

$\text{new debt} = \text{old debt} + \text{this year's deficit}$

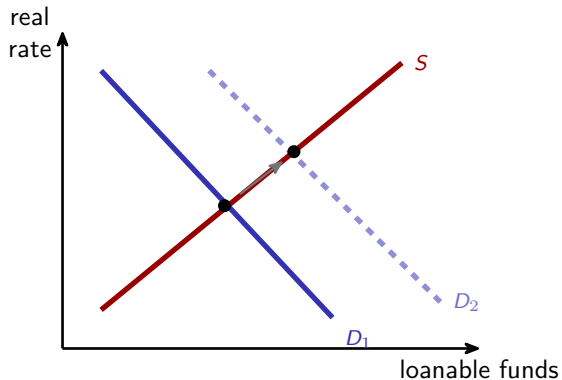
Persistent deficits pile up the debt: interest costs, future taxpayers, crowding out.



Deficits add; the debt is the stock



Crowding out

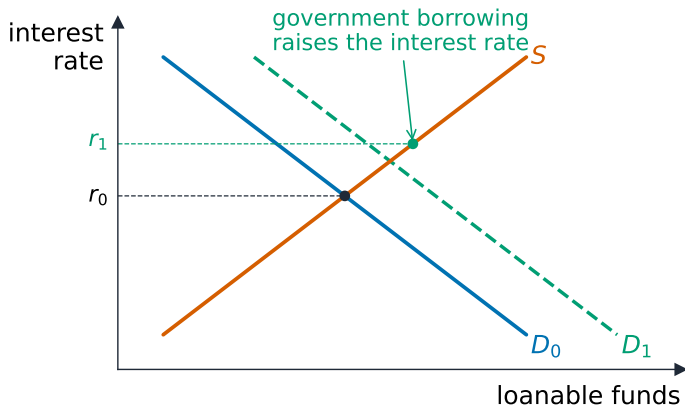


Government borrowing shifts
loanable-funds demand right:

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

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

Government borrowing raises rates and crowds out investment



Government borrowing raises interest rates and crowds out private investment



Economic growth

Economic growth = a rise in real GDP **per capita** over time. Two sources:

- more & better **resources** (labour, capital, human capital)
- higher **productivity** – 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 (roads, machines) & **human capital** (schools, health)

Technology

R&D , universities, **patents** – more output per input

Institutions

property rights , 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

a trade-off: lower unemployment comes with higher inflation

the long-run Phillips curve

vertical at the **natural rate of unemployment** – 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

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)** slopes down: with expectations fixed, lower unemployment comes with higher inflation.

Long-run

The **long-run Phillips curve (LRPC)** 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** is revenue above spending; deficits accumulate into the national debt.

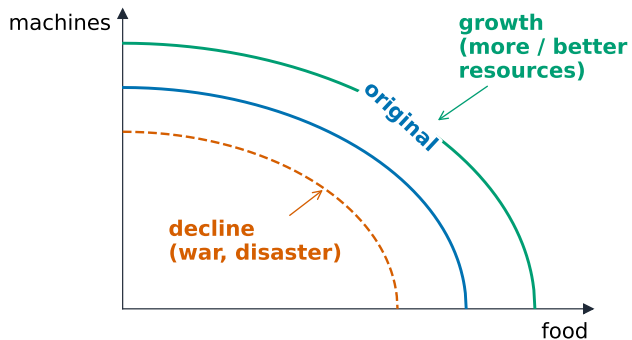
SRPC and AD–AS tell the same story twice. Whatever moves one moves the other – say which, in both diagrams.

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.



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

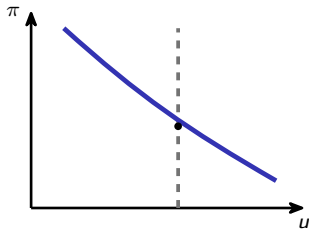
4

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