

Announcements (1)

- Go BEARS!!!
- People that need to see me, come see me after class
- HW due in section
- Go over MPL business?

Announcements (2)

- Monday & Wednesday: we will be covering the 'heart' of 121—Deriving the AD curve (9-11).
 - First, a basic conceptual analysis of D & S (9)
 - Second, a derivation of ISLM model (10)
 - Third, bringing it all together in the AD (11)
- Next Monday, Midterm Review at the end of class
- Will Hold OH on that Monday from 4 to 5 pm in Robinson Hall

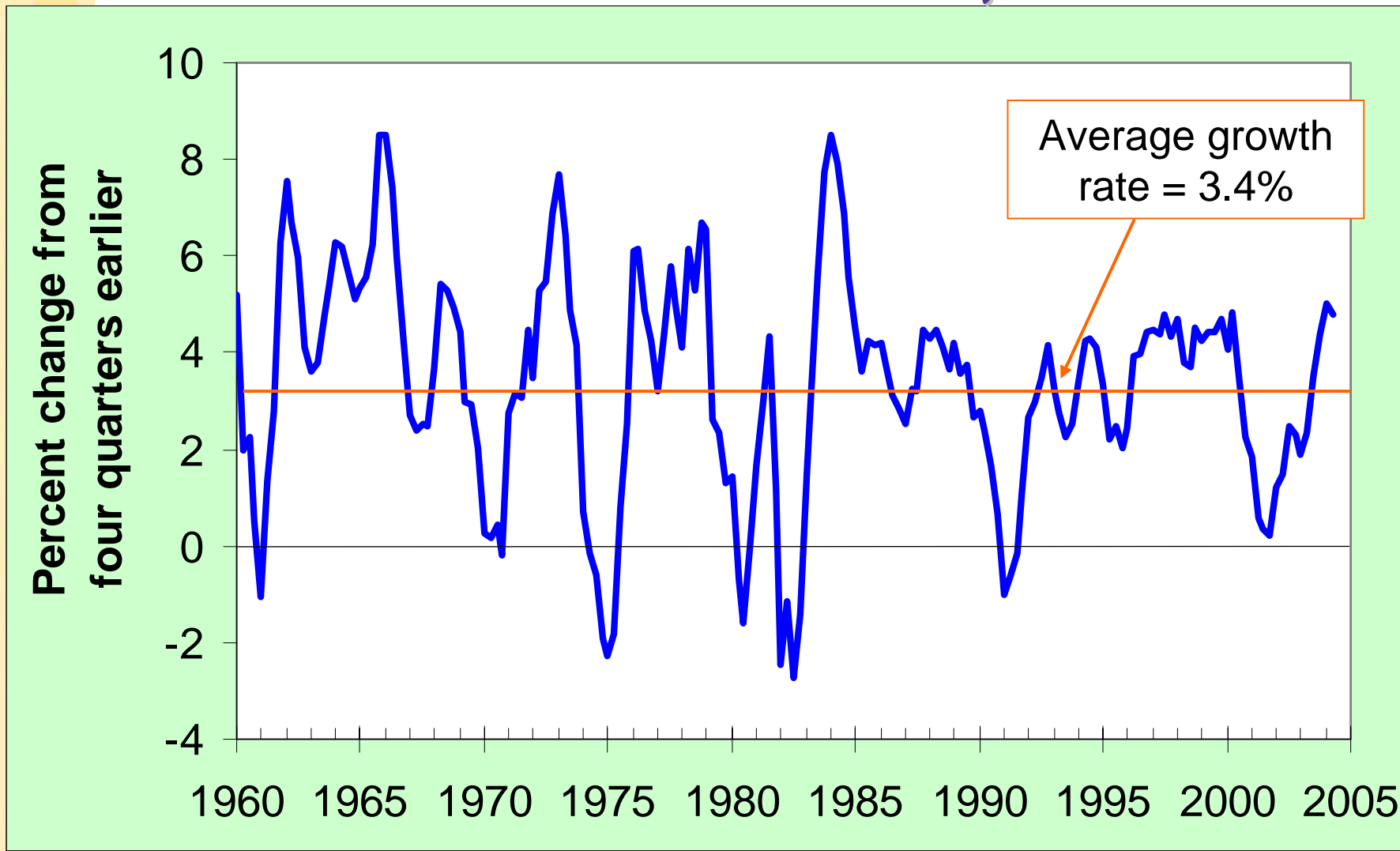
Midterm Details

- Time: (??) 8:30 – 9:50 AM
- Location: List 110 (same place as before)
- Coverage: Chapters 1-11
 - Can exclude CH 5 Appendix
 - Chapter 6; according to lecture coverage
 - Everything else is fair game
 - Study the additional problem from homework

OBJECTIVES

- Understanding the Short Run (the crucial assumptions)
- Build up the Aggregate Demand Curve
 - First an sparse presentation as in Ch9
 - Understand the broad concept
 - Then follows the derivation of the actual aggregate demand curve
 - This helps us fill in ALL gaps from the Ch9 presentation
- Using the Aggregate Demand Curve
- Caveat: For the first part, think more about the results...and then we'll build up the intuition the second half of lecture

Motivations: Real GDP Growth in the U.S., 1960-2004



Time horizons

- Long run:
Prices are flexible, respond to changes in supply or demand (remember the assumptions on the $MV=PY$ equation)
- Short run:
many prices are “sticky” at some predetermined level (essentially P is fixed)

The economy behaves much differently when prices are sticky. This is why we are concerned with time horizons

In Classical Macroeconomic Theory,

- Output is determined by the **supply** side:
 - supplies of capital, labor
 - Technology
 - “THE SOLOW GROWTH MODEL”
- Changes in demand for goods & services (**C, I, G**) only affect ‘prices’, not quantities.
- Complete price flexibility is the crucial assumption
- Classical => the behavior of the economy in the ***Long Run***

When prices are sticky

...output & employment also (in addition to the supply side) depend on demand for G & S ...

These demands are, in turn, influenced by:

- fiscal policy (G and T) --BUSH
- monetary policy (M) --GREENSPAN
- other factors, like exogenous changes in C or I . --Consumer Confidence, Investor Sentiment/Environment/Opportunities

The model of aggregate demand and supply

- the framework that most mainstream economists & policymakers use to think about economic fluctuations and policies to stabilize the economy (a general guideline to follow)
- shows how the price level and aggregate output are determined (y axis, x axis)
- shows the economy's behavior in the short run and long run (the intersection)

Aggregate demand

- The aggregate demand curve shows the relationship between the price level and the quantity of output demanded.
- For this chapter's intro to the AD/AS model, we use a simple theory of aggregate demand based on the Quantity Theory of Money.
- Chapters 10-12 develop the theory of aggregate demand in more detail.

The Quantity Equation as Agg. Demand

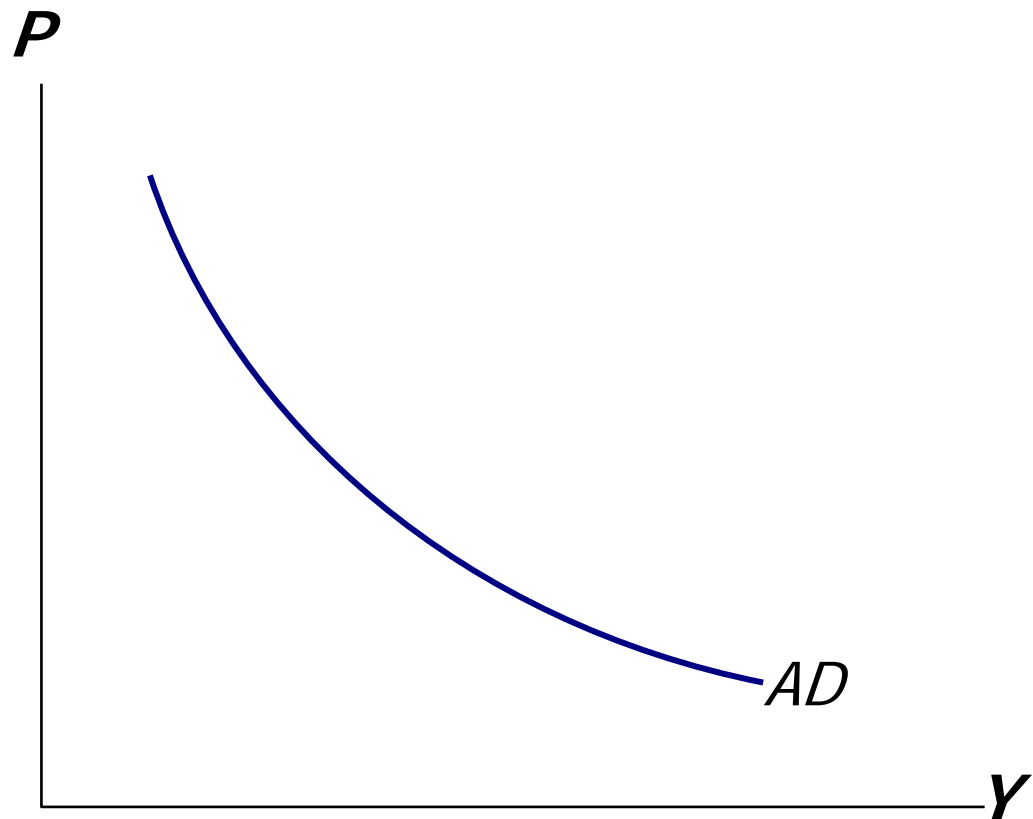
- Recall the quantity equation

$$M V = P Y$$

- For given values of M and V , these equations imply an inverse relationship between P and Y :
 - *If MV is equal to a number Z , then P times Y must equal Z . So...if P goes up, then Y must go down so that P times Y is Z (inverse relation...also know as a level curve)*

The downward-sloping *AD* curve

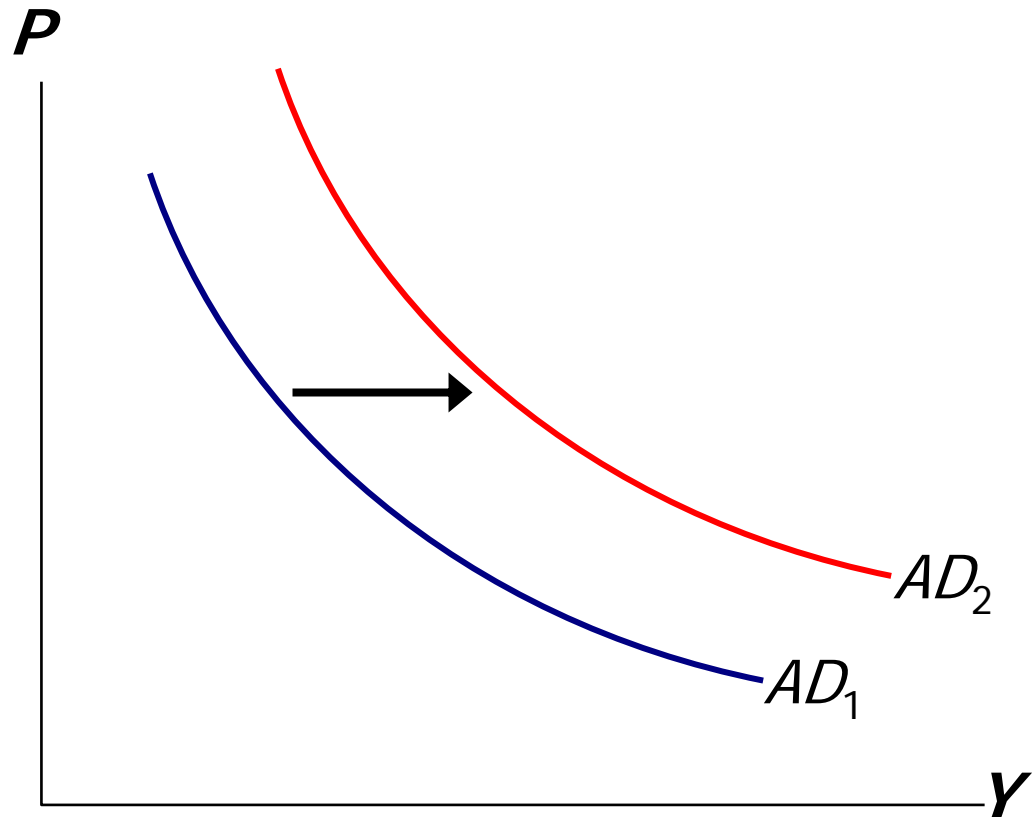
Follow the intuition from the previous slide...consider $P \cdot Y = Z$. If Z does not change, how should P & Y relate? →



Shifting the *AD* curve

Now what happens if Z changes? →

How does Z change? Well, either M changes or V changes.



Aggregate Supply in the Long Run

- Recall from chapter 3:
In the long run, output is determined by factor supplies and technology

$$\bar{Y} = F(\bar{K}, \bar{L})$$

\bar{Y} is the **full-employment** or **natural** level of output, the level of output at which the economy's resources are fully employed.

“Full employment” means that unemployment equals its natural rate.

Aggregate Supply in the Long Run

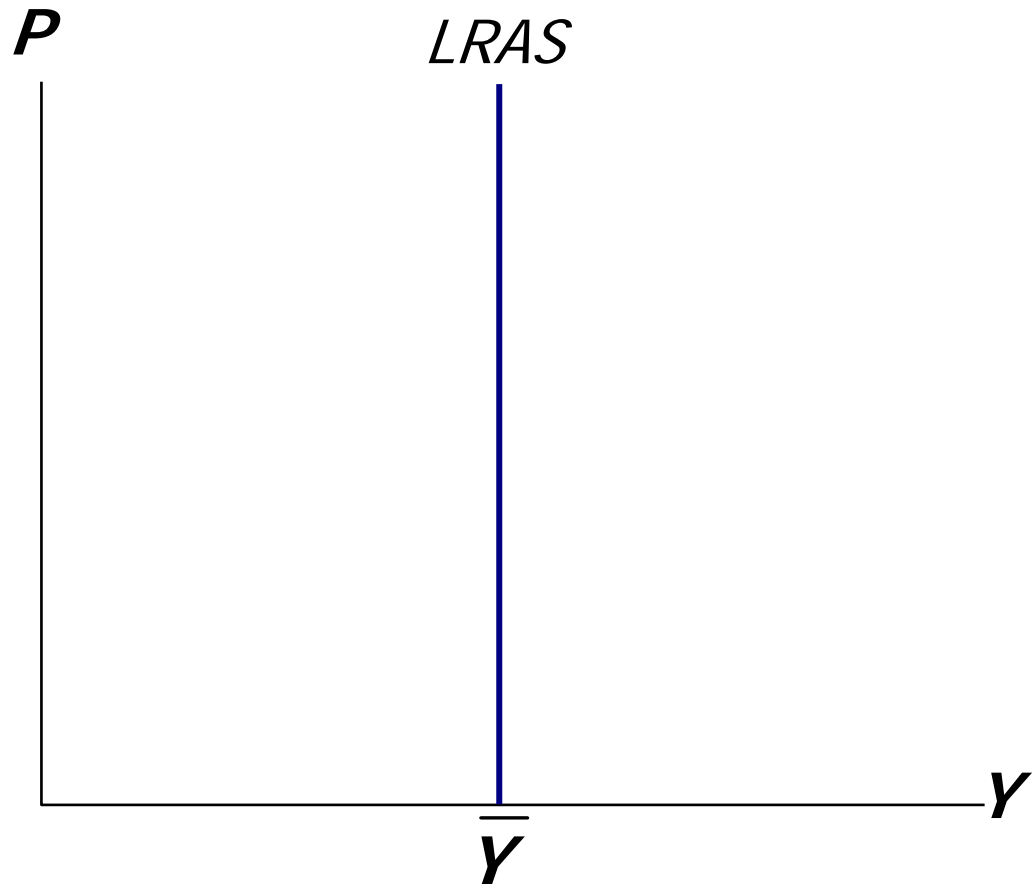
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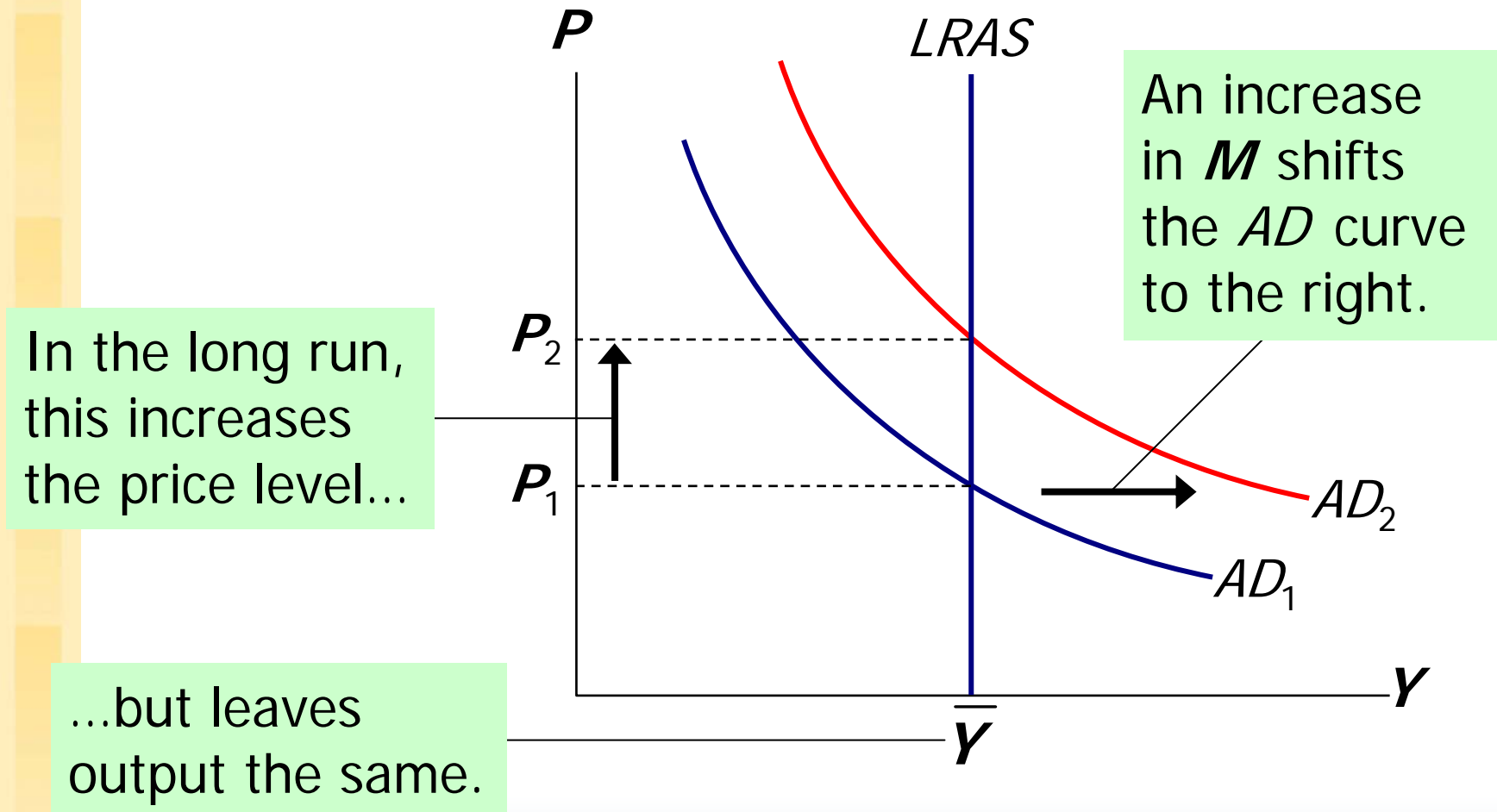
- Full-employment output does not depend on the price level,
so the long run aggregate supply (LRAS) curve is vertical:

The long-run aggregate supply curve

The LRAS curve is vertical at the full-employment level of output.



Long-run effects of an increase in M



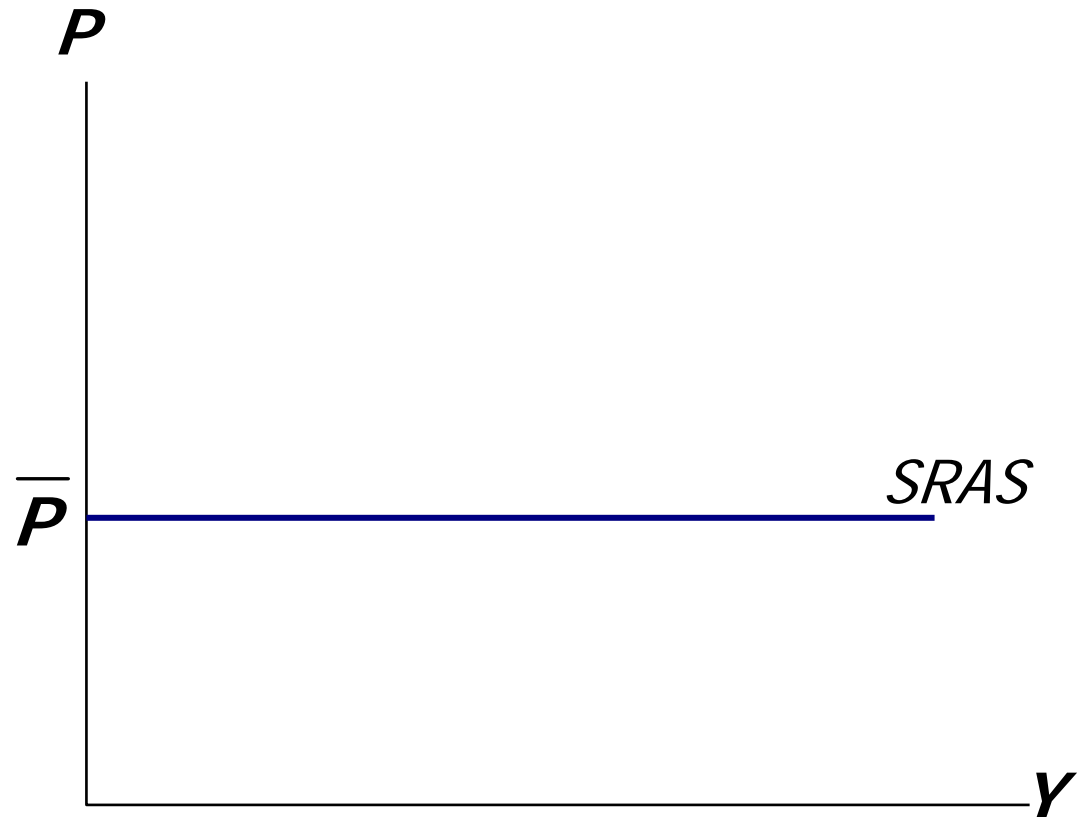
Aggregate Supply in the Short Run

- In the real world, many prices are sticky in the short run.
- For now (and throughout Chapters 9-12), we assume that all prices are stuck at a predetermined level in the short run...
- ...and that firms are willing to sell as much at that price level as their customers are willing to buy.
- Therefore, the short-run aggregate supply (SRAS) curve is horizontal:

The short run aggregate supply curve

The SRAS curve is horizontal:

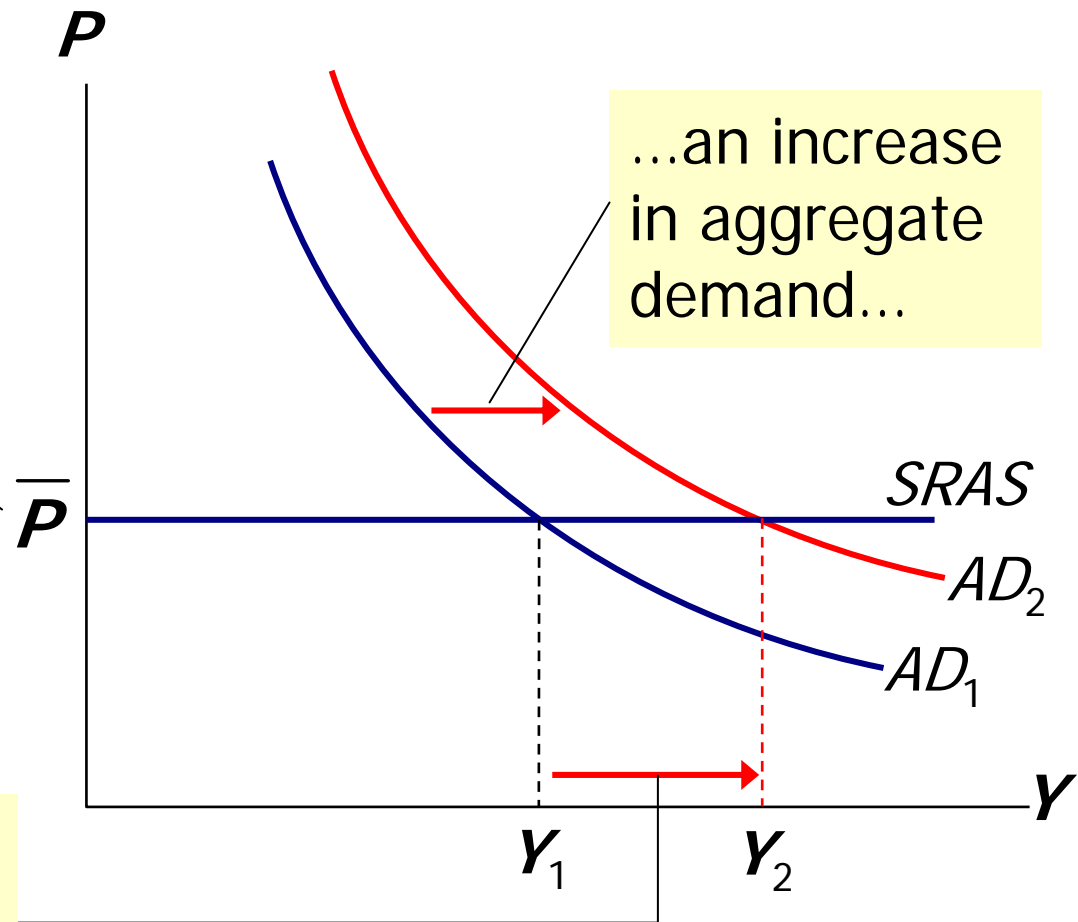
The price level is fixed at a predetermined level, and firms sell as much as buyers demand.



Short-run effects of an increase in M

In the short run when prices are sticky,...

...an increase in aggregate demand...



...causes output to rise.

From the short run to the long run

Over time, prices gradually become “unstuck.”
When they do, will they rise or fall?

In the short-run equilibrium, if	then over time, the price level will
$Y > \bar{Y}$	<i>rise</i>
$Y < \bar{Y}$	<i>fall</i>
$Y = \bar{Y}$	<i>remain constant</i>

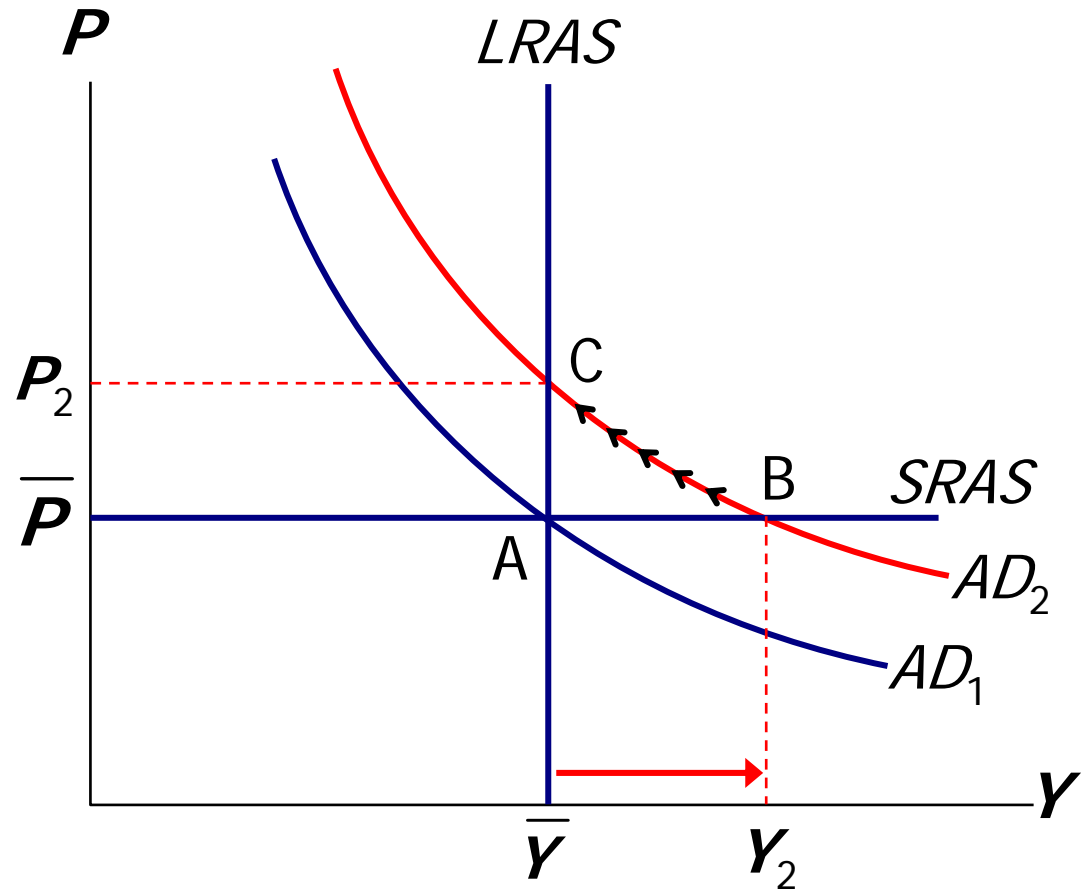
This adjustment of prices is what moves the economy to its long-run equilibrium.

The SR & LR effects of $\Delta M > 0$

A = initial equilibrium

B = new short-run eq'm after Fed increases M

C = long-run equilibrium



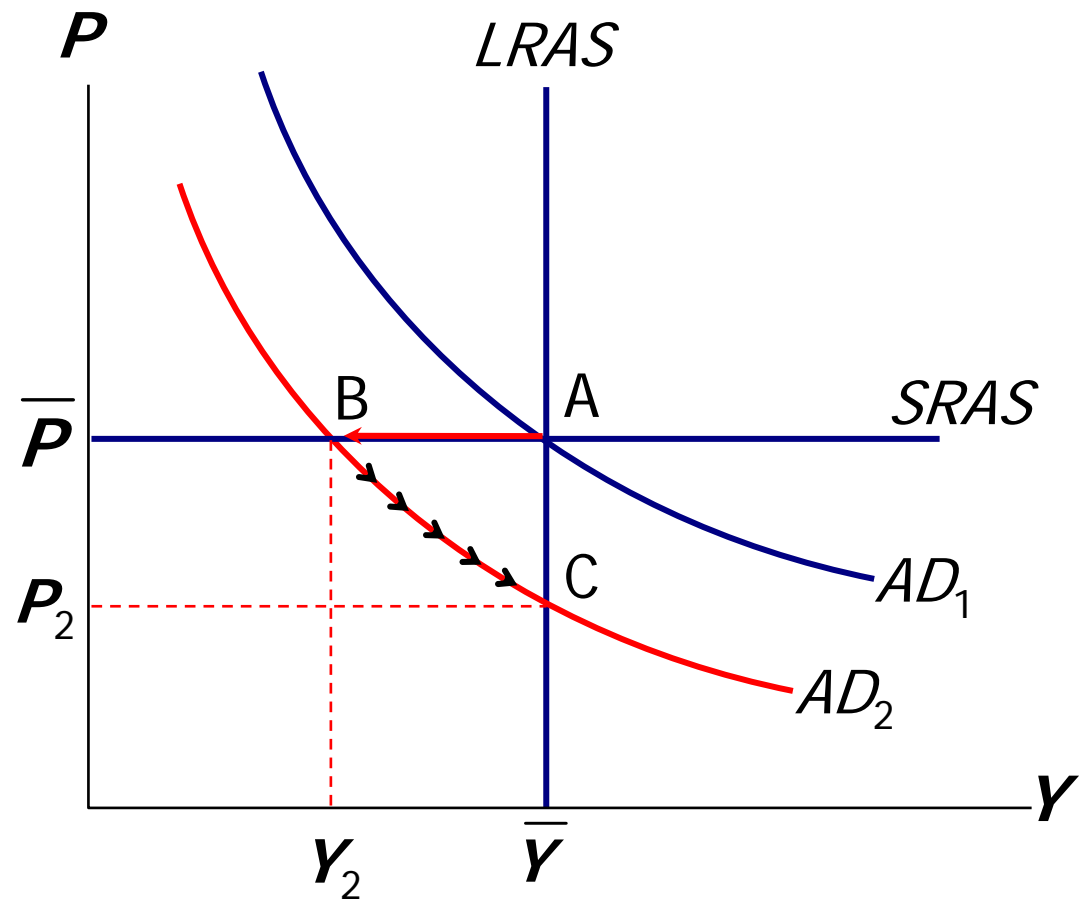
Change in V

- **shocks**: exogenous changes in aggregate supply or demand
- Shocks temporarily push the economy away from full-employment.
- An example of a demand shock: exogenous decrease in velocity
- If the money supply is held constant, then a decrease in V means people will be using their money in fewer transactions, causing a decrease in demand for goods and services:

The effects of a negative demand shock

The shock shifts AD left, causing output and employment to fall in the short run

Over time, prices fall and the economy moves down its demand curve toward full-employment.



Supply shocks

A **supply shock** alters production costs, affects the prices that firms charge.
(also called **price shocks**)

Examples of *adverse* supply shocks:

- Bad weather reduces crop yields, pushing up food prices.
- Workers unionize, negotiate wage increases.
- New environmental regulations require firms to reduce emissions. Firms charge higher prices to help cover the costs of compliance.

(*Favorable* supply shocks *lower* costs and prices.)

CASE STUDY:

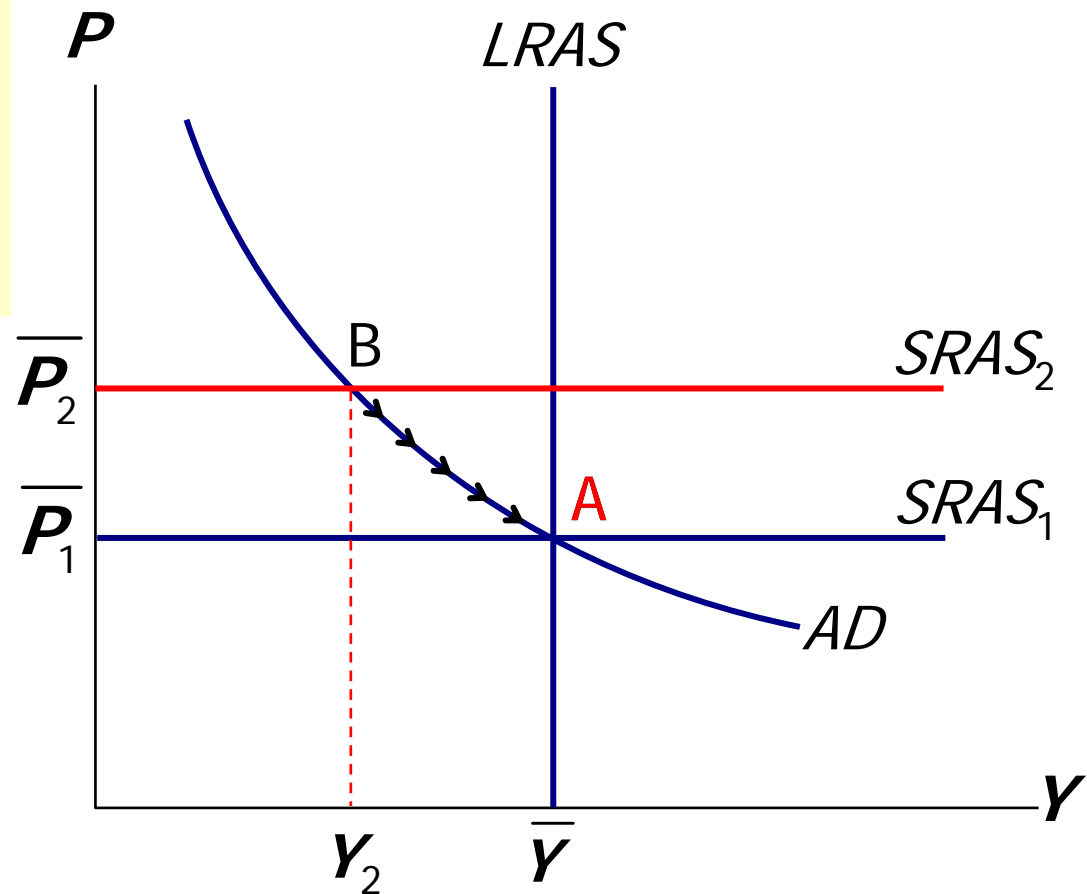
The 1970s oil shocks

- Early 1970s: OPEC coordinates a reduction in the supply of oil.
- Oil prices rose
 - 11% in 1973
 - 68% in 1974
 - 16% in 1975
- Such sharp oil price increases are supply shocks because they significantly impact production costs and prices.

CASE STUDY: The 1970s oil shocks

The oil price shock shifts SRAS up, causing output and employment to fall.

In absence of further price shocks, prices will fall over time and economy moves back toward full employment.

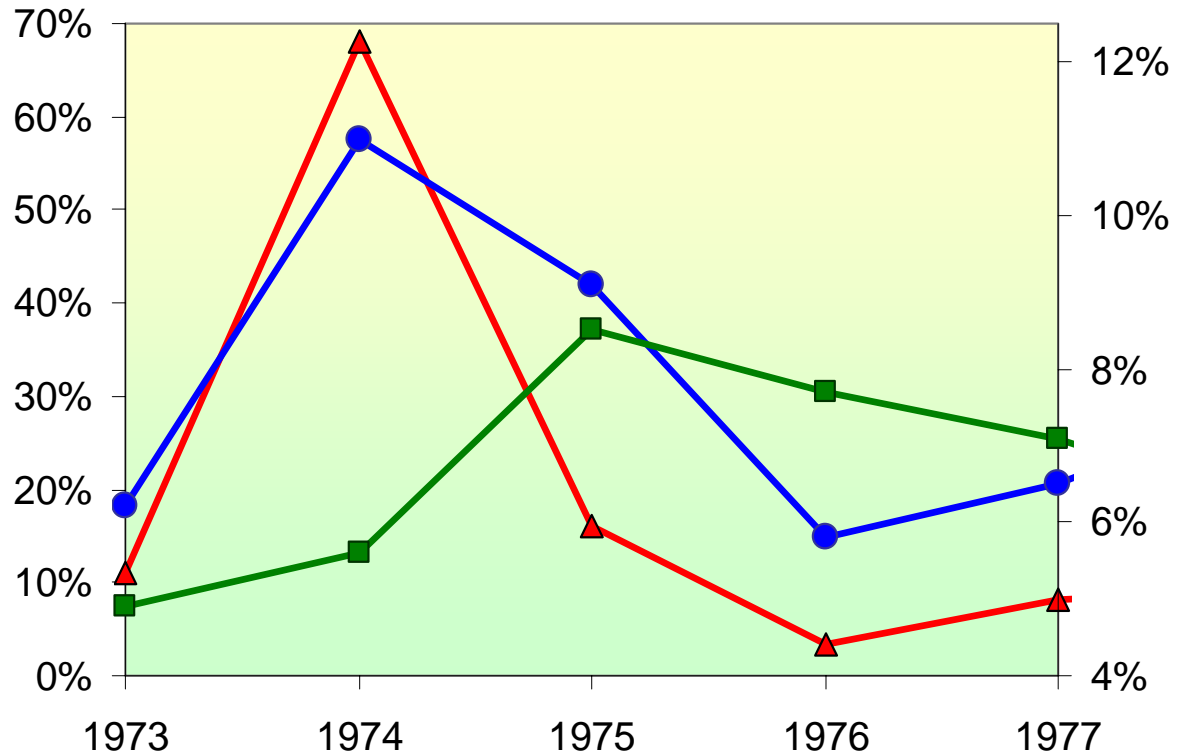


CASE STUDY: The 1970s oil shocks

Predicted effects of the oil price shock:

- inflation \uparrow
- output \downarrow
- unemployment \uparrow

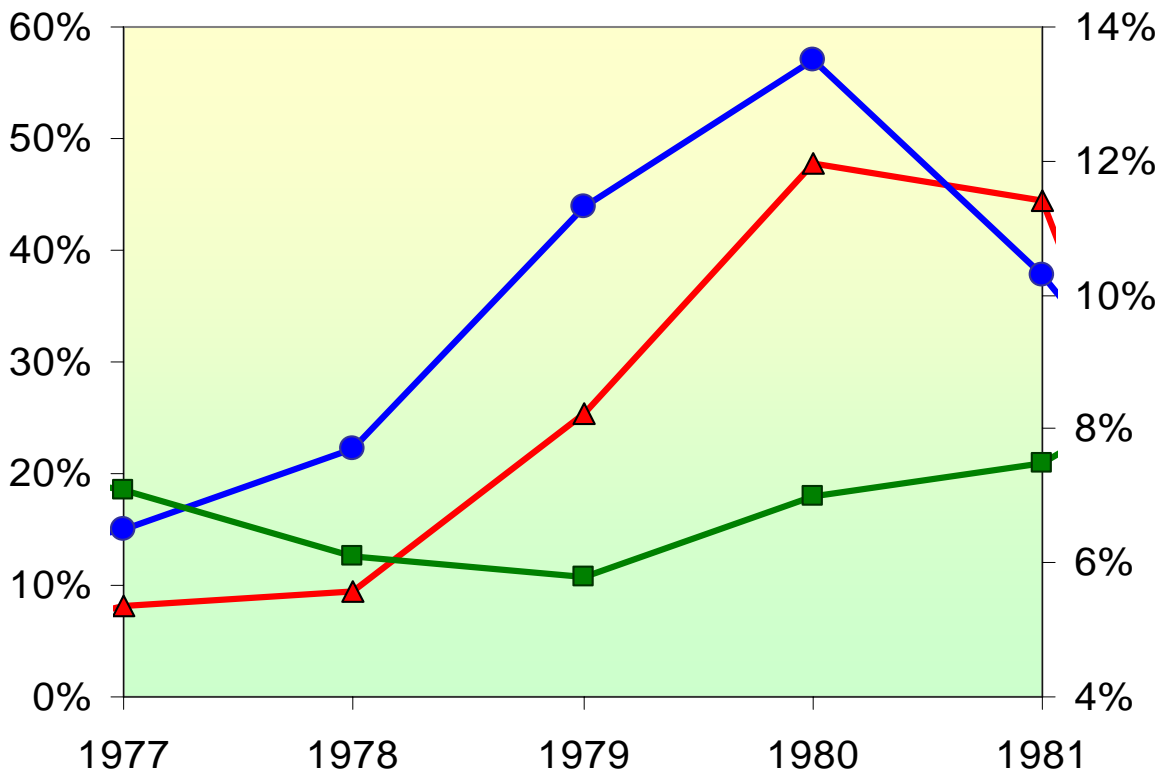
...and then a gradual recovery.



- ▲— Change in oil prices (left scale)
- Inflation rate-CPI (right scale)
- Unemployment rate (right scale)

CASE STUDY: The 1970s oil shocks

Late 1970s:
As economy was recovering,
oil prices shot up again, causing
another huge supply shock!!!

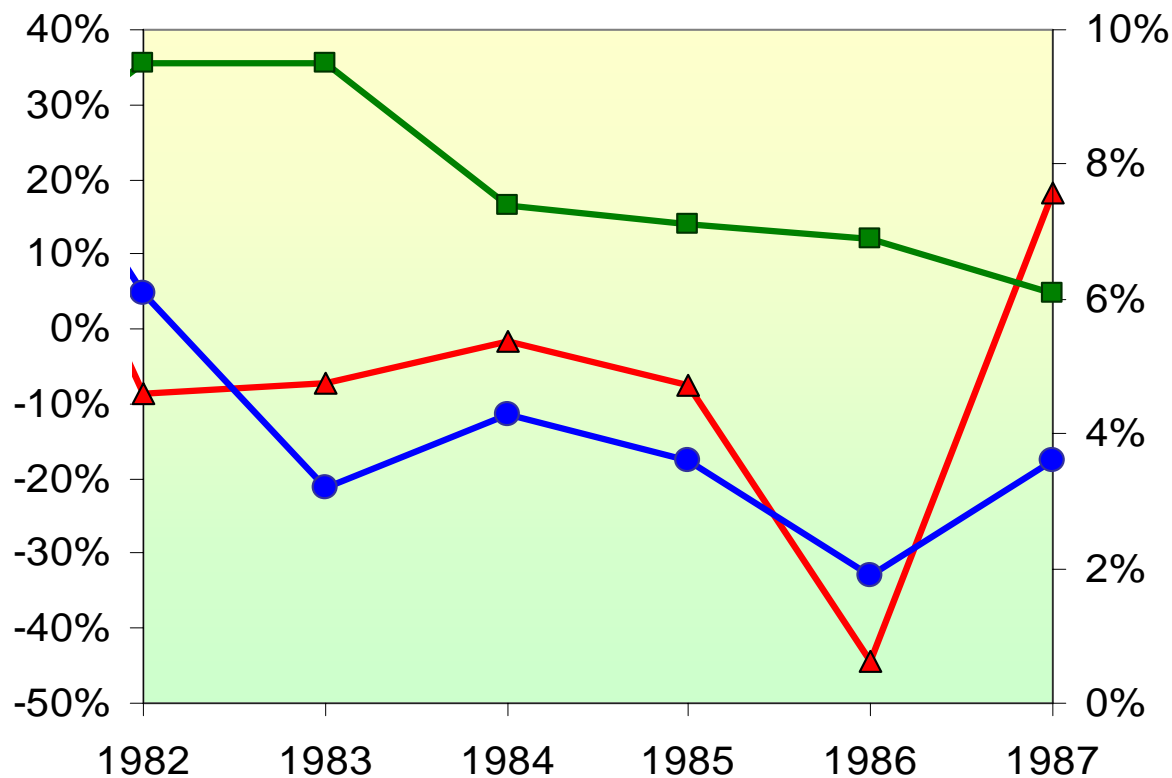


- ▲ Change in oil prices (left scale)
- Inflation rate-CPI (right scale)
- Unemployment rate (right scale)

CASE STUDY: The 1980s oil shocks

1980s:
A favorable supply shock--
a significant fall
in oil prices.

As the model
would predict,
inflation and
unemployment
fell:



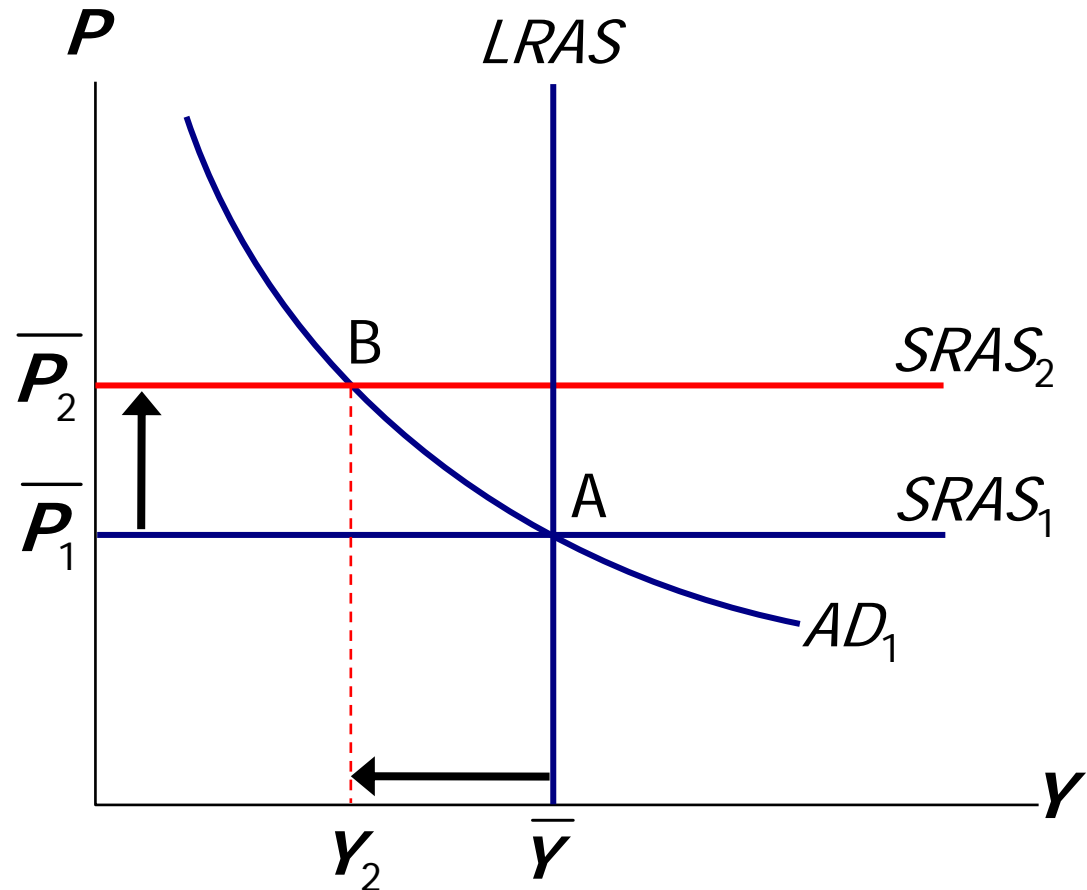
- ▲ Change in oil prices (left scale)
- Inflation rate-CPI (right scale)
- Unemployment rate (right scale)

Stabilization policy

- def: policy actions aimed at reducing the severity of short-run economic fluctuations.
- Example: Using monetary policy to combat the effects of adverse supply shocks:

Stabilizing output with monetary policy

The adverse supply shock moves the economy to point B.

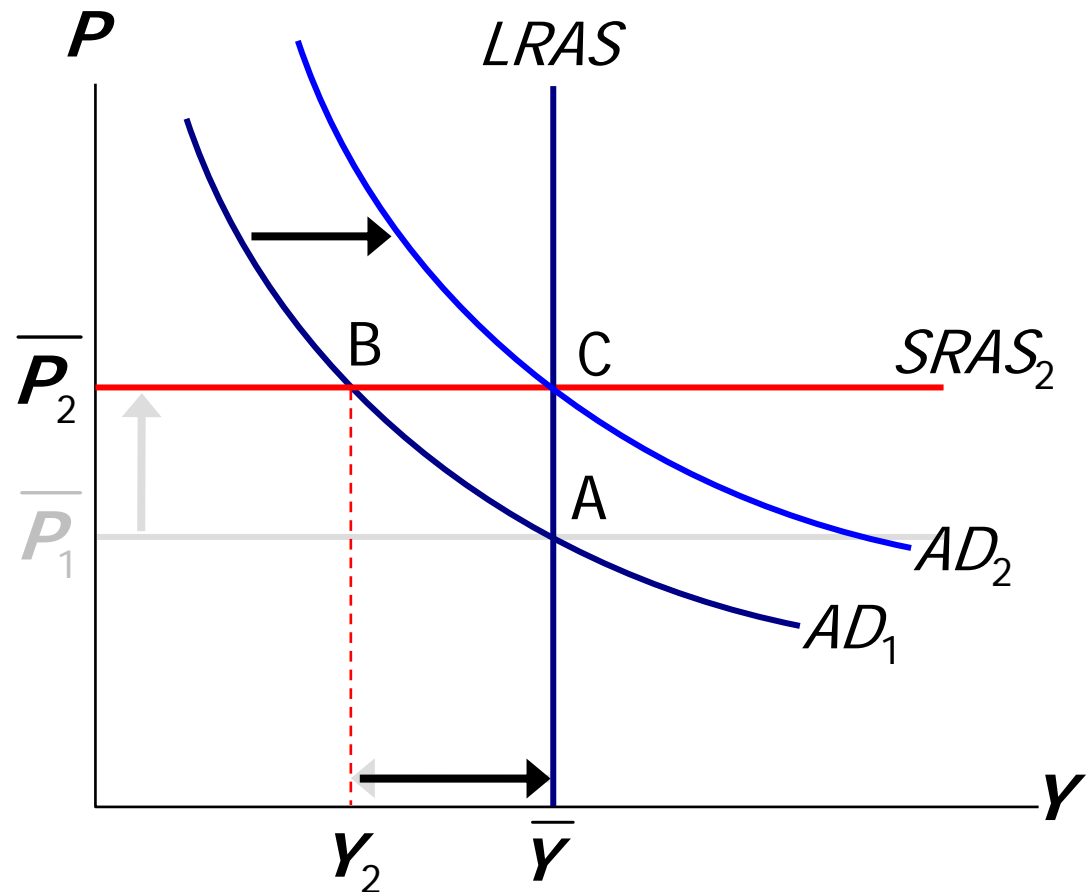


Stabilizing output with monetary policy

But the Fed accommodates the shock by raising agg. demand.

results:

P is permanently higher, but Y remains at its full-employment level.



Mid-Lecture summary

1. Long run: prices are flexible, output and employment are always at their natural rates, and the classical theory applies.

Short run: prices are sticky, shocks can push output and employment away from their natural rates.

2. Aggregate demand and supply:

a framework to analyze economic fluctuations

3. The aggregate demand curve slopes downward.

4. The long-run aggregate supply curve is vertical, because output depends on technology and factor supplies, but not prices.

5. The short-run aggregate supply curve is horizontal, because prices are sticky at predetermined levels.