ECON 3010
Intermediate Macroeconomics

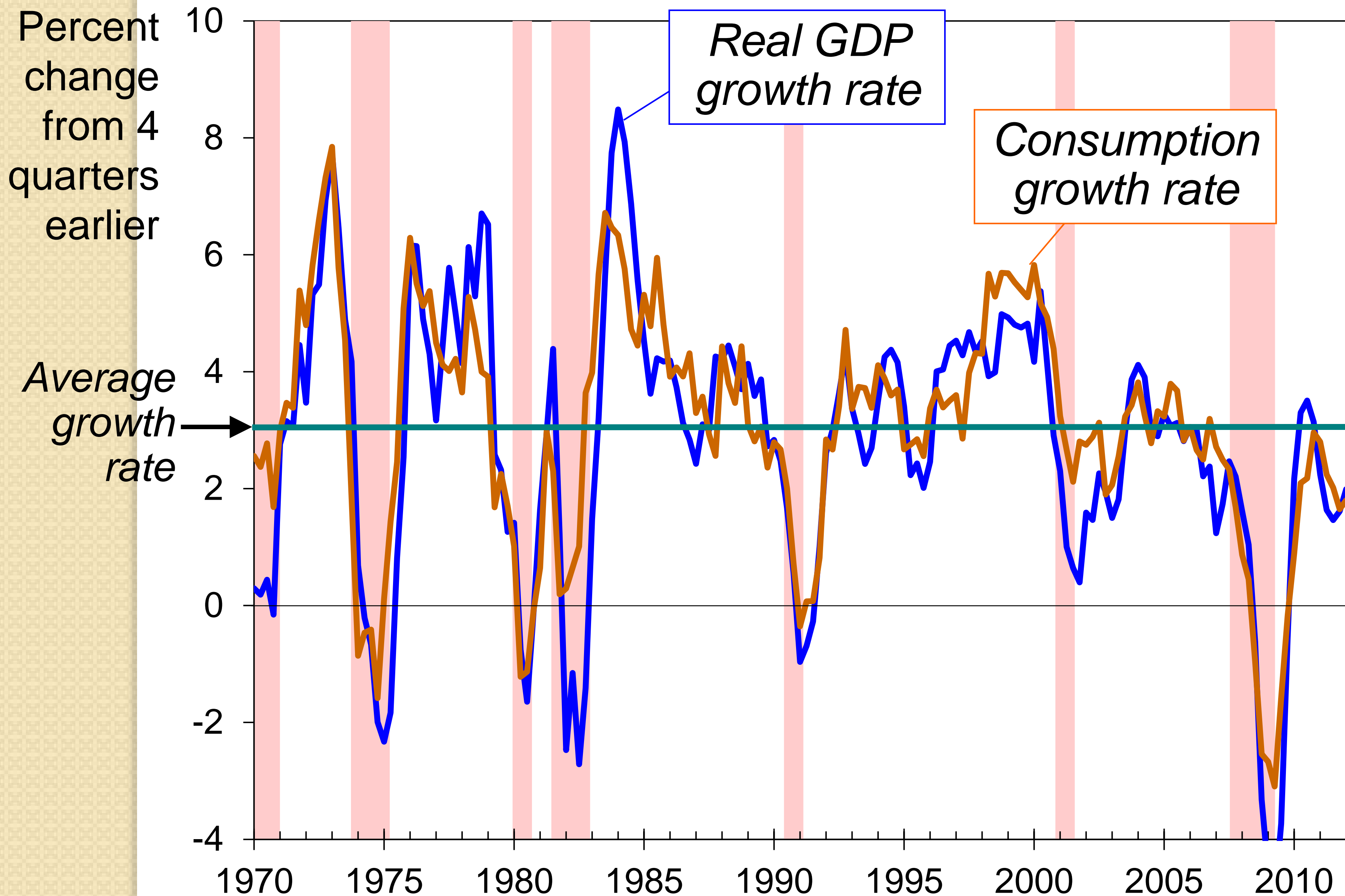
Chapter 10

Introduction to Economic Fluctuations

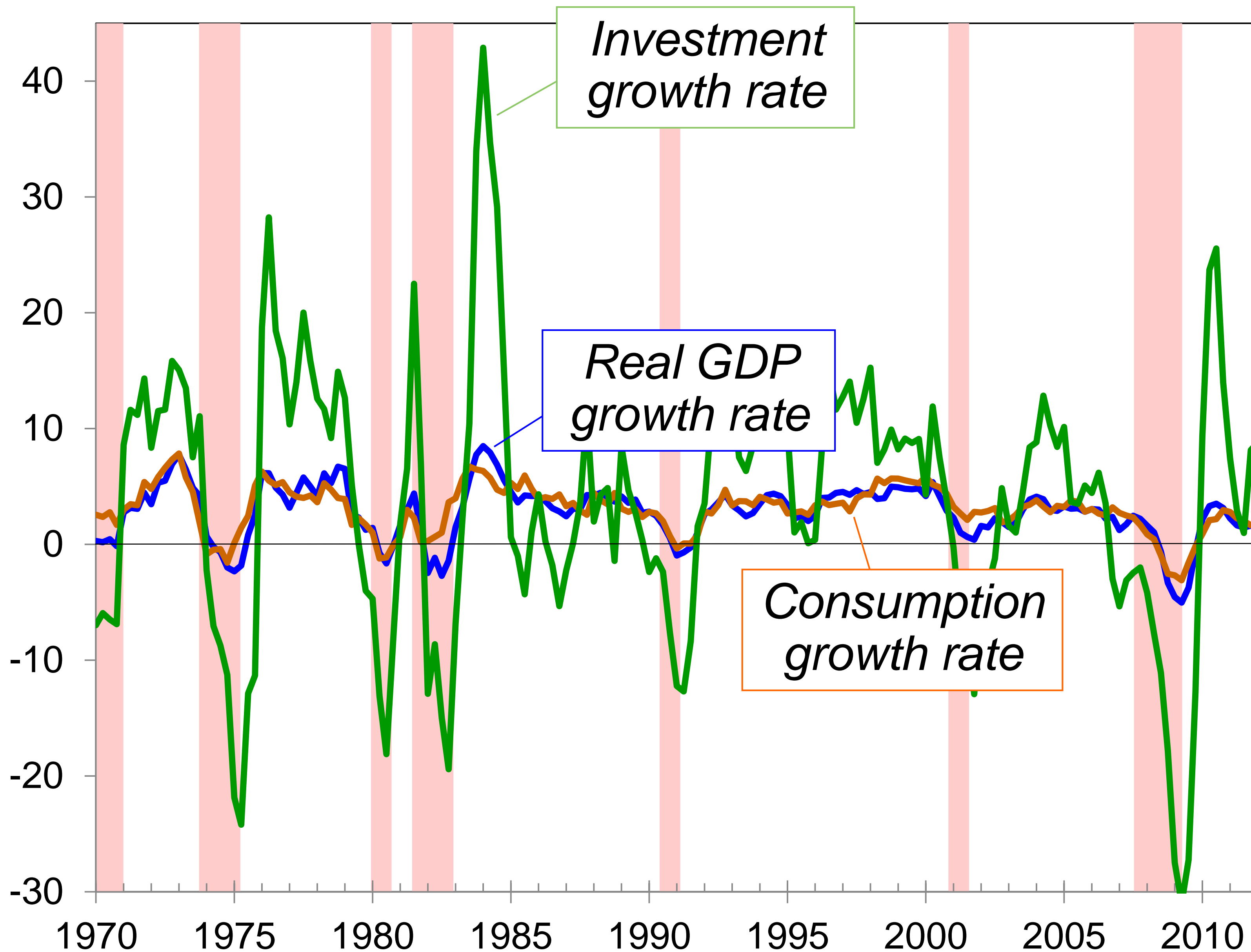
Facts about the business cycle

- GDP growth averages 3–3.5 percent per year
- C (consumption) and I (Investment) fluctuate with GDP
- C tends to be less volatile and I more volatile than GDP.
- Unemployment rises during recessions and falls during expansions (also known as **Okun's law**).

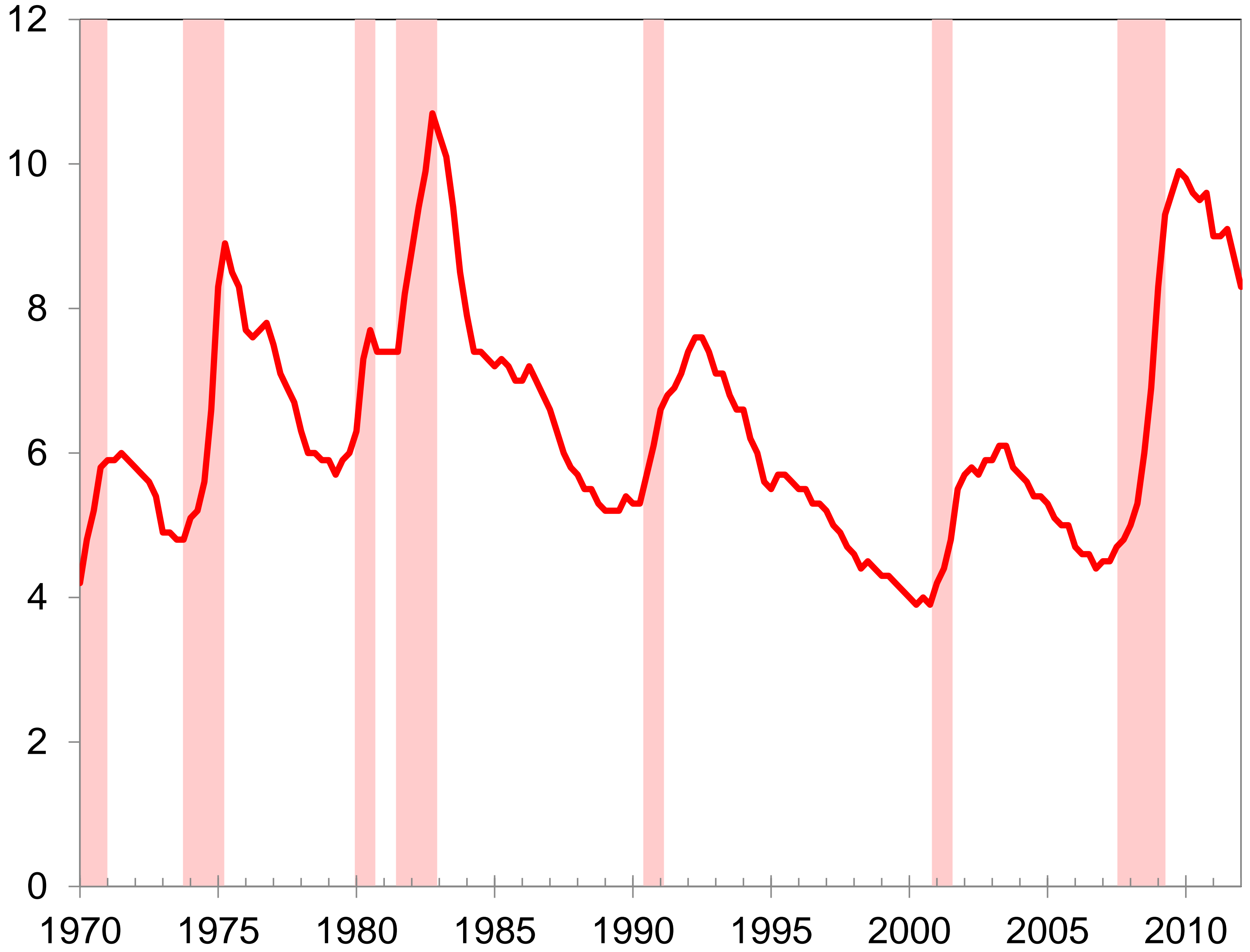
Growth rates of real GDP, consumption



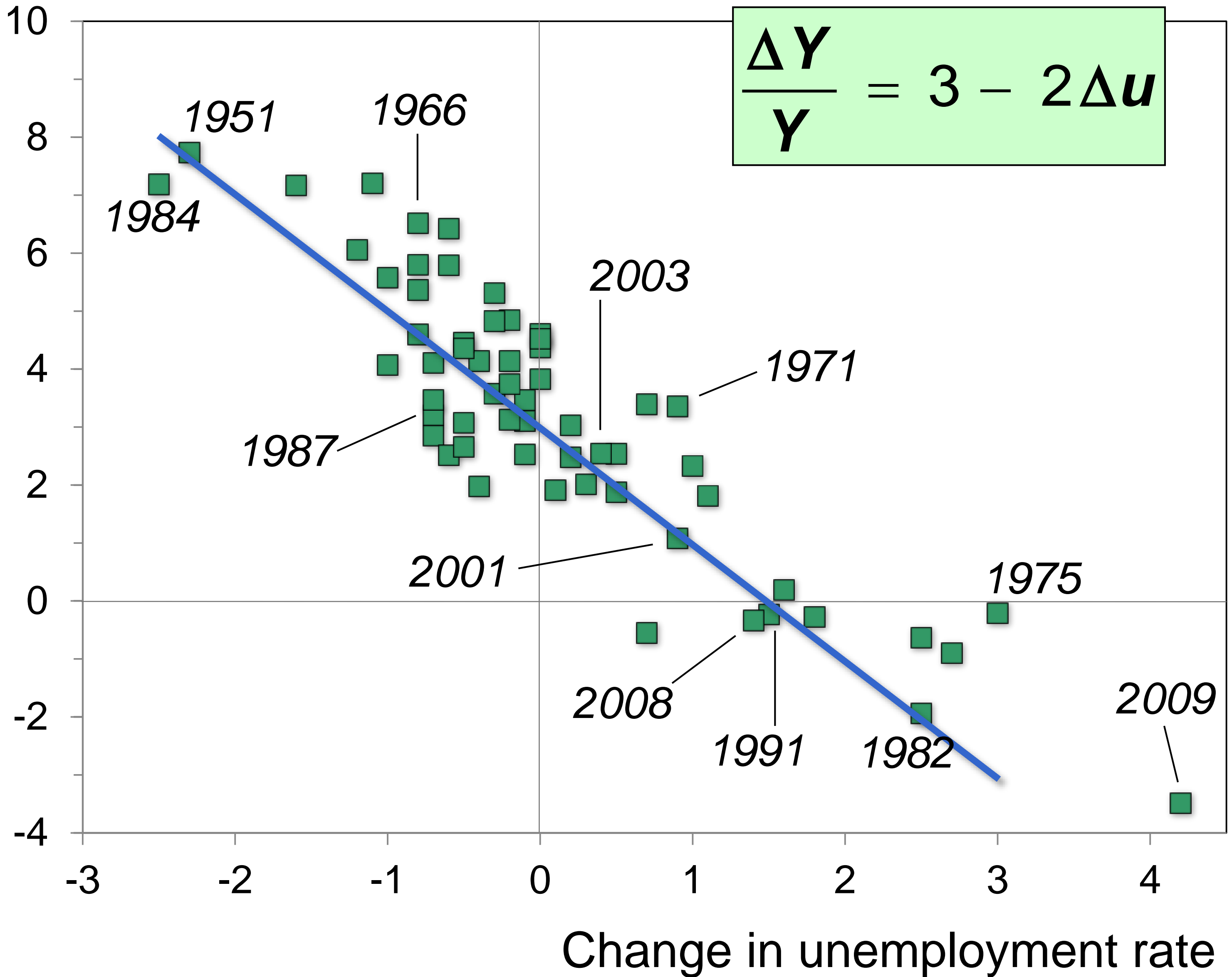
Growth rates of real GDP, consump., investment



Unemployment



Okun's Law



Time horizons in macroeconomics

- Long run
  Prices are flexible, respond to changes in supply or demand.

- Short run
  Many prices are "sticky" at a predetermined level.

The economy behaves much differently when prices are sticky.

Recap of classical macro theory
(Chaps. 3-8)

- Output is determined by the supply side:
  - supplies of capital, labor
  - technology
- Changes in demand for goods & services (C, I, G) only affect prices, not quantities.
- Assumes complete price flexibility.
- Applies to the long run.

When prices are sticky…

…output and employment also depend on demand, which is affected by:

- fiscal policy (G and T)
- monetary policy (M)
- other factors, like exogenous changes in C or I

The model of aggregate demand and supply

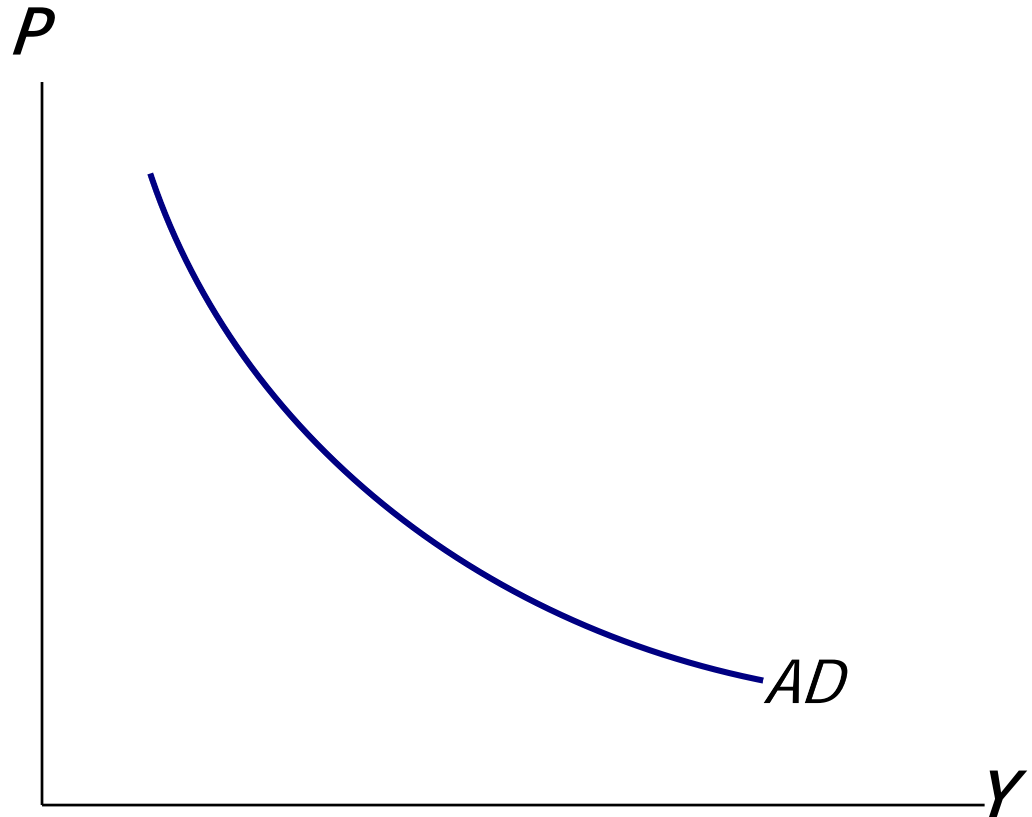
- Used by mainstream economists and policymakers use to think about economic fluctuations and policies
- Shows how the price level and aggregate output are determined
- Shows how the economy's behavior is different in the short run and long run

Aggregate Demand

- The aggregate demand (AD) curve shows the relationship between the price level and the quantity of output demanded.
- Recall the quantity equation $MV = PY$
- For given values of M and V, this equation implies an inverse relationship between P and Y…

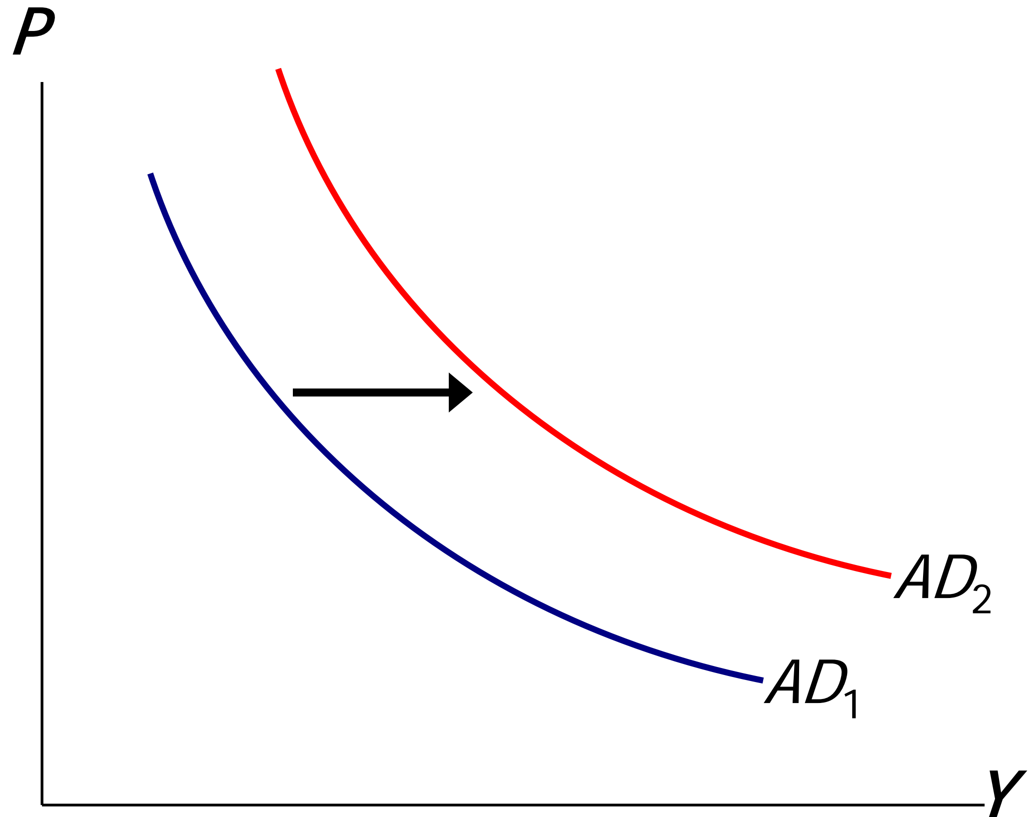
The downward-sloping *AD* curve

An increase in the price level causes a fall in real money balances (***M***/***P***), causing a decrease in the demand for goods & services.



Shifting the *AD* curve

An increase in the money supply shifts the *AD* curve to the right.



Long-Run Aggregate Supply

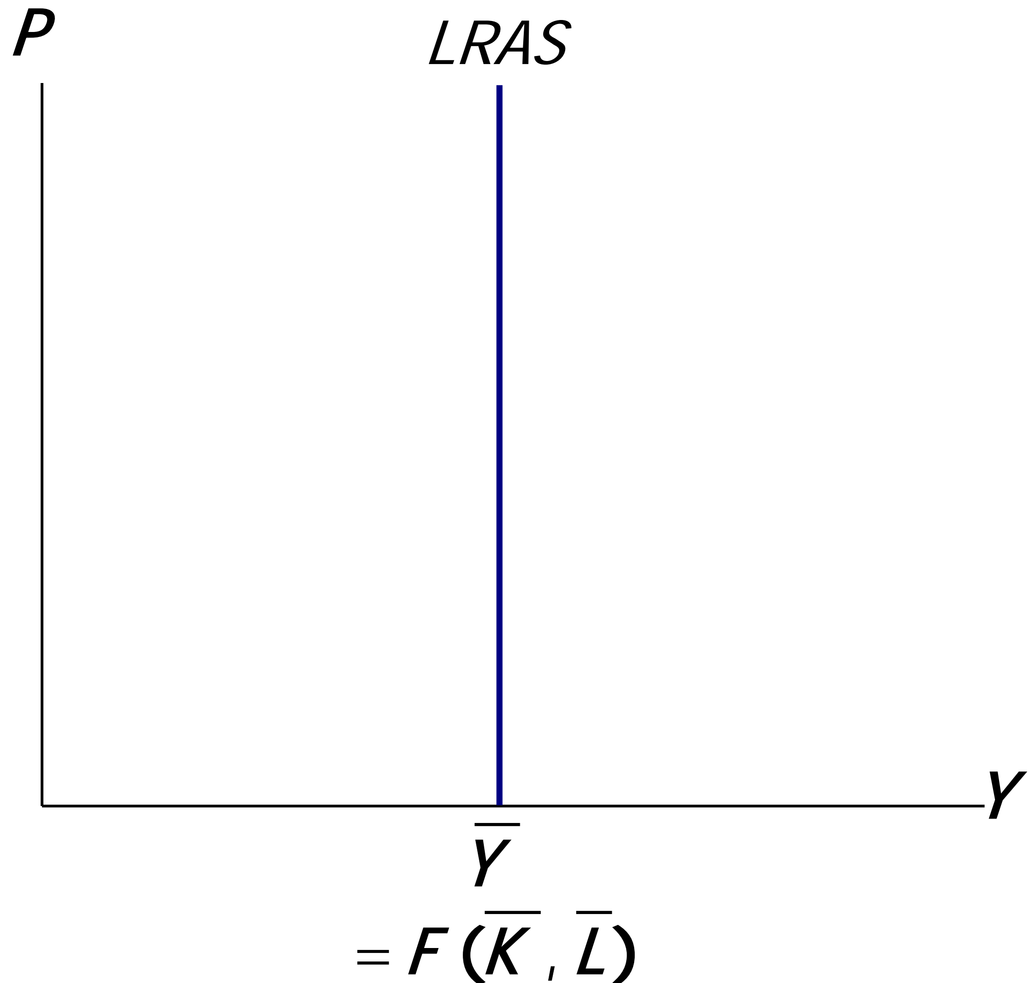
- Recall from Chap. 3, output in the long run is determined by K, L, and technology:

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

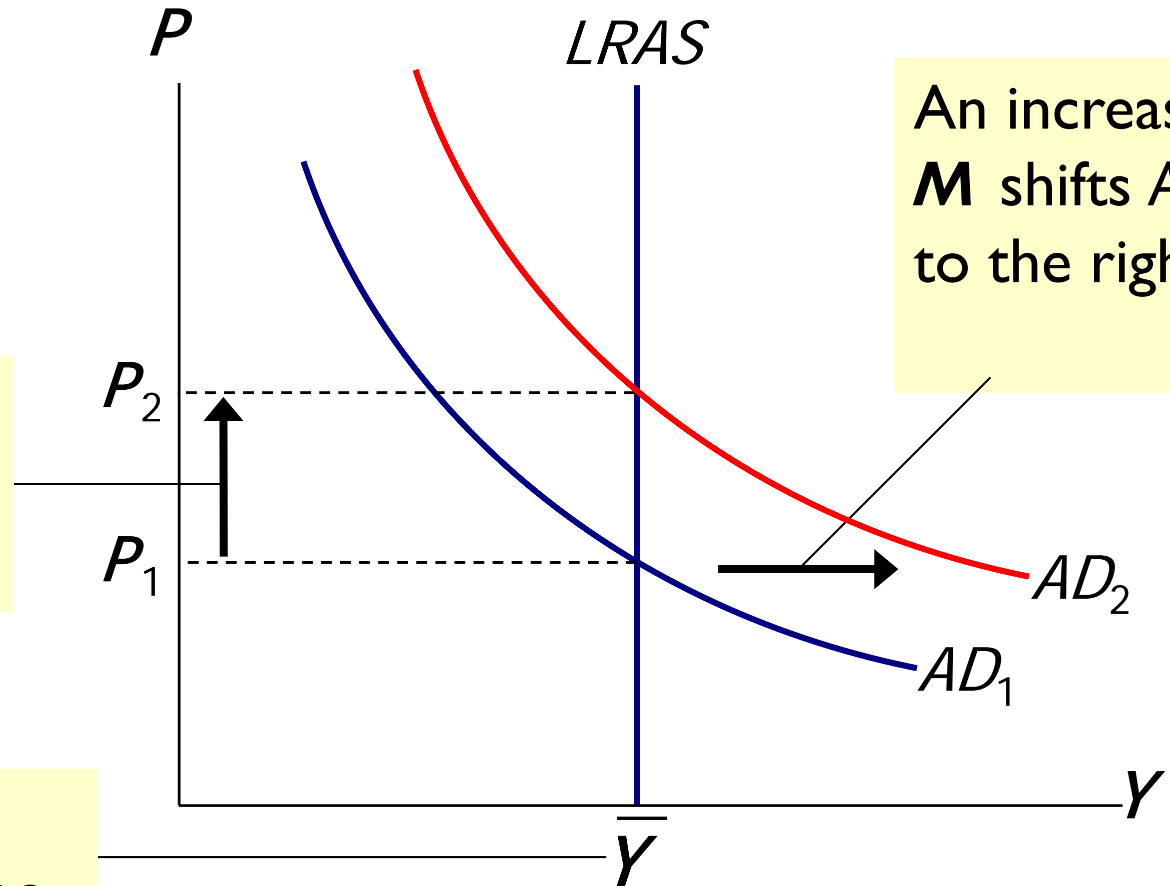
$\overline{Y}$ is the **full-employment** or **natural** level of output, at which the economy's resources are fully employed.

The long-run aggregate supply curve

$\overline{Y}$ does not depend on ***P***, so *LRAS* is vertical.



Long-run effects of an increase in *M*



An increase in ***M*** shifts *AD* to the right.

In the long run, this raises the price level…

…but leaves output the same.

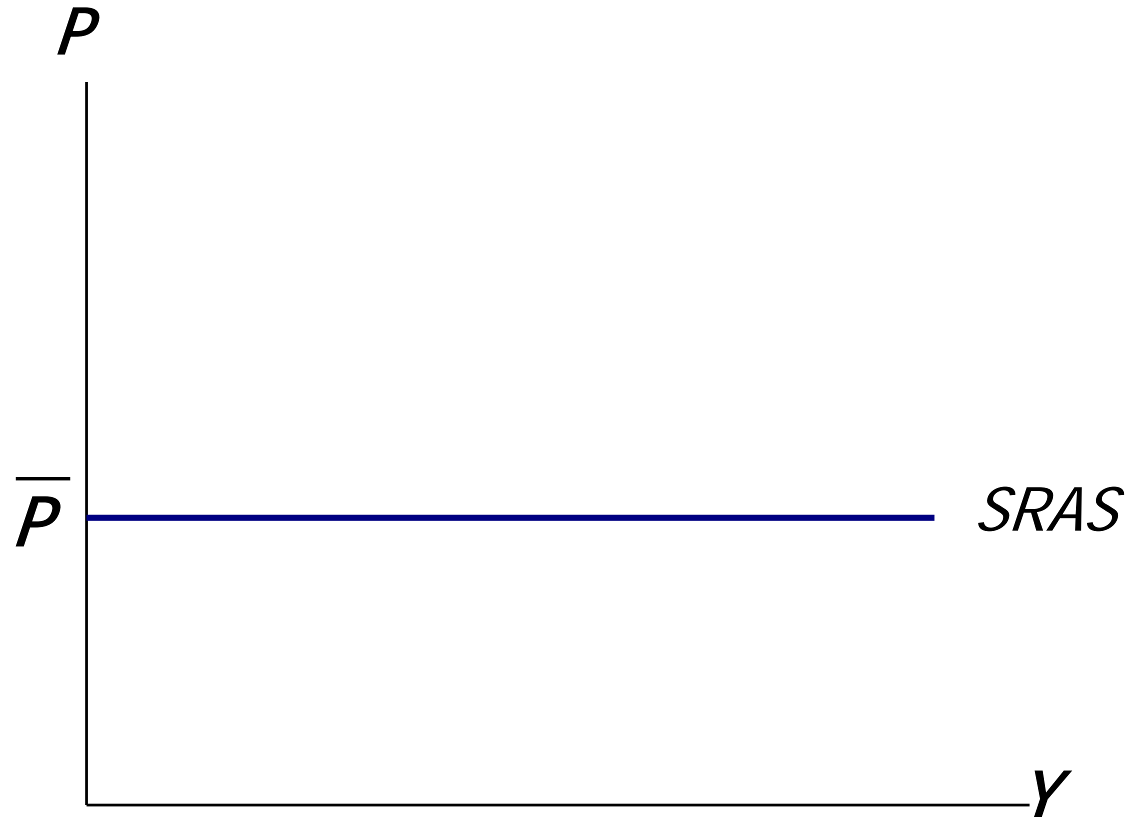
Aggregate supply in the short run

- Many prices are sticky in the short run.
- We now assume
    - all prices are stuck at a predetermined level in the short run.
    - 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

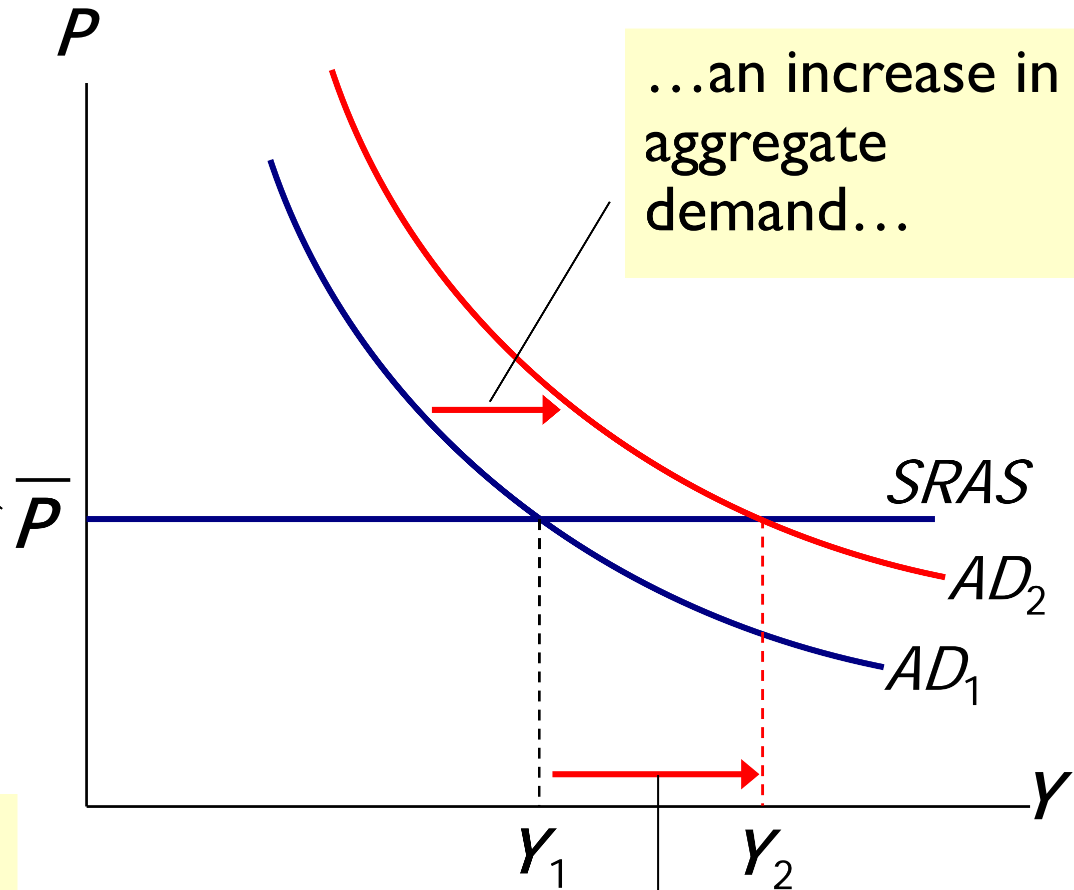
The *SRAS* curve is horizontal:

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,…



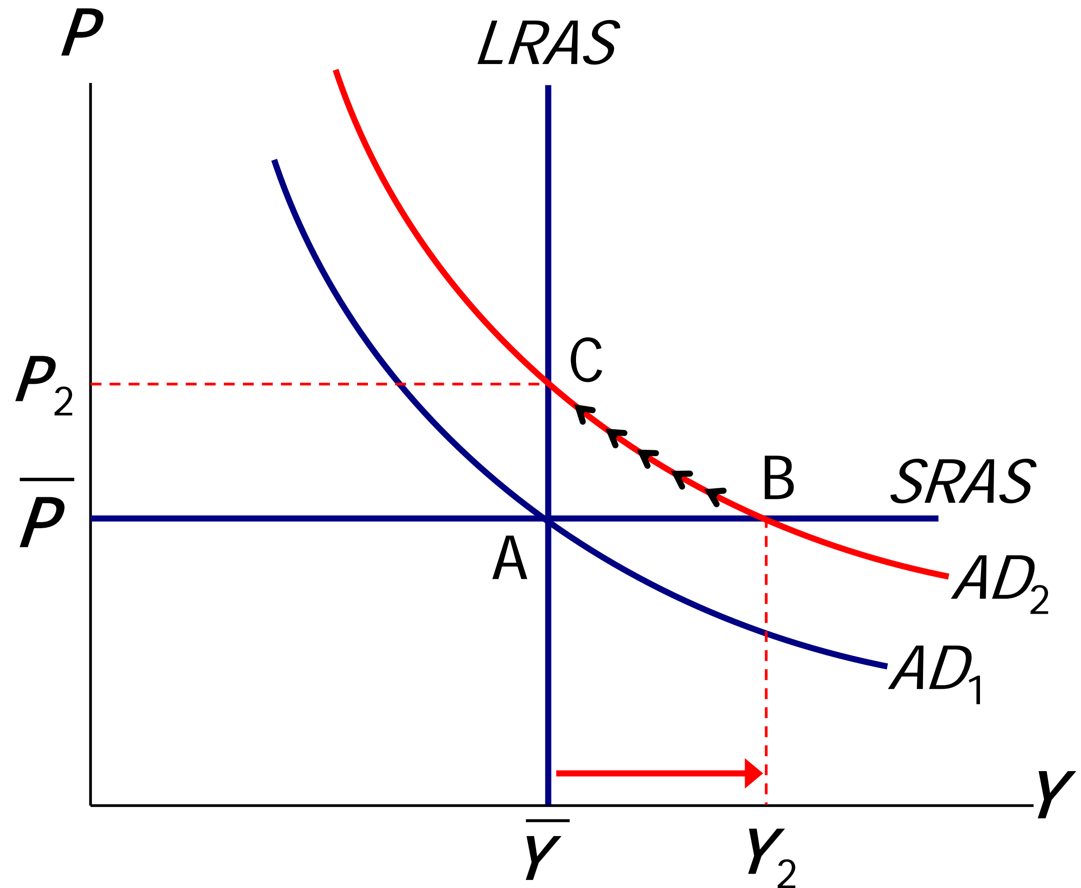
…causes output to rise.

Price Adjustment in the Long Run

A = initial equilibrium

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

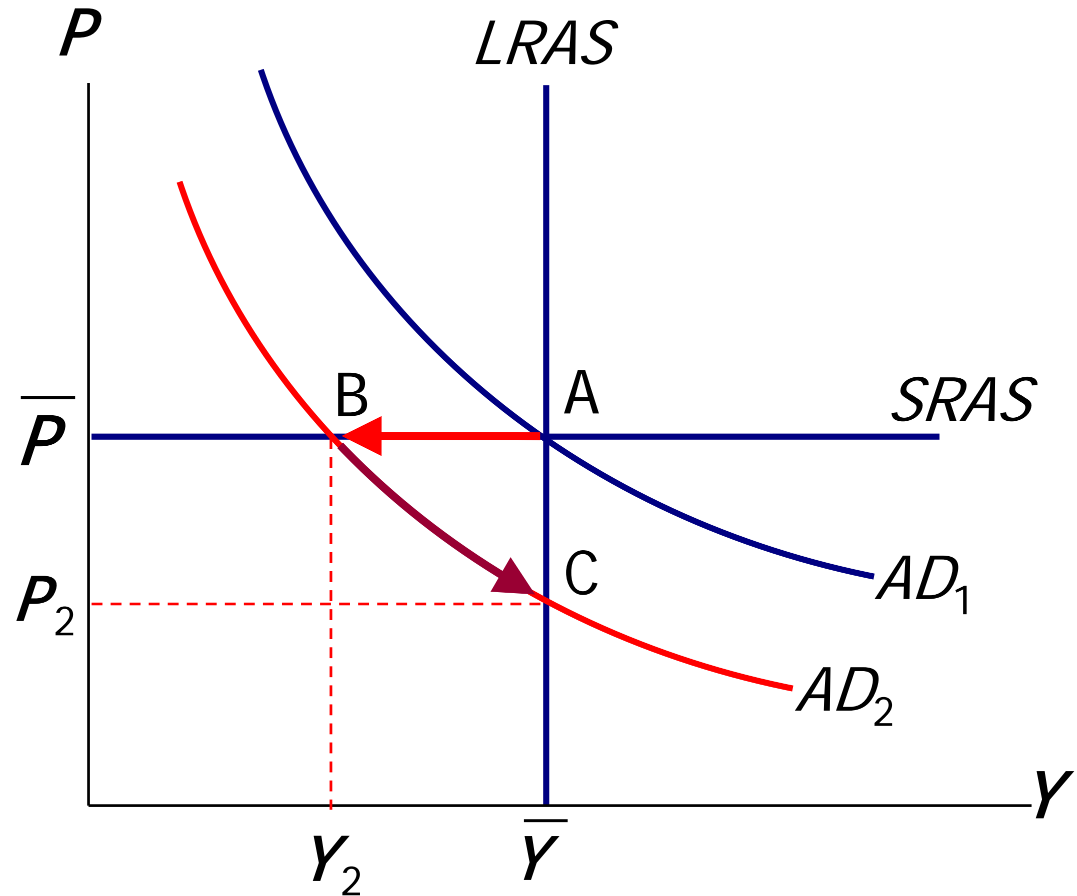
C = long-run equilibrium



The effects of a negative demand shock

AD shifts left, depressing output and employment in the short run.

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



Supply shocks

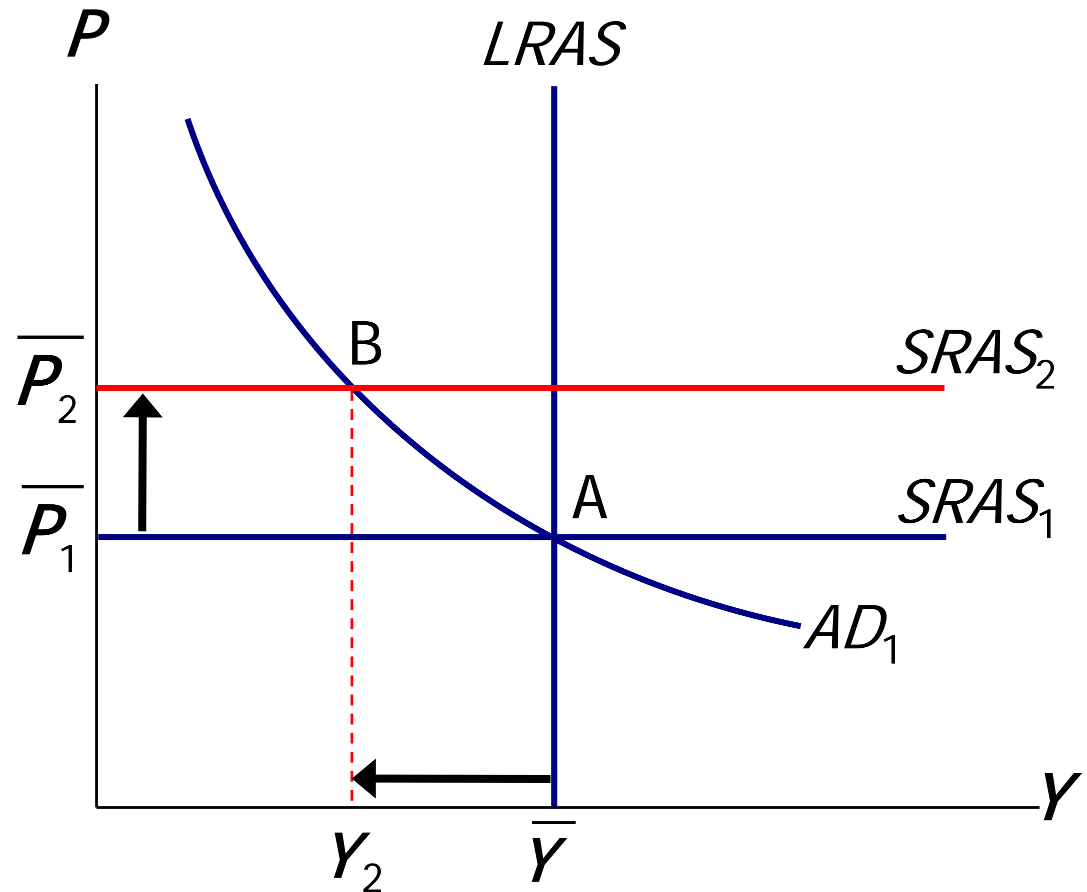
- A **supply shock** alters production costs & affects the prices that firms charge.
- Examples of *adverse* supply shocks:
  - Bad weather reduces crop yields, pushing up food prices.
  - Workers unionize, negotiate wage increases.
  - New environmental regulations require firms to reduce emissions. Firms charge higher prices to help cover the costs of compliance.
- *Favorable* supply shocks lower costs and prices.

Stabilization policy

- Definition: 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 aggregate demand.

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