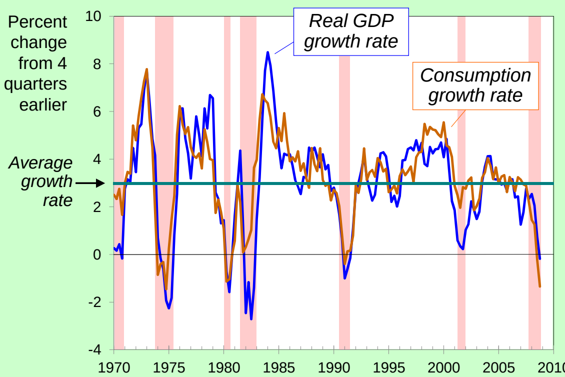
Chapter 9:

Introduction to Economic Fluctuations

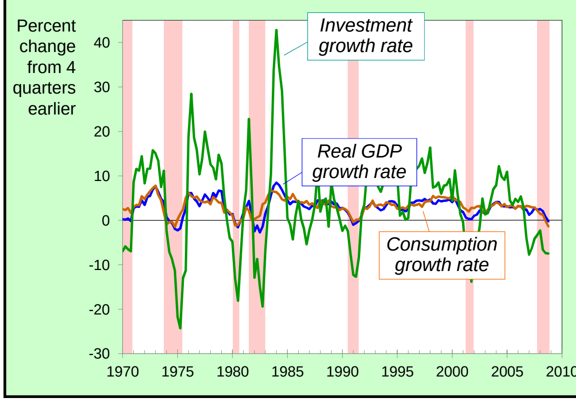
Facts about the business cycle

- GDP growth averages 3–3.5 percent per year over the long run with large fluctuations in the short run.
- Consumption and investment fluctuate with GDP, but consumption tends to be less volatile and investment more volatile than GDP.
- Unemployment rises during recessions and falls during expansions.
- **Okun's Law**: the negative relationship between GDP and unemployment.

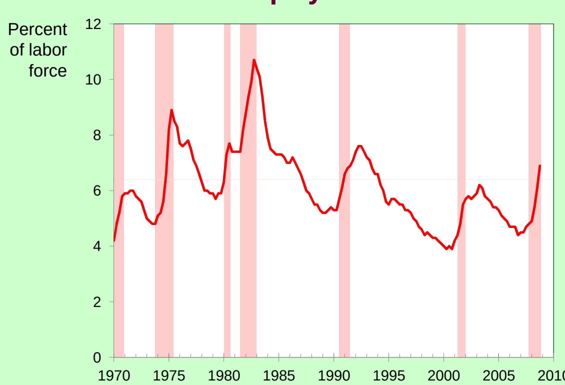
Growth rates of real GDP, consumption



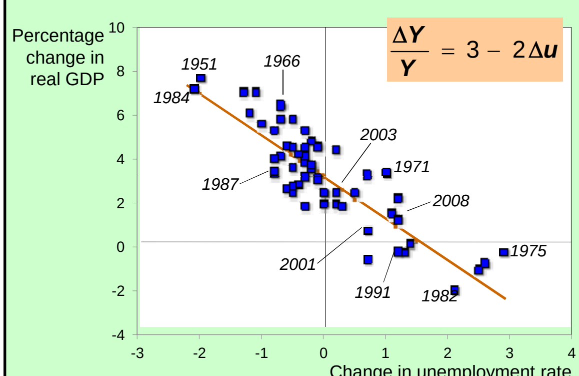
Growth rates of real GDP, consumption, investment



Unemployment



Okun's Law



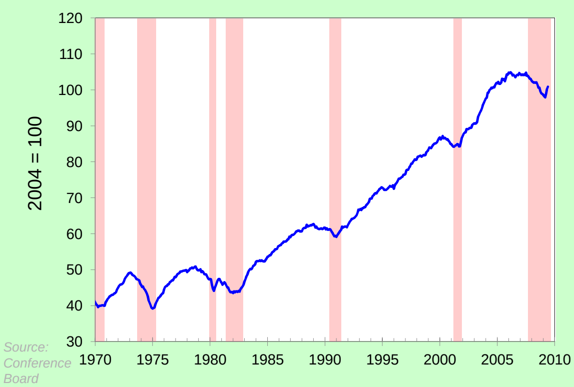
Index of Leading Economic Indicators

- Published monthly by the Conference Board.
- Aims to forecast changes in economic activity 6-9 months into the future.
- Used in planning by businesses and govt, despite not being a perfect predictor.

Components of the LEI index

- Average workweek in manufacturing
- Initial weekly claims for unemployment insurance
- New orders for consumer goods and materials
- New orders, nondefense capital goods
- Vendor performance
- New building permits issued
- Index of stock prices
- M2
- Yield spread (10-year minus 3-month) on Treasuries
- Index of consumer expectations

Index of Leading Economic Indicators



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

- The paradigm most mainstream economists and policymakers use to think about economic fluctuations and policies to stabilize the economy
- 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 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 Aggregate Demand

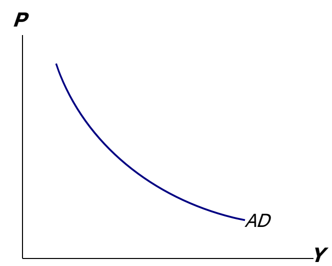
- From Chapter 4, recall the quantity equation

$$MV = PY$$

- For given values of M and V, this equation implies an inverse relationship between P and Y…

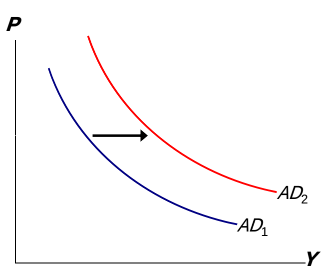
The downward-sloping *AD* curve

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.



Aggregate supply in the long run

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

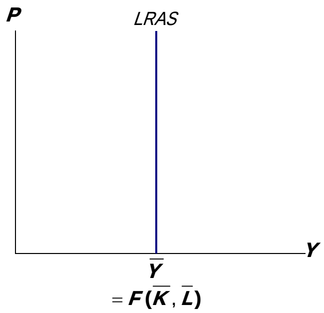
$$\overline{Y} = F(\overline{K}, \overline{L})$$

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

"Full employment" means that unemployment equals its natural rate (not zero).

The long-run aggregate supply curve

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

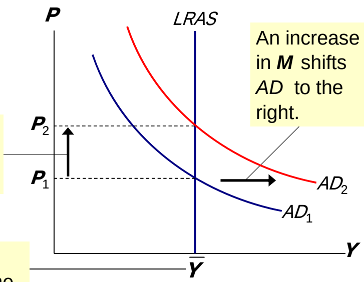


Long-run effects of an increase in *M*

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

In the long run, this raises the price level…

…but leaves output the same.



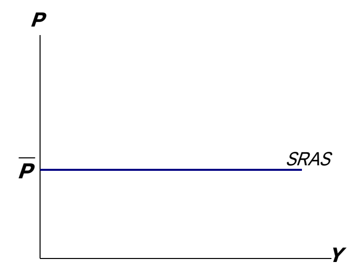
Aggregate supply in the short run

- Many prices are sticky in the short run.
- For now (and through Chap. 12), we 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.

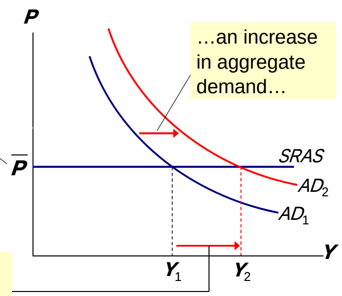


Short-run effects of an increase in *M*

In the short run when prices are sticky,…

…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, ***P*** will…
$Y > \overline{Y}$	*rise*
$Y < \overline{Y}$	*fall*
$Y = \overline{Y}$	*remain constant*

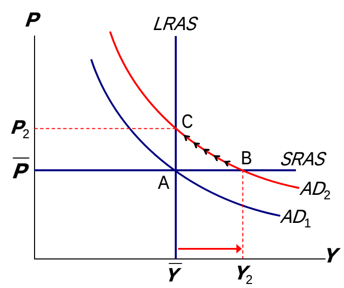
The adjustment of prices is what moves the economy to its long-run equilibrium.

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



How shocking!!!

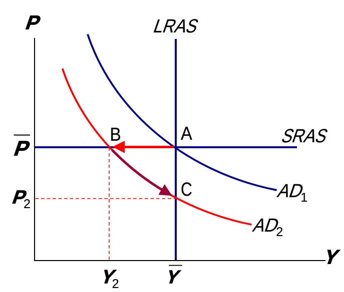
- **shocks**: exogenous changes in agg. supply or demand
- Shocks temporarily push the economy away from full employment.
- Example: exogenous decrease in velocity

  If the money supply is held constant, 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

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. (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.

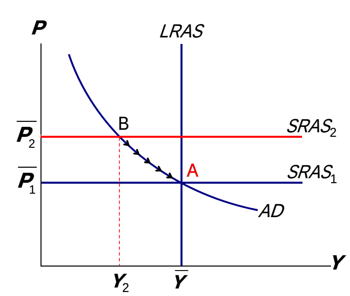
CASE STUDY: The 1970s oil shocks

- 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.

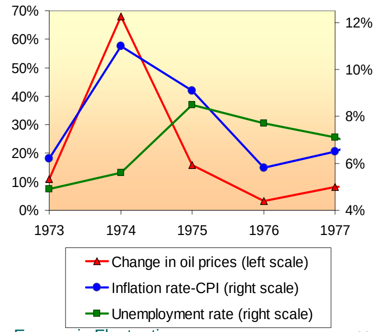
In absence of further price shocks, prices will fall over time and economy moves back toward full employment.



CASE STUDY:
The 1970s oil shocks

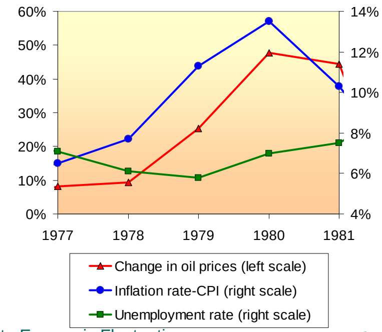
Predicted effects of the oil shock:
- inflation ↑
- output ↓
- unemployment ↑

…and then a gradual recovery.



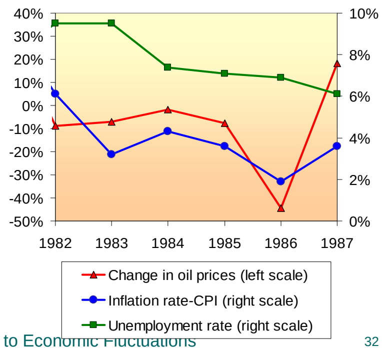
CASE STUDY:
The 1970s oil shocks

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



CASE STUDY:
The 1980s oil shocks

1980s:
A favorable supply shock--a significant fall in oil prices.
As the model predicts, inflation and unemployment fell:

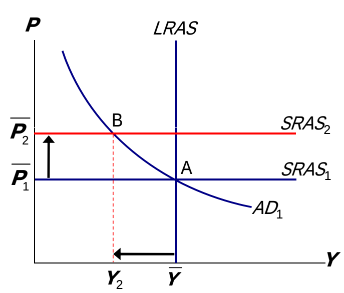


Stabilization policy

- 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

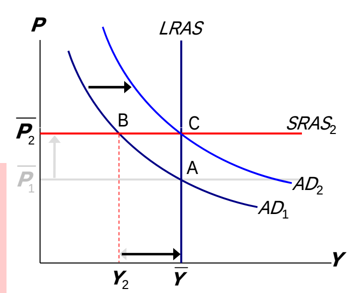
The adverse supply shock moves the economy to point B.



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.



Chapter 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

Chapter Summary

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.

Chapter Summary

6. Shocks to aggregate demand and supply cause fluctuations in GDP and employment in the short run.
7. The Fed can attempt to stabilize the economy with monetary policy.