N. Gregory Mankiw

Principles of
Economics
Sixth Edition

33

Aggregate Demand and Aggregate Supply

Premium PowerPoint Slides by Ron Cronovich

In this chapter, look for the answers to these questions:

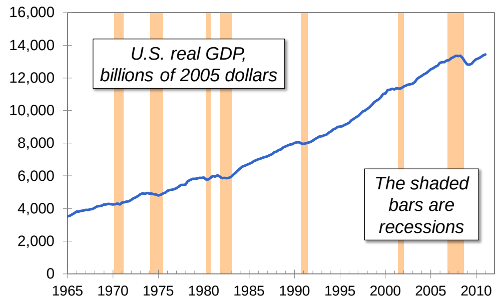
- What are economic fluctuations? What are their characteristics?
- How does the model of aggregate demand and aggregate supply explain economic fluctuations?
- Why does the Aggregate-Demand curve slope downward? What shifts the *AD* curve?
- What is the slope of the Aggregate-Supply curve in the short run? In the long run? What shifts the *AS* curve(s)?

Introduction

- Over the long run, real GDP grows about 3% per year on average.
- In the short run,
  - **Recessions**:
  - **Depressions**:
- Short-run economic fluctuations are often called

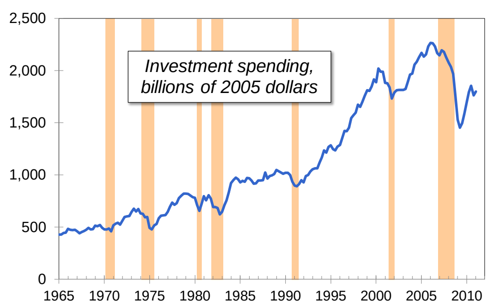
Three Facts About Economic Fluctuations

FACT 1:



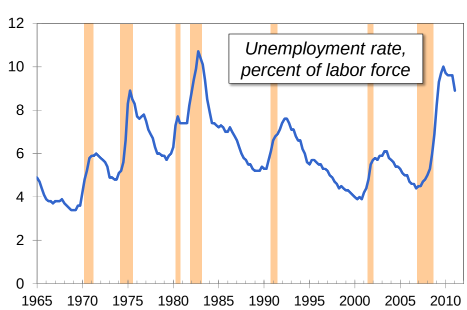
Three Facts About Economic Fluctuations

FACT 2:



Three Facts About Economic Fluctuations

FACT 3:



Introduction, *continued*

- Explaining these fluctuations is difficult, and the theory of economic fluctuations is controversial.
- Most economists use the **model of aggregate demand and aggregate supply** to study fluctuations.
- This model differs from the classical economic theories economists use to explain the long run.

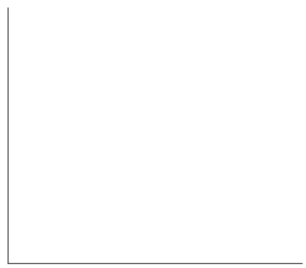
Classical Economics—A Recap

- The previous chapters are based on the ideas of classical economics, especially:
- The **Classical Dichotomy**, the separation of variables into two groups:
  - Real – quantities, relative prices
  - Nominal – measured in terms of money
- The **neutrality of money**:

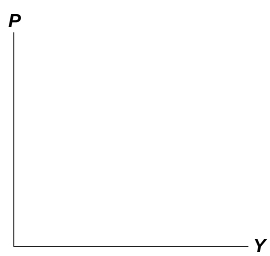
Classical Economics—A Recap

- Most economists believe classical theory describes the world
- In the short run,
- To study the short run, we use a new model.

The Model of Aggregate Demand and Aggregate Supply



The Aggregate-Demand (*AD*) Curve

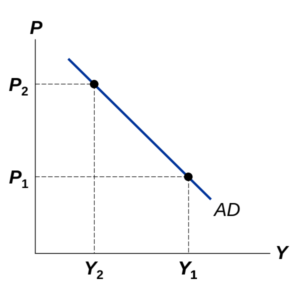


Why the *AD* Curve Slopes Downward

Y = ***C*** + ***I*** + ***G*** + ***NX***

Assume

To understand
the slope of *AD*,
must determine how



The Wealth Effect (*P* and *C*)

Suppose ***P*** rises.

Result:

12

The Interest-Rate Effect (*P* and *I*)

Suppose ***P*** rises.

Result:

13

The Exchange-Rate Effect (*P* and *NX*)

Suppose ***P*** rises.

- U.S. interest rates rise (the interest-rate effect).

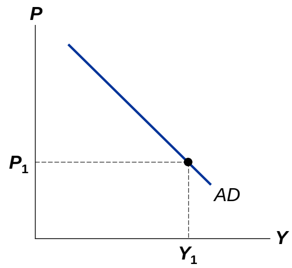
Result:

14

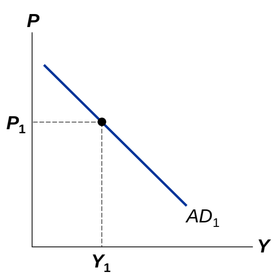
The Slope of the *AD* Curve: Summary

An increase in ***P***

- the wealth effect (***C*** falls)
- the interest-rate effect (***I*** falls)
- the exchange-rate effect (***NX*** falls)



Why the *AD* Curve Might Shift



Example:
A stock market boom makes households feel wealthier, ***C*** rises, the *AD* curve shifts right.

Why the *AD* Curve Might Shift

- Changes in
- Changes in

Why the *AD* Curve Might Shift

- Changes in
- Changes in

ACTIVE LEARNING 1

The Aggregate-Demand curve

What happens to the *AD* curve in each of the following scenarios?

A. A ten-year-old investment tax credit expires.

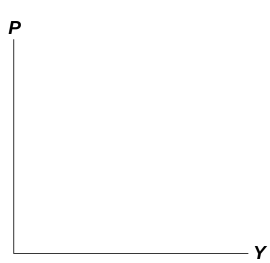
B. The U.S. exchange rate falls.

C. A fall in prices increases the real value of consumers' wealth.

D. State governments replace their sales taxes with new taxes on interest, dividends, and capital gains.

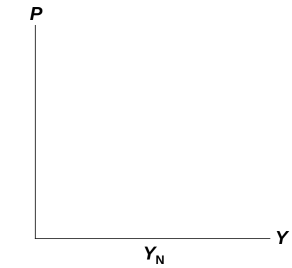
The Aggregate-Supply (*AS*) Curves

The ***AS* curve** shows



The Long-Run Aggregate-Supply Curve (*LRAS*)

The **natural rate of output** (*Y_N*)

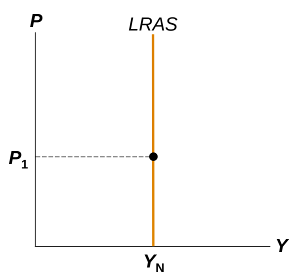


Y_N is also called **potential output** or **full-employment output**.

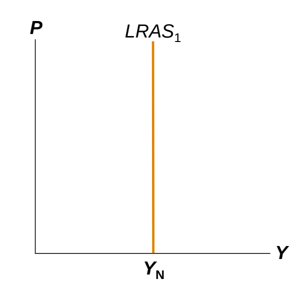
Why *LRAS* Is Vertical

Y_N determined by

An increase in ***P***



Why the *LRAS* Curve Might Shift



Example:
Immigration increases ***L***,
causing *Y_N* to rise.

Why the *LRAS* Curve Might Shift

- Changes in
- Changes in

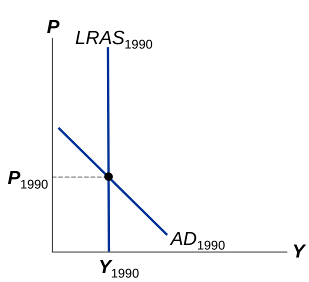
Why the *LRAS* Curve Might Shift

- Changes in
- Changes in

Using *AD* & *AS* to Depict Long-Run Growth and Inflation

Over the long run,

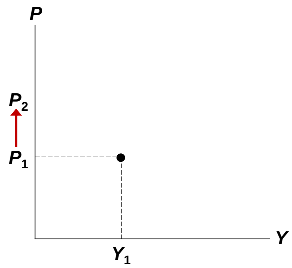
Result:



Short Run Aggregate Supply (*SRAS*)

The *SRAS* curve

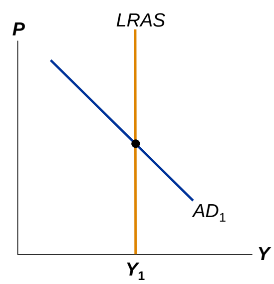
Over the period of 1–2 years, an increase in ***P***



Why the Slope of *SRAS* Matters

If *AS* is vertical, fluctuations in *AD* do not cause fluctuations in output or employment.

If *AS* slopes up,



Three Theories of *SRAS*

In each,

- some type of market imperfection
- result:

1. The Sticky-Wage Theory

- Imperfection:
  Nominal wages are **sticky** in the short run,
- Firms and workers set the nominal wage in advance based on P_E, the price level they expect to prevail.

31

1. The Sticky-Wage Theory

- If $P > P_E$,
- Hence, higher P causes higher Y, so the ***SRAS curve slopes upward***.

32

2. The Sticky-Price Theory

- Imperfection:
  - Due to
  - Examples: cost of printing new menus, the time required to change price tags
- Firms

33

2. The Sticky-Price Theory

- Suppose the Fed increases the money supply unexpectedly. In the long run, ***P*** will rise.
- In the short run, firms without menu costs
- Firms with menu costs
  Meanwhile, their prices are relatively low,
- Hence, higher ***P*** is associated with higher ***Y***, so the ***SRAS curve slopes upward***.

3. The Misperceptions Theory

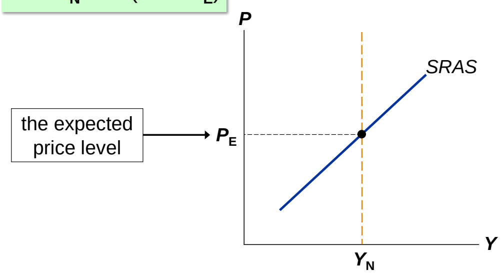
- Imperfection:
- If ***P*** rises above P_E, a firm sees its price rise before realizing all prices are rising.
- So, an increase in ***P*** can cause an increase in ***Y***, making the ***SRAS curve upward-sloping.***

What the 3 Theories Have in Common:

In all 3 theories, ***Y*** deviates from Y_N when ***P*** deviates from P_E.

What the 3 Theories Have in Common:

$Y = Y_N + a(P - P_E)$



37

SRAS and *LRAS*

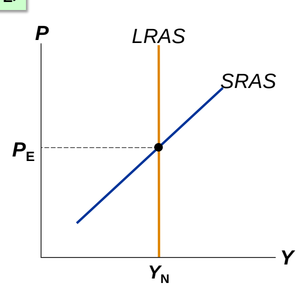
- The imperfections in these theories are temporary. Over time,
- In the LR,

38

SRAS and *LRAS*

$Y = Y_N + a(P - P_E)$

In the long run,
$P_E = P$
and
$Y = Y_N$.



39

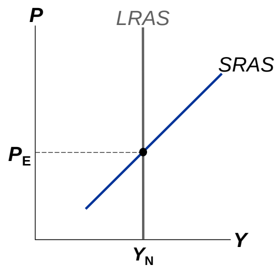
Why the *SRAS* Curve Might Shift

Everything that shifts *LRAS* shifts *SRAS*, too.

Also,

If P_E rises, workers & firms set higher wages.

At each ***P***,



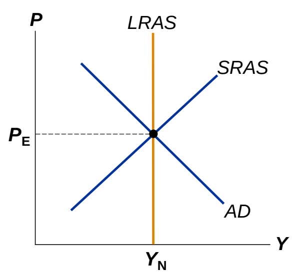
The Long-Run Equilibrium

In the long-run equilibrium,

$P_E = P$,

$Y = Y_N$,

and unemployment is at its natural rate.



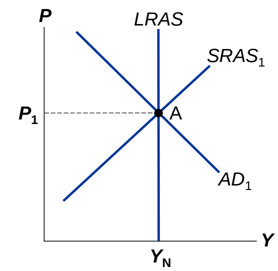
Economic Fluctuations

- Caused by

- Four steps to analyzing economic fluctuations:
  1. Determine whether the event shifts *AD* or *AS*.
  2. Determine whether curve shifts left or right.
  3. Use *AD–AS* diagram to see how the shift changes ***Y*** and ***P*** in the short run.
  4. Use *AD–AS* diagram to see how economy moves from new SR eq'm to new LR eq'm.

The Effects of a Shift in *AD*

Event: Stock market crash

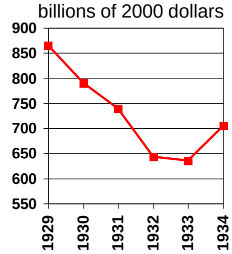


Two Big *AD* Shifts:
1. The Great Depression

From 1929–1933,

- money supply
- stock prices
- *Y*
- *P*
- u-rate

U.S. Real GDP, billions of 2000 dollars

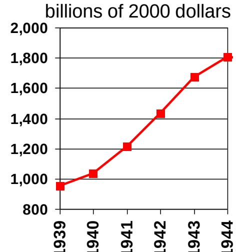


Two Big *AD* Shifts:
2. The World War II Boom

From 1939–1944,

- govt outlays
- *Y*
- *P*
- unemployment

U.S. Real GDP, billions of 2000 dollars



ACTIVE LEARNING **2**

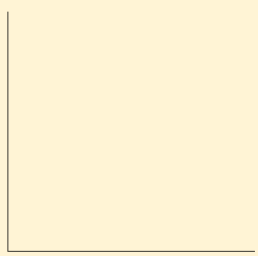
Working with the model

- Draw the *AD-SRAS-LRAS* diagram for the U.S. economy starting in a long-run equilibrium.
- A boom occurs in Canada. Use your diagram to determine the SR and LR effects on U.S. GDP, the price level, and unemployment.

ACTIVE LEARNING **2**

Answers

Event: Boom in Canada

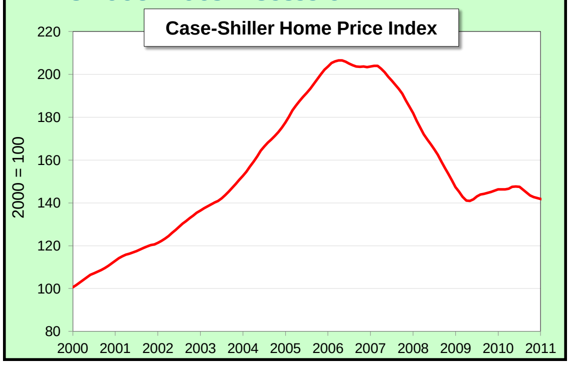


CASE STUDY:

The 2008–2009 Recession

- From 12/2007 to 6/2009, real GDP fell about 4%
- Unemployment rose from 4.4% in 5/2007 to 10.1% in 10/2009
- The housing market played a central role in this recession…

CASE STUDY: The 2008–2009 Recession



CASE STUDY: The 2008–2009 Recession

Rising house prices during 2002–2006 due to:

-
-
- government policies to increase homeownership
- securitization of mortgages:
  -
  - Mortgage-backed securities perceived as safe, since house prices "never fall"

CASE STUDY: The 2008–2009 Recession

Consequences of 2006–2009 housing market crash:

- Millions of homeowners
- Millions of mortgage defaults and foreclosures
- Banks selling foreclosed houses increased surplus and downward price pressures
- Housing crash badly damaged construction industry: 2010 unemployment rate was 20.6% in construction vs. 9.6% overall

CASE STUDY: The 2008–2009 Recession

Consequences of 2006–2009 housing market crash:

- Mortgage-backed securities became “toxic,”
- Sharply rising unemployment and falling GDP

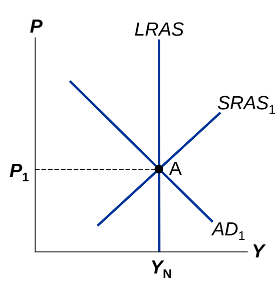
CASE STUDY: The 2008–2009 Recession

The policy response:

- Federal Reserve
- Federal Reserve
- U.S. Treasury
- Fiscal policymakers

The Effects of a Shift in *SRAS*

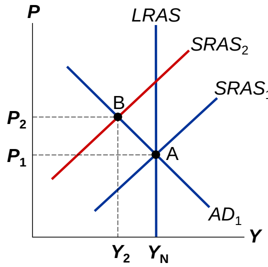
Event: Oil prices rise



Accommodating an Adverse Shift in *SRAS*

If policymakers do nothing,

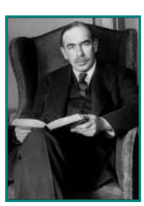
Or, policymakers could



The 1970s Oil Shocks and Their Effects

	1973–75	1978–80
Real oil prices	+ 138%	+ 99%
CPI	+ 21%	+ 26%
Real GDP	– 0.7%	+ 2.9%
# of unemployed persons	+ 3.5 million	+ 1.4 million

John Maynard Keynes, 1883–1946



- *The General Theory of Employment, Interest, and Money*, 1936
- Argued recessions and depressions can result from inadequate demand; policymakers should shift *AD*.
- Famous critique of classical theory:
  The long run is a misleading guide to current affairs. In the long run, we are all dead. Economists set themselves too easy, too useless a task if in tempestuous seasons they can only tell us when the storm is long past, the ocean will be flat.

CONCLUSION

- This chapter has introduced the model of aggregate demand and aggregate supply, which helps explain economic fluctuations.
- Keep in mind:
- In the next chapter, we will learn how policymakers can affect aggregate demand with fiscal and monetary policy.