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

U.S. real GDP, billions of 2000 dollars

The shaded bars are recessions

Investment spending, billions of 2000 dollars

Unemployment rate, percent of labor force

Three Facts About Economic Fluctuations
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 long run, but not the short run.

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:

The Interest-Rate Effect (P and I)
Suppose $P$ rises.

Result:

The Exchange-Rate Effect (P and NX)
Suppose $P$ rises.
- U.S. interest rates rise (the interest-rate effect).

Result:
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 $P$ versus $Y$.

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7
The Long-Run Aggregate-Supply Curve (LRAS)

The natural rate of output ($Y_n$) is $Y_n$. $Y_n$ is also called potential output or full-employment output.

Why LRAS Is Vertical

$Y_n$ is determined by $P$. An increase in $P$ causes $Y_n$ to rise.

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

- Changes in

---

Using AD & AS to Depict LR 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.

- If $P > P_E$,

- Hence, higher $P$ causes higher $Y$, so the SRAS curve slopes upward.

2. The Sticky-Price Theory

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

\[ Y = Y_N + \alpha (P - P_E) \]

SRAS and LRAS

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

- In the LR,

\[ P_E = P \]

\[ Y = Y_N \]
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 $P$, $Y = Y_N$.

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

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

1929 1930 1931 1932 1933 1934

1939 1940 1941 1942 1943 1944

800 1,000 1,200 1,400 1,600 1,800 2,000
1. Draw the $AD$-$SRAS$-$LRAS$ diagram for the U.S. economy starting in a long-run equilibrium.

2. A boom occurs in Canada. Use your diagram to determine the SR and LR effects on U.S. GDP, the price level, and unemployment.
Accommodating an Adverse Shift in SRAS

If policymakers do nothing,

Or, policymakers could

The 1970s Oil Shocks and Their Effects

<table>
<thead>
<tr>
<th></th>
<th>1973-75</th>
<th>1978-80</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real oil prices</td>
<td>+ 138%</td>
<td>+ 99%</td>
</tr>
<tr>
<td>CPI</td>
<td>+ 21%</td>
<td>+ 26%</td>
</tr>
<tr>
<td>Real GDP</td>
<td>− 0.7%</td>
<td>+ 2.9%</td>
</tr>
<tr>
<td># of unemployed persons</td>
<td>+ 3.5 million</td>
<td>+ 1.4 million</td>
</tr>
</tbody>
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John Maynard Keynes, 1883-1946

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.