

CHAPTER 20

Aggregate Demand and Aggregate Supply

PRINCIPLES OF
Macroeconomics
N. Gregory Mankiw

Premium PowerPoint Slides
by Ron Cronovich

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**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)?

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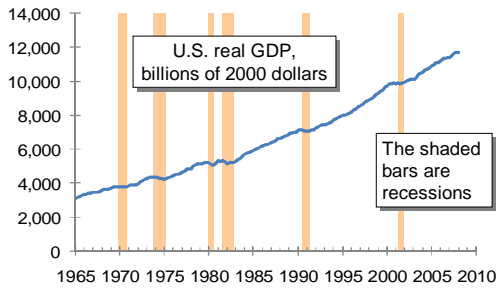
Introduction

- § 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

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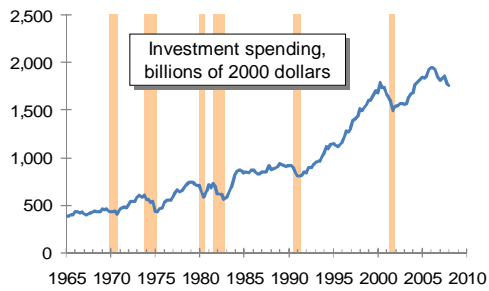
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Three Facts About Economic Fluctuations



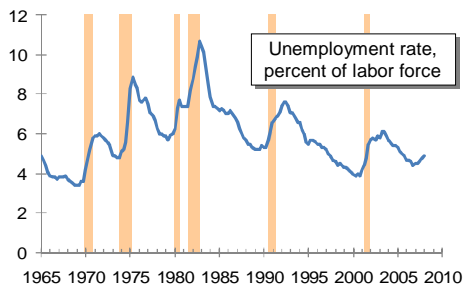
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Three Facts About Economic Fluctuations



4

Three Facts About Economic Fluctuations



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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

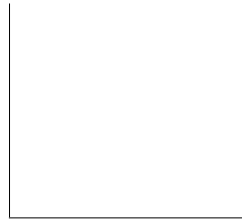
- § The previous chapters are based on the ideas of classical economics, especially:
- § The **Classical Dichotomy**, the separation of variables into two groups:
 - § Real – quantities, relative prices
 - § Nominal – measured in terms of money
- § The **neutrality of money**:

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.

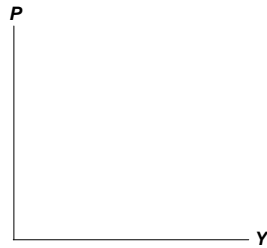
The Model of Aggregate Demand and Aggregate Supply



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The Aggregate-Demand (AD) Curve



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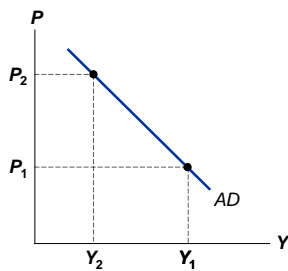
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Why the AD Curve Slopes Downward

$$Y = C + I + G + NX$$

Assume

To understand the slope of AD, must determine how



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

Suppose *P* rises.

Result:

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

Suppose *P* rises.

Result:

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

Suppose *P* rises.

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

Result:

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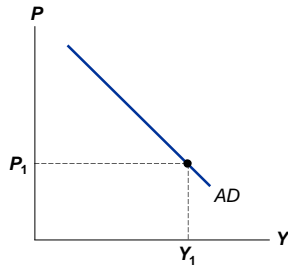
The Slope of the AD Curve: Summary

An increase in P

§ the wealth effect
(C falls)

§ the interest-rate
effect (I falls)

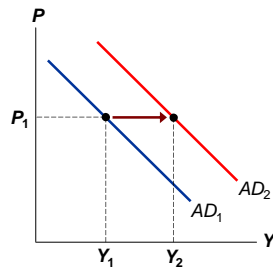
§ the exchange-rate
effect (NX falls)



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Why the AD Curve Might Shift



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

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Why the AD Curve Might Shift

§ Changes in

§ Changes in

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Why the AD Curve Might Shift

§ Changes in

§ Changes in

ACTIVE LEARNING 1

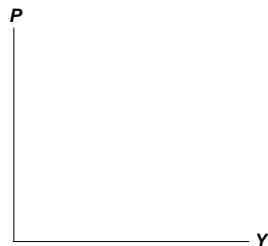
The Aggregate-Demand curve

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

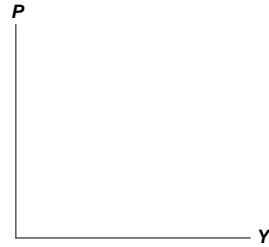
The AS curve shows



The Long-Run Aggregate-Supply Curve (LRAS)

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

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



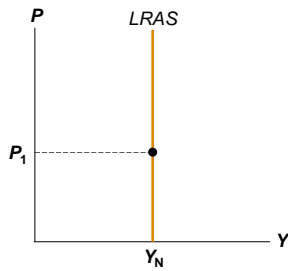
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Why LRAS Is Vertical

Y_N determined by

An increase in P

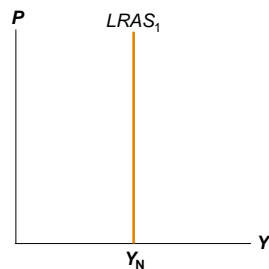


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Why the LRAS Curve Might Shift

Example:
Immigration
increases L ,
causing Y_N to rise.



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Why the *LRAS* Curve Might Shift

§ Changes in

§ Changes in

Why the *LRAS* Curve Might Shift

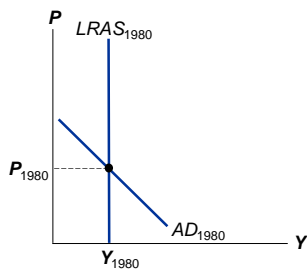
§ Changes in

§ Changes in

Using *AD* & *AS* to Depict *LR* Growth and Inflation

Over the long run,

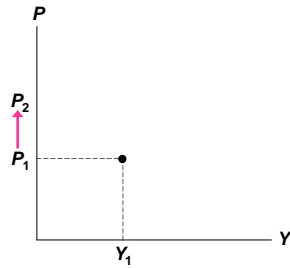
Result:



Short Run Aggregate Supply (SRAS)

The SRAS curve

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



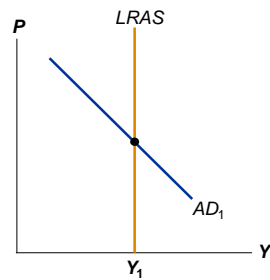
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Why the Slope of SRAS Matters

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

If AS slopes up,



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Three Theories of SRAS

In each,

§ some type of market imperfection

§ result:

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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.

1. The Sticky-Wage Theory

§ 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**.

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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**.

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What the 3 Theories Have in Common:

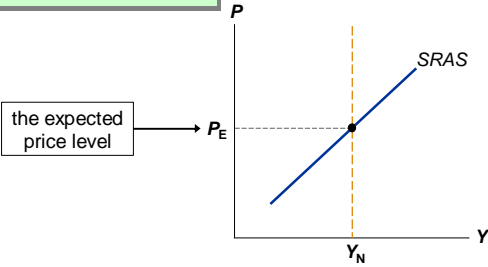
In all 3 theories, Y deviates from Y_N when P deviates from P_E .

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What the 3 Theories Have in Common:

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



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SRAS and LRAS

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

§ In the LR,

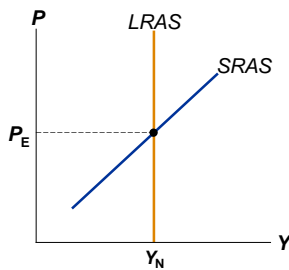
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SRAS and LRAS

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

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



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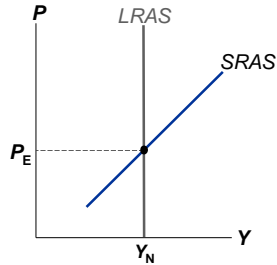
Why the SRAS Curve Might Shift

Everything that shifts LRAS shifts SRAS, too.

Also,

If P_E rises, workers & firms set higher wages.

At each P ,



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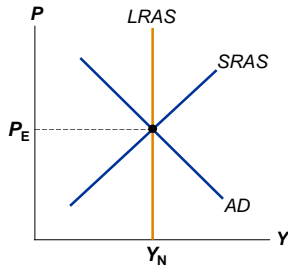
The Long-Run Equilibrium

In the long-run equilibrium,

$$P_E = P,$$

$$Y = Y_N,$$

and unemployment is at its natural rate.



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Economic Fluctuations

§ Caused by

§ Four steps to analyzing economic fluctuations:

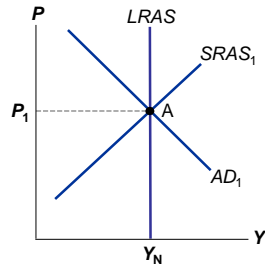
1. Determine whether the event shifts AD or AS.
2. Determine whether curve shifts left or right.
3. Use AD-AS diagram to see how the shift changes Y and P in the short run.
4. Use AD-AS diagram to see how economy moves from new SR eq'm to new LR eq'm.

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The Effects of a Shift in AD

Event: Stock market crash



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Two Big AD Shifts:

1. The Great Depression

From 1929-1933,

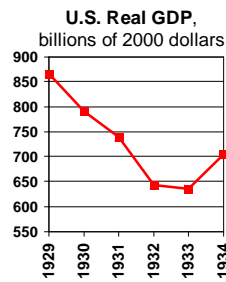
§ money supply

§ stock prices

§ Y

§ P

§ u-rate



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Two Big AD Shifts:

2. The World War II Boom

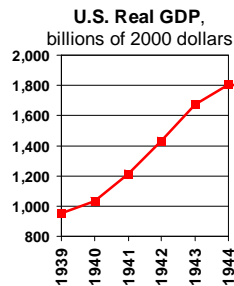
From 1939-1944,

§ govt outlays

§ Y

§ P

§ unemployment



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ACTIVE LEARNING 2
Working with the model

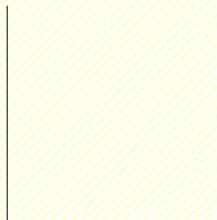
§ Draw the AD-SRAS-LRAS diagram for the U.S. economy starting in a long-run equilibrium.

§ A boom occurs in Canada. Use your diagram to determine the SR and LR effects on U.S. GDP, the price level, and unemployment.

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ACTIVE LEARNING 2
Answers

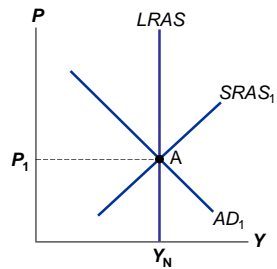
Event: Boom in Canada



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The Effects of a Shift in SRAS

Event: Oil prices rise



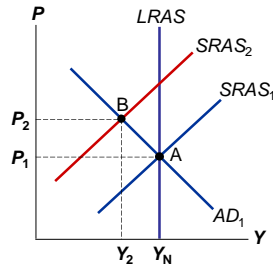
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Accommodating an Adverse Shift in SRAS

If policymakers do nothing,

Or, policymakers could



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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

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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.



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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.
