

Short-Run Equilibrium

Introduction and Description

In this lesson, the focus is on the short-run equilibrium between aggregate supply and demand, on the changes in output and price level if aggregate supply or aggregate demand changes, and on the students' ability to explain correctly why the curve shifted in a specific direction. The relationship between the simple Keynesian model and the aggregate supply-aggregate demand model is explored.

Activity 25 provides the students with practice at manipulating the aggregate demand and aggregate supply model and interpreting the effects on the price level and real GDP. Students who perform well on this activity have an excellent foundation for the rest of the course. Activity 26 relates the Keynesian simple model and the AD and AS model.

Objectives

1. Explain the macroeconomic equilibrium.
2. Explain what happens to the equilibrium price level and quantity with a change in aggregate demand.
3. Explain what happens to the equilibrium price level and quantity with a change in aggregate supply.
4. Explain what happens to the equilibrium price level and quantity with a change in aggregate demand and aggregate supply.
5. Explain the relationship between the simple Keynesian model and the AD and AS model.
6. Distinguish among equilibrium below, above and at full employment.

Time Required

Two class periods or 90 minutes

Materials

1. Activities 25 and 26
2. Visuals 3.11 and 3.12

Procedure

1. Project Visual 3.11 and focus on the top graph. Short-run macroeconomic equilibrium occurs when real GDP demanded equals real GDP supplied. This is Point A in the graph, or the level of output Y .

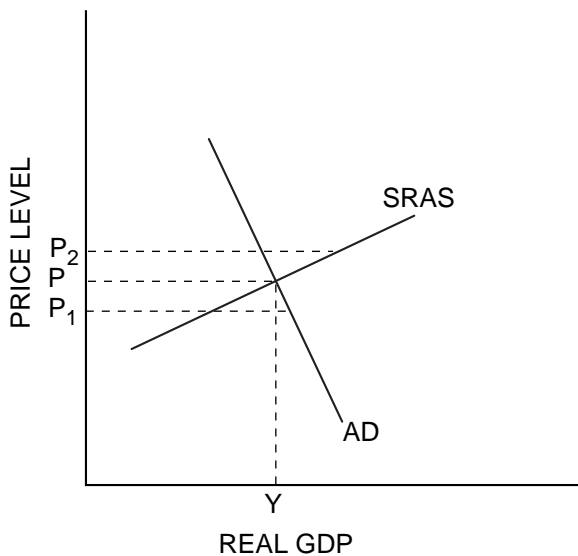
If the price level (P_1) is above the equilibrium, then the aggregate supply (Y_2) is greater than the aggregate demand (Y_1). Firms experience an accumulation of inventory; they cut production and employment; output decreases toward the equilibrium level. Have the students tell a comparable story if the price level is below equilibrium.

2. Explain that the long-run macroeconomic equilibrium occurs at point B in the lower graph of Visual 3.11.
3. Use Visual 3.12 to examine what happens if there is an increase in aggregate demand. The new equilibrium is at a higher price level and a higher level of output. In response to the increase in demand, firms increase production and price. Go through decreases in aggregate demand, decreases in aggregate supply and increases in aggregate supply and have the students explain what happens in the economy.
4. Have the students complete Activity 25. Review the answers with the students.
5. Review the simple Keynesian model. Remember that in the simple Keynesian model, the price level is held constant. Show the relationship among changes in components of aggregate expenditures, aggregate demand and the effects on equilibrium real GDP.
6. Have the students complete Activity 26. Review the answers with the students.

Short-Run Equilibrium Price Level and Output

Part A Equilibrium

* Figure 25.1
Equilibrium Price and Output Levels



1. What are the equilibrium price level and output? P and Y
2. What would eventually happen to the price level and output if the initial price level were P_2 rather than P ? Why would this happen? *There is excess supply of goods and services. Inventories are building up. To reduce the inventory levels, firms will cut prices and output. The price level will fall, and real output will decrease. This would happen because higher inventories will cause sellers to reduce prices; lower prices will provide fewer incentives to increase production. However, consumers will purchase more output at lower prices.*
3. What would eventually happen to the price level and output if the initial price level were P_1 rather than P ? Why would this happen? *There is excess demand. Inventories are below intended levels. Firms will seek to increase inventory levels, prices will rise and output will increase. This would happen because competition among buyers will increase the price level; increased prices will encourage producers to increase their output and consumers will buy less.*

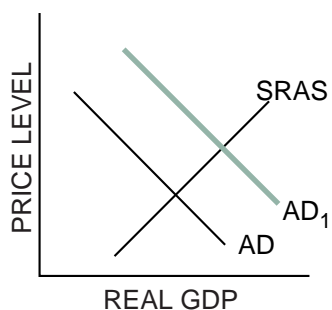
Part B

Changes in the Equilibrium Price Level and Output

For each situation described below, illustrate the change on the AD and AS graph and describe the effect on the equilibrium price level and real GDP by circling the correct symbol: ↑ for increase, ↓ for decrease, or — for unchanged.

4. Congress passes a tax cut for the middle class, and the president signs it.

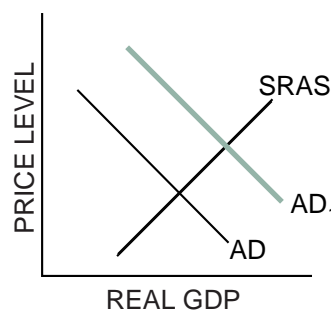
Middle Class Tax Cut



Price level: ↑ ↓ —
Real GDP: ↑ ↓ —

5. During a recession, the government increases spending on schools, highways and other public works.

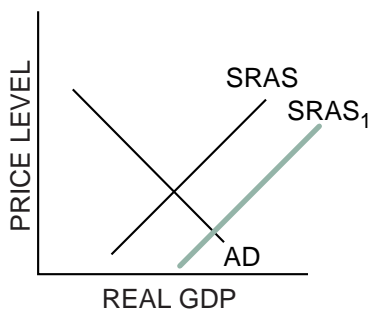
Increased Government Spending



Price level: ↑ ↓ —
Real GDP: ↑ ↓ —

6. New oil discoveries cause large decreases in energy prices.

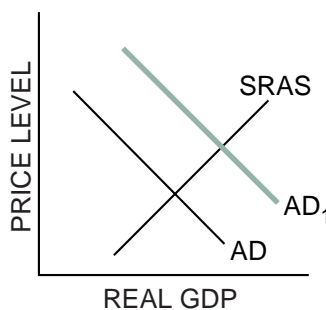
New Oil Discoveries



Price level ↑ ↓ —
Real GDP ↑ ↓ —

7. Illustrate the effects of an increase in aggregate demand.

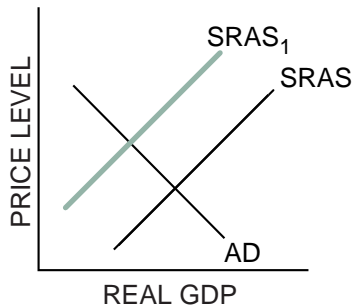
Effects of an Increase in AD



Price level ↑ ↓ —
Real GDP ↑ ↓ —

8. Illustrate the effects of increases in production costs.

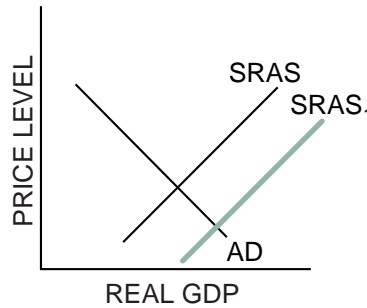
Effects of Increases in Production Costs



Price level	↑	↓	—
Real GDP	↑	↓	—

9. New technology and better education increase productivity.

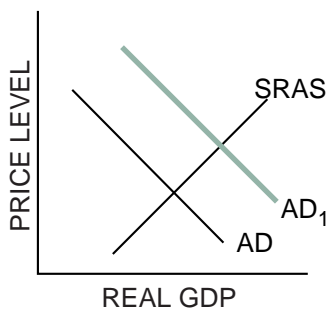
Effects of New Technology and Better Education



Price level	↑	↓	—
Real GDP	↑	↓	—

10. A new president makes consumers and businesses more confident about the future economy. **Note:** Show the change in AD only.

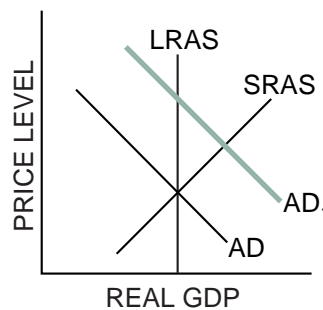
Increased Confidence for Future Economy



Price level	↑	↓	—
Real GDP	↑	↓	—

11. With the unemployment rate at five percent, the federal government reduces personal taxes and increases spending. **Note:** Show the change in AD only.

Reduced Taxes and Increased Government Spending



Price level	↑	↓	—
Real GDP	↑	↓	—

Part C

Summarizing Aggregate Demand and Aggregate Supply Shifts

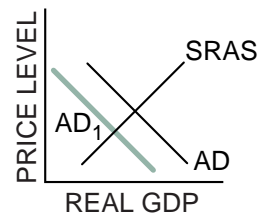
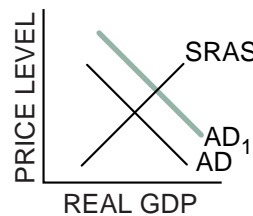
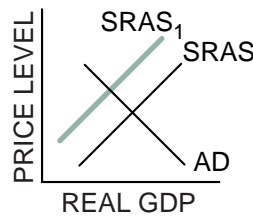
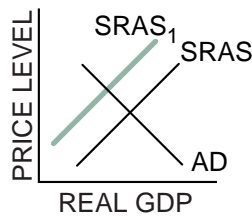
For each of the events below, make additions to the graph to illustrate the change. Then indicate the response in terms of shifts in or movements along the aggregate demand or aggregate supply curve and the short-run effect on real GDP and the price level. Indicate *shifts* in the curve by S and movements *along* the curve by A. Indicate the changes in price level, unemployment and real GDP with an up arrow for an increase and a down arrow for a decrease.

1. Increase in labor productivity due to technological change

2. Increase in the price of inputs used by many firms

3. Boom in investment assuming some unemployed resources are available

4. A major reduction in investment spending



AD Curve	<u> A </u>	<u> A </u>	<u> S </u>	<u> S </u>
AS Curve	<u> S </u>	<u> S </u>	<u> A </u>	<u> A </u>
Real GDP	<u> ↑ </u>	<u> ↓ </u>	<u> ↑ </u>	<u> ↓ </u>
Price Level	<u> ↓ </u>	<u> ↑ </u>	<u> ↑ </u>	<u> ↓ </u>
Unemployment	<u> ↓ </u>	<u> ↑ </u>	<u> ↓ </u>	<u> ↑ </u>

Reconciling the Keynesian Aggregate Expenditure Model With the Aggregate Demand and Aggregate Supply Model

Now it is time to reconcile the Keynesian aggregate expenditure model with the aggregate demand and supply model. We find both differences and similarities when comparing the two models:

- The Keynesian model is a fixed, or constant, price model while the AD and AS model is a variable-price model. The vertical axis of the Keynesian model is *aggregate expenditure* while the vertical axis of the AD and AS model is *price level*.
- Aggregate expenditure ($C + I + G + \text{Net Exports}$) on the Keynesian model is aggregate demand on the AD and AS model. A shift upward in aggregate expenditure is the same as a shift outward in aggregate demand. A shift downward of aggregate expenditure is the same as a shift inward of aggregate demand.
- The ADs and AS model can account for shifts in aggregate supply. The Keynesian model cannot do so.
- In the Keynesian model, a shift in aggregate expenditures results in the full multiplier effect, and the multiplier can easily be calculated from the graphs. In the AD and AS model, the multiplier is not at full strength on the positively sloped and vertical AS curves.
- In the AD and AS model, the increase in the price level diminishes the impact of the multiplier.

For each of the following situations, illustrate the indicated change on both the AD and AS model and the Keynesian model.

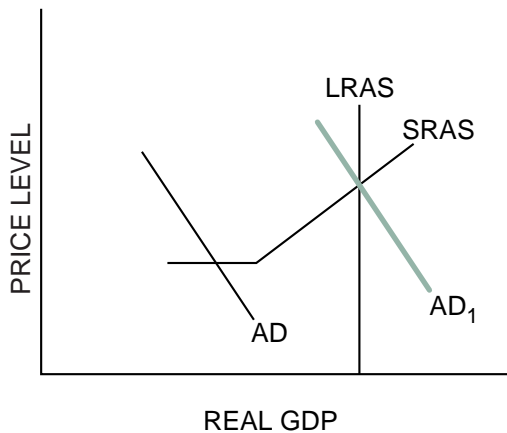
1. The economy is at less than *full* employment. An increase in consumer confidence moves the economy to *full* employment.



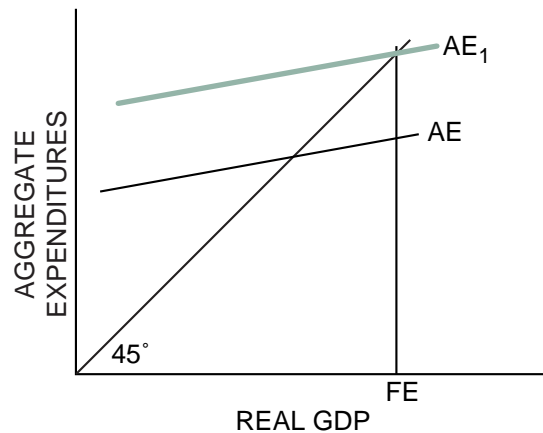
Figure 26.1

An Increase in Consumer Confidence

**Less Than Full Employment
Using the AD and AS Model**



**Less Than Full Employment
Using the Keynesian Model**



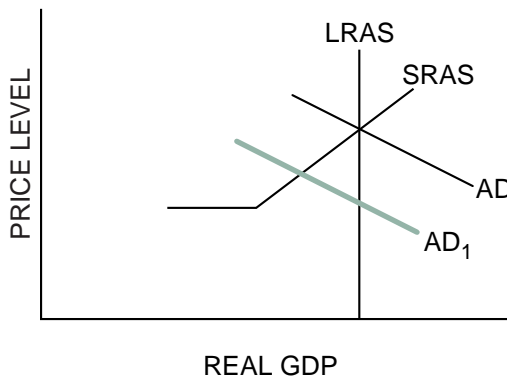
2. The economy is at full employment but businesses begin to believe that a recession is ahead.



Figure 26.2

Businesses Believe a Recession Is Coming

**Full Employment
Using the AD and AS Model**



**Full Employment
Using the Keynesian Model**

