

# chapter 13 (29)

## Fiscal Policy

### Chapter Objectives

Students will learn in this chapter:

- What fiscal policy is and why it is an important tool in managing economic fluctuations.
- Which policies constitute an expansionary fiscal policy and which constitute a contractionary fiscal policy.
- Why fiscal policy has a multiplier effect and how this effect is influenced by automatic stabilizers.
- Why governments calculate the cyclically adjusted budget balance.
- Why a large public debt may be a cause for concern.
- Why implicit liabilities of the government are also a cause for concern.

### Chapter Outline

**Opening Example:** In February 2007, Congress passed a “stimulus package” to address a potential recession. The package sent checks to 130 million families and offered tax breaks to businesses. This action was a rare example of a quick, bipartisan effort by Congress to use **discretionary fiscal policy** to manage aggregate demand.

#### I. Fiscal Policy: The Basics

A. Sources of government tax revenue in the United States in 2007 included:

- Personal income taxes: 37%
- Social insurance taxes: 25%
- Corporate profit taxes: 11%
- Other taxes mainly collected at the state and local level: 27%

B. Total government spending in the United States in 2007 included:

- Education: 17%
- Medicare and Medicaid: 20%
- National defense: 15%
- Social Security: 16%
- Other goods and services: 25%
- Other government transfers: 8%

C. *Definition:* **Social insurance** programs are government programs intended to protect families against economic hardship.

- D. The government directly controls government spending ( $G$ ), and indirectly influences consumer spending ( $C$ ) with transfer payments and taxes, and sometimes influences investment spending ( $I$ ) through its tax policies.
- E. Expansionary Fiscal Policy
1. Expansionary fiscal policies include:
    - Increases in government purchases of goods and services
    - Decreases in taxes
    - Increases in government transfer payments
  2. Expansionary fiscal policies increase aggregate demand and thus shift the aggregate demand curve to the right.
- F. Contractionary Fiscal Policy
1. Contractionary fiscal policies include:
    - Decreases in government purchase of goods and services
    - Increases in taxes
    - Decreases in government transfer payments
  2. Contractionary fiscal policies decrease aggregate demand and thus shift the aggregate demand curve to the left.
- G. Due to the long period needed to implement fiscal policies and the sometimes long period before these policies effects are felt, it is often difficult to accurately implement fiscal policy at the right time.

## II. Fiscal Policy and the Multiplier

- A. Multiplier Effects of a Change in Government Purchases of Goods and Services
1. An increase or decrease in government spending changes real GDP by a larger amount than the initial change in government spending due to the multiplier effect.
  2. The magnitude of the shift of the aggregate demand curve due to a change in government spending is determined by the value of the multiplier.
  3. The multiplier associated with changes in government spending is expressed mathematically as:

$$\frac{1}{1 - MPC}$$

- B. Multiplier Effects of Changes in Government Transfers and Taxes
1. An increase or decrease in transfer payments or taxes changes real GDP by a larger amount than the initial change in transfer payments or taxes due to the multiplier effect.
  2. The size of the multiplier effect associated with a change in either transfer payments or taxes is smaller than the multiplier effect associated with a change in government spending, because part of any change in taxes or transfers is absorbed by savings in the first round of spending.
  3. The magnitude of the shift of the aggregate demand curve due to a change in transfer payments or taxes is determined by the value of the multiplier.
  4. The multiplier associated with changes in transfer payments or taxes is expressed mathematically as:

$$\frac{MPC}{1 - MPC}$$

5. *Definition:* **Automatic stabilizers** are government spending and taxation rules that cause fiscal policy to be expansionary when the economy contracts and contractionary when the economy expands.
6. *Definition:* **Discretionary fiscal policy** is fiscal policy that is the result of deliberate actions by policy makers rather than rules.

### III. The Budget Balance

#### A. The Budget Balance as a Measure of Fiscal Policy

1. The budget balance is equal to government savings,  $S_{Government}$ , expressed mathematically as:

$$S_{Government} = T - G - TR$$

where  $T$  represents tax revenue,  $G$  denotes government purchases, and  $TR$  represents government transfers.

2. Increases in government purchases on goods and services, increases in government transfers, or lowering taxes reduce the budget balance, thereby making a budget surplus smaller or a budget deficit larger for that year, *ceteris paribus*.
  3. Decreases in government purchases of goods and services, decreases in government transfers, or increases in taxes increase the budget balance, thereby making a budget surplus bigger or a budget deficit smaller, for that year, *ceteris paribus*.
  4. Two different changes in fiscal policy that have equal effects on the budget balance may have quite unequal effects on aggregate demand.
- #### B. The Business Cycle and the Cyclically Adjusted Budget Balance
1. The budget deficit tends to rise during recessions and fall during expansions due, in part, to the business cycle.
  2. *Definition:* The **cyclically adjusted budget balance** is an estimate of what the budget balance would be if real GDP were exactly equal to potential GDP. The cyclically adjusted budget deficit is shown in Figure 13-10 (Figure 29-10) in the text.
  3. Most economists believe that governments should run budget surpluses during expansionary periods in the business cycle and budget deficits during contractionary periods in the business cycle.
  4. Some economists believe that laws requiring a balanced budget would undermine the role of automatic stabilizers in the economy.

### IV. Long-Run Implications of Fiscal Policy

#### A. Deficits, Surpluses, and Debt

1. *Definition:* **Fiscal years** run from October 1 to September 30 and are named by the calendar year in which they end.
2. U.S. government budget accounting is calculated on the basis of fiscal years.
3. *Definition:* **Public debt** is government debt held by individuals and institutions outside the government.
4. Persistent budget deficits result in increases in the public debt.
5. Rising public debt can lead to crowding out of private investment or, in extreme situations, government default.

#### B. Deficits and Debt in Practice

1. *Definition:* The **debt-GDP ratio** is government debt as a percentage of GDP.

2. A country with rising GDP can have a stable debt-GDP ratio, even if it runs budget deficits, if GDP is growing faster than the debt.
3. *Definition: **Implicit liabilities*** are spending promises made by governments that are effectively a debt despite the fact that they are not included in the usual debt statistics.
4. Social Security, Medicare, and Medicaid represent large implicit liabilities of the U.S. government.

## Teaching Tips

### Fiscal Policy: The Basics

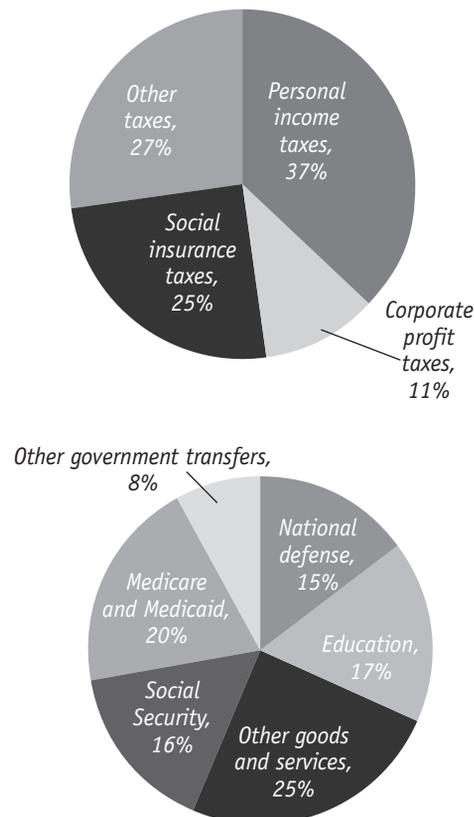
#### *Creating Student Interest*

Ask students what stage of the business cycle the economy is in. Take a poll of students (show of hands, voice vote or written response) and form a class consensus. Explain that hindsight is required to know for certain where the economy is and present information from the NBER Business Cycle Dating Committee (see the Web Resources section).

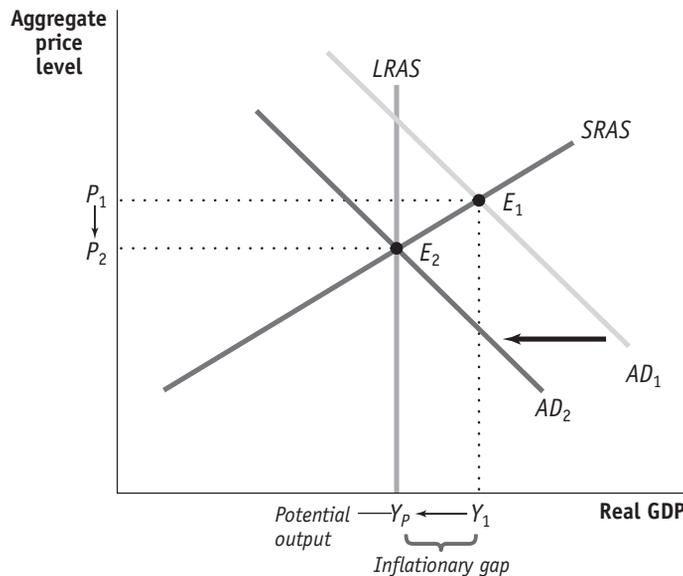
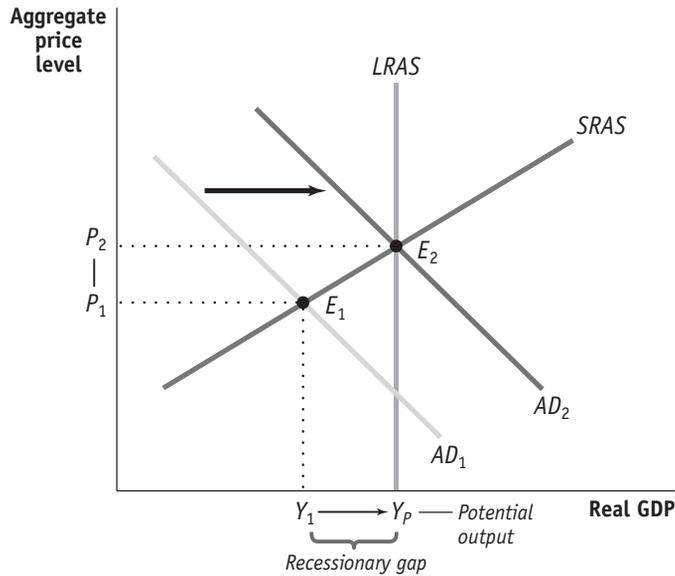
Once you have established the class consensus on the state of the economy, ask students what they think should be done to address the state of the economy. Use this discussion to introduce fiscal policy as the topic of this chapter.

#### *Presenting the Material*

It is important to point out the sources of tax revenue as well as the major spending areas for governments. These data are displayed in Figures 13-2 (Figure 29-2) and 13-3 (Figure 29-3) in the text.



In addition, demonstrate the effect of contractionary and expansionary fiscal policies on the AS-AD model from both the long-run and short-run perspectives. Emphasize the manner in which fiscal policy can be used to close a recessionary gap or an inflationary gap as shown in Figures 13-4 (Figure 29-4) and 13-5 (Figure 29-5) in the text.



## Fiscal Policy and the Multiplier

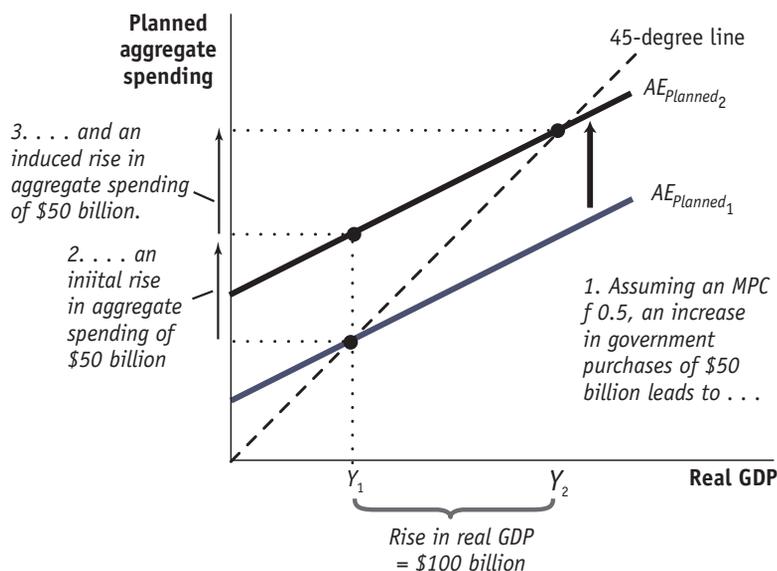
### Creating Student Interest

Ask students what effect they think a \$50 billion increase in government spending will have on the economy. Students should be able to draw some connections to the previous discussion of the multiplier in Chapter 11 (27), regarding the effect a change in investment has on the economy. Indicate that, in a similar way, a change in government will have a direct impact on the economy as well as subsequent indirect impacts on consumer spending. Also mention that the effect of a change in government spending or taxes on the macroeconomy can be measured using the government spending or tax multiplier, respectively.

### Presenting the Material

Perhaps the most effective way for students to understand the relative differences between the effect of a change in government spending on real GDP and the effect of a change in taxes or transfer payments on real GDP is to carry out mathematical examples of each. First, present the generalized formulas for measuring a change in real GDP in each case. Afterward, choose a value for the MPC and a value by which government spending increases, which is the same as the value by which taxes decrease or transfer payments increase, and carry out the computations in front of the class. Follow up these calculations with the graphical analysis of the effect on aggregate spending curve, as shown in Figure 13-6 (Figure 29-6) in the text. It is also important to discuss the notions of automatic stabilizers and discretionary fiscal policy.

**The Multiplier Effect of an Increase in Government Spending**



## The Budget Balance

### Creating Student Interest

Ask students if they know whether the U.S. government budget is in balance or in surplus or in deficit. Afterward ask students if they know the value of the government budget deficit. Record the students' responses on the board and compare them to the actual value of the budget deficit. Ask students if the federal government balances its budget. Ask them to estimate the size of the most recent federal deficit. Ask if they know when the last time the federal budget was balanced (or in surplus). See the Web Resources section for websites to go to in order to pull current data.

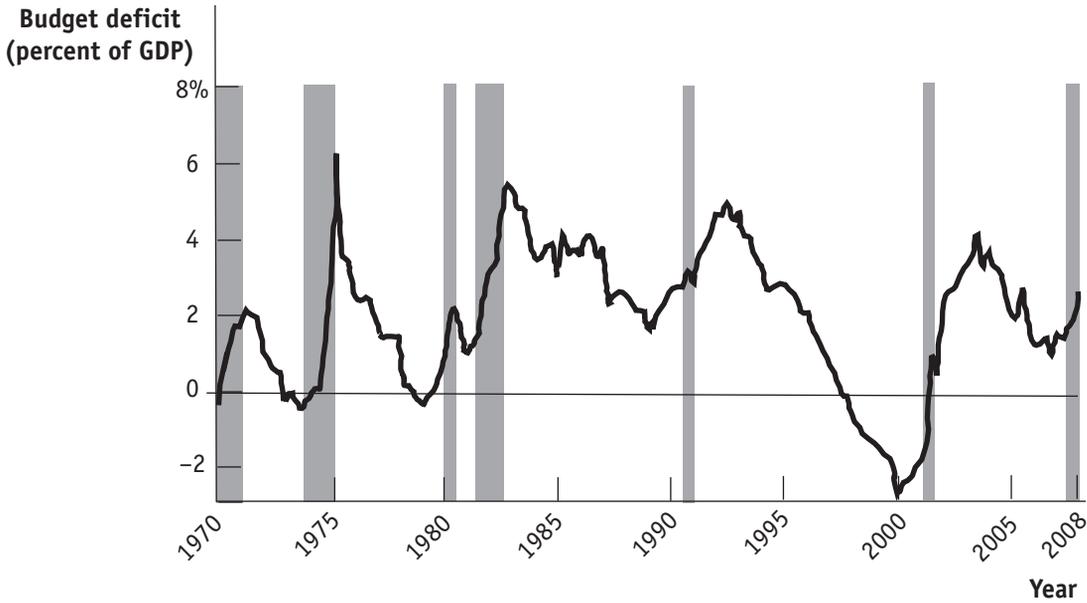
### Presenting the Material

Begin by reviewing the definition for the budget balance, which is equal to government savings as follows:

$$S_{\text{Government}} = T - G - TR$$

where  $T$  represents tax revenue,  $G$  denotes government purchases, and  $TR$  represents government transfers. Afterward, discuss the relationship between the business cycle and the cyclically adjusted budget balance. Figure 13-8 (Figure 29-8) in the text provides a great illustration of the close ties between the U.S. federal budget deficit and the business

cycle. Also provide a balanced presentation of pros and cons of a legally mandated balanced federal government budget.



## Long-Run Implications of Fiscal Policy

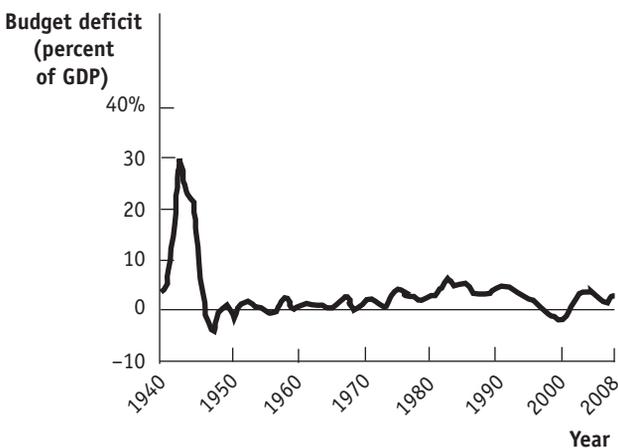
### Creating Student Interest

Ask students if they know the value of the U.S. government debt. Note students' responses on the board. Afterward, inform students of the actual value of the government debt, which can be found at the website [www.publicdebt.treas.gov/](http://www.publicdebt.treas.gov/), and compare it with the students' responses.

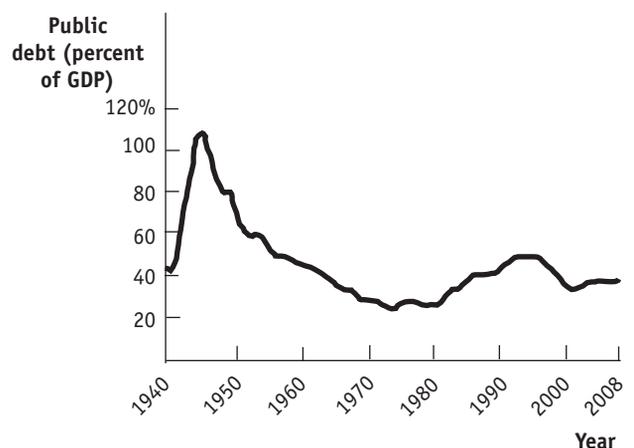
### Presenting the Material

It is important to distinguish between the government deficit and the government debt, as well as to identify the holders of the federal debt. The debt to GDP ratio is an effective tool for measuring the relative magnitude of the debt in the economy over time. Panels (a) and (b) in Figure 13-11 (Figure 29-11) in the text provide historical data on the federal budget deficit as well as the federal debt-GDP ratio.

(a) The U.S. Federal Budget Deficit Since 1940



(b) The U.S. Public Debt-GDP Ratio Since 1940



In addition, it is important to point out the effect that a growing debt can have on the macroeconomy, in terms of higher interest rates in the future, crowding out of private investment, and increasing the possibility of the government defaulting on its debt.

## Common Student Pitfalls

- **Transfer Payments.** Students sometimes don't understand why transfer payments are discussed separately from government spending on goods and services. Explain that transfer payments are different from other forms of government spending in that transfer payments made by the government are not in direct exchange for any goods or services received by the government.
- **Different Multipliers.** Students may not immediately understand why the multiplier effect associated with a change in taxes or transfer payments is smaller than the multiplier effect associated with an equivalent change in government spending. Explain to them that since the *MPC* is less than 1, the size of the multiplier effect associated with a change in either transfer payments or taxes is smaller than the multiplier effect associated with a change in government spending because in the first round of spending part of any change in taxes or transfers is absorbed by savings.
- **Balancing the Federal Budget.** Students may erroneously think that the U.S. budget must be balanced each year by law. Explain that while there have been attempts in the past to pass legislation requiring the federal government to balance the budget each year, no such law exists to date.
- **Deficit versus Debt.** Students often use the terms *deficit* and *debt* interchangeably. Emphasize that the two terms are indeed different measures. Specifically, the deficit is the difference between what the government spends and the amount it receives in tax revenue in a given period. By contrast, the debt is a cumulative measure, indicating the sum of money that the government owes at a particular point in time.

## Case Studies in the Text

### Economics in Action

*Expansionary Fiscal Policy in Japan*—This EIA outlines Japan's use of government spending as an expansionary fiscal policy to address a severe economic recession during the 1990s.

Ask students the following questions:

1. Why did economists refer to the Japanese economy in the 1980s as the "bubble economy"? (Answer: Economists referred to the Japanese economy in the 1980s as the "bubble economy" because consumer spending rose during this period due to rising stock and real estate prices that were not justified by rational calculations. When stock and real estate values fell in the late 1980s, the Japanese economic bubble burst.)
2. What actions were taken to move the Japanese economy out of its recession during the late 1980s and the 1990s? (Answer: Policy makers in Japan used vast increases in government spending, largely on construction of roads, bridges, and other infrastructure, to increase aggregate demand and move the Japanese economy out of recession.)

*About That Stimulus Package . . .*—This EIA explains the political aspects of the 2008 U.S. stimulus package. It discusses the different policy options that were available (govern-

ment spending, tax cuts, or transfer payments), the eventual package that was passed, and its effectiveness.

Ask students the following questions:

1. What are the three options available when discretionary fiscal policy is considered to combat a recession? (Answer: an increase in government spending, tax cuts, or transfer payments).
2. What are the benefits and drawbacks of each of the three options? (Answer: increasing spending would take too long but could be effective, tax cuts would mostly benefit the wealthy, and transfer payments could help the needy but only a portion may be spent.)
3. How effective was the 2008 stimulus package? (Answer: there was widespread agreement that the plan's results had been disappointing).

*Stability Pact or Stupidity Pact?*—This EIA explains the European “stability pact” requiring every member country to keep its actual budget deficit below 3% of GDP and its effect on the use of discretionary fiscal policy.

Ask students the following questions:

1. Describe the stability pact that members of the euro zone agreed to in 1999. (Answer: The stability pact required each European government in the euro zone to keep its actual budget deficit below 3% of its GDP or else face fines.)
2. Why was the stability pact rewritten in 2005? (Answer: The stability pact was rewritten in March 2005 because two of the most powerful nations in the euro zone, France and Germany, were unable to keep their government budget deficits below 3% of their GDP. Furthermore, these governments were unwilling to raise taxes or cut government spending to be compliant with the stability pact, as these actions would exacerbate the recessions going on in these countries at that time.)

*Argentina's Creditors Take a Haircut*—This EIA uses the example of Argentina in 2001 to explain how countries CAN default on their debt.

Ask students the following questions:

1. What type of deal was negotiated by the government of Argentina with its creditors, after Argentina defaulted on its debt in late 2001? (Answer: The government of Argentina negotiated an agreement by which it issued new bonds for holders of this nation's debt at just 32% of their original value.)
2. How did Argentina's slide into default affect the economy of this country? (Answer: Argentina's default on its debt triggered soaring rates of unemployment and poverty, as well as public unrest due to the depressed state of the economy.)

## For Inquiring Minds

*Investment Tax Credits*—This FIM explains the use of investment tax credits as a tool of fiscal policy.

*What Happened to the Debt from World War II?*—This FIM explains how modern governments can run deficits forever, as long as they aren't too large.

## Global Comparison

*The American Way of Debt*—This Global Comparison shows the ratio of public debt to GDP for developed countries at the end of 2007.

## Activities

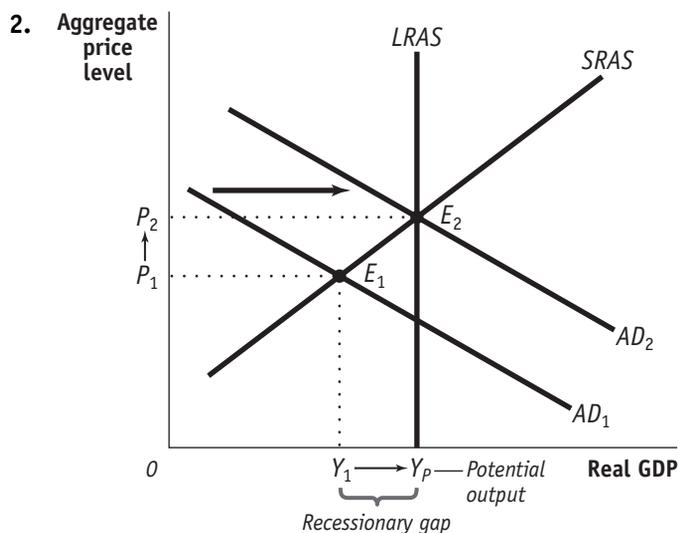
### Filling in the Gaps (10 minutes)

Ask students to work in pairs on the following exercises.

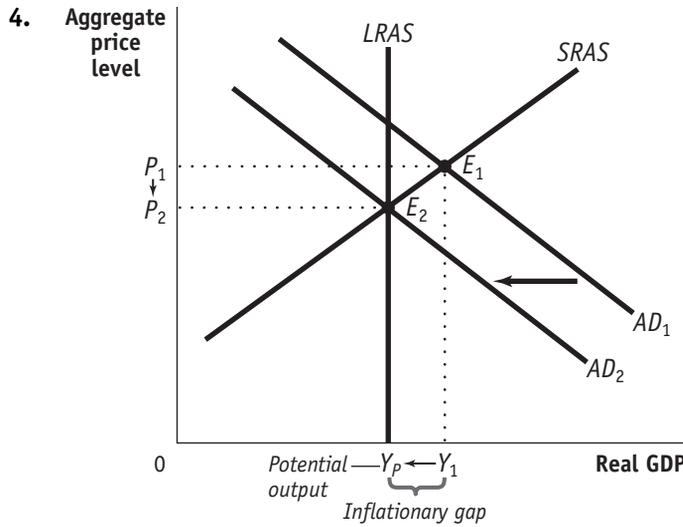
1. Describe a policy measure the government can use to close a recessionary gap.
2. Illustrate your response to question 1 in a graph.
3. Describe a policy measure the government can use to close an inflationary gap.
4. Illustrate your response to question 3 in a graph.

Answers:

1. To close a recessionary gap the government can use expansionary fiscal policies such as decreasing taxes paid by businesses or households, or increasing government spending on, say, public schools or roads.



3. To close an inflationary gap, the government can use contractionary fiscal policies such as increasing taxes paid by businesses or households, or decreasing government spending on, say, public hospitals and the military.



**Defining Terms (15 minutes)**

Pair students and ask them to define the following terms and assess the benefits and drawbacks of each in maintaining macroeconomic stability.

1. Automatic stabilizers
2. Discretionary fiscal policy

Answers:

1. Automatic stabilizers are government spending and taxation rules that cause fiscal policy to be expansive when the economy contracts and contractionary when the economy expands. Most economists agree that expansionary and contractionary fiscal policies that are the result of automatic stabilizers are helpful in maintaining macroeconomic stability.
2. Discretionary fiscal policy is fiscal policy that is the result of deliberate actions by policy makers rather than rules. It is important to note that economists are not in agreement regarding the effectiveness of discretionary fiscal policy.

**Working with Multipliers (15 minutes)**

Pair students and ask them to complete the following exercises.

1. Assume the *MPC* is 0.80 and the government increases spending on cancer research by \$15 billion. What is the value of the initial impact on real GDP? What is the value of the total impact on real GDP?
2. Assume the *MPC* is 0.80 and policy makers have targeted real GDP to increase by \$200 billion. By how much must taxes be reduced to achieve this goal?

Answers:

1. Initial change in real GDP = change in government spending = \$15 billion

Total change in real GDP computed as:

$$\begin{aligned} \Delta \text{real GDP} &= \frac{1}{1 - MPC} \times \Delta G \\ &= \frac{1}{1 - 0.80} \times \$15 \text{ billion} \\ &= 5 \times \$15 \text{ billion} \\ &= \$75 \text{ billion} \end{aligned}$$

$$\begin{aligned}
 2. \quad \$200 \text{ billion} &= \frac{MPC}{1 - MPC} \times \Delta T \\
 \$200 \text{ billion} &= \frac{0.80}{1 - 0.80} \times \Delta T \\
 \$200 \text{ billion} &= 4 \times \Delta T \\
 \Delta T &= \frac{\$200 \text{ billion}}{4} = \$50 \text{ billion (meaning } T \text{ must decrease by } \$50 \text{ billion)}
 \end{aligned}$$

### What the Budget Balance Can't Tell Us (15 minutes)

Pair students and ask them to explain why changes in the budget balance cannot be used as an accurate measure of the effectiveness of fiscal policy in the macroeconomy.

Answer: Changes in the budget balance cannot be used as an accurate measure of the effectiveness of fiscal policy in the macroeconomy because:

- Two different changes in fiscal policy that have equal effects on the budget balance may have quite unequal effects on aggregate demand.
- Changes in the budget balance can be the result, not the cause, of fluctuations in the economy.

### Debate Time (20 minutes)

Divide the students into two groups: one *for* a constitutional amendment guaranteeing a balanced government budget each year, and the other *against* such an amendment. Provide students with sufficient time to appoint representatives to engage in the debate and to record points supporting their side. Also allow sufficient time to both carry out the debate and to assess its outcome with the students.

### Computing Surpluses, Deficits, and the Debt (15 minutes)

Provide students with the following data from the government of Macroland. Ask students to work in pairs to complete the following exercises. Note: All data are in billions of dollars.

Year	Tax Revenue ( $T$ )	Government Spending on Goods & Services ( $G$ )	Transfer Payments ( $TR$ )
2004	\$2,000	\$1,200	\$600
2005	\$1,600	\$1,500	\$900
2006	\$1,700	\$1,400	\$700
2007	\$2,200	\$1,000	\$500
2008	\$2,400	\$1,600	\$800

1. Determine the value of the budget balance and indicate whether there is a government surplus, deficit, or balance for each year.
2. Determine the value of the government debt for the period 2004–2008.

Answers:

1. In general the budget balance, denoted  $S_{\text{Government}}$ , is computed for any year as:

$$S_{\text{Government}} = T - G - TR$$

Year	$S_{\text{Government}}$ (billions)	Status of Government Budget
2004	\$200	Surplus
2005	\$-800	Deficit
2006	\$-400	Deficit
2007	\$700	Surplus
2008	\$0	Balanced

2. Debt = Sum of  $S_{\text{Government}}$  for the years 2004–2008

$$\text{Debt} = \$200 + \$-800 + \$-400 + \$700 + \$0 = \$-300 \text{ billion}$$

## Web Resources

The following websites provide information on the state of the economy and the size of the federal deficit and national debt:

The NBER Business Cycle Dating Committee: <http://www.nber.org/cycles/main.html>.

Examples of U.S. national debt clocks: [http://www.brillig.com/debt\\_clock/](http://www.brillig.com/debt_clock/) or [http://www.optimist123.com/optimist/2006/04/the\\_best\\_debt\\_c.html](http://www.optimist123.com/optimist/2006/04/the_best_debt_c.html).

Federal budget data from the Congressional Budget Office: <http://www.cbo.gov/>.

Treasury Direct web page: <http://www.treasurydirect.gov/govt/govt.htm>.

Global Policy Forum website: <http://www.globalpolicy.org>.

Bureau of the Public Debt: <http://www.publicdebt.treas.gov/>.

