After studying this chapter, you will be able to:

- Describe the federal budget process and the recent history of outlays, tax revenues, deficits, and debt
- Explain the supply-side effects of fiscal policy
- Explain how fiscal policy choices redistribute benefits and costs across generations
- Explain how fiscal stimulus is used to fight a recession

13 FISCAL POLICY

In 2010, the federal government spent 28 cents of every dollar that Americans earned. It raised 16 of those cents in taxes and borrowed the other 12. The government had a deficit of 12 cents on every dollar earned and a total deficit of $1.5 trillion. The 2010 deficit was exceptionally large, but federal government deficits are not new. Aside from the four years 1998–2001, the government's budget has been in deficit every year since 1970. Deficits bring debts, and your share of the federal government's debt is around $40,000.

Does it matter if the government doesn't balance its books? What are the effects of an ongoing government deficit and accumulating debt? Do they slow economic growth? Do they impose a burden on future generations—on you and your children?

What are the effects of taxes and government spending on the economy? Does a dollar spent by the government on goods and services have the same effect as a dollar spent by someone else? Does it create jobs, or does it destroy them?

These are the fiscal policy issues that you will study in this chapter. In *Reading Between the Lines* at the end of the chapter, we look at fiscal policy ideas to create jobs and boost real GDP in 2010.

The Federal Budget

The **federal budget** is an annual statement of the outlays and receipts of the government of the United States together with the laws and regulations that approve and support them. The federal budget has two purposes:

1. To finance federal government programs and activities, and
2. To achieve macroeconomic objectives

The first purpose of the federal budget was its only purpose before the Great Depression of the 1930s. The second purpose arose as a reaction to the Great Depression and the rise of the ideas of economist John Maynard Keynes. The use of the federal budget to achieve macroeconomic objectives such as full employment, sustained economic growth, and price level stability is called **fiscal policy**. It is this aspect of the budget that is the focus of this chapter.

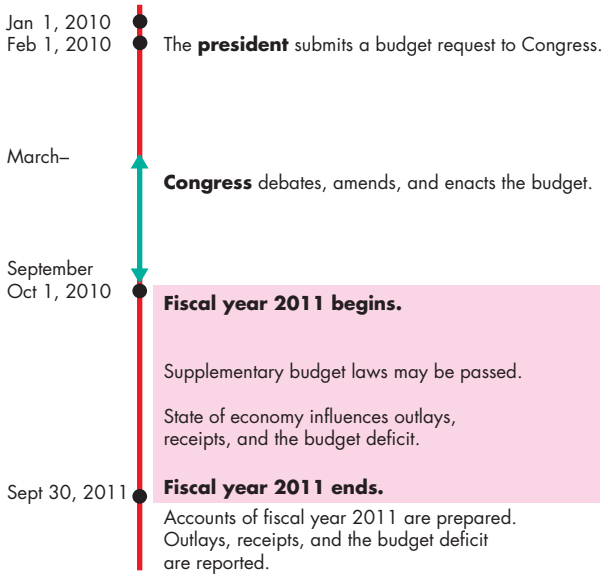
The Institutions and Laws

Fiscal policy is made by the president and Congress on an annual timeline that is shown in Fig. 13.1 for the 2011 budget.

The Roles of the President and Congress The president *proposes* a budget to Congress each February. Congress debates the proposed budget and passes the budget acts in September. The president either signs those acts into law or vetoes the *entire* budget bill. The president does not have the veto power to eliminate specific items in a budget bill and approve others—known as a *line-item veto*. Many state governors have long had line-item veto authority. Congress attempted to grant these powers to the president of the United States in 1996, but in a 1998 Supreme Court ruling, the line-item veto for the president was declared unconstitutional. Although the president proposes and ultimately approves the budget, the task of making the tough decisions on spending and taxes rests with Congress.

Congress begins its work on the budget with the president's proposal. The House of Representatives and the Senate develop their own budget ideas in their respective House and Senate Budget Committees. Formal conferences between the two houses eventually resolve differences of view, and a series of spending acts and an overall budget act are usually passed by both houses before the start of the fiscal year. A *fiscal year* is a year that runs from October 1 to September 30 in the next calendar year. *Fiscal* 2011 is the fiscal year that *begins* on October 1, 2010.

FIGURE 13.1 The Federal Budget Timeline in Fiscal 2011



The federal budget process begins with the president's request in February. Congress debates and amends the request and enacts a budget before the start of the fiscal year on October 1. The president signs the budget acts into law or vetoes the entire budget bill. Throughout the fiscal year, Congress might pass supplementary budget laws. The budget outcome is calculated after the end of the fiscal year.

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During a fiscal year, Congress often passes supplementary budget laws, and the budget outcome is influenced by the evolving state of the economy. For example, if a recession begins, tax revenues fall and welfare payments increase.

The Employment Act of 1946 Fiscal policy operates within the framework of the landmark **Employment Act of 1946** in which Congress declared that

> . . . it is the continuing policy and responsibility of the Federal Government to use all practicable means . . . to coordinate and utilize all its plans, functions, and resources . . . to promote maximum employment, production, and purchasing power.

This act recognized a role for government actions to keep unemployment low, the economy expanding, and inflation in check. The *Full Employment and Balanced Growth Act of 1978*, more commonly known as the *Humphrey-Hawkins Act*, went farther than the Employment Act of 1946 and set a specific target of 4 percent for the unemployment rate. But this target has never been treated as an unwavering policy goal. Under the 1946 act, the president must describe the current economic situation and the policies he believes are needed in the annual *Economic Report of the President*, which the Council of Economic Advisers writes.

The Council of Economic Advisers The president's Council of Economic Advisers was established in the Employment Act of 1946. The Council consists of a chairperson and two other members, all of whom are economists on a one- or two-year leave from their regular university or public service jobs. In 2010, the chair of President Obama's Council of Economic Advisers was Austan Goolsbee of the University of Chicago. The **Council of Economic Advisers** monitors the economy and keeps the President and the public well informed about the current state of the economy and the best available forecasts of where it is heading. This economic intelligence activity is one source of data that informs the budget-making process.

Let's look at the most recent federal budget.

Highlights of the 2011 Budget

Table 13.1 shows the main items in the federal budget proposed by President Obama for 2011. The numbers are projected amounts for the fiscal year beginning on October 1, 2010—fiscal 2011. Notice the three main parts of the table: *Receipts* are the government's tax revenues, *outlays* are the government's payments, and the *deficit* is the amount by which the government's outlays exceed its receipts.

Receipts Receipts were projected to be $2,807 billion in fiscal 2011. These receipts come from four sources:

1. Personal income taxes
2. Social Security taxes
3. Corporate income taxes
4. Indirect taxes and other receipts

The largest source of receipts is *personal income taxes*, which in 2011 are expected to be $1,076 billion. These taxes are paid by individuals on their incomes. The second largest source is *Social Security taxes*. These taxes are paid by workers and their employers to finance the government's Social Security programs. Third in size are *corporate income taxes*. These taxes are paid by companies on their profits. Finally, the smallest source of federal receipts is what are called *indirect taxes*. These taxes are on the sale of gasoline, alcoholic beverages, and a few other items.

Outlays Outlays are classified into three categories:

1. Transfer payments
2. Expenditure on goods and services
3. Debt interest

The largest item of outlays, *transfer payments*, is the payment to individuals, businesses, other levels of government, and the rest of the world. In 2011, this item is expected to be $2,588 billion. It includes Social Security benefits, Medicare and Medicaid, unemployment checks, welfare payments, farm subsidies, grants to state and local governments, and payments to international agencies. It also includes capital transfers to bail out failing financial institutions. Transfer payments, especially those for Medicare and Medicaid, are sources of persistent growth in

TABLE 13.1 Federal Budget in Fiscal 2011

Item	Projections (billions of dollars)	
Receipts	**2,807**	
Personal income taxes		1,076
Social Security taxes		1,054
Corporate income taxes		432
Indirect taxes and other receipts		245
Outlays	**4,129**	
Transfer payments		2,588
Expenditure on goods and services		1,181
Debt interest		360
Deficit	**1,322**	

Source of data: Budget of the United States Government, Fiscal Year 2011, Table 14.1.

government expenditures and are a major source of concern and political debate.

Expenditure on goods and services is the expenditure on final goods and services, and in 2011, it is expected to total $1,181 billion. This expenditure, which includes that on national defense, homeland security, research on cures for AIDS, computers for the Internal Revenue Service, government cars and trucks, and federal highways, has decreased in recent years. This component of the federal budget is the *government expenditure on goods and services* that appears in the circular flow of expenditure and income and in the National Income and Product Accounts (see Chapter 4, pp. 85–86).

Debt interest is the interest on the government debt. In 2011, this item is expected to be $360 billion—about 9 percent of total expenditure. This interest payment is large because the government has a debt of more than $6 trillion, which has arisen from many years of budget deficits during the 1970s, 1980s, 1990s, and 2000s.

Surplus or Deficit The government's budget balance is equal to receipts minus outlays.

$$\text{Budget balance} = \text{Receipts} - \text{Outlays}.$$

If receipts exceed outlays, the government has a **budget surplus**. If outlays exceed receipts, the government has a **budget deficit**. If receipts equal outlays, the government has a **balanced budget**. For fiscal 2011, with projected outlays of $4,129 billion and receipts of $2,807 billion, the government projected a budget deficit of $1,322 billion.

Big numbers like these are hard to visualize and hard to compare over time. To get a better sense of the magnitude of receipts, outlays, and the deficit, we often express them as percentages of GDP. Expressing them in this way lets us see how large government is relative to the size of the economy and also helps us to study *changes* in the scale of government over time.

How typical is the federal budget of 2011? Let's look at the recent history of the budget.

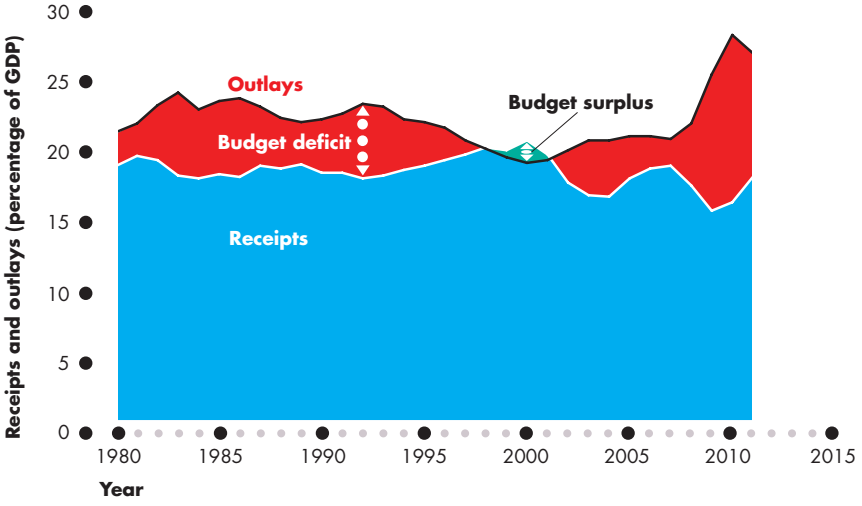
The Budget in Historical Perspective

Figure 13.2 shows the government's receipts, outlays, and budget surplus or deficit since 1980. You can see that except for the four years around 2000, the budget has been in persistent deficit.

You can also see that after 2008, the deficit was extraordinarily large, peaking in 2010 at almost 12 percent of GDP. The next highest deficit had been in 1983 at 6 percent of GDP.

The large deficit of the 1980s gradually shrank through 1990s expansion and in 1998 the first budget

FIGURE 13.2 The Budget Surplus and Deficit



The figure records the federal government's outlays, receipts, and budget balance from 1980 to 2011. Except for the four years 1998 through 2001, the budget has been in deficit. The deficit after 2008 reached a new all-time high and occurred because outlays increased. Receipts have fluctuated but have displayed no trend (as a percentage of GDP).

Source of data: Budget of the United States Government, Fiscal Year 2011, Table 14.2.

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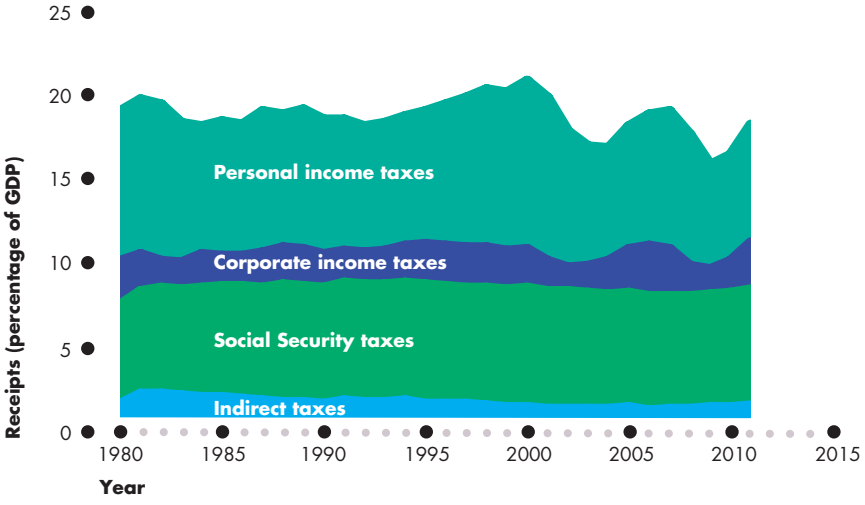
surplus since 1969 emerged. But by 2002, the budget was again in deficit and during the 2008–2009 recession, the deficit reached a new all-time high.

Why did the budget deficit grow during the 1980s, vanish in the late 1990s, and re-emerge in the 2000s? Did outlays increase, or did receipts shrink, and which components of outlays and receipts changed most to swell and then shrink the deficit? Let's look at receipts and outlays in a bit more detail.

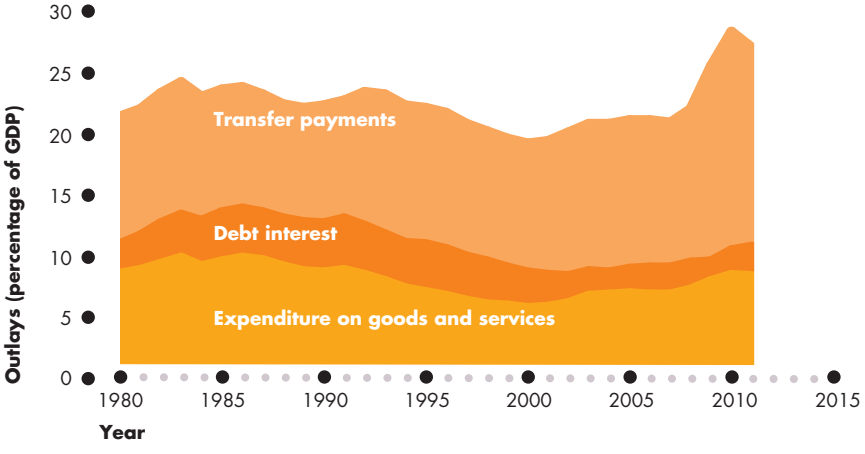
Receipts Figure 13.3(a) shows the components of government receipts as percentages of GDP from 1980 to 2011. Total receipts fluctuate because personal income taxes and corporate income taxes fluctuate. Other receipts (Social Security taxes and indirect taxes) are a near constant percentage of GDP.

Income tax receipts trended downward during the early 1980s and 2000s, upward during the 1990s, and slightly downward over the 30 years to 2010.

FIGURE 13.3 Federal Government Receipts and Outlays



(a) Receipts



(b) Outlays

Source of data: Budget of the United States Government, Fiscal Year 2011, Table 14.2.

In part (a), receipts from personal and corporate income taxes (as a percentage of GDP) fell during the early1980s, increased during the 1990s, and fluctuated wildly during the 2000s. The other components of receipts remained steady. Over the entire period, receipts fell slightly.

In part (b), expenditure on goods and services as a percentage of GDP decreased through 2001 but then increased because expenditure on security-related goods and services increased sharply after 2001. Transfer payments increased over the entire period and exploded to a new all-time high percentage of GDP after 2008. Debt interest held steady during the 1980s and decreased during the 1990s and 2000s, helped by a shrinking budget deficit during the 1990s and low interest rates after 2008.

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Outlays Figure 13.3(b) shows the components of government outlays as percentages of GDP from 1980 to 2011. Two features of government outlays stand out. First, expenditure on goods and services decreased from 1983 through 2000 and then increased. The increase after 2000 was mainly on security-related goods and services in the wake of the attacks that occurred on September 11, 2001, and defense expenditure. Second, transfer payments increased over the entire period and exploded after 2008 when the government tried to stimulate economic activity.

You've seen that the U.S. government budget deficit is large. But how does it compare to the deficits of other countries? The answer is that it is one of the largest, as *Economics in Action* shows. Of the major economies, only the United Kingdom has a larger deficit as a percentage of GDP.

Deficits bring debts, as you will now see.

Budget Balance and Debt

When the government has a budget deficit it borrows, and when it has a budget surplus it makes loan repayments. **Government debt** is the total amount that the government has borrowed. It is the sum of past budget deficits minus the sum of past budget surpluses. A government budget deficit increases government debt. A persistent budget deficit feeds itself: It leads to increased borrowing, which leads to larger interest payments, which in turn lead to a larger deficit. That is the story of the increasing budget deficit during the 1970s and 1980s.

Figure 13.4 shows two measures of government debt since 1940. Gross debt includes the amounts that the government owes to future generations in Social Security payments. Net debt is the debt held by the public, and it excludes Social Security obligations.

Government debt (as a percentage of GDP) was at an all-time high at the end of World War II. Budget surpluses and rapid economic growth lowered the debt-to-GDP ratio through 1974. Small budget deficits increased the debt-to-GDP ratio slightly through the 1970s, and large budget deficits increased it dramatically during the 1980s and the 1990–1991 recession. The growth rate of the debt-to-GDP ratio slowed as the economy expanded during the mid-1990s, fell when the budget went into surplus in the late 1990s and early 2000s, and began to rise again as the budget returned to deficit.

Economics in Action

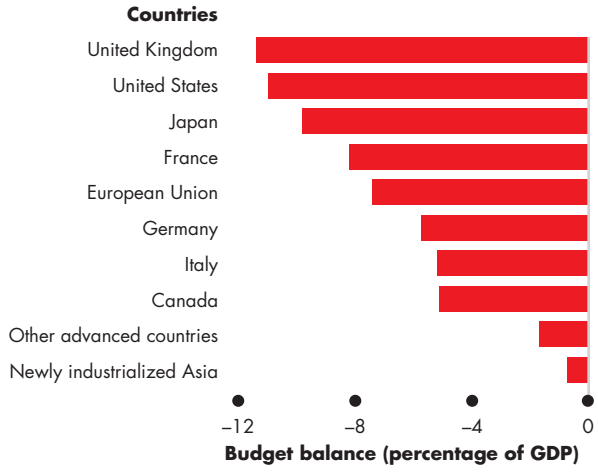
The U.S. Government Budget in Global Perspective

The U.S. government budget deficit in Fiscal 2010 was projected to be 11.8 percent of GDP. You've seen that this deficit is historically high but how does it compare with the deficits of other countries?

To compare the deficits of governments across countries, we must take into account the differences in local and regional government arrangements. Some countries, and the United States is one of them, have large state and local governments. Other countries, and the United Kingdom is one, have larger central government and small local governments. These differences make the international comparison more valid at the level of total government. The figure shows the budget balances of all levels of government in the United States and other countries.

Of the countries shown here, the United Kingdom has the largest deficit, as a percentage of GDP, and the United States has the second largest. Japan and some European countries also have large deficits.

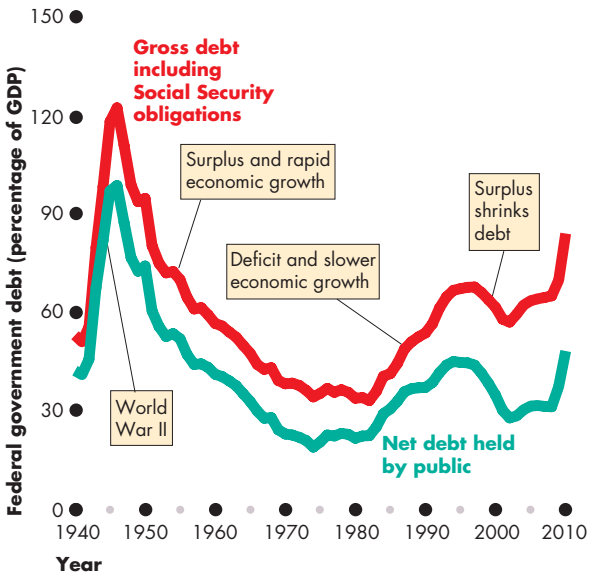
Italy, Canada, other advanced economies as a group, and the newly industrialized economies of Asia (Hong Kong, South Korea, Singapore, and Taiwan) had the smallest deficits in 2010. It is notable that none of the world's major economies had a budget surplus in 2010. Fiscal stimulus to fight recession resulted in deficits everywhere.



Government Budgets Around the World

Source of data: International Monetary Fund, *World Economic Outlook*, April 2010.

FIGURE 13.4 The Federal Government Debt



Gross and net government debt (the accumulation of past budget deficits less past budget surpluses) was at its highest at the end of World War II. Debt as a percentage of GDP fell through 1974 but then started to increase. After a further brief decline during the late 1970s, it exploded during the 1980s and continued to increase through 1995, after which it fell. After 2002, it began to rise again.

Source of data: Budget of the United States Government, Fiscal Year 2011, Table 7.1.

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Debt and Capital Businesses and individuals incur debts to buy capital—assets that yield a return. In fact, the main point of debt is to enable people to buy assets that will earn a return that exceeds the interest paid on the debt. The government is similar to individuals and businesses in this regard. Much government expenditure is on public assets that yield a return. Highways, public schools and universities, and the stock of national defense capital all yield a social rate of return that probably far exceeds the interest rate the government pays on its debt.

But total government debt, which exceeds $4 trillion, is four times the value of the government's capital stock. So some government debt has been incurred to finance public consumption expenditure and transfer payments, which do not have a social return. Future generations bear the cost of this debt.

State and Local Budgets

The *total government* sector of the United States includes state and local governments as well as the federal government. In 2010, when federal government outlays were $4,129 billion, state and local outlays were a further $2,000 billion. Most of these expenditures were on public schools, colleges, and universities ($550 billion); local police and fire services; and roads.

It is the combination of federal, state, and local government receipts, outlays, and budget deficits that influences the economy. But state and local budgets are not designed to stabilize the aggregate economy. So sometimes, when the federal government cuts taxes or outlays, state and local governments do the reverse and, to a degree, cancel out the effects of the federal actions. For example, since 2000, federal taxes decreased as a percentage of GDP, but state and local taxes and total government taxes increased.

REVIEW QUIZ

1. What is fiscal policy, who makes it, and what is it designed to influence?
2. What special role does the president play in creating fiscal policy?
3. What special roles do the Budget Committees of the House of Representatives and the Senate play in creating fiscal policy?
4. What is the timeline for the U.S. federal budget each year? When does a fiscal year begin and end?
5. Is the federal government budget today in surplus or deficit?

You can work these questions in Study Plan 13.1 and get instant feedback. myeconlab

Now that you know what the federal budget is and what the main components of receipts and outlays are, it is time to study the *effects* of fiscal policy. We'll begin by learning about the effects of taxes on employment, aggregate supply, and potential GDP. Then we'll study the effects of budget deficits and see how fiscal policy brings redistribution across generations. Finally, we'll look at fiscal stimulus and see how it might be used to speed recovery from recession and stabilize the business cycle.

Supply-Side Effects of Fiscal Policy

How do taxes on personal and corporate income affect real GDP and employment? The answer to these questions is controversial. Some economists, known as *supply-siders*, believe these effects to be large and an accumulating body of evidence suggests that they are correct. To see why these effects might be large, we'll begin with a refresher on how full employment and potential GDP are determined in the absence of taxes. Then we'll introduce an income tax and see how it changes the economic outcome.

Full Employment and Potential GDP

You learned in Chapter 6 (pp. 139–141) how the full-employment quantity of labor and potential GDP are determined. At full employment, the real wage rate adjusts to make the quantity of labor demanded equal the quantity of labor supplied. Potential GDP is the real GDP that the full-employment quantity of labor produces.

Figure 13.5 illustrates a full-employment situation. In part (a), the demand for labor curve is *LD*, and the supply of labor curve is *LS*. At a real wage rate of $30 an hour and 250 billion hours of labor a year employed, the economy is at full employment.

In Fig. 13.5(b), the production function is *PF*. When 250 billion hours of labor are employed, real GDP—which is also potential GDP—is $13 trillion.

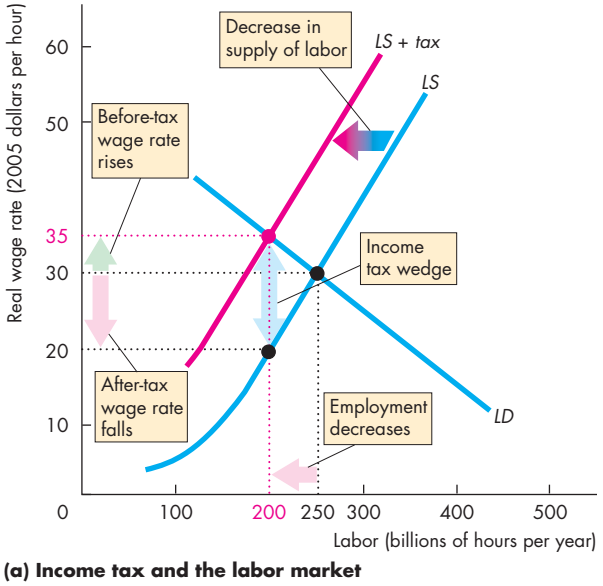
Let's now see how an income tax changes potential GDP.

The Effects of the Income Tax

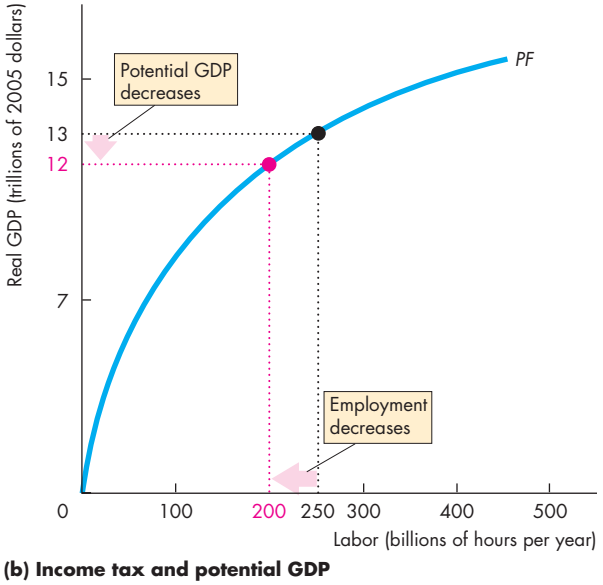
The tax on labor income influences potential GDP and aggregate supply by changing the full-employment quantity of labor. The income tax weakens the incentive to work and drives a wedge between the take-home wage of workers and the cost of labor to firms. The result is a smaller quantity of labor and a lower potential GDP.

Figure 13.5 shows this outcome. In the labor market, the income tax has no effect on the demand for labor, which remains at *LD*. The reason is that the quantity of labor that firms plan to hire depends only on how productive labor is and what it costs—its real wage rate.

FIGURE 13.5 The Effects of the Income Tax on Aggregate Supply



(a) Income tax and the labor market



(b) Income tax and potential GDP

In part (a), with no income tax, the real wage rate is $30 an hour and employment is 250 billion hours. In part (b), potential GDP is $13 trillion. An income tax shifts the supply of labor curve leftward to *LS + tax*. The before-tax wage rate rises to $35 an hour, the after-tax wage rate falls to $20 an hour, and the quantity of labor employed decreases to 200 billion hours. With less labor, potential GDP decreases.

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But the supply of labor *does* change. With no income tax, the real wage rate is $30 an hour and 250 billion hours of labor a year are employed. An income tax weakens the incentive to work and decreases the supply of labor. The reason is that for each dollar of before-tax earnings, workers must pay the government an amount determined by the income tax code. So workers look at the after-tax wage rate when they decide how much labor to supply. An income tax shifts the supply curve leftward to *LS* + *tax*. The vertical distance between the *LS* curve and the *LS* + *tax* curve measures the amount of income tax. With the smaller supply of labor, the *before-tax* wage rate rises to $35 an hour but the *after-tax* wage rate falls to $20 an hour. The gap created between the before-tax and after-tax wage rates is called the **tax wedge**.

The new equilibrium quantity of labor employed is 200 billion hours a year—less than in the no-tax case. Because the full-employment quantity of labor decreases, so does potential GDP. And a decrease in potential GDP decreases aggregate supply.

In this example, the tax rate is high—$15 tax on a $35 wage rate is a tax rate of about 43 percent. A lower tax rate would have a smaller effect on employment and potential GDP.

An increase in the tax rate to above 43 percent would decrease the supply of labor by more than the decrease shown in Fig. 13.5. Equilibrium employment and potential GDP would also decrease still further. A tax cut would increase the supply of labor, increase equilibrium employment, and increase potential GDP.

Taxes on Expenditure and the Tax Wedge

The tax wedge that we've just considered is only a part of the wedge that affects labor-supply decisions. Taxes on consumption expenditure add to the wedge. The reason is that a tax on consumption raises the prices paid for consumption goods and services and is equivalent to a cut in the real wage rate.

The incentive to supply labor depends on the goods and services that an hour of labor can buy. The higher the taxes on goods and services and the lower the after-tax wage rate, the less is the incentive to supply labor. If the income tax rate is 25 percent and the tax rate on consumption expenditure is 10 percent, a dollar earned buys only 65 cents worth of goods and services. The tax wedge is 35 percent.

Economics in Action

Some Real World Tax Wedges

Edward C. Prescott of Arizona State University, who shared the 2004 Nobel Prize for Economic Science, has estimated the tax wedges for a number of countries, among them the United States, the United Kingdom, and France.

The U.S. tax wedge is a combination of 13 percent tax on consumption and 32 percent tax on incomes. The income tax component of the U.S. tax wedge includes Social Security taxes and is the *marginal* tax rate—the tax rate paid on the marginal dollar earned.

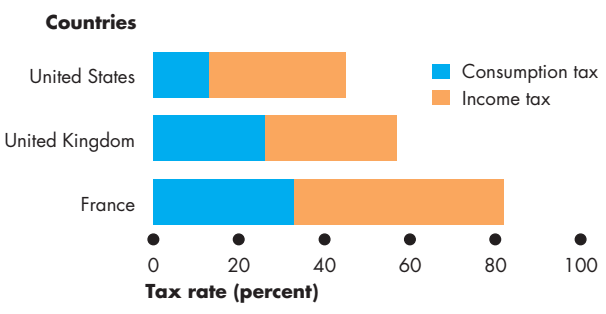
Prescott estimates that in France, taxes on consumption are 33 percent and taxes on incomes are 49 percent.

The estimates for the United Kingdom fall between those for the United States and France. The figure shows these components of the tax wedges in the three countries.

Does the Tax Wedge Matter?

According to Prescott's estimates, the tax wedge has a powerful effect on employment and potential GDP. Potential GDP in France is 14 percent below that of the United States (per person), and the entire difference can be attributed to the difference in the tax wedge in the two countries.

Potential GDP in the United Kingdom is 41 percent below that of the United States (per person), and about a third of the difference arises from the different tax wedges. (The rest is due to different productivities.)



Three Tax Wedges

Source of data: Edward C. Prescott, *American Economic Review*, 2003.

Taxes and the Incentive to Save and Invest

A tax on interest income weakens the incentive to save and drives a wedge between the after-tax interest rate earned by savers and the interest rate paid by firms. These effects are analogous to those of a tax on labor income. But they are more serious for two reasons.

First, a tax on labor income lowers the quantity of labor employed and lowers potential GDP, while a tax on capital income lowers the quantity of saving and investment and *slows the growth rate of real GDP*.

Second, the true tax rate on interest income is much higher than that on labor income because of the way in which inflation and taxes on interest income interact. Let's examine this interaction.

Effect of Tax Rate on Real Interest Rate The interest rate that influences investment and saving plans is the *real after-tax interest rate*. The real *after-tax* interest rate subtracts the income tax rate paid on interest income from the real interest rate. But the taxes depend on the nominal interest rate, not the real interest rate. So the higher the inflation rate, the higher is the true tax rate on interest income. Here is an example. Suppose the real interest rate is 4 percent a year and the tax rate is 40 percent.

If there is no inflation, the nominal interest rate equals the real interest rate. The tax on 4 percent interest is 1.6 percent (40 percent of 4 percent), so the real after-tax interest rate is 4 percent minus 1.6 percent, which equals 2.4 percent.

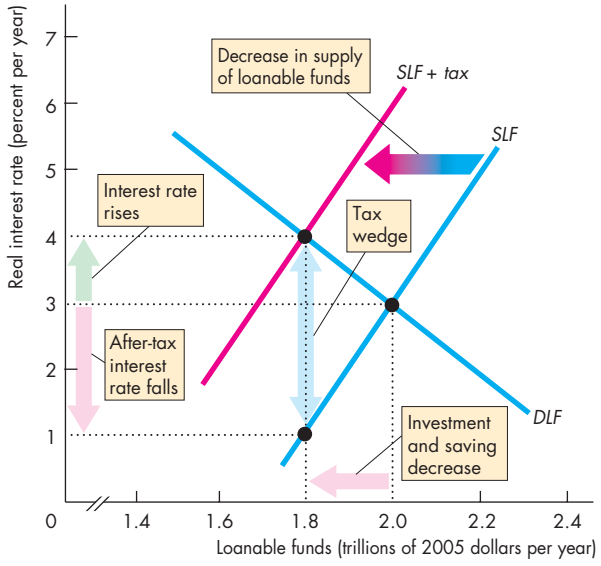
If the inflation rate is 6 percent a year, the nominal interest rate is 10 percent. The tax on 10 percent interest is 4 percent (40 percent of 10 percent), so the real after-tax interest rate is 4 percent minus 4 percent, which equals zero. The true tax rate in this case is not 40 percent but 100 percent!

Effect of Income Tax on Saving and Investment In Fig. 13.6, initially there are no taxes. Also, the government has a balanced budget. The demand for loanable funds curve, which is also the investment demand curve, is *DLF*. The supply of loanable funds curve, which is also the saving supply curve, is *SLF*. The equilibrium interest rate is 3 percent a year, and the quantity of funds borrowed and lent is $2 trillion a year.

A tax on interest income has no effect on the demand for loanable funds. The quantity of investment and borrowing that firms plan to undertake depends only on how productive capital is and what it costs—its real interest rate. But a tax on interest income weakens the incentive to save and lend and decreases the supply of loanable funds. For each dollar of before-tax interest, savers must pay the government an amount determined by the tax code. So savers look at the after-tax real interest rate when they decide how much to save.

When a tax is imposed, saving decreases and the supply of loanable funds curve shifts leftward to *SLF + tax*. The amount of tax payable is measured by the vertical distance between the *SLF* curve and the *SLF + tax* curve. With this smaller supply of loanable funds, the interest rate rises to 4 percent a year but the *after-tax* interest rate falls to 1 percent a year. A tax wedge is driven between the interest rate and the after-tax interest rate, and the equilibrium quantity of loanable funds decreases. Saving and investment also decrease.

FIGURE 13.6 The Effects of a Tax on Capital Income



The demand for loanable funds and investment demand curve is *DLF*, and the supply of loanable funds and saving supply curve is *SLF*. With no income tax, the real interest rate is 3 percent a year and investment is $2 trillion. An income tax shifts the supply curve leftward to *SLF + tax*. The interest rate rises to 4 percent a year, the after-tax interest rate falls to 1 percent a year, and investment decreases to $1.8 trillion. With less investment, the real GDP growth rate decreases.

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Tax Revenues and the Laffer Curve

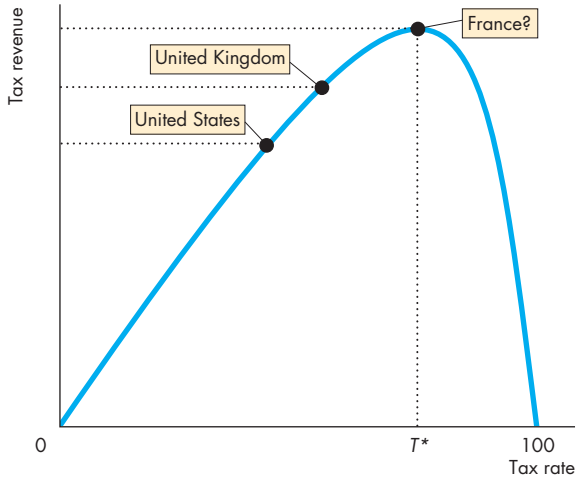
An interesting consequence of the effect of taxes on employment and saving is that a higher tax *rate* does not always bring greater tax *revenue*. A higher tax rate brings in more revenue per dollar earned. But because a higher tax rate decreases the number of dollars earned, two forces operate in opposite directions on the tax revenue collected.

The relationship between the tax rate and the amount of tax revenue collected is called the **Laffer curve**. The curve is so named because Arthur B. Laffer, a member of President Reagan's Economic Policy Advisory Board, drew such a curve on a table napkin and launched the idea that tax *cuts* could *increase* tax revenue.

Figure 13.7 shows a Laffer curve. The tax *rate* is on the *x*-axis, and total tax *revenue* is on the *y*-axis. For tax rates below T^*, an increase in the tax rate increases tax revenue; at T^*, tax revenue is maximized; and a tax rate increase above T^* decreases tax revenue.

Most people think that the United States is on the upward-sloping part of the Laffer curve; so is the United Kingdom. But France might be close to the maximum point or perhaps even beyond it.

FIGURE 13.7 A Laffer Curve



A Laffer curve shows the relationship between the tax rate and tax revenues. For tax rates below T^*, an increase in the tax rate increases tax revenue. At the tax rate T^*, tax revenue is maximized. For tax rates above T^*, an increase in the tax rate decreases tax revenue.

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The Supply-Side Debate

Before 1980, few economists paid attention to the supply-side effects of taxes on employment and potential GDP. Then, when Ronald Reagan took office as president, a group of supply-siders began to argue the virtues of cutting taxes. Arthur Laffer was one of them. Laffer and his supporters were not held in high esteem among mainstream economists, but they were influential for a period. They correctly argued that tax cuts would increase employment and increase output. But they incorrectly argued that tax cuts would increase tax revenues and decrease the budget deficit. For this prediction to be correct, the United States would have had to be on the "wrong" side of the Laffer curve. Given that U.S. tax rates are among the lowest in the industrial world, it is unlikely that this condition was met. And when the Reagan administration did cut taxes, the budget deficit increased, a fact that reinforces this view.

Supply-side economics became tarnished because of its association with Laffer and came to be called "voodoo economics." But mainstream economists, including Martin Feldstein, a Harvard professor who was Reagan's chief economic adviser, recognized the power of tax cuts as incentives but took the standard view that tax cuts without spending cuts would swell the budget deficit and bring serious further problems. This view is now widely accepted by economists of all political persuasions.

REVIEW QUIZ

1. How does a tax on labor income influence the equilibrium quantity of employment?
2. How does the tax wedge influence potential GDP?
3. Why are consumption taxes relevant for measuring the tax wedge?
4. Why are income taxes on capital income more powerful than those on labor income?
5. What is the Laffer curve and why is it unlikely that the United States is on the "wrong" side of it?

You can work these questions in Study Plan 13.2 and get instant feedback. myeconlab

You now know how taxes influence potential GDP and saving and investment. Next we look at the intergenerational effects of fiscal policy.

Generational Effects of Fiscal Policy

Is a budget deficit a burden on future generations? If it is, how will the burden be borne? And is the budget deficit the only burden on future generations? What about the deficit in the Social Security fund? Does it matter who owns the bonds that the government sells to finance its deficit? What about the bonds owned by foreigners? Won't repaying those bonds impose a bigger burden than repaying bonds owned by Americans?

To answer questions like these, we use a tool called **generational accounting**—an accounting system that measures the lifetime tax burden and benefits of each generation. This accounting system was developed by Alan Auerbach of the University of Pennsylvania and Laurence Kotlikoff of Boston University. Generational accounts for the United States have been prepared by Jagadeesh Gokhale of the Cato Institute and Kent Smetters of the Wharton School at the University of Pennsylvania.

Generational Accounting and Present Value

Income taxes and Social Security taxes are paid by people who have jobs. Social Security benefits are paid to people after they retire. So to compare taxes and benefits, we must compare the value of taxes paid by people during their working years with the benefits received in their retirement years. To compare the value of an amount of money at one date with that at a later date, we use the concept of present value. A **present value** is an amount of money that, if invested today, will grow to equal a given future amount when the interest that it earns is taken into account. We can compare dollars today with dollars in 2030 or any other future year by using present values.

For example, if the interest rate is 5 percent a year, $1,000 invested today will grow, with interest, to $11,467 after 50 years. So the present value (in 2010) of $11,467 in 2060 is $1,000.

By using present values, we can assess the magnitude of the government's debts to older Americans in the form of pensions and medical benefits.

But the assumed interest rate and growth rate of taxes and benefits critically influence the answers we get. For example, at an interest rate of 3 percent a year, the present value (in 2010) of $11,467 in 2060 is $2,616. The lower the interest rate, the greater is the present value of a given future amount.

Because there is uncertainty about the proper interest rate to use to calculate present values, plausible alternative numbers are used to estimate a range of present values.

Using generational accounting and present values, economists have studied the situation facing the federal government arising from its Social Security obligations, and they have found a time bomb!

The Social Security Time Bomb

When Social Security was introduced in the New Deal of the 1930s, today's demographic situation was not foreseen. The age distribution of the U.S. population today is dominated by the surge in the birth rate after World War II that created what is called the "baby boom generation." There are 77 million "baby boomers."

The first of the baby boomers start collecting Social Security pensions in 2008 and in 2011 they became eligible for Medicare benefits. By 2030, all the baby boomers will have reached retirement age and the population supported by Social Security and Medicare benefits will have doubled.

Under the existing laws, the federal government has an obligation to this increasing number of citizens to pay pensions and Medicare benefits on an already declared scale. These obligations are a debt owed by the government and are just as real as the bonds that the government issues to finance its current budget deficit.

To assess the full extent of the government's obligations, economists use the concept of fiscal imbalance. **Fiscal imbalance** is the present value of the government's commitments to pay benefits minus the present value of its tax revenues. Fiscal imbalance is an attempt to measure the scale of the government's true liabilities.

Gokhale and Smetters estimated that the fiscal imbalance was $79 trillion in 2010. To put the $79 trillion in perspective, note that U.S. GDP in 2010 was $13.6 trillion. So the fiscal imbalance was 5.8 times the value of one year's production. And the fiscal imbalance grows every year by an amount that in 2010 was approaching $2 trillion.

These are enormous numbers and point to a catastrophic future. How can the federal government meet its Social Security obligations? Gokhale and Smetters consider four alternatives:

- Raise income taxes
- Raise Social Security taxes
- Cut Social Security benefits
- Cut federal government discretionary spending

They estimated that if we had started in 2003 and made only one of these changes, income taxes would need to be raised by 69 percent, or Social Security taxes raised by 95 percent, or Social Security benefits cut by 56 percent. Even if the government stopped all its discretionary spending, including that on national defense, it would not be able to pay its bills. By combining the four measures, the pain from each could be lessened, but the pain would still be severe.

A further way of meeting these obligations is to pay by printing money. As you learned in Chapter 8 (see pp. 200–201), the consequence of this solution would be a seriously high inflation rate.

Generational Imbalance

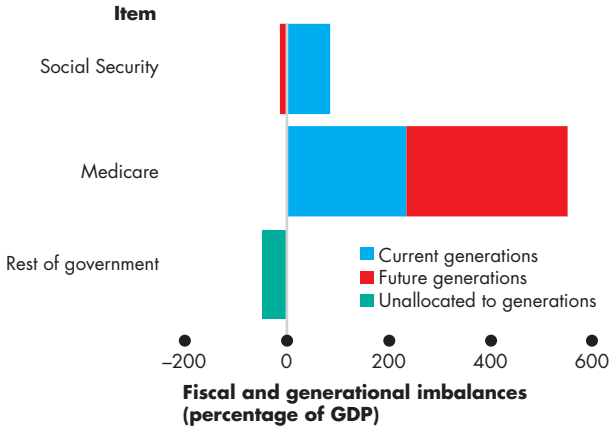
A fiscal imbalance must eventually be corrected and when it is, people either pay higher taxes or receive lower benefits. The concept of generational imbalance tells us who will pay. **Generational imbalance** is the division of the fiscal imbalance between the current and future generations, assuming that the current generation will enjoy the existing levels of taxes and benefits.

Figure 13.8 shows an estimate of how the fiscal imbalance is distributed across the current (born before 1988) and future (born in or after 1988) generations. It also shows that the major source of the imbalances is Medicare. Social Security pension benefits create a fiscal imbalance, but these benefits will be more than fully paid for by the current generation. But the current generation will pay less than 50 percent of its Medicare costs, and the balance will fall on future generations. If we sum all the items, the current generation will pay 43 percent and future generations will pay 57 percent of the fiscal imbalance.

Because the estimated fiscal imbalance is so large, it is not possible to predict how it will be resolved. But we can predict that the outcome will involve both lower benefits and higher taxes or paying bills with new money and creating inflation.

The Fed would have to cooperate if inflation were to be used to deal with the imbalance, and this cooperation might be hard to obtain.

FIGURE 13.8 Fiscal and Generational Imbalances



The bars show the scale of the fiscal imbalance. The largest component at almost 600 percent of GDP is Medicare benefits. These benefits are also the main component of the generational imbalance. Social Security pensions are paid for entirely by the current generation.

Source of data: Jagadeesh Gokhale and Kent Smetters, "Fiscal and Generational Imbalances: An Update" *Tax Policy and the Economy*, Vol. 20, pp. 193-223, University of Chicago Press, 2006.

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International Debt

So far in our discussion of government deficits and debts, we've ignored the role played by the rest of the world. We'll conclude this discussion by considering the role and magnitude of international debt.

You've seen that borrowing from the rest of the world is one source of loanable funds. And you've also seen that this source of funds became larger during the late 1990s and 2000s.

How large is the contribution of the rest of the world? How much business investment have we paid for by borrowing from the rest of the world? And how much U.S. government debt is held abroad?

Table 13.2 answers these questions. In June 2010, the United States had a net debt to the rest of the world of $9.5 trillion. Of that debt, $4.0 trillion was U.S. government debt. U.S. corporations had used $4.7 trillion of foreign funds ($2.4 trillion in bonds and $2.3 trillion in equities). About two thirds of U.S. government debt is held by foreigners.

The international debt of the United States is important because, when that debt is repaid, the United States will transfer real resources to the rest of

TABLE 13.2 What the United States Owed the Rest of the World in June 2010

	$ trillions
(a) U.S. liabilities	
Deposits in U.S. banks	0.6
U.S. government securities	4.0
U.S. corporate bonds	2.4
U.S. corporate equities	2.3
Other (net)	0.2
Total	**9.5**
(b) U.S. government securities	
Held by rest of world	4.0
Held in the United States	2.0
Total	**6.0**

Source of data: Federal Reserve Board.

the world. Instead of running a large net exports deficit, the United States will need a surplus of exports over imports. To make a surplus possible, U.S. saving must increase and consumption must decrease. Some tough choices lie ahead.

REVIEW QUIZ

1 What is a present value?
2 Distinguish between fiscal imbalance and generational imbalance.
3 How large was the estimated U.S. fiscal imbalance in 2010 and how did it divide between current and future generations?
4 What is the source of the U.S. fiscal imbalance and what are the painful choices that we face?
5 How much of U.S. government debt is held by the rest of the world?

You can work these questions in Study Plan 13.3 and get instant feedback. myeconlab

You now know how the supply-side effects of fiscal policy work and you've seen the shocking scale of fiscal imbalance. We conclude this chapter by looking at fiscal policy as a tool for fighting a recession.

Fiscal Stimulus

The 2008–2009 recession brought Keynesian macroeconomic ideas (see p. 256) back into fashion and put a spotlight on **fiscal stimulus**—the use of fiscal policy to increase production and employment. But whether fiscal policy is truly stimulating, and if so, how stimulating, are questions that generate much discussion and disagreement. You're now going to explore these questions.

Fiscal stimulus can be either *automatic* or *discretionary*. A fiscal policy action that is triggered by the state of the economy with no action by government is called **automatic fiscal policy**. The increase in total unemployment benefits triggered by the massive rise in the unemployment rate through 2009 is an example of automatic fiscal policy.

A fiscal policy action initiated by an act of Congress is called **discretionary fiscal policy**. It requires a change in a spending program or in a tax law. A fiscal stimulus act passed by Congress in 2009 (see *Economics in Action* on p. 336) is an example of discretionary fiscal policy.

Whether automatic or discretionary, an increase in government outlays or a decrease in government receipts can stimulate production and jobs. An increase in expenditure on goods and services directly increases aggregate expenditure. And an increase in transfer payments (such as unemployment benefits) or a decrease in tax revenues increases disposable income, which enables people to increase consumption expenditure. Lower taxes also strengthen the incentives to work and invest.

We'll begin by looking at automatic fiscal policy and the interaction between the business cycle and the budget balance.

Automatic Fiscal Policy and Cyclical and Structural Budget Balances

Two items in the government budget change automatically in response to the state of the economy. They are *tax revenues* and *needs-tested spending*.

Automatic Changes in Tax Revenues The tax laws that Congress enacts don't legislate the number of tax *dollars* the government will raise. Rather they define the tax *rates* that people must pay. Tax dollars paid depend on tax rates and incomes. But incomes vary with real GDP, so tax revenues depend on real GDP. When real GDP increases in a business cycle expan-

sion, wages and profits rise, so tax revenues from these incomes rise. When real GDP decreases in a recession, wages and profits fall, so tax revenues fall.

Needs-Tested Spending The government creates programs that pay benefits to qualified people and businesses. The spending on these programs results in transfer payments that depend on the economic state of individual citizens and businesses. When the economy expands, unemployment falls, the number of people experiencing economic hardship decreases, so needs-tested spending decreases. When the economy is in a recession, unemployment is high and the number of people experiencing economic hardship increases, so needs-tested spending on unemployment benefits and food stamps increases.

Automatic Stimulus Because government receipts fall and outlays increase in a recession, the budget provides automatic stimulus that helps to shrink the recessionary gap. Similarly, because receipts rise and outlays decrease in a boom, the budget provides automatic restraint to shrink an inflationary gap.

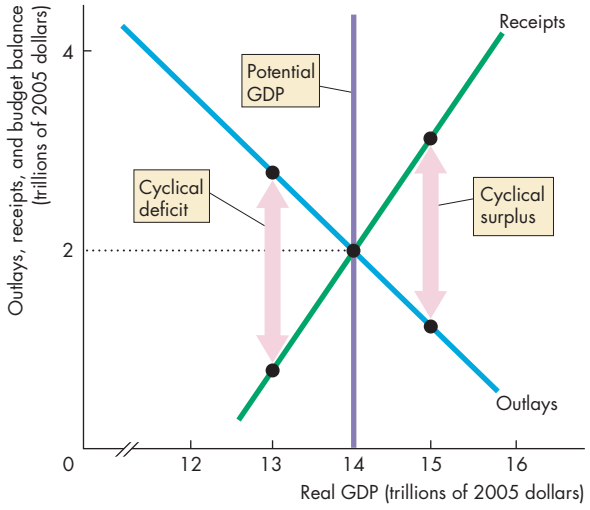
Cyclical and Structural Budget Balances To identify the government budget deficit that arises from the business cycle, we distinguish between the **structural surplus or deficit**, which is the budget balance that would occur if the economy were at full employment, and the **cyclical surplus or deficit**, which is the actual surplus or deficit *minus* the structural surplus or deficit.

Figure 13.9 illustrates these concepts. Outlays *decrease* as real GDP *increases*, so the outlays curve slopes downward; and receipts *increase* as real GDP *increases*, so the receipts curve slopes upward.

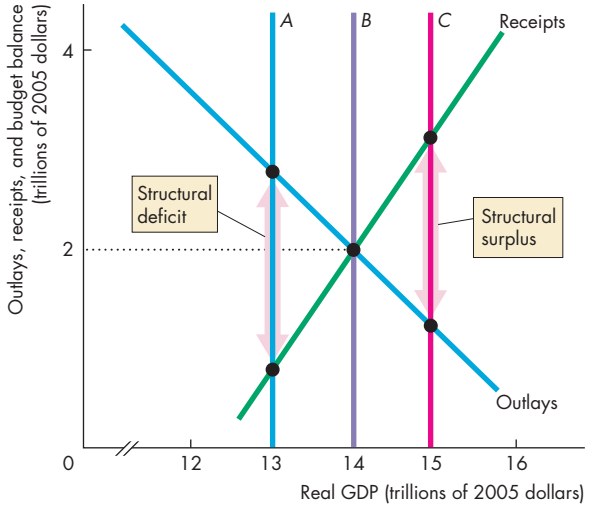
In Fig. 13.9(a), potential GDP is $14 trillion and if real GDP equals potential GDP, the government has a *balanced budget*. There is no structural surplus or deficit. But there might be a cyclical surplus or deficit. If real GDP is less than potential GDP at $13 trillion, outlays exceed receipts and there is a *cyclical deficit*. If real GDP is greater than potential GDP at $15 trillion, outlays are less than receipts and there is a *cyclical surplus*.

In Fig. 13.9(b), if potential GDP equals $14 trillion (line *B*), the *structural balance is zero*. But if potential GDP is $13 trillion (line *A*), the government budget has a *structural deficit*. And if potential GDP is $15 trillion (line *C*), the government budget has a *structural surplus*.

FIGURE 13.9 Cyclical and Structural Surpluses and Deficits



(a) Cyclical deficit and cyclical surplus



(b) Structural deficit and structural surplus

In part (a), potential GDP is $14 trillion. When real GDP is less than potential GDP, the budget is in a *cyclical deficit*. When real GDP exceeds potential GDP, the budget is in a *cyclical surplus*. The government has a *balanced budget* when real GDP equals potential GDP.

In part (b), if potential GDP is $13 trillion, there is a *structural deficit* and if potential GDP is $15 trillion, there is a *structural surplus*. If potential GDP is $14 trillion, the budget is in structural balance.

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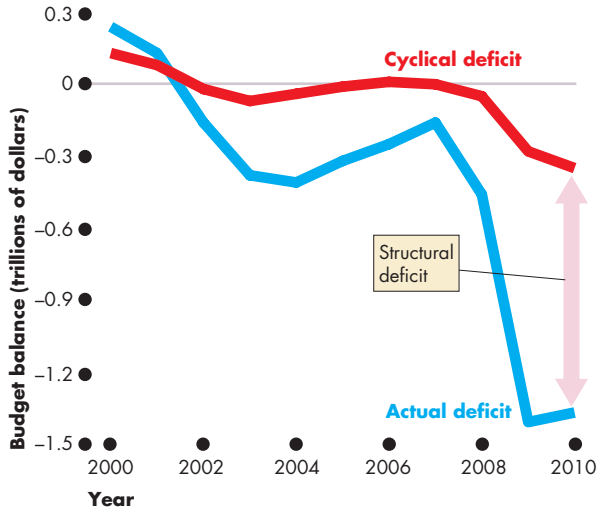
U.S. Structural Budget Balance in 2010 The U.S. federal budget in 2010 was in deficit at $1.4 trillion and the recessionary gap (the gap between real GDP and potential GDP) was close to $1 trillion. With a large recessionary gap, you would expect some of the deficit to be cyclical. But how much of the 2010 deficit was cyclical and how much was structural?

The Congressional Budget Office (CBO) answers this question by analyzing the detailed items in the budget. According to the CBO, the cyclical deficit in 2010 was $0.4 trillion and the structural deficit was $1 trillion. Figure 13.10 shows the cyclical and structural deficit between 2000 and 2010.

You can see that the structural deficit was small in 2007, increased in 2008, and exploded in 2009. The 2009 fiscal stimulus package (see *Economics in Action*) created most of this structural deficit.

When full employment returns, which the CBO says will be in 2014, the cyclical deficit will vanish. But the structural deficit must be addressed by further acts of Congress. No one knows the discretionary measures that will be taken to reduce the structural deficit and this awkward fact creates enormous uncertainty.

FIGURE 13.10 U.S. Cyclical and Structural Budget Balance



As real GDP shrank in the 2008–2009 recession, receipts fell, outlays increased, and the budget deficit increased. The cyclical deficit was small compared to the actual deficit; most of the 2010 deficit was structural.

Source of data: Congressional Budget Office.

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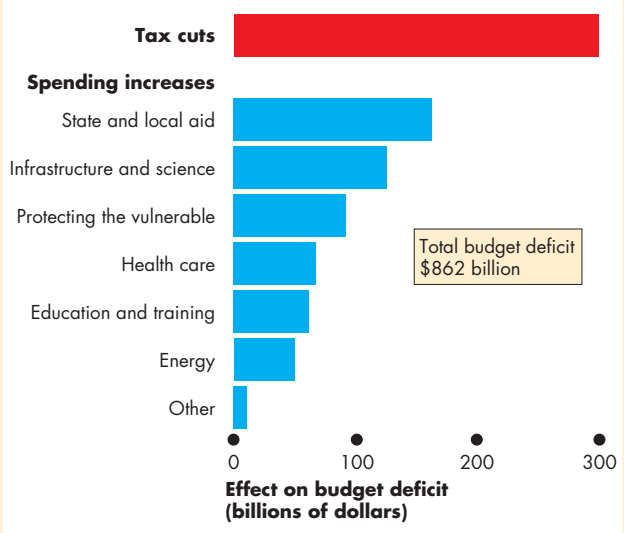
Economics in Action

The 2009 Fiscal Stimulus Package

Congress passed the *American Recovery and Reinvestment Act of 2009* (the 2009 Fiscal Stimulus Act) in February 2009, and President Obama signed it into law at an economic forum he hosted in Denver. This act was the third and most ambitious in a series of stimulus packages and its purpose was to increase investment and consumer expenditure and lead to the creation of jobs.

The total package added $862 billion to the federal government's budget deficit: $288 billion from tax cuts and the rest from increased spending. The spending increases included payments to state and local governments ($144 billion), spending on infrastructure and science projects ($111 billion), programs in health care ($59 billion), education and training ($53 billion), and energy ($43 billion).



The Components of the 2009 Fiscal Stimulus Act

The president signs the 2009 fiscal stimulus act.

Discretionary Fiscal Stimulus

Most discussion of *discretionary* fiscal stimulus focuses on its effects on aggregate demand. But you've seen (on pp. 328–331) that taxes influence aggregate supply and that the balance of taxes and spending—the government budget deficit—can crowd out investment and slow the pace of economic growth. So discretionary fiscal stimulus has both supply-side and demand-side effects that end up determining its overall effectiveness.

We're going to begin our examination of discretionary fiscal stimulus by looking at its effects on aggregate demand.

Fiscal Stimulus and Aggregate Demand Changes in government expenditure and changes in taxes change aggregate demand by their influence on spending plans, and they also have multiplier effects.

Let's look at the two main fiscal policy multipliers: the government expenditure and tax multipliers.

The **government expenditure multiplier** is the quantitative effect of a change in government expenditure on real GDP. Because government expenditure is a component of aggregate expenditure, an increase in government spending increases aggregate expenditure and real GDP. But does a $1 billion increase in government expenditure increase real GDP by $1 billion, or more than $1 billion, or less than $1 billion?

When an increase in government expenditure increases real GDP, incomes rise and the higher incomes bring an increase in consumption expenditure. If this were the only consequence of increased government expenditure, the government expenditure multiplier would be greater than 1.

But an increase in government expenditure increases government borrowing (or decreases government lending if there is a budget surplus) and raises the real interest rate. With a higher cost of borrowing, investment decreases, which partly offsets the increase in government spending. If this were the only consequence of increased government expenditure, the multiplier would be less than 1.

The actual multiplier depends on which of the above effects is stronger and the consensus is that the crowding-out effect is strong enough to make the government expenditure multiplier less than 1.

The **tax multiplier** is the quantitative effect of a change in taxes on real GDP. The demand-side effects of a tax cut are likely to be smaller than an equivalent increase in government expenditure. The reason is that a tax cut influences aggregate demand by increasing disposable income, only part of which gets spent. So the initial injection of expenditure from a $1 billion tax cut is less than $1 billion.

A tax cut has similar crowding-out consequences to a spending increase. It increases government borrowing (or decreases government lending), raises the real interest rate, and cuts investment.

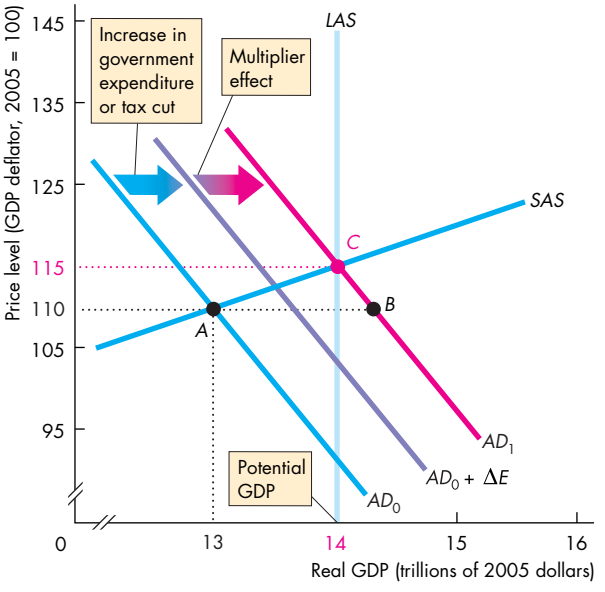
The tax multiplier effect on aggregate demand depends on these two opposing effects and is probably quite small.

Graphical Illustration of Fiscal Stimulus Figure 13.11 shows how fiscal stimulus is supposed to work if it is perfectly executed and has its desired effects.

Potential GDP is $14 trillion and real GDP is below potential at $13 trillion so the economy has a recessionary gap of $1 trillion.

To restore full employment, the government passes a fiscal stimulus package. An increase in

FIGURE 13.11 Expansionary Fiscal Policy



Potential GDP is $14 trillion, real GDP is $13 trillion, and there is a $1 trillion recessionary gap. An increase in government expenditure and a tax cut increase aggregate expenditure by ΔE. The multiplier increases consumption expenditure. The *AD* curve shifts rightward to AD_1, the price level rises to 115, real GDP increases to $14 trillion, and the recessionary gap is eliminated.

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government expenditure and a tax cut increase aggregate expenditure by ΔE. If this were the only change in spending plans, the *AD* curve would shift rightward to become the curve labeled $AD_0 + \Delta E$ in Fig. 13.11. But if fiscal stimulus sets off a multiplier process that increases consumption expenditure, and does not crowd out much investment expenditure, aggregate demand increases further and the *AD* curve shifts to AD_1.

With no change in the price level, the economy would move from point *A* to point *B* on AD_1. But the increase in aggregate demand brings a rise in the price level along the upward-sloping *SAS* curve and the economy moves to point *C*.

At point *C*, the economy returns to full employment and the recessionary gap is eliminated.

Fiscal Stimulus and Aggregate Supply You've seen earlier in this chapter that taxes influence aggregate supply. A tax on labor income (on wages) drives a wedge between the cost of labor and the take-home pay of workers and lowers employment and output (p. 328). A tax on capital income (on interest) drives a wedge between the cost of borrowing and the return to lending and lowers saving and investment (p. 330). With less saving and investment, the real GDP growth rate slows.

These negative effects of taxes on real GDP and its growth rate and on employment mean that a tax *cut* increases real GDP and its growth rate and increases employment.

These supply-side effects of a tax cut occur along with the demand-side effects and are probably much larger than the demand-side effects and make the overall tax multiplier much larger than the government expenditure multiplier—see *Economics in Action.*

An increase in government expenditure financed by borrowing increases the demand for loanable funds and raises the real interest rate, which in turn lowers investment and private saving. This cut in investment is the main reason why the government expenditure multiplier is so small and why a deficit-financed increase in government spending ends up making only a small contribution to job creation. And because government expenditure crowds out investment, it lowers future real GDP.

So a fiscal stimulus package that is heavy on tax cuts and light on government spending works. But an increase in government expenditure alone is not an effective way to stimulate production and create jobs.

The description of the effects of discretionary fiscal stimulus and its graphical illustration in Fig. 13.11 make it look easy: Calculate the recessionary gap and the multipliers, change government expenditure and taxes, and eliminate the gap. In reality, things are not that easy.

Getting the magnitude and the timing right is difficult, and we'll now examine this challenge.

Magnitude of Stimulus Economists have diverging views about the size of the government spending and tax multipliers because there is insufficient empirical evidence on which to pin their size with accuracy. This fact makes it impossible for Congress to determine the amount of stimulus needed to close a given

Economics in Action

How Big Are the Fiscal Stimulus Multipliers?

When the 2009 fiscal stimulus package cut taxes by $300 billion and increased government spending by almost $500 billion, by how much did aggregate expenditure and real GDP change? How big were the fiscal policy multipliers? Was the government expenditure multiplier larger than the tax multiplier? These questions are about the multiplier effects on *equilibrium real GDP*, not just on aggregate demand.

President Obama's chief economic adviser in 2009, Christina Romer, a University of California, Berkeley, professor, expected the government expenditure multiplier to be about 1.5. So she was expecting the spending increase of $500 billion to go a long way toward closing the $1 trillion output gap by some time in 2010.

Robert Barro, a professor at Harvard University, says this multiplier number is not in line with previous experience. Based on his calculations, an additional $500 billion of government spending would increase aggregate expenditure by only $250 billion because it would lower private spending in a crowding-out effect by $250 billion—the multiplier is 0.5.

Harald Uhlig, a professor at the University of Chicago, says that the government expenditure multiplier on real GDP is even smaller and lies between 0.3 and 0.4, so that a $500 billion increase in government spending increases aggregate expenditure by between $150 billion and $200 billion.

output gap. Further, the actual output gap is not known and can only be estimated with error. For these two reasons, discretionary fiscal policy is risky.

Time Lags Discretionary fiscal stimulus actions are also seriously hampered by three time lags:

- Recognition lag
- Law-making lag
- Impact lag

Recognition Lag The recognition lag is the time it takes to figure out that fiscal policy actions are needed. This process involves assessing the current state of the economy and forecasting its future state.

There is greater agreement about tax multipliers. Because tax cuts strengthen the incentive to work and to invest, they increase aggregate supply as well as aggregate demand.

These multipliers get bigger as more time elapses. Harald Uhlig says that after one year, the tax multiplier is 0.5 so that the $300 billion tax cut would increase real GDP by about $150 billion by early 2010. But with two years of time to respond, real GDP would be $600 billion higher—a multiplier of 2. And after three years, the tax multiplier builds up to more than 6.

The implications of the work of Barro and Uhlig are that tax cuts are a powerful way to stimulate real GDP and employment but spending increases are not effective.

Christina Romer agrees that the economy hasn't performed in line with a multiplier of 1.5 but says other factors deteriorated and without the fiscal stimulus, the outcome would have been even worse.

Christina Romer: 1.5

Robert Barro: 0.5

Harald Uhlig: 0.4

Law-Making Lag The *law-making lag* is the time it takes Congress to pass the laws needed to change taxes or spending. This process takes time because each member of Congress has a different idea about what is the best tax or spending program to change, so long debates and committee meetings are needed to reconcile conflicting views. The economy might benefit from fiscal stimulation today, but by the time Congress acts, a different fiscal medicine might be needed.

Impact Lag The *impact lag* is the time it takes from passing a tax or spending change to its effects on real GDP being felt. This lag depends partly on the speed with which government agencies can act and partly on the timing of changes in spending plans by households and businesses. These changes are spread out over a number of quarters and possibly a number of years.

Economic forecasting is steadily improving, but it remains inexact and subject to error. The range of uncertainty about the magnitudes of the spending and tax mulitpliers make discretionary fiscal stimulus an imprecise tool for boosting production and jobs and the crowding out consequences raise serious questions about its effects on long-term economic growth.

REVIEW QUIZ

1. What is the distinction between automatic and discretionary fiscal policy?
2. How do taxes and needs-tested spending programs work as automatic fiscal policy to dampen the business cycle?
3. How do we tell whether a budget deficit needs discretionary action to remove it?
4. How can the federal government use discretionary fiscal policy to stimulate the economy?
5. Why might fiscal stimulus crowd out investment?

You can work these questions in Study Plan 13.4 and get instant feedback. myeconlab

You've now seen the effects of fiscal policy, and *Reading Between the Lines* on pp. 340–341 applies what you've learned to U.S. fiscal policy.