



## 26 Fiscal Policy

In response to the recession that began in December 2007 and ended in June 2009, Presidents George W. Bush and Barack Obama both proposed—and convinced the Congress to enact—countercyclical fiscal policy legislation with the express purpose of stimulating the economy. In February 2008 President Bush signed the \$152 billion Economic Stimulus Act, which included direct payments to individuals and families so that they would increase consumption and thereby jump-start the economy. A year later President Barack Obama signed the much larger \$787 billion American Recovery and Reinvestment Act of 2009, which included not only payments to individuals and families but also grants to the state and local governments to finance increased infrastructure and other spending.

Even though ostensibly aimed at helping the economy recover from recession, these fiscal policy packages generated substantial policy disagreements and controversy. Critics of the 2008 stimulus bill argued that people used at best a small fraction of the stimulus funds to increase consumption. Critics of the 2009 stimulus argued that the funds sent to the states were not used to increase infrastructure spending and

thereby did not jump-start government purchases of goods and services. Proponents of the legislation argued that the recession would have been much worse without the fiscal policy actions.

Soon after these short-run stimulus packages were passed another fiscal policy issue took center stage: the large government budget deficits and growing federal debt. In part, because the payments to individuals or the grants to the states were financed by issuing more debt, the growing debt was caused by the stimulus packages. But the seeds of the debt problem were planted before the recession when legislation was passed that implied increased spending in the future. But here, too, controversy exists, with some claiming that the debt is not such a problem and others arguing that insufficient taxes rather than spending is the main cause of the deficit and debt.

In this chapter, we examine the economic theories and facts that bear on the controversies over short-term countercyclical fiscal policy and the problem of long-term debt. We begin by reviewing how federal government decisions are made whether about spending, tax revenues, the deficit, or the debt.

# The Government Budget

The **federal budget** is the major document describing fiscal policy in the United States. The budget includes the estimates of the surplus or deficit that get so much attention as well as proposals for taxes and spending. Let’s look at how the federal budget in the United States is put together.

**federal budget**  
a summary of the federal government’s proposals for spending, taxes, and the deficit.

## Setting the Annual Budget

In the United States, the president submits a new budget to Congress each year for the following fiscal year. The fiscal year runs from October to October. For example, *The Budget of the United States: Fiscal Year 2012* applies to spending and taxes from October 1, 2011, through September 30, 2012. It was submitted to Congress by the president in February 2011. The president typically devotes part of the State of the Union address to describing the budget and fiscal policy. Also at the start of each year, the Council of Economic Advisers (CEA) prepares and releases the *Economic Report of the President*, providing the economic forecasts underlying the budget. The Congressional Budget Office (CBO) makes its own economic forecasts.

In putting together the federal budget, the president proposes specific spending programs that fit into an overall philosophy of what the government should be doing. In any one year, however, most of the spending in the budget is determined by ongoing programs, which the president usually can do little to change. For example, payments of social security benefits to retired people are a large item in the budget, but the amount of spending on social security depends on how many people are eligible. As more people retire, spending automatically goes up unless the social security law is changed. Thus, in reality, the president can change only a small part of the budget each year, unless new legislation is passed.

**A Balanced Budget versus a Deficit or Surplus** Taxes to pay for the spending programs also are included in the budget. As part of the budget, the president may propose an increase or a decrease in taxes. *Tax revenues* are the total dollar amount the government receives from taxpayers each year. When tax revenues are exactly equal to spending, there is a **balanced budget**. When tax revenues are greater than spending, there is a **budget surplus**. When spending is greater than tax revenues, there is a **budget deficit**, and the government must borrow to pay the difference.

**balanced budget**  
a budget in which tax revenues equal spending.

**budget surplus**  
the amount by which tax revenues exceed government spending.

**budget deficit**  
the amount by which government spending exceeds tax revenues.

Budget Deficit	Budget Balance	Budget Surplus
Tax revenues < spending	Tax revenues = spending	Tax revenues > spending

**The Proposed Budget versus the Actual Budget** Keep in mind that the budget the president submits is only a *proposal*. The actual amounts of tax revenues and spending during the fiscal year are quite different from what is proposed. There are two main reasons for this difference.

First, Congress usually modifies the president’s budget, adding programs and deleting others. Congress deliberates on the specific items in the president’s budget proposal for months before the fiscal year actually starts. After the president’s budget has been debated and modified, it is passed by Congress. Only when the president signs the legislation is the budget enacted into law. Because of this congressional modification, the enacted budget is always different from the proposed budget. Figure 26-1 shows the budget moving from a proposal to completion. The same *budget cycle* occurs every year, but it does not always progress smoothly. In many years the president and Congress do not settle on a budget until well into the fiscal year.

Second, because of changes in the economy and other unanticipated events such as wars and natural disasters, the actual amounts of spending and taxes will be different

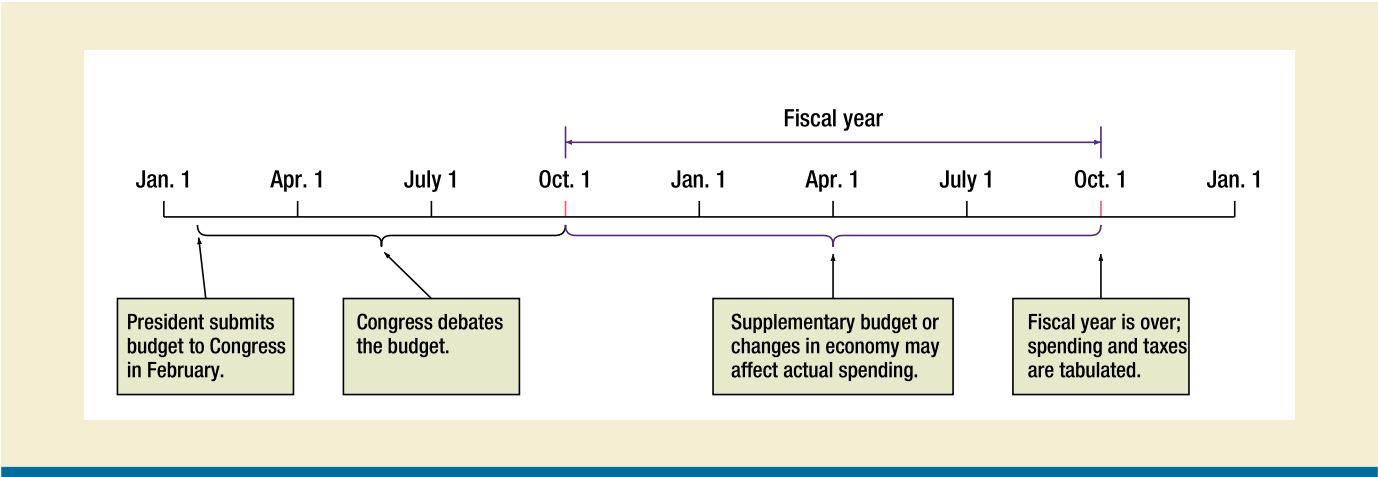
### RE M I N D E R

Note the difference between tax rate and tax revenues. For the income tax, if the average tax rate is 20 percent and income is \$3,000 billion, then tax revenues are \$600 billion.

Figure 26-1

A Typical Budget Cycle

The budget cycle begins well before the fiscal year begins. After considering various spending and tax options, the president submits a budget proposal to the Congress in February. The cycle is not complete until the end of the fiscal year. By then, a new budget is being enacted.



from what is enacted. After the fiscal year has begun and the budget has been enacted, various *supplementals* are proposed and passed. A supplemental is a change in a spending program or a change in the tax law that affects the budget in the current fiscal year.

A Look at the Federal Budget

Table 26-1 contains a summary of tax revenues and expenditure for the federal budget for fiscal year 2011.

Table 26-1  
FY 2011 Federal Tax  
Revenues and Expenditures  
(billions of dollars)

Tax revenues	2,228
Personal income	998
Corporate income	201
Payroll	819
Other	210
Expenditures	3,708
Social security	727
Medicare and Medicaid	846
Defense	712
Interest	225
Other	1,198
Deficit	1,480

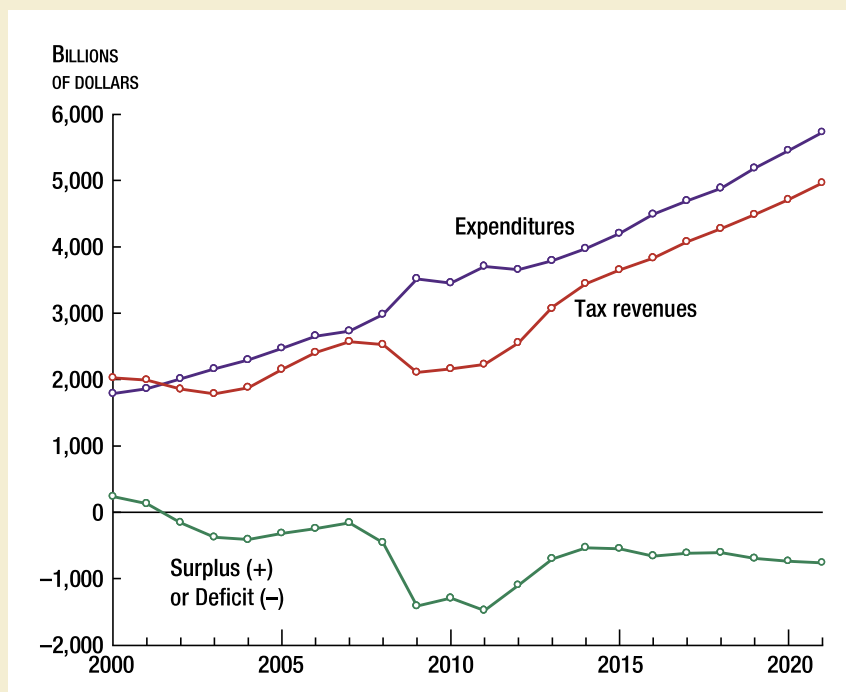
Source: Office of Management and Budget.

**The Deficit** Table 26-1 shows more expenditures than tax revenues, so there is a deficit. Budget deficits have been common in the United States for many years, although 1998 to 2001 were years of surplus. Deficits are projected to continue in the future unless government programs change. Figure 26-2 shows the deficit in recent years and projections into the future. It also shows tax revenue and spending.

**Taxes and Spending** Sources of tax revenue include *personal income taxes* paid by individuals on their total income, *corporate income taxes* paid by businesses on their profits, and *payroll taxes*, a percentage of wages paid by workers and their employers that supports government programs such as social security. Payroll taxes provide a large amount of revenues, nearly as much as personal income tax revenues.

On the expenditure side of the budget, one must distinguish between *purchases* of goods and services (such as defense), *transfer payments* (such as social security and Medicare and Medicaid), and *interest payments*. Only purchases are included in the symbol *G* that we have been using in the text. Purchases represent *new* production, whether of computers, federal court-houses, or food for military troops.

Interest payments are what the federal government pays every year on its debt. The government pays interest on its borrowings just like anyone

*Figure 26-2*

### Federal Tax Revenues, Expenditures, and the Surplus or Deficit 2000–2021

The surplus turned to deficit in 2002 as tax revenues fell while spending continued to increase. After nearly reaching a surplus in 2007, the deficit then grew larger as spending rose and tax revenues fell in the 2007–2009 recession.

else. Total interest payments equal the interest rate multiplied by the amount of government debt outstanding. For example, if the interest rate on government debt is 5 percent and total outstanding debt held by the public is \$5,000 billion, then interest payments would be \$250 billion ( $0.05 \times \$5,000$ ).

A significant part of the budget—nearly 50 percent—consists of social security, Medicare, and Medicaid. Social security and Medicare provide income and health care for the elderly, and Medicaid provides health care for people and families with very low incomes. Under current law, federal spending is projected to grow rapidly because of the increase in spending on these programs as the baby boomers retire and then live longer, and spending on health care increases. If Congress and the president do not change the law to either reduce the growth of spending or increase tax revenue, then the federal deficit will grow much larger in the future.

## The Federal Debt

The **federal debt** is the total amount of outstanding loans that the federal government owes. If the government runs a surplus, the debt comes down by the amount of the surplus. If the government has a deficit, the debt goes up by the amount of the deficit.

Consider an example involving thousands of dollars rather than trillions of dollars. Think of a student, Sam, who graduates from college with a \$14,000 outstanding loan. In other words, he has a debt of \$14,000. Suppose that the first year he works, his income is \$30,000, but he spends \$35,000. Sam's deficit for that year is \$5,000, and his debt rises to \$19,000. Assume that in his second year of work, he has an income of \$35,000 and spends \$38,000; his deficit is \$3,000, and his debt rises to \$22,000. Each

### **federal debt**

the total amount of outstanding loans owed by the federal government.



# ECONOMICS IN ACTION

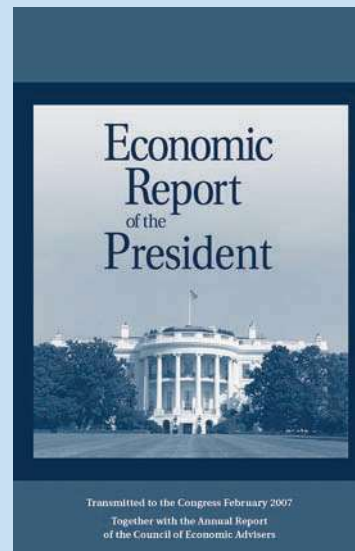
## The Economic Report of the President

Early each year, the president of the United States issues an economic report, which contains the economic forecast for the year prepared by the president's CEA. Most economic reports are filled with interesting economic facts and applications to the pressing fiscal policy issues of the day.

President John Kennedy's 1963 *Economic Report* made the case for his tax cuts, arguing that "it is appropriate to reduce significantly the highest income tax rates at the same time that a more comprehensive tax base is provided." Nearly 20 years later, President Ronald Reagan's 1982 *Economic Report* argued that the lower tax rates he advocated would stimulate economic growth. President Bill Clinton's 1994 *Economic Report* presented the case for "shifting federal spending priorities from consumption to investment," a key fiscal policy principle of his administration. These and the latest economic reports are available online at [fraser.stlouisfed.org](http://fraser.stlouisfed.org) and are worth reviewing.

The *Economic Report of the President* always attracts news attention and sometimes generates huge controversy. For example, the 2004 *Economic Report* explained, as part of an argument in favor of international trade, why distinguishing between a manufacturing job and a service job is difficult, saying that making a hamburger—a service job—was really a lot like manufacturing. The innocent comparison generated a tidal wave of ridicule because it sounded like the president's advisers were belittling the decline in manufacturing jobs in the United States. A CBS News report was headlined "Building Blue-Collar ... Burgers? Bush Report: Fast Food Work a Form of Manufacturing?" It said:

The annual economic report—most of which consists of charts and statistics—has been the focus of unusual scrutiny this year, perhaps reflecting the presidential campaign and concern about the lack of job creation despite an ongoing recovery....  
"When a good or service is produced at lower cost

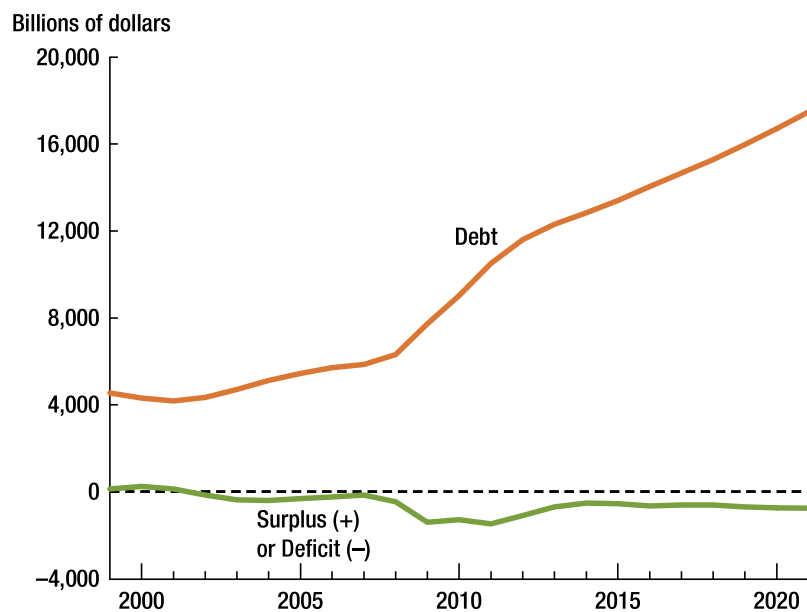


in another country, it makes sense to import it rather than to produce it domestically. This allows the United States to devote its resources to more productive purposes," the report read. The statement, which reflects standard economic theory about the efficiencies of trade, was denounced by Democrats and Republicans alike. "These people, what planet do they live on?" asked Democratic presidential candidate and North Carolina Sen. John Edwards. Even Republican House Speaker Dennis Hastert wrote to the White House protesting the claim.

Not surprisingly all the reports since the 2004 *Economic Report* have been given extra scrutiny by the White House to prevent such embarrassing attention, but they continue to be a valuable resource in which you can read about economics being used in action.

year his debt rises by the amount of his deficit. In the third year, Sam earns \$40,000 and spends \$33,000; he has a surplus of \$7,000. This would reduce his debt to \$15,000.

The laws of accounting that we apply to Sam also apply to Uncle Sam. A federal government deficit of \$1 trillion means that the outstanding government debt increases by \$1 trillion. Figure 26-3 shows the debt along with the deficit in the United States for two decades. The first decade is history as tabulated by federal government economists. The years from 2012 to 2021 are forecasts made by government economists in 2011.

*Figure 26-3*

### The Government Debt and Deficit

When there is a deficit, the debt increases. When there is a surplus, the debt falls. After a brief period in which government debt fell, the rate of increase has picked up significantly in the past few years.

For most of these years the debt increases because there are deficits. Observe, however, that the debt declined in 2000 and 2001 when there was a surplus. The debt then started increasing again. It rose particularly sharply during the 2007–2009 recession, but it is projected to continue increasing in the future long after that recession ended.

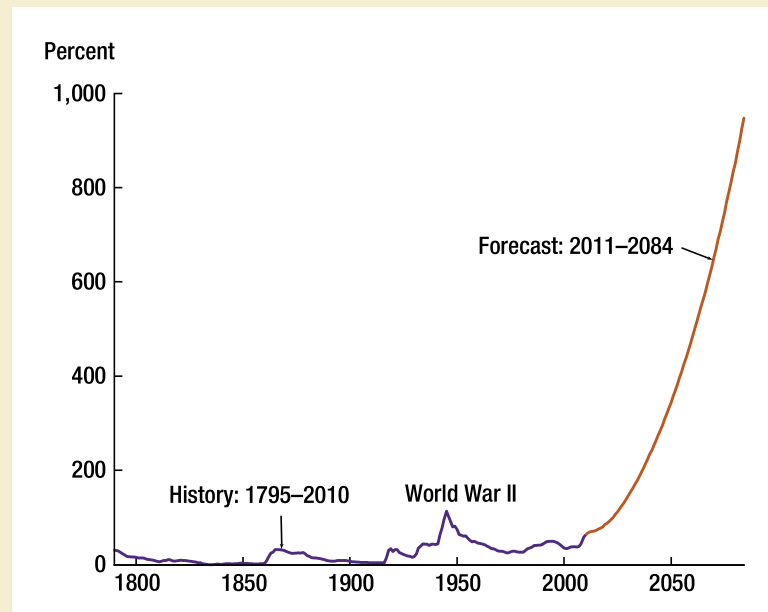
If Congress and the president do not change the law to either reduce the growth of spending or increase tax revenue, then the federal deficit will remain and the debt will continue to grow rapidly. As the debt grows, interest payments on the debt also will grow and absorb an ever larger share of the spending, leaving a smaller share for government to provide public goods and a social safety net.

As the government debt increases other problems occur. History shows that governments with high debt are prone to financial crises, which has been evident in Greece in recent years as many Americans have noticed. In fact, excessive debt in Greece, Ireland, Portugal, and Spain put the whole of Europe into a financial crisis. One concern is that holders of the debt lose confidence and refuse to continue financing the deficit. From the time of the first U.S. secretary of the treasury, Alexander Hamilton, the United States has established a strong reputation for paying its debts, but that credibility could decline if actions are not taken to control the growth of the debt. In addition, because foreign governments hold nearly one-half of the federal debt, people are concerned that they suddenly might sell the debt and cause an international crisis. Because of these concerns, interest has been renewed in dealing with the problem and politicians in Washington have begun to look for solutions.

**The Debt-to-GDP Ratio** When looking at the debt and the deficit over time, it is important to consider the size of the economy. For example, a \$3 trillion debt may not be much of a problem for an economy with a gross domestic product (GDP) of \$10 trillion but could be overwhelming for an economy with a GDP of \$1 trillion. An easy way

**Figure 26-4****Debt as a Percentage of GDP**

The debt history since the founding of the United States is shown along with future projections by the CBO. Debt as a percentage of GDP normally has increased in major war periods, such as World War II, but then declined as the deficit is reduced and GDP grows. The projection is made under the assumption that the federal law for Medicare, social security, and taxes as of 2010 does not change. To prevent this disastrous scenario, budget reforms are required.

**debt-to-GDP ratio**

the total amount of outstanding loans the federal government owes divided by nominal GDP.

to compare the debt to the size of the economy is to measure the debt as a percentage of GDP—the **debt-to-GDP ratio**. It is appropriate to consider the ratio of debt to nominal GDP rather than real GDP because the debt is stated in current dollars, just as nominal GDP is.

Figure 26-4 shows the history of the debt as a percentage of GDP in the United States since 1795 and projections by the CBO into the future. Note that the debt was a high percentage of GDP at the end of World War II because the U.S. government had borrowed large amounts to finance its military expenditures during the war. The debt-to-GDP ratio rose in the 1980s and then leveled off and fell in the 1990s, but it began to increase again when deficits returned. Unless budget reforms are put in place, the debt will explode in the future.

**State and Local Government Budgets**

Much of the government spending and taxation in the United States occurs outside of the federal government, in state and local governments. Although fiscal policy usually refers to the plans of the federal government, it is the combined action of federal, state, and local governments that has an impact on the overall economy. For example, during the 2007–2009 recession, many states cut back on spending, which would tend to reduce real GDP in the short run, just as reduced spending at the federal level would. The 2009 stimulus bill included hundreds of billions in assistance to state or local government intended to ward off cuts. Taken as a whole, state and local governments are a large force in the economy. In 2004 state and local government expenditures were about two-thirds of federal government expenditures.

Most of the state and local government expenditures are for public schools, local police, fire services, and roads. Observe that state and local government *purchases* of goods and services are larger than federal government purchases, especially when national defense is excluded.

Like the federal government, the state and local governments, on average, have been running deficits after a few years of surpluses in the late 1990s. These deficits worsened dramatically during the 2008 recession.

## REVIEW

- In the United States, the president submits a budget to Congress giving proposals for spending, for taxes, and for the deficit or surplus. The actual budget is different from the proposed budget because of congressional modifications and unforeseen events like unusually fast or slow economic growth.
- A budget surplus occurs when spending is less than tax revenues. Deficits occur when spending exceeds revenues.
- When a government or individual runs a deficit, the debt increases. Surpluses reduce the debt.
- It is appropriate to consider the debt in relation to the size of the economy by measuring it as a percentage of GDP.
- Federal government expenditures are larger than state or local government expenditures, but state and local government purchases are larger than federal government purchases.

## Countercyclical Fiscal Policy

Government spending and taxes are called the *instruments* of fiscal policy. They are the variables that affect the economy. Now let's see how changes in the instruments of fiscal policy affect the size of economic fluctuations.

### Impacts of the Instruments of Fiscal Policy

We first consider a change in government purchases and then go on to consider a change in taxes.

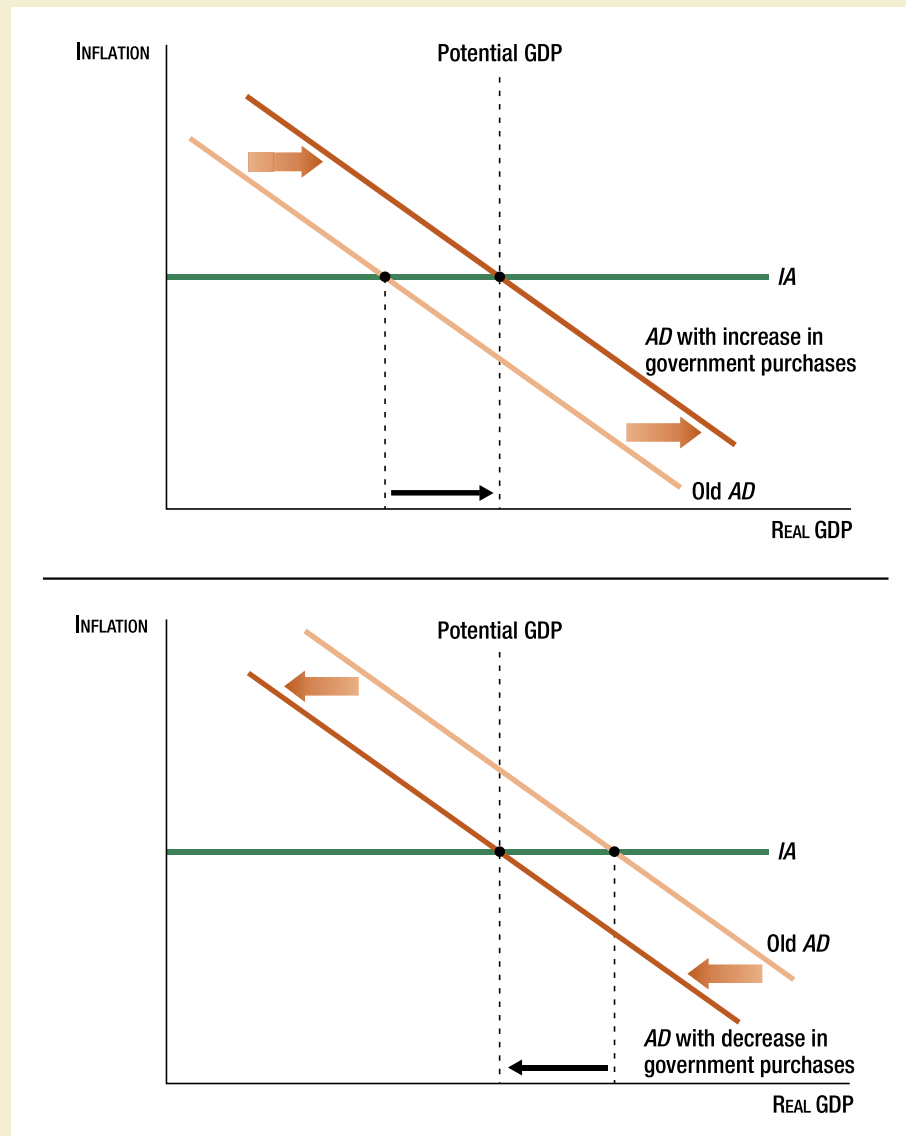
**Changes in Government Purchases** We know that if a change occurs in government purchases, real GDP initially will change. If real GDP equaled potential GDP at the time of the change in government purchases, then real GDP would move away from potential GDP. Hence, a first lesson about fiscal policy is “do no harm.” Erratic changes in government purchases can lead to fluctuations of real GDP away from potential GDP.

But suppose real GDP was already away from potential GDP. Then the change in government purchases could move real GDP closer to potential GDP. This is shown in Figure 26-5. In the top panel, real GDP starts out below potential GDP. An increase in government purchases shifts the aggregate demand curve to the right and moves real GDP back toward potential GDP. In the bottom panel, real GDP is above potential GDP, and a decrease in government purchases shifts the aggregate demand curve to the left, bringing real GDP back toward potential GDP. The important point is that a change in government purchases shifts the aggregate demand curve from wherever it happens to be at the time of the change.

Remember that these government purchases will make a difference for real GDP only in the short term. Had the government not intervened, prices eventually would have adjusted; consumption, investment, and net exports would have changed; and real GDP would have returned to potential GDP, albeit with a lower inflation rate in the top panel of Figure 26-5, and a higher inflation rate in the bottom panel. The short-term effect, however, may have partially offset a temporary decline in aggregate demand in a recession. So the short-run impacts of government purchases provide fiscal policy with the potential power to reduce the size of economic fluctuations.

**Figure 26-5****Effect of a Change in Government Purchases**

If real GDP is below potential GDP, as in the top panel, an increase in government purchases, which shifts the *AD* curve to the right, will move real GDP toward potential GDP. If real GDP is above potential GDP, as in the bottom panel, a decrease in government purchases will move real GDP toward potential GDP. These are short-run effects.



An increase in government purchases on roads and bridges is one example of how changes in government spending could affect investment and therefore impact potential GDP in the long run. But, for now, we focus on how the government can move the economy closer to potential GDP, rather than on how it can move potential GDP through fiscal policy changes.

**Changes in Taxes** A change in taxes also affects real GDP in the short run. At any given level of real GDP, people will consume less if taxes increase because they have less income to spend after taxes. They will consume more if taxes are cut. In either case, the aggregate demand curve will shift. The top panel of Figure 26-6 shows how a tax cut will shift the aggregate demand curve to the right and push real GDP closer to potential GDP if it is below potential GDP. The bottom panel shows a tax increase reducing real



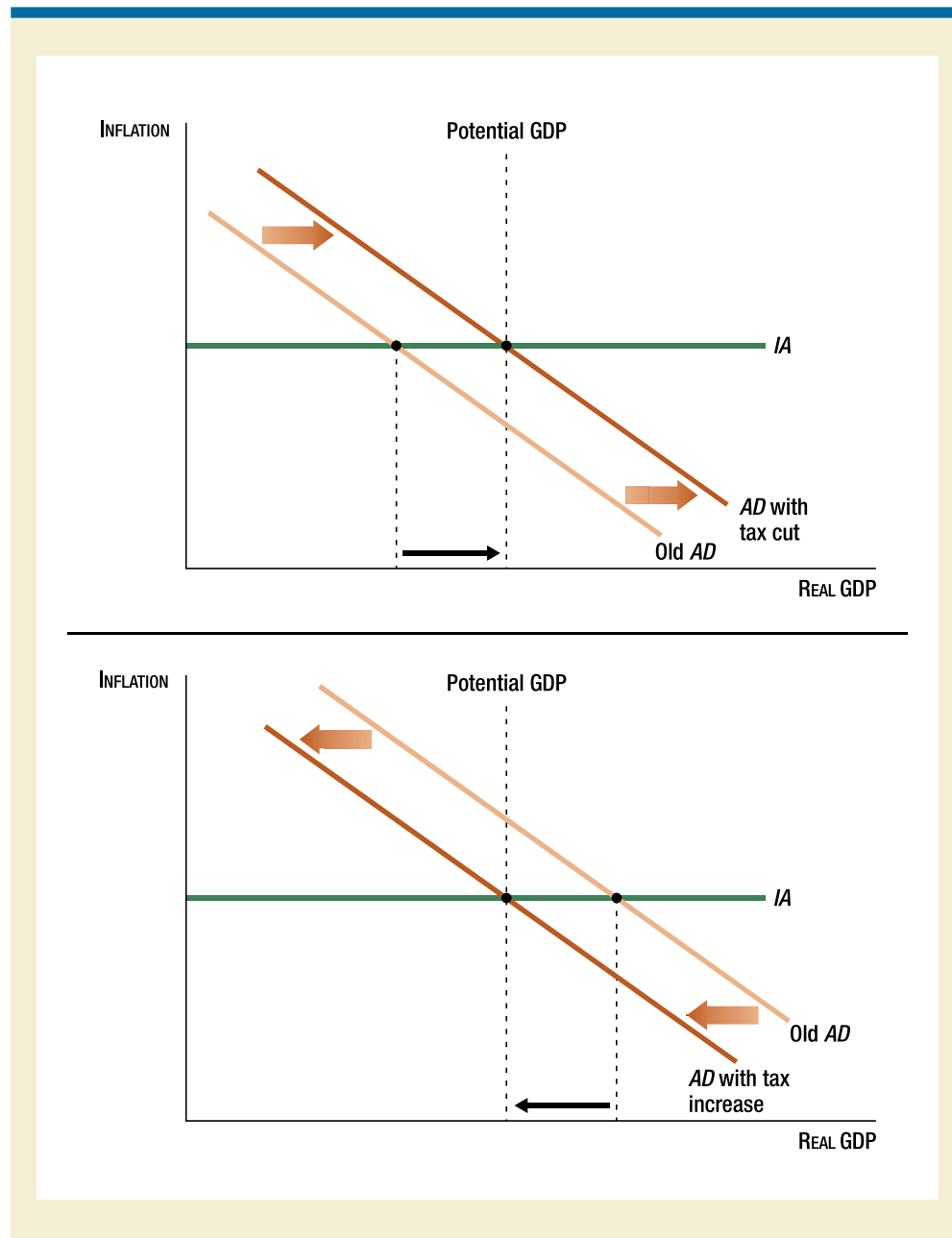
GDP from a position above potential GDP. Again, these are short-term effects. Prices eventually will adjust and real GDP will return to potential GDP.

Both increases and decreases in taxes also can affect potential GDP. For example, if an increase in tax rates causes some people to work less, then the labor supply will not be as large and potential GDP will be lower. Again, our focus here is on the departures of real GDP from potential GDP.

### Countercyclical Fiscal Policy

As the analysis in Figures 26-5 and 26-6 shows, fiscal policy, in principle, can offset the impact of shocks that push real GDP away from potential GDP because government

*Figure 26-6*



#### Effects of a Change in Taxes

A decrease in taxes shifts the *AD* curve to the right and can move real GDP toward potential GDP, as in the top panel. An increase in taxes moves real GDP toward potential GDP in the lower panel.

**countercyclical policy**

a policy designed to offset the fluctuations in the business cycle.

spending and taxes affect real GDP in the short run. Such use of fiscal policy is called **countercyclical policy**, because the cyclical movements in the economy are being “countered,” or offset, by changes in government spending or taxes. Recessions can be countered by cuts in taxes or increases in spending. The stimulus package of 2009 was a good example of a countercyclical fiscal policy—a \$787 billion package of government spending increases and tax cuts that aimed to help the U.S. economy recover from a deep recession by increasing real GDP and moving the economy closer to potential output.

But why would such an intervention be controversial? Clearly, Republicans and Democrats disagreed strongly about the 2009 stimulus package with only three Republican senators and no Republican members of the House of Representatives voting in favor of the bill. Similar vigorous debates were conducted among economists through newspaper op-ed columns, blog posts, and television appearances. Well-known economists like Paul Krugman were strongly in support of the plan as being exactly what the ailing economy needed, while equally well-known economists like Eugene Fama and Robert Barro were just as confident that the bill would do little for the economy compared with the long-term budgetary costs it would impose on the United States.

Clearly, then, our analysis needs to be more sophisticated than what was presented in Figures 26-5 and 26-6, or else we would have no tools with which to evaluate the arguments made by the proponents and opponents of the stimulus package. The analysis presented in Figures 26-7 through 26-9 provides the detail needed to understand the arguments on both sides, given the economic circumstances that prevailed at the time the stimulus package was being debated in 2009.

Figure 26-7 shows what a stimulus policy ideally would do. A deep recession in the year 2009 is shown. Without any change in government purchases or taxes, the economy would eventually recover, as shown in the figure, even though the recovery may take four or five years. But suppose the government implements the \$787 billion stimulus plan with its mix of spending on infrastructure, aid to state governments so they can provide money to the poor to purchase food and utilities, and tax cuts that increase consumer spending. If these policies are put into place immediately, they will raise real GDP, as shown in the figure, and hasten the return to potential GDP.

**Figure 26-7**

**Effect of a Well-Timed Countercyclical Fiscal Policy**

The figure shows a likely path of recovery from a recession caused by a decline in demand for U.S. products. A well-timed cut in taxes or increase in government purchases can reduce the size of the recession and bring real GDP back to potential GDP more quickly. The size of the economic fluctuation is smaller. The analysis is shown in Figure 26-8.

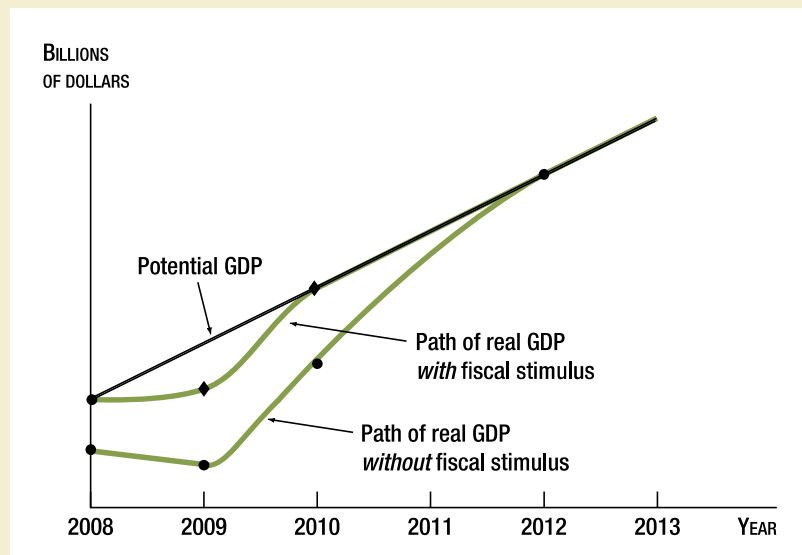
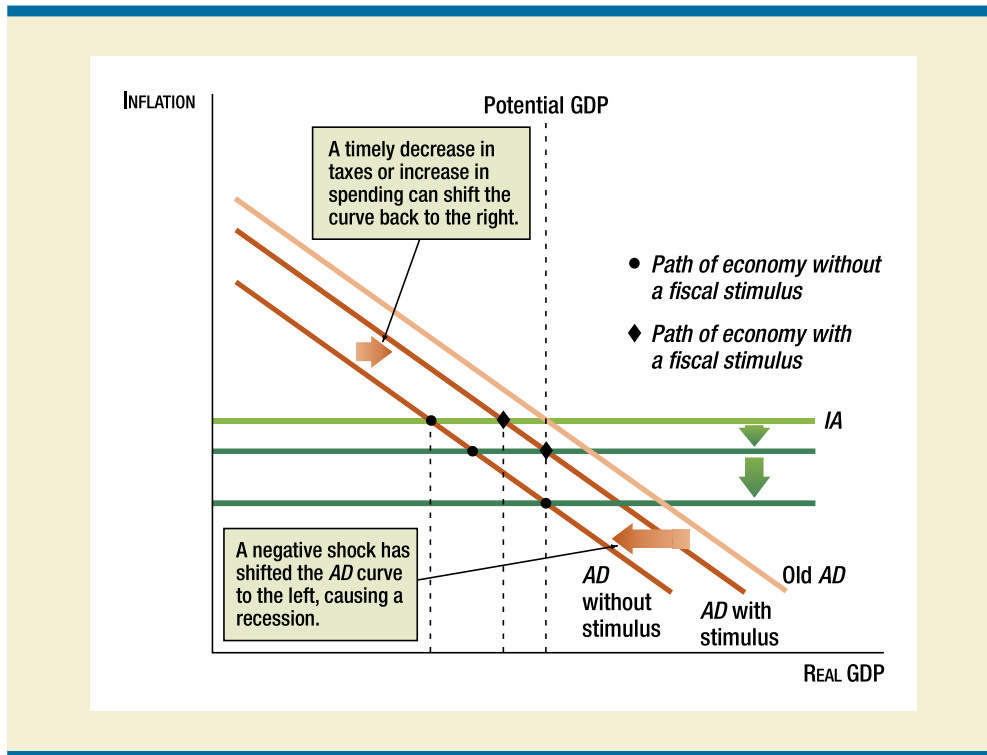


Figure 26-8



### Analysis of a Well-Timed Countercyclical Fiscal Policy

A decline in demand shifts the AD curve to the left. Without a countercyclical fiscal policy, real GDP recovers back to potential GDP, but a timely cut in taxes or an increase in government purchases can offset the drop in demand and bring real GDP back to potential GDP more quickly.

How would this work when prices are adjusting and when the inflation rate is changing as well? Figure 26-8 provides the analysis. The recession is caused by the leftward shift in the aggregate demand curve. But the cut in taxes or increase in spending shifts the aggregate demand curve in the opposite direction. The aggregate demand curve shifts back to the right. If these countercyclical measures are timely enough and if they are of the appropriate magnitude—both big ifs—then the recession may be small and short-lived. The example shows real GDP falling only slightly below potential GDP.

Figure 26-9 shows a less ideal case that reflects the arguments of some of the critics. Critics argue that too few of the projects targeted by the stimulus bill are ready to be implemented immediately, so it will take a year or two before they are enacted. Furthermore, the critics argue that consumers will be reluctant to increase spending even if they receive tax cuts either because the cuts are temporary or because consumers are concerned about what will happen to their taxes in the future when the government has to repay the money it borrowed to implement the stimulus bill. If government purchases are increased, but the response is too late, and if consumer spending does not respond immediately to the tax cuts, the outcome in terms of real GDP may not be much better than in the absence of stimulus, as shown in Figure 26-9. Given the substantial budgetary cost, this would imply that the stimulus was a worse option than doing nothing at all in terms of countercyclical fiscal policy. It also is possible that if the bulk of the spending projects in the stimulus package kick in after the economy has begun to recover on its own, the excessive growth in aggregate demand will cause inflation to increase.

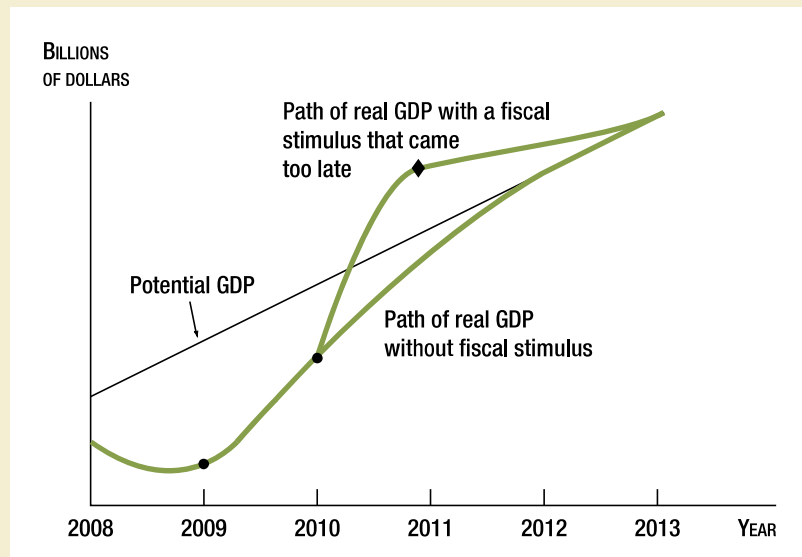
Disagreements about the usefulness of fiscal policy boil down to an assessment of whether the scenario in Figure 26-7 or in Figure 26-9 is more likely. Let's first consider some examples from recent history that may guide us in assessing which path is more likely.

**Discretionary Change in the Instruments of Fiscal Policy** **Discretionary fiscal policy** refers to specific changes in laws or administrative procedures,

**discretionary fiscal policy** changes in tax or spending policy requiring legislative or administrative action by the president or Congress.

**Figure 26-9****Effect of a Poorly Timed Fiscal Policy**

Here, in contrast to Figure 26-7, the fiscal stimulus comes too late, when the economy is already recovering, possibly leading to an increase in inflation.



such as a change in an existing program to speed up spending, the creation of a new program (such as a new welfare program), or a change in the tax system (such as lower tax rates). These changes in the law are discretionary changes because they require action on the part of the Congress or the president.

One of the most significant post–World War II discretionary fiscal policy actions was the tax cut proposed by President John F. Kennedy in 1963 and enacted after his death when Lyndon Johnson was president. The early 1960s were a period when real GDP was below potential GDP, and this large discretionary tax cut was a factor in speeding the economic recovery. This cut in taxes probably also stimulated the growth of potential GDP and therefore was good for the long run.

More recent examples of discretionary fiscal policies include the Economic Growth and Tax Relief Reconciliation Act, enacted by Congress in June 2001. One part of the plan was a \$300 (\$600 for couples) rebate check that the government mailed to eligible taxpayers in the summer of 2001. Some economists argue that the tax cut was helpful in raising spending during the recession, although, because of its temporary nature, the extent to which it helped is the source of some debate among economists.

The tax component of the 2009 stimulus package signed into law by President Obama is similar to the tax cut–based stimulus bill signed into law early in 2008 by President Bush. As Figure 26-10 suggests, these temporary increases in disposable income did little or nothing to stimulate consumption demand, and thereby aggregate demand, or the economy.

Figure 26-10 illustrates the economic impact of the temporary payments in 2008 and in 2009. The upper line shows U.S. disposable personal income, which is income after taxes and government transfers; it therefore includes the temporary payments from the government. Notice the sharp increase in disposable personal income in May 2008, when checks were mailed or deposited in people's bank accounts. Disposable personal income then started to come down in June and July as total payments declined and by August had returned to the trend that was prevailing in April.

The lower line in Figure 26-10 is personal consumption expenditures over the same period. Observe that consumption shows no noticeable increase at the time of the

# ECONOMICS IN ACTION

## Was the Cash for Clunkers Program a Clunker?

In addition to the large macroeconomic stimulus programs of 2008 and 2009, a number of other discretionary fiscal policies were undertaken in sectors such as housing and automobiles. Economists have been evaluating these programs to determine whether they were effective. The evaluations will help determine whether such policies should be used in the future.

A particularly important policy to evaluate is the widely discussed \$3 billion “Cash for Clunkers” program. Enacted in 2009, it offered subsidies from \$3,500 to \$4,500 to people who purchased new cars if they agreed to trade in their old gas-guzzling clunker when they bought a new car. The program was available in the summer of 2009. The hope was that this temporary incentive would jump-start automobile consumption and help get the economy moving again.

Economists Atif Mian of Berkeley and Amir Sufi of the University of Chicago studied the program carefully after it was completed. They compared regions of the United States that had differences in the number of clunkers to estimate the effects of the program on automobile consumption. They published their results in a

research paper “The Effects of Fiscal Stimulus: Evidence from the 2009 ‘Cash for Clunkers’ Program.”

Mian and Sufi found an effect on consumption, but it mainly was to shift purchases forward a few months. Consumption was higher than it would have been without the program during the months when the program was available, but lower than it would have been after the program ended. Thus, no noticeable net increase in consumption resulted. Apparently, people who were planning to trade in their clunker simply did so a few months earlier than they would have without the program. This is what economic theory would suggest. It is like a clearance sale: If a business has a temporary period of discount prices, people will shift their purchases to the time of the sale.

The graph illustrates the Mian–Sufi results. It shows the effect of the changes in automobile purchases on total personal consumption expenditures. Observe that consumption first increased as people were encouraged to trade in their clunker and purchase new cars. It then declined because many of the trade-ins and purchases simply were brought forward. You can see that consumption rises above what it would have been without the program and then actually falls below what it would have been. One might argue that bringing forward purchases like this is exactly what such programs are supposed to do in a recession, but the graph makes it very clear that the offsetting secondary effects occur so quickly that the net result is an insignificant blip in the recovery. The impact is not sustainable.

Even if the blip in consumption were not offset, the graph raises questions about how such a temporary program could sustain a recovery. Suppose that there was not an offset. Then consumption would return to normal after the temporary purchases. But we still would see consumption growth picking up for a month or two and then slowing down. Again, that is not sustainability.

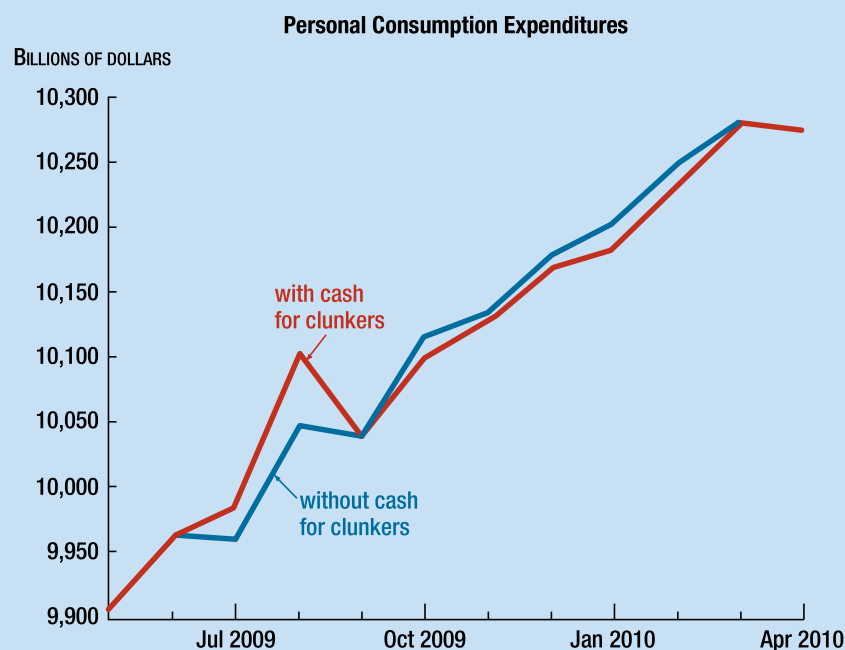
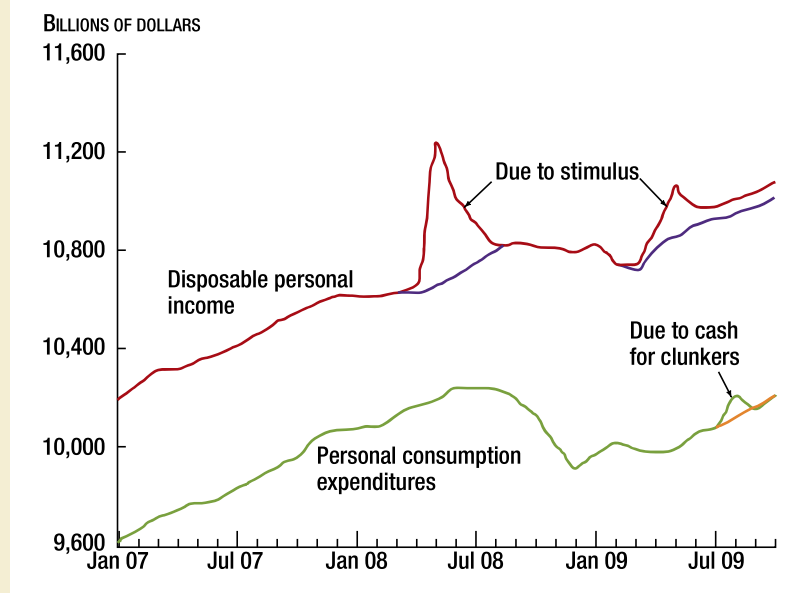




Figure 26-10

### Income and Consumption during the Two Discretionary Stimulus Programs

The 2008 and 2009 stimulus programs raised disposable personal income as checks were sent to people. The purpose was to jump-start consumption and stimulate aggregate demand. According to the data shown in this chart, consumption did not increase as a result of these programs. Economists who view the programs as effective argue that consumption would have declined more without the programs. See the Economics in Action box on the previous page for a discussion of the Cash for Clunkers program.



rebate. As the picture illustrates, the temporary rebate apparently did little to stimulate consumption demand, and thereby aggregate demand, or the economy.

What could explain this discrepancy between what was predicted by our model and the empirical reality? One possibility—though difficult to prove—is simply that consumption would have fallen further without the program, perhaps because of other factors such as an increase in the price of gasoline. The permanent income model of consumption model is a more likely explanation. It implies that consumers respond less to changes in income that are temporary compared with more lasting changes. If so, the magnitude of the outward shift of the *AD* curve in response to a tax cut depends very much on whether the tax cut is permanent or temporary. Temporary tax rebates would have little impact on consumer spending.

Figure 26-10 also casts some doubt on the success of the temporary tax provisions of the 2009 stimulus bill. Although the increase in disposable income was smaller, it was spread out for more than a year. Still, it is difficult to see an effect on consumption.

**Automatic Changes in the Instruments of Fiscal Policy** Discretionary actions by the government are not the only way in which taxes and spending can be changed. In fact, many of the very large changes in taxes and spending are automatic. Income tax revenues expand when people are making more and fall when people are making less. Thus, tax revenues respond automatically to the economy. Tax payments rise when the economy is in a boom and more people are working. Tax revenues fall when the economy is in a slump and unemployment rises.

These changes in tax revenues are even larger with a progressive income tax. With a *progressive tax* system, individual tax payments *rise* as a proportion of income as income increases. With a progressive tax, a person earning \$100,000 per year pays proportionately more in taxes than a person earning \$20,000 per year. Because of this progressive

tax system, as people earn more, they pay a higher tax rate, and when they earn less, they pay a lower tax rate.

Parts of government spending also change automatically. Unemployment compensation, through which the government makes payments to individuals who are unemployed, rises during a recession. When unemployment rises, so do payments to unemployed workers. Social security payments also increase in a recession because people may retire earlier if job prospects are bad. Welfare payments rise in a recession because people who are unemployed for a long period of time may qualify for welfare. As poverty rates rise in recessions, welfare payments increase.

These automatic tax and spending changes are called **automatic stabilizers** because they tend to stabilize the fluctuations of real GDP. How significant are these automatic stabilizers? Consider the 2001 recession, when discretionary fiscal stimulus was quite small. Real GDP in 1999 and 2000 was above potential GDP. But by late 2001 and 2002, real GDP was dropping below potential GDP. As this happened, government spending went up and taxes went down.

The magnitude of these effects was quite large. The difference between proposed and actual taxes and spending in the 2002 budget provides an estimate of the effect of the recession on taxes and spending. Tax revenue was \$336 billion less than had been proposed before the recession. Thus, taxes were reduced automatically by this amount. Spending, however, was \$50 billion more than had been proposed before the recession. Thus, spending rose by \$50 billion in response to the recession. The combined effect of a \$336 billion reduction in taxes and a \$50 billion increase in spending was vital in keeping the recovery going. Because tax receipts went down in the recession and transfer payments went up, people's consumption was at a higher level than it otherwise would have been. These automatic changes in tax revenues and government spending tended to stabilize the economy and probably made the recession less severe than it otherwise would have been. These changes did not completely offset other factors, however, because there still was a recession.

#### **automatic stabilizers**

automatic tax and spending changes that occur over the course of the business cycle that tend to stabilize the fluctuations in real GDP.

## **The Discretion versus Rules Debate for Fiscal Policy**

For many years, economists have debated the usefulness of discretionary and automatic fiscal policy. Automatic fiscal policy is an example of a fiscal policy rule describing how the instruments of fiscal policy respond to the state of the economy. Thus, the debate is sometimes called the “discretion versus rules” debate.

Proponents of discretionary fiscal policy argue that the automatic stabilizers will not be large enough or well timed enough to bring the economy out of a recession quickly. Critics of the discretionary policy emphasize that the effect of policy is uncertain and that the impact of policy has long lags. By the time spending increases and taxes are cut, a recession could be over; if so, the policy would only lead to an overshooting of potential GDP and an increase in inflation. Three types of lags are particularly problematic for discretionary fiscal policy: a recognition lag, the time between the need for the policy and the recognition of the need; an implementation lag, the time between the recognition of the need for the policy and its implementation; and an impact lag, the time between the implementation of the policy and its impact on real GDP.

Although lags and uncertainty continue to contribute to the discretion versus rules debate, other issues have become central. Many economists feel that policy rules are desirable because of their stability and reliability. A fiscal policy rule emphasizing the automatic stabilizers might make government plans to reduce the deficit more believable. Countercyclical fiscal policy raises the deficit or reduces the surplus during recessions. With discretionary policy, nothing guarantees that the surplus will return or increase after the recession. With an automatic policy rule, the expectation is that the deficit will decline after the recession is over.

## REVIEW

- Countercyclical fiscal policy is undertaken by governments to reduce economic fluctuations. The aim is to keep real GDP closer to potential GDP.
- Two types of countercyclical fiscal policy are (1) discretionary policy, such as the 2008 and the 2009 stimulus bills, and (2) automatic stabilizers, such as changes in unemployment payments, social security payments, and tax revenues resulting from changes in people's incomes.

## The Structural versus the Cyclical Surplus

### structural surplus

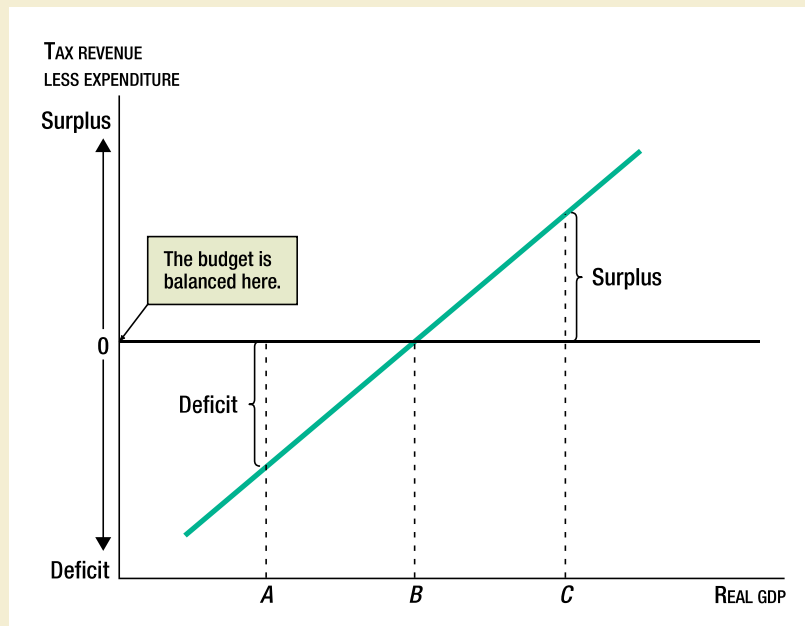
the level of the government budget surplus under a scenario in which real GDP is equal to potential GDP; also called the full-employment surplus.

We noted earlier that taxes and spending change automatically in recessions and recoveries. These automatic changes affect the budget, so to analyze the budget, it is important to separate out these automatic effects. The *structural*, or *full-employment, surplus* was designed for this purpose. The **structural surplus** is what the surplus would be if real GDP equaled potential GDP.

Figure 26-11 introduces a graph to explain the structural surplus. On the horizontal axis is real GDP. On the vertical axis is the budget surplus: tax revenues less expenditures. The budget is balanced when the surplus is zero, which is marked by a horizontal line in the diagram. The region below zero represents a situation in which taxes are less than spending and the government has a deficit. The region above zero is a situation in which the government budget has a surplus. On the horizontal axis, *A*, *B*, and *C* represent three different levels of real GDP.

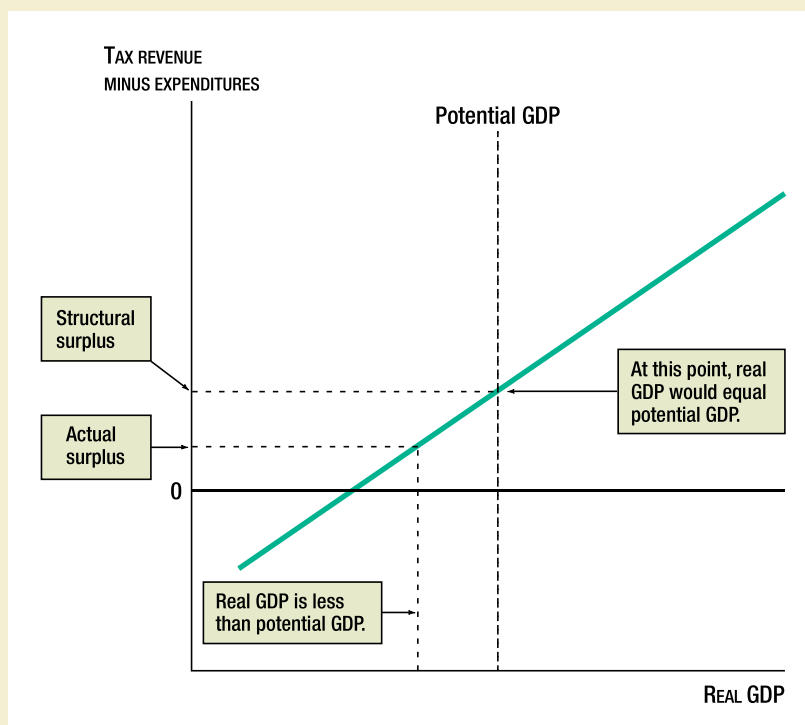
The upward-sloping line in Figure 26-11 indicates that as real GDP rises, the budget surplus gets larger. Why? The automatic stabilizers are the reason. When real GDP rises, tax revenues rise and spending on transfer programs falls. Because the surplus is the difference between tax revenues and spending, the surplus gets larger. Conversely, when real GDP falls, tax receipts decline and spending on transfer programs increases, so the surplus falls. The upward-sloping line in Figure 26-11 pertains to a particular set of government programs and tax laws. A change in these programs or laws would *shift* the line. For example, a decrease in tax rates would shift the line down.

Figure 26-12, a similar diagram, shows potential GDP and real GDP in a year when real GDP is below potential GDP. Imagine raising real GDP up to potential GDP. We would predict that the surplus would go up, because tax receipts would rise as the economy grew and transfer payments would go down because fewer people would be unemployed, fewer people would be retiring, and fewer people would be on welfare. As we move to the right in the diagram, the surplus gets larger. The structural surplus occurs when real GDP equals potential GDP. The structural surplus provides a way to separate out cyclical changes in the budget caused by cyclical changes in the economy.

*Figure 26-11*

### The Effect of Real GDP on the Budget

When real GDP falls, the budget moves toward deficit because spending rises and tax receipts fall. When real GDP is at point A, there is a deficit; at point B, the budget is balanced; and at point C, there is a budget surplus.

*Figure 26-12*

### The Structural Surplus versus the Actual Surplus in a Recession Year

The surplus that occurs when real GDP is equal to potential GDP is called the structural surplus, as shown in the figure. The actual surplus falls below the structural surplus when real GDP falls below potential GDP. If the recession is big, an actual deficit could result even with a structural surplus.

ECONOMICS IN ACTION

The Case for Discretionary Fiscal Policy

The most influential economic case in support of the stimulus act of 2009 was made by Christina Romer, (then) the chair of the president's CEA, and Jared Bernstein, economic adviser to the vice president. In a white paper released in January 2009, they estimated that the stimulus bill would create more than 3 million jobs and keep unemployment from rising above 8 percent.

The first part of the Romer-Bernstein analysis focused on the aggregate demand effects of the package. They used multipliers of the type we discussed in Chapter 23 to assess the overall GDP impact of the tax cuts and spending increases contained in the package. The multipliers they used for each quarter are listed below. These multipliers, along with some assumptions about how aid to state governments would affect demand, were used to calculate the overall impact on GDP.

Tax and Spending Multipliers Used to Evaluate the Stimulus Bill

Quarter	Spending Multiplier	Tax Multiplier
1	1.05	0
2	1.24	0.49
3	1.35	0.58
4	1.44	0.66
5	1.51	0.75
6	1.53	0.84
7	1.54	0.93
8–15	1.57	0.99
16	1.55	0.98

The GDP effects were then translated into the number of jobs created using a reasonable rule of thumb that a “1 percent increase in GDP corresponds to an increase in employment of approximately 1 million jobs.” The increase in the number of jobs that would result from the stimulus plan was estimated to be 3.7 million. The authors cautioned that this did not mean that the number of jobs in 2010 would necessarily be higher than what it was before the onset of the recession at the end of 2007. The estimated number of 3.7 million new jobs should be

interpreted as the difference between the number of jobs that existed after the stimulus was implemented and the number of jobs that would have existed if no stimulus were implemented.

Romer and Bernstein recognized that the impact of temporary tax cuts might be small, saying, “Large proportions of temporary tax cuts are saved, blunting their stimulatory impact on output and employment.” Because of the dire economic situation, however, they assumed that households would treat the tax cuts as essentially permanent in making their spending decision. If this assumption is not valid, then the estimated number of jobs would be substantially less.

Romer and Bernstein also estimated the time it would take to stimulate the economy. They argued that funds for food stamps, unemployment benefits, and welfare payments would be spent quickly, whereas the spending on infrastructure, education, health, and energy would take time. Overall, they estimated that job creation would peak in 2010.

These estimates of the economic impact of a fiscal policy package played a critical role in informing members of the Congress and their constituents about whether a vote for a policy was appropriate. For packages approaching \$1 trillion including interest, as in 2009, the estimated economic impacts matter greatly.

In the end, the unemployment rate rose well above 8 percent, reaching 10.1 percent in October 2009. This high unemployment rate was, of course, at odds with the white paper and led people to criticize the Romer-Bernstein finding and argue that the stimulus was not effective because they overestimated the size of multiplier. For example, a National Bureau of Economic Research paper by John Cogan, Tobias Cwik, John Taylor, and Volker Wieland found much smaller multipliers.

But others, including Romer and Bernstein, argued that unemployment would have been worse without the stimulus, maybe rising to 12 percent. It is difficult to know for sure. Economics is not an experimental science. You cannot run an experiment over again without a stimulus package. Nevertheless, economics likely will continue to inform the policy and political debate, so it is important to do more research on the economic impact of the discretionary fiscal policy.



## REVIEW

- Because tax revenues and spending fluctuate as the economy fluctuates, the surplus, or deficit, is cyclical. Deficits frequently arise or get bigger in recessions.
- The structural surplus adjusts the actual surplus for these cyclical changes in the economy.

## CONCLUSION

Because the government is such a large player in the economy, its fiscal actions (spending, taxing, and borrowing) exert a powerful influence on real GDP and employment. Such actions can cause real GDP to depart from potential GDP and can alter the long-term growth rate of potential GDP.

A first principle of fiscal policy, therefore, is that the government should not take actions that would harm the economy. Avoiding erratic changes in fiscal policy and ensuring that taxes are not increased during recessions are part of this first principle.

A second principle is that fiscal policy in principle can smooth the fluctuations in the economy. Tax cuts and

spending increases during recessions can help offset the declines in demand.

Economists debate about whether the government is capable of taking discretionary actions that will have these effects. Policy lags and uncertainty make discretionary fiscal policy difficult. Economists disagree little, however, about the importance of automatic stabilizers, under which tax and spending actions occur automatically without legislation. Automatic stabilizers cause the deficit to rise in recessions and fall during better times.

Another part of government policy that has powerful effects on the economy is monetary policy. We take up monetary policy in Chapter 27.

## KEY POINTS

1. Fiscal policy consists of the government’s plans for spending and taxes.
2. The government’s budget is the primary document of fiscal policy. It gives the priorities for spending and taxes. In the United States, the president must submit a budget proposal to Congress.
3. The United States has had large federal budget deficits in recent years. These are increasing the debt and raising risks to the economy.
4. Because Congress modifies the proposals and because of unanticipated events, the actual budget differs considerably from the proposed budget.
5. Changes in spending and taxes can move real GDP away from potential GDP in the short run. But in the long run, real GDP returns to potential GDP.
6. Changes in taxes and spending can offset shocks to real GDP.
7. Lags and uncertainty make discretionary fiscal policy difficult.
8. Automatic stabilizers are an important part of fiscal policy. Tax revenues automatically decline in recessions. Transfer payments move in the reverse direction.

## KEY TERMS

- |                             |                                  |
|-----------------------------|----------------------------------|
| automatic stabilizers, 683  | debt-to-GDP ratio, 674           |
| balanced budget, 669        | discretionary fiscal policy, 679 |
| budget deficit, 669         | federal budget, 669              |
| budget surplus, 669         | federal debt, 671                |
| countercyclical policy, 678 | structural surplus, 684          |

QUESTIONS FOR REVIEW

1. Why are actual expenditures and revenues always different from the president’s proposals?

2. How is the government’s debt affected by the government’s budget surplus?

3. Why would a tax cut in a recession reduce the size of the recession?

4. Why might a proposal to cut taxes in a recession do little to mitigate the recession?
5. What is meant by the discretion versus rules debate?

6. What are automatic stabilizers, and how do they help mitigate economic fluctuations?

7. What is the difference between the structural surplus and the actual surplus?

8. What would happen to the actual surplus in a recession?

PROBLEMS

1. Suppose you have the following data on projected and actual figures for the U.S. budget for a given year (in billions of dollars).

	Projected Budget	Actual Budget
Taxes	2,286	2,407
Expenditures	2,709	2,655

- a. What was the projected budget surplus or deficit? What was the actual budget surplus or deficit? Why might this happen?

b. If the government debt was \$4,592 billion at the start of the year, what was the debt at the end of the year?

c. If real GDP was \$12,300 billion, what is the debt-to-GDP ratio?
2. Examine the hypothetical budget data, shown below, for calendar years 2012–2015 (in billions of dollars).

Year	Budget Surplus	Government Debt as of January 1	GDP
2012	–150	1,000	4,000
2013	–100	1,150	4,200
2014	100		4,800
2015	200		5,400

- a. Fill in the missing values in the table.

b. What is the percentage change in debt and GDP from 2012 to 2013?

c. Calculate the debt-to-GDP ratio for each year. How does this ratio change over time? Why?
3. Suppose you are in charge of deciding the appropriate fiscal policy for an economy in which real GDP is less than potential GDP. One of your economic advisers recommends a reduction in government spending. Using an *AD-IA* diagram, indicate the short-run, medium-run, and long-run effects of this plan. Did you receive good advice from your economic adviser?

4. Suppose the economy is currently \$100 billion above potential GDP, and the government wants to pursue discretionary fiscal policy to cool off the economy. Show this situation using an *AD-IA* diagram.
5. Suppose Congress is considering a balanced budget amendment to the Constitution that requires that the budget be balanced every fiscal year. Explain how this law could make the economy more unstable.
6. Do you think that a zero national debt would be best for the country? Why or why not? Do you think that a zero level of debt would be best for you? Why or why not?
7. Suppose you get a summer job working in Congress and a recession begins while you are there. Write a memo to your boss, who is a member of Congress, on the pros and cons of a big highway- and bridge-building program to combat the recession.
8. Will projects such as Alaska’s proposed “bridge to nowhere,” a \$300 million bridge that would connect two remote Alaskan communities, help the national economy avoid a recession? How would you reconcile this with your answer to Problem 7?
9. Suppose that real GDP has just fallen below potential GDP in a recession and the Council of Economic Advisers is trying to forecast the recovery from the recession. They are uncertain about whether Congress will pass the president’s proposed tax cut right away or will delay it a year. Trace out two possible scenarios with an *AD-IA* diagram that describes the impact of the uncertainty.
10. Suppose the government surplus is 3 percent of real GDP, but economists say that the structural surplus is 2 percent. Is real GDP currently above or below potential GDP? Why? Draw the diagram showing this situation.