

“U.S. President Barack Obama claimed on February 17, 2010, that ‘it was largely thanks to the Recovery Act that a second depression is no longer a possibility.’”

U.S. President Barack Obama claimed on February 17, 2010, that “it is largely thanks to the Recovery Act that a second depression is no longer a possibility.” The Japanese government cut taxes and increased spending to stimulate its troubled economy. These are examples of fiscal policy, which focuses on the effects of taxing and public spending on aggregate economic activity. What is the proper role of fiscal policy in the economy? Can fiscal policy reduce swings in the business cycle? Why did fiscal policy fall on hard times for a quarter century, and what brought it back to life? Does fiscal policy affect aggregate supply? Answers to these and other questions are addressed in this chapter, which examines the theory and practice of fiscal policy.

In this chapter, we examine the role of fiscal policy in moving the economy to its potential output. We review U.S. fiscal policy and discuss limitations to its effectiveness. The Great Recession had a major impact on the economy. We’ll consider the fiscal response to that calamity.

A more complex model of fiscal policy appears in the online appendix to this chapter.

## What do you think?

A federal budget deficit is of less concern than a downturn in the nation’s economy.

Strongly Disagree

Strongly Agree

1 2 3 4 5 6 7

### Topics discussed in Chapter 11 include

- Theory of fiscal policy
- Discretionary fiscal policy
- Automatic stabilizers
- Fiscal policy in practice
- Limits of fiscal policy
- Deficits, surpluses, then more deficits
- Fiscal policy response to the Great Recession

## 11-1 Theory of Fiscal Policy

Our macroeconomic model so far has viewed government as passive. But government purchases and transfer payments at all levels in the United States total more than \$5 trillion a year, making government an important player in the economy.

From highway construction to unemployment compensation to income taxes to federal deficits, fiscal policy affects the economy in myriad ways. We now move fiscal policy to center stage. As introduced in Chapter 3, *fiscal policy* refers to government purchases, transfer payments, taxes, and borrowing as they affect macroeconomic variables such as real GDP, employment, the price level, and economic growth. When economists study fiscal policy, they usually focus on the federal government, although governments at all levels affect the economy.

## 11-1a Fiscal Policy Tools

The tools of fiscal policy sort into two broad categories: automatic stabilizers and discretionary fiscal policy. **Automatic stabilizers** are revenue and spending programs in the federal budget that automatically adjust with the ups and downs of the economy to stabilize disposable income and, consequently, consumption and real GDP. For example, the federal income tax is an automatic stabilizer because (1) once adopted, it requires no congressional action to operate year after year, so it's *automatic*, and (2) it reduces the drop in disposable income during recessions and reduces the jump in disposable income during expansions, so it's a *stabilizer*, a smoother. **Discretionary fiscal policy**, on the other hand, requires the deliberate manipulation of government purchases, transfer payments, and taxes to promote macroeconomic goals like full employment, price stability, and economic growth.

### automatic stabilizers

Structural features of government spending and taxation that reduce fluctuations in disposable income, and thus consumption, over the business cycle

### discretionary fiscal policy

The deliberate manipulation of government purchases, taxation, and transfer payments to promote macroeconomic goals, such as full employment, price stability, and economic growth

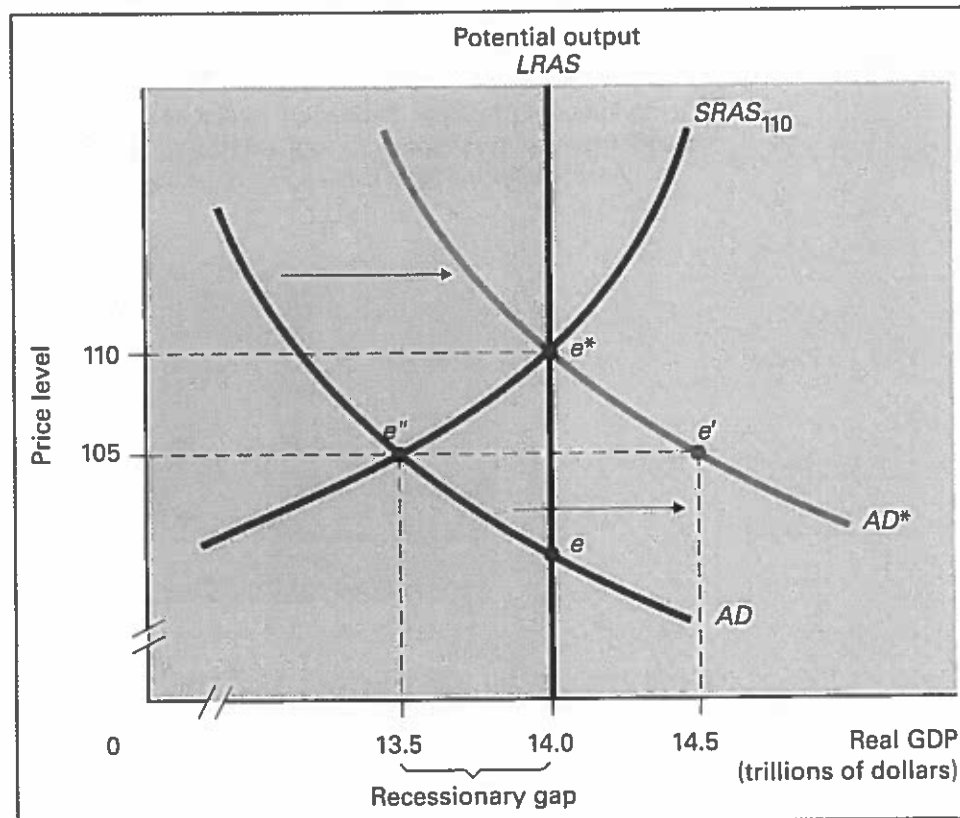
President Obama's 2009 stimulus plan is an example of discretionary fiscal policy. Some discretionary policies are temporary, such as one-time tax cuts or government spending increases to fight a recession. President Bush's 2008 one-time tax rebate is an example. Let's next consider how, in theory, fiscal policy can be used to close a recessionary gap and an inflationary gap.

## 11-1b Discretionary Fiscal Policy to Close a Recessionary Gap

What if the economy produces less than its potential? Suppose the aggregate demand curve  $AD$  in Exhibit 1 intersects the aggregate supply curve at point  $e''$ , yielding the short-run output of \$13.5 trillion and price level of 105. Output falls short of the economy's potential, opening up a recessionary gap of \$0.5 trillion. Unemployment exceeds the natural rate. If markets adjusted naturally to high unemployment, the short-run aggregate supply curve would shift rightward in the long run to achieve equilibrium at the economy's potential output, point  $e$ . History suggests, however, that wages and other resource prices could be slow to respond to a recessionary gap.

Exhibit 1

Discretionary Fiscal Policy to Close a Recessionary Gap



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Suppose policy makers believe that natural market forces will take too long to return the economy to potential output. They also believe that the appropriate increase in government purchases, decrease in net taxes, or some combination of the two could increase aggregate demand just enough to return the economy to its potential output. A \$0.2 trillion increase in government purchases reflects an **expansionary fiscal policy** that increases aggregate demand, as shown in Exhibit 1 by the rightward shift from  $AD$  to  $AD'$ . If the price level remained at 105, the additional spending would increase the quantity demanded from \$13.5 to \$14.5 trillion. This increase of \$1.0 trillion reflects the simple spending multiplier effect, given a constant price level.

At the original price level of 105, however, excess quantity demanded causes the price level to rise. As the price level rises, real GDP supplied increases, but real GDP demanded decreases along the new aggregate demand curve. The price level rises until quantity demanded equals quantity supplied. In Exhibit 1, the new aggregate demand curve intersects the aggregate supply curve at  $e'$ , where the price level is 110, the one originally expected, and output equals potential GDP of \$14.0 trillion. Note that an *expansionary fiscal policy aims to close a recessionary gap*.

**“An expansionary fiscal policy aims to close a recessionary gap”**

The intersection at point  $e'$  is not only a short-run equilibrium but also a long-run equilibrium. If fiscal policy makers are accurate enough (or lucky enough), the appropriate fiscal stimulus can close the recessionary gap and foster a long-run equilibrium at potential GDP. But the increase in output results in a higher price level. What's more, if the federal budget was in balance before the fiscal stimulus, an increase in government spending creates a budget deficit. In fact, the federal government has run deficits in all but 4 of the last 40 years.

What if policy makers overshoot the mark and stimulate aggregate demand more than necessary to achieve potential GDP? In the short run, real GDP exceeds potential output. In the long run, the short-run aggregate supply curve shifts back until it intersects the aggregate demand curve at potential output, increasing the price level further but reducing real GDP to potential output.

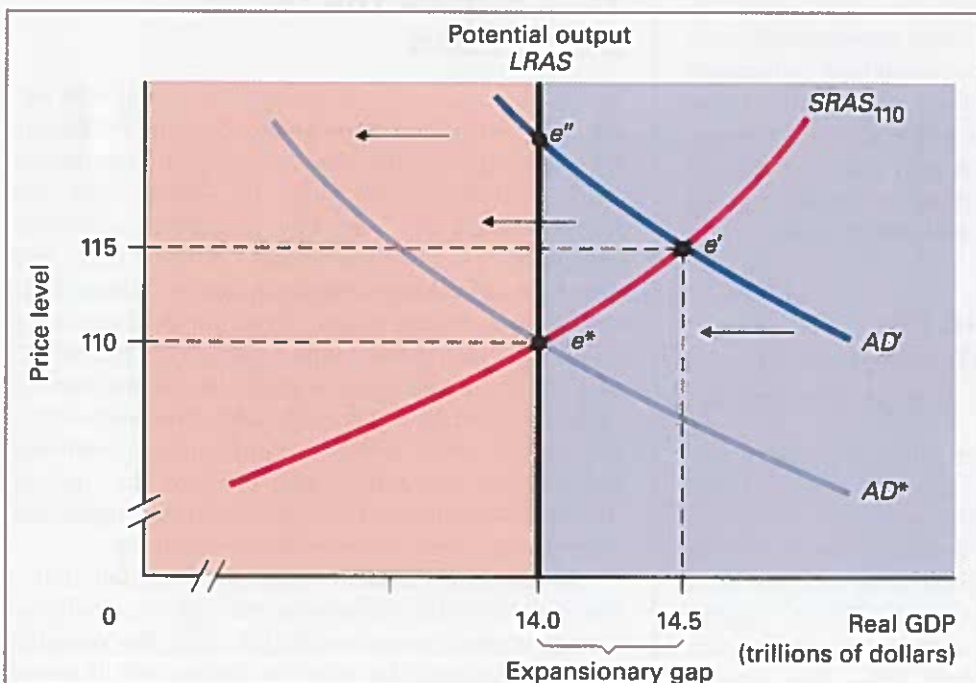
### 11-1c Discretionary Fiscal Policy to Close an Expansionary Gap

Suppose output exceeds potential GDP. In Exhibit 2, the aggregate demand curve,  $AD'$ , intersects the aggregate supply curve to yield short-run output of \$14.5 trillion, an amount exceeding the potential of \$14.0 trillion. The economy faces an expansionary gap of \$0.5 trillion. Ordinarily, this gap would

be closed by a leftward shift of the short-run aggregate supply curve, which would return the economy to potential output but at a higher price level, as shown by point  $e''$ .

Exhibit 2

Discretionary Fiscal Policy to Close an Expansionary Gap



**expansionary fiscal policy**

An increase in government purchases, decrease in net taxes, or some combination of the two aimed at increasing aggregate demand enough to reduce unemployment and return the economy to its potential output; fiscal policy used to close a recessionary gap

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But the use of discretionary fiscal policy introduces another possibility. By reducing government purchases, increasing net taxes, or employing some combination of the two, the government can implement a **contractionary fiscal policy** to reduce aggregate demand. This could move the economy to potential output without the resulting inflation. If the policy succeeds, aggregate demand in Exhibit 2 shifts leftward from  $AD'$  to  $AD^*$ , establishing a new equilibrium at point  $e^*$ . Again, with just the right reduction in aggregate demand, output falls to \$14.0 trillion, the potential GDP. Closing an expansionary gap through fiscal policy rather than through natural market forces results in a lower price level, not a higher one. Increasing net taxes or reducing government purchases also reduces a government deficit or increases a surplus. So a contractionary fiscal policy could reduce inflation and reduce a federal deficit. Note that a *contractionary fiscal policy aims to close an expansionary gap*.

Such precisely calculated expansionary and contractionary fiscal policies are difficult to achieve. Their proper execution assumes that (1) potential output is accurately gauged, (2) the relevant spending multiplier can be predicted accurately, (3) aggregate demand can be shifted by just the right amount, (4) various government entities can somehow coordinate their fiscal efforts, and (5) the shape of the short-run aggregate supply curve is known and remains unaffected by the fiscal policy itself.

### 11-1d The Multiplier and the Time Horizon

In the short run, the aggregate supply curve slopes upward, so a shift of aggregate demand changes both the price level and the level of output. When aggregate supply gets in the act, we find that the simple

multiplier overstates the amount by which output changes. The exact change of equilibrium output in the short run depends on the steepness of the aggregate supply curve, which in turn depends on how sharply production costs increase as output expands. *The steeper the short-run aggregate supply curve, the less impact a given shift of the aggregate*

*demand curve has on real GDP and the more impact it has on the price level, so the smaller the spending multiplier.*

If the economy is already producing its potential, then in the long run, any change in fiscal policy aimed at stimulating aggregate demand increases the price level but does not affect output. Thus, *if the economy is already producing its potential, the spending multiplier in the long run is zero.*

“The steeper the short-run aggregate supply curve, the less impact a given shift of the aggregate demand curve has on real GDP and the more impact it has on the price level, so the smaller the spending multiplier”.

## 11-2 Fiscal Policy Up to the Stagflation of the 1970s

Now that you have some idea of how fiscal policy can work in theory, let's take a look at fiscal policy in practice, beginning with the approach used before the Great Depression.

### 11-2a Before the Great Depression

Before the 1930s, discretionary fiscal policy was seldom used to influence the macroeconomy. Public policy was shaped by the views of classical economists, who advocated *laissez-faire*, the belief that free markets were the best way to achieve economic prosperity. Classical economists did not deny that depressions and high unemployment occurred from time to time, but they argued that the sources of such crises lay outside the market system, in the effects of wars, tax increases, poor growing seasons, natural disasters, changing tastes, and the like. Such external shocks could reduce output and employment, but classical economists also believed that natural market forces, such as changes in prices, wages, and interest rates, could correct these problems.

Simply put, classical economists argued that if the economy's price level was too high to sell all that was produced, prices would fall until the quantity supplied equaled the quantity demanded. If wages

#### contractionary fiscal policy

A decrease in government purchases, increase in net taxes, or some combination of the two aimed at reducing aggregate demand enough to return the economy to potential output without worsening inflation; fiscal policy used to close an expansionary gap

#### classical economists

A group of 18th- and 19th-century economists who believed that economic downturns corrected themselves through natural market forces; thus, they believed the economy was self-correcting and needed no government intervention

were too high to employ all who wanted to work, wages would fall until the quantity of labor supplied equaled the quantity demanded. And if the interest rate was too high to invest all that had been saved, interest rates would fall until the amount invested equaled the amount saved.

So the classical approach implied that natural market forces, through flexible prices, wages, and interest rates, would move the economy toward potential GDP. There appeared to be no need for government intervention. What's more, the government, like households, was expected to live within its means. The idea of government running a deficit year after year was considered immoral. Thus, before the onset of the Great Depression, most economists believed that discretionary fiscal policy could do more harm than good. Besides, the federal government itself was a bit player in the economy. At the onset of the Great Depression, for example, all federal outlays were only 3 percent relative to GDP (compared to about 24 percent today).

## 11-2b The Great Depression and World War II

Although classical economists acknowledged that capitalistic, market-oriented economies could experience high unemployment from time to time, the depth and duration of the Depression strained belief in the economy's ability to heal itself. The Great Depression was marked by four consecutive years of contraction during which unemployment reached 25 percent. Investment plunged 80 percent. Many factories sat idle. With vast unemployed resources, output and income fell well short of the economy's potential.

The stark contrast between the natural market adjustments predicted by classical economists and the years of high unemployment during the Great Depression represented a collision of theory and fact. In 1936, John Maynard Keynes, of Cambridge University in England, published *The General Theory of Employment, Interest, and Money*, a book that challenged the classical view and touched off what would later be called the Keynesian revolution. *Keynesian theory and policy were developed in response to the problem of high unemployment during the Great Depression.* Keynes's main quarrel with the classical economists was that prices



62/100237480 Detroit, Michigan: Closed assembly-lines at the Ford factory in Detroit due to a downturn in sales. 1929. ©Shutterstock / The Image Works

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and wages did not seem to be flexible enough to ensure the full employment of resources. According to Keynes, prices and wages were relatively inflexible in the downward direction—they were “sticky”—so natural market forces would not return the economy to full employment in a timely fashion. Keynes also believed business expectations could at times become so grim that even very low interest rates would not spur firms to invest all that consumers might save.

Three developments in the years following the Great Depression bolstered the use of discretionary fiscal policy in the United States. The first was the influence of Keynes's *General Theory*, in which he argued that natural forces would not necessarily close a recessionary gap. Keynes thought the economy could get stuck well below its potential, requiring the government to increase aggregate demand to boost output and employment. The second development was the impact of World War II on output and employment. The demands of war greatly increased production and erased cyclical unemployment during the war years, pulling the U.S. economy out of its depression. The third development, largely a consequence of the first two, was the passage of the **Employment Act of 1946**, which gave

the federal government responsibility for promoting full employment and price stability.

“As a result of the Great Depression, the objective of fiscal policy was no longer to balance the budget but to promote full employment with price stability even if budget deficits resulted.”

### Employment Act of 1946

Law that assigned to the federal government the responsibility for promoting full employment and price stability

Prior to the Great Depression, the dominant fiscal policy was a balanced budget. During 1930, the first full year of the Great Depression, the federal budget showed a surplus. Indeed, to head off a modest deficit in 1932, federal tax rates were raised, which only deepened the depression. In the wake of Keynes's *General Theory* and World War II, however, policy makers grew more receptive to the idea that fiscal policy could improve economic stability. The objective of fiscal policy was no longer to balance the budget, but instead to promote full employment with price stability even if budget deficits resulted.

## 11-2c Automatic Stabilizers

This chapter so far has focused mostly on discretionary fiscal policy—conscious decisions by public policy makers to change taxes and government spending to achieve the economy's potential output. Now let's get a clearer picture of automatic stabilizers. Automatic stabilizers smooth out fluctuations in disposable income over the business cycle by stimulating aggregate demand during recessions and dampening aggregate demand during expansions. Consider the federal income tax. The federal income tax system is progressive, meaning that the fraction of income paid in taxes increases as a taxpayer's income increases. During an economic expansion, employment and incomes rise, moving some taxpayers into higher tax brackets. As a result, taxes claim a growing fraction of income. This slows the growth in disposable income and, hence, slows the growth in consumption.

Therefore, the progressive income tax relieves some of the inflationary pressure that might otherwise arise as output increases during an economic expansion. Conversely, when the economy is in recession, output declines, and employment and incomes fall, moving some people into lower tax brackets. As a result, taxes take a smaller bite out of income, so disposable income does not fall as much as GDP. Thus, the progressive income tax cushions declines in disposable income, in consumption, and in aggregate demand.

Another automatic stabilizer is unemployment insurance. During economic expansions, the system

automatically increases the flow of unemployment insurance taxes from the income stream into the unemployment insurance fund, thereby moderating consumption and aggregate demand. During contractions, unemployment increases and the system reverses itself. Unemployment payments automatically flow from the insurance fund to the unemployed, increasing disposable income and propping up consumption and aggregate demand. Likewise, welfare payments automatically increase during hard times as more people become eligible. Because of these automatic stabilizers, GDP fluctuates less than it otherwise would, and disposable income varies proportionately less than does GDP. Because disposable income varies less than GDP does, consumption also fluctuates less than GDP does (as was shown in an earlier chapter's case study).

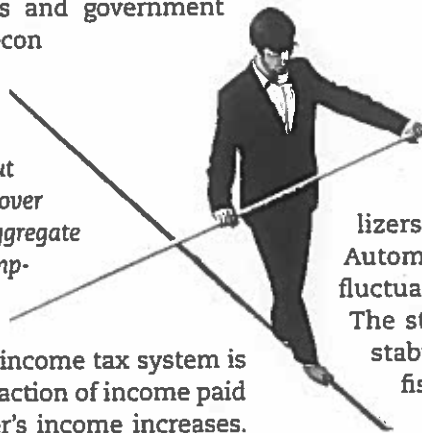
The progressive income tax, unemployment insurance, and welfare benefits were initially designed not so much as automatic stabilizers but as income redistribution programs. Their roles as automatic stabilizers were secondary effects of the legislation. Automatic stabilizers do not eliminate economic fluctuations, but they do reduce their magnitude. The stronger and more effective the automatic stabilizers are, the less need for discretionary fiscal policy. Because of the greater influence of automatic stabilizers, the economy is more stable today than it was during the Great Depression and before. As a measure of just how successful these automatic stabilizers have become in cushioning the impact of recessions, consider this: Since 1948, real GDP declined

10 years, but real consumption fell only four years—in 1974, 1980, 2008, and 2009. Without much fanfare, automatic stabilizers have been quietly doing their work, keeping the economy on a more even keel.

“Automatic stabilizers smooth out fluctuations in disposable income over the business cycle by stimulating aggregate demand during recessions and dampening aggregate demand during expansions.”

## 11-2d From the Golden Age to Stagflation

The 1960s were the Golden Age of fiscal policy. John F. Kennedy was the first president to propose a federal budget deficit to stimulate an economy experiencing a recessionary gap. Fiscal policy was also used on occasion to provide an extra kick



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to an expansion already under way, as in 1964, when Kennedy's successor, Lyndon B. Johnson, cut income tax rates to keep an expansion alive. This tax cut, introduced to stimulate business investment, consumption, and employment, was perhaps the shining example of fiscal policy during the Golden Age. The tax cut seemed to work wonders, increasing disposable income and consumption. The unemployment rate dropped under 5 percent for the first time in seven years, the inflation rate dipped under 2 percent, and the federal budget deficit in 1964 equaled only 0.9 percent of GDP (compared with an average of 3.4 percent between 1980 and 2012).

Discretionary fiscal policy is a demand-management policy; the objective is to increase or decrease aggregate demand to smooth economic fluctuations. But the 1970s brought a different problem—stagflation, the double trouble of higher inflation and higher unemployment resulting from a decrease in aggregate supply. The aggregate supply curve shifted left because of crop failures around the world, sharply higher OPEC-driven oil prices, and other adverse supply shocks. Demand-management policies are ill suited to cure stagflation because an increase of aggregate demand would increase inflation, whereas a decrease of aggregate demand would increase unemployment.

“Discretionary fiscal policy is a demand-management policy; the objective is to increase or decrease aggregate demand to smooth economic fluctuations.”

## 11-3 Limits on Fiscal Policy's Effectiveness

Other concerns besides stagflation also caused policy makers and economists to question the effectiveness of discretionary fiscal policy. These concerns included the difficulty of estimating the

natural rate of unemployment, the time lags involved in implementing fiscal policy, the distinction between current income and permanent income, and the possible feedback effects of fiscal policy on aggregate supply. We consider each in turn.

### 11-3a Fiscal Policy and the Natural Rate of Unemployment

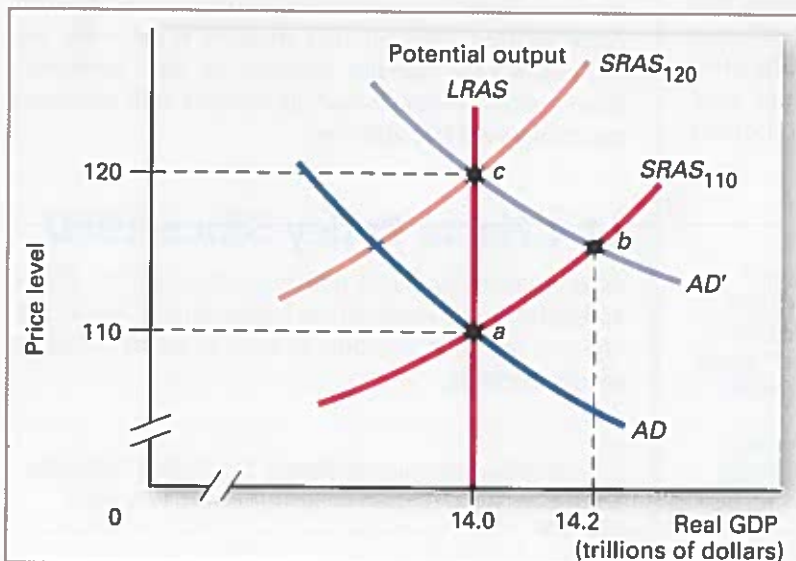
As discussed in the previous chapter, the unemployment that occurs when the economy is producing its potential GDP is called the *natural rate of unemployment*. Before adopting discretionary policies, public officials must correctly estimate this natural rate. Suppose the economy is producing its potential output of \$14.0 trillion, as in Exhibit 3, where the natural rate of unemployment is 5.0 percent. Also suppose that public officials mistakenly believe the natural rate to be 4.0 percent, and they attempt to reduce unemployment and increase real GDP through discretionary fiscal policy. As a result of their policy, the aggregate demand curve shifts to

the right, from AD to AD'. In the short run, this stimulation of aggregate demand expands output to \$14.2 trillion and reduces unemployment to 4.0 percent, so the policy appears successful. But stimulating aggregate demand opens up an expansionary gap, which in the long run results in a leftward shift of the short-run aggregate supply curve. This reduction in aggregate supply pushes up prices and reduces real GDP to \$14.0 trillion, the economy's potential. Thus, policy makers initially believe their plan worked, but pushing production beyond the economy's potential leads only to inflation in the long run.

Given the effects of fiscal policy, particularly in the short run, we

### Exhibit 3

When Discretionary Fiscal Policy Overshoots Potential Output

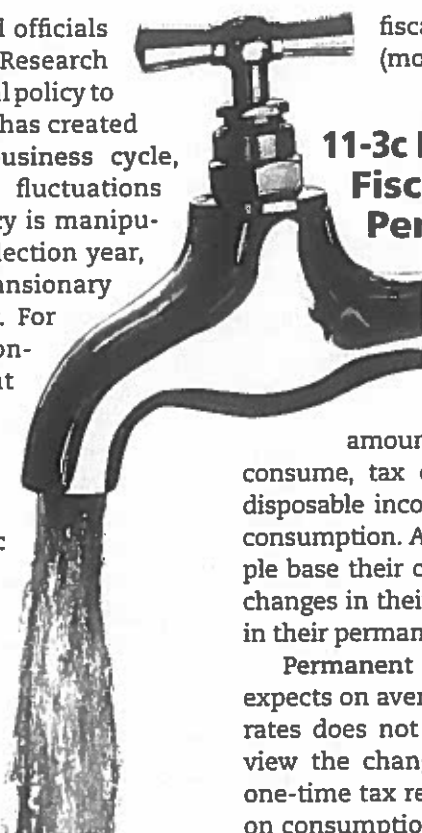


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should not be surprised that elected officials might try to use it to get reelected. Research suggests that public officials use fiscal policy to boost their reelection chances. This has created what some argue is a political business cycle, which results from the economic fluctuations that occur when discretionary policy is manipulated for political gain. During an election year, incumbent presidents use expansionary policies to stimulate the economy. For example, a study of 18 industrial economies over three decades found that incumbents boosted health care spending during election years.<sup>1</sup> There is also evidence that municipal officials, just before an election, spend more on those public goods most visible to the electorate, such as city parks.<sup>2</sup>

### 11-3b Lags in Fiscal Policy

The time required to approve and implement fiscal legislation may hamper its effectiveness and weaken discretionary fiscal policy as a tool of macroeconomic stabilization. Even if a fiscal prescription is appropriate for the economy when proposed, the months and sometimes years required to approve and implement legislation means the medicine could do more harm than good. The policy might kick in only after the economy has already turned itself around. Because a recession is not usually identified until at least six months after it begins, and because the 11 recessions since 1945 lasted only 11 months on average, discretionary



fiscal policy allows little room for error (more later about timing problems).

### 11-3c Discretionary Fiscal Policy and Permanent Income

It was once believed that discretionary fiscal policy could be turned on and off like a water faucet, stimulating or dampening the economy at the right time by just the right amount. Given the marginal propensity to consume, tax changes could increase or decrease disposable income to bring about desired change in consumption. A more recent view suggests that people base their consumption decisions not merely on changes in their current income but also on changes in their permanent income.

Permanent income is the income a person expects on average over the long term. Changing tax rates does not affect consumption much if people view the change as only temporary. For example, one-time tax rebates seem to have had little impact on consumption. The stimulative effects of the \$117

PETER BOYD/WATER / SCIENCE SOURCE

“The time required to approve and implement fiscal legislation may hamper its effectiveness.”

billion tax-rebate program in early 2008 were disappointing. Surveys showed that only about 20 percent of households spent most of their rebate check. Other households saved most of it or paid down debt.<sup>3</sup> The temporary nature of the tax cuts meant that house-

holds faced only a small increase in their permanent income. Because permanent income changed little, consumption changed little. In short, to the extent that consumers base spending decisions on their permanent income, attempts to fine-tune the economy with temporary tax changes are less effective.

#### political business cycles

Economic fluctuations that occur when discretionary policy is manipulated for political gain

permanent income  
income that individuals expect to receive on average over the long term

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1. Niklas Potrafke, “The Growth of Public Health Expenditures in OECD Countries: Do Government Ideology and Electoral Motives Matter?” *Journal of Health Economics*, 29 (December 2010): 797–810.

2. Linda Veiga and Francisco Veiga, “Political Business Cycles at the Municipal Level,” *Public Choice*, 131 (April 2007): 45–64.

### 11-4 Fiscal Policy Since 1980

After examining fiscal policy up through the era of stagflation and considering limitations of fiscal policy, you are in a position to look at fiscal policy in recent decades.

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3. See Matthew Shapiro and Joel Slemrod, “Did the 2008 Tax Rebated Simulate Spending?” *American Economic Review*, 99 (May 2009): 374–379.

airplanes ended thousands of lives and reduced the chances of a strong economic recovery. Although the recession lasted only eight months, the recovery was weak, and jobs did not start coming back until the second half of 2003, nearly two years after the recession officially ended. But, between 2003 and 2007, the economy added more than 8 million jobs. By late 2007, the economic expansion, which began in late 2001, had lasted six years, somewhat longer than average for expansions after World War II. The economy peaked in December 2007. The strengthening economy helped cut the federal deficit from \$413 billion in 2004 to \$161 billion in 2007. Then the economy fell apart.

## 11-4c Fiscal Policy and the Great Recession

After peaking in December 2007, the U.S. economy entered a recession, this time precipitated by declining home prices and rising foreclosure rates, as more borrowers failed to make their mortgage payments. The recession began quietly. Many economists doubted that one was even underway (the starting date of December 2007 would not be officially announced until a year later). But as a precaution, Congress and President Bush enacted a \$168 billion plan in early 2008 to stimulate the softening economy. The money was borrowed, so it added to the federal deficit. The centerpiece was a \$117 billion one-time tax rebate of up to \$600 for individual filers and up to \$1,200 for joint filers. Probably because the tax cuts were temporary, the results were disappointing and the stimulation minimal. As noted already, surveys showed that most households saved the rebate or used it to pay down debt; the marginal propensity to consume from rebate money was estimated to be less than one-third.

After a quiet start, the recession gathered steam. Job losses jumped six fold from an average of 31,000 a month during the first quarter of 2008 to an average of 191,000 a month in the second quarter. Then things got worse. In the third quarter, monthly job losses averaged 334,000.

### American Recovery and Reinvestment Act

At an estimated cost of \$831 billion, the largest stimulus measure in U.S. history; enacted in February 2009

### The Financial Crisis and Aftermath

The problems of falling home prices and rising default rates that

simmered throughout 2007 and the first half of 2008 reached a boiling point in September 2008 when Lehman Brothers, the nation's fourth-largest investment bank, with assets of over \$600 billion and about 25,000 employees, filed for what became the largest bankruptcy in U.S. history. And AIG, a trillion-dollar insurance giant, would have collapsed without a federal bailout. The financial crisis froze credit markets around the world. Nobody wanted to lend for fear that the borrower might go bankrupt. Facing financial chaos, public policy makers were emboldened to take some extraordinary measures. The first of these was the \$700 billion Troubled Asset Relief Program, or TARP, passed in October 2008 and aimed at unfreezing financial flows by investing in financial institutions (these investments became known derisively as "bailouts"). TARP, to be discussed in a later chapter, helped calm credit markets, but the economy and the stock market continued to worsen. In the fourth quarter of 2008, real GDP fell 8.9 percent (at an annualized rate), the largest drop in many decades, and job losses averaged 662,000 a month, or 21 times the average for the first three months of the year. The unemployment rate in 2008 climbed from 5.0 percent in January to 7.4 percent in December, at the time the highest in nearly two decades.

### The Stimulus Package

With the economy bleeding jobs, policy makers had a sense of urgency if not panic. On February 17, 2009, newly-elected President Barack Obama signed the American Recovery and Reinvestment Act, a \$787 billion package of tax benefits and spending programs aimed at stimulating aggregate demand. The president called the measure "the most sweeping economic recovery package in our history." He predicted the measure would "create or save three and a half million jobs over the next two years." The projected cost would later rise to \$831 billion, or about \$7,000 per household.

According to the White House Website [Recovery.gov](http://Recovery.gov), which was created to track the stimulus package and its consequences, 37 percent was for tax benefits, 28 percent was for entitlements (such as Medicaid), and 35 percent was for grants, contracts, and loans. Most of the tax benefits were one-time reductions for individuals. Grants, contracts, and loans included some "shovel-ready" infrastructure projects, such as bridges and roads, but these projects were slow to get underway and they represented just a small fraction of stimulus spending



TODD BANNER/JALAMY

exceeds 1, a dollar of government spending produces more than a dollar of new output and income. Thus, the effectiveness of any stimulus program depends on the size of the tax and spending multipliers. During the debate on the measure, one group of economists argued that the multipliers were less than 1 and another group, including the president's economists, argued they were greater than 1. Unfortunately, because of chronic deficits since the early 1980s, discretionary fiscal policies had not been used much, at least not explicitly, so few researchers have attempted to measure those effects, and not all those researchers have tried to estimate multipliers.

(only 4 percent of the stimulus went to the Federal Highway Administration for highway and bridge projects).

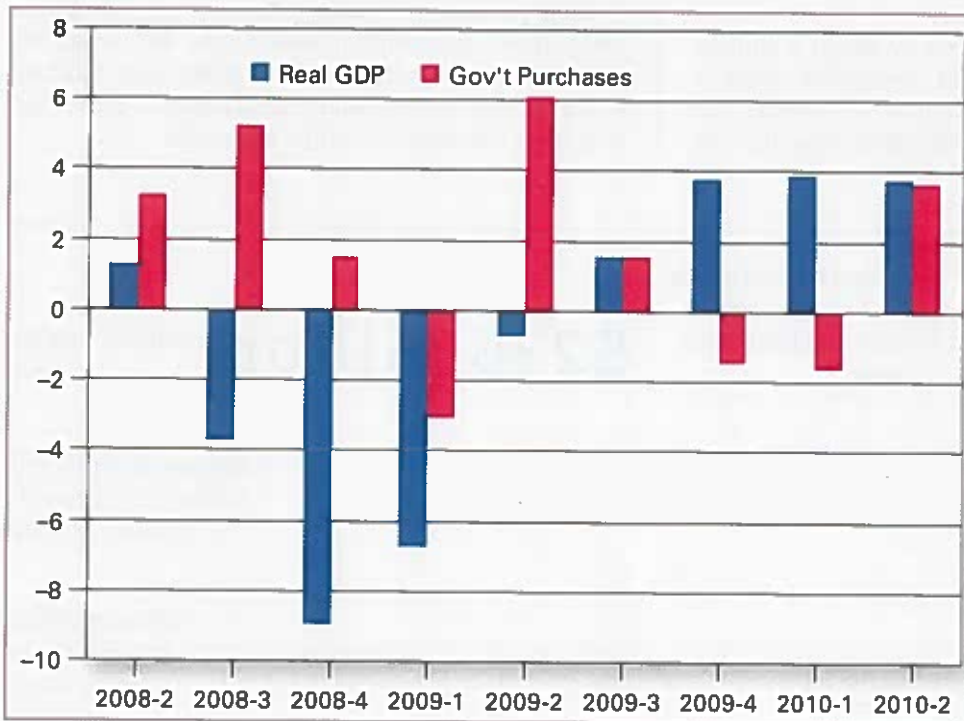
The stimulus package was all deficit spending. The rationale for deficit spending is that unemployed labor and idle capital will be put to work. And if the spending multiplier

**“The rationale for deficit spending is that unemployed labor and idle capital will be put to work.”**

Still, recent research suggests that permanent tax cuts had more of an impact on the economy than spending increases, and of those studies that try to estimate a spending multiplier, the average was less than 1. The stimulus measure was never very popular. During his State of the Union address in the election year of 2012, President Obama did not mention it, nor did he bring it up much during his successful campaign for a second term that year.

### Exhibit 4

Percent Change in Real GDP and Government Purchases by Quarter (Annualized Rate)



SOURCE: National Economic Accounts, Bureau of Economic Analysis, at <http://bea.gov/national/nipaweb/index.asp>.

### Government Purchases and Real GDP

It may be too soon to isolate the impact of the largest stimulus program in history. But just so you can get a rough idea of what happened during the period, Exhibit 4 shows quarterly changes in real GDP and in government purchases between the second quarter of 2008 and the second quarter of 2010 (all at annualized rates). First, notice the change in real GDP, shaded blue, which went from positive to

negative, then back to positive over the nine quarters. The fourth quarter of 2008 showed the largest drop, with GDP falling 8.9 percent, the largest quarterly decline since 1958. Government purchases include federal, state, and local purchases; this total would reflect federal stimulus money to save state and local government jobs as well as spending for so-called “shovel-ready” projects. (Not captured directly in government purchases are tax cuts and transfer programs, though any effects should eventually be reflected in GDP.)

Government purchases declined the most in the first quarter of 2009, with a drop of 3.0 percent. That same quarter, President Obama signed the stimulus bill. Government purchases grew the most, by 6.1 percent, the quarter following the enactment of the stimulus package. We should remember that association is not causation, but GDP fell only 0.7 percent in the quarter after the stimulus was signed. Once GDP started growing again, government purchases seemed to slow, then turned negative for two quarters. Government purchases during the four quarters following enactment of the stimulus package grew an average of 1.2 percent. By way of comparison, government purchases in the four prior quarters grew an average of 1.8 percent. So government purchases grew less on average after the stimulus than before it. Federal spending did increase after the stimulus was signed. Of course, the stimulus included tax cuts and increases in transfer payments, outlays not captured in government purchases.

Altogether, employment fell by about 8 million between December 2007 and December 2009, a decline of 6.1 percent. Over the next three years, the economy added back about half those jobs, but the

unemployment rate remained stubbornly high—above 8.0 percent deep into 2012. The federal deficit ballooned from \$161 billion in 2007 to \$459 billion in 2008 to \$1.4 trillion in 2009, when 41 cents of each dollar spent by the federal government was borrowed. Deficits topped \$1.0 trillion for each of the next three years. Those deficits add up to an awesome federal debt, to be discussed in the next chapter.

It is said that geologists learn more about the nature of the Earth’s crust from one major upheaval, such as a huge earthquake or major volcanic eruption, than from a dozen lesser events. The recession of 2007–2009 traumatized the economy and the economics profession. Events will be dissected for years to develop a clearer understanding of how the economy works and what went wrong.

## 11-5 Final Word

This chapter discussed fiscal policy in theory and in practice. It also examined several factors that reduce the effectiveness of fiscal policy. In the short run, the aggregate supply curve slopes upward, so the impact on equilibrium output of any change in aggregate demand is blunted by a change in the price level. In the long run, aggregate supply is a vertical line, so if the economy is already producing at its potential, the spending multiplier is zero. To the extent that consumers respond primarily to changes in their permanent incomes, temporary changes in taxes affect consumption less, so the tax multiplier is smaller. Various lags in fiscal policy also limit its effectiveness. Discretionary fiscal policy is presented in greater detail in the online appendix.

**8.4 million** < Total U.S. job losses between December 2007 and December 2009

**\$236 billion** < Federal surplus in 2000

Number of recessions since 1945; these averaged 11 months in duration > **11**

**662,000** < Average monthly job losses during fourth quarter of 2008

Year when John Maynard Keynes published *The General Theory of Employment, Interest, and Money* > **1936**

**\$1.1 trillion** < Federal deficit in 2012, down from about \$1.3 trillion a year earlier



# Federal Budgets

## and Public Policy

### Learning Outcomes

- 12-1** Summarize how federal spending priorities have changed since the 1960s
- 12-2** Explain why the federal budget has been in deficit in most years since the Great Depression
- 12-3** Outline what has happened to the federal debt in recent decades and how it compares with debt levels in other countries
- 12-4** Describe how a giant federal debt could have a negative impact on the economy

# “How big is the federal budget, and where does the money go?”

How big is the federal budget, and where does the money go? Why is the federal budget process such a tangled web? In what sense is the federal budgeting process at odds with discretionary fiscal policy? How is a sluggish economy like an empty restaurant? Why has the federal budget been in deficit most years? What is the federal debt, and who owes it to whom? Can a nation run deficits year after year and decade after decade? Answers to these and other questions are examined in this chapter, which considers federal budgeting in theory and practice.

The word *budget* derives from the Old

French word *bougette*, which means “little bag.” The federal budget is now about \$3,600,000,000,000—\$3.6 trillion a year. That's big money! If this “little bag” held \$100 bills, it would weigh 38,000 tons! These \$100 bills could paper over a 24-lane highway stretching from northern Maine to southern California. A \$3.6 trillion stack of \$100 bills would tower 2,400 miles high. Here's another way to appreciate the size of the federal budget: If all 4,600 tons of gold stored in Fort Knox were sold at the October 2013 price of \$1,350 per ounce, the proceeds would fund the federal government for only about a month.

Government budgets have a tremendous impact on the economy. Government outlays at all levels amount to about 40 percent relative to GDP. Our focus in this chapter will be the federal budget, beginning with the budget process. We then look at the source of federal deficits. We also examine the national debt and its impact on the economy. At some point, a giant federal debt could cripple the nation. Because you and your classmates will inherit liability for the federal debt, you may have a particular interest in this material.

## What do you think?

**The budget process is too long for government spending to have a substantial effect on present economic conditions.**

Strongly Disagree

Strongly Agree

1 2 3 4 5 6 7

### Topics discussed in Chapter 12 include

- The federal budget process
- Crowding out and crowding in
- Rationale for deficit spending
- The short-lived budget surplus
- Impact of federal deficits
- The sustainability of the federal debt

## 12-1 The Federal Budget Process

The federal budget is a plan of outlays and revenues for a specified period, usually a year. Federal outlays include both government purchases and transfer payments. Exhibit 1 shows U.S. federal outlays by major category since 1960. As you can see, the share of outlays going to national defense dropped from over half in 1960 to only 18 percent in 2013. Social Security's share has grown every decade. Medicare, medical care for the elderly, was introduced in 1965 and has also grown sharply. In fact, Social Security and Medicare, programs aimed primarily at the elderly, combined for 35 percent of federal outlays in 2013. For the last two decades, welfare spending, which consists of cash and

### federal budget

A plan for federal government outlays and revenues for a specified period, usually a year

in-kind transfer payments, has remained relatively stable, and in 2013 accounted for almost 15 percent of federal outlays. And, thanks to record low interest rates, interest payments on the national debt were a

little over 6 percent of federal outlays in 2013, down from 15 percent as recently as 1996. So 50 percent, or half the federal budget, redistributes income (Social Security, Medicare, and welfare); 18 percent goes for national defense; 6 percent services the national debt; and the remaining 26 percent pays for everything else in the federal budget—from environmental protection to federal prisons to federal education aid. Note that the spike in "All Other Outlays" in 2009 was caused by the \$831 billion stimulus package passed early that year. Since the 1960s, the federal government has shifted its focus from national defense to income redistribution.

“Social Security and Medicare outlays have grown sharply, while welfare spending has remained relatively stable.”

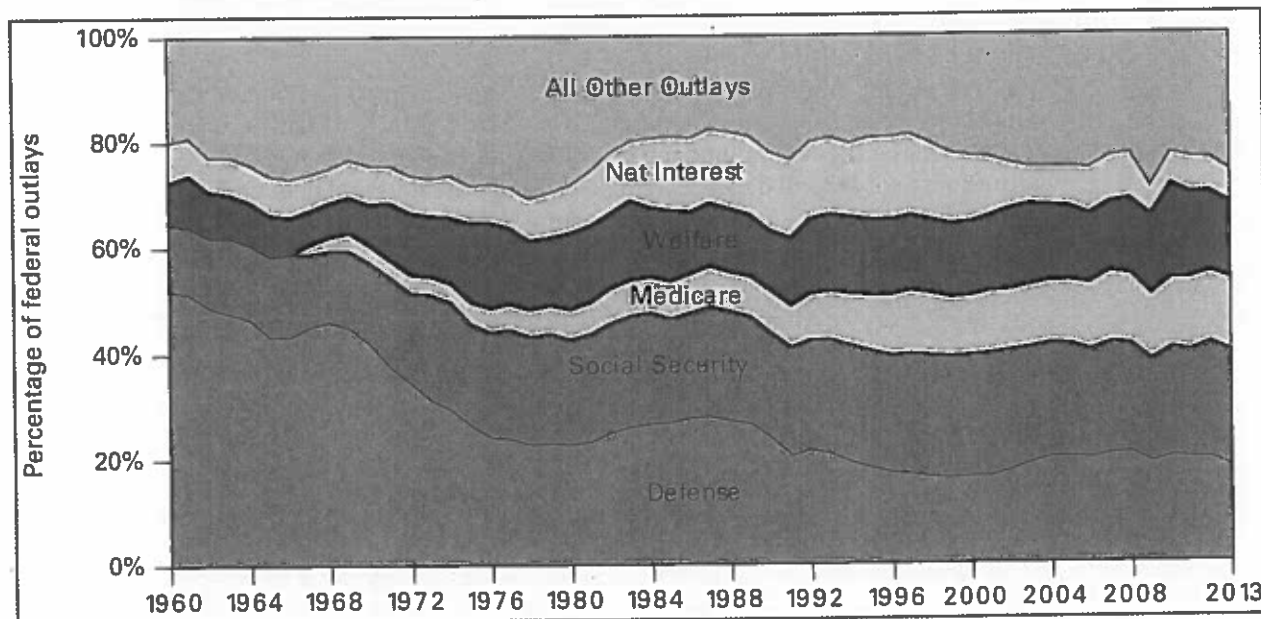
### 12-1a The Presidential and Congressional Roles

The president's budget proposal begins to take shape

a year before it is submitted to Congress, with each agency preparing a budget request. In late January or early February, the president submits to Congress *The Budget of the United States Government*, a pile of books detailing spending and revenue proposals for the upcoming fiscal year, which begins October 1. At this stage, the president's budget is little more than

## Exhibit 1

Defense's Share of Federal Outlays Declined Since 1960 and Redistribution Increased



SOURCES: Computed based on budget totals from *Economic Report of the President*, February 2013, Table B-80; and the Office of Management and Budget. For the most recent year, go to <http://www.gpoaccess.gov/eop/>. Percentage shares for 2013 are estimates based on the president's budget.

detailed suggestions for congressional consideration. About the same time, the president's Council of Economic Advisers sends Congress the *Economic Report of the President*, which offers the president's take on the economy.

Budget committees in both the House and the Senate rework the president's budget until they agree on total outlays, spending by major category, and expected revenues. This agreement, called a **budget resolution**, guides spending and revenue decisions made by the many congressional committees and subcommittees. The budget cycle is supposed to end before October 1, the start of the new fiscal year. Before that date, Congress should have approved detailed plans for outlays along with revenue projections. Thus, the federal budget has a congressional gestation period of about nine months—though, as noted, the president's budget usually begins taking shape a year before it's submitted to Congress.

“When outlays exceed revenues, the budget is in deficit. A deficit stimulates aggregate demand in the short run but increases the federal debt and reduces national saving, which in the long run could impede economic growth.”

The size and composition of the budget and the difference between outlays and revenues measure the budget's fiscal impact on the economy. When outlays exceed revenues, the budget is in deficit. A deficit stimulates aggregate demand in the short run but increases the federal debt and reduces national saving, which in the long run could impede economic growth. Alternatively, when revenues exceed outlays, the federal budget is in surplus. A surplus dampens aggregate demand in the short run but reduces the federal debt and boosts domestic saving, which in the long run could promote economic growth.

## 12-1b Problems With the Federal Budget Process

The federal budget process sounds good on paper, but it does not work that well in practice. Here are some problems.

## Continuing Resolutions Instead of Budget Decisions

Congress often ignores the timetable for developing and approving a budget. Because deadlines are frequently missed, budgets typically run from year to year based on **continuing resolutions**, which are agreements to allow agencies, in the absence of an approved budget, to spend at the rate of the previous year's budget. Poorly conceived programs continue through sheer inertia; successful programs cannot expand. For example, beginning in 2009, the U.S. Senate failed to pass a budget for three years in a row. During that stretch, the federal government was funded by one continuing resolution after another, and all this was accompanied by huge budget deficits.

## Lengthy Budget Process

You can imagine the difficulty of using the budget as a tool of discretionary fiscal policy when the budget process takes so long. Given that the average recession since World War II has lasted only eleven months and that budget preparations begin more than a year and a half before the budget takes effect, planning discretionary fiscal measures to reduce economic fluctuations is difficult if not impossible. That's one reason why attempts to stimulate an ailing economy often seem so halfhearted; by the time Congress and the president agree on a fiscal remedy, the economy has usually recovered on its own.

## Uncontrollable Budget Items

Congress has only limited control over much of the budget. Most federal outlays are determined by existing laws. For example, once Congress establishes eligibility criteria, **entitlement programs**, such as Social Security, Medicare, and Medicaid, take on lives of their own, with each annual appropriation simply reflecting the amount required to support the expected number of entitled beneficiaries. Health care reform introduced another major entitlement program, the cost of which has not yet been fully calculated. Congress has no say in such appropriations unless it chooses to change benefits or eligibility

### **budget resolution**

A congressional agreement about total outlays, spending by major category, and expected revenues; it guides spending and revenue decisions by the many congressional committees and subcommittees

### **continuing resolutions**

Budget agreements that allow agencies, in the absence of an approved budget, to spend at the rate of the previous year's budget

### **entitlement programs**

Guaranteed benefits for those who qualify for government transfer programs such as Social Security and Medicare

criteria. Most entitlement programs have such politically powerful constituencies that Congress is reluctant to mess with the structure.

“Most federal outlays are determined by existing laws.”

budget deliberations, and cabinet members could focus more on running their agencies (many states have adopted two-year budgets). A two-year budget, however, would require longer-term

### Overly Detailed Budget

The federal budget is divided into thousands of accounts and subaccounts, which is why it fills volumes. To the extent that the budget is a way of making political payoffs, such micromanagement allows elected officials to reward friends and punish enemies with great precision. For example, a recent budget included \$176,000 for the Reindeer Herders Association in Alaska, \$400,000 for the Southside Sportsman Club in New York, and \$5 million for an insect-rearing facility in Mississippi. By budgeting in such detail, Congress may lose sight of the big picture. When economic conditions change or when the demand for certain public goods shifts, the federal government cannot easily reallocate funds. Detailed budgeting is not only time consuming, but it also reduces the flexibility of discretionary fiscal policy and is subject to political abuse. But detailed budgeting allows the party in power to reward supporters.

### 12-1c Possible Budget Reforms

Some reforms might improve the budget process. First, the annual budget could become a two-year budget, or *biennial budget*. As it is, Congress spends nearly all of the year working on the budget, and even then sometimes fails to pass one, as noted already. The executive branch is always dealing with three budgets: administering an approved budget, defending a proposed budget before congressional committees, and preparing the next budget for submission to Congress. With a two-year budget, Congress would not be continually involved with

economic forecasts and would be less useful than a one-year budget as a tool of discretionary fiscal policy.

Another possible reform would be to simplify the budget document by concentrating only on major groupings and eliminating line items. Each agency head would receive a total budget, along with the discretion to allocate that budget in a manner consistent with the perceived demands for agency services. The drawback is that agency heads may have different priorities than those of elected representatives. On the plus side, elected officials would be less able to insert favorite pork-barrel projects into the budget.

## 12-2 The Fiscal Impact of the Federal Budget

When government outlays—government purchases plus cash and in-kind transfer programs—exceed government revenue, the result is a *budget deficit*, a flow measure already introduced. Although the federal budget was in surplus from 1998 to 2001, before that it had been in deficit every year but one since 1960. After 2001 the budget slipped back into the red, where it remains. To place federal deficits in perspective, let's first examine the economic rationale for deficit financing.

### 12-2a The Rationale for Deficits

Deficit financing has been justified for outlays that increase the economy's productivity—capital outlays for investments such as highways, waterways, and dams. The cost of these capital projects should be borne in part by future taxpayers, who will also benefit from these investments. Thus, there is some justification for shifting some of the cost of capital projects to future taxpayers. State and local governments issue debt to fund capital projects, such as schools and infrastructure. But the federal government does not issue bonds to fund specific capital projects.

Before the Great Depression, federal deficits occurred primarily during wartime. Because wars often impose a great hardship on the population, public officials are understandably reluctant to tax



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citizens much more to finance war-related spending. Deficits during wars were largely self-correcting, however, because military spending dropped after a war, but tax revenue did not.

The Great Depression led John Maynard Keynes to argue that public spending should offset any drop in private spending. As you know by now, Keynes argued that a federal budget deficit would stimulate aggregate demand. As a result of the Great Depression, automatic stabilizers were also introduced, which increased public outlays during recessions and decreased them during expansions. Deficits increase during recessions because tax revenues decline while spending programs such as unemployment benefits and welfare increase. For example, between 2007 and 2009, corporate tax revenue fell 62 percent but welfare spending jumped 45 percent. An economic expansion reverses these flows. As the economy picks up, so do personal income and corporate profits, boosting tax revenue. Unemployment compensation and welfare spending decline. Thus, federal deficits usually fall during the recovery stage of the business cycle.

## 12-2b Budget Philosophies and Deficits

Several budget philosophies have emerged over the years. Prior to the Great Depression, fiscal policy focused on maintaining an **annually balanced budget**, except during wartime. Because tax revenues rise during expansions and fall during recessions, an annually balanced budget means that spending increases during expansions and declines during recessions. But such a pattern magnifies fluctuations in the business cycle, overheating the economy during expansions and increasing unemployment during recessions.

A second budget philosophy calls for a **cyclically balanced budget**, meaning that deficits during recessions are paid for by surpluses during expansions. Such a fiscal policy dampens swings in the business cycle without increasing the national debt. Nearly all states have established “rainy day” funds to build up budget surpluses during the good times for use during hard times.

A third budget philosophy is **functional finance**, which says that policy makers should be concerned less with balancing the budget annually, or even over the business cycle, and more with ensuring that the economy produces its potential output. If the budgets needed to keep the economy producing its potential involve chronic deficits, so be it. Since the Great Depression, budgets in this country have seldom balanced. *Although budget deficits have been*

*larger during recessions than during expansions, the federal budget has been in deficit in all but 14 years since 1929. One major problem with functional finance is that chronic deficits accumulate into a national debt that at some point could cripple an economy.*

## 12-2c Federal Deficits Since the Birth of the Nation

Between 1789, when the U.S. Constitution was adopted, and 1929, the year the Great Depression started, the federal budget was in deficit 33 percent of the time, primarily during war years. After a war, government spending dropped more than government revenue. Thus, deficits arising during wars were largely self-correcting once the wars ended.

Since the onset of the Great Depression, however, federal budgets have been in deficit in 84 percent of the years. Exhibit 2 shows federal deficits and surpluses as a percentage of GDP since 1929. Unmistakable are the huge deficits during World War II, which dwarf deficits in other years. Turning now to the last quarter century, we see the relatively large deficits of the 1980s. These resulted from large tax cuts along with higher defense spending. Supply-side economists argued that tax cuts would stimulate enough economic activity to keep tax revenues from falling. Unspecified spending cuts were supposed to erase a projected deficit, but Congress never made the promised cuts. In short, the president and Congress cut tax rates but not expenditures.

As the economy improved during the 1990s, the deficit decreased and then disappeared, turning into a surplus by 1998. But a recession in 2001, tax cuts, and higher federal spending turned surpluses into deficits. A weak recovery and the cost of fighting the war against terrorism worsened the deficits to 3.5 percent relative to GDP by 2003. But over the next four years, a stronger economy along with a rising stock market increased federal revenue enough to drop the deficit to about 1.2 percent relative to GDP in 2007. Because of the global financial crisis and the Great Recession of 2007–2009, federal deficits relative to GDP swelled to levels not seen since World War II. The recession reduced revenues and

### **annually balanced budget**

Budget philosophy prior to the Great Depression; aimed at matching annual revenues with outlays, except during times of war

### **cyclically balanced budget**

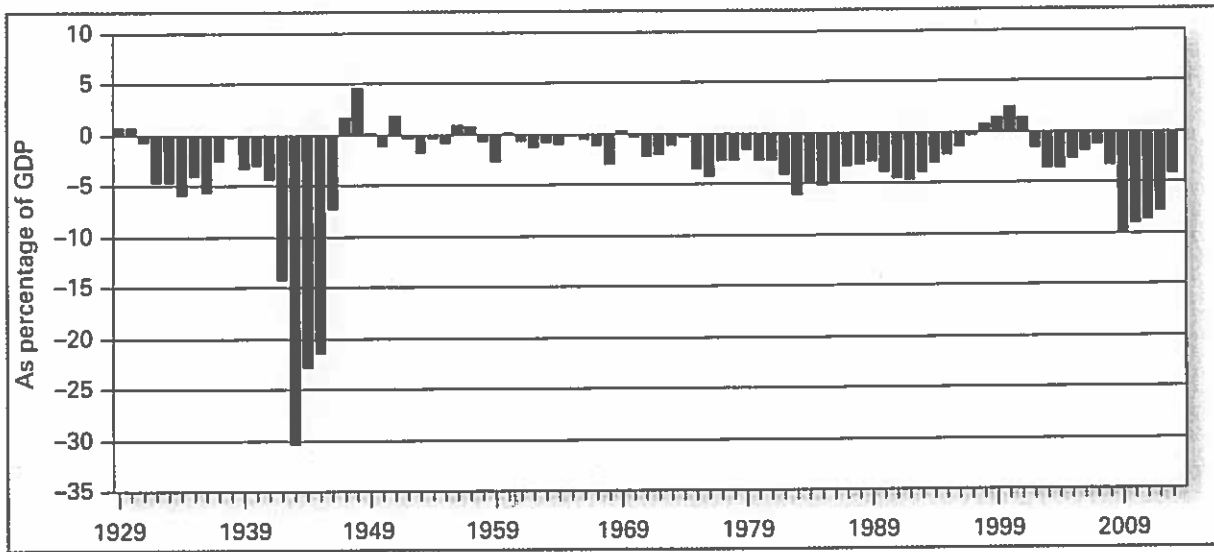
A budget philosophy calling for budget deficits during recessions to be financed by budget surpluses during expansions

### **functional finance**

A budget philosophy using fiscal policy to achieve the economy's potential GDP, rather than balancing budgets either annually or over the business cycle

## Exhibit 2

### Federal Deficits and Surpluses Relative to GDP Since the Great Depression



SOURCES: *Economic Report of the President*, January 1964 and February 2013, Table B-79. Figure for 2013 is based on the actual deficit that year and the author's estimate of GDP. For the latest data, go to <http://www.gpoaccess.gov/eop/>.

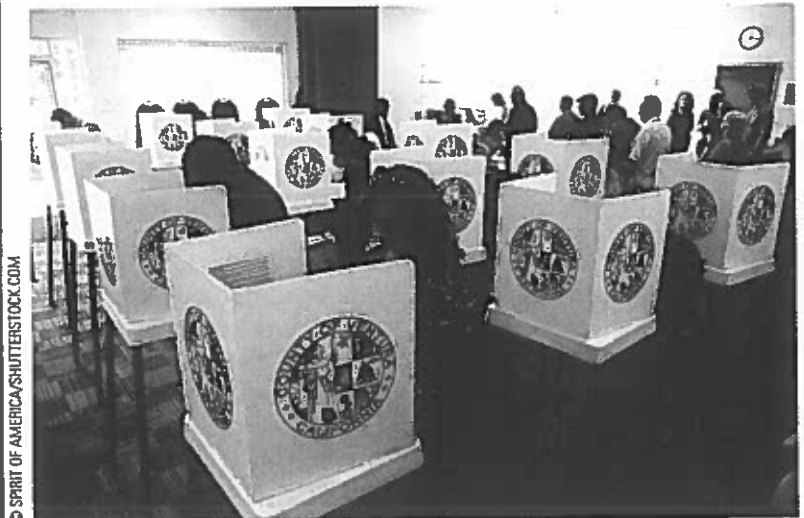
expanded outlays, especially the \$831 million American Reinvestment and Recovery Act, more popularly known as the stimulus program. The 2009 deficit was \$1.4 trillion, or 10.1 percent relative to GDP. Deficits topped \$1 trillion each year through 2012. Relative to GDP, deficits were 9.0 percent in 2010, 8.7 percent in 2011, and 7.8 percent in 2012, before improving to 4.1% percent in 2013. Except for years during World War II, deficits from 2009 through 2012 were the largest in the nation's history even higher than during the Great Depression. From 2009 to 2012, about 36 cents of every dollar of federal spending had to be borrowed, much of it from foreigners. Sizable deficits are projected for the next decade.

That's a short history of federal deficits. Now let's consider why the federal budget has been in deficit so long.

### 12-2d Why Deficits Persist

As we have seen, recent deficits climbed as the global financial crisis spilled into the wider economy, decreasing tax revenues and increasing government outlays. But why has the budget been in deficit for all but 14 years since 1929? The most obvious answer is that, unlike budgeters in 49 states, federal officials are not required to balance the budget. But why deficits rather than balanced budgets or even surpluses? One widely accepted model of the public sector assumes that elected officials try to maximize their political support, including votes

and campaign contributions. Voters like spending programs but hate paying taxes, so public spending wins support and taxes lose it. Candidates try to maximize their chances of getting elected and reelected by offering budgets long on benefits but short on taxes. Moreover, members of Congress push their favorite programs with little concern about the overall budget. For example, a senator from Mississippi was able to include \$1.5 billion in a budget for an amphibious assault ship to be built in his hometown of Pascagoula. The Navy never even asked for the ship.



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“Voters like spending programs but hate paying taxes, so public spending wins support and taxes lose it.”

## 12-2e Deficits, Surpluses, Crowding Out, and Crowding In

What effect do federal deficits and surpluses have on interest rates? Recall that interest rates affect investment, a critical component of economic growth. What's more, year-to-year fluctuations in investment are a primary source of shifts in the aggregate demand curve. Let's look at the impact of government deficits and surpluses on investment.

“Higher interest rates discourage, or crowd out, some private investment, reducing the stimulating effect of the government's deficit.”

Suppose the federal government increases spending without raising taxes, thereby increasing the budget deficit. How will this affect national saving, interest rates, and investment? An increase in the federal deficit reduces the supply of national saving, leading to higher interest rates. Higher interest rates discourage, or crowd out, some private investment, reducing the stimulating effect of the government's deficit. The extent of **crowding out** is a matter of debate. Some economists argue that although government deficits may displace some private-sector borrowing, expansionary fiscal policy results in a net increase in aggregate demand, leading to greater output and employment in the short run. Others believe that the crowding out is more extensive, so borrowing from the public in this way results in little or no net increase in aggregate demand and output.

Although crowding out is likely to occur to some degree, there is another possibility. If the economy is operating well below its potential, the additional fiscal stimulus provided by a higher government deficit could encourage some firms to invest more. Recall that an important determinant

of investment is business expectations. Government stimulus of a weak economy could put a sunny face on the business outlook. As expectations grow more favorable, firms become more willing to invest. This ability of government deficits to stimulate private investment is sometimes called **crowding in**, to distinguish it from crowding out. Between 1993 and 2013, the Japanese government pursued deficit spending that averaged 6.5 percent relative to GDP as a way of getting that flat economy going, but with only limited success.

Were you ever reluctant to patronize a restaurant because it was too crowded? You simply did not want to put up with the hassle and long wait and were thus “crowded out.” Similarly, high government deficits may “crowd out” some investors by driving up interest rates. On the other hand, did you ever pass up an unfamiliar restaurant because the place seemed dead—it had no customers? Perhaps you wondered why? If you had seen just a few customers, you might have stopped in—you might have been willing to “crowd in.” Similarly, businesses may be reluctant to invest in a seemingly lifeless economy. The economic stimulus resulting from deficit spending could encourage some investors to “crowd in.”

## 12-2f The Twin Deficits

To finance the huge deficits, the U.S. Treasury must sell a lot of government IOUs. To get people to buy more of these Treasury securities, the government must offer higher interest rates, other things constant. So funding a higher deficit pushes up the market interest rates, other things constant. With U.S. interest rates higher, foreigners find Treasury securities more attractive. But to buy them, foreigners must first exchange their currencies for dollars. This greater demand for dollars causes the dollar to appreciate relative to foreign currencies. The rising value of the dollar makes foreign goods cheaper in the United States and U.S.

goods more expensive abroad.

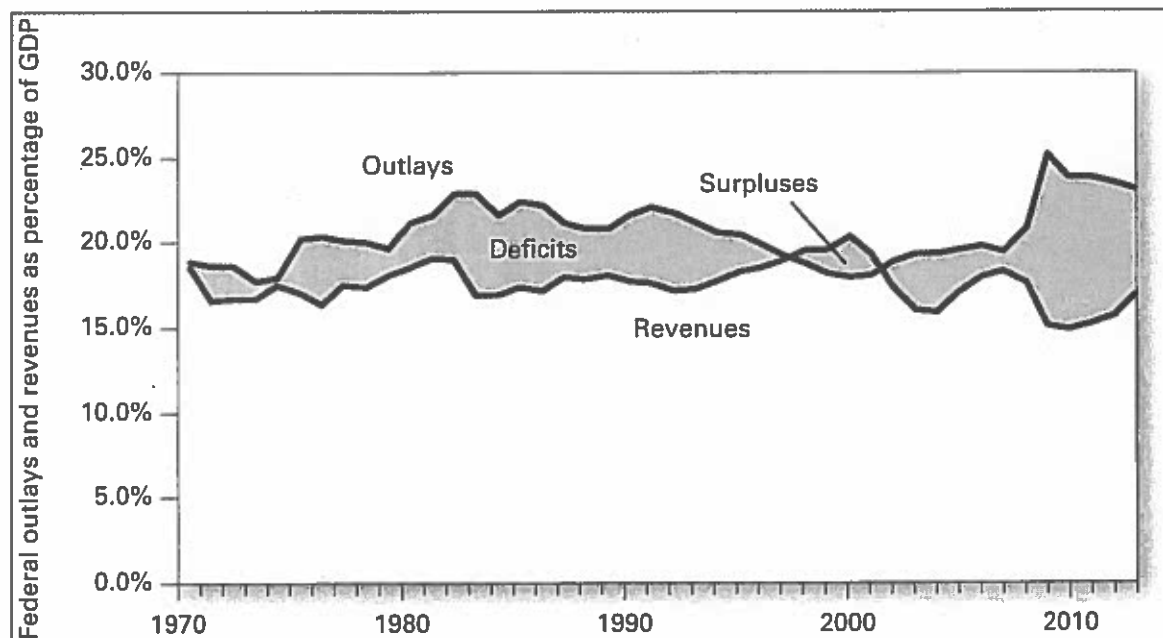
**crowding out**  
The displacement of interest-sensitive private investment that occurs when higher government deficits drive up market interest rates

**crowding in**  
The potential for government spending to stimulate private investment in an otherwise dead economy



## Exhibit 3

The Sharp Recession of 2007–2009 Cut Federal Revenues and Increased Federal Outlays, Resulting in Huge Deficits



SOURCES: *Economic Report of the President*, February 2013, Tables B-79 and the Office of Management and Budget. Figures for 2013 are projections based primarily on the president's budget. For the latest data, go to <http://www.gpoaccess.gov/eop/>.

Thus, U.S. imports increase and U.S. exports decrease, so the trade deficit increases.

Higher trade deficits mean that foreigners have dollars left over after they buy all the U.S. goods and services they want. With these accumulated dollars, foreigners buy U.S. assets, including U.S. government securities, and thereby help fund federal deficits. The increase in funds from abroad is both good news and bad news for the U.S. economy. The supply of foreign saving increases investment spending in the United States over what would have occurred in the absence of these funds. Ask people what they think of foreign investment in their town; they will likely say it's great. But foreign funds to some extent simply offset a decline in U.S. saving. Such a pattern could pose problems in the long run. The United States has surrendered a certain amount of control over its economy to foreign investors. And the return on foreign investments in the United States flows abroad. For example, a growing share of the federal government's debt is now owed to foreigners, as discussed later in the chapter.

America was once the world's leading creditor. Now it's the lead debtor nation, borrowing huge sums from abroad, helping in the process to fund the federal deficit. Some critics blame U.S. fiscal policy as reflected in the large federal deficits for the switch from creditor to debtor nation. Japan and China are big buyers of U.S. Treasury securities. A debtor country becomes more beholden to those countries that supply credit.

## 12-2g The Short-Lived Budget Surplus

Exhibit 3 summarizes the federal budget since 1970, showing outlays relative to GDP as the red line and revenues relative to GDP as the blue line. These percentages offer an overall look at the federal government's role in the economy. Between 1970 and 2013, federal outlays averaged 20.6 percent and revenues averaged 17.6 percent relative to GDP. When outlays exceed revenues, the federal budget is in deficit, measured each year by the vertical distance between the blue and red lines. Thus, on average, the federal budget had a deficit of 3.0 percent relative to GDP. The pink shading shows the annual deficit as a percent of GDP. In the early 1990s, federal outlays started to decline relative to GDP, while revenues increased. This shrank the deficit and, by 1998, created a surplus, as indicated by the blue shading. Specifically, the deficit in 1990, which amounted to 3.8 percent relative to GDP, became a surplus by 1998, which lasted through 2001. What turned a hefty deficit into a surplus, and why has the surplus turned back into an even bigger deficit?

### Tax Increases

With concern about the deficits of the 1980s growing, Congress and President George H. W. Bush agreed in 1990 to a package of spending cuts and tax increases aimed at trimming budget deficits. Ironically, those

tax increases not only may have cost President Bush reelection in 1992 (because they violated his 1988 election promise of “no new taxes”), but they also began the groundwork for erasing the budget deficit, for which President Clinton was able to take credit. For his part, President Clinton increased taxes on high-income households in 1993, boosting the top marginal tax rate from 31 percent to 40 percent. The economy also enjoyed a vigorous recovery during the 1990s, fueled by rising worker productivity, growing consumer spending, globalization of markets, and a strong stock market. The combined effects of higher taxes on the rich and a strengthening economy raised federal revenue from 17.8 percent of GDP in 1990 to 20.3 percent in 2000. That may not seem like much of a difference, but it translated into an additional \$250 billion in federal revenue in 2000.

### Slower Growth in Federal Outlays

Because of spending discipline imposed by the 1990 legislation, growth in federal outlays slowed compared to the 1980s. What’s more, the collapse of the Soviet Union reduced U.S. military commitments abroad. Between 1990 and 2000, the number of military personnel dropped by one-third and defense spending dropped 30 percent in real terms. An additional impetus for slower spending growth came from Republicans, who attained congressional majority in 1994. Between 1994 and 2000, domestic spending grew little in real terms. Another beneficial development was a drop in interest rates, which fell to their lowest level in thirty years, saving billions in interest charges on the national debt. In short, federal outlays dropped from 21.6 percent relative to GDP in 1990 to 18.0 percent in 2000. Again, if federal outlays remained the same percentage of GDP in 2000 as in 1990, spending in 2000 would have been \$360 billion higher than it was.

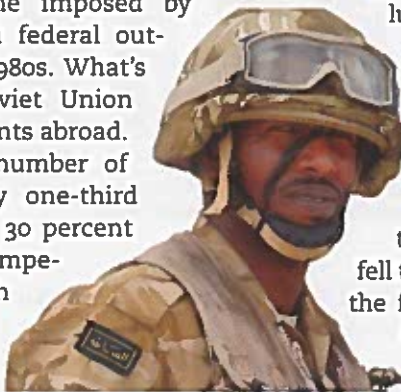
### A Reversal of Fortune in 2001

Thanks to the tax-rate increases and the strong economy, revenues gushed into Washington, growing an average of 8.4 percent per year between 1993 and 2000. Meanwhile, federal outlays remained in check, growing only 3.5 percent per year. By 2000, that combination created a federal budget surplus of \$236 billion, quite a turnaround from a deficit that had topped \$290 billion in 1992. But in 2001 unemployment increased, the stock market sank, and

terrorists crashed jets and spread anthrax. All this slowed federal revenues and accelerated federal spending. To counter the recession and cope with terrorism, Congress and the president cut taxes and increased federal spending. As a result, the federal budget surplus returned to a deficit by 2002 and has been in the red ever since. The era of federal budget surpluses was short-lived.

### Trillion-Dollar Deficits

The financial crisis of 2008 and the Great Recession of 2007–2009 increased budget deficits for two reasons. On the revenue side, falling employment, income, and profits cut tax receipts. Discretionary tax cuts reduced revenue even more. Revenues dropped from 18.3 percent relative to GDP in 2007 to 15.1 percent in 2009. On the spending side, automatic stabilizers such as unemployment benefits and welfare payments increased federal outlays, as did discretionary spending such as bailouts and the \$831 billion stimulus plan. Federal outlays jumped from 19.7 percent relative to GDP in 2007 to 25.2 percent in 2009. The federal deficit climbed from \$161 billion in 2007 to \$459 billion in 2008 to \$1.4 trillion in 2009. Even after the recession ended, the federal deficit remained stubbornly high, topping \$1.0 trillion in 2010, 2011, and 2012. However, it fell to \$680 billion in 2013. Thus, in just six years, the federal debt rose by about \$6 trillion. (You will read more about the federal debt later in the chapter.)



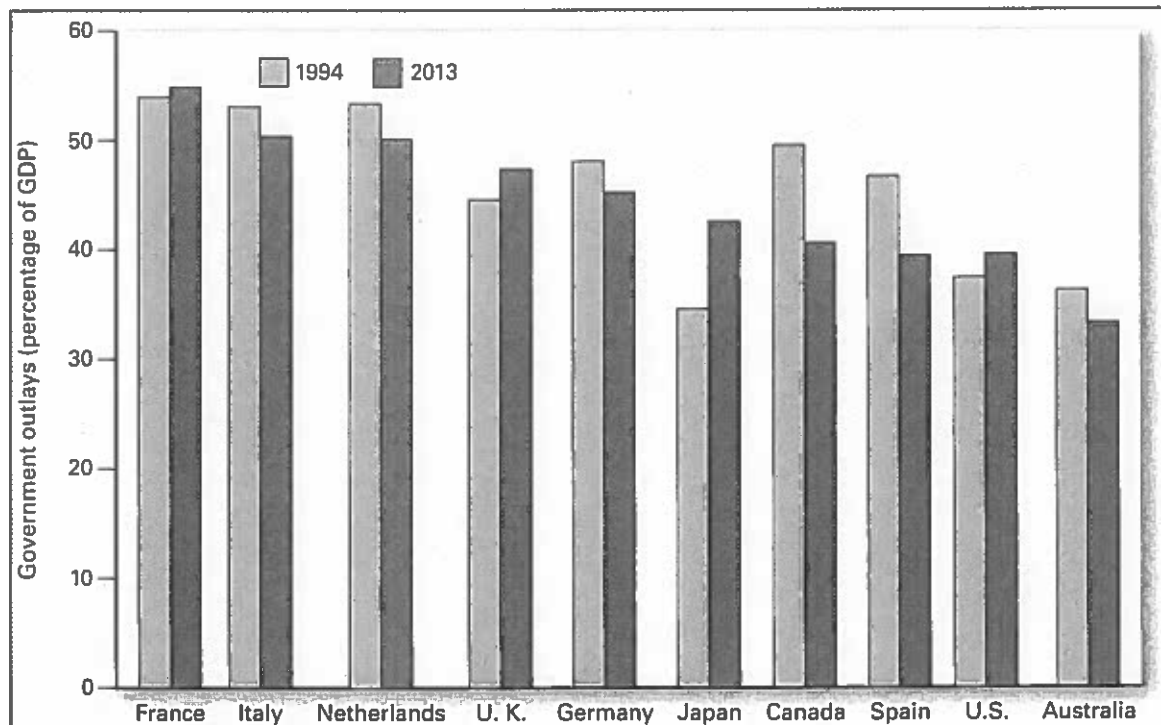
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## 12-2h The Relative Size of the Public Sector

So far, we have focused on the federal budget, but a fuller picture includes state and local governments as well. For added context, we can look at government budgets over time compared to other major economies. Exhibit 4 shows government outlays at all levels relative to GDP in 10 industrial economies in 1994 and in 2013. Government outlays in the United States relative to GDP increased from 37 percent in 1994 to 40 percent in 2013. Despite the increase, the United States is projected to have a smaller public sector in 2013 than all but one of the other listed countries. Outlays relative to GDP increased in four of the major economies and decreased in six. The 10-country average decreased from 46 percent to 44 percent. Government grew the most in Japan, rising from 35 percent relative to GDP in 1994 to 43 percent in 2013. Two decades of trying to stimulate the Japanese economy swelled

## Exhibit 4

Government Outlays as a Percentage of GDP in 1994 and 2013



SOURCE: Developed from figures available in *OECD Economic Outlook*, 93 (June 2013), Annex Table 25. Figures for 2013 are projections. For the latest data, go to <http://www.oecd.org/home/>, click on "Statistics," then find the most recent issue of *OECD Economic Outlook*.

the public sector. Government spending shrank the most in Canada, dropping from 50 percent to 41 percent relative to GDP.

Let's now turn our attention to a consequence of federal deficits—a sizable federal debt.

## 12-3 The National Debt in Perspective

Federal deficits add up. It took 39 presidents, six wars, the Great Depression, and more than two hundred years for the federal debt to reach \$1 trillion, as it did in 1981. It took only 5 presidents and 32 years for that debt to increase more than fivefold in real terms, as it did by 2013. The federal deficit is a flow variable measuring the amount by which outlays exceed revenues in a particular year. The federal debt, or the national debt, is a stock variable measuring the net accumulation of past deficits, the amount

owed by the federal government. This section puts the national debt in perspective by looking at (1) changes over time, (2) U.S. government

debt levels compared with those in other countries, (3) interest payments on the national debt, (4) who bears the burden of the national debt, and (5) what impact does the national debt have on the nation's future. Note that the national debt ignores the projected liabilities of Social Security, Medicare, and other health-care entitlements or other federal retirement programs. If these liabilities were included, the national debt would more than double.

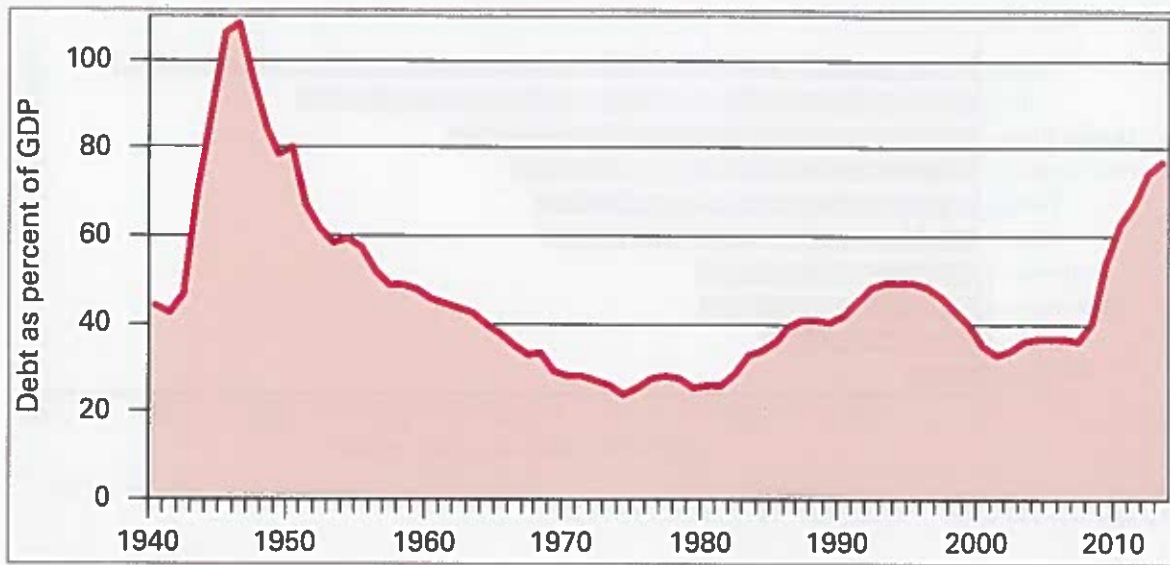
### 12-3a Measuring the National Debt

In talking about the national debt, we should distinguish between the gross debt and debt held by the public. The *gross debt* includes U.S. Treasury securities purchased by various federal agencies. Because the federal government owes this debt to itself, analysts often focus instead on *debt held by the public*, which includes U.S. Treasury securities held by households, firms, banks (including Federal Reserve Banks), and foreign entities. As of 2012, the gross federal debt stood at \$16.2 trillion, and the debt held by the public stood at \$11.4 trillion.

**national debt**  
The net accumulation of federal budget deficits

## Exhibit 5

### Federal Debt Held by the Public as Percent of GDP Spiked Because of World War II and the Great Recession



SOURCE: Fiscal year figures from the *Economic Report of the President*, February 2013, Table B-79, plus updates from budget deliberations. For the latest data, go to <http://www.gpoaccess.gov/eop/>.

One way to measure debt over time is relative to the economy's production and income, or GDP (just as a bank might compare the size of a mortgage to a borrower's income). Exhibit 5 shows federal debt held by the public relative to GDP. The cost of World War II ballooned the debt from 44 percent relative to GDP in 1940 to 109 percent in 1946. After the war, the economy grew much faster than the debt, so by 1980, debt fell to only 26 percent relative to GDP. But high deficits in the 1980s and early 1990s nearly doubled debt to 49 percent relative to GDP by 1993. Budget surpluses from 1998 to 2001 cut debt to 33 percent relative to GDP by 2001. A recession, a stock market slump, tax cuts, and higher federal spending increased debt to 37 percent relative to GDP in 2004, where it remained through 2007. Deficits from the 2007–2009 recession increased federal debt relative to GDP. Public debt was projected to climb to 77 percent relative to GDP by 2013, the highest since World War II. If nothing changes, large deficits and growing debt are expected for years to come. But, again, this measure of the debt ignores the fact that the federal government is on the hook to pay Social Security and Medicare benefits that will create a big hole in the budget. Why are these other debts ignored? The U.S. Congress exempts itself from including the cost of promised retirement benefits in the budget. Yet firms as well as state and local governments include retirement commitments in their financial statements, as required by private accounting boards and by federal laws. As of 2012, the federal government should have \$22 trillion set aside and earning interest to cover the



PAT CANOVA/PHOTOLIBRARY/GETTY IMAGES

### Social Security and Medicare create a big hole in the budget.

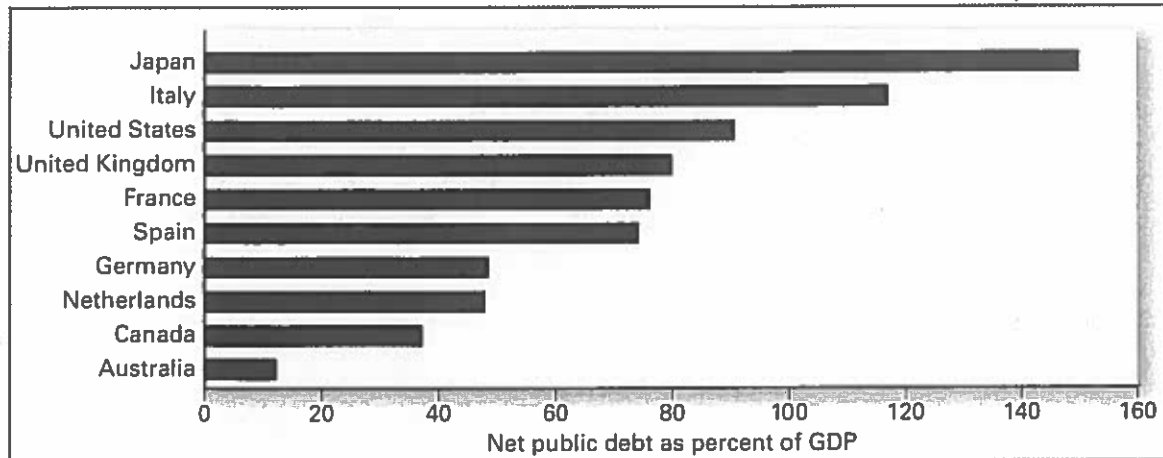
Social Security retirement benefits of current workers beyond what payroll taxes would cover.<sup>1</sup>

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1. Dennis Cauchon, "Real Federal Deficit Dwarfs Official Tally," *USA Today*, 24 May 2012.

## Exhibit 6

Relative to GDP, U.S. Net Public Debt Above Average for Major Economies in 2014



SOURCE: OECD Economic Outlook, 93 (June 2013), Annex Table 33. Figures are projections for net debt at all levels of government in 2014. For the latest data, go to <http://www.oecd.org/home/>, click on "Statistics," then find the latest OECD Economic Outlook.

### 12-3b International Perspective on Public Debt

Exhibit 5 shows federal debt relative to GDP over time, but how does the United States compare with other major economies around the world? Because different economies have different fiscal structures—for example some rely more on a central government—we should consider the debt at all government levels. Exhibit 6 compares the net government debt in the United States relative to GDP with those of nine other industrial countries. Net debt includes outstanding liabilities of federal, state, and local governments minus government financial assets, such as loans to students and farmers, securities, cash on hand, and foreign exchange on reserve. Net debt for the 10 nations was projected to average 76 percent relative to GDP in 2014, below the United States figure of 91 percent (remember this is for all levels of government, not just the federal level). Australia was the lowest with only a 12 percent net debt relative to GDP, and Japan was the highest at 150 percent relative to GDP. Much of Japan's debt was taken on during the "lost decade" of the 1990s as the government borrowed to fund efforts to stimulate the ailing economy. The United States ranked third among the

“Net debt for all levels of government in the United States was projected to be 91% of GDP in 2014.”

10 industrialized nations, up from fifth a decade ago. Thus, although the United States ranks low in public outlays relative to GDP, the country ranks high in public debt relative to GDP. That's because we have been running big deficits for decades, and really big ones lately. Net public debt has been increasing in many countries around the world to levels not seen since World War II. The average among the 30 most advanced economies increased from 42 percent in 2003 to 71 percent in 2013.

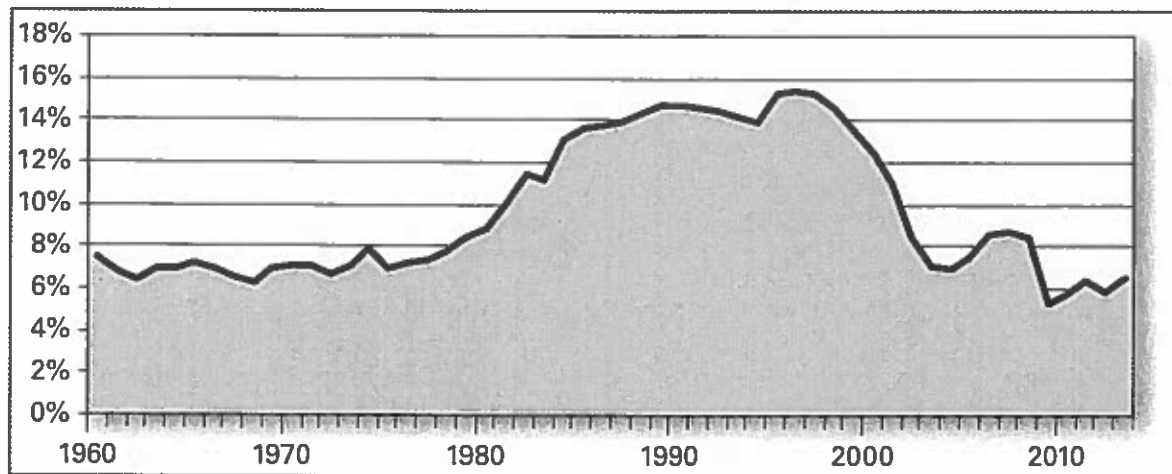
### 12-3c Interest Payments on the National Debt

Purchasers of federal securities range from individuals who buy \$25 U.S. savings bonds to institutions that buy \$1 million Treasury securities. Because most Treasury securities are short term, nearly half the debt is refinanced every year. Based on a \$11.6 trillion debt held by the public in 2012, a 1 percentage point increase in the nominal interest rate ultimately increases interest costs by \$116 billion a year.

Exhibit 7 shows interest on the federal debt held by the public as a percent of federal outlays since 1960. After remaining relatively constant for two decades, interest payments climbed in the 1980s because growing deficits added to the debt and because of higher interest rates. Interest payments peaked at 15.4 percent of outlays in 1996, when the U.S. Treasury had to offer a 6.4 percent annual interest rate to sell 10-year bonds. Interest payments then began falling first because of budget surpluses and later because of lower interest rates.

## Exhibit 7

Interest Payments on Federal Debt Held by the Public as Percent of Federal Outlays Peaked in 1996



SOURCE: *Economic Report of the President*, February 2013. Figures for 2013 are estimates based on the president's budget. For the latest figures, go to <http://www.gpoaccess.gov/eop/>.

By 2013, interest payments were only 6.1 percent of outlays, because the interest rate on 10-year Treasury bonds dropped to as low as 1.6 percent. Interest's share of federal outlays will climb as debt grows and as interest rates rise from historic lows of recent years. For example, if the average interest rate paid by the federal government was 5 percent, instead of the record low rates actually paid, annual interest payments on public debt would have risen to \$580 billion, or 16.1 percent of federal outlays in 2013.

### 12-4 Huge Federal Debt and the Economy

In light of the giant deficits of recent years, a growing federal debt has become central to the debate about fiscal policy effectiveness. Let's consider some economic implications of huge deficits and a mounting debt.

#### 12-4a Are Persistent Deficits Sustainable?

Given that deficits have been with us so long, we might ask: How long can the country run a deficit? The short answer is: As long as lenders are willing to finance that deficit at reasonable interest rates. And that depends on the confidence that lenders have about getting repaid. At some point, chronic deficits may accumulate into such a debt that lenders demand an extremely high interest rate or refuse to lend at all. As interest rates rise, debt service costs could overwhelm the budget.

U.S. government securities have been considered the safest in the world, and this has helped us finance our chronic deficits and rising debt. Ironically, the global financial crisis encouraged investors around the globe to buy U.S. securities as they sought safety. This "flight to quality" drove down the interest rate the U.S. government had to pay, thus reducing the cost of servicing our debt. But that could change. Greece had little trouble borrowing until 2010, when the financial community decided the government debt there had become too high and therefore too risky.

Indebted countries such as Greece, Ireland, Spain, and Portugal all received rescue packages from international institutions, yet they continued to struggle, some with violent public protests against deficit-cutting remedies that reduced public spending and increased taxes. One sign of possible problems in the United States was the downgrading of the nation's credit risk by the chief credit-rating agency in 2011. For the first time in 70 years, debt issued by some U.S. "government entities" such as the Federal Farm Credit System and the Federal Deposit Insurance Corporation was judged to be more risky.<sup>2</sup>

“Countries can continue to run deficits as long as the cost of servicing the resulting debt remains manageable.”

...

2. Alan Zibel and Tess Stynes, "S&P Cuts U.S. Government Entities," *Wall Street Journal*, 8 August 2011.

Countries can continue to run deficits as long as the cost of servicing the resulting debt remains manageable. Suppose that debt service, which consists almost entirely of interest payments, remains at 10 percent or less of the federal budget. Something like that would appear to be sustainable (since 1960, U.S. debt service payments have averaged 9.8 percent of federal outlays). More generally, government could still run a deficit year after year, and the dollar amount of the deficit might even rise. As long as the economy is growing at least as fast as the debt service payments, those deficits should be manageable. But trillion dollar deficits are not sustainable.

## 12-4b The Debt Ceiling and Debt Default

The **debt ceiling** is a limit on the total amount of money the federal government can legally borrow. About a century ago, Congress set the first debt ceiling and raised it whenever necessary, more than 80 times in all. The ceiling was largely a formality—until early 2011, that is, when the federal government faced sharply rising debt from giant deficits for years to come. In early 2011, the gross debt ceiling stood at \$14.3 trillion. The federal government actually hit that ceiling in May of that year, but the U.S. Treasury was able to buy time by suspending payments to some retirement funds. At the time, the government was borrowing about 40 cents of each dollar spent, so without additional borrowing the Treasury would run out of money. The limit would be reached in early August.

If the debt ceiling had not been raised, the U.S. government would have missed some debt-service payments and would be in default. This would have triggered a cascade of troubles, not the least of which would be a sharply higher cost of borrowing or even an inability to borrow. Difficulty rolling over the more than \$200 billion of debt that comes due each month would cripple federal finances.

A default on what had been considered the securest investment in the world would also be catastrophic for world financial markets. Not only would the federal cost of borrowing increase sharply but also market interest rates would spike to reflect a riskier economy, so interest on everything from car loans to home loans would rise. Credit flows could dry up. Unemployment would jump as businesses cut jobs in the face of growing uncertainty.

**debt ceiling**  
A limit on the total amount of money the federal government can legally borrow

Both Democrats and Republicans in Congress agreed in August 2011 that the debt ceiling should be raised. Before approving a higher debt ceiling, Republicans wanted to reduce future deficits by cutting spending. Democrats focused more on tax increases, especially on high-income households. In the end, the two sides came together enough to raise the debt ceiling and avert a fiscal crisis for a while.

## 12-4c Who Bears the Burden of the Debt?

Deficit spending is a way of billing future taxpayers for current spending. The national debt raises moral questions about the right of one generation to bequeath to the next generation the burden of its borrowing. To what extent do deficits and debt shift the burden to future generations? Let's examine two arguments about the burden of the federal debt.

### We Owe It to Ourselves

It is often argued that the debt is not a burden to future generations because, although future generations must service the debt, those same generations receive the payments. It's true that if U.S. citizens forgo present consumption to buy bonds, they or their heirs will be repaid, so debt service payments stay in the country. Thus, future generations both service the debt and receive the payments. In that sense, the debt is not a burden on future generations. It's all in the family, so to speak.

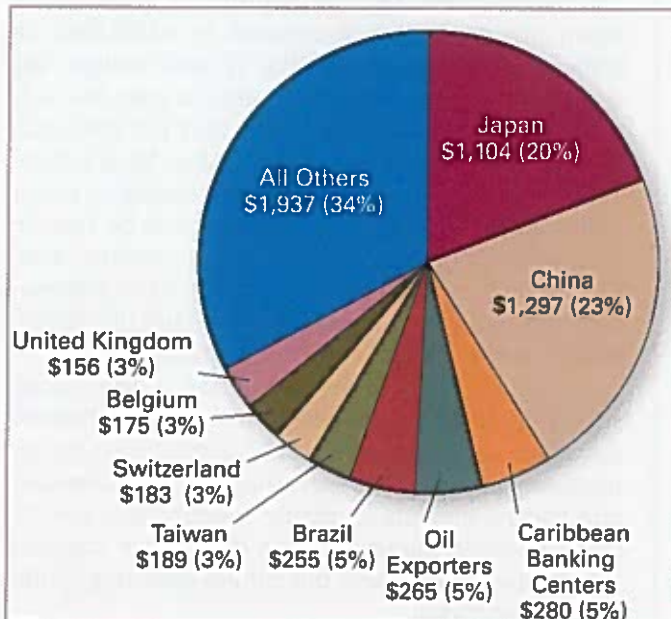
### Foreign Ownership of Debt

But the "we-owe-it-to-ourselves" argument does not apply to that portion of the national debt owed to foreigners. Foreigners who buy U.S. Treasury securities forgo present consumption and are paid back in the future. Foreign buyers reduce the amount of current consumption that Americans must sacrifice to finance a deficit. A reliance on foreigners, however, increases the burden of the debt on future generations of Americans because future debt service payments no longer remain in the country. Foreigners held about half of all federal debt held by the public in 2013, more than triple the share of two decades ago. So the burden of the debt on future generations of Americans has increased both absolutely and relatively.

Exhibit 8 shows the major foreign holders of U.S. Treasury securities in May 2013, when foreigners held a total of \$5,657 billion of U.S. federal debt. China was the leader with \$1,297 billion, or 23 percent of foreign-held U.S. federal debt. Japan ranks second, with \$1,104 billion, or 20 percent of the foreign-held total. Together, Asian countries (including some not

## Exhibit 8

Largest Foreign Holders of U.S. Treasury Securities as of May 2013  
(in billions and as percent of foreign holdings)



SOURCE: Developed based on country totals from the U.S. Treasury Department at <http://www.treasury.gov/resource-center/data-chart-center/tic/Documents/mfh.txt>. Caribbean banks include those in the Bahamas, Bermuda, the Cayman Islands, Panama, and the British Virgin Islands.

shown) had more than half of foreign-held federal debt. Despite the growth in federal debt, U.S. Treasury securities are considered the safest in the world because they are backed by the U.S. government. Whenever there is trouble around the world, investors flock to U.S. Treasury securities in a “flight to quality.” Some other countries have proven to be less trustworthy borrowers. Argentina, Mexico, and Russia, for example, all defaulted on some national debt.

### 12-4d Crowding Out and Capital Formation

As we have seen, government borrowing can drive up interest rates, crowding out some private investment.



JOSHUA LOTT/REUTERS/LANDOV

The long-run effect of deficit spending depends on how the government spends the borrowed funds. If the funds are invested in better highways and a more educated workforce, this could enhance productivity in the long run. If, however, borrowed dollars go toward current expenditures such as more farm subsidies or higher retirement benefits, less capital formation results. With less investment today, there will

“The long-run effect of deficit spending depends on how the government spends the borrowed funds.”

be less capital in the future, thus hurting labor productivity and our future standard of living.

Ironically, despite the large federal deficits during the last few decades, public investments in roads, bridges, and airports—so-called *public capital*—declined, perhaps because a growing share of the federal budget goes toward income redistribution, especially for the elderly. The United States spent 3 percent of GDP building and maintaining the public infrastructure between 1950 and 1970. Since 1980 that share has averaged only 2 percent. Some argue that declining investment in the public infrastructure slows productivity growth. For example, the failure to invest sufficiently in airports and in the air traffic control system has led to congested air travel and flight delays, a problem compounded by the threat of terrorism. The \$831 billion stimulus package approved in February 2009 was supposed to fund “shovel-ready” infrastructure improvements such as repairing crumbling roads and bridges. But surprisingly little went into such programs.

### 12-4e The National Debt and Economic Growth

Finally, what's the impact of the national debt on economic growth? Researchers have identified major public debt episodes in the advanced economies around the world since the early 1800s.<sup>3</sup> A major episode is one where the ratio of public debt to GDP exceeds 90 percent for at least five years in a row. Researchers found that the economy grows at least one percentage point less annually during these periods than during other periods. What's

3. Carmen Reinhart, Vincent Reinhart, and Kenneth Rogoff, “Public Debt Overhangs: Advanced Economy Episodes Since 1800,” *Journal of Economic Perspectives*, 26 (Summer 2012): 69–86.

more, the growth slowdown can last a long time. Among the 26 episodes the researchers identified, 20 lasted more than a decade (five of the six shorter episodes were immediately after World Wars I and II). Across all 26 instances, the average duration of the slowdown was about 23 years. Thus the cumulative shortfall in output from a high national debt is potentially huge. Perhaps most telling for the United States is that growth declines are significant even in the many episodes where debtor countries were able to secure continual access to capital markets at relatively low real interest rates. This suggests that the growth-reducing effects of high public debt are apparently not transmitted entirely through high real interest rates on that debt.

Government deficits of one generation can affect the standard of living of the next. Note again that our current measure of the national debt does not capture all burdens passed on to future generations. As mentioned earlier, if the unfunded liabilities of government retirement programs, especially Medicare, were included, this would more than double the national debt.

## 12-5 Final Word

John Maynard Keynes introduced the idea that federal deficit spending is an appropriate fiscal policy when private aggregate demand is insufficient to achieve potential output. The federal budget has not been the same since. Beginning in 1960, the federal budget was in deficit every year but one until 1998. And beginning in the early 1980s, large federal deficits dominated the fiscal policy debate. A major policy issue for the coming decade will be how to address high federal deficits and a growing debt. The difficulties that other nations faced in addressing their national debts suggest the kind of political challenge the United States could encounter.

Monetary policy is the regulation of the money supply by the Federal Reserve. The next few chapters introduce money and financial institutions, review monetary policy, and discuss the impact of monetary and fiscal policy on economic stability and growth. Once we bring money into the picture, we consider yet another reason why the simple spending multiplier is overstated.

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**50%** < Percent of the federal budget that goes for Social Security, Medicare, and Welfare

**77%** < Federal government debt in 2013 as a percent of GDP

The federal government deficit in 2009, the largest in U.S. history > **\$1.4 trillion**

Net federal, state, and local government debt in 2014 as a percent of GDP > **91%**

Federal, state, and local government outlays as a percent of GDP in 2013 > **40%**

Foreign share of publicly held U.S. government debt > **50%**

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