CHAPTER 15 FIFTEEN

Government Debt

Blessed are the young, for they shall inherit the national debt.

— Herbert Hoover

When a government spends more than it collects in taxes, it borrows from the private sector to finance the budget deficit. The accumulation of past borrowing is the government debt. Debate about the appropriate amount of government debt in the United States is as old as the country itself. Alexander Hamilton believed that "a national debt, if it is not excessive, will be to us a national blessing," whereas James Madison argued that "a public debt is a public curse." Indeed, the location of the nation's capital was chosen as part of a deal in which the federal government assumed the Revolutionary War debts of the states: because the Northern states had larger outstanding debts, the capital was located in the South.

Although attention to the government debt has waxed and waned over the years, it was especially intense during the last two decades of the twentieth century. Beginning in the early 1980s, the U.S. federal government began running large budget deficits—in part because of increased spending and in part because of reduced taxes. As a result, the government debt expressed as a percentage of GDP roughly doubled from 26 percent in 1980 to 50 percent in 1995. By the late 1990s, the budget deficit had come under control and had even turned into a budget surplus. Policymakers then turned to the question of how rapidly the debt should be paid off.

The large increase in government debt from 1980 to 1995 is without precedent in U.S. history. Government debt most often rises in periods of war or depression, but the United States experienced neither during this time. Not surprisingly, the episode sparked a renewed interest among economists and policymakers in the economic effects of government debt. Some view the large budget deficits of the 1980s and 1990s as the worst mistake of economic policy since the Great Depression, whereas others think that the deficits matter very little. This chapter considers various facets of this debate.

We begin by looking at the numbers. Section 15-1 examines the size of the U.S. government debt, comparing it to the debt of other countries and to the debt that the United States has had during its own past. It also takes a brief look at what the future may hold. Section 15-2 discusses why measuring changes in

government indebtedness is not as straightforward as it might seem. Indeed, some economists argue that traditional measures are so misleading that they should be completely ignored.

We then look at how government debt affects the economy. Section 15-3 describes the traditional view of government debt, according to which government borrowing reduces national saving and crowds out capital accumulation. This view is held by most economists and has been implicit in the discussion of fiscal policy throughout this book. Section 15-4 discusses an alternative view, called *Ricardian equivalence*, which is held by a small but influential minority of economists. According to the Ricardian view, government debt does not influence national saving and capital accumulation. As we will see, the debate between the traditional and Ricardian views of government debt arises from disagreements over how consumers respond to the government's debt policy.

Section 15-5 then looks at other facets of the debate over government debt. It begins by discussing whether the government should try to always balance its budget and, if not, when a budget deficit or surplus is desirable. It also examines the effects of government debt on monetary policy, the political process, and the role of a country in the world economy.

15-1 The Size of the Government Debt

Let's begin by putting the government debt in perspective. In 2001, the debt of the U.S. federal government was $3.2 trillion. If we divide this number by 276 million, the number of people in the United States, we find that each person's share of the government debt was about $11,600. Obviously, this is not a trivial number—few people sneeze at $11,600. Yet if we compare this debt to

table 15-1

How Indebted Are the World's Governments?

Country	Government Debt as a Percentage of GDP	Country	Government Debt as a Percentage of GDP
Japan	119	Ireland	54
Italy	108	Spain	53
Belgium	105	Finland	51
Canada	101	Sweden	49
Greece	100	Germany	46
Denmark	67	Austria	40
United Kingdom	64	Netherlands	27
United States	62	Australia	26
France	58	Norway	24
Portugal	55		

Source: OECD Economic Outlook. Figures are based on estimates of gross government debt and GDP for 2001.

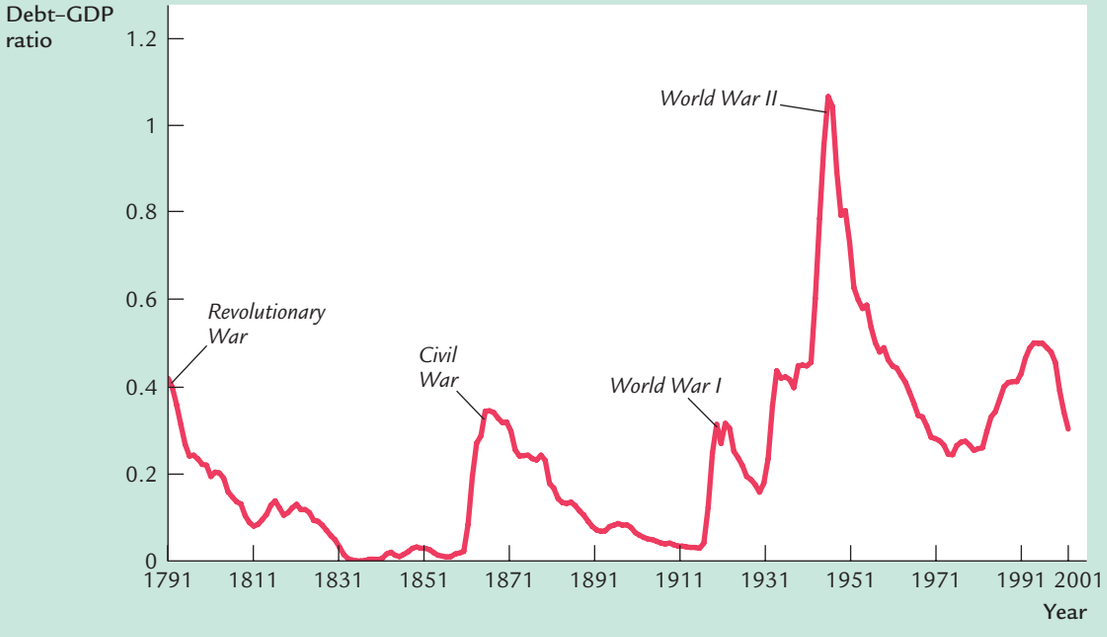
the roughly $1 million a typical person will earn over his or her working life, the government debt does not look like the catastrophe it is sometimes made out to be.

One way to judge the size of a government's debt is to compare it to the amount of debt other countries have accumulated. Table 15-1 shows the amount of government debt for 19 major countries expressed as a percentage of each country's GDP. On the top of the list are the heavily indebted countries of Japan and Italy, which have accumulated a debt that exceeds annual GDP. At the bottom are Norway and Australia, which have accumulated relatively small debts. The United States is in the middle of the pack. By international standards, the U.S. government is neither especially profligate nor especially frugal.

Over the course of U.S. history, the indebtedness of the federal government has varied substantially. Figure 15-1 shows the ratio of the federal debt to GDP since 1791. The government debt, relative to the size of the economy, varies from close to zero in the 1830s to a maximum of 107 percent of GDP in 1945.

Historically, the primary cause of increases in the government debt is war. The debt–GDP ratio rises sharply during major wars and falls slowly during peacetime. Many economists think that this historical pattern is the appropriate

figure 15-1



The Ratio of Government Debt to GDP Since 1790 The U.S. federal government debt held by the public, relative to the size of the U.S. economy, rises sharply during wars and declines slowly during peacetime. The exception is the period since 1980, when the debt–GDP ratio rose without the occurrence of a major military conflict.

Source: U.S. Department of Treasury, U.S. Department of Commerce, and T.S. Berry, "Production and Population Since 1789," Bostwick Paper No. 6, Richmond, 1988.

way to run fiscal policy. As we discuss more fully later in this chapter, deficit financing of wars appears optimal for reasons of both tax smoothing and generational equity. One instance of a large increase in government debt in peacetime occurred during the 1980s and early 1990s, when the federal government ran substantial budget deficits. Many economists have criticized this increase in government debt as imposing a burden on future generations without justification.

During the middle of the 1990s, the U.S. federal government started to get its budget deficit under control. A combination of tax hikes, spending cuts, and rapid economic growth caused the ratio of debt to GDP to stabilize and then decline. Recent experience has tempted some observers to think that exploding government debt is a thing of the past. But as the next case study suggests, the worst may be yet to come.

CASE STUDY

The Fiscal Future: Good News and Bad News

What does the future hold for fiscal policymakers? Economic forecasting is far from precise, and it is easy to be cynical about economic predictions. But good policy cannot be made if policymakers only look backwards. As a result, economists in the Congressional Budget Office (CBO) and other government agencies are always trying to look ahead to see what problems and opportunities are likely to develop.

When George W. Bush moved into the White House in 2001, the fiscal picture facing the U.S. government was mixed. In particular, it depended on how far one looked ahead.

Over a ten- or twenty-year horizon, the picture looked good. The U.S. federal government was running a large budget surplus. As a percentage of GDP, the projected surplus for 2001 was the largest since 1948. Moreover, the surplus was expected to grow even larger over time. The surplus was large enough so that, without any policy changes, the government debt would be paid off by 2008.

These surpluses arose from various sources. The elder George Bush had signed a tax increase in 1990, and Bill Clinton had signed another in 1993. Because of these tax hikes, federal tax revenue as a percentage of GDP reached its highest level since World War II. Then, in the late 1990s, productivity accelerated, most likely because of advances in information technology. The high growth in incomes led to rising tax revenue, which pushed the federal government's budget from deficit to surplus.

A debate arose over how to respond to the budget surplus. The government could use the large projected surpluses to repay debt, increase spending, cut taxes, or some combination of these. The new Republican president George W. Bush advocated a tax cut of $1.6 trillion over 10 years, which was about one-fourth of the projected surpluses. Democrats in Congress argued for a smaller tax cut and greater government spending. The end result was a compromise bill that cut taxes by a bit less than Bush had advocated.

While the 10-year horizon looked rosy, the longer-term fiscal picture was more troublesome. The problem was demographic. Advances in medical technology have been increasing life expectancy, while improvements in birth-control techniques and changing social norms have reduced the number of children people have. Because of these developments, the elderly are becoming a larger share of the population. In 1990, there were 21 elderly for every 100 people of working age (ages 20 to 64); this figure is projected to rise to 36 by the year 2030. Such a demographic change has profound implications for fiscal policy. About one-third of the budget of the U.S. federal government is devoted to pensions and health care for the elderly. As more people become eligible for these "entitlements," as they are sometimes called, government spending automatically rises over time, pushing the budget toward deficit.

The magnitude of these budgetary pressures was documented in a CBO report released in October 2000. According to the CBO, if no changes in fiscal policy are enacted, the government debt as a percentage of GDP will start rising around 2030 and reach historic highs around 2060. At that point, the government's budget will spiral out of control.[1]

Of course, all economic forecasts need to be greeted with a bit of skepticism, especially those that try to look ahead half a century. Shocks to the economy can alter the government's revenue and spending. In fact, only months after moving into the White House, George W. Bush saw the fiscal picture start to change. First, the economic slowdown in 2001 reduced tax revenue. Then, the terrorist attacks in September 2001 induced an increase in government spending. Both developments reduced the projected near-term government surpluses. As this book was going to press, there was great uncertainty about future government spending and the rate of technological advance—two key determinants of the fiscal situation.

Yet one thing is clear: the elderly are making up a larger share of the population, and this fact will shape the fiscal challenges in the decades ahead.

15-2 Problems in Measurement

The government budget deficit equals government spending minus government revenue, which in turn equals the amount of new debt the government needs to issue to finance its operations. This definition may sound simple enough, but in fact debates over fiscal policy sometimes arise over how the budget deficit should be measured. Some economists believe that the deficit as currently measured is not a good indicator of the stance of fiscal policy. That is, they believe that the budget deficit does not accurately gauge either the impact of fiscal policy on today's economy or the burden being placed on future generations of taxpayers. In this section we discuss four problems with the usual measure of the budget deficit.

[1] Congressional Budget Office, *The Long-Term Budget Outlook*, October 2000.

Measurement Problem 1: Inflation

The least controversial of the measurement issues is the correction for inflation. Almost all economists agree that the government's indebtedness should be measured in real terms, not in nominal terms. The measured deficit should equal the change in the government's real debt, not the change in its nominal debt.

The budget deficit as commonly measured, however, does not correct for inflation. To see how large an error this induces, consider the following example. Suppose that the real government debt is not changing; in other words, in real terms, the budget is balanced. In this case, the nominal debt must be rising at the rate of inflation. That is,

$$\Delta D/D = \pi,$$

where π is the inflation rate and D is the stock of government debt. This implies

$$\Delta D = \pi D.$$

The government would look at the change in the nominal debt ΔD and would report a budget deficit of πD. Hence, most economists believe that the reported budget deficit is overstated by the amount πD.

We can make the same argument in another way. The deficit is government expenditure minus government revenue. Part of expenditure is the interest paid on the government debt. Expenditure should include only the real interest paid on the debt rD, not the nominal interest paid iD. Because the difference between the nominal interest rate i and the real interest rate r is the inflation rate π, the budget deficit is overstated by πD.

This correction for inflation can be large, especially when inflation is high, and it can often change our evaluation of fiscal policy. For example, in 1979, the federal government reported a budget deficit of $28 billion. Inflation was 8.6 percent, and the government debt held at the beginning of the year by the public (excluding the Federal Reserve) was $495 billion. The deficit was therefore overstated by

$$\begin{aligned} \pi D &= 0.086 \times \$495 \text{ billion} \\ &= \$43 \text{ billion}. \end{aligned}$$

Corrected for inflation, the reported budget deficit of $28 billion turns into a budget surplus of $15 billion! In other words, even though nominal government debt was rising, real government debt was falling.

Measurement Problem 2: Capital Assets

Many economists believe that an accurate assessment of the government's budget deficit requires accounting for the government's assets as well as its liabilities. In particular, when measuring the government's overall indebtedness, we should subtract government assets from government debt. Therefore, the budget deficit should be measured as the change in debt minus the change in assets.

Certainly, individuals and firms treat assets and liabilities symmetrically. When a person borrows to buy a house, we do not say that he is running a budget deficit. Instead, we offset the increase in assets (the house) against the increase in debt (the mortgage) and record no change in net wealth. Perhaps we should treat the government's finances the same way.

A budget procedure that accounts for assets as well as liabilities is called **capital budgeting**, because it takes into account changes in capital. For example, suppose that the government sells one of its office buildings or some of its land and uses the proceeds to reduce the government debt. Under current budget procedures, the reported deficit would be lower. Under capital budgeting, the revenue received from the sale would not lower the deficit, because the reduction in debt would be offset by a reduction in assets. Similarly, under capital budgeting, government borrowing to finance the purchase of a capital good would not raise the deficit.

The major difficulty with capital budgeting is that it is hard to decide which government expenditures should count as capital expenditures. For example, should the interstate highway system be counted as an asset of the government? If so, what is its value? What about the stockpile of nuclear weapons? Should spending on education be treated as expenditure on human capital? These difficult questions must be answered if the government is to adopt a capital budget.

Economists and policymakers disagree about whether the federal government should use capital budgeting. (Many state governments already use it.) Opponents of capital budgeting argue that, although the system is superior in principle to the current system, it is too difficult to implement in practice. Proponents of capital budgeting argue that even an imperfect treatment of capital assets would be better than ignoring them altogether.

Measurement Problem 3: Uncounted Liabilities

Some economists argue that the measured budget deficit is misleading because it excludes some important government liabilities. For example, consider the pensions of government workers. These workers provide labor services to the government today, but part of their compensation is deferred to the future. In essence, these workers are providing a loan to the government. Their future pension benefits represent a government liability not very different from government debt. Yet this liability is not included as part of the government debt, and the accumulation of this liability is not included as part of the budget deficit. According to some estimates, this implicit liability is almost as large as the official government debt.

Similarly, consider the Social Security system. In some ways, the system is like a pension plan. People pay some of their income into the system when young and expect to receive benefits when old. Perhaps accumulated future Social Security benefits should be included in the government's liabilities. Estimates suggest that the government's future Social Security liabilities (less future Social Security taxes) are more than three times the government debt as officially measured.

One might argue that Social Security liabilities are different from government debt because the government can change the laws determining Social Security

benefits. Yet, in principle, the government could always choose not to repay all of its debt: the government honors its debt only because it chooses to do so. Promises to pay the holders of government debt may not be fundamentally different from promises to pay the future recipients of Social Security.

A particularly difficult form of government liability to measure is the *contingent liability*—the liability that is due only if a specified event occurs. For example, the government guarantees many forms of private credit, such as student loans, mortgages for low- and moderate-income families, and deposits in banks and savings-and-loan institutions. If the borrower repays the loan, the government pays nothing; if the borrower defaults, the government makes the repayment. When the government provides this guarantee, it undertakes a liability contingent on the borrower's default. Yet this contingent liability is not reflected in the budget deficit, in part because it is not clear what dollar value to attach to it.

Measurement Problem 4: The Business Cycle

Many changes in the government's budget deficit occur automatically in response to a fluctuating economy. For example, when the economy goes into a recession, incomes fall, so people pay less in personal income taxes. Profits fall, so corporations pay less in corporate income taxes. More people become eligible for government assistance, such as welfare and unemployment insurance, so government spending rises. Even without any change in the laws governing taxation and spending, the budget deficit increases.

These automatic changes in the deficit are not errors in measurement, because the government truly borrows more when a recession depresses tax revenue and boosts government spending. But these changes do make it more difficult to use the deficit to monitor changes in fiscal policy. That is, the deficit can rise or fall either because the government has changed policy or because the economy has changed direction. For some purposes, it would be good to know which is occurring.

To solve this problem, the government calculates a **cyclically adjusted budget deficit** (sometimes called the *full-employment budget deficit*). The cyclically adjusted deficit is based on estimates of what government spending and tax revenue would be if the economy were operating at its natural rate of output and employment. The cyclically adjusted deficit is a useful measure because it reflects policy changes but not the current stage of the business cycle.

Summing Up

Economists differ in the importance they place on these measurement problems. Some believe that the problems are so severe that the measured budget deficit is almost meaningless. Most take these measurement problems seriously but still view the measured budget deficit as a useful indicator of fiscal policy.

The undisputed lesson is that to evaluate fully what fiscal policy is doing, economists and policymakers must look at more than only the measured budget deficit. And, in fact, they do. The budget documents prepared annually by the Office of Management and Budget contain much detailed information about the government's finances, including data on capital expenditures and credit programs.

No economic statistic is perfect. Whenever we see a number reported in the media, we need to know what it is measuring and what it is leaving out. This is especially true for data on government debt and budget deficits.

CASE STUDY

Generational Accounting

One harsh critic of current measures of the budget deficit is economist Laurence Kotlikoff. Kotlikoff argues that the budget deficit is like the fabled emperor who wore no clothes: everyone should plainly see the problem, but no one is willing to admit to it. He writes, "On the conceptual level, the budget deficit is intellectually bankrupt. On the practical level, there are so many official deficits that 'balanced budget' has lost any true meaning." He sees an "urgent need to switch from an outdated, misleading, and fundamentally noneconomic measure of fiscal policy, namely the budget deficit, to generational accounting."

Generational accounting, Kotlikoff's new way to gauge the influence of fiscal policy, is based on the idea that a person's economic well-being depends on his or her lifetime income. (This idea is founded on Modigliani's life-cycle theory of consumer behavior, which we examine in Chapter 16.) When evaluating fiscal policy, therefore, we should not be concerned with taxes or spending in any single year. Instead, we should look at the taxes paid, and transfers received, by people over their entire lives. Generational accounts measure the impact of fiscal policy on the lifetime incomes of different generations.

Generational accounts tell a very different story than the budget deficit about the history of U.S. fiscal policy. In the early 1980s, the U.S. government cut taxes, beginning a long period of large budget deficits. Most commentators claim that older generations benefited at the expense of younger generations during this period, because the young inherited the government debt. Kotlikoff agrees that these tax cuts raised the burden on the young, but he claims that this standard analysis ignores the impact of many other policy changes. His generational accounts show that the young were hit even harder during the 1950s, 1960s, and 1970s. During these years, the government raised Social Security benefits for the elderly and financed the higher spending by taxing the working-age population. This policy redistributed income away from the young, even though it did not affect the budget deficit. During the 1980s, Social Security reforms reversed this trend, benefiting younger generations.

Despite Kotlikoff's advocacy, generational accounting is not likely to replace the budget deficit. This alternative system also has flaws. For example, to calculate the total tax burden on different generations, one needs to make assumptions about future policy, which are open to dispute. Nonetheless, generational accounting offers a useful perspective in the debate over fiscal policy.[2]

[2] Laurence J. Kotlikoff, *Generational Accounting: Knowing Who Pays, and When, for What We Spend* (New York: The Free Press, 1992). For an appraisal of the book, see David M. Cutler, Book Review, *National Tax Journal* 56 (March 1993): 61–67. See also the symposium on generational accounting in the Winter 1994 issue of the *Journal of Economic Perspectives*.

15-3 The Traditional View of Government Debt

Imagine that you are an economist working for the Congressional Budget Office (CBO). You receive a letter from the chair of the Senate Budget Committee:

> Dear CBO Economist:
>
> Congress is about to consider the president's request to cut all taxes by 20 percent. Before deciding whether to endorse the request, my committee would like your analysis. We see little hope of reducing government spending, so the tax cut would mean an increase in the budget deficit. How would the tax cut and budget deficit affect the economy and the economic well-being of the country?
>
> Sincerely,
> Committee Chair

Before responding to the senator, you open your favorite economics textbook—this one, of course—to see what the models predict for such a change in fiscal policy.

To analyze the long-run effects of this policy change, you turn to the models in Chapters 3 through 8. The model in Chapter 3 shows that a tax cut stimulates consumer spending and reduces national saving. The reduction in saving raises the interest rate, which crowds out investment. The Solow growth model introduced in Chapter 7 shows that lower investment eventually leads to a lower steady-state capital stock and a lower level of output. Because we concluded in Chapter 8 that the U.S. economy has less capital than in the Golden Rule steady state (the steady state with maximium consumption), the fall in steady-state capital means lower consumption and reduced economic well-being.

To analyze the short-run effects of the policy change, you turn to the *IS–LM* model in Chapters 10 and 11. This model shows that a tax cut stimulates consumer spending, which implies an expansionary shift in the *IS* curve. If there is no change in monetary policy, the shift in the *IS* curve leads to an expansionary shift in the aggregate demand curve. In the short run, when prices are sticky, the expansion in aggregate demand leads to higher output and lower unemployment. Over time, as prices adjust, the economy returns to the natural rate of output, and the higher aggregate demand results in a higher price level.

To see how international trade affects your analysis, you turn to the open-economy models in Chapters 5 and 12. The model in Chapter 5 shows that when national saving falls, people start financing investment by borrowing from abroad, causing a trade deficit. Although the inflow of capital from abroad lessens the effect of the fiscal-policy change on U.S. capital accumulation, the United States becomes indebted to foreign countries. The fiscal-policy change also causes the dollar to appreciate, which makes foreign goods cheaper in the United States and domestic goods more expensive abroad. The Mundell–Fleming model in Chapter 12 shows that the appreciation of the dollar and the resulting fall in net exports reduce the short-run expansionary impact of the fiscal change on output and employment.

With all these models in mind, you draft a response:

Dear Senator:

A tax cut financed by government borrowing would have many effects on the economy. The immediate impact of the tax cut would be to stimulate consumer spending. Higher consumer spending affects the economy in both the short run and the long run.

In the short run, higher consumer spending would raise the demand for goods and services and thus raise output and employment. Interest rates would also rise, however, as investors competed for a smaller flow of saving. Higher interest rates would discourage investment and would encourage capital to flow in from abroad. The dollar would rise in value against foreign currencies, and U.S. firms would become less competitive in world markets.

In the long run, the smaller national saving caused by the tax cut would mean a smaller capital stock and a greater foreign debt. Therefore, the output of the nation would be smaller, and a greater share of that output would be owed to foreigners.

The overall effect of the tax cut on economic well-being is hard to judge. Current generations would benefit from higher consumption and higher employment, although inflation would likely be higher as well. Future generations would bear much of the burden of today's budget deficits: they would be born into a nation with a smaller capital stock and a larger foreign debt.

Your faithful servant,
CBO Economist

The senator replies:

Dear CBO Economist:

Thank you for your letter. It made sense to me. But yesterday my committee heard testimony from a prominent economist who called herself a "Ricardian" and who reached quite a different conclusion. She said that a tax cut by itself would not stimulate consumer spending. She concluded that the budget deficit would therefore not have all the effects you listed. What's going on here?

Sincerely,
Committee Chair

After studying the next section, you write back to the senator, explaining in detail the debate over Ricardian equivalence.

15-4 The Ricardian View of Government Debt

The traditional view of government debt presumes that when the government cuts taxes and runs a budget deficit, consumers respond to their higher after-tax income by spending more. An alternative view, called **Ricardian equivalence**, questions this presumption. According to the Ricardian view, consumers are forward-looking and, therefore, base their spending not only on their current income but also on their expected future income. As we explore more fully in Chapter 16, the forward-looking consumer is at the heart of many modern theories of consumption. The Ricardian view of government debt applies the logic of the forward-looking consumer to analyze the effects of fiscal policy.

The Basic Logic of Ricardian Equivalence

Consider the response of a forward-looking consumer to the tax cut that the Senate Budget Committee is considering. The consumer might reason as follows:

> The government is cutting taxes without any plans to reduce government spending. Does this policy alter my set of opportunities? Am I richer because of this tax cut? Should I consume more?
>
> Maybe not. The government is financing the tax cut by running a budget deficit. At some point in the future, the government will have to raise taxes to pay off the debt and accumulated interest. So the policy really represents a tax cut today coupled with a tax hike in the future. The tax cut merely gives me transitory income that eventually will be taken back. I am not any better off, so I will leave my consumption unchanged.

The forward-looking consumer understands that government borrowing today means higher taxes in the future. A tax cut financed by government debt does not reduce the tax burden; it merely reschedules it. It therefore should not encourage the consumer to spend more.

One can view this argument another way. Suppose that the government borrows $1,000 from the typical citizen to give that citizen a $1,000 tax cut. In essence, this policy is the same as giving the citizen a $1,000 government bond as a gift. One side of the bond says, "The government owes you, the bondholder, $1,000 plus interest." The other side says, "You, the taxpayer, owe the government $1,000 plus interest." Overall, the gift of a bond from the government to the typical citizen does not make the citizen richer or poorer, because the value of the bond is offset by the value of the future tax liability.

The general principle is that government debt is equivalent to future taxes, and if consumers are sufficiently forward-looking, future taxes are equivalent to current taxes. Hence, financing the government by debt is equivalent to financing it by taxes. This view is called *Ricardian equivalence* after the famous nineteenth-century economist David Ricardo, because he first noted the theoretical argument.

The implication of Ricardian equivalence is that a debt-financed tax cut leaves consumption unaffected. Households save the extra disposable income to pay the future tax liability that the tax cut implies. This increase in private saving exactly offsets the decrease in public saving. National saving—the sum of private and public saving—remains the same. The tax cut therefore has none of the effects that the traditional analysis predicts.

The logic of Ricardian equivalence does not mean that all changes in fiscal policy are irrelevant. Changes in fiscal policy do influence consumer spending if they influence present or future government purchases. For example, suppose that the government cuts taxes today because it plans to reduce government purchases in the future. If the consumer understands that this tax cut does not require an increase in future taxes, he feels richer and raises his consumption. But note that it is the reduction in government purchases, rather than the reduction in taxes, that stimulates consumption: the announcement

of a future reduction in government purchases would raise consumption today even if current taxes were unchanged, because it would imply lower taxes at some time in the future.

Consumers and Future Taxes

The essence of the Ricardian view is that when people choose their consumption, they rationally look ahead to the future taxes implied by government debt. But how forward-looking are consumers? Defenders of the traditional view of government debt believe that the prospect of future taxes does not have as large an influence on current consumption as the Ricardian view assumes. Here are some of their arguments.[3]

Myopia Proponents of the Ricardian view of fiscal policy assume that people are rational when making decisions such as choosing how much of their income to consume and how much to save. When the government borrows to pay for current spending, rational consumers look ahead to the future taxes required to support this debt. Thus, the Ricardian view presumes that people have substantial knowledge and foresight.

One possible argument for the traditional view of tax cuts is that people are shortsighted, perhaps because they do not fully comprehend the implications of government budget deficits. It is possible that some people follow simple and not fully rational rules of thumb when choosing how much to save. Suppose, for example, that a person acts on the assumption that future taxes will be the same as current taxes. This person will fail to take account of future changes in taxes required by current government policies. A debt-financed tax cut will lead this person to believe that his lifetime income has increased, even if it hasn't. The tax cut will therefore lead to higher consumption and lower national saving.

Borrowing Constraints The Ricardian view of government debt assumes that consumers base their spending not only on current income but on their lifetime income, which includes both current and expected future income. According to the Ricardian view, a debt-financed tax cut increases current income, but it does not alter lifetime income or consumption. Advocates of the traditional view of government debt argue that current income is more important than lifetime income for those consumers who face binding borrowing constraints. A *borrowing constraint* is a limit on how much an individual can borrow from banks or other finanical institutions.

A person who would like to consume more than his current income—perhaps because he expects higher income in the future—has to do so by borrowing. If he cannot borrow to finance current consumption, or can borrow only a

[3] For a survey of the debate over Ricardian equivalence, see Douglas Bernheim, "Ricardian Equivalence: An Evaluation of Theory and Evidence," *NBER Macroeconomics Annual* (1987): 263–303. See also the symposium on budget deficits in the Spring 1989 issue of the *Journal of Economic Perspectives*.

limited amount, his current income determines his spending, regardless of what his lifetime income might be. In this case, a debt-financed tax cut raises current income and thus consumption, even though future income is lower. In essence, when the government cuts current taxes and raises future taxes, it is giving taxpayers a loan. For a person who wanted to obtain a loan but was unable to, the tax cut expands his opportunities and stimulates consumption.

CASE STUDY

George Bush's Withholding Experiment

In early 1992, President George Bush pursued a novel policy to deal with the lingering recession in the United States. By executive order, he lowered the amount of income taxes that were being withheld from workers' paychecks. The order did not reduce the amount of taxes that workers owed; it merely delayed payment. The higher take-home pay that workers received during 1992 was to be offset by higher tax payments, or smaller tax refunds, when income taxes were due in April 1993.

What effect would you predict for this policy? According to the logic of Ricardian equivalence, consumers should realize that their lifetime resources were unchanged and, therefore, save the extra take-home pay to meet the upcoming tax liability. Yet George Bush claimed his policy would provide "money people can use to help pay for clothing, college, or to get a new car." That is, he believed that consumers would spend the extra income, thereby stimulating aggregate demand and helping the economy recover from the recession. Bush seemed to be assuming that consumers were shortsighted or faced binding borrowing constraints.

Gauging the actual effects of this policy is difficult with aggregate data, because many other things were happening at the same time. Yet some evidence comes from a survey two economists conducted shortly after the policy was announced. The survey asked people what they would do with the extra income. Fifty-seven percent of the respondents said they would save it, use it to repay debts, or adjust their withholding in order to reverse the effect of Bush's executive order. Forty-three percent said they would spend the extra income. Thus, for this policy change, a majority of the population was planning to act as Ricardian theory posits. Nonetheless, Bush was partly right: many people planned to spend the extra income, even though they understood that the following year's tax bill would be higher.[4]

Future Generations Besides myopia and borrowing constraints, a third argument for the traditional view of government debt is that consumers expect the implied future taxes to fall not on them but on future generations. Suppose,

[4] Matthew D. Shapiro and Joel Slemrod, "Consumer Response to the Timing of Income: Evidence From a Change in Tax Withholding," *American Economic Review* 85 (March 1995): 274–283.

for example, that the government cuts taxes today, issues 30-year bonds to finance the budget deficit, and then raises taxes in 30 years to repay the loan. In this case, the government debt represents a transfer of wealth from the next generation of taxpayers (which faces the tax hike) to the current generation of taxpayers (which gets the tax cut). This transfer raises the lifetime resources of the current generation, so it raises their consumption. In essence, a debt-financed tax cut stimulates consumption because it gives the current generation the opportunity to consume at the expense of the next generation.

Drawing by Dave Carpenter. From the *Wall Street Journal*. Permission, Cartoon Features Syndicate.

"What's this I hear about you adults mortgaging my future?"

Economist Robert Barro has provided a clever rejoinder to this argument to support the Ricardian view. Barro argues that because future generations are the children and grandchildren of the current generation, we should not view them as independent economic actors. Instead, he argues, the appropriate assumption is that current generations care about future generations. This altruism between generations is evidenced by the gifts that many people give their children, often in the form of bequests at the time of their deaths. The existence of bequests suggests that many people are not eager to take advantage of the opportunity to consume at their children's expense.

According to Barro's analysis, the relevant decisionmaking unit is not the individual, whose life is finite, but the family, which continues forever. In other words, an individual decides how much to consume based not only on his own income but also on the income of future members of his family. A debt-financed tax cut may raise the income an individual receives in his lifetime, but it does not raise his family's overall resources. Instead of consuming the extra income from the tax cut, the individual saves it and leaves it as a bequest to his children, who will bear the future tax liability.

We can see now that the debate over government debt is really a debate over consumer behavior. The Ricardian view assumes that consumers have a long time horizon. Barro's analysis of the family implies that the consumer's time horizon, like the government's, is effectively infinite. Yet it is possible that consumers do not look ahead to the tax liabilities of future generations. Perhaps they expect their children to be richer than they are and therefore welcome the opportunity to consume at their children's expense. The fact that many people leave zero or minimal bequests to their children is consistent with this hypothesis. For these zero-bequest families, a debt-financed tax cut alters consumption by redistributing wealth among generations.[5]

[5] Robert J. Barro, "Are Government Bonds Net Wealth?" *Journal of Political Economy* 81 (1974): 1095–1117.

CASE STUDY

Why Do Parents Leave Bequests?

The debate over Ricardian equivalence is partly a debate over how different generations are linked to one another. Robert Barro's defense of the Ricardian view is based on the assumption that parents leave their children bequests because they care about them. But is altruism really the reason that parents leave bequests?

One group of economists has suggested that parents use bequests to control their children. Parents often want their children to do certain things for them, such as phoning home regularly and visiting on holidays. Perhaps parents use the implicit threat of disinheritance to induce their children to be more attentive.

To test this "strategic bequest motive," these economists examined data on how often children visit their parents. They found that the more wealthy the parent, the more often the children visit. Even more striking was another result: only wealth that can be left as a bequest induces more frequent visits. Wealth that cannot be bequeathed, such as pension wealth which reverts to the pension company in the event of an early death, does not encourage children to visit. These findings suggest that there may be more to the relationships among generations than mere altruism.[6]

Making a Choice

Having seen the traditional and Ricardian views of government debt, you should ask yourself two sets of questions.

First, with which view do you agree? If the government cuts taxes today, runs a budget deficit, and raises taxes in the future, how will the policy affect the economy? Will it stimulate consumption, as the traditional view holds? Or will consumers understand that their lifetime income is unchanged and, therefore, offset the budget deficit with higher private saving?

Second, why do you hold the view that you do? If you agree with the traditional view of government debt, what is the reason? Do consumers fail to understand that higher government borrowing today means higher taxes tomorrow? Or do they ignore future taxes, either because they are borrowing-constrained or because future taxes fall on future generations with which they do not feel an economic link? If you hold the Ricardian view, do you believe that consumers have the foresight to see that government borrowing today will result in future taxes levied on them or their descendants? Do you believe that consumers will save the extra income to offset that future tax liability?

We might hope that the evidence could help us decide between these two views of government debt. Yet when economists examine historical episodes of large budget deficits, the evidence is inconclusive. History can be interpreted in different ways.

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[6] B. Douglas Bernheim, Andrei Shleifer, and Lawrence H. Summers, "The Strategic Bequest Motive," *Journal of Political Economy* 93 (1985): 1045–1076.

FYI Ricardo on Ricardian Equivalence

David Ricardo was a millionaire stockbroker and one of the great economists of all time. His most important contribution to the field was his 1817 book *Principles of Political Economy and Taxation*, in which he developed the theory of comparative advantage, which economists still use to explain the gains from international trade. Ricardo was also a member of the British Parliament, where he put his own theories to work and opposed the corn laws, which restricted international trade in grain.

Ricardo was interested in the alternative ways in which a government might pay for its expenditure. In an 1820 article called *Essay on the Funding System*, he considered an example of a war that cost 20 million pounds. He noted that if the interest rate were 5 percent, this expense could be financed with a one-time tax of 20 million pounds, a perpetual tax of 1 million pounds, or a tax of 1.2 million pounds for 45 years. He wrote

> In point of economy, there is no real difference in either of the modes; for twenty million in one payment, one million per annum for ever, or 1,200,0000 pounds for 45 years, are precisely of the same value.

Ricardo was aware that the issue involved the linkages among generations:

> It would be difficult to convince a man possessed of 20,000 pounds, or any other sum, that a perpetual payment of 50 pounds per annum was equally burdensome with a single tax of 1000 pounds. He would have some vague notion that the 50 pounds per annum would be paid by posterity, and would not be paid by him; but if he leaves his fortune to his son, and leaves it charged with this perpetual tax, where is the difference whether he leaves him 20,000 pounds with the tax, or 19,000 pounds without it?

Although Ricardo viewed these alternative methods of government finance as equivalent, he did not think other people would view them as such:

> The people who pay taxes . . . do not manage their private affairs accordingly. We are apt to think that the war is burdensome only in proportion to what we are at the moment called to pay for it in taxes, without reflecting on the probable duration of such taxes.

Thus, Ricardo doubted that people were rational and farsighted enough to look ahead fully to their future tax liabilities.

As a policymaker, Ricardo took seriously the government debt. Before the British Parliament, he once declared,

> This would be the happiest country in the world, and its progress in prosperity would go beyond the powers of imagination to conceive, if we got rid of two great evils—the national debt and the corn laws.

It is one of the great ironies in the history of economic thought that Ricardo rejected the theory that now bears his name!

Consider, for example, the experience of the 1980s. The large budget deficits, caused partly by the Reagan tax cut of 1981, seem to offer a natural experiment to test the two views of government debt. At first glance, this episode appears decisively to support the traditional view. The large budget deficits coincided with low national saving, high real interest rates, and a large trade deficit. Indeed, advocates of the traditional view of government debt often claim that the experience of the 1980s confirms their position.

Yet those who hold the Ricardian view of government debt interpret these events differently. Perhaps saving was low in the 1980s because people were optimistic about future economic growth—an optimism that was also reflected in a booming stock market. Or perhaps saving was low because people expected that the tax cut would eventually lead not to higher taxes but, as Reagan promised, to lower government spending. Because it is hard to rule out any of these interpretations, both views of government debt survive.

15-5 Other Perspectives on Government Debt

The policy debates over government debt have many facets. So far we have considered the traditional and Ricardian views of government debt. According to the traditional view, a government budget deficit expands aggregate demand and stimulates output in the short run but crowds out capital and depresses economic growth in the long run. According to the Ricardian view, a government budget deficit has none of these effects, because consumers understand that a budget deficit represents merely the postponement of a tax burden. With these two theories as background, we now consider several other perspectives on government debt.

Balanced Budgets Versus Optimal Fiscal Policy

In the United States, many state constitutions require the state government to run a balanced budget. A recurring topic of political debate is whether the federal Constitution should require a balanced budget for the federal government as well. Most economists oppose a strict rule requiring the government to balance its budget. There are three reasons why optimal fiscal policy may at times call for a budget deficit or surplus.

Stabilization A budget deficit or surplus can help stabilize the economy. In essence, a balanced-budget rule would revoke the automatic stabilizing powers of the system of taxes and transfers. When the economy goes into a recession, taxes automatically fall, and transfers automatically rise. Although these automatic responses help stabilize the economy, they push the budget into deficit. A strict balanced-budget rule would require that the government raise taxes or reduce spending in a recession, but these actions would further depress aggregate demand.

Tax Smoothing A budget deficit or surplus can be used to reduce the distortion of incentives caused by the tax system. As you probably learned in microeconomics courses, high tax rates impose a cost on society by discouraging economic activity. A tax on labor earnings, for instance, reduces the incentive that people have to work long hours. Because this disincentive becomes particularly large at very high tax rates, the total social cost of taxes is minimized by keeping tax rates relatively stable rather than making them high in some years and low in others. Economists call this policy *tax smoothing*. To keep tax rates smooth, a deficit is necessary in years of unusually low income (recessions) or unusually high expenditure (wars).

Intergenerational Redistribution A budget deficit can be used to shift a tax burden from current to future generations. For example, some economists argue that if the current generation fights a war to maintain freedom, future generations benefit as well and should bear some of the burden. To pass on some of the war's costs, the current generation can finance the war with a

budget deficit. The government can later retire the debt by levying taxes on the next generation.

These considerations lead most economists to reject a strict balanced-budget rule. At the very least, a rule for fiscal policy needs to take account of the recurring episodes, such as recessions and wars, during which a budget deficit is a reasonable policy response.

Fiscal Effects on Monetary Policy

In 1985, Paul Volcker told Congress that "the actual and prospective size of the budget deficit . . . heightens skepticism about our ability to control the money supply and contain inflation." A decade later, Alan Greenspan claimed that "a substantial reduction in the long-term prospective deficit of the United States will significantly lower very long-term inflation expectations." Both of these Fed chairmen apparently saw a link between fiscal policy and monetary policy.

We first discussed such a possibility in Chapter 4. As we saw, one way for a government to finance a budget deficit is simply to print money—a policy that leads to higher inflation. Indeed, when countries experience hyperinflation, the typical reason is that fiscal policymakers are relying on the inflation tax to pay for some of their spending. The ends of hyperinflations almost always coincide with fiscal reforms that include large cuts in government spending and therefore a reduced need for seigniorage.

In addition to this link between the budget deficit and inflation, some economists have suggested that a high level of debt might also encourage the government to create inflation. Because most government debt is specified in nominal terms, the real value of the debt falls when the price level rises. This is the usual redistribution between creditors and debtors caused by unexpected inflation—here the debtor is the government and the creditor is the private sector. But this debtor, unlike others, has access to the monetary printing press. A high level of debt might encourage the government to print money, thereby raising the price level and reducing the real value of its debts.

Despite these concerns about a possible link between government debt and monetary policy, there is little evidence that this link is important in most developed countries. In the United States, for instance, inflation was high in the 1970s, even though government debt was low relative to GDP. Monetary policymakers got inflation under control in the early 1980s, just as fiscal policymakers started running large budget deficits and increasing the government debt. Thus, although monetary policy might be driven by fiscal policy in some situations, such as during the classic hyperinflations, this situation appears not to be the norm in most countries today. There are several reasons for this. First, most governments can finance deficits by selling debt and don't need to rely on seigniorage. Second, central banks often have enough independence to resist political pressure for more expansionary monetary policy. Third, and most important, policymakers in all parts of government know that inflation is a poor solution to fiscal problems.

Debt and the Political Process

Fiscal policy is made not by angels but by an imperfect political process. Some economists worry that the possibility of financing government spending by issuing debt makes that political process all the worse.

This idea has a long history. Nineteenth-century economist Knut Wicksell claimed that if the benefit of some type of government spending exceeded its cost, it should be possible to finance that spending in a way that would receive unanimous support from the voters. He concluded that government spending should be undertaken only when support was, in fact, nearly unanimous. In the case of debt finance, however, Wicksell was concerned that "the interests [of future taxpayers] are not represented at all or are represented inadequately in the tax-approving assembly."

Many economists have echoed this theme more recently. In their 1977 book *Democracy in Deficit*, James Buchanan and Richard Wagner argued for a balanced-budget rule for fiscal policy on the grounds that it "will have the effect of bringing the real costs of public outlays to the awareness of decision makers; it will tend to dispel the illusory 'something for nothing' aspects of fiscal choice." Similarly, Martin Feldstein (once an economic adviser to Ronald Reagan and a longtime critic of budget deficits) argues that "only the 'hard budget constraint' of having to balance the budget" can force politicians to judge whether spending's "benefits really justify its costs."

These arguments have led some economists to favor a constitutional amendment that would require Congress to pass a balanced budget. Often these proposals have escape clauses for times of national emergency, such as wars and depressions, when a budget deficit is a reasonable policy response. Some critics of these proposals argue that, even with the escape clauses, such a constitutional amendment would tie the hands of policymakers too severely. Others claim that Congress would easily evade the balanced-budget requirement with accounting tricks. As this discussion makes clear, the debate over the desirability of a balanced-budget amendment is as much political as economic.

International Dimensions

Government debt may affect a nation's role in the world economy. As we first saw in Chapter 5, when a government budget deficit reduces national saving, it often leads to a trade deficit, which in turn is financed by borrowing from abroad. For instance, many observers have blamed U.S. fiscal policy for the recent switch of the United States from a major creditor in the world economy to a major debtor. This link between the budget deficit and the trade deficit leads to two further effects of government debt.

First, high levels of government debt may increase the risk that an economy will experience capital flight—an abrupt decline in the the demand for a country's assets in world financial markets. International investors are aware that a government can always deal with its debt simply by defaulting. This approach was used as far back as 1335, when England's King Edward III defaulted

on his debt to Italian bankers. More recently, several Latin American countries defaulted on their debts in the 1980s, and Russia did the same in 1998. The higher the level of the government debt, the greater the temptation of default. Thus, as government debt increases, international investors may come to fear default and curtail their lending. If this loss of confidence occurs suddenly, the result could be the classic symptoms of capital flight: a collapse in the value of the currency and an increase in interest rates. As we discussed in Chapter 12, this is precisely what happened to Mexico in the early 1990s when default appeared likely.

Second, high levels of government debt financed by foreign borrowing may reduce a nation's political clout in world affairs. This fear was emphasized by economist Ben Friedman in his 1988 book *Day of Reckoning*. He wrote, "World power and influence have historically accrued to creditor countries. It is not coincidental that America emerged as a world power simultaneously with our transition from a debtor nation . . . to a creditor supplying investment capital to the rest of the world." Friedman suggests that if the United States continues to run large trade deficits, it will eventually lose some of its international influence. So far, the record has not been kind to this hypothesis: the United States has run another decade of trade deficits and remains a leading superpower. But perhaps other events—such as the collapse of the Soviet Union—offset the fall in political clout that the United States would have experienced from its increased indebtedness.

CASE STUDY

The Benefits of Indexed Bonds

In 1997, the U.S. Treasury Department started to issue bonds that pay a return based on the consumer price index. These bonds pay a low interest rate of about 3.5 percent, so a $1,000 bond pays only $35 per year in interest. But that interest payment grows with the overall price level as measured by the CPI. In addition, when the $1,000 of principal is repaid, that amount is also adjusted for changes in the CPI. The 3.5 percent, therefore, is a real interest rate. No longer do professors of macroeconomics need to define the real interest rate as an abstract construct. They can open the *New York Times*, point to the credit report, and say, "Look here, this is a nominal interest rate, and this is a real interest rate." (Professors in the United Kingdom and several other countries have long enjoyed this luxury because indexed bonds have been trading in other countries for years.)

Of course, making macroeconomics easier to teach was not the reason that the Treasury chose to index some of the government debt. That was just a positive externality. Its goal was to introduce a new type of government bond that should benefit bondholder and taxpayer alike. These bonds are a win–win proposition because they insulate both sides of the transaction from inflation risk. Bondholders should care about the real interest rate they earn, and taxpayers should care about the real interest rate they pay. When government bonds are

specified in nominal terms, both sides take on risk that is neither productive nor necessary. The new indexed bonds eliminate this inflation risk.

In addition, the new bonds have three other benefits:

First, the bonds may encourage the private sector to begin issuing its own indexed securities. Financial innovation is, to some extent, a public good. Once an innovation has been introduced into the market, the idea is nonexcludable (people cannot be prevented from using it) and nonrival (one person's use of the idea does not diminish other people's use of it). Just as a free market will not adequately supply the public goods of national defense and basic research, it will not adequately supply financial innovation. The Treasury's new bonds can be viewed as a remedy for that market failure.

Second, the bonds reduce the government's incentive to produce surprise inflation. After the large budget deficits of the 1980s and 1990s, the U.S. government is now a substantial debtor, and its debts are specified almost entirely in dollar terms. What is unique about the federal government, in contrast to most debtors, is that it can print the money it needs. The greater the government's nominal debts, the more incentive the government has to inflate away its debt. The Treasury's switch toward indexed debt reduces this potentially problematic incentive.

Third, the bonds provide data that might be useful for monetary policy. Many macroeconomic theories point to expected inflation as a key variable to explain the relationship between inflation and unemployment. But what is expected inflation? One way to measure it is to survey private forecasters. Another way is to look at the difference between the yield on nominal bonds and the yield on real bonds.

In the past, economists have proposed a variety of rules that could be used to conduct monetary policy, as we discussed in the preceding chapter. The new indexed bonds expand the number of possible rules. Here is one idea: the Fed announces a target for the inflation rate. Then, every day, the Fed measures expected inflation as the spread between the yield on nominal debt and the yield on indexed debt. If expected inflation is above the target, the Fed contracts the money supply. If expected inflation is below the target, the Fed expands the money supply. In this way, the Fed can use the bond market's inflation forecast to ensure that the money supply is growing at the rate needed to keep inflation close to its target.

The Treasury's new indexed bonds, therefore, will likely produce many benefits: less inflation risk, more financial innovation, better government incentives, more informed monetary policy, and easier lives for students and teachers of macroeconomics.[7]

[7] To read more about indexed bonds, see John Y. Campbell and Robert J. Shiller, "A Scorecard for Indexed Government Debt," *NBER Macroeconomics Annual* (1996): 155–197; and David W. Wilcox, "Policy Watch: The Introduction of Indexed Government Debt in the United States," *The Journal of Economic Perspectives* 12 (Winter 1998): 219–227.

15-6 Conclusion

Fiscal policy and government debt are central in the U.S. political debate. When Bill Clinton became president in 1993, he made reducing the budget deficit a high priority of his administration. When the Republicans took control of Congress in 1995, they pushed for even faster deficit reduction than Clinton had advocated. These efforts together with some good luck turned the federal government budget from deficit to surplus by the late 1990s. When George W. Bush moved into the White House in 2001, the policy debate was over how quickly the government should pay off its debts.

This chapter discussed some of the economic issues that lie behind these policy decisions. As we have seen, economists are not in complete agreement about the measurement or effects of government indebtedness. Given the profound importance of this topic, there seems little doubt that the debates will continue in the years to come.

Summary

1. The current debt of the U.S. federal government is of moderate size compared to the debt of other countries or compared to the debt that the United States has had throughout its own history. The 1980s and early 1990s were unusual in that the ratio of debt to GDP increased during a period of peace and prosperity. Since 1995, the debt–GDP ratio has declined substantially.
2. Standard measures of the budget deficit are imperfect measures of fiscal policy because they do not correct for the effects of inflation, do not offset changes in government liabilities with changes in government assets, omit some liabilities altogether, and do not correct for the effects of the business cycle.
3. According to the traditional view of government debt, a debt-financed tax cut stimulates consumer spending and lowers national saving. This increase in consumer spending leads to greater aggregate demand and higher income in the short run, but it leads to a lower capital stock and lower income in the long run.
4. According to the Ricardian view of government debt, a debt-financed tax cut does not stimulate consumer spending because it does not raise consumers' overall resources—it merely reschedules taxes from the present to the future. The debate between the traditional and Ricardian views of government debt is ultimately a debate over how consumers behave. Are consumers rational or shortsighted? Do they face binding borrowing constraints? Are they economically linked to future generations through altruistic bequests? Economists' views of government debt hinge on their answers to these questions.

5. Most economists oppose a strict rule requiring a balanced budget. A budget deficit can sometimes be justified on the basis of short-run stabilization, tax smoothing, or intergenerational redistribution of the tax burden.
6. Government debt can potentially have other effects. Large government debt or budget deficits may encourage excessive monetary expansion and, therefore, lead to greater inflation. The possibility of running budget deficits may encourage politicians to unduly burden future generations when setting government spending and taxes. A high level of government debt may risk capital flight and diminish a nation's influence around the world. Economists differ in which of these effects they consider most important.

KEY CONCEPTS

Capital budgeting

Cyclically adjusted budget deficit

Ricardian equivalence

QUESTIONS FOR REVIEW

1. What was unusual about U.S. fiscal policy from 1980 to 1995?
2. Why do many economists project increasing budget deficits and government debt over the next several decades?
3. Describe four problems affecting measurement of the government budget deficit.
4. According to the traditional view of government debt, how does a debt-financed tax cut affect public saving, private saving, and national saving?
5. According to the Ricardian view of government debt, how does a debt-financed tax cut affect public saving, private saving, and national saving?
6. Do you believe the traditional or the Ricardian view of government debt? Why?
7. Give three reasons why a budget deficit might be a good policy choice.
8. Why might the level of government debt affect the government's incentives regarding money creation?

PROBLEMS AND APPLICATIONS

1. On April 1, 1996, Taco Bell, the fast-food chain, ran a full-page ad in the *New York Times* with this news: "In an effort to help the national debt, Taco Bell is pleased to announce that we have agreed to purchase the Liberty Bell, one of our country's most historic treasures. It will now be called the *Taco Liberty Bell* and will still be accessible to the American public for viewing. We hope our move will prompt other corporations to take similar action to do their part to reduce the country's debt." Would such actions by U.S. corporations actually reduce the national debt as it is now measured? How would your answer change if the U.S. government adopted capital budgeting? Do you think these actions represent a true reduction in the government's indebtedness? Do you think Taco Bell was serious about this plan? (*Hint:* Note the date.)
2. Draft a letter to the senator described in Section 15-3, explaining and evaluating the Ricardian view of government debt.
3. The Social Security system levies a tax on workers and pays benefits to the elderly. Suppose that

Congress increases both the tax and the benefits. For simplicity, assume that the Congress announces that the increases will last for one year only.

a. How do you suppose this change would affect the economy? (*Hint:* Think about the marginal propensities to consume of the young and the old.)

b. Does your answer depend on whether generations are altruistically linked?

4. Evaluate the usefulness of generational accounting from the perspective of someone who believes that generations are altruistically linked. Now evaluate the usefulness of generational accounting from the perspective of someone who believes that many consumers face binding borrowing constraints.

5. The *cyclically adjusted budget deficit* is the budget deficit corrected for the effects of the business cycle. In other words, it is the budget deficit that the government would be running if unemployment were at the natural rate. (It is also called the *full-employment budget deficit*.) Some economists have proposed the rule that the cyclically adjusted budget deficit always be balanced. Compare this proposal to a strict balanced-budget rule. Which is preferable? What problems do you see with the rule requiring a balanced cyclically adjusted budget?

6. Using the library or the Internet, find some recent projections for the future path of the U.S. government debt as a percentage of GDP. What assumptions are made about government spending, taxes, and economic growth? Do you think these assumptions are reasonable? If the U.S. experiences a productivity slowdown, how will reality differ from this projection? (*Hint*: A good place to look is www.cbo.gov.)