CBO

The 2014 Long-Term Budget Outlook

Percentage of GDP

Actual | Projected

Federal Debt
Held by the Public

Federal Spending

Federal Revenues

120

100

80

60

40

20

0

1999 2004 2009 2014 2019 2024 2029 2034 2039
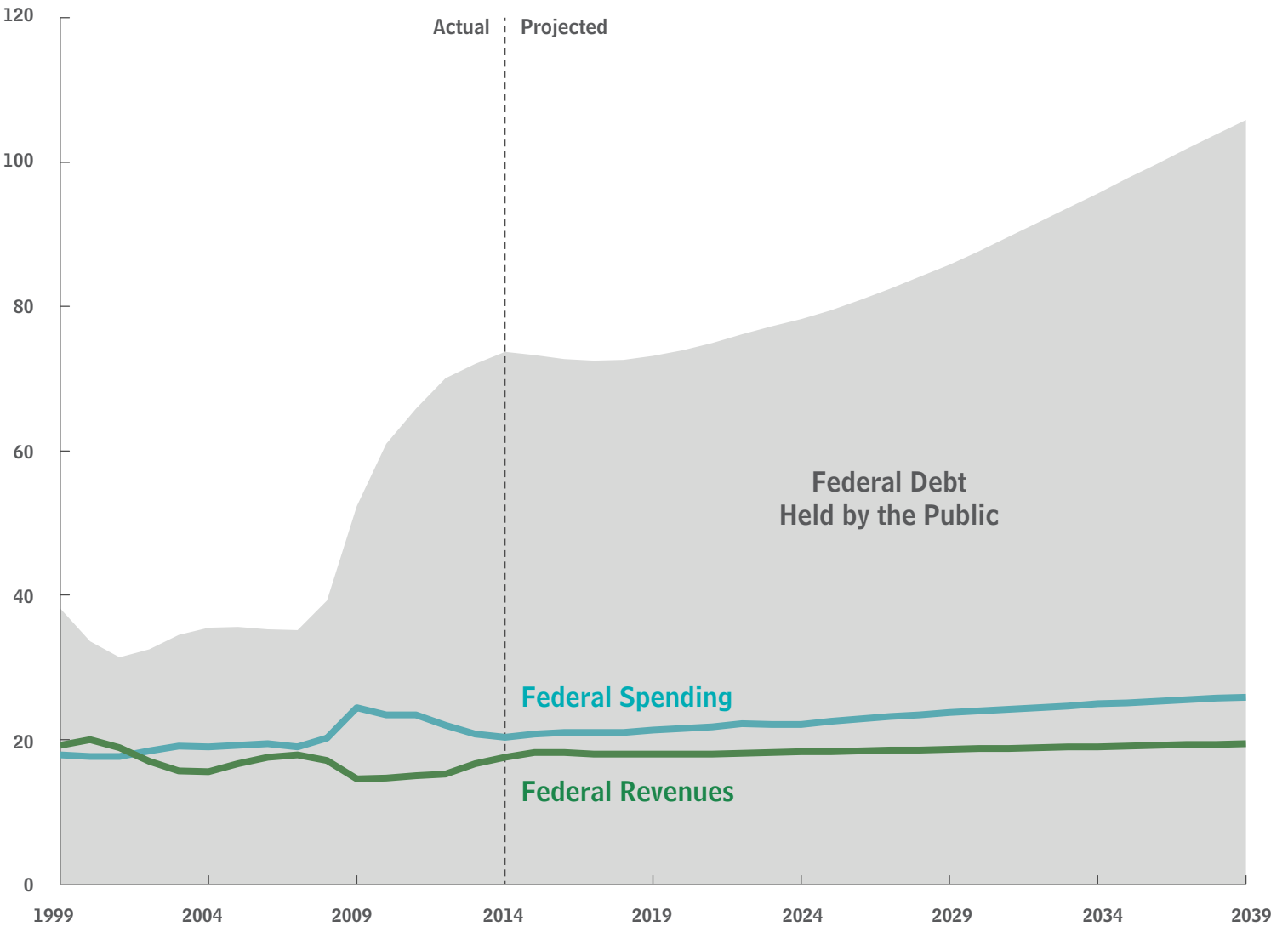
JULY 2014

Notes

CBO's long-term projections extend beyond the usual 10-year budget window to focus on the 25-year period ending in 2039. They generally reflect current law, following the agency's April 2014 baseline budget projections through 2024 and then extending the baseline concept into later years; hence, they constitute the agency's extended baseline. The baseline and the extended baseline are not meant to be predictions of future budgetary outcomes; rather, they represent CBO's best assessment of how the economy and other factors would affect revenues and spending if current law generally remained unchanged. Thus, they serve as benchmarks for measuring the budgetary effects of proposed changes in law regarding federal revenues or spending.
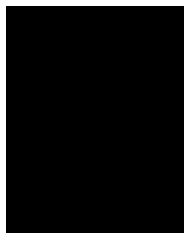
Unless otherwise indicated, the years referred to in most of this report are federal fiscal years (which run from October 1 to September 30). In Chapters 6 and 7, budgetary values, such as the ratio of debt or deficits to gross domestic product (GDP), are presented on a fiscal year basis, whereas economic variables, such as gross national product (GNP) or interest rates, are presented on a calendar year basis.

Numbers in the text, tables, and figures of this report may not add up to totals because of rounding. Also, some values are expressed as fractions to indicate numbers rounded to amounts greater than a tenth of a percentage point.

As referred to in this report, the Affordable Care Act comprises the Patient Protection and Affordable Care Act and the health care provisions of the Health Care and Education Reconciliation Act of 2010, as affected by subsequent judicial decisions, statutory changes, and administrative actions.

The figure on the cover shows federal revenues, spending, and debt held by the public under CBO's extended baseline.

Additional data—including the data underlying the figures in this report, supplemental budget projections, and the demographic and economic variables underlying those projections—are posted along with the report on CBO's website (www.cbo.gov/publication/45471).
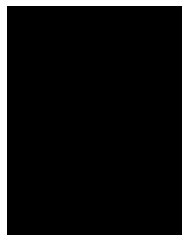
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Summary

Between 2009 and 2012, the federal government recorded the largest budget deficits relative to the size of the economy since 1946, causing its debt to soar. The total amount of federal debt held by the public is now equivalent to about 74 percent of the economy's annual output, or gross domestic product (GDP)—a higher percentage than at any point in U.S. history except a brief period around World War II and almost twice the percentage at the end of 2008.

If current laws remained generally unchanged in the future, federal debt held by the public would decline slightly relative to GDP over the next few years, the Congressional Budget Office (CBO) projects. After that, however, growing budget deficits would push debt back to and above its current high level. Twenty-five years from now, in 2039, federal debt held by the public would exceed 100 percent of GDP, CBO projects. Moreover, debt would be on an upward path relative to the size of the economy, a trend that could not be sustained indefinitely.

What Is the Outlook for the Budget in the Next 10 Years?

The economy's gradual recovery from the 2007–2009 recession, the waning budgetary effects of policies enacted in response to the weak economy, and other changes to tax and spending laws have caused the deficit to shrink this year to its smallest size since 2007: roughly 3 percent of GDP, compared with a peak of almost 10 percent in 2009. If current laws governing taxes and spending stayed generally the same—an assumption that underlies CBO's 10-year baseline budget projections—the anticipated further strengthening of the economy and constraints on federal spending built into law would keep deficits between 2½ percent and 3 percent of GDP from 2015 through 2018, CBO estimates.[1]

In succeeding years, however, deficits would become notably larger under current law. The pressures stemming from an aging population, rising health care costs, and an expansion of federal subsidies for health insurance would cause spending for some of the largest federal programs to increase relative to GDP. Moreover, CBO expects interest rates to rebound in coming years from their current unusually low levels, raising the government's interest payments. That additional spending would contribute to larger budget deficits—equaling close to 4 percent of GDP—toward the end of the 10-year period spanned by the baseline, CBO anticipates. Altogether, deficits during that 2015–2024 period would total about $7.6 trillion.

With deficits expected to remain close to their current percentage of GDP for the next few years, federal debt held by the public is projected to stay between 72 percent and 74 percent of GDP from 2015 through 2020. Thereafter, larger deficits would boost debt to 78 percent of GDP by the end of 2024.

What Is the Outlook for the Budget in the Long Term?

CBO has extrapolated its baseline projections through 2039 (and, with even greater uncertainty, through later decades) by producing an extended baseline that generally reflects current law. The extended baseline projections show a substantial imbalance in the federal budget over the long term, with revenues falling well short of spending (see Summary Figure 1). As a result, budget deficits are projected to rise steadily and, by 2039, to push federal debt held by the public up to a percentage

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1. For details about CBO's most recent 10-year baseline, see Congressional Budget Office, *Updated Budget Projections: 2014 to 2024* (April 2014), www.cbo.gov/publication/45229. In this summary, values for spending, revenues, and deficits as a percentage of GDP have been rounded to the nearest one-half percent.

Summary Figure 1.

Federal Debt, Spending, and Revenues

Debt Held by the Public, Total Spending, and Total Revenues

Percentage of Gross Domestic Product

Actual | Extended Baseline Projection

Federal Debt
Held by the Public

Spending

Revenues

Components of Total Spending

Actual | Extended Baseline Projection

Federal Spending on the
Major Health Care Programs[a]

Other Noninterest Spending

Social Security

Net Interest

Components of Total Revenues

Actual | Extended Baseline Projection

Individual Income Taxes

Payroll (Social Insurance)
Taxes

Corporate Income Taxes
Other Revenue Sources[b]

Source: Congressional Budget Office.

Note: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period. These projections do not reflect the economic effects of the policies underlying the extended baseline. (For an analysis of those effects and their impact on debt, see Chapter 6.)

a. Consists of spending on Medicare (net of offsetting receipts), Medicaid, the Children's Health Insurance Program, and subsidies offered through health insurance exchanges.

b. Consists of excise taxes, remittances to the Treasury from the Federal Reserve System, customs duties, estate and gift taxes, and miscellaneous fees and fines.

of GDP seen only once before in U.S. history (just after World War II). The harm that such growing debt would cause to the economy is not factored into CBO's detailed long-term projections but is considered in further analysis presented in this report.

Federal spending would increase to 26 percent of GDP by 2039 under the assumptions of the extended baseline, CBO projects, compared with 21 percent in 2013 and an average of 20½ percent over the past 40 years. That increase reflects the following projected paths for various types of federal spending if current laws remained generally unchanged:

- Federal spending for Social Security and the government's major health care programs—Medicare, Medicaid, the Children's Health Insurance Program, and subsidies for health insurance purchased through the exchanges created under the Affordable Care Act— would rise sharply, to a total of 14 percent of GDP by 2039, twice the 7 percent average seen over the past 40 years. That boost in spending is expected to occur because of the aging of the population, growth in per capita spending on health care, and an expansion of federal health care programs.

- The government's net interest payments would grow to 4½ percent of GDP by 2039, compared with an average of 2 percent over the past four decades. Net interest payments would be larger than that average mainly because federal debt would be much larger.

- In contrast, total spending on everything other than Social Security, the major health care programs, and net interest payments would decline to 7 percent of GDP by 2039—well below the 11 percent average of the past 40 years and a smaller share of the economy than at any time since the late 1930s.

Federal revenues would also increase relative to GDP under current law, but much more slowly than federal spending. Revenues would equal 19½ percent of GDP by 2039, CBO projects, compared with an average of 17½ percent over the past four decades. In the next 10 years, revenues are projected to rise to 18½ percent of GDP, from 16½ percent last year, reflecting structural features of the tax system and the ongoing economic recovery. After 2024, revenues would increase gradually relative to GDP under the assumptions of the extended baseline, mainly because people's income is expected to

grow faster than the rate of inflation, pushing more income into higher tax brackets over time.

The gap between federal spending and revenues would widen after 2015 under the assumptions of the extended baseline, CBO projects. By 2039, the deficit would equal 6½ percent of GDP, larger than in any year between 1947 and 2008, and federal debt held by the public would reach 106 percent of GDP, more than in any year except 1946—even without factoring in the economic effects of growing debt.

Moreover, the harmful effects that such large debt would have on the economy would worsen the budget outlook. Under current law, the increase in debt relative to the size of the economy, combined with a gradual increase in marginal tax rates (the rates that would apply to an additional dollar of income), would reduce economic output and raise interest rates, compared with the benchmark economic projections that CBO used in producing the extended baseline. Those economic effects in turn would lead to lower federal revenues and higher interest payments on the debt. With those effects included, federal debt held by the public under the extended baseline would rise to 111 percent of GDP in 2039.

Beyond the next 25 years, the pressures caused by rising budget deficits and debt would become even greater unless laws governing taxes and spending were changed. With deficits as big as the ones that CBO projects, federal debt would be growing faster than GDP, a path that would ultimately be unsustainable.

What Consequences Would a Large and Growing Federal Debt Have?

How long the nation could sustain such growth in federal debt is impossible to predict with any confidence. At some point, investors would begin to doubt the government's willingness or ability to pay its debt obligations, which would require the government to pay much higher interest costs to borrow money. Such a fiscal crisis would present policymakers with extremely difficult choices and would probably have a substantial negative impact on the country.

Even before that point was reached, the high and rising amount of federal debt that CBO projects under the extended baseline would have significant negative consequences for both the economy and the federal budget:

- The large amount of federal borrowing would draw money away from private investment in productive capital in the long term, because the portion of people's savings used to buy government securities would not be available to finance private investment. The result would be a smaller stock of capital and lower output and income than would otherwise be the case, all else being equal. (Despite those reductions, the continued growth of productivity would make output and income per person, adjusted for inflation, higher in the future than they are now.)

- Federal spending on interest payments would rise, thus requiring higher taxes, lower spending for benefits and services, or both to achieve any chosen targets for budget deficits and debt.

- The large amount of debt would restrict policymakers' ability to use tax and spending policies to respond to unexpected challenges, such as economic downturns or financial crises. As a result, those challenges would tend to have larger negative effects on the economy and on people's well-being than they would otherwise. The large amount of debt could also compromise national security by constraining defense spending in times of international crisis or by limiting the country's ability to prepare for such a crisis.

What Effects Would Alternative Fiscal Policies Have?

Most of the projections in this report are based on the assumption that laws governing federal taxes and spending will remain generally the same over time—not because CBO expects that to occur but because the budgetary and economic implications of current law are a useful benchmark for policymakers when they consider changing laws. If tax and spending policies differed significantly from those specified in current law, budgetary and economic outcomes could differ substantially as well. To illustrate some possible differences, CBO analyzed the effects of three additional sets of fiscal policies.

Under one set of alternative policies—referred to as the extended alternative fiscal scenario—certain policies that are now in place but are scheduled to change under current law would be continued, and some provisions of law that might be difficult to sustain for a long period would be modified. With those changes to current law, deficits excluding interest payments would be about $2 trillion

higher over the next decade than in CBO's baseline; in subsequent years, such deficits would exceed those projected in the extended baseline by rapidly growing amounts. The harmful effects on the economy from the resulting increase in federal debt would be partly offset by the lower marginal tax rates that would be in place under that scenario. Nevertheless, in the long term, economic output would be lower and interest rates would be higher under that set of policies than under the extended baseline. With those economic changes incorporated, federal debt held by the public would exceed 180 percent of GDP in 2039, CBO projects.

Under a different scenario, budget deficits would be smaller than those projected under current law: Deficit reduction would be phased in such that deficits excluding interest payments would be a total of $2 trillion lower through 2024 than in CBO's baseline, and the amount of deficit reduction as a percentage of GDP in 2024 would be continued in later years. In that case, output would be higher and interest rates would be lower in the long term than under the extended baseline. Factoring in the effects of those economic changes on the budget, CBO projects that federal debt held by the public would equal about 75 percent of GDP in 2039, close to its percentage in 2013.

Under yet another scenario, with twice as much deficit reduction—a total decrease of $4 trillion in deficits excluding interest payments through 2024—CBO projects that federal debt held by the public would fall to 42 percent of GDP in 2039. That percentage would be slightly above the ratio of debt to GDP in 2008 and the average ratio over the past 40 years (both 39 percent). As in the preceding scenario, output would be higher and interest rates would be lower in the long term than under the extended baseline.

Such alternative fiscal policies would have differing effects on the economy in the short term as well as in the long term, reflecting the short-term impact of tax and spending policies on the demand for goods and services. The spending increases and tax reductions in the alternative fiscal scenario (relative to what would happen under current law) would increase the demand for goods and services and thereby raise output and employment in the next few years. The deficit reduction under the other scenarios, by contrast, would decrease the demand for goods and services and thus reduce output and employment in the next few years.

How Uncertain Are the Long-Term Budget Projections?

Even if future tax and spending policies match what is specified in current law, budgetary outcomes will undoubtedly differ from CBO's projections because of unexpected changes in the economy, demographics, and other factors. To illustrate the uncertainty of its projections, CBO examined how altering its estimates of future mortality rates, productivity, interest rates on federal debt, and federal spending on health care would affect the projections in the extended baseline. For that purpose, CBO projected budgetary outcomes with those factors varying by amounts that are based on their past variation as well as on CBO's consideration of possible future developments. Those estimates show the following:

■ In cases in which only one of those factors varies from the values used for the extended baseline, CBO's projections of federal debt held by the public in 2039 range from about 90 percent of GDP to 135 percent, compared with 111 percent under the extended baseline including the economic effects of future fiscal policies.

■ In a case in which all four factors vary simultaneously in a way that raises projected deficits, but they vary only half as much as in the individual cases, federal debt is projected to reach about 160 percent of GDP in 2039. Conversely, in a case in which all four factors vary in a way that lowers deficits but, again, vary by only half as much as in the individual cases, debt in 2039 is projected to equal 75 percent of GDP, about what it is now.

Those calculations do not cover the full range of possible outcomes, nor do they address other sources of uncertainty in the budget projections, such as the risk of an economic depression or major war or the possibility of unexpected changes in birth rates, immigration, or labor force participation. Nonetheless, CBO's analysis shows that the main implication of the central estimates in this report applies under a wide range of possible values for some key factors that influence federal spending and revenues. That implication is that if current laws remained generally unchanged, federal debt, which is already high by historical standards, would be at least as high and probably much higher 25 years from now.

What Choices Do Policymakers Have?

The unsustainable nature of the federal tax and spending policies specified in current law presents lawmakers and the public with difficult choices. Unless substantial changes are made to the major health care programs and Social Security, spending for those programs will equal a much larger percentage of GDP in the future than it has in the past. At the same time, under current law, spending for all other federal benefits and services would be on track to make up a smaller percentage of GDP by 2024 than at any point in more than 70 years. Federal revenues would also represent a larger percentage of GDP in the future than they have, on average, in the past few decades. Even so, spending would soon start to outpace revenues by increasing amounts (relative to GDP), generating rising budget deficits. As a result, federal debt held by the public is projected to grow faster than the economy starting a few years from now, and because debt is already unusually high relative to GDP, further increases could be especially harmful.

To put the federal budget on a sustainable path for the long term, lawmakers would have to make significant changes to tax and spending policies: reducing spending for large benefit programs below the projected levels, letting revenues rise more than they would under current law, or adopting some combination of those approaches.

The size of such changes would depend on the amount of federal debt that lawmakers considered appropriate. For example, lawmakers might set a goal of bringing debt held by the public back down to the average percentage of GDP seen over the past 40 years—39 percent. Meeting that goal by 2039 would require a combination of increases in revenues and cuts in noninterest spending, relative to current law, totaling 2.6 percent of GDP in each year beginning in 2015 (without accounting for the economic effects of the reduction in debt or of the policy changes that might be used to achieve it); in 2015, 2.6 percent of GDP would equal about $465 billion. If those changes came entirely from revenues, they would represent an increase of 14 percent from the revenues projected for the 2015–2039 period under the extended baseline. If the changes came entirely from noninterest spending, they would represent a cut of 13 percent from the amount of noninterest spending projected for that period. A similar level of debt in 2039 would result under the third scenario discussed above (a $4 trillion total reduction in deficits excluding interest payments through

2024, with the amount of deficit reduction in 2024 as a percentage of GDP continuing in later years).

In deciding how quickly to carry out policies to put federal debt on a sustainable path, lawmakers face trade-offs:

■ The sooner significant deficit reduction was implemented, the smaller the government's accumulated debt would be, the smaller policy changes would need to be to achieve a particular long-term outcome, and the less uncertainty there would be about what policies would be adopted. However, if lawmakers implemented spending cuts or tax increases quickly, people would have little time to plan and adjust to the policy changes, and those changes would weaken the economic expansion during the next few years.

■ Reductions in federal spending or increases in taxes that were implemented several years from now would have a smaller effect on output and employment in the short term. However, waiting for some time before reducing federal spending or increasing taxes would result in a greater accumulation of debt, which would represent a greater drag on output and income in the

long term and would increase the size of the policy changes needed to reach any chosen target for debt.

If lawmakers wanted to minimize both the short-term economic costs of reducing deficits quickly and the longer-term costs of running large deficits, they could enact a combination of changes in tax and spending policies that increased the deficit in the next few years relative to what it would be under current law but reduced the deficit thereafter.

Even if policy changes to shrink deficits in the long term were not implemented for several years, making decisions about them sooner rather than later would offer significant advantages. If decisions were reached sooner, people would have more time to alter their behavior to be prepared for the time when the changes would be carried out. In addition, decisions about policy changes that would reduce future debt relative to the amounts projected under current law would tend to increase output and employment in the next few years by holding down longer-term interest rates, reducing uncertainty, and enhancing businesses' and consumers' confidence.

The Long-Term Outlook for the Federal Budget

Again this year, the federal budget deficit is shrinking noticeably, and the Congressional Budget Office (CBO) projects that the deficit will remain roughly stable as a share of the nation's output—its gross domestic product (GDP)—for the next several years if current laws remain generally unchanged. Federal debt held by the public also will be roughly stable relative to the size of the economy for several years, according to CBO's projections.

The long-term budget outlook is much less positive, however. The combination of three factors—the aging of the population, growth in per capita spending on health care, and an expansion of federal subsidies for health insurance—is expected to significantly boost the government's spending for Social Security and major health care programs. Barring changes to current law, that additional spending would contribute to larger budget deficits toward the end of the 10-year period that runs from 2015 to 2024, causing federal debt, which is already quite large relative to the size of the economy, to swell even more. In this report, CBO presents its projections of federal outlays, revenues, deficits, and debt for the next few decades, and it discusses the possible consequences of the projected budgetary outcomes.

The Budget Outlook for the Next 10 Years

The budget deficit is on track to fall in 2014 to its smallest percentage of the economy since 2008: CBO estimates that the deficit will be roughly 3 percent of GDP, which is less than one-third of its peak of nearly 10 percent in 2009. That decline reflects the economy's gradual recovery from the 2007–2009 recession, the waning budgetary effects of policies enacted in response to the weak economy, and other changes to tax and spending policies. However, debt held by the public will edge up relative to

GDP, reaching about 74 percent by the end of 2014—its highest level since 1950.

In CBO's 10-year baseline budget projections—which are based on the assumption that current laws governing taxes and spending will remain generally unchanged—a combination of the anticipated further strengthening of the economy and constraints on federal spending built into law keeps deficits close to their current percentage of GDP for the next several years. With deficits staying between 2½ percent and 3 percent of GDP from 2015 through 2018, and then rising slowly thereafter, federal debt held by the public is projected to stay between 72 percent and 74 percent of GDP from 2015 through 2020.[1]

Later in the 10-year baseline projection period, under current law, deficits would be notably larger, CBO anticipates. Interest rates are expected to rebound from their current unusually low levels, sharply increasing interest payments on the government's debt. Moreover, the pressures of an aging population, rising health care costs, and an expansion of federal subsidies for health insurance would cause mandatory spending to rise as a percentage of GDP.[2] In addition, CBO projects, revenues would remain roughly stable relative to GDP for the next 10 years as an increase in individual income taxes was offset by a decline in receipts from corporate income taxes and remittances from the Federal Reserve (all relative to

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1. For details about CBO's most recent 10-year baseline, see Congressional Budget Office, *Updated Budget Projections: 2014 to 2024* (April 2014), www.cbo.gov/publication/45229. CBO will update those projections later this summer.

2. Lawmakers generally determine spending for mandatory programs by setting eligibility rules, benefit formulas, and other parameters rather than by appropriating specific amounts each year. In that way, mandatory spending differs from discretionary spending, which is controlled by annual appropriation acts.

the size of the economy). By 2024, under current law, the budget deficit would grow to nearly 4 percent of GDP; federal debt would equal 78 percent of GDP and would be on the rise relative to the size of the economy.

The Long-Term Budgetary Imbalance

CBO's long-term projections extend beyond the usual 10-year budget window to focus on the 25-year period ending in 2039. They generally reflect current law, following the agency's April 2014 baseline budget projections through 2024 and then extending the baseline concept into later years; hence, they constitute what is called the *extended baseline*. The detailed long-term budget estimates that CBO presents in this and the following four chapters depend on projections of a host of demographic and economic conditions that the agency bases primarily on historical patterns. The estimates in these five chapters do not incorporate the economic effects of the fiscal policies in the extended baseline; those effects are incorporated, however, in the estimates presented in Chapter 6. The demographic and economic projections that underlie the detailed long-term budget estimates are summarized later in this chapter and discussed in detail in Appendix A. (Appendix B offers a discussion of changes in the projections since the 2013 report; Appendix C briefly reviews changes since earlier reports; and Appendix D provides information on CBO's projections over the next 75 years.)

CBO's 10-year and extended baselines are meant to serve as benchmarks for measuring the budgetary effects of proposed changes in federal revenues or spending. They are not meant to be predictions of future budgetary outcomes; rather, they represent CBO's best assessment of how the economy and other factors would affect revenues and spending if current law generally remained unchanged. In that way, the baselines incorporate the assumption that some policy changes that lawmakers have routinely made in the past—such as preventing the sharp cuts to Medicare's payment rates for physicians that are called for by law—will not be made again.

CBO's extended baseline projections show a substantial imbalance in the federal budget over the long run, with revenues falling well short of spending. Two measures offer complementary perspectives on the size of that imbalance: Projections of federal debt illustrate how the shortfall of revenues relative to spending would accumulate over time under current law, and estimates of how

much spending or revenues would need to be changed to achieve a chosen goal for federal debt illustrate the magnitude of the modifications in law that policymakers might consider.

In addition to its extended baseline, CBO has developed an *extended alternative fiscal scenario*, under which certain policies that are now in place but are scheduled to change under current law are assumed to continue, and under which some provisions of current law that might be difficult to sustain for a long period are assumed to be modified (see Chapter 6). Under that scenario, federal debt would grow even faster than it would under the extended baseline, so larger policy changes would be needed to reach any chosen fiscal target.

The Accumulation of Federal Debt

Debt held by the public represents the amount that the federal government has borrowed in financial markets (by issuing Treasury securities) to pay for its operations and activities.[3] If a given combination of federal spending and revenues is to be sustainable over time, debt held by the public eventually must grow no faster than the economy does. If debt continued to rise relative to GDP, at some point investors would begin to doubt the government's willingness or ability to repay its obligations. Such doubts would make it more expensive for the government to borrow money, thus necessitating cuts in spending, increases in taxes, or some combination of those two approaches. For that reason, the amount of federal debt held by the public relative to the nation's annual economic output is an important barometer of the government's financial position.

At the end of 2008, federal debt held by the public stood at 39 percent of GDP, which was close to its average of

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3. When the federal government borrows in financial markets, it competes with other participants for financial resources and, in the long run, crowds out private investment, reducing economic output and income. In contrast, federal debt held by trust funds and other government accounts represents internal transactions of the government and has no direct effect on financial markets. (That debt and debt held by the public together make up gross federal debt.) For more discussion, see Congressional Budget Office, *Federal Debt and Interest Costs* (December 2010), www.cbo.gov/publication/21960. Several factors not directly included in the budget totals also affect the government's need to borrow from the public. They include increases or decreases in the government's cash balance as well as the cash flows reflected in the financing accounts used for federal credit programs.

Figure 1-1.

Federal Debt Held by the Public

Percentage of Gross Domestic Product
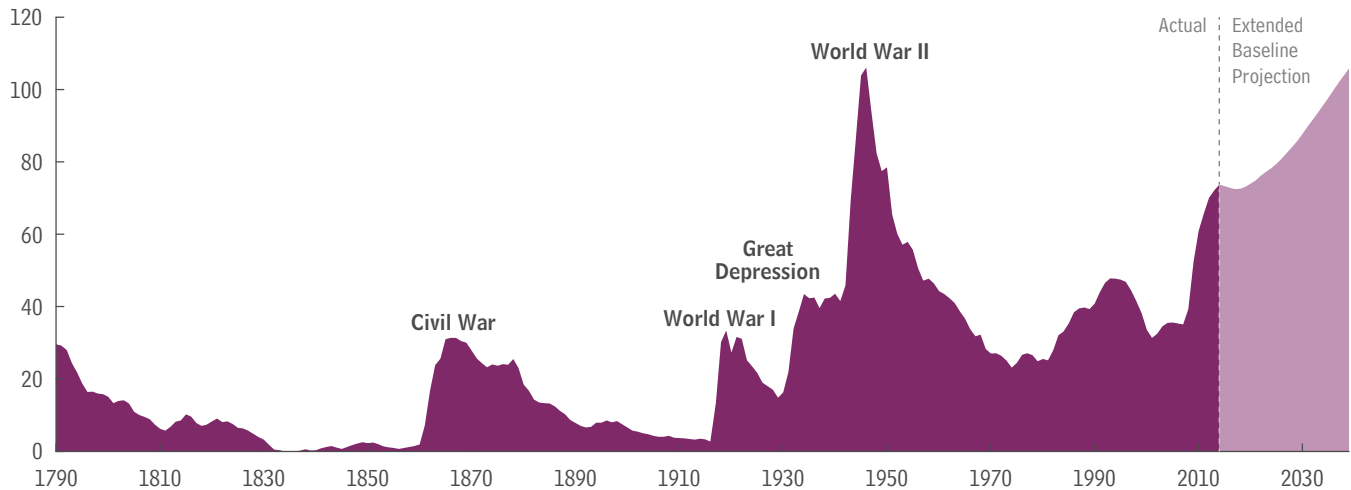
Source: Congressional Budget Office. For details about the sources of data used for past debt held by the public, see Congressional Budget Office, *Historical Data on Federal Debt Held by the Public* (July 2010), www.cbo.gov/publication/21728.

Note: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period. The long-term projections of debt do not reflect the economic effects of the policies underlying the extended baseline. (For an analysis of those effects and their impact on debt, see Chapter 6.)

the preceding several decades. Since then, large deficits have caused debt held by the public to grow sharply—to a projected 74 percent of GDP by the end of 2014. Debt has exceeded 70 percent of GDP during only one other period in U.S. history: from 1944 through 1950, when it spiked because of a surge in federal spending during World War II to a peak of 106 percent of GDP (see Figure 1-1).

CBO projects that, under current law, debt held by the public will exceed its current percentage of GDP after 2020 and continue rising. By 2039, under the extended baseline, federal debt held by the public would reach 106 percent of GDP (see Table 1-1)—equal to the percentage at the end of 1946 and more than two and a half times the average percentage during the past several decades—and would be on an upward path. That trajectory ultimately would be unsustainable. Moreover, the long-term projections of federal debt presented in this chapter and the next few chapters do not incorporate the negative economic effects of higher debt. Projections that account for those effects show debt reaching 111 percent of GDP in 2039 (see Chapter 6).

Projections so far into the future are highly uncertain, of course. Nevertheless, under a wide range of possible expectations for key factors that affect budgetary outcomes, CBO anticipates that if current law generally stayed the same, federal debt in 2039 would be very high by the nation's historical standards (see Chapter 7).

Policy Changes Needed to Meet Various Goals for Federal Debt

An alternative perspective on the long-term fiscal imbalance comes from assessing the changes in revenues or noninterest spending that would be needed to achieve a chosen goal for federal debt. One possible goal would be to make federal debt the same percentage of GDP in some future year as it is today. Another would be to make federal debt the same percentage of GDP in some future year as it has been, on average, during the past several decades. Other goals are possible as well.

The changes in revenues or noninterest spending that are estimated to be necessary to achieve one of those goals are conceptually similar to the estimated actuarial imbalance (that is, a negative actuarial balance) that is commonly reported for the trust funds for Part A of

Table 1-1.

Projected Spending and Revenues in Selected Years Under CBO's Extended Baseline

Percentage of Gross Domestic Product

	2014	2024	2039
Spending			
Noninterest			
Social Security	4.9	5.6	6.3
Medicare (Net of offsetting receipts)[a]	3.0	3.2	4.6
Medicaid, CHIP, and exchange subsidies	1.9	2.7	3.4
Other mandatory	2.5	2.2	1.7
Discretionary	6.8	5.1	5.2
Subtotal	19.1	18.8	21.2
Net interest	1.3	3.3	4.7
Total Spending	**20.4**	**22.1**	**25.9**
Revenues			
Individual income taxes	8.0	9.4	10.5
Payroll taxes	6.0	5.8	5.7
Corporate income taxes	2.0	1.8	1.8
Excise taxes, estate and gift taxes, and other sources of revenues	1.5	1.3	1.4
Total Revenues	**17.6**	**18.3**	**19.4**
Deficit			
Excluding net interest	-1.5	-0.5	-1.7
Total	**-2.8**	**-3.7**	**-6.4**
Debt Held by the Public at the End of the Year	**74**	**78**	**106**
Memorandum:			
Gross Medicare Spending[a]	3.5	3.9	5.7

Source: Congressional Budget Office.

Notes: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period. These projections do not reflect the economic effects of the policies underlying the extended baseline. (For an analysis of those effects and their impact on debt, see Chapter 6.)

   CHIP = Children's Health Insurance Program.

a.   Medicare spending net of offsetting receipts reflects premium payments by beneficiaries and certain other receipts used to offset a portion of spending for the Medicare program; gross Medicare spending does not include those offsetting receipts.

Medicare and for Social Security (see Table 2-1 on page 34 and Table 3-1 on page 50). An estimated actuarial imbalance for a trust fund over a given period represents the changes in revenues or spending that would be needed to achieve the target balance for the trust funds if those changes were enacted immediately and maintained throughout the period. A similar calculation for the federal government as a whole is one way to summarize the projected fiscal imbalance over a specified period.

The size of the policy changes that would be needed to achieve a chosen goal for federal debt would depend in part on how quickly that goal was to be reached. Determining the timing of policy changes involves various trade-offs, including the economic effects of those changes and the burdens borne by different generations.

The Size of Policy Changes Needed to Meet Various Goals. The magnitude of the changes in noninterest spending or revenues that would be needed to make federal debt equal its current percentage of GDP at a

specific date in the future is often called the fiscal gap.[4] In CBO's extended baseline, the fiscal gap for the 2015–2039 period amounts to 1.2 percent of GDP (without accounting for the economic effects of the policy changes that might be used to close the gap). That is, relative to projections that generally follow current law, a combination of cuts in noninterest spending and increases in revenues that equaled 1.2 percent of GDP in each year beginning in 2015—about $225 billion in that year—is estimated to result in debt in 2039 that would equal 74 percent of GDP, or the same percentage of GDP in 25 years that it equals now. If those changes came entirely from revenues or entirely from spending, they would amount to roughly a 6½ percent increase in revenues or a 6 percent cut in noninterest spending relative to the amounts projected for the 2015–2039 period.

Increases in revenues or reductions in noninterest spending would need to be larger to reduce debt to the percentages of GDP that are more typical of those in recent decades. To return debt to its average percentage of GDP during the past 40 years (39 percent) by 2039, the government would need to pursue a combination of increases in revenues and cuts in noninterest spending (relative to current-law projections) that totaled 2.6 percent of GDP each year (without accounting for the economic effects of the reduction in debt and the policy changes that might be used to achieve it; in 2015, 2.6 percent of GDP would be about $465 billion).[5] If the changes came entirely from revenues, they would represent an increase of 14 percent relative to the amount projected under the extended baseline for the 2015–2039

period; if they came entirely from noninterest spending, they would represent a cut of 13 percent from the amount projected under the extended baseline for that period.

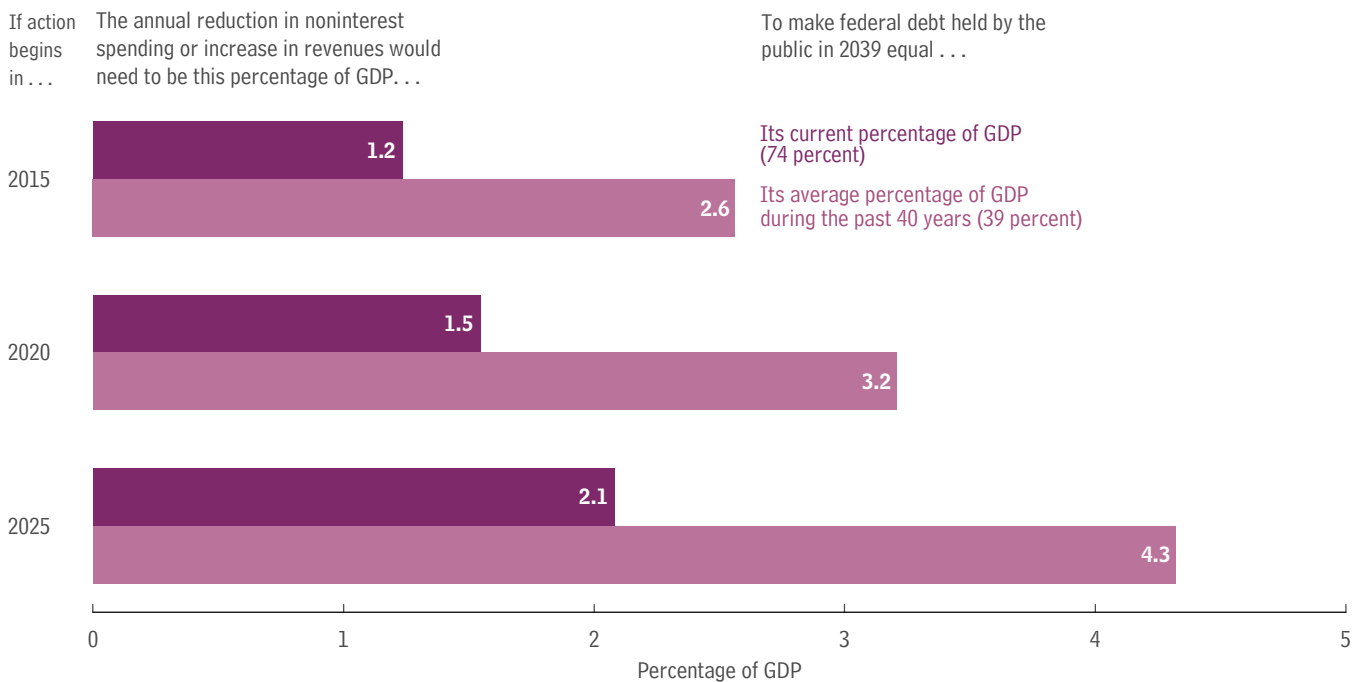**The Timing of Policy Changes Needed to Meet Various Goals.** In deciding how quickly to implement policies to put federal debt on a sustainable path, lawmakers face trade-offs:

- The sooner that significant deficit reduction was implemented, the smaller the government's accumulated debt would be, the smaller the policy changes would need to be to attain a chosen long-run outcome, and the less uncertainty there would be about what policies would be adopted. However, if lawmakers implemented spending cuts or tax increases quickly, people would have little time to plan and adjust to the policy changes. In addition, those policy changes would weaken the economic expansion during the next few years. The negative short-term effects of deficit reduction on output and employment would be especially strong now, because the Federal Reserve is keeping short-term interest rates near zero and could not lower them further to offset the effects of a tightening of fiscal policy.

- By contrast, reductions in federal spending or increases in taxes that were implemented several years from now would have a smaller effect on output and employment during the following few years because short-term interest rates are likely to be well above zero by then and the Federal Reserve could lower those rates in response to a tightening of fiscal policy. However, if lawmakers waited for some time before reducing federal spending or increasing taxes, the result would be a greater accumulation of debt, which would represent a greater drag on output and income in the long run and would increase the size of the policy adjustments needed to reach any chosen target for debt.

In addition, faster or slower implementation of policies to reduce budget deficits would tend to impose different burdens on different generations: Reducing deficits sooner would probably require more sacrifices by today's older workers and retirees for the benefit of today's younger workers and future generations. Reducing deficits later would require smaller sacrifices by older

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4. The fiscal gap equals the present value of noninterest outlays and other means of financing minus the present value of revenues over the projected period with adjustments to make the ratio of federal debt to GDP at the end of the period equal to the current ratio. Specifically, current debt is added to the present value of outlays and other means of financing, and the present value of the target end-of-period debt (which equals GDP in the last year of the period multiplied by the ratio of debt to GDP at the end of 2014) is added to the present value of revenues. A present value is a single number that expresses a flow of current, past, and future revenues or outlays in terms of an equivalent lump sum received or paid today. In calculating present values, CBO uses a discount rate equal to the average interest rate on federal debt held by the public (see Appendix A). Other means of financing include changes in the government's cash balances and the cash flows of federal credit programs (mostly programs that provide loans and loan guarantees).

5. That figure is calculated in the same manner as the fiscal gap except that it uses a different target for end-of-period debt.

Figure 1-2.

The Timing and Size of Policy Changes Needed to Make Federal Debt Meet Two Goals

| If action begins in . . . | The annual reduction in noninterest spending or increase in revenues would need to be this percentage of GDP. . . | To make federal debt held by the public in 2039 equal . . . |

Legend:
Its current percentage of GDP (74 percent)
Its average percentage of GDP during the past 40 years (39 percent)

2015: 1.2 / 2.6
2020: 1.5 / 3.2
2025: 2.1 / 4.3

Percentage of GDP (axis 0 to 5)

Source: Congressional Budget Office.

Note: GDP = gross domestic product.

people and greater sacrifices by younger workers and future generations.

CBO has tried to illustrate that collection of trade-offs in three ways. First, the agency has estimated the macroeconomic consequences of several paths for federal debt in both the short term and the longer term. For example, it has analyzed the effects of deficit reduction that is phased in so that deficits excluding interest payments are $2 trillion lower through 2024 than under the baseline, with the reduction in the deficit in 2024 as a percentage of GDP continued in subsequent years. Under that scenario, CBO estimates, economic output would be slightly lower in 2016, but gross national product would be about 2½ percent higher in 2039 than if current laws generally continued. (Unlike the more commonly cited gross domestic product, gross national product includes the income that U.S. residents earn abroad and excludes the income that foreigners earn in this country; it is therefore a better measure of the resources available to U.S. households.) Those results and corresponding results for other scenarios are discussed in Chapter 6.

Second, CBO has estimated the amount by which delaying policy changes to reduce deficits would increase the size of the policy adjustments needed to achieve any chosen goal for debt. If the goal was to have the debt equal 74 percent of GDP in 2039 but to wait to implement new policies until 2020, the combination of increases in revenues and reductions in noninterest spending over the 2020–2039 period would need to be 1.5 percent of GDP, rather than the 1.2 percent of GDP needed to reach that goal if policy changes took effect in 2015 (see Figure 1-2). If lawmakers waited even longer—until 2025—to take action, the policy changes over the 2025–2039 period would need to amount to 2.1 percent of GDP. If, instead of aiming to keep debt from rising relative to GDP, lawmakers wanted to return debt to its historical average percentage of GDP—but policy changes did not take effect until 2020—the policy changes would need to amount to 3.2 percent rather than 2.6 percent of GDP. Waiting an additional five years would require even larger changes, amounting to 4.3 percent of GDP.

Third, CBO has studied how waiting to resolve the long-term fiscal imbalance would affect various generations of

the U.S. population. In 2010, CBO compared economic outcomes under a policy that would stabilize the debt-to-GDP ratio starting in 2015 with outcomes under a policy that would delay stabilizing the ratio until 2025.[6] That analysis suggested that generations born after about 2015 would be worse off if action to stabilize the debt-to-GDP ratio was postponed to 2025. People born before 1990, however, would be better off if action was delayed—largely because they would partly or entirely avoid the policy changes needed to stabilize the debt—and generations born between 1990 and 2015 could either gain or lose from a delay, depending on the details of the policy changes.[7]

If policymakers wanted to minimize both the short-term economic costs of shrinking the deficit very quickly and the longer-term costs of allowing large deficits to persist, they could enact a combination of changes in tax and spending policies that increased the deficit in the next few years relative to what it would be under current law but that reduced the deficit thereafter. That approach, however, would allow a greater amount of federal debt to accumulate and might raise doubts about whether longer-term deficit reduction would actually occur. People would be more likely to believe that the future deficit reduction would truly take effect if the future policy changes were specific and widely supported.

Even if policy changes to reduce deficits in the long term were not implemented for several years, making decisions about them sooner rather than later would offer significant advantages. If decisions were reached sooner, people would have more time to plan and adjust their behavior to be prepared for the time at which changes would be implemented. In addition, decisions about policy changes that would reduce future debt relative to amounts under current law would tend to increase output and employment in the next few years by holding down longer-term interest rates, reducing uncertainty, and enhancing businesses' and consumers' confidence.

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6. See Congressional Budget Office, *Economic Impacts of Waiting to Resolve the Long-Term Budget Imbalance* (December 2010), www.cbo.gov/publication/21959. That analysis was based on a projection of slower growth in debt than CBO now projects, so the estimated effects of a similar policy today would be close, but not identical, to the effects estimated in that earlier analysis.

7. Those conclusions do not incorporate the possible negative effects of a fiscal crisis or effects that might arise from the government's reduced flexibility to respond to unexpected challenges.

Budgetary Imbalances Beyond the Next 25 Years

After 2039, the pressures of rising federal budget deficits and debt held by the public would increase further unless laws governing taxes and spending were changed. Although projections for the very long term are highly uncertain, CBO estimates that debt held by the public would be more than twice as large relative to GDP after 75 years as it would be after 25 years (without accounting for the economic effects of such high debt). Moreover, the fiscal gap would be roughly 50 percent larger over a 75-year period than over a 25-year period. (For information on CBO's very long term projections, see Appendix D.)

Consequences of a Large and Growing Federal Debt

The high and rising amounts of federal debt held by the public that CBO projects for the coming decades under the extended baseline would have significant negative consequences for the economy in the long term and would impose significant constraints on future budget policy. In particular, the projected amounts of debt would reduce the total amounts of national saving and income in the long term; increase the government's interest payments, thereby putting more pressure on the rest of the budget; limit lawmakers' flexibility to respond to unforeseen events; and increase the likelihood of a fiscal crisis.

Less National Saving and Future Income

Large federal budget deficits over the long term would reduce investment, resulting in lower national income and higher interest rates than would otherwise occur. Increased government borrowing would cause a larger share of the savings potentially available for investment to be used for purchasing government securities, such as Treasury bonds. Those purchases would crowd out investment in capital goods—factories and computers, for example—which makes workers more productive. Because wages are determined mainly by workers' productivity, the reduction in investment would reduce wages as well, lessening people's incentive to work. Both the government and private borrowers would face higher interest rates to compete for savings, and those rates would strengthen people's incentive to save. However, the rise in saving by households and businesses would be a good deal smaller than the increase in federal borrowing represented by the change in the deficit, so national saving (total saving by all sectors of the economy) would

decline, as would private investment. (For a detailed analysis of those economic effects, see Chapter 6.)

In the short term, budget deficits would boost overall demand for goods and services, thus increasing output and employment relative to what they would be with smaller deficits or with no deficits at all. That is especially true under current economic conditions: Large amounts of unused resources and low inflation have led the Federal Reserve to reduce short-term interest rates almost to zero, so the short-term expansionary effects of deficits are not offset by tighter monetary policy. The impact of greater demand is temporary, though, because stabilizing forces in the economy tend to push output back in the direction of its potential (or maximum sustainable) level. Those forces include the response of prices and interest rates to greater demand and (under typical conditions) actions by the Federal Reserve.

Pressure for Larger Tax Increases or Spending Cuts in the Future

When the federal debt is large, the government ordinarily must make substantial interest payments to its lenders, and growth in the debt causes those interest payments to increase. (Net interest payments are currently fairly small relative to the size of the economy because interest rates are exceptionally low, but CBO anticipates that those payments will increase considerably as interest rates return to more typical levels.)

Higher interest payments would consume a larger portion of federal revenues, resulting in a larger gap between the remaining revenues and the amount that would be spent on federal programs under current law. Hence, if lawmakers wanted to maintain the benefits and services that the government has been accustomed to providing, while preventing deficits from increasing as interest payments grew, revenues would need to increase as well. That could be accomplished in different ways, but to the extent that such increases occurred through higher marginal tax rates (the rates that apply to an additional dollar of income), those higher rates would discourage people from working and saving, thus further reducing output and income. Alternatively, lawmakers could choose to offset rising interest costs at least in part by reducing government benefits and services. Those reductions could be made in many ways, but to the extent that they came from cutting federal investments, future output and income also would be reduced. As another option, lawmakers could respond to higher interest payments by

allowing deficits to increase for some period, but that approach would require greater deficit reduction later if lawmakers wanted to avoid a long-term increase in the debt-to-GDP ratio.

Reduced Ability to Respond to Domestic and International Problems

When the amount of outstanding debt is relatively small, a government can borrow money to address significant unexpected events—recessions, financial crises, or wars, for example. In contrast, when outstanding debt is large, a government has less flexibility to address financial and economic crises—a very costly circumstance for many countries.[8] A large amount of debt also can compromise a country's national security by constraining military spending in times of international crisis or by limiting the country's ability to prepare for such a crisis.

Several years ago, when federal debt was below 40 percent of GDP, the government had some flexibility to respond to the financial crisis and severe recession by increasing spending and cutting taxes to stimulate economic activity, providing public funding to stabilize the financial sector, and continuing to pay for other programs even as tax revenues dropped sharply because of the decline in output and income. As a result, federal debt almost doubled as a percentage of GDP. If federal debt stayed at its current percentage of GDP or increased further, the government would find it more difficult to undertake similar policies under similar conditions in the future. As a result, future recessions and financial crises could have larger negative effects on the economy and on people's well-being. Moreover, the reduced financial flexibility and increased dependence on foreign investors that accompany high and rising debt could weaken U.S. leadership in the international arena.

Greater Chance of a Fiscal Crisis

A large and continuously growing federal debt would have another significant negative consequence: It would

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8. See, for example, Carmen M. Reinhart and Kenneth S. Rogoff, "The Aftermath of Financial Crises," *American Economic Review*, vol. 99, no. 2 (May 2009), pp. 466–472, http://tinyurl.com/ml9kchv; and Carmen M. Reinhart and Vincent R. Reinhart, "After the Fall," *Macroeconomic Challenges: The Decade Ahead* (Federal Reserve Bank of Kansas City, 2011), http://tinyurl.com/lntnp6j (PDF, 1.6 MB). Also see Luc Laeven and Fabian Valencia, *Systemic Banking Crises Database: An Update,* Working Paper 12-163 (International Monetary Fund, June 2012), http://tinyurl.com/p2clvmy.

increase the likelihood of a fiscal crisis in the United States.[9] Specifically, there would be a greater risk that investors would become unwilling to finance the government's borrowing needs unless they were compensated with very high interest rates and, as a result, interest rates on federal debt would rise suddenly and sharply relative to rates of return on other assets. That increase in interest rates would reduce the market value of outstanding government bonds, causing losses for investors and perhaps precipitating a broader financial crisis by creating losses for mutual funds, pension funds, insurance companies, banks, and other holders of government debt—losses that might be large enough to cause some financial institutions to fail.

Unfortunately, there is no way to predict with any confidence whether or when such a fiscal crisis might occur in the United States. In particular, there is no identifiable tipping point in the debt-to-GDP ratio to indicate that a crisis is likely or imminent. All else being equal, however, the larger a government's debt, the greater the risk of a fiscal crisis.

The likelihood of such a crisis also depends on economic conditions. If investors expect continued economic growth, they are generally less concerned about the government's debt burden; conversely, substantial debt can reinforce more generalized concern about an economy. Thus, in many cases around the world, fiscal crises have begun during recessions—and, in turn, have exacerbated them. In some instances, a crisis has been triggered by news that a government would need to borrow an unexpectedly large amount of money. Then, as investors lost confidence and interest rates spiked, borrowing became more expensive for the government. That development forced policymakers to take several actions: cut spending and increase taxes immediately and substantially to reassure investors, renege on the terms of the country's existing debt, or boost inflation to reduce the value of the existing debt. In some cases, a fiscal crisis also made private-sector borrowing more expensive because uncertainty about the government's responses reduced confidence in the viability of private-sector enterprises. Higher private-sector interest rates, when combined with reduced government spending and increased taxes, have tended to worsen economic conditions in the short term.

If a fiscal crisis were to occur in the United States, policymakers would have only limited—and unattractive—options for responding. In particular, the government would need to undertake some combination of three approaches: restructure the debt (that is, seek to modify the contractual terms of existing obligations), pursue an inflationary monetary policy, and adopt an austerity program of spending cuts and tax increases. Thus, such a crisis would confront policymakers with extremely difficult choices and probably have a significantly negative effect on the country.

CBO's Approach to Producing Long-Term Projections

To formulate its extended baseline, CBO projects demographic and economic conditions for the decades ahead and develops assumptions about future policies for the major categories of federal spending and revenues. The set of projected demographic and economic conditions, which CBO refers to as its economic benchmark, is consistent with CBO's baseline projections over the next 10 years and reflects CBO's assessment of long-term trends thereafter; it incorporates an assumption that federal debt as a percentage of GDP and marginal tax rates remain constant at their 2024 levels in subsequent years. (The economic benchmark is described more fully in Appendix A.) CBO's assumptions about federal spending and revenue policies generally reflect current law—they match the assumptions underlying the agency's 10-year baseline through 2024, and they are extended in a similar way to later years. The long-term projections of federal spending, revenues, and debt presented in this and the next few chapters do not incorporate the economic effects of rising debt beyond 2024 or possible changes to fiscal policies; those considerations are addressed in Chapter 6.

Demographic and Economic Projections

Economic growth will be slower in the future than it has been in the past, CBO projects, largely because of a slowdown in the growth of the labor force resulting from the retirement of the baby-boom generation, declining birth rates, and the leveling-off of increases in women's participation in the labor market. The labor force is projected to grow at an average annual rate of 0.5 percent over the next 25 years, compared with the 1.7 percent recorded during the 1970–2007 period. CBO projects that future productivity growth will be close to its historical average. Accounting for those and other economic variables, CBO projects that real (inflation-adjusted) GDP will increase

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9. For additional discussion, see Congressional Budget Office, *Federal Debt and the Risk of a Fiscal Crisis* (July 2010), www.cbo.gov/publication/21625.

at an average annual rate of 2.3 percent over the next 25 years, compared with 3.1 percent during the 1970–2007 period.

In the economic benchmark—in which debt as a percentage of GDP is assumed to remain constant at the 2024 level—CBO projects that interest rates will rise from their unusually low levels today but will still be lower in the future than they have been, on average, during the past few decades. The real interest rate (specifically, the interest rate after adjusting for the rate of increase in the consumer price index) on 10-year Treasury notes is projected to rise to 2.6 percent for the 2017–2024 period. After 2024, it is projected to equal 2.5 percent, below its 1970–2007 average of 3.2 percent and its 1990–2007 average of 3.1 percent.

The average interest rate on all federal debt held by the public tends to be a little lower than the rate on 10-year Treasury notes because interest rates are generally lower on shorter-term debt than on longer-term debt, and, since the 1950s, the average maturity of federal debt has been shorter than 10 years. CBO projects that the average real interest rate on all federal debt held by the public will be 2.2 percent after 2024.

For the 2014–2039 period, the real interest rate on 10-year Treasury notes is projected to average 2.5 percent and the rate for all federal debt held by the public is projected to average 1.7 percent. The average interest rate on federal debt is projected to rise more slowly than rates on 10-year Treasury notes because only a portion of federal debt matures each year.

Those figures for real interest rates reflect an adjustment for inflation that is based on the rate of increase in the consumer price index. Adjusting instead for the rate of increase in the price index for GDP (or the price index for personal consumption expenditures) yields an average real interest rate on all federal debt held by the public over the next 25 years of 2.1 percent. Thus, during the next 25 years as a whole, the growth rate of GDP is projected to exceed the average interest rate on federal debt. However, that pattern is driven by a larger difference between growth rates and interest rates during the coming decade. Beyond 2024, the growth rate of GDP is projected to be below the average interest rate on federal debt. When the growth rate of GDP was less than the interest rate, the ratio of debt to GDP would tend to rise

over time even if the federal budget excluding interest payments was in balance.

Policy Assumptions

CBO's extended baseline is identical to its baseline projections for 2015 through 2024, and it generally follows the baseline concept in later years (see Table 1-2 for a summary of CBO's policy assumptions).

Social Security. CBO projects spending for Social Security under the assumption that there will generally be no changes to current law. CBO also assumes that Social Security will pay benefits as scheduled under current law regardless of the status of the program's trust funds—an assumption that is consistent with a statutory requirement that CBO, in its 10-year baseline projections, assume that funding for any mandatory program is adequate to make all payments required by law for that program.[10] (For more on Social Security, see Chapter 3.)

The Major Health Care Programs. CBO also projects federal spending for the government's major health care programs—Medicare, Medicaid, the Children's Health Insurance Program, and insurance subsidies provided through the exchanges created under the Affordable Care Act (ACA)—for 2015 through 2024 under the assumption that there will generally be no changes to current law. (Unless otherwise specified, Medicare outlays are presented net of offsetting receipts, such as premiums paid by enrollees, which reduce net outlays for that program.) Thus, the projections incorporate the reduction in Medicare's payments to physicians scheduled for 2015 and the reductions in Medicare spending specified in the Budget Control Act of 2011, as amended, for 2015 through 2024.

Beyond 2024, the considerable uncertainty that exists about the evolution of the health care delivery and financing systems leads CBO to employ a formulaic approach in its projections of federal spending for health care programs. Specifically, CBO combines estimates of the number of people who will be receiving benefits from

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10. Section 257(b)(1) of the Balanced Budget and Emergency Deficit Control Act of 1985, 2 U.S.C. §907(b)(1), states that the balances of the trust funds represent the total amount that the government is legally authorized to spend for those purposes. For a discussion of the legal issues related to exhaustion of a trust fund, see Christine Scott, *Social Security: What Would Happen If the Trust Funds Ran Out?* Report for Congress RL33514 (Congressional Research Service, June 15, 2012).

Table 1-2.

Assumptions About Policies for Spending and Revenues Underlying CBO's Extended Baseline

<table>
<tr><td colspan="2" align="center">**Assumptions About Policies for Spending**</td></tr>
<tr><td>Social Security</td><td>As scheduled under current law[a]</td></tr>
<tr><td>Medicare</td><td>As scheduled under current law through 2024; thereafter, projected spending depends on the estimated number of beneficiaries and health care costs per beneficiary (for which growth is projected to move smoothly to the underlying path of excess cost growth rates over the succeeding 15 years and then follow that path)[a] *</td></tr>
<tr><td>Medicaid</td><td>As scheduled under current law through 2024; thereafter, projected spending depends on the estimated number of beneficiaries and health care costs per beneficiary (for which growth is projected to move smoothly to the underlying path of excess cost growth rates over the succeeding 15 years and then follow that path)*</td></tr>
<tr><td>Children's Health Insurance Program</td><td>As projected in CBO's baseline through 2024; remaining constant as a percentage of GDP thereafter</td></tr>
<tr><td>Exchange Subsidies</td><td>As scheduled under current law through 2024; thereafter, projected spending depends on the estimated number of beneficiaries, an additional indexing factor for subsidies, and health care costs per beneficiary (for which growth is projected to move smoothly to the underlying path of excess cost growth rates over the succeeding 15 years and then follow that path)*</td></tr>
<tr><td>Other Mandatory Spending</td><td>As scheduled under current law through 2024; thereafter, refundable tax credits are estimated as part of revenue projections, and the rest of other mandatory spending is assumed to decline as a percentage of GDP at the same annual rate that it is projected to decline between 2019 and 2024</td></tr>
<tr><td>Discretionary Spending</td><td>As projected in CBO's baseline through 2024; remaining constant as a percentage of GDP thereafter</td></tr>
<tr><td colspan="2" align="center">**Assumptions About Policies for Revenues**</td></tr>
<tr><td>Individual Income Taxes</td><td>As scheduled under current law</td></tr>
<tr><td>Payroll Taxes</td><td>As scheduled under current law</td></tr>
<tr><td>Corporate Income Taxes</td><td>As scheduled under current law through 2024; remaining constant as a percentage of GDP thereafter</td></tr>
<tr><td>Excise Taxes</td><td>As scheduled under current law[b]</td></tr>
<tr><td>Estate and Gift Taxes</td><td>As scheduled under current law</td></tr>
<tr><td>Other Sources of Revenues</td><td>As scheduled under current law through 2024; remaining constant as a percentage of GDP thereafter</td></tr>
</table>

Source: Congressional Budget Office.

Notes: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period.

For CBO's most recent 10-year baseline projections, see Congressional Budget Office, *Updated Budget Projections: 2014 to 2024* (April 2014), www.cbo.gov/publication/45229.

GDP = gross domestic product.

a. Assumes the payment of full benefits as calculated under current law, regardless of the amounts available in the program's trust funds.

b. The sole exception to the current-law assumption applies to expiring excise taxes dedicated to trust funds. The Balanced Budget and Emergency Deficit Control Act of 1985 requires CBO's baseline to reflect the assumption that those taxes would be extended at their current rates. That law does not stipulate that the baseline include the extension of other expiring tax provisions, even if they have been routinely extended in the past.

[*Passage clarified on July 29, 2014]

the government's health care programs with fairly mechanical estimates of the growth in spending per beneficiary. (See Chapter 2 for details about the long-term projections for the major health care programs; CBO assumes that Medicare, like Social Security, will pay benefits as scheduled under current law regardless of the status of the program's trust funds.)

Other Mandatory Programs. For other mandatory programs—such as retirement programs for federal civilian and military employees, certain veterans' programs, the Supplemental Nutrition Assistance Program (SNAP), unemployment compensation, and refundable tax credits—the projections through 2024 are based on the assumption that there will generally be no changes to current law.[11] For years after 2024, CBO projects outlays for refundable tax credits as part of its revenue projections and projects spending for the remaining mandatory programs as a whole by assuming that such spending will decline as a share of GDP after 2024 at the same annual rate that it is projected to fall between 2019 and 2024. That is, CBO does not estimate outlays for each program separately after 2024 (see Chapter 4).

Discretionary Spending. Discretionary spending in the extended baseline matches that in the 10-year baseline through 2024. Under current law, most of the government's discretionary appropriations for the 2015–2021 period are constrained by the caps put in place by the Budget Control Act of 2011, as amended. For 2022 through 2024, those appropriations are assumed to grow from the 2021 amount at the rate of anticipated inflation. Funding for certain purposes, such as war-related activities, is not constrained by the Budget Control Act's caps; CBO assumes that such funding will increase each year through 2024 at the rate of inflation, starting from the amount appropriated for the current year. After 2024, discretionary spending is assumed to remain fixed at its percentage of GDP in 2024, with an adjustment for the timing of certain monthly payments (see Chapter 4).[12]

Revenues. Revenue projections through 2024 follow the 10-year baseline, which generally incorporates the assumption that various tax provisions will expire as scheduled even if they have routinely been extended in the past. After 2024, rules for individual income taxes, payroll taxes, excise taxes, and estate and gift taxes are assumed to evolve as scheduled under current law.[13] Because of the structure of current tax law, total federal revenues from those sources are estimated to grow faster than GDP over the long run. Revenues from corporate income taxes and other sources (such as receipts from the Federal Reserve System) are assumed to remain constant as a percentage of GDP after 2024 (see Chapter 5).

Projected Spending Through 2039

Over the past 40 years, federal outlays other than those for the government's net interest costs have averaged 18 percent of GDP. However, in the past several years, noninterest spending has been well above that average, both because of underlying trends and because of temporary circumstances (namely, the financial crisis, the weak economy, and policies implemented in response to them). Noninterest spending spiked to 23 percent of GDP in 2009 but then declined, falling to about 19 percent this year. If current laws that affect spending were unchanged, noninterest outlays would remain at about 19 percent of GDP throughout the coming decade, CBO projects, as an increase in mandatory spending was offset by a decline in discretionary spending relative to the size of the economy. After the mid-2020s, however, under the assumptions of the extended baseline, noninterest spending would rise relative to the size of the economy, reaching 21 percent of GDP by 2039 and remaining on an upward path.

CBO projects that, under current law, spending for net interest would jump from 1.3 percent of GDP this year to more than 3 percent 10 years from now. By 2039, interest costs would reach nearly 5 percent of GDP, bringing total federal spending to 26 percent of GDP (see Figure 1-3). Federal spending has been larger relative to

11. The law governing CBO's baseline projections (section 257(b)(2) of the Deficit Control Act) makes exceptions for some programs, such as SNAP, that have expiring authorizations but that are assumed to continue as currently authorized.

12. Because October 1, 2023—the first day of fiscal year 2024—will fall on a weekend, some payments scheduled for that day will instead be made at the end of September, thus shifting the spending into the previous fiscal year.

13. The sole exception to the current-law assumption applies to expiring excise taxes dedicated to trust funds. The Deficit Control Act requires CBO's baseline to reflect the assumption that those taxes would be extended at their current rates. That law does not stipulate that the baseline include the extension of other expiring tax provisions, even if they have been routinely extended in the past.

Figure 1-3.

Spending and Revenues Under CBO's Extended Baseline, Compared With Past Averages

Percentage of Gross Domestic Product
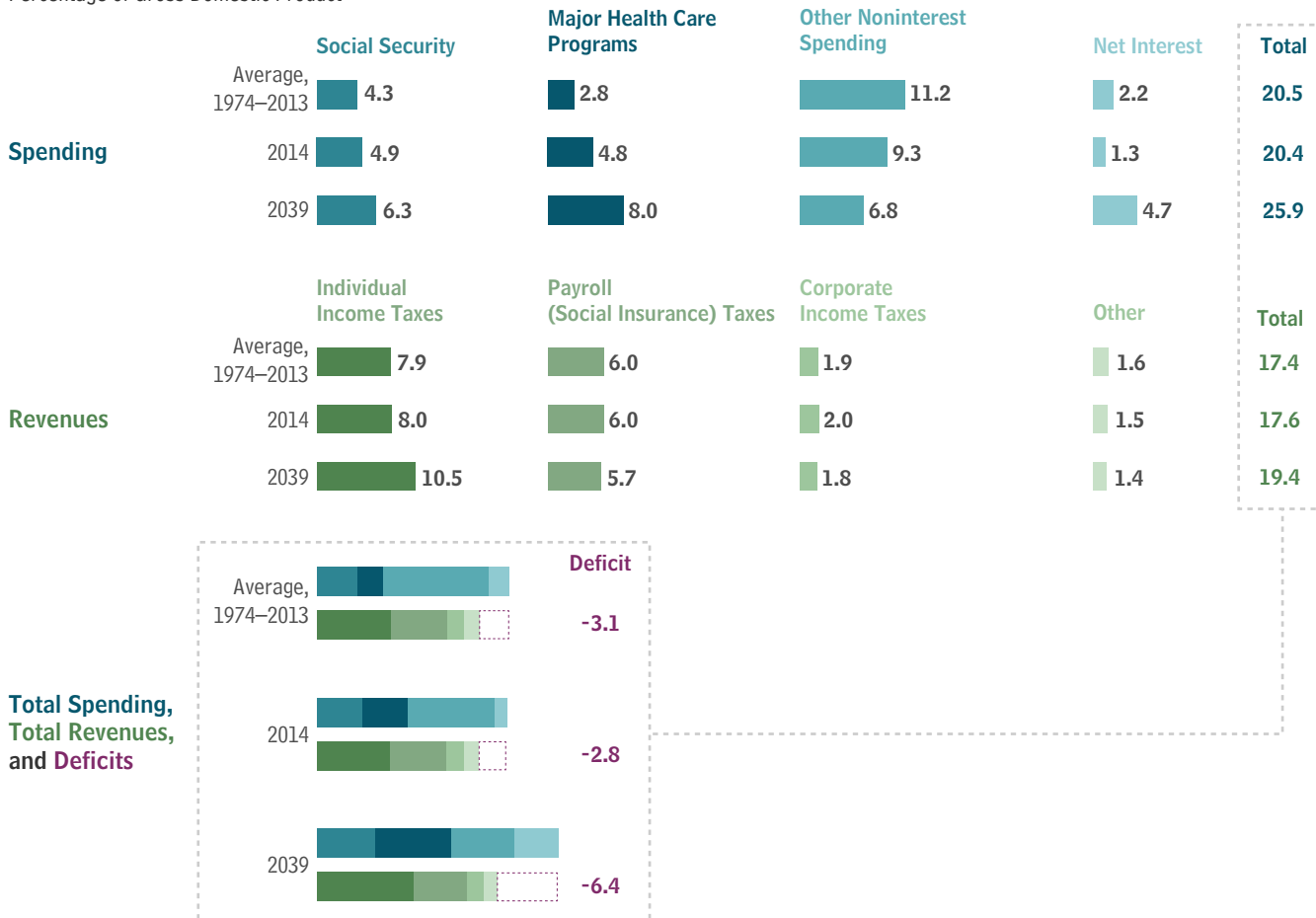
Source: Congressional Budget Office.

Notes: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period.

The major health care programs consist of Medicare, Medicaid, the Children's Health Insurance Program, and subsidies offered through health insurance exchanges. (Medicare spending is net of offsetting receipts.) Other noninterest spending is all federal spending other than that for the major health care programs, Social Security, and net interest.

Other revenues are excise taxes, remittances to the U.S. Treasury from the Federal Reserve System, customs duties, estate and gift taxes, and miscellaneous fees and fines.

the size of the economy only during World War II, when it topped 40 percent of GDP for three years.

Spending for the Major Health Care Programs and Social Security

Mandatory programs have accounted for a rising share of the federal government's noninterest spending over the past few decades, averaging 60 percent in recent years. Most of the growth in mandatory spending has involved the three largest programs—Social Security, Medicare,

and Medicaid. Federal outlays for those programs together made up more than 40 percent of the government's noninterest spending, on average, during the past 10 years, compared with less than 30 percent four decades ago.

Most of the anticipated growth in noninterest spending as a share of GDP over the long term is expected to come from the government's major health care programs: Medicare, Medicaid, the Children's Health Insurance

Program, and the subsidies for health insurance purchased through the exchanges created under the ACA. CBO projects that, under current law, total outlays for those programs, net of offsetting receipts, would grow much faster than the overall economy, increasing from just below 5 percent of GDP now to 8 percent in 2039 (see Chapter 2). Spending for Social Security also would increase relative to the size of the economy, but by much less—from almost 5 percent of GDP in 2014 to more than 6 percent in 2039 and beyond (see Chapter 3).

Those projected increases in spending for Social Security and the government's major health care programs are attributable primarily to three causes: the aging of the population, rising health care spending per beneficiary, and the ACA's expansion of federal subsidies for health insurance. (For estimates of the extent to which each cause contributes to the projected increases in spending, see Box 1-1 on page 22).

The Aging of the Population. The retirement of the baby-boom generation portends a long-lasting shift in the age profile of the U.S. population—a change that will substantially alter the balance between the working-age and retirement-age groups. During the next decade alone, the number of people age 65 or older is expected to rise by more than one-third, and over the longer term, the share of the population age 65 or older is projected to grow from the current 14 percent to 21 percent in 2039. By contrast, the share of the population between the ages of 20 and 64 is expected to drop from 60 percent to 54 percent. Those trends are expected to continue in later decades, although at a slower pace, as life expectancy increases.

The aging of the population is the main factor driving the projected growth of Social Security spending as a percentage of GDP. Initial Social Security benefits are based on a person's earnings history, but those earnings are indexed to the overall growth of wages in the economy, so average benefits increase at approximately the same rate as average earnings. As a result, economic growth does not significantly alter spending for Social Security as a share of GDP. Rather, that share depends primarily on the ratio of the number of people working in jobs covered by Social Security (covered workers) to the number of Social Security beneficiaries. CBO projects that the ratio of covered workers to beneficiaries will decline significantly

over the next quarter century—from almost 3 to 1 now to almost 2 to 1 in 2039—and then continue to drift downward.

Rising Health Care Spending per Beneficiary. Although the growth of health care spending has been slower during the past several years than it had been historically, CBO projects that spending per enrollee in federal health care programs will continue to increase at a faster pace than per capita GDP over the next 25 years. The growth rate of spending per Medicare beneficiary is projected to remain very low over the next few years—reflecting slow growth in the use of medical care, scheduled cuts to payment rate updates, and an influx of younger beneficiaries—but is then projected to increase gradually through 2039 (although remaining below its average growth rate of the past few decades). Compared with Medicare, costs per enrollee in Medicaid and private insurance are expected to grow more rapidly over the coming decade, but CBO projects a gradual slowing in later years. Although costs per beneficiary in federal health care programs are projected to increase faster than per capita GDP over the 25-year projection period, the difference between those two growth rates will be smaller than its average of recent decades, CBO projects (see Chapter 2).

Expansion of Federal Subsidies for Health Insurance. Under provisions of the ACA, many people can purchase subsidized insurance through the health insurance exchanges (or marketplaces) that are operated by the federal or state governments. Those subsidies come in two forms: refundable tax credits that can be applied to premiums, and cost-sharing subsidies that reduce deductibles and copayments. CBO anticipates that 19 million people will receive subsidized health insurance coverage through the exchanges (and that several million others will obtain unsubsidized coverage) in each year between 2019 and 2024.[14]

In addition, as a result of the ACA and a subsequent Supreme Court ruling, each state has the option to expand eligibility for Medicaid to most nonelderly adults whose income is below 138 percent of the federal poverty guidelines (commonly known as the federal poverty level,

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14. See Congressional Budget Office, *Updated Estimates of the Effects of the Insurance Coverage Provisions of the Affordable Care Act, April 2014* (April 2014), Table 3, www.cbo.gov/publication/45231.

or FPL).[15] By calendar year 2018, CBO anticipates, about 80 percent of the potential newly eligible population will live in states that will have expanded their programs.[16] Each year between 2018 and 2024, 13 million more people, on net, are projected to have coverage through Medicaid and CHIP than would have had such coverage in the absence of the ACA.

Other Noninterest Spending
In the extended baseline, total federal spending for everything other than the major health care programs, Social Security, and net interest declines to a smaller percentage of GDP than has been the case for more than 70 years. Such spending has been more than 8 percent of GDP each year since the late 1930s, including about 12 percent of GDP in 1974 and about 10 percent in 1994; CBO estimates that it will be about 9 percent of GDP in 2014. Under the assumptions used for this analysis, that spending is projected to fall below 8 percent of GDP in 2020 and then to decline further, dropping to about 7 percent of GDP in 2039 (see Chapter 4).

Spending for discretionary programs is projected to decline significantly over the next 10 years relative to GDP—from roughly 7 percent to roughly 5 percent—because of the constraints on discretionary funding imposed by the Budget Control Act. For its long-term projections, CBO assumed that discretionary outlays would remain at their 2024 share of GDP, with an adjustment for the timing of certain monthly payments, in subsequent years.

Spending for mandatory programs other than the major health care programs and Social Security also is projected

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15. The ACA expanded eligibility for Medicaid to include nonelderly residents with income up to 133 percent of the FPL, but the law defines the income used to determine eligibility in a way that effectively increases that threshold to 138 percent of the FPL. The FPL is currently $23,850 for a family of four. See Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation, "2014 Poverty Guidelines" (January 2014), http://aspe.hhs.gov/poverty/14poverty.cfm. As a result of the Supreme Court's decision on June 28, 2012, in *National Federation of Independent Business v. Sebelius,* 132 S. Ct. 2566 (2012), some states may choose not to expand their programs.

16. See Congressional Budget Office, *The Budget and Economic Outlook: 2014 to 2024* (February 2014), p. 58, www.cbo.gov/publication/45010.

to decline relative to the size of the economy during the next 10 years. That spending accounts for about 2½ percent of GDP today and, under current law, is projected to fall to about 2 percent of GDP in 2024. That decline would occur in part because the improving economy would reduce the number of people eligible for some programs in this category and in part because payments per beneficiary under some programs tend to rise with prices (which usually increase more slowly than GDP). Beyond 2024, CBO projects, other mandatory spending, excluding the portion related to refundable tax credits, would decline as a share of GDP at the same annual rate that it is projected to fall between 2019 and 2024. As a result, other mandatory spending would fall to less than 2 percent of GDP by 2039—lower than at any point at least since 1962 (the first year for which comparable data are available).

Interest Payments
CBO expects interest rates to rebound in coming years from their current unusually low levels. As a result, the government's net interest costs are projected to more than double relative to the size of the economy over the next decade—from 1¼ percent of GDP in 2014 to more than 3 percent by 2024—even though, under current law, federal debt would be only slightly larger relative to GDP at the end of that decade than it is today.

Beyond 2024, interest rates are assumed to remain close to their projected levels in 2024, so net interest payments would change roughly in line with changes to the amount of federal debt held by the public. By 2039, interest payments would reach nearly 5 percent of GDP under current law. The growth in net interest payments and debt is mutually reinforcing: Rising interest payments push up deficits and debt, and rising debt pushes up interest payments.

Projected Revenues Through 2039
Over the past 40 years, federal revenues have fluctuated between 14½ percent and 20 percent of GDP, averaging 17½ percent, with no evident trend over time. After amounting to nearly 18 percent of GDP in 2007, federal revenues fell sharply in 2009, to 14½ percent of GDP, primarily because of the recession. With an improving economy and changes in certain tax rules that have

Box 1-1.

Causes of Projected Growth in Federal Spending for the Major Health Care Programs and Social Security

Under its extended baseline, the Congressional Budget Office (CBO) projects that the growth of federal noninterest spending as a share of gross domestic product (GDP) results entirely from projected increases in spending for a few large programs: Social Security, Medicare, Medicaid, and the insurance subsidies provided through the health insurance exchanges established under the Affordable Care Act (ACA). The major health care programs, which currently account for about half of total spending for those large programs, are responsible for more than two-thirds of the projected increase in spending for those programs over the next 25 years. (By contrast, under the assumptions that govern the extended baseline, total federal spending on everything other than those programs and net interest is projected to fall significantly as a percentage of GDP over the next 25 years.)

Three factors underlie the projected increase in federal spending for the major health care programs and Social Security relative to the size of the economy:

■ The aging of the U.S. population, which will increase the share of the population receiving benefits from those programs and also affect the average age (and thus the average health care costs) of beneficiaries;

■ The effects of excess cost growth—that is, the extent to which health care costs per beneficiary, adjusted for demographic changes, grow faster than potential GDP per capita;[1] and

■ The continuing expansion of Medicaid under the ACA and the growth in subsidies for health insurance purchased through the exchanges created under that law.

CBO calculated the share of the projected growth in federal spending for the major health care programs and Social Security that could be attributed to each of those factors. (Aging is the only one that affects CBO's projections for Social Security.) The agency compared the outlays projected for those programs under the extended baseline with the outlays that would occur under three alternative paths: one that included aging of the population but no excess cost growth and no expansion of Medicaid or the exchange subsidies, one that included excess cost growth but no aging of the population and no expansion of Medicaid or the exchange subsidies, and one that included both aging and excess cost growth but no expansion of Medicaid or the exchange subsidies.

The ways in which aging of the population and excess cost growth interact accentuate those factors' individual effects. For example, as aging increases the number of Medicare beneficiaries and elderly Medicaid beneficiaries, rising health care spending per person has a greater impact on federal health care spending. Likewise, when per-person health care costs are rising, the increasing number of beneficiaries has greater budgetary consequences. That interaction effect can be identified separately—or, as in CBO's analysis, it can be allocated in proportion to the shares of projected growth that are attributable to the two factors: aging and excess cost growth.

The aging of the population and excess cost growth also affect the budgetary impact of the expansion of Medicaid and the exchange subsidies, but in different directions: Excess cost growth increases the effect of that expansion on federal health care spending, but aging decreases the effect by reducing the share of the population that is under the age of 65 and therefore potentially eligible for the expanded federal benefits.

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1. Potential GDP is the economy's maximum sustainable output.

Continued

Box 1-1.   **Continued**

Causes of Projected Growth in Federal Spending for the
Major Health Care Programs and Social Security

**Explaining Projected Growth in
Federal Spending for Major
Health Care Programs and Social Security**

	Percentage of Projected Growth Through	
	2024	**2039**
Major Health Care Programs and Social Security		
Aging	43	55
Excess Cost Growth	13	24
Expansion of Medicaid and Exchange Subsidies	44	21
Major Health Care Programs		
Aging	21	39
Excess Cost Growth	17	33
Expansion of Medicaid and Exchange Subsidies	62	28

Source: Congressional Budget Office.

According to CBO's calculations, the aging of the population accounts for 55 percent of the projected growth in federal spending for the major health care programs and Social Security as a share of GDP through 2039 (see the table). Excess cost growth accounts for 24 percent, and the expansion of Medicaid and exchange subsidies accounts for the remaining 21 percent. (For more information about CBO's projections of demographic changes over that

period, see Figure 2-3 on page 41; for more information about excess cost growth and spending on federal health care programs, see Chapter 2.)

For the major health care programs alone, the relative impact of the population's aging is smaller and the significance of factors related to health care is greater. Through 2039, aging accounts for 39 percent of projected growth in federal spending for those programs as a share of GDP, excess cost growth accounts for 33 percent, and the expansion of Medicaid and the exchange subsidies together account for 28 percent. Total federal spending for those programs would increase from 4.8 percent of GDP in 2014 to 8.0 percent in 2039 under current law, CBO projects. Of that rise of 3.1 percentage points, aging would contribute 1.2 percentage points; excess cost growth, 1.0 percentage point; and the expansion of Medicaid and the exchange subsidies, 0.9 percentage points.

Under the assumptions of the extended baseline, the relative importance of those three factors would shift over the longer term. The age profile of the population is expected to change less rapidly after 2039, so aging would account for less of the growth in spending for federal programs. The expansion of Medicaid and the exchange subsidies also would account for less of the growth in spending once it took full effect. Thus, after 2039, excess cost growth in the major health care programs would be the primary driver of the total projected growth in spending for those programs and Social Security as a percentage of GDP.

resulted in higher tax rates, revenues have rebounded to 17½ percent of GDP in 2014, CBO estimates.

Individual income taxes account for the bulk of federal revenues—almost half of all revenues in 2013—payroll taxes (also known as social insurance taxes) account for about one-third of all revenues, and corporate income taxes and excise taxes account for most of the remainder.[17]

CBO projects that, under current law, revenues would grow slightly faster than the economy over the coming decade, reaching a little more than 18 percent of GDP by 2024. Individual income taxes would rise as a percentage

17. Most payroll tax revenues come from taxes designated for Social Security and Medicare; the rest come mainly from taxes for unemployment insurance.

of GDP because of structural features of the individual income tax system and the continued economic recovery. That increase would be partially offset by declines in other taxes relative to GDP, most notably receipts from the Federal Reserve and corporate income taxes.

Over the long run, revenues would keep growing slightly more rapidly than GDP under current law. In particular, with rising real income, a greater proportion of income would be taxed in higher income tax brackets because tax brackets are indexed for inflation but not for growth in real income. By 2039, total revenues would be 19½ percent of GDP, CBO projects. Increases in receipts from individual income taxes account for more than the 2 percentage-point rise in total revenues as a percentage of GDP over the next 25 years; receipts from all other sources, taken together, are projected to decline slightly as a percentage of GDP (see Chapter 5).

Even if no changes in tax law were enacted in the future, the effects of the tax system in 2039 would differ in significant ways from what those effects are today. Average taxpayers at all income levels would pay a greater share of income in taxes than similar taxpayers do now, primarily because a greater share of their income would be taxed in higher tax brackets. Moreover, the effective marginal tax rate on labor income (the percentage of an additional dollar of labor income paid in federal taxes) would be about 34 percent, compared with the current 29 percent, and the effective marginal tax rate on capital income (the percentage of an additional dollar of income from investments paid in federal taxes) would be about 19 percent, compared with about 18 percent today.

Changes From Last Year's Long-Term Budget Outlook

Each time it prepares long-term budget projections, CBO incorporates the effects of new legislation and updates the economic and technical aspects of its projections. The projections of federal revenues and outlays presented in this report are generally similar to those published in 2013, despite certain changes in law, revisions to some of the agency's assumptions and methods, and the availability of more recent data.[18] As a result, the projected path

for federal debt is similar to that projected last year. However, a number of small changes (some of them offsetting) have led CBO to estimate a larger fiscal gap and a greater actuarial deficit for Social Security.* (The key revisions to the projections since last year are discussed at greater length in Appendix B.)

Taken together, the legislative, economic, and technical changes had the following effects on CBO's view of the federal budget in the long term:

- Under the extended baseline, CBO now projects that debt would reach 106 percent of GDP in 2039, compared with a projection last year of 102 percent. (Those figures do not incorporate the feedback effects from the economic impact of those paths for federal debt; with such feedback considered, debt in 2039 is now projected to grow to 111 percent of GDP, compared with 108 percent projected last year.)

- The estimated fiscal gap is larger this year than last year. For the 2015–2039 period, CBO now estimates that cuts in noninterest spending or increases in revenues equal to 1.2 percent of GDP in each year through 2039 would be required to have debt in 2039 equal the same percentage of GDP that it constitutes today; last year, CBO estimated that changes equal to 0.9 percent of GDP would be required. That difference is the result of larger gaps between revenues and noninterest spending and the inclusion of other means of financing, offset somewhat by the effect of the lower projected rate of interest.*

- The actuarial shortfall for the Social Security trust funds is estimated to be significantly larger this year than was estimated last year. The estimated actuarial balance for Social Security is the sum of the present value of projected tax revenues and the trust funds' current balance minus the sum of the present value of projected outlays and a target balance at the end of the period; that difference is traditionally presented as a percentage of the present value of taxable payroll. CBO now estimates that the 75-year actuarial deficit for Social Security is 4.0 percent of taxable payroll, compared with the previous projection of 3.4 percent. That change reflects the reduction in projected interest rates, lower payroll tax revenues in CBO's 10-year baseline, updated data, and other factors (see Chapter 3 and Appendix B).

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18. For CBO's long-term projections for the 2013–2038 period, see Congressional Budget Office, *The 2013 Long-Term Budget Outlook* (September 2013), www.cbo.gov/publication/44521.

[*Sentence corrected on July 29, 2014]

The Long-Term Outlook for Major Federal Health Care Programs

Although spending for health care in the United States has grown more slowly in recent years than it had previously, high and rising amounts of such spending continue to pose a challenge not only for the federal government but also for state and local governments, businesses, and households. Measured as a share of economic output, federal spending for Medicare (net of what are termed offsetting receipts, which mostly consist of premiums paid by beneficiaries) and Medicaid rose from 2.0 percent of gross domestic product (GDP) in 1985 to 4.6 percent in 2013. Total national spending on health care services and supplies increased from 4.6 percent of GDP in calendar year 1960 to 9.5 percent in 1985 and to 16.2 percent in 2012, the most recent year for which such data are available.[1]

Underlying those trends, health care spending per person has grown faster, on average, than the nation's economic output per person during the past few decades, even after the recent slowdown is factored in. The Congressional Budget Office (CBO) estimates that growth in health care spending per person outpaced growth in potential (or maximum sustainable) GDP per capita by an average of 1.4 percent per year between calendar years 1985 and 2012 (after adjusting for demographic changes and giving greater weight to more recent years). Key factors contributing to that faster growth were the emergence and increasing use of new medical technologies, rising personal income, and the declining share of health care costs that people paid out of pocket. Those factors were offset in part by other influences that restrained growth, including the spread of managed care plans in the 1990s, the 2007–2009 recession, and legislated changes in

Medicare's payment policies such as those in the Balanced Budget Act of 1997 and the Affordable Care Act (ACA).

The future growth of health care spending by the federal government and by the nation as a whole will depend on many factors, including federal law, demographic changes, and the behavior of households, businesses, and state and local governments. For federal spending on health care, CBO's extended baseline matches the agency's current-law baseline for the next 10 years but employs a formulaic approach beyond that period, reflecting the considerable uncertainties about the evolution of the health care delivery and financing systems in the long run under current law.[2] Specifically, CBO has projected federal spending after 2024 by combining estimates of the number of people who will be receiving benefits from government health care programs with fairly mechanical estimates of the growth in spending per beneficiary:

- Under current law, the number of people receiving benefits from government programs will increase sharply during the next few decades. That increase can be attributed to two main factors. The first is the aging of the population—in particular, the retirement of the baby-boom generation—which will increase the number of people receiving benefits from Medicare by about one-third over the next decade. The second is the expansion of federal support for health insurance under the ACA, which will significantly increase the number of people receiving benefits from Medicaid and make some people eligible for federal subsidies for health insurance purchased through exchanges (or marketplaces).

1. Centers for Medicare & Medicaid Services, National Health Expenditure Accounts, "NHE Tables" (accessed April 18, 2014), http://go.usa.gov/jmGY.

2. For the details of CBO's current-law baseline, see Congressional Budget Office *Updated Budget Projections: 2014 to 2024* (April 2014), www.cbo.gov/publication/45229.

■ CBO assumes that spending growth per beneficiary in each major program will move slowly from its rate at the end of the first decade to an estimate of the underlying growth rate for that program. The underlying growth rates begin with the rate of growth in health care spending in recent decades and are projected to decline gradually as people try to limit their spending for health care in order to maintain their consumption of other goods and services and as state governments, private insurers, and employers respond to the pressures of rising costs.

On the basis of that methodology, CBO expects that federal spending on the government's major health care programs will continue to rise substantially relative to GDP.[3] The major health care programs are Medicare, Medicaid, the Children's Health Insurance Program (CHIP), and the subsidies for health insurance purchased through the exchanges. In CBO's extended baseline, net federal spending for those programs (that is, spending net of offsetting receipts for Medicare) grows from an estimated 4.8 percent of GDP in 2014 to 8.0 percent in 2039; in that year, 4.6 percent of GDP would be devoted to net spending on Medicare and 3.4 percent would be spent on Medicaid, CHIP, and the exchange subsidies. (Box 1-1 on page 22 in provides a quantitative breakdown of the roles that the aging of the population, the expansion of federal subsidies, and growth in health care costs per person play in CBO's spending projections for health care programs.) Beyond 2039, CBO projects, federal health care spending would continue to climb relative to GDP but at a slower rate than during the intervening years.

Those estimates are subject to a considerable degree of uncertainty (as discussed in Chapter 7). A particular
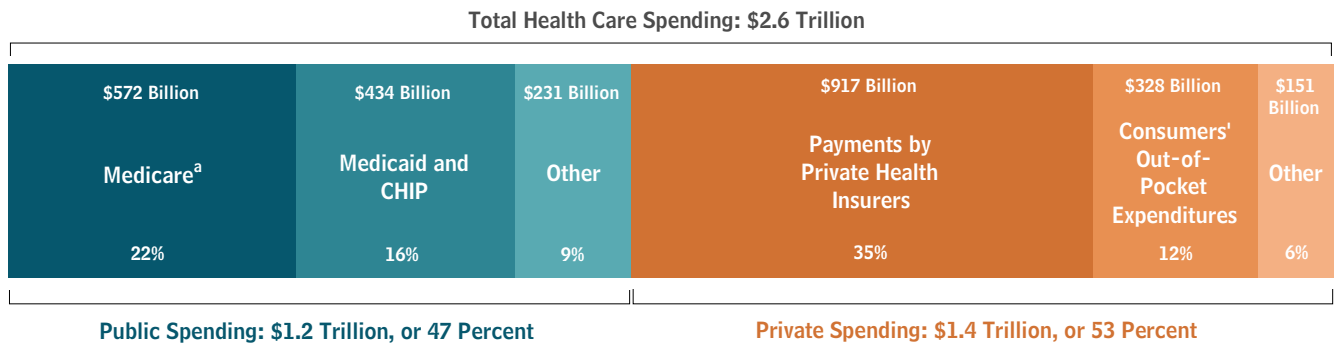
challenge currently is assessing the extent to which the recent slowdown in the growth of health care spending can be attributed to temporary factors like the recession or, instead, reflects more enduring developments. Studies have generally concluded that a portion of the observed reduction in growth cannot be linked directly to the weak economy, although they differ considerably in their assessment of the relative importance of other factors. CBO's own analysis found no direct link between the recession and slower growth in spending for Medicare.[4] Accordingly, over the past several years, CBO has substantially reduced its 10-year and long-term projections of spending per person for Medicare, for Medicaid, and for the country as a whole. However, the growth rates for such spending per person are expected to rebound somewhat from their recent very low levels.

Overview of Major Government Health Care Programs

A combination of private and public sources finances health care in the United States, mostly through various forms of health insurance. The great majority of non-elderly Americans have private health insurance obtained through an employer (which is subsidized indirectly through the tax code): CBO and the staff of the Joint Committee on Taxation (JCT) estimate that about 156 million nonelderly people will have an employment-based health plan as their primary source of coverage in 2014.[5] Many other people will obtain insurance through government programs. In 2014, an estimated 54 million people will be covered by Medicare and an estimated 61 million will be covered by Medicaid.[6] In addition,

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3. In this report, federal discretionary spending on health care— that is, spending that is subject to annual appropriations—is included in the budget projections for other noninterest spending (see Chapter 4 and Table 1-1 on page 10). Such discretionary spending includes federal support for health research and federal spending on health care provided by the Veterans Health Administration. Some mandatory spending on health care (for example, spending for care for federal retirees) is also included in other noninterest spending; that mandatory spending represents a very small share of the federal budget. The spending for subsidies for insurance provided through the exchanges that is analyzed in this chapter includes outlays for cost-sharing subsidies and for the refundable portion of subsidies for premiums; the reduction in taxes paid because of the premium subsidies—which is projected to be much smaller than the increase in outlays for the refundable portion of the subsidies—is reflected in the revenue projections in Chapter 5.

4. See Michael Levine and Melinda Buntin, *Why Has Growth in Spending for Fee-for-Service Medicare Slowed?* Working Paper 2013-06 (Congressional Budget Office, August 2013), www.cbo.gov/publication/44513.

5. Congressional Budget Office, "Effects of the Affordable Care Act on Health Insurance Coverage—Baseline Projections" (April 2014), www.cbo.gov/publication/43900.

6. Congressional Budget Office, "Medicare—Baseline Projections" (April 2014), www.cbo.gov/publication/44205; and "Medicaid— Baseline Projections" (April 2014), www.cbo.gov/publication/44204. Some people have coverage from more than one source at a time. Currently, about 8.5 million people with Medicaid coverage are also covered by Medicare, which is their primary source of coverage. For information on people eligible for benefits through both programs, see Congressional Budget Office, *Dual-Eligible Beneficiaries of Medicare and Medicaid: Characteristics, Health Care Spending, and Evolving Policies* (June 2013), www.cbo.gov/publication/44308. All of the estimates here reflect average monthly enrollment during the year.

Figure 2-1.

Distribution of Spending for Health Care, 2012

Total Health Care Spending: $2.6 Trillion

$572 Billion Medicare[a] 22%	$434 Billion Medicaid and CHIP 16%	$231 Billion Other 9%	$917 Billion Payments by Private Health Insurers 35%	$328 Billion Consumers' Out-of-Pocket Expenditures 12%	$151 Billion Other 6%

Public Spending: $1.2 Trillion, or 47 Percent   Private Spending: $1.4 Trillion, or 53 Percent

Source: Congressional Budget Office based on data from the Centers for Medicare & Medicaid Services.

Note: CHIP = Children's Health Insurance Program.

a. Gross Medicare spending (excludes offsetting receipts from premium payments by beneficiaries and amounts paid by states from savings on Medicaid's prescription drug costs).

CBO and JCT estimate that, over the course of this calendar year, an average of about 6 million people will be covered by health insurance purchased through exchanges run by the federal government or state governments, and most of those people will receive tax subsidies from the federal government to help pay for that insurance; another roughly 7 million people will be covered by a policy purchased directly from an insurer.[7] At any given time during this calendar year, according to CBO and JCT's projections, about 42 million nonelderly people will be uninsured. Over the next few years, the number of people without insurance coverage is projected to decline.

In 2012, the most recent calendar year for which data are available, total spending for health care in the United States amounted to about $2.6 trillion, or 16.2 percent of the nation's GDP.[8] In that year, 53 percent of that spending was financed privately; the rest came from public sources (see Figure 2-1):

- Payments by private health insurers made up 35 percent of total expenditures on health care. Consumers' out-of-pocket expenses, which include payments made to satisfy cost-sharing requirements for services covered by insurance, as well as payments for services not covered by insurance, accounted for another 12 percent of those expenditures.[9] Other sources of private funds, such as philanthropy, accounted for 6 percent of total health care spending.

- Gross federal spending for Medicare made up 22 percent of total expenditures on health care, and federal and state spending for Medicaid and CHIP accounted for 16 percent. Another 9 percent was accounted for by various other public programs, including those run by state and local governments' health departments, by the Department of Veterans Affairs, and by the Department of Defense.

A significant share of health care spending in the private sector is subsidized through provisions in the tax code, primarily through the tax exclusion for employment-based health insurance, which is not reflected in reported totals for health care spending. Under that provision, most payments that employers and employees make for health insurance coverage are exempt from payroll and income taxes. CBO estimates that the federal cost, or tax expenditure, associated with that exclusion—including

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7. Congressional Budget Office, *Updated Estimates of the Effects of the Insurance Coverage Provisions of the Affordable Care Act, April 2014* (April 2014), Box 1, www.cbo.gov/publication/45231.

8. This report defines "total spending for health care" as health consumption expenditures in the national health expenditure accounts maintained by the Centers for Medicare & Medicaid Services. That concept excludes spending on medical research, structures, and equipment. Under a broader definition that includes those categories, total national expenditures for health care were 17.2 percent of GDP in 2012. For more information, see Anne B. Martin and others, "National Health Spending in 2012: Rate of Health Spending Growth Remained Low for the Fourth Consecutive Year," *Health Affairs*, vol. 33, no. 1 (January 2014), pp. 67–77, http://dx.doi.org/10.1377/hlthaff.2013.1254.

9. In this analysis, out-of-pocket payments do not include the premiums that people pay for health insurance (because premiums fund the payments that insurers provide, which are already included in the measure of spending by private insurers).

the effects on revenues from both payroll and income taxes—was roughly $250 billion in 2013, equal to nearly one-quarter of health care spending on private health insurance that year and comparable to federal spending on Medicaid.[10]

Medicare

In 2014, by CBO's projections, Medicare will provide federal health insurance to about 54 million people who are elderly or disabled or have end-stage renal disease. The elderly make up about 85 percent of enrollees; in general, people become eligible for Medicare when they reach 65, and disabled individuals become eligible for the program 24 months after they qualify for benefits under Social Security's Disability Insurance program.[11]

The Medicare program provides a specified set of benefits. Hospital Insurance (HI), or Medicare Part A, primarily covers inpatient services provided by hospitals as well as care in skilled nursing facilities, home health care, and hospice care. Part B mainly covers services provided by physicians and other practitioners and by hospitals' outpatient departments, and Part D provides a prescription drug benefit. Most enrollees in Medicare are in the traditional fee-for-service program, in which the federal government pays for covered services directly, but enrollees can instead obtain coverage for Medicare benefits through a private health insurance plan under Part C of the program, known as Medicare Advantage. About 30 percent of Medicare beneficiaries are currently enrolled in Medicare Advantage. In 2013, net spending for Medicare (that is, with the offsetting receipts that mostly consist of beneficiaries' payments of premiums taken into account) was $492 billion, and gross spending for Medicare was $585 billion.

The various parts of the program are financed in different ways. For Part A, benefits are financed primarily by a payroll tax (2.9 percent of all taxable earnings), the revenues from which are credited to the HI trust fund. An

additional 0.9 percent tax on earnings over $200,000 ($250,000 for married couples) is also credited to the trust fund.[12] For Part B, premiums paid by beneficiaries cover just over one-quarter of outlays, and the government's general funds cover the rest. Federal payments to private insurance plans under Part C are financed by a blend of funds from Parts A and B. Enrollees' premiums under Part D are set to cover about one-quarter of the cost of the basic prescription drug benefit, although many low-income enrollees pay no premiums; general funds from the Treasury cover most of the remaining cost. Altogether, in calendar year 2012, receipts from the payroll tax were equal to about 36 percent of gross federal spending on Medicare, beneficiaries' premiums were equal to about 12 percent, and general funds allocated to the program's trust funds amounted to about 37 percent; the trust funds are also credited with money from other sources.[13]

The cost-sharing obligations of enrollees in the fee-for-service, or traditional, portion of Medicare vary widely by type of service, and the program does not set an annual cap on the amount of health care costs for which beneficiaries are responsible. However, the vast majority of beneficiaries have supplemental insurance that covers many or all of the program's cost-sharing requirements. According to one recent study, nearly all beneficiaries in Medicare have some supplemental coverage (about 93 percent in 2009); the most common sources of supplemental coverage are plans for retirees offered by former employers, individually purchased medigap policies, Medicaid, and Medicare Advantage.[14]

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10. For more information about the tax exclusion, see Congressional Budget Office, *The Distribution of Major Tax Expenditures in the Individual Income Tax System* (May 2013), www.cbo.gov/ publication/43768.

11. People with amyotrophic lateral sclerosis (also known as Lou Gehrig's disease) who receive Social Security Disability Insurance benefits are eligible for Medicare in the month that their disability benefits start.

12. Those thresholds are not indexed for inflation. Also, certain individuals are subject to an additional 3.8 percent tax on unearned income that is officially labeled as a Medicare tax even though the revenues are not credited to the HI trust fund.

13. Calculations are based on data from Boards of Trustees, Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds, *2013 Annual Report of the Boards of Trustees of the Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds* (May 2013), Table II.B1, http://go.usa.gov/ bUZm. The measures of benefits and premium receipts in that table treat Part D premiums for basic benefits that beneficiaries pay directly to plans as if those premiums were paid to Medicare and then disbursed to the plans.

14. Medicare Payment Advisory Commission, *A Data Book: Health Care Spending and the Medicare Program* (June 2013), p. 51, www.medpac.gov/document_TOC.cfm?id=617.

A number of provisions of law constrain the rates that Medicare pays to providers of health care:

■ Payments for physicians' services in Medicare are governed by the sustainable growth rate mechanism, a formula established by law that governs the year-to-year changes in payment rates. Under current law, those payment rates will be reduced by about 24 percent in April 2015 and will increase by small amounts in most subsequent years, CBO projects—remaining below current levels throughout the next decade. In recent years, legislation has been enacted to block similar reductions that were scheduled to occur.

■ The ACA contains numerous provisions that, on balance, are reducing federal spending on Medicare. The provisions that will have the greatest effect on the growth of Medicare spending impose permanent reductions in the annual updates to Medicare's payment rates for many types of health care providers (other than physicians) in the fee-for-service portion of the program. Under the law prior to the ACA (and in the absence of any other legislation to limit updates), those payment updates generally would have been equal to the estimated percentage change in the average prices of providers' inputs (such as labor and equipment). Under current law, however, those updates equal the percentage change in those prices minus the 10-year moving average of growth in productivity in the economy overall—a measure that seeks to capture, for the economy as a whole, how many fewer inputs are being used to produce a given level of output. (The law also specifies additional reductions in payment updates in certain years.)

■ In addition, the ACA established an Independent Payment Advisory Board (IPAB), which is required to submit a proposal to reduce Medicare spending in certain years if the rate of growth in spending per enrollee is projected to exceed specified targets. The proposal—or an alternative proposal submitted by the Secretary of Health and Human Services if the board does not submit a qualifying proposal—must achieve a specified amount of savings in the year it is implemented while not increasing spending in the succeeding nine years by more than the amount of those first-year savings. The proposal would go into effect automatically unless blocked or replaced by subsequent legislation.[15] According to CBO's

projections, under current law, growth in Medicare spending will remain below the IPAB's target growth rate during the next decade. However, the IPAB mechanism will generate savings in some subsequent years, CBO expects, because variation in Medicare's spending growth will probably cause it to exceed the target rate in some years.

■ The Budget Control Act of 2011, as amended, specifies automatic procedures—sequestration, or the cancellation of funding—that will reduce most Medicare payments to providers for services furnished through September 2024. Those provisions will reduce payment rates for most services by 2 percent between 2014 and the first half of fiscal year 2023, by 2.9 percent for the second half of fiscal year 2023, by 1.1 percent for the first half of fiscal year 2024, and by 4.0 percent for the second half of fiscal year 2024. All told, CBO projects that sequestration will cancel $167 billion of Medicare payments to providers and health insurance plans over the 2014–2024 period.[16]

Medicaid, CHIP, and Subsidies to Purchase Health Insurance Through Exchanges
Spending for Medicaid, CHIP, and the exchange subsidies provides federal support for low- and moderate-income households to obtain health care.

Medicaid. A joint federal-state program, Medicaid pays for health care services for low-income people, including children, adults who are elderly or disabled, and some other adults. Subject to broad federal requirements, state governments historically have had substantial flexibility under Medicaid to determine eligibility, benefits, and payments to providers, and they have used that flexibility to differing degrees. Most recently, as a result of the ACA and a subsequent Supreme Court ruling, each state has the option to expand eligibility for Medicaid to most

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15. From 2015 through 2019, the target growth rate is the average of inflation in the economy generally and inflation for medical services in particular; in subsequent years, the target growth rate is the percentage increase in per capita GDP plus 1 percentage point. The ACA places a number of limitations on the actions available to the IPAB, including a prohibition against modifying Medicare's eligibility rules or reducing benefits.

16. Estimated annual effects of the sequestration on Medicare spending are presented in Congressional Budget Office, "Medicare—Baseline Projections" (April 2014), www.cbo.gov/publication/44205.

nonelderly adults with income below 138 percent of the federal poverty guidelines (commonly referred to as the federal poverty level, or FPL).[17] Twenty-seven states, with about 45 percent of the potential newly eligible population, have expanded their programs to date. CBO anticipates that additional states will expand coverage during the next few years so that, by 2018, about 80 percent of the potential newly eligible population will be in states that have extended coverage.[18]

The federal government's share of Medicaid's spending for benefits varies among the states. That share historically has averaged about 57 percent across states, but for enrollees newly eligible under the ACA's coverage expansion, the federal government will pay all costs through 2016, a slightly declining share of costs from 2017 to 2019, and 90 percent of costs in 2020 and subsequent years. According to CBO's estimates, those changes will result in a federal share of Medicaid's spending that averages about 60 percent in 2020 and beyond.

In 2013, federal spending for Medicaid was $265 billion, of which $239 billion covered benefits for enrollees.[19] (In addition to benefits, Medicaid's spending included payments to hospitals that provide a "disproportionate share" of Medicaid and uncompensated care, costs for the Vaccines for Children program, and administrative expenses.) On the basis of data provided by the Centers for Medicare & Medicaid Services (CMS), CBO estimates that states spent $192 billion on Medicaid in 2013.[20]

States administer their Medicaid programs under federal guidelines that specify a minimum set of services that must be provided to certain categories of low-income people. Required services include inpatient and outpatient hospital services, services provided by physicians and laboratories, and nursing home and home health care. Subject to those requirements and other statutory limits, states have flexibility in administering their programs. States may choose to make additional groups of people eligible (such as nonelderly adults who have income below 138 percent of the FPL or who have income that is not especially low but have high medical expenses relative to their income) or to provide additional benefits (such as coverage for prescription drugs and dental services), and they have exercised those options to varying degrees. Moreover, many states seek and receive federal waivers that allow them to provide benefits and cover groups that would otherwise be excluded. As a result, the program's rules are complex, and it is difficult to generalize about the types of enrollees covered, the benefits offered, and the cost sharing required. By one estimate, federal and state expenditures on optional populations and benefits accounted for about 60 percent of the Medicaid program's total spending in 2007, a figure that would probably be much higher if updated to reflect expansions in coverage under the ACA.[21]

About 77 million people will be enrolled in Medicaid at some point during 2014, CBO estimates; the average enrollment over the course of the year will be about 61 million. Those two ways of measuring enrollment yield divergent estimates because many people are enrolled in Medicaid for only part of a year. Currently, almost half of Medicaid's enrollees are children in low-income families, and almost one-third are adults under age 65 with low income who are not disabled. The elderly and disabled constitute the other enrollees, amounting to about one-fifth of the total. Expenses tend to be higher for beneficiaries who are elderly and disabled, many of whom require long-term care, than for other beneficiaries. In 2013, the elderly and disabled accounted for more than 60 percent of federal spending for benefits provided by Medicaid. About 30 percent of federal spending for

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17. The ACA expanded eligibility for Medicaid to include nonelderly residents with income up to 133 percent of the FPL, but the act defines the income used to determine eligibility in a way that effectively increases that threshold to 138 percent of the FPL. The FPL is currently $23,850 for a family of four. See Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation, "2014 Poverty Guidelines" (January 2013), http://aspe.hhs.gov/poverty/14poverty.cfm. As a result of the Supreme Court's decision issued on June 28, 2012 (*National Federation of Independent Business v. Sebelius,* 132 S. Ct. 2566 (2012)), some states may choose not to expand their programs.

18. Congressional Budget Office, *The Budget and Economic Outlook: 2014 to 2024* (February 2014), p. 58, www.cbo.gov/publication/45010.

19. Congressional Budget Office, "Medicaid—Baseline Projections" (April 2014), www.cbo.gov/publication/44204.

20. CBO's calculations rely on unpublished data for the CMS-64 Quarterly Expense Report for fiscal year 2013. States use CMS Form 64 to report their expenditures for Medicaid-covered benefits and administrative activities.

21. Brigette Courtot, Emily Lawton, and Samantha Artiga, *Medicaid Enrollment and Expenditures by Federal Core Requirements and State Options* (Kaiser Commission on Medicaid and the Uninsured, January 2012), p. 1, http://tinyurl.com/pfb72d7.

benefits was for long-term services and supports, which include institutional care provided in nursing homes and certain other facilities, as well as care provided in a person's home or in the community.[22]

Children's Health Insurance Program. CHIP is a much smaller joint federal-state program that provides health insurance coverage for children living in families with income that is modest but too high for them to qualify for Medicaid.[23] Like Medicaid, CHIP is administered by the states within broad federal guidelines. Unlike Medicaid, however, CHIP is a matching-grant program with a fixed nationwide cap on federal spending.[24] In 2013, federal spending on CHIP was $9.5 billion, and about 8.4 million people (almost all children) were enrolled in the program at some point during the year.[25] The federal share of CHIP spending varies among the states but averages about 70 percent in most years.[26]

Subsidies for Insurance Purchased Through Exchanges. Under provisions of the ACA, many individuals and families can purchase subsidized insurance through exchanges operated by the federal government or by state governments. Those subsidies come in two forms: refundable tax credits that can be applied to premiums, and cost-sharing subsidies to reduce out-of-pocket expenses such as deductibles and copayments. To qualify for the premium tax credits, people generally must have household income between 100 percent and 400 percent of the FPL and not have access to certain other sources of health insurance coverage (such as "affordable" coverage through an employer, as defined in the ACA, or coverage from a

government program, such as Medicare or Medicaid). To qualify for the cost-sharing subsidies, people must meet the requirements for the premium tax credits and have household income below 250 percent of the FPL.

The amount of the premium tax credit is set such that the cost to an enrollee in the second-lowest-cost "silver" plan (which covers about 70 percent of the costs of covered benefits) generally equals a specified percentage of the enrollee's household income. For example, in calendar year 2014, the tax credit is set so that people with income between 100 percent and 133 percent of the FPL pay 2 percent of their income to enroll in such a plan, and people with higher income pay a larger share of their income, up to 9.5 percent for enrollees with income between 300 percent and 400 percent of the FPL. (If the premiums are less than the specified percentages of income, then no tax credit applies.) The amounts that enrollees must pay are indexed so that the subsidies cover roughly the same shares of the premiums over time. After calendar year 2018, however, an additional indexing factor may apply; if so, the shares of the premiums that enrollees pay will increase, and the shares of the premiums that the subsidies cover will decline.[27]

CBO and JCT estimate that, over the course of calendar year 2014, an average of about 6 million people will be covered by insurance purchased through the exchanges, of whom about 5 million will receive subsidies. Over time, coverage through the exchanges will increase substantially, CBO and JCT expect, as people respond to the subsidies and to rising penalties for failing to obtain coverage: By CBO and JCT's projections, an average of about 13 million people will have such coverage in 2015, about 24 million in 2016, and about 25 million in each year between 2017 and 2024. Roughly three-quarters of those enrollees are expected to receive subsidies. In fiscal year 2014, outlays for those subsidies and related spending will be about $15 billion, CBO and JCT estimate.[28]

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22. Congressional Budget Office, "Medicaid—Baseline Projections" (April 2014), www.cbo.gov/publication/44204.

23. Under certain limited conditions, parents of children enrolled in CHIP and pregnant women are also eligible for the program, but they constitute a very small percentage of the program's enrollment. See Congressional Budget Office, "Children's Health Insurance Program—Baseline Projections" (April 2014), www.cbo.gov/publication/44189.

24. Under current law, authorization for CHIP expires after September 2015.

25. Congressional Budget Office, "Children's Health Insurance Program—Baseline Projections" (April 2014), www.cbo.gov/publication/44189.

26. The ACA provided for an increase in the federal share of CHIP spending such that the national average is projected to be 93 percent from 2016 through 2019, after which it will revert to 70 percent. See Centers for Medicare & Medicaid Services, "Children's Health Insurance Program Financing" (accessed April 17, 2014), http://tinyurl.com/kqjfj3s.

27. The additional indexing factor will apply in any year after calendar year 2018 in which the total costs of exchange subsidies exceed a specified percentage of GDP. CBO expects that the indexing factor will apply eventually, although the uncertainty of projections of both the exchange subsidies and GDP make the timing unclear.

28. See Congressional Budget Office, *Updated Estimates of the Effects of the Insurance Coverage Provisions of the Affordable Care Act, April 2014* (April 2014), Table 3, www.cbo.gov/publication/45231. Related spending includes grants to states and payments by the federal government to insurers under several provisions of the ACA.

The Historical Growth of Health Care Spending

Total spending for health care in the United States—that is, private and public spending combined—has risen significantly as a share of GDP over the past several decades. Such spending has grown relative to GDP in most years, with the notable exception of the periods between calendar years 1993 and 2000 and again between 2009 and 2012 (the most recent year for which data are available), when spending for health care remained roughly stable as a share of the economy.

Some analysts have attributed the lull in growth from 1993 to 2000 to a substantial rise in the number of people enrolled in managed care plans as well as to excess capacity among some types of providers, which increased the leverage that health plans had in negotiating payments; also, economic growth was relatively rapid in that period.[29] In examining the most recent slowdown in health care spending—from 2009 to 2012—analysts have reached different conclusions about the relative contributions of the weak economy and changes in the health care delivery and financing systems. Some analysts believe that an expansion of high-deductible health plans, states' efforts to control Medicaid spending, and a slackening in the diffusion of new technologies are the key factors in the most recent slowdown.[30] Others believe that the weakened economy was the primary factor.[31] How long the slowdown might persist is highly uncertain: Some recent studies indicate that spending growth for health care started to increase in 2013 or project faster growth in 2014, but other recent analyses suggest that spending and premiums for employment-based coverage grew more slowly in 2014 than in 2013.[32]

Spending for Medicare and Medicaid has also grown quickly in the past few decades, on average, in part because of rising enrollment and in part because of rising costs per enrollee. Between 1985 and 2013, federal spending for Medicare, net of offsetting receipts, rose from 1.5 percent of GDP to 3.0 percent, and federal spending for Medicaid increased from 0.5 percent of GDP to 1.6 percent (while total spending for Medicaid, including spending by the states, increased from 0.9 percent of GDP to 2.8 percent). During the last few years of that period, however, net federal spending for Medicare and federal spending for Medicaid grew at rates similar to that for the economy overall. In 2014, though, spending for Medicaid is increasing rapidly because of the expansion of Medicaid coverage under the ACA. In a comparison of the period from October 2013 through May 2014 with the same period one year earlier (the latest year-over-year comparison available when this report was prepared), net Medicare spending grew by only 0.3 percent, whereas Medicaid spending grew by 8.2 percent.[33]

Factors Affecting Growth in Health Care Spending

A crucial factor underlying the rise in per capita spending for health care during the past few decades has been the emergence, adoption, and widespread diffusion of new medical technologies and services.[34] Major advances in medical science allow providers to diagnose and treat illnesses in ways that previously were impossible. Many of those innovations rely on costly new drugs, equipment, and skills.[35] Other innovations are relatively inexpensive, but their costs add up quickly as growing numbers of providers and patients make use of them. Although technological advances can sometimes reduce costs, in

29. See Katharine Levit and others, "National Health Expenditures in 1997: More Slow Growth," *Health Affairs,* vol. 17, no. 6 (1998), pp. 99–110, http://tinyurl.com/otuc45a.

30. See, for example, Amitabh Chandra, Jonathan Holmes, and Jonathan Skinner, *Is This Time Different? The Slowdown in Healthcare Spending*, Working Paper 19700 (National Bureau of Economic Research, December 2013), www.nber.org/papers/w19700.

31. See, for example, Kaiser Family Foundation, "Assessing the Effects of the Economy on the Recent Slowdown in Health Spending" (April 22, 2013), http://tinyurl.com/m78guc9.

32. See IMS Institute for Healthcare Informatics, *Medicine Use and Shifting Costs of Healthcare: A Review of the Use of Medicines in the United States in 2013* (April 2014), http://tinyurl.com/pl9nzzx (PDF, 2.7 MB); Gigi A. Cuckler and others, "National Health Expenditure Projections, 2012–22: Slow Growth Until Coverage Expands and Economy Improves," *Health Affairs*, vol. 32, no. 10 (October 2013), pp. 1820–1831, http://dx.doi.org/10.1377/hlthaff.2013.0721; Milliman, *2014 Milliman Medical Index* (May 2014), http://tinyurl.com/lneljrl (PDF, 462 KB); and ADP Research Institute, *ADP Annual Health Benefits Report* (2014), http://tinyurl.com/lmfz28s.

33. Congressional Budget Office, *Monthly Budget Review for May 2014* (June 2014), www.cbo.gov/publication/45426.

34. Congressional Budget Office, *Technological Change and the Growth of Health Care Spending* (January 2008), www.cbo.gov/publication/41665.

35. See, for example, Jay H. Hoofnagle and Averell H. Sherker, "Therapy for Hepatitis C—The Costs of Success," *New England Journal of Medicine*, vol. 370, no. 16 (2014), pp. 1552–1553, http://tinyurl.com/p7z4tyu.

medicine, such advances and the resulting changes in clinical practice have generally increased total spending.

Other factors that have contributed to the growth of per capita spending on health care in recent decades include increases in personal income and declines in the share of health care costs that people with insurance coverage pay out of pocket. Demand for medical care tends to rise as real (inflation-adjusted) family income increases, and people also use more care if they pay a smaller portion of the cost. Between 1970 and 2000, the share of health consumption expenditures paid out of pocket declined rapidly, from 37 percent to 16 percent; the rate of decline has slowed in more recent years, however, and the out-of-pocket share was about 12 percent in 2012.[36] Factors that have slowed growth in the share of costs covered by insurance include increases in the share of people with insurance who have an annual deductible and increases in the share enrolled in high-deductible health plans.

In general, disentangling the effects of technology, income, and insurance coverage on the growth of health care spending is difficult because the growth of income and insurance coverage has increased the demand for new technologies. One study estimated that new medical technologies and rising income were the most important factors explaining the growth in health care spending between 1960 and 2007, with the two accounting for similar shares of that growth.[37] But the study also noted that the effect of the expansion in insurance coverage on spending growth during that period is highly uncertain. Another study concluded that the expansion of insurance coverage resulting from the introduction of Medicare had a substantial impact on national spending on health care—raising spending not just for the elderly patients who gained coverage but for younger patients as well. It attributed part of the impact to more rapid and widespread adoption of existing treatment methods (such as those provided by cardiac intensive care units) but concluded that questions remained about the magnitude of those effects.[38]

Spending on health care per person would also be expected to grow if people were developing more health problems or becoming more likely to contract diseases, but the evidence on the importance of those factors is mixed. In particular, researchers have reached different conclusions about the contributions to changes in health care spending of changes in the prevalence of chronic diseases (such as cardiovascular disease, diabetes, and arthritis), the share of the people with those diseases who receive treatment, and costs per case.[39]

In addition, studies that have analyzed the sources of growth in health care spending in the past have consistently found that the aging of the population has had only a small effect.[40] Although older adults generally have higher average medical expenses than younger adults do, the age composition of the population has not changed sufficiently to account for much of the increase in per capita spending. Aging has had a larger effect on federal spending for health care, however, because nearly all U.S. residents become eligible for Medicare when they turn 65. From calendar year 1985 to 2014, the share of the

36. See Centers for Medicare & Medicaid Services, National Health Expenditure Accounts, "NHE Tables" (accessed April 18, 2014), http://go.usa.gov/jmGY.

37. Sheila Smith, Joseph P. Newhouse, and Mark S. Freeland, "Income, Insurance, and Technology: Why Does Health Spending Outpace Economic Growth?" *Health Affairs*, vol. 28, no. 5 (September/October 2009), pp. 1276–1284, http://dx.doi.org/10.1377/hlthaff.28.5.1276.

38. Amy Finkelstein, "The Aggregate Effects of Health Insurance: Evidence From the Introduction of Medicare," *Quarterly Journal of Economics,* vol. 122, no. 1 (February 2007), pp. 1–37, http://qje.oxfordjournals.org/content/122/1/1.short. One factor that may have contributed to that study's findings was the relatively generous payment system that Medicare adopted. Following the common practice of private insurers at the time, Medicare initially paid hospitals on the basis of their incurred costs—an approach that gave hospitals little incentive to control those costs. The increase in hospital spending that resulted from Medicare's creation might have been smaller under a less generous payment system.

39. For additional discussion, see Congressional Budget Office, *Key Issues in Analyzing Major Health Insurance Proposals (*December 2008), p. 23, www.cbo.gov/publication/41746. See also Congressional Budget Office, *How Does Obesity in Adults Affect Spending on Health Care?* (September 2010), www.cbo.gov/publication/21772; Charles S. Roehrig and David M. Rousseau, "The Growth in Cost per Case Explains Far More of U.S. Health Spending Increases Than Rising Disease Prevalence," *Health Affairs*, vol. 30, no. 9 (September 2011), pp. 1657–1663, http://dx.doi.org/10.1377/hlthaff.2010.0644; and Kenneth E. Thorpe and others, "The Rising Prevalence of Treated Disease: Effects on Private Health Insurance Spending," *Health Affairs,* web exclusive (June 2005), http://dx.doi.org/10.1377/hlthaff.w5.317.

40. See, for example, Uwe E. Reinhardt, "Does the Aging of the Population Really Drive the Demand for Health Care?" *Health Affairs,* vol. 22, no. 6 (November 2003), pp. 27–39, http://dx.doi.org/10.1377/hlthaff.22.6.27.

population that was age 65 or older grew by about one-fifth, from almost 12 percent to 14 percent.

Excess Cost Growth

When analyzing historical trends in the growth of health care spending and developing projections for the future growth of that spending, distinguishing between various components of that growth is useful. As part of that analysis, CBO calculates the growth in health care spending per person relative to the growth of potential GDP per person after removing the effects of demographic changes on health care spending—in particular, changes in the population's age distribution.[41] The resulting ratio of those growth rates is generally referred to as excess cost growth. The phrase is not intended to imply that growth in per capita spending for health care is necessarily excessive or undesirable; it simply measures the extent to which the growth in such spending (adjusted for demographic changes) outpaces the growth in potential output per capita.

According to CBO's calculations, weighted-average rates of excess cost growth have ranged between 0.1 percent and 1.9 percent for various parts of the health care system and during various multiyear periods in the past several decades (see Table 2-1).[42] Although such rates are quite variable from year to year, they have generally declined over the past few decades. That slowing probably stemmed, at least partially, from two important shifts in how care is financed: First, private health insurance moved away from indemnity policies—which generally reimburse enrollees for their incurred medical costs and

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41. Potential GDP is CBO's estimate of the maximum sustainable output of the economy; using potential GDP rather than actual GDP in the calculation of excess cost growth limits the effect of cyclical changes in the economy on that calculation.

42. The rates of excess cost growth shown in the table are a weighted average of annual rates, placing twice as much weight on the latest year as on the earliest year. In calculating excess cost growth for Medicare, CBO adjusts for changes in the projected life expectancy (time until death) of beneficiaries. In calculating excess cost growth for Medicaid, CBO adjusts for changes in the program's case mix—that is, the proportions of beneficiaries who are children, elderly individuals, disabled individuals, and other adults—rather than for changes in the age composition of the population of beneficiaries. The introduction of Medicare's Part D drug benefit in 2006 resulted in a onetime shift in some spending from Medicaid to Medicare; to adjust for that shift, CBO assumed that excess cost growth in 2006 for both Medicare and Medicaid was equal to the average of excess cost growth in the two programs for that year.

Table 2-1.

Excess Cost Growth in Spending for Health Care

Percent

	Medicare	Medicaid	Other	Overall
1975 to 2012	1.9	1.5	1.9	1.9
1980 to 2012	1.6	1.1	1.8	1.7
1985 to 2012	1.4	0.7	1.5	1.4
1990 to 2012	1.2	0.1	1.3	1.1

Source: Congressional Budget Office.

Note: Excess cost growth refers to the extent to which the annual growth rate of nominal Medicare or Medicaid spending per beneficiary, or of all other health care spending per capita or overall health care spending per capita—adjusted for demographic characteristics of the relevant populations—outpaced the annual growth rate of potential gross domestic product (GDP) per capita, on average. (Potential GDP is CBO's estimate of the maximum sustainable output of the economy.) The reported rates of excess cost growth are a weighted average of annual rates, placing twice as much weight on the latest year as on the earliest year.

which predominated before the 1990s—and toward greater management of care. Second, beginning in the 1980s, Medicare shifted from cost-based and charge-based payments to fee schedules that constrain price increases.

Excess cost growth was especially low, on average, during two periods—in the 1990s and during the past few years. In the 1990s, managed care was spreading most rapidly, and some of the slowing probably represented a series of downward shifts in health care costs, spread out over several years, rather than a permanent change in the underlying growth rate. During the past few years, some of the slowing (apart from that for Medicare) probably reflects the economic downturn and may be reversed once the economy recovers further. Even the portion of the recent slowdown that reflects structural changes in how care is delivered or how it is financed may largely represent another onetime downward shift in costs rather than a permanent reduction in the growth rate.

In CBO's judgment, the rate of excess cost growth in overall spending on health care since 1985 best reflects features of the health care delivery and financing systems that are likely to endure for a number of years, but the later years within that period provide a more useful guide

to the future than do the earlier years. Therefore, CBO calculated a weighted average of the annual excess cost growth rates between 1985 and 2012 (the latest year for which data are available), placing twice as much weight on the latest year as on the earliest year (with a linear progression between the two). The resulting average— 1.4 percent per year—serves as an anchor for CBO's long-term projections of health care costs.[43]

CBO's Methodology for Long-Term Projections of Federal Health Care Spending

CBO's extended baseline generally reflects the provisions of current law. For federal spending on major health care programs, the projections in the extended baseline during the next 10 years match the agency's current-law baseline projections, which are based on detailed analysis of the programs involved. Beyond the coming decade, projecting federal health care spending becomes increasingly difficult because of the considerable uncertainties involved. A wide range of changes could occur—in people's health, in the sources and extent of their insurance coverage, and in the delivery of medical care—that are almost impossible to predict but that could have a significant effect on federal health care spending. Therefore, CBO has adopted a formulaic approach for the projections beyond 2024, combining estimates of the number of people who will be receiving benefits from government health care programs with fairly mechanical estimates of the growth in spending per beneficiary. The estimates of spending growth per beneficiary are based on the assumption that growth in each major program moves slowly from its estimated rate at the end of the first decade to an estimate of the underlying growth rate for that program. Those underlying growth rates begin with the historical average described in the preceding section and are projected to decline gradually in response to the pressures created by rising costs.

Long-Term Responses to Rising Health Care Costs

Health care expenditures cannot rise more quickly than GDP forever. When health care expenditures increase as a share of GDP, they absorb a rising share of people's income, restraining the consumption of other goods and services. Therefore, continued growth in health care spending will create mounting pressure to slow the growth of costs, even in the absence of changes in federal law.

Responses in the Private Sector, Health Insurance Exchanges, and Medicaid. CBO expects that the private sector will respond to rising costs for health care by pursuing various changes to restrain spending. Many employers will intensify their efforts to reduce the costs of the insurance plans they sponsor—by, for example, working with insurers and providers to make the delivery of health care more efficient, limiting the amount of insurance coverage they offer, or offering a fixed contribution that employees can use to purchase health insurance. To avoid higher premiums, some employees will shift to plans with more tightly managed benefits or higher cost-sharing requirements. (Increases in cost sharing and reductions in the scope of coverage would lower premiums by shifting costs to employees, but such changes also could reduce total spending on health care.) Such changes are already under way; for example, the share of covered workers with an annual deductible increased from 55 percent in 2006 to 78 percent in 2013.[44] The excise tax on certain health insurance plans with high premiums, which will go into effect in 2018, will also encourage some employers and individuals to choose plans with lower premiums. In some cases, employers are already reducing health benefit offerings or increasing workers' deductibles and copayments to avoid having to pay the tax in the future.[45] Although the excise tax does not apply to health insurance plans offered through the ACA's exchanges, people purchasing coverage through those exchanges are also likely to seek ways to avoid higher premiums, which will tend to slow the growth of federal spending for the exchange subsidies.

Many state governments will respond to growing costs for Medicaid by restraining the rates paid to providers, limiting the services they choose to cover, or tightening eligibility to reduce the number of beneficiaries (compared with what would have occurred without the pressures of

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43. That same methodology applied to data through 2007 yields a weighted average of 1.7 percent per year. That is, the slow growth experienced during the past several years, all else being equal, has reduced the underlying rate of excess cost growth as estimated using this methodology by about 0.3 percentage points.

44. Gary Claxton and others, *Employer Health Benefits: 2013 Annual Survey* (Kaiser Family Foundation and Health Research and Educational Trust, August 2013), p. 104, http://tinyurl.com/lsamruu.

45. "Health Policy Brief: Excise Tax on 'Cadillac' Plans," *Health Affairs* (September 12, 2013), http://tinyurl.com/my4kfd7.

rising costs). Because the federal government's spending for Medicaid depends on what the states spend, actions by the states that reduce the growth of their Medicaid spending will tend to slow the growth of federal spending for the program as well.

Those responses by businesses, individuals, and state and local governments will produce a sizable slowdown over the long term in the rate of excess cost growth in the health care system, CBO projects. That slowdown could occur in different ways. One way would be to increase the efficiency of the health care sector, so that it yields the same improvements in health at a lower cost. Many experts believe that a substantial share of health care spending is of low value, meaning that the services provided yield little or no health benefits relative to their costs. If the responses to high and rising health care costs reduce the use of such services, the growth rate of spending could be lowered for an extended period without imposing direct costs on patients. However, developing mechanisms that reduce the use of low-value care without affecting high-value care is very challenging, so the degree to which it will occur is highly uncertain.

To the extent that the responses to high and rising health care costs do not simply reduce low-value care, they could lead to significant changes in the amount that people pay directly for care, their access to care, or the quality of care—at least, relative to what would have occurred without a slowdown in spending. In the private sector, people might face increased cost-sharing requirements and narrower networks of providers; new and potentially useful health technologies might be introduced more slowly or used less frequently than they would have been without the pressures of rising costs; and more treatments and interventions might not be covered by insurance. Those outcomes might affect people with employment-based health insurance and people purchasing health insurance through the exchanges. In Medicaid, some beneficiaries might lose their eligibility or face higher out-of-pocket spending if states narrowed their eligibility criteria or dropped coverage of optional services. Medicaid beneficiaries might also end up with care that is more tightly managed. In addition, private insurers and Medicaid programs might constrain payments to providers in ways that would limit access to care, the quality of care, or both.

Responses in Medicare. Many features of the Medicare program cannot be altered without changes in federal law. Still, a slowdown in spending growth outside of Medicare will probably affect the program because it is integrated to a significant degree with the rest of the health care system. In particular, Medicare will experience some reduction in cost growth to the extent that actions by businesses, individuals, and states result in lower-cost "patterns of practice" by physicians, slower development and diffusion of new medical technologies, and cost-limiting changes to the structure of the overall health care system.

In addition, current law includes a number of incentives and mechanisms that could reduce spending growth in Medicare. From the beneficiaries' perspective, the demand for Medicare services will be constrained as the program's premiums and cost-sharing amounts consume a growing share of their income. Changes being made in the structure of Medicare's payments to providers—such as financial incentives to reduce hospital-acquired infections and readmissions—may also help hold down federal spending.[46] Further, the Centers for Medicare & Medicaid Innovation (CMMI), like many state Medicaid agencies and private insurance companies, is aiming to reduce costs without impairing the quality of health care, or to improve quality without increasing costs, by testing promising ideas for modifying rules and payment methods; the changes that prove effective may be expanded by the Secretary of Health and Human Services.[47] Several such demonstrations are currently under way, but which, if any, will prove to be successful in slowing spending growth for Medicare as a whole is uncertain.

An important source of uncertainty in projecting health care spending in the long term under current law is how providers would respond to the scheduled restraint in annual updates to Medicare's payment rates—and

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46. Sarah L. Krein and others, "Preventing Hospital-Acquired Infections: A National Survey of Practices Reported by U.S. Hospitals in 2005 and 2009," *Journal of General Internal Medicine*, vol. 27, no. 7 (July 2012), pp. 773–779, www.ncbi.nlm.nih.gov/pmc/articles/PMC3378739/. A description of the program to reduce hospital readmissions is available at Centers for Medicare & Medicaid Services, "Readmissions Reduction Program" (accessed April 18, 2014), http://go.usa.gov/DxKC.

47. Sections 3021 to 3027 of the Patient Protection and Affordable Care Act authorized the creation of the CMMI. A list of ongoing CMMI projects is available at Centers for Medicare & Medicaid Services, "Innovation Models" (accessed April 18, 2014), www.innovations.cms.gov/initiatives/index.html.

whether those responses would lead to offsetting increases or further reductions in spending for Medicare and other health care programs. The scheduled updates in the payment rates for providers other than physicians would generally fall below increases in the prices of inputs (namely, labor and supplies) used to deliver care.[48] The difference between the changes in payment rates and in input prices reflects an adjustment for economywide increases in productivity. For example, CBO projects that Medicare's payment rates for most hospitals will grow by 2.2 percent per year over the 2019–2024 period but that prices for hospitals' inputs will grow by 3.3 percent per year. Overall price inflation as measured by the rate of increase in the GDP price index is projected to be 2.0 percent over that same period.

In order to keep the growth of their costs in line with the growth in payment rates, providers could use fewer inputs per patient over time—specifically, they could raise their productivity over time at a rate that is comparable to economywide increases in productivity. However, measured productivity growth in the hospital sector (and in the health care sector more generally) has been relatively low in the past, perhaps because delivering health care can be labor-intensive.[49] If providers cannot achieve significant gains in productivity, and the increases in their costs thereby exceed Medicare's payment updates for a prolonged period, providers could reduce the quality of care offered to Medicare enrollees, reduce enrollees' access to care (which might reduce spending), or seek to increase revenues by other means (which might increase spending).

Yet other evidence suggests that hospitals and other providers may be able to achieve significant productivity gains or to restrain the growth of their costs in some other way. A recent analysis by the CMS actuaries indicates that

Medicare's payment updates for services by providers other than physicians were, on average, roughly in line with increases in the GDP price index over the 1991–2011 period—albeit with substantial year-to-year variation.[50] Furthermore, an analysis by the American Hospital Association indicates that private-sector payment rates grew at about the same pace as Medicare payment rates over that period, on average, and that average profit margins for hospitals in 2011 (at about 7 percent) were higher than those in the early 1990s (which were between 4 percent and 5 percent).[51] Taken together, those findings suggest that, on average, hospitals have been able to keep growth in costs in line with overall inflation over the past two decades.[52]

Over the long term, how Medicare providers other than physicians will respond to the payment updates specified in current law is unclear; in particular, it is unclear whether their responses will generate offsetting increases in spending or will further reduce spending. Reflecting that uncertainty, CBO has not adjusted its projections of spending in the long term to take such possible responses into account.

CBO's Approach to Projecting Spending Growth by Program

CBO's long-term projections of federal spending for Medicare, Medicaid, and subsidies provided through the insurance exchanges are based on projections of the number of beneficiaries per program and spending growth per beneficiary. Spending growth per beneficiary in a given program is the combination of projected growth in potential GDP per capita (described in Appendix A) and projected excess cost growth for that program (with adjustments for demographic changes in the program). In turn, projected excess cost growth for each program depends on the projected growth rate of spending for that program under current law for the next decade; CBO's assessment of the underlying rate of excess cost growth

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48. As discussed earlier, Medicare's payment rates for physicians will be reduced sharply in 2015 under current law; because the Congress has acted to block similar reductions in recent years, this discussion focuses on the payments to other providers scheduled under current law.

49. See Jonathan D. Cylus and Bridget A. Dickensheets, "Hospital Multifactor Productivity: A Presentation and Analysis of Two Methodologies," *Health Care Financing Review*, vol. 29, no. 2 (Winter 2007–2008), pp. 49–64, http://go.usa.gov/XrHC; and Michael J. Harper and others, "Nonmanufacturing Industry Contributions to Multifactor Productivity, 1987–2006," *Monthly Labor Review*, vol. 133, no. 6 (June 2010), pp.16–31, www.bls.gov/opub/mlr/2010/06/art2full.pdf (1 MB).

50. See Centers for Medicare & Medicaid Services, Technical Review Panel on the Medicare Trustees Report, *Review of Assumptions and Methods of the Medicare Trustees' Financial Projections* (December 2012), p. 60, http://go.usa.gov/Xn7Q.

51. American Hospital Association, *Trends Affecting Hospitals and Health Systems* (accessed May 2, 2014), Ch. 4, www.aha.org/research/reports/tw/chartbook/index.shtml.

52. Less information is readily available to assess the influences of changes in Medicare's payment rates and methods over the past two decades on other providers.

for the program a quarter century from now and beyond; and a blend of those factors for the intervening period (the 11th through 24th years of the projection).

Excess Cost Growth Over the Next Decade. For 2015 through 2024, projected rates of excess cost growth are based on CBO's current-law baseline projections:

■ For Medicare, CBO's baseline projections imply an average annual rate of excess cost growth over that decade of about zero; that is, spending per beneficiary for Medicare (adjusted for demographic changes) is projected to grow roughly in line with potential GDP per capita. That rate of zero stems partly from slow projected growth in the use of Medicare services, which is consistent with recent experience. In addition, Medicare's payment rates for physicians are scheduled to be reduced sharply in April 2015, and some of the limitations on payments under the ACA are being phased in. Consequently, excess cost growth in Medicare is projected to be negative during the next few years and then to rise to about 0.7 percent per year by the end of the decade.

■ For federal Medicaid spending, CBO's baseline projections imply an average annual rate of excess cost growth for the coming decade of 1.8 percent (after an adjustment for the changing federal share of Medicaid spending). The expansion of benefits in some states to people with income up to 138 percent of the FPL will increase total Medicaid spending and will probably change the average cost per enrollee over the next several years because average spending on those new enrollees (mostly adults who are not disabled) will tend to differ from average spending on previously eligible enrollees. However, excess cost growth incorporates an adjustment for demographic changes, so it is not significantly affected by the expansion.

■ For the exchange subsidies, CBO's baseline projections imply an average annual rate of excess cost growth of about 2 percent for private health insurance premiums. The agency's projections of spending per enrollee on the exchange subsidies depend on projected health insurance premiums but also account for the likelihood that federal subsidies will cover a declining share of the premiums over time as a result of the additional indexing factor described above.

Underlying Rates of Excess Cost Growth. CBO's projections of the underlying rates of excess cost growth are calculated as follows:

■ For all parts of the health care system, the underlying rate of excess cost growth in 2013 equals the weighted average rate of excess cost growth observed in the overall health care system between 1985 and 2012.

■ The underlying rates of excess cost growth decline by 2089 (the final year of the current 75-year projection period) to zero for Medicaid and private insurance premiums and to 1.0 percent for Medicare. CBO built in that difference because, in the absence of changes in federal law, state governments and the private sector have more flexibility to respond to the pressures of rising health care spending than does the federal government. Such a difference in growth rates could occur if, for instance, actions taken to reduce spending growth in the private sector weakened the incentives to develop and disseminate new medical procedures and technologies for nonelderly people but had less of an effect on new procedures and technologies focused on diseases that principally affect the elderly. Indeed, rates of excess cost growth in health care have differed across sectors for extended periods (see Table 2-1 on page 34).

■ The underlying rates of excess cost growth in each sector decline linearly—that is, by the same fraction of a percentage point—each year between 2013 and 2089. That linear decline (referred to as the "underlying path" of excess cost growth) reflects CBO's assessment that, over time, the steps needed to keep reducing growth rates will become increasingly onerous, but the pressure to take them will also intensify because of the increasingly high levels of health care spending.

Long-Term Projections. In CBO's extended baseline, projected federal spending for the major federal health care programs for the 2015–2024 period matches projected spending in CBO's current-law baseline. For 2025 and later years, the projection of federal spending is constructed as follows:

■ For Medicare, excess cost growth in 2025 equals 0.7 percent, the average rate projected from 2022

through 2024 with certain adjustments.[53] It then increases by the same fraction of a percentage point each year for 15 years so that the rate of excess cost growth in 2039 matches that in the underlying path for that year, 1.3 percent. After 2039, excess cost growth declines in line with the underlying path. Altogether, by CBO's projections, excess cost growth for Medicare will average 0.6 percent per year during the 2015–2039 period (and 1.0 percent per year during the 2015–2089 period); that average reflects very low excess cost growth in the first 10 years of the projection. CBO estimates that the number of Medicare beneficiaries will grow with the size of the population age 65 and over and with the number of recipients of Social Security Disability Insurance.[54]

■ For Medicaid, excess cost growth in 2025 equals 1.8 percent, the average rate projected from 2022 through 2024. It then decreases by the same fraction of a percentage point each year for 15 years so that the rate of excess cost growth in 2039 matches that in the underlying path, 0.9 percent. After 2039, excess cost growth declines in line with the underlying path. According to the agency's projections, excess cost growth for the program will average 1.5 percent per year during the 2015–2039 period (and 0.8 percent per year during the 2015–2089 period). To generate figures for total spending, the agency projects that the number of Medicaid beneficiaries will grow with the population, with adjustments for changes in the age distribution of the population.[55]

■ For private health insurance premiums, excess cost growth in 2025 is about 2 percent, the average rate projected from 2022 through 2024. It then decreases by the same fraction of a percentage point each year for 15 years so that in 2039, the rate of excess cost growth matches that in the underlying path for that year, 0.9 percent. After 2039, excess cost growth declines in line with the underlying path. CBO projected the amounts of the exchange subsidies on the basis of excess cost growth for private health insurance premiums, the effects of the additional indexing factor described above, and growth in incomes (which reduces the share of the population that is eligible for subsidies).

■ Under current law, authorization for CHIP expires after September 2015. Following statutory guidelines, CBO assumes in its baseline spending projections that annual funding for the program from 2016 through 2024 will continue at $5.7 billion.[56] For 2025 and beyond, CBO assumes that spending on the program will be the same share of GDP as the value in 2024.

All long-term economic and demographic developments are uncertain, but excess cost growth in health care may be particularly so.[57] Medical procedures and technology and the delivery of care all continue to evolve rapidly, and spending for any of the federal health care programs could be substantially higher or lower than CBO projects. The number of beneficiaries in Medicaid and the exchanges is also very uncertain because changes in the distribution of income and the steps states might take regarding eligibility are unclear. (Chapter 7 shows how CBO's projections would differ if the growth of health care costs was significantly higher or lower than is projected in the extended baseline.)

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53. Spending amounts were adjusted for the fact that, given the quirks of the calendar, Medicare is scheduled to make 13, rather than the normal 12, capitation payments in Parts C and D of the program in 2022 and only 11 payments, rather than the normal 12, in 2024. Additionally, the effect of sequestration was removed because that cancellation of funding will not affect spending after 2024.

54. For more information about how CBO projects the number of beneficiaries of Social Security Disability Insurance, see Congressional Budget Office, *CBO's Long-Term Model: An Overview* (June 2009), www.cbo.gov/publication/20807. CBO changed its projection of the incidence of disability in its 2013 long-term projections, resulting in a higher projection of the number of people receiving benefits. For additional information, see "CBO's Projections of Demographic and Economic Trends" in Chapter 1 and "New Legislation and Changes in Assumptions and Methods" in Appendix A of *The 2013 Long-Term Budget Outlook* (September 2013), www.cbo.gov/publication/44521.

55. If states took steps to reduce eligibility that decreased the share of the population enrolled in Medicaid over time, they would not have to do as much to reduce spending growth per enrollee in order to achieve the same projected level of total spending.

56. See Congressional Budget Office, "Children's Health Insurance Program—Baseline Projections" (April 2014), note (a), www.cbo.gov/publication/44189.

57. This year, CBO changed its projection methods for Medicare and Medicaid to better reflect uncertainties about the timing and nature of changes in rates of excess cost growth and the relationship of those changes to specific provisions of current law. For additional information, see Appendix B.

Long-Term Projections of Spending for the Major Health Care Programs

Under the extended baseline, which generally reflects current law, federal spending on major health care programs would increase significantly as a percentage of the economy in the coming decades, according to CBO's projections.

Projected Spending

In 2014, federal spending for Medicare (net of offsetting receipts), Medicaid, CHIP, and the exchange subsidies will amount to 4.8 percent of GDP, CBO expects—with net Medicare spending equal to 3.0 percent and federal spending on Medicaid, CHIP, and the exchange subsidies equal to 1.9 percent. Under CBO's extended baseline, federal spending for those programs would rise to 8.0 percent of GDP in 2039—with net Medicare spending accounting for 4.6 percent and Medicaid, CHIP, and the exchange subsidies, 3.4 percent (see Figure 2-2).[58] Gross Medicare spending is projected to increase from 3.5 percent of GDP in 2014 to 5.7 percent in 2039. Beyond 2039, federal spending for the major health care programs would continue to increase as a share of GDP, CBO projects, but more slowly than during the next 25 years.

The projected rise in federal spending for the major health care programs relative to GDP results from the continued aging of the population, an expectation that health care costs per beneficiary will continue to grow somewhat faster than potential GDP per capita, and the expansion of federal subsidies for health care through Medicaid and the insurance exchanges. Over the next 25 years in CBO's extended baseline, aging accounts for 39 percent of the programs' spending growth relative to GDP, excess cost growth accounts for 33 percent, and the expansion of federal subsidies accounts for 28 percent (see Box 1-1 on page 22). Beyond the next 25 years, the age profile of the population is expected to change less rapidly, so the incremental effect of aging on the programs' spending growth will diminish. In addition, after they take full effect, the expansion of Medicaid and

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58. The projections in this chapter include the effects of the exchange subsidies on outlays; the smaller effects on revenues are included in the projections presented in Chapter 5. In all of the projections, the outlays for the exchange subsidies are presented in combination with outlays for Medicaid and CHIP; they all constitute federal subsidies for health insurance for low- and moderate-income households. Spending for the exchange subsidies includes related spending for risk adjustment.

Figure 2-2.

Federal Spending on the Major Health Care Programs, by Category
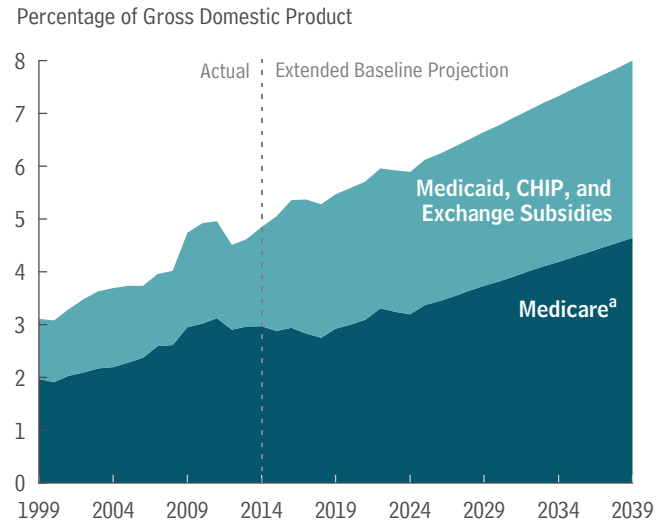
Percentage of Gross Domestic Product

Source: Congressional Budget Office.

Notes: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period.

CHIP = Children's Health Insurance Program.

a.   Net Medicare spending (includes offsetting receipts from premium payments by beneficiaries and amounts paid by states from savings on Medicaid's prescription drug costs).

the addition of the exchange subsidies will influence spending growth less. As a result, the growth of spending will slow, and growth in health care costs per beneficiary will account for an increasing share of that growth.

The factors that underlie the projected rise in total federal spending for the major health care programs also affect the amounts of spending that would subsidize care for different sorts of beneficiaries. Despite the significant expansion of federal support for health care for lower-income people enacted in the ACA, under the extended baseline, only about one-fifth of federal spending for the major health care programs in 2024 would finance care for able-bodied nonelderly people, CBO projects; about three-fifths would go toward care for people who are age 65 or older, and about one-fifth, toward care for blind and disabled people. Beyond 2024, by CBO's estimates under the extended baseline, the share of federal spending for the major health care programs that finances care for people who are age 65 or older would rise slowly because of the continued aging of the population.

Among Medicare beneficiaries who are age 65 or older, the fraction who will be significantly older than 65 will increase over the next 25 years (see Figure 2-3). That shift affects CBO's long-term projections because Medicare spending has traditionally been higher, on average, for the older people within the over-65 group. For example, in Parts A and B of the fee-for-service portion of Medicare in calendar year 2011, spending for beneficiaries who were 66 years old averaged about $4,500; for those age 75, about $8,500; and for those age 85, about $12,500.[59] CBO expects that pattern to persist in the future. One consequence of the pattern is that a larger share of the program's spending goes to beneficiaries over any given age than the share of beneficiaries they constitute. For example, the people who will be age 75 or older in 2039 will represent about 50 percent of the elderly people enrolled in Medicare but will account for about 60 percent of the program's spending for such enrollees, according to CBO's projections.

Although this chapter focuses on federal spending for health care, CBO also projected total national spending on health care (see Box 2-1). The agency combined its projections of federal spending on the major health care programs with rough projections of other health care spending. According to that analysis, which involves substantial uncertainty, national spending on health care as a share of GDP will continue to rise—from about 16 percent of GDP now to about 22 percent by 2039.
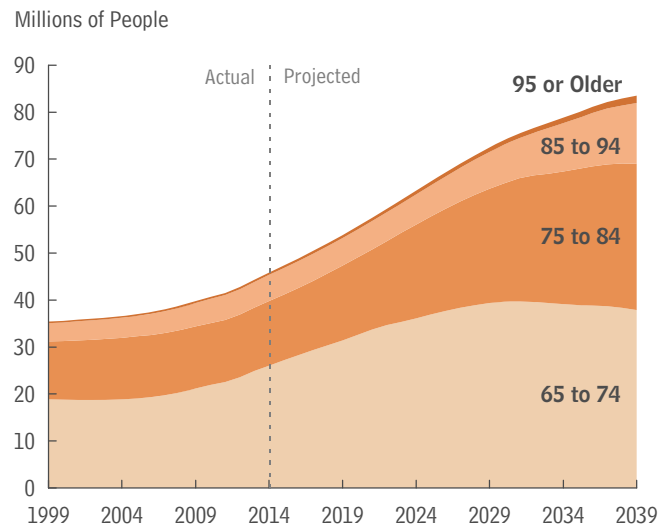
Financing of Major Health Care Programs

Spending on the government's major health care programs is financed in various ways, as described earlier in this chapter. For Medicaid and CHIP, states and the federal government share in the financing. The federal share of spending on those programs is funded entirely from the government's general funds, as are the outlays for subsidies provided through the health insurance exchanges.

In contrast, Medicare is funded through a combination of payroll taxes, beneficiaries' premiums, general funds of

Figure 2-3.

Number of People Age 65 or Older, by Age Group

Millions of People

Source: Congressional Budget Office.

the federal government, and money from other sources. The relative magnitudes of those sources of funding have changed significantly over time. The amount of Medicare payroll taxes collected has declined from 63 percent of gross federal spending for Medicare in 2000 to an estimated 37 percent in 2014 (see Figure 2-4). During that same period, the share of those benefits financed by beneficiaries' premiums and other offsetting receipts has grown from 10 percent to an estimated 13 percent, and the share financed by general funds of the government and the remaining sources of funding for the program has increased from 27 percent to 50 percent.[60] By CBO's projections in its extended baseline, in 2039 receipts from payroll taxes would equal 22 percent of gross federal spending for Medicare, and beneficiaries' premiums and other offsetting receipts would account for 15 percent—leaving 63 percent financed by general funds and the remaining sources.

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59. Calculating average spending for 65-year-old beneficiaries is not helpful for this comparison because most such beneficiaries are enrolled in Medicare for only part of the calendar year in which they turn 65, and average spending for beneficiaries of that age reflects that fact. The amounts reported here include spending under Parts A and B of Medicare averaged across all beneficiaries of that age enrolled in Part A, Part B, or both, within the traditional fee-for-service program. The fraction of beneficiaries enrolled in both Parts A and B increases among beneficiaries of older ages.

60. The increase in the share of spending covered by sources other than payroll taxes is largely the result of an increase in the portion of benefits provided by the parts of the program that are financed mainly by a combination of premiums and general funds—Part B and, since 2006, Part D. In 2000, Part B accounted for 41 percent of gross Medicare spending; in 2014, Parts B and D will account for 55 percent of gross Medicare spending, CBO estimates. In 2014, the percentage of benefits covered by premiums and other offsetting receipts would be higher than shown here if the two-thirds of Part D premiums paid directly by beneficiaries to Part D plans and the resulting benefit payments were included.

Box 2-1.

National Spending on Health Care

The Congressional Budget Office (CBO) has a limited ability to project national spending on health care because the agency does not track all of the components of that spending as closely as it analyzes the components that are directly relevant to the federal budget. Therefore, to generate projections of national spending for health care, the agency combined its own projections for some categories of spending with projections for other categories developed by the Office of the Actuary in the Centers for Medicare & Medicaid Services (CMS).[1] The resulting projections are rough and involve substantial uncertainty—especially as they look farther into the future—and therefore should be viewed with caution.

To project national spending for health care for the 2015–2024 period, CBO started with its projections of federal spending on the government's major health care programs. Other spending for health care includes payments by private health insurers, out-of-pocket payments by consumers, and other public spending. CBO estimated such spending using its own projections of payments by private health insurers and the Office of the Actuary's projections of out-of-pocket payments by consumers and other public spending. Because the projections from CMS are available only through 2022, CBO used a historical rate of excess cost growth (described below) to extend them for the following two years.[2]

To project national spending for health care after 2024, CBO again started with its projections of federal spending on the government's major health care programs. It estimated other spending for health care by combining its projections of demographic and economic conditions with assumptions about excess cost growth for such spending. The starting point for projected excess cost growth in other health care spending was the weighted average rate (calculated in the manner discussed in the text) of excess cost growth observed in the overall health care system between 1985 and 2012. CBO assumed that the rate of excess cost growth for other health care spending would slow from that historical rate—1.4 percent—in 2013 to zero in 2089, in reaction to the pressures developing from rising health care spending. The slowdown was assumed to occur linearly—that is, the rate of excess cost growth was assumed to decline by the same number of fractional percentage points each year.

National spending on health care increased from 9.5 percent of GDP in 1985 to 16.2 percent of GDP in 2012. Under CBO's extended baseline, which generally reflects current law, national spending for health care would increase to about 22 percent of GDP by 2039.

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1. As used here, national spending on health care is health consumption expenditures as defined in the national health expenditure accounts, which are maintained by CMS. That concept excludes spending on medical research, structures, and equipment.

2. Gigi A. Cuckler and others, "National Health Expenditure Projections, 2012–22: Slow Growth Until Coverage Expands and Economy Improves," *Health Affairs*, vol. 32, no. 10 (October 2013), pp. 1820–1831, http://dx.doi.org/10.1377/hlthaff.2013.0721.

Benefits under Part A of Medicare are paid from the Hospital Insurance Trust Fund, which is credited with receipts from payroll taxes and a small amount of other revenues. A commonly used summary measure of the financial status of Part A is the estimated actuarial balance of the HI trust fund—that is, the present value of projected noninterest revenues and the current balance of the trust fund, minus the present value of projected outlays and the target trust fund balance (generally defined to be

one year of outlays) at the end of a specified period.[61] That difference is usually shown as a percentage of the present value of taxable payroll over the same period.

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61. A present value is a single number that expresses a flow of current, past, and future income or payments in terms of an equivalent lump sum received or paid today. For this analysis, payroll taxes include the shares paid by employers and employees, and benefits are those scheduled to be paid under current law, regardless of the balances projected for the trust fund.

Figure 2-4.

Medicare Payroll Taxes and Offsetting Receipts as a Share of Medicare Benefits

Percent
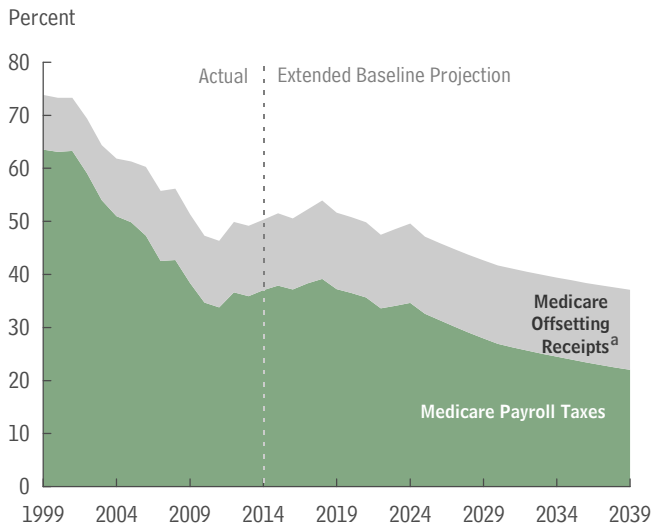
Sources: Office of Management and Budget (actual shares up to 2013); Congressional Budget Office (projected shares).

Note: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period.

a. Premium payments by beneficiaries and amounts paid by states from savings on Medicaid's prescription drug costs.

A negative estimated actuarial balance—an actuarial imbalance—means that outlays plus the desired trust fund balance are projected to exceed the sum of revenues and the current balance; such a negative value represents the amount by which revenues as a percentage of taxable payroll (the income rate) would have to be increased immediately and in every year of the projection period to cover all projected costs and provide the target balance in the trust fund at the end of the period. Alternatively, outlays as a percentage of taxable payroll (the cost rate) could be reduced by an equivalent amount. Or a combination of the two approaches yielding the same total effect could be used to address the imbalance.

Projections of future spending under Part A of Medicare are even more uncertain than projections of overall Medicare spending. Changes over time in the nature of health care and in the system for delivering health care might lead to greater or lesser reliance on the services covered by Part A relative to the services covered by Part B and Part D. CBO has not developed the analytic capability to project such shifts over the long term. Therefore,

the agency's long-term projections of spending under Part A are constructed on the assumption that such spending grows in line with projected spending for Medicare as a whole.

In the extended baseline, the estimated actuarial imbalance for the HI trust fund over the next 25 years is 0.8 percentage points, which is the difference between projected income equal to 3.6 percent of taxable payroll and projected costs totaling 4.4 percent of taxable payroll (see Table 2-2). Eliminating a gap of that size would require an immediate and permanent increase in HI payroll taxes from 2.9 percent to 3.7 percent of taxable payroll as currently projected, an immediate and permanent cut in spending on Part A equal to about one-fifth of current spending, or some combination of tax increases and spending cuts with an equal present value. Over the next 75 years, the estimated actuarial imbalance is much larger, reaching 3.1 percent of taxable payroll.

Those estimates of the actuarial shortfall do not account for revenues and outlays that would be generated beyond the 25 years or 75 years included in each estimate. A policy that increased revenues or reduced outlays by the same percentage of taxable payroll in each year so as to eliminate the 75-year shortfall, for example, would not place the HI trust fund on a permanently stable financial path. Instead, such a policy would create surpluses during the next several decades but would not prevent deficits from arising in later years and thus would leave the system in a state of financial imbalance after the 75-year period. (For further discussion, see Chapter 3.)

Another commonly used measure of the sustainability of Part A of Medicare is the timing of the projected exhaustion of the HI trust fund. According to CBO's April 2014 baseline projections, under current law, the balance of the HI trust fund would increase, from $206 billion at the end of fiscal year 2013 to $261 billion at the end of fiscal year 2024, with no change in the trust fund balance from 2023 to 2024.[62] Thereafter, spending for Part A would begin to increase more rapidly than income to the HI trust fund, CBO projects, and the trust fund would be exhausted sometime around 2030.

Once the HI trust fund was exhausted, total payments to health plans and providers for services covered under

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62. Congressional Budget Office, "Medicare—Baseline Projections" (April 2014), www.cbo.gov/publication/44205.

Table 2-2.

Financial Measures for Medicare's Hospital Insurance Trust Fund Under CBO's Extended Baseline

Percentage of Taxable Payroll

Projection Period (Calendar years)	Income Rate	Cost Rate	Actuarial Balance (Difference)
25 Years (2014 to 2038)	3.6	4.4	-0.8
50 Years (2014 to 2063)	3.6	5.5	-1.9
75 Years (2014 to 2088)	3.7	6.8	-3.1

Source: Congressional Budget Office.

Notes: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period.

Over the relevant periods, the income rate is the present value of annual noninterest revenues (including the initial trust fund balance), and the cost rate is the present value of annual outlays (including the target trust fund balance at the end of the period), each divided by the present value of taxable payroll. The actuarial balance is the difference between the income and cost rates.

To be consistent with the approach used by the Medicare trustees, the 25-, 50-, and 75-year projection periods for the financial measures reported here include 2014 and end in 2038, 2063, and 2088, respectively. See Boards of Trustees, Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds, *2013 Annual Report of the Boards of Trustees of the Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds* (May 2013), http://go.usa.gov/bUZm.

Part A of Medicare apparently would be limited to the amount of revenues subsequently credited to the trust fund. If that occurred, beneficiaries' access to health care services would almost certainly be reduced. However, projections in this report are consistent with a statutory requirement that CBO, in its baseline projections, assume that funding for any mandatory program is adequate to make all payments required by law for that program.[63]

Medicare Benefits and Payroll Taxes for People in Different Birth Cohorts

Different generations will pay different amounts of Medicare payroll taxes and receive different amounts of Medicare benefits during their lifetime. Benefits are higher for later generations primarily because of the growth of health care spending per person but also because of increases in life expectancy, which cause later generations to receive benefits for longer periods, on average. Payroll taxes are higher for later cohorts because real earnings generally grow over time; payroll tax rates have also been increased and applied to larger shares of earnings over time.

In its *2013 Long-Term Budget Outlook*, CBO presented estimated lifetime benefits and taxes for various birth cohorts as the present value, discounted to the year in which a beneficiary turns 65, of all benefits that an individual receives from Medicare and all payroll taxes paid to the program. The agency is constructing similar estimates using the projections of benefits, taxes, and discount rates in this report but has not yet completed that work; those estimates will be released later this summer.

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63. See section 257(b)(1) of the Balanced Budget and Emergency Deficit Control Act of 1985; 2 U.S.C. §907(b)(1).

The Long-Term Outlook for Social Security

The federal government spends more on Social Security than it does on any other single program. Created in 1935, the program has long consisted of two parts: Old-Age and Survivors Insurance (OASI), which pays benefits to retired workers and to their dependents and survivors, as well as to some survivors of deceased workers; and Disability Insurance (DI), which makes payments to disabled workers who have not reached full retirement age (the age of eligibility for full retirement benefits) and to their dependents. In all, more than 58 million people currently receive Social Security benefits. The Congressional Budget Office (CBO) estimates that outlays for that program in fiscal year 2014 will total $845 billion, accounting for nearly a quarter of all federal spending.

During the program's first four decades, spending for Social Security increased relative to the size of the economy, reaching about 4 percent of gross domestic product (GDP) in the mid-1970s. That increase was caused largely by repeated expansions of the program. Costs rose to 4.8 percent of GDP in 1983, the year that the last major piece of legislation focused on Social Security was enacted. Between 1984 and 2007, spending for Social Security fluctuated between 4.0 percent and 4.5 percent of GDP. During the most recent recession, GDP contracted, and Social Security outlays increased more rapidly than they would have with stable economic growth because the number of OASI and DI claimants rose as the job market deteriorated. As a result, outlays grew from 4.1 percent of GDP in 2007 to 4.7 percent of GDP in 2009 (see Figure 3-1). CBO anticipates that spending for Social Security will be 4.9 percent of GDP in 2014, and if the full benefits specified under current law were paid, spending would reach 6.3 percent of GDP in 2039 and remain close to that value in subsequent decades.

How Social Security Works

Social Security is often characterized as a retirement program because a majority of its beneficiaries—71 percent—are retired workers or the spouses and children of those people.[1] In general, workers qualify for retirement benefits if they are age 62 or older and have paid sufficient Social Security taxes for at least 10 years.

Social Security also provides other types of benefits, such as payments to deceased workers' survivors, who make up 11 percent of beneficiaries. In addition, workers younger than the full retirement age who have had to limit their employment because of a physical or mental disability can qualify for DI benefits, in many cases with a shorter employment history. Disabled workers and their spouses and children account for 19 percent of beneficiaries.[2] In dollar terms, retired workers and their dependents receive 69 percent of Social Security benefits, survivors receive 14 percent, and disabled workers and their spouses and children receive 17 percent.[3]

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1. For a more detailed description of the Social Security program, see Congressional Budget Office, "An Overview of Social Security," *Social Security Policy Options* (July 2010), pp. 1–4, www.cbo.gov/publication/21547.

2. See Congressional Budget Office, *Policy Options for the Social Security Disability Insurance Program* (July 2012), www.cbo.gov/publication/43421; and *Social Security Disability Insurance: Participation Trends and Their Fiscal Implications* (July 2010), www.cbo.gov/publication/21638.

3. The ways in which beneficiaries and benefits are categorized are not completely consistent because some beneficiaries receive more than one type of benefit. For instance, some retired workers are also entitled to survivors' benefits. Those beneficiaries are classified as retired workers for the purpose of calculating the distribution of beneficiaries, but for the purpose of calculating the distribution of funding, their benefit payments are prorated between the categories of retired worker and survivor.

Figure 3-1.

Spending for Social Security
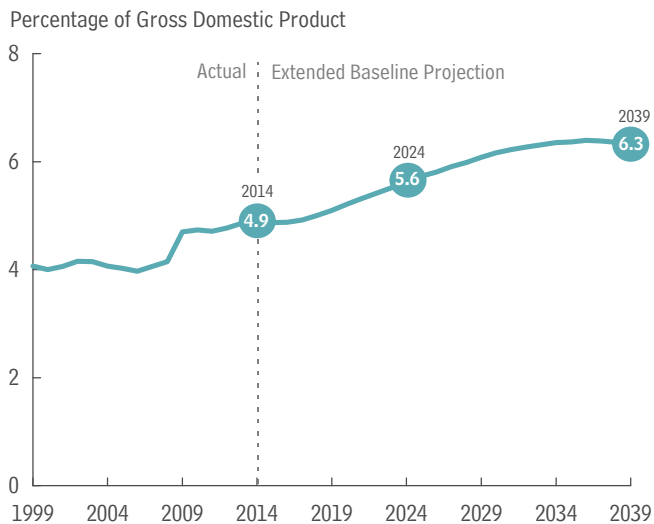
Percentage of Gross Domestic Product

Source: Congressional Budget Office.

Note: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period.

Benefits

The benefits that retired or disabled workers initially receive are based on their individual earnings histories, although those earnings and the formula used to compute initial benefits are indexed to changes in average annual earnings for the workforce as a whole. In subsequent years, a cost-of-living adjustment is applied to the initial benefits to reflect annual growth in consumer prices.

Workers born before calendar year 1938 were able to receive full retirement benefits at the age of 65. But under a schedule put in place by the Social Security Amendments of 1983, the full retirement age is increasing gradually. It reached 66 for people born from calendar years 1943 to 1954; it will rise again slowly beginning with people born in calendar year 1955, who will turn 62 in calendar year 2017; and it will reach 67 for people born after calendar year 1959, who will turn 62 in calendar year 2022 or later. The age at which workers may start receiving reduced benefits remains 62.

The Social Security Administration has estimated that workers who retired in calendar year 2013 at age 66 (the full retirement age for those workers) and who had earnings over their career that were equal to the average

earnings of all workers in the country would qualify for an initial annual benefit of about $19,500.[4] That amount was expected to replace about 45 percent of their career-average earnings indexed by national average wage growth to the year the worker turns age 60; as a share of their earnings just before claiming, that initial benefit would be somewhat smaller in most cases. In coming decades, replacement rates will be lower for workers with average earnings who retire at age 66, mainly because of the scheduled increase in the full retirement age. Nevertheless, because initial benefits are based on beneficiaries' previous earnings indexed to overall average wage growth and because wages are expected to grow faster than inflation in the long term, the real (inflation-adjusted) value of those benefits will rise over time, in CBO's estimation.

Taxes

The Social Security program is funded by two sources of dedicated tax revenues. Roughly 96 percent of those revenues derive from a payroll tax—generally, 12.4 percent of earnings—that is split evenly between workers and their employers; self-employed people pay the entire tax. Only earnings up to a maximum annual amount ($117,000 in calendar year 2014) are subject to the payroll tax. That amount, referred to as the taxable maximum, generally increases each year at the same rate as average earnings in the United States. However, the share of economywide earnings that falls below the taxable maximum varies each year as the distribution of earnings changes. When earnings inequality increases, as it has in recent decades, the taxable share of earnings declines because a greater share of income is above the taxable maximum. Earnings inequality will grow somewhat during the next few decades, and the share of earnings subject to the payroll tax, which has varied between 82 percent and 85 percent in recent years, will average roughly 82 percent in coming decades, CBO projects.

The remaining share of tax revenues—4 percent—is collected from income taxes on benefits. Those filing singly must pay taxes on Social Security benefits if the sum of their non–Social Security income and half of their benefits exceeds $25,000; the threshold for those filing jointly

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4.   See Social Security Administration, *The 2013 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds* (May 2013), Table V.C7, www.ssa.gov/oact/tr/2013.

is $32,000.[5] Under current law, those thresholds will remain the same over time, with no adjustment for earnings growth or inflation.

Revenues from both sources are credited to the two Social Security trust funds (the OASI trust fund and the DI trust fund). Social Security benefits and the program's administrative costs are paid from those funds; benefit payments constitute 99 percent of total outlays for the program. Interest on the trust funds' balances is credited to those funds, but because the interest transactions represent payments from one part of the government (the general fund of the U.S. Treasury) to another (the Social Security trust funds), they do not affect federal budget deficits or surpluses. The balances in those funds ($2.8 trillion at the end of May 2014) have accumulated over many years, during which tax revenues and interest received by the trust funds have exceeded the benefits paid from those funds.

The Outlook for Social Security Spending and Revenues

The cost of the Social Security program will rise significantly in coming decades—a development that analysts have long foreseen. Average benefits per beneficiary tend to grow over time because the earnings on which those benefits are based also increase; other things being equal, that relationship would tend to keep total benefits roughly stable as a share of GDP. In addition, as more members of the baby-boom generation reach retirement age and as longer life spans lead to longer retirements, a significantly larger share of the population will draw Social Security benefits. That aging of the population will cause the total amount of benefits scheduled to be paid under current law to grow faster than the economy. However, total revenues for the program will increase about in line with the size of the economy because most of those revenues come from the payroll tax, which has a flat tax rate (up to a maximum amount that is indexed to average earnings). Faster growth in total benefits than total revenues will create a shortfall in the program's finances. The

extent of that shortfall and the amounts of Social Security benefits received and taxes paid by people born in different years will depend on changes in life expectancy and other factors.

CBO's long-term projections for Social Security spending and revenues are based on the agency's detailed micro-simulation model, which starts with data about individuals from a representative sample of the population and projects demographic and economic outcomes for that sample through time. For each individual in the sample, the model simulates birth, death, immigration and emigration, marriages and divorces, fertility, labor force participation, hours worked, earnings, payroll taxes, and Social Security retirement, disability, and dependent benefits.[6]
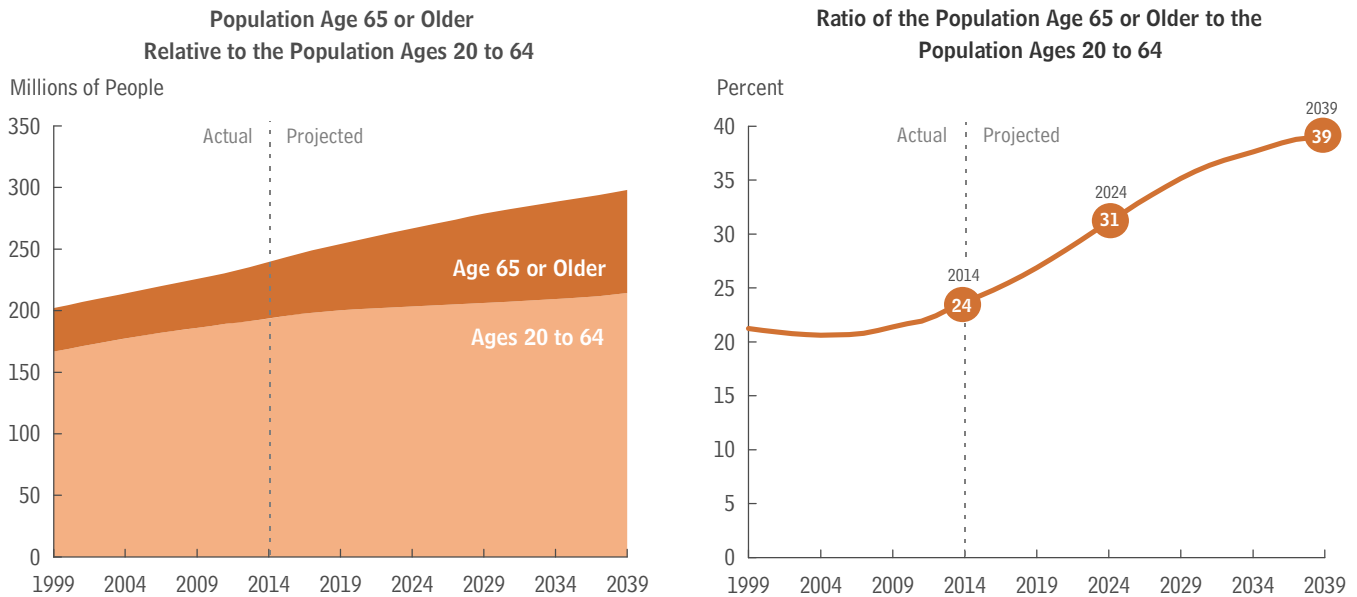
Demographic Changes

According to CBO's projections, the number of people who are age 65 or older will increase by 38 percent between now and calendar year 2024 and by 82 percent between now and 2039, compared with increases of just 5 percent and 11 percent over those periods in the number of people ages 20 to 64. Today, that older group is 24 percent the size of the younger group; at those rates of growth, it will be 31 percent as large as the younger group by 2024 and 39 percent as large by 2039 (see Figure 3-2). Under current law, about 77 million people would collect benefits in 2024 and more than 103 million people would in 2039, compared with 58 million who currently receive them. (For more information on CBO's demographic projections, see Appendix A.)

As the baby-boom generation enters retirement, the average age of Social Security beneficiaries will decline. Currently, about 13 percent of beneficiaries who are 65 or older are 85 or older; by 2025, 12 percent of them will be 85 or older, CBO projects. However, as that generation continues to age and life expectancy increases, Social Security beneficiaries will become older, on average; by 2039, 19 percent of beneficiaries who are 65 or older will be 85 or older.

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5. Non–Social Security income equals adjusted gross income plus nontaxable interest income.

6. See Congressional Budget Office, *CBO's Long-Term Model: An Overview* (June 2009), www.cbo.gov/publication/20807.

Figure 3-2.

Changes in Population, by Age Group

Population Age 65 or Older Relative to the Population Ages 20 to 64	Ratio of the Population Age 65 or Older to the Population Ages 20 to 64

Source: Congressional Budget Office.

CBO expects that future increases in life expectancy will be larger for people with higher lifetime earnings, which would be consistent with the pattern of past increases.[7] Today, a 65-year-old man whose household is in the highest quintile of lifetime earnings will live more than three years longer, CBO projects, than a man of the same age whose household is in the lowest quintile of lifetime earnings; similarly, a 65-year-old woman in a household with high lifetime earnings will live more than one year longer than a woman of the same age in a household with low lifetime earnings. CBO projects that, by 2039, men in households with high lifetime earnings will live about six years longer than men in households with low lifetime earnings, and women in households with high earnings will live about three years longer than women in households with low earnings.

The projected changes in the life expectancy of people with high earnings relative to that of people with low earnings affect both overall Social Security benefits and the distribution of those benefits. Retirees with higher lifetime earnings receive larger benefits than retirees with lower earnings, so the greater increase in life expectancy of people in households with high lifetime earnings will raise total future benefits, all else being equal. In addition, the greater increase in life expectancy of high earners will boost the ratio of lifetime Social Security benefits to lifetime Social Security taxes for high earners relative to that of low earners.[8]

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8. The ratio of lifetime benefits to taxes in Social Security depends both on annual benefits and on the number of years for which benefits are collected. Beneficiaries with low lifetime earnings receive an annual benefit that replaces a larger portion of their average lifetime earnings than beneficiaries with high lifetime earnings, but they also tend to live for fewer years and therefore to collect benefits for fewer years. Estimates of the effect of the difference in mortality on the progressivity of lifetime Social Security benefits—that is, on how much lifetime Social Security benefits as a share of lifetime earnings decrease as earnings rise—vary widely, with estimates depending on whether disabled and survivors' beneficiaries are included, how spousal benefits are accounted for, and how married couples are treated. For example, see Barry P. Bosworth and Kathleen Burke, *Differential Mortality and Retirement Benefits in the* Health and Retirement Study (April 2014), pp. 5–6, http://tinyurl.com/lexuoyo.

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7. Life expectancy is the number of additional years a person is expected to live at a specified age. For more information on mortality differentials among groups with different earnings, see Congressional Budget Office, *Growing Disparities in Life Expectancy* (April 2008), www.cbo.gov/publication/41681; and Julian P. Cristia, *The Empirical Relationship Between Lifetime Earnings and Mortality,* Working Paper 2007-11 (Congressional Budget Office, August 2007), www.cbo.gov/publication/19096.

Projected Spending and Revenues

If current law remained in place, spending for Social Security would rise from 4.9 percent of GDP in 2014 to 6.3 percent by 2039, CBO estimates.[9] The share of Social Security outlays that pays for disability benefits would fall from 17 percent today to 14 percent in 2039. Most disabled beneficiaries are between age 50 and the full retirement age, and, as the baby-boom generation becomes older, the share of the population in that range will decline.

Under current law, Social Security revenues would grow more slowly than spending between 2014 and 2039. Because payroll tax receipts are a fixed share of taxable earnings, and CBO expects that taxable earnings will remain a fairly stable share of GDP, the agency projects that payroll taxes would remain fairly constant as a share of GDP.[10] However, if current law remained unchanged, both the number of Social Security beneficiaries whose benefits are subject to taxation and their average income tax rates would increase, CBO projects.[11] As a result, income taxes on Social Security benefits would grow from about 3½ percent of benefits today to almost 4½ percent

of benefits in 2039. By that year, total Social Security tax revenues—payroll taxes plus taxes on benefits—would be 4½ percent of GDP, about the same as the current level.

In 2010, for the first time since the enactment of the Social Security Amendments of 1983, annual outlays for the program exceeded annual revenues excluding interest credited to the trust funds. A gap between those amounts has persisted since then, and, according to CBO's projections under the extended baseline, outlays would exceed such revenues by around 17 percent over the next decade. After that, the difference would grow; by 2039, outlays would be about one-third greater than annual revenues excluding interest credited to the trust funds.

Beyond 2039, CBO projects, the gap between annual Social Security outlays and tax revenues would shrink temporarily but then widen again. Specifically, during the 2040s and early 2050s, Social Security outlays would dip slightly relative to the size of the economy as members of the baby-boom generation die—but by the mid-2050s, outlays would turn upward again relative to GDP as a result of beneficiaries' increasing life spans. Meanwhile, the amount of tax revenues credited to the trust funds relative to the size of the economy is projected to be approximately flat beyond 2039. Combining those patterns, the growth in outlays is projected to be less than the growth in tax revenues in the 2040s and early 2050s but greater than the growth in tax revenues beyond the mid-2050s.

Financing of Social Security

A common measure of the sustainability of a program that has a trust fund and a dedicated revenue source is its estimated actuarial balance over a given period—that is, the sum of the present value of projected tax revenues and the current trust fund balance minus the sum of the present value of projected outlays and a target balance at the end of the period.[12] For Social Security, that difference is traditionally presented as a percentage of the present value of taxable payroll. Over the next 75 years, if current law remained in place, the program's actuarial shortfall would be 4.0 percent of taxable payroll, or

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9. CBO's projections are based on the assumption that Social Security will pay benefits as scheduled under current law regardless of the status of the program's trust funds. That approach is discussed later in this section.

10. CBO expects that private-sector costs for health care will continue to grow more quickly than workers' total compensation. By itself, that trend would reduce the share of compensation that workers receive as wages. However, the Affordable Care Act instituted an excise tax on some employment-based health insurance plans with high premiums. Some workers and employers will respond by shifting to less expensive plans, thus reducing the share of compensation allocated to health insurance premiums and increasing the share of cash wages. (See Appendix A, "Taxable Earnings as a Share of Compensation.") In CBO's projections, the effects of the excise tax roughly offset the effects of rising health care costs on cash wages as a share of total compensation until about 2050, but the effects of rising health care costs dominate thereafter. Consequently, CBO expects the share of compensation that workers receive as covered wages (wages received for employment that is subject to the Social Security payroll tax, including wages above the taxable maximum) to remain at roughly its 2024 level through 2050 and then to decline slightly. CBO also anticipates that earnings inequality will continue to increase slightly through the 2030s, so taxable earnings as a share of covered earnings will be slightly lower by 2039 than it is today. Beyond the 2030s, taxable earnings are projected to be nearly flat as a share of GDP.

11. For information about CBO's projections of total income taxes, see Chapter 5.

12. A present value is a single number that expresses a flow of income or payments over time in terms of an equivalent lump sum received or paid today. To account for the difference between the trust fund's current balance and the balance desired for the end of the period, the balance at the beginning is added to the projected tax revenues and an additional year of costs at the end of the period is added to projected outlays.

Table 3-1.

Financial Measures for Social Security Under CBO's Extended Baseline

Projection Period (Calendar years)	Income Rate	Cost Rate	Actuarial Balance (Difference)
As a Percentage of Taxable Payroll			
25 Years (2014 to 2038)	15.0	17.1	-2.1
50 Years (2014 to 2063)	14.2	17.4	-3.3
75 Years (2014 to 2088)	14.0	18.0	-4.0
As a Percentage of Gross Domestic Product			
25 Years (2014 to 2038)	5.2	6.0	-0.7
50 Years (2014 to 2063)	5.0	6.1	-1.1
75 Years (2014 to 2088)	4.9	6.3	-1.4

Source: Congressional Budget Office.

Notes: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period.

Over the relevant periods, the income rate is the present value of annual tax revenues (including the initial trust fund balance), and the cost rate is the present value of annual outlays (including the target trust fund balance at the end of the period), each divided by the present value of taxable payroll or gross domestic product. The actuarial balance is the difference between the income and cost rates.

To be consistent with the approach used by the Social Security trustees, the 25-, 50-, and 75-year projection periods for the financial measures reported here include 2014 and end in 2038, 2063, and 2088, respectively. See Social Security Administration, *The 2013 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds* (May 2013), www.ssa.gov/oact/tr/2013.

1.4 percent of GDP, CBO estimates (see Table 3-1).[13] In other words, to bring the program into actuarial balance through calendar year 2088, given CBO's projections, payroll taxes could be increased immediately and permanently by 4.0 percent of taxable payroll, scheduled benefits could be reduced by an equivalent amount, or some

combination of tax increases and spending reductions of equal present value could be used.

Those estimates of the actuarial shortfall do not account for revenues and outlays after the next 75 years. A policy that increased revenues or reduced outlays by the same percentage of taxable payroll in each year so as to eliminate the 75-year shortfall would not place Social Security on a permanently stable financial path. Instead, such a policy would create surpluses during the next several decades but generate deficits in later years and leave the system in a state of financial imbalance after calendar year 2088. If such a policy was adopted, the 75-year measure used in this report and commonly used in other analyses of Social Security would show no shortfall now because the measure includes the taxes paid by workers each year until calendar year 2088 but does not include the benefits that would be paid to those workers after calendar year 2088. That measure is known as the *75-year open-group unfunded obligation* because, with no change in law, the program would continue to be open to new participants.

An alternative measure—sometimes called the *closed-group unfunded obligation*—shows the shortfall in the system that would occur if the law was changed to close

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13. To be consistent with the 75-year actuarial balance reported by the Social Security trustees, the 75-year projection period used here begins in calendar year 2014 and ends in calendar year 2088. The Social Security trustees estimated in 2013 that the program's 75-year actuarial shortfall was 2.7 percent of taxable payroll, 1.3 percentage points less than CBO estimates. Compared with the Social Security trustees, CBO projects that life expectancy will increase somewhat more rapidly, the incidence of disability will be a little higher, and interest rates will be slightly lower (which raises the present value of projected future outlays more than the present value of projected future tax revenues because projected outlays are larger in the very long run); all of the other factors that affect the actuarial shortfall, taken together, would lead CBO and the trustees to make roughly the same estimate. For more details on CBO's projections, see Appendix A. For more details on the trustees' projections, see Social Security Administration, *The 2013 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds* (May 2013), www.ssa.gov/oact/tr/2013.

Social Security to anyone younger than age 15, thereby encompassing future taxes paid and benefits received only by people who are age 15 or older. That measure thus excludes the financial consequences of participation in Social Security by future generations; such groups would pay much more in taxes over the next 75 years than they would receive in benefits during that period. (Similar assessments are made of the financial outlook for private pension plans.) The Social Security trustees have estimated that, when measured as a percentage of the taxable payroll in the two cases, the closed-group shortfall as of 2013 was more than 50 percent larger than the open-group shortfall.[14]

Another commonly used measure of Social Security's sustainability is the trust funds' date of exhaustion. Under CBO's extended baseline, the DI trust fund would be exhausted in fiscal year 2017 and the OASI trust fund would be exhausted in calendar year 2032. This document, however, focuses on the combined trust funds. In 1994, the annual report of the Social Security trustees projected that the DI trust fund would be exhausted in 1995, an outcome that was prevented by legislation that redirected revenues from the OASI trust fund to the DI trust fund. Partly because of that experience, it is a common analytical convention to consider the DI and OASI trust funds as combined, although legally they are quite separate. Under CBO's extended baseline, the combined OASDI trust funds would be exhausted in calendar year 2030.

Once the trust funds are depleted, the Social Security Administration would no longer have legal authority to pay full benefits when they are due. In the years after the exhaustion of the trust funds, it appears that

annual outlays would therefore be limited to annual revenues. Thus, benefits can be projected in two ways: as *payable benefits*, which reflect the limits imposed by the availability of balances in the trust funds, or as *scheduled benefits*, which reflect the benefit formulas specified in law, regardless of the trust funds' balances. This report uses the latter approach, which is consistent with a statutory requirement that CBO, in its 10-year baseline projections, assume that funding is adequate to make all payments required by law for mandatory programs.[15]

Social Security Benefits and Payroll Taxes for People in Different Birth Cohorts

Different generations will end up paying different amounts of Social Security taxes and receiving different amounts of benefits during their lifetime.[16] Under current law, taxes and benefits alike would be higher for later cohorts because real earnings are projected to keep growing. Continuing increases in life expectancy also would contribute to growth in lifetime benefits because later cohorts would live to receive Social Security benefits for longer periods. In the previous *Long-Term Budget Outlook*, CBO presented estimated lifetime benefits and taxes for various birth cohorts as the present value, discounted to the year in which a beneficiary turns 62, of all benefits that an individual receives from Social Security and all payroll taxes paid to the program. The agency is constructing similar estimates using the projections of benefits, taxes, and discount rates in this report but has not yet completed that work; the estimates will be released later this summer.

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14. Social Security Administration, *The 2013 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds* (May 2013), Tables IV.B6 and IV.B7, www.ssa.gov/oact/tr/2013. CBO has not estimated the closed-group shortfall.

15. Section 257(b)(1) of the Balanced Budget and Emergency Deficit Control Act of 1985; 2 U.S.C. §907(b)(1).

16. For analysis of the distribution of Social Security benefits and taxes using the projections in the previous report, see Congressional Budget Office, *The 2013 Long-Term Projections for Social Security: Additional Information* (December 2013), www.cbo.gov/publication/44972; and *The 2013 Long-Term Budget Outlook* (September 2013), www.cbo.gov/publication/44521.

The Long-Term Outlook for Other Federal Noninterest Spending

In 2014, almost half of the federal government's spending will go toward programs and activities other than major health care programs (Medicare, Medicaid, the Children's Health Insurance Program, and the subsidies for health insurance purchased through exchanges), Social Security, and net interest. That spending—referred to in this report as other federal noninterest spending—includes outlays for discretionary programs, which are funded through the annual appropriation process, and outlays for mandatory programs (other than major health care programs and Social Security), which are usually funded according to underlying statutes that establish eligibility and payment rules.[1] Mandatory spending in this category also includes the refundable portions of the earned income tax credit, the child tax credit, and the American Opportunity Tax Credit, which are recorded in the budget as outlays.

The Congressional Budget Office (CBO) projects that if current laws generally continued without change—an assumption underlying the agency's baseline and extended baseline—other federal noninterest spending would drop from a total of 9.3 percent of gross domestic product (GDP) in 2014 to 7.3 percent in 2024 and then to 6.8 percent in 2039. Discretionary spending, which equaled 6.8 percent of GDP in 2014, would fall to 5.1 percent of GDP by 2024; for its extended baseline, CBO assumed that discretionary spending would remain fixed at its percentage of GDP in 2024, with an adjustment for the timing of certain monthly payments (see Figure 4-1).[2] Mandatory spending other than that for the major health care programs and Social Security would decrease from 2.5 percent of GDP this year to 2.2 percent

in 2024. For its extended baseline, CBO assumed that such spending—other than the portion related to refundable tax credits—would continue to fall relative to GDP at the same rate that occurred over the 2019–2024 period. (Refundable tax credits are estimated as part of the revenue projections, which are described in Chapter 5.) Putting those pieces together, other mandatory spending is projected to equal 1.7 percent of GDP in 2039.

## Other Federal Noninterest Spending Over the Past Four Decades

During the past 40 years, federal spending for everything other than the major health care programs, Social Security, and net interest has averaged 11 percent of GDP. Such spending equaled 12 percent of GDP in 1974, stayed between 12 percent and 14 percent from 1975 through 1987, and fell to around 8 percent in the late 1990s and early 2000s. Such spending moved up to 10 percent of GDP by 2003 and remained close to that level through most of the first decade of the 2000s. It then spiked to 14 percent of GDP in 2009, before receding to 10 percent in 2013.

Discretionary Spending
A distinct pattern in the federal budget since the 1970s has been the diminishing share of spending that occurs through the annual appropriation process. Between 1974 and 2013, discretionary spending fell from 51 percent of total federal spending to 35 percent. Relative to the size of the economy, discretionary spending declined from 9.3 percent of GDP to 7.2 percent.

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1. For a description of the activities included in various categories of federal spending, see Congressional Budget Office, *The Budget and Economic Outlook: 2014 to 2024* (February 2014), Box 3-1, p. 51, www.cbo.gov/publication/45010.

2. Because October 1, 2023—the first day of fiscal year 2024—will fall on a weekend, certain payments that ordinarily would be made on that day will instead be made at the end of September, thus shifting them into the previous fiscal year.

Figure 4-1.

Other Federal Noninterest Spending
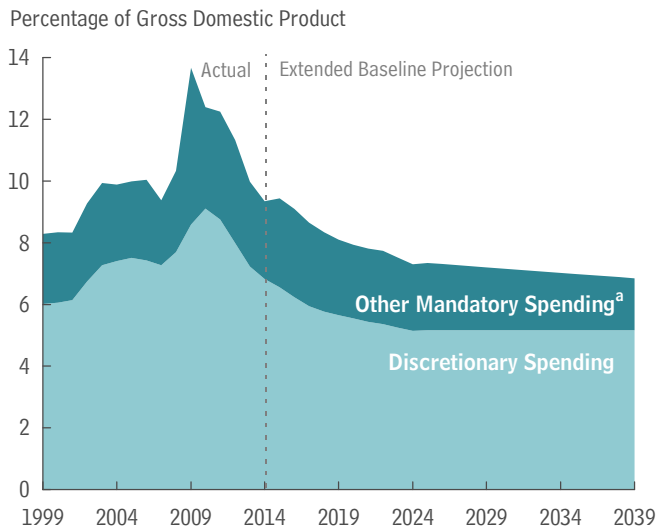
Percentage of Gross Domestic Product

Source: Congressional Budget Office.

Note: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period.

a.   Other mandatory spending is all mandatory spending other than that for the major health care programs, Social Security, and net interest. It includes the refundable portions of the earned income and child tax credits and of the American Opportunity Tax Credit.

The portion of discretionary spending devoted to national defense, and administered primarily by the Department of Defense (DoD), falls mostly into three categories:

■ Operation and maintenance, which supports the day-to-day activities of the military, the training of military units, the majority of costs for the military's health care program, and compensation for most of DoD's civilian employees;

■ Military personnel, which covers compensation for uniformed service members, including pay; housing and food allowances; and related activities, such as moving service members and their families to new duty stations; and

■ Procurement, which pays for the purchase of new weapon systems and other major equipment and upgrades to existing weapon systems.

Forty years ago, in 1974, defense discretionary spending equaled 5.4 percent of GDP. It dropped below 5.0 percent of GDP in the late 1970s but averaged 5.9 percent during the defense buildup of 1982 to 1986 (see Figure 4-2). After the end of the Cold War, outlays for defense fell again relative to GDP, reaching a low of 2.9 percent at the turn of the century. Such outlays were higher again in the 2000s, mainly as a result of spending on operations in Iraq and Afghanistan. Defense spending averaged 4.6 percent of GDP from 2009 through 2011, before falling to 3.8 percent in 2013.

The rest of discretionary spending is for nondefense purposes and covers a wide array of federal investment and other activities, including:

■ Education (excluding student loans), training, employment, and social services;

■ Transportation, including highway programs, transit programs, and airport security;

■ Housing assistance;

■ Veterans' health care;

■ Health-related research and public health programs;

■ Administration of justice, including federal law enforcement, criminal justice, and correctional activities;

■ International affairs, including international development, humanitarian assistance, peacekeeping, nuclear nonproliferation, and the operation of U.S. embassies and consulates; and

■ Other activities, including natural resources and the environment, science, and community and regional development.

Forty years ago, nondefense discretionary spending amounted to 3.9 percent of GDP. Between 1975 and 1981, such spending averaged almost 5 percent of GDP, but between 1984 and 2008 it stayed between 3 percent and 4 percent of GDP. More recently, funding from the American Recovery and Reinvestment Act of 2009, as well as other funding associated with the federal government's response to the 2007–2009 recession, helped push nondefense discretionary spending above 4 percent of GDP from 2009 through 2011. Such spending dropped back to 3.5 percent of GDP in 2013.

Figure 4-2.

Other Federal Noninterest Spending, by Category, 1974 to 2013

Percentage of Gross Domestic Product

Defense Discretionary Spending

Nondefense Discretionary Spending

Other Mandatory Spending[a]
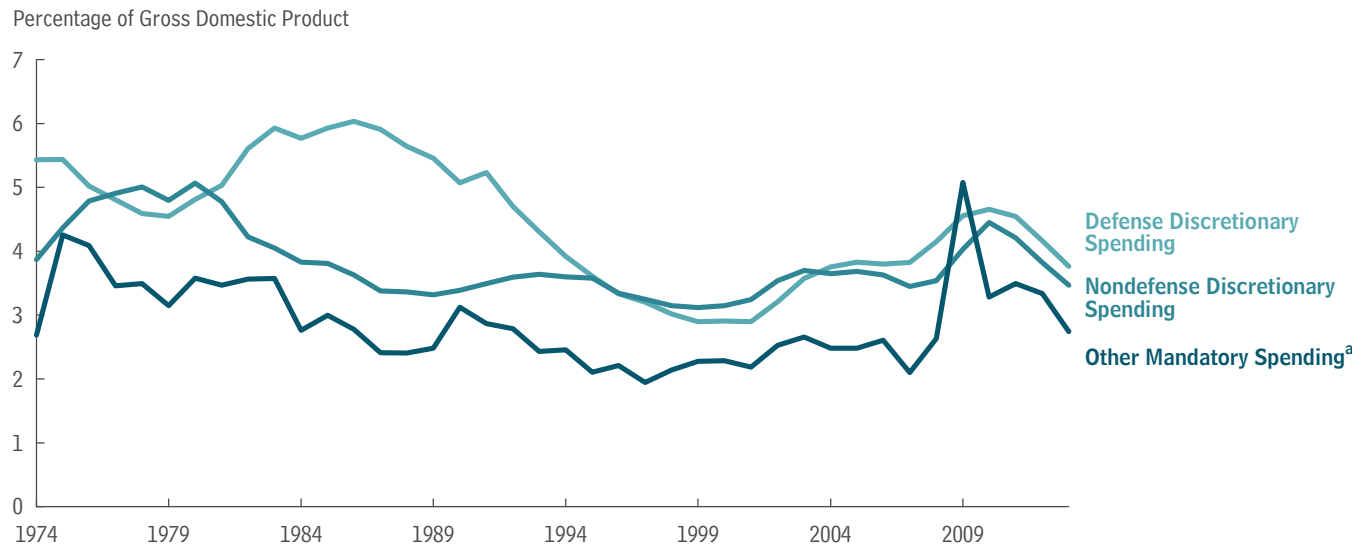
Source: Congressional Budget Office.

a.   Other mandatory spending is all mandatory spending other than that for the major health care programs, Social Security, and net interest. It includes the refundable portions of the earned income and child tax credits and of the American Opportunity Tax Credit.

Other Mandatory Spending

Mandatory spending other than that for the major health care programs and Social Security covers the following activities:

■ Civilian and military retirement, including benefits paid to retired federal civilian and military employees and to retired railroad workers;

■ Earned income, child, and other refundable tax credits, for which payments are made to taxpayers for whom the credit amounts exceed tax liabilities;

■ Veterans' benefits, including housing, educational assistance, readjustment benefits, life insurance, disability compensation, pensions, and burial benefits for military veterans;

■ Food and nutrition programs, including SNAP (the Supplemental Nutrition Assistance Program, formerly known as the Food Stamp program) and child nutrition programs;

■ Unemployment compensation;

■ Supplemental Security Income; and

■ Family support and foster care, including grants to states that help fund welfare programs, Temporary Assistance for Needy Families, foster care, and child support enforcement.

Other mandatory spending is net of various offsetting receipts, which are payments collected by government agencies from other government accounts or from the public in businesslike or market-oriented transactions and are recorded in the budget as negative outlays (that is, credits against direct spending). A significant share of offsetting receipts goes to the Medicare program and is combined with Medicare outlays in this report (see Chapter 2 for more information). Other offsetting receipts come from the contributions that government agencies make to federal retirement programs, the proceeds from leases to drill for oil and natural gas on the Outer Continental Shelf, payments made by Fannie Mae and Freddie Mac, and other sources.

Other mandatory spending averaged about 3½ percent of GDP from the mid–1970s through the early 1980s. It was generally lower from the mid–1980s to 2008, averaging about 2½ percent of GDP. In 2009, however, other mandatory spending nearly doubled, to 5.1 percent of GDP, because of the financial crisis and recession and the

Table 4-1.

Other Federal Noninterest Spending Projected Under CBO's Baseline

Percentage of Gross Domestic Product

	2014	2024
Discretionary Spending		
Defense	3.4	2.7
Nondefense	3.4	2.5
Total	**6.8**	**5.1**
Other Mandatory Spending		
Civilian and military retirement	0.9	0.8
Nutrition programs	0.6	0.4
Refundable tax credits[a]	0.5	0.3
Veterans' benefits	0.5	0.4
Unemployment compensation	0.3	0.2
Supplemental Security Income	0.3	0.2
Offsetting receipts	-1.1	-0.6
Other	0.6	0.4
Total	**2.5**	**2.2**
Total, Other Federal Spending	**9.3**	**7.3**

Source: Congressional Budget Office.

Note: Other federal spending is all spending other than that for the major health care programs, Social Security, and net interest.

a.   The earned income and child tax credits and the American Opportunity Tax Credit.

federal government's response to them. As the economy has improved, and the increases in spending related to the financial crisis and recession have waned, other mandatory spending has declined sharply relative to the size of the economy, falling to 2.7 percent of GDP in 2013.

Long-Term Projections of Other Federal Noninterest Spending

Under CBO's extended baseline, all federal spending apart from the major health care programs, Social Security, and net interest is projected to total 7.3 percent of GDP in 2024 and 6.8 percent in 2039. Those figures represent the lowest amounts relative to the size of the economy since the 1930s.

Discretionary Spending

Projections of discretionary spending for 2014 through 2024 come from CBO's most recent 10-year baseline budget projections, which were published in April.[3]

Through 2021, most discretionary appropriations are constrained by the caps put in place by the Budget Control Act of 2011 (as amended); for 2022 through 2024, CBO assumed that those appropriations would equal the 2021 amount, with increases for projected inflation. Funding for certain purposes, such as war-related activities, is not constrained by the Budget Control Act's caps; through 2024, CBO assumed that such funding would increase each year at the rate of inflation, starting from the current amount. Under those assumptions, outlays from discretionary appropriations are projected to decline from 6.8 percent of GDP this year—already well below the 40-year average of 8.3 percent—to 5.1 percent in 2024 (see Table 4-1). That 2024 amount would be the lowest level of discretionary spending relative to GDP in more than half a century (since at least 1962, the first year for which comparable data are available). Under those projections, in 2024, defense discretionary spending would equal 2.7 percent of GDP and nondefense discretionary spending would equal 2.5 percent of GDP. Each of those amounts would also be the smallest share of the economy in at least five decades.

After 2024, CBO's extended baseline incorporates the assumption that discretionary spending remains at the percentage of GDP projected for 2024—in other words, that such spending grows at the same pace as the economy. CBO's baseline and extended baseline are meant to be benchmarks for measuring the budgetary effects of legislation, so they mostly reflect the assumption that current laws remain unchanged. However, after 2021—when the caps established by the Budget Control Act are due to expire—total discretionary spending will not be limited by current laws and will be determined by lawmakers' future actions. With no basis for predicting those actions, CBO based its long-term projections of discretionary spending on a combination of the baseline projections through 2024 and historical experience.

In CBO's judgment, projecting a continued decline in discretionary spending as a share of GDP beyond 2024 would not provide the most useful benchmark for considering potential changes to discretionary programs, for several related reasons: First, discretionary spending has been a larger share of economic output throughout the past 50 years than it is projected to be in 2024. Second,

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3.   See Congressional Budget Office, *Updated Budget Projections: 2014 to 2024* (April 2014), www.cbo.gov/publication/45229.

nondefense discretionary spending has been higher than 3.0 percent of GDP throughout the past five decades and has shown no sustained trend relative to GDP. Third, defense spending has equaled at least 2.9 percent of GDP throughout the past five decades and has shown no trend relative to GDP in the past two decades. Conversely, projecting an increase in discretionary spending as a percentage of GDP beyond 2024 would require CBO to select a specific percentage, which the agency does not have a clear basis for doing. As a result of those considerations, CBO assumed for the extended baseline that discretionary spending would remain the same share of GDP after 2024 that the agency projects for 2024 in the 10-year baseline, with an adjustment for the timing of certain monthly payments.

Other Mandatory Spending

In constructing baseline projections, CBO assumes that mandatory programs will operate as they do under current law, which includes the automatic spending cuts put in place by the Budget Control Act.

In CBO's most recent baseline projections, total mandatory spending other than that for the major health care programs and Social Security is estimated to fall from 2.7 percent of GDP in 2013 to 2.5 percent this year. That category of other mandatory spending is projected to move back up to 2.9 percent of GDP in 2015, primarily because of lower offsetting receipts, but then decline in subsequent years, to 2.2 percent by 2024.[4]

A small part of the decline between 2014 and 2024 stems from a projected reduction in spending for the earned income tax credit, the child tax credit, and the American Opportunity Tax Credit. Outlays for the refundable portions of those credits are projected to decrease from 0.5 percent of GDP in 2014 to 0.3 percent in 2024 because the American Opportunity Tax Credit and temporary increases in the earned income and child tax credits are scheduled to expire at the end of calendar year

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4. See Congressional Budget Office, *The Budget and Economic Outlook: 2014 to 2024* (February 2014), www.cbo.gov/publication/ 45010.

2017 and because, as income grows, the amounts of various credits that people qualify for decrease.

Much of the remaining projected decline in other mandatory spending relative to GDP between 2014 and 2024 occurs because the structure of many programs in this category leads the number of beneficiaries to decline relative to the size of the population as the economy expands and leads average payments per beneficiary to decline relative to average income. For example, income thresholds for eligibility for some large income support programs, such as Supplemental Security Income and the Supplemental Nutrition Assistance Program, generally rise with prices, while income usually rises more rapidly—especially with the strengthening of the economy that CBO anticipates during the next several years. As a result, CBO expects, the number of beneficiaries of some programs will rise more slowly than the population or even decrease over the next 10 years. Further, average payments under some large programs are often indexed to inflation and therefore tend to grow more slowly than income.

For the years beyond 2024, CBO projected outlays for the refundable portions of the earned income and child tax credits as part of its long-term revenue projections (discussed in Chapter 5). The remainder of other mandatory spending was not projected in detail after 2024 because of the number of programs involved and the variety of factors that influence spending on them. Instead, CBO used an approximate method to project spending for those programs as a group: assuming that such spending would decline as a share of GDP after 2024 at the same rate that it is projected to fall between 2019 and 2024. As benefits from some programs declined further relative to average income in the long run under current law, the effects of the system of federal benefits would become quite different from what they are today.

Under that assumption, mandatory spending other than that for the major health care programs, Social Security, and refundable tax credits would decrease from 1.8 percent of GDP in 2024 to 1.5 percent by 2039. With spending on those tax credits included, other mandatory spending would equal 1.7 percent of GDP in 2039. In later years, under the same assumptions, other mandatory spending would continue to fall.

The Long-Term Outlook for Federal Revenues

Federal revenues come from various sources, including individual and corporate income taxes, payroll (social insurance) taxes, excise taxes, estate and gift taxes, and other taxes and fees. Currently, proceeds from individual income taxes and payroll taxes account for about 80 percent of the federal government's revenues.

Projecting the amount of revenues that will be collected in the future is difficult because revenues are sensitive to economic developments and because policymakers frequently make changes to tax law. For this report, the Congressional Budget Office (CBO) projected the future path of revenues under an extended baseline, which follows the agency's April 2014 baseline budget projections for the next decade and then extends the baseline concept beyond that 10-year window. The revenues projected for the 10-year window are the same as those in CBO's April 2014 baseline.

The extended baseline generally adheres closely to current law and embodies the following assumptions about future federal tax policy: that the rules governing individual income, payroll, excise, and estate and gift taxes would evolve as specified under current law (including the scheduled expiration of temporary provisions lawmakers have routinely extended in the past); and that revenues from corporate income taxes and other sources (such as receipts from the Federal Reserve) would grow as projected under current law through 2024 and then remain constant as a share of gross domestic product (GDP) thereafter.[1] The resulting projections are not intended to be a prediction of future budgetary outcomes; rather, they serve as a benchmark against which lawmakers can measure the potential effect of proposed changes in law. (Chapter 6 discusses the consequences of fiscal policies other than those included in current law.)

Under CBO's extended baseline, federal revenues as a share of GDP are projected to rise from 17.6 percent in 2014 to 18.3 percent in 2024, reflecting structural features of the tax system and the ongoing economic recovery. After 2024, revenues would continue rising faster than GDP, largely for two reasons: Growth in real (inflation-adjusted) income and the interaction of the tax system with inflation would push a greater proportion of income into higher tax brackets; and certain tax increases enacted in the Affordable Care Act (ACA) would generate increasing amounts of revenues relative to the size of the economy. Federal revenues are projected to reach 19.4 percent of GDP by 2039 and to continue rising thereafter (see Figure 5-1).[2] By comparison, revenues have averaged 17.4 percent of GDP over the past 40 years. Without significant changes in tax law, the

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1. The sole exception to the current-law assumption during the 10-year baseline period applies to expiring excise taxes dedicated to trust funds. The Balanced Budget and Emergency Deficit Control Act of 1985 requires CBO's baseline to reflect the assumption that those taxes would be extended at their current rates. That law does not stipulate that the baseline include the extension of other expiring tax provisions, even if they have been routinely extended in the past.

2. The revenue projections presented in this chapter are based on CBO's benchmark projections of economic variables such as GDP, inflation, and interest rates. For the 2014–2024 period, the benchmark matches CBO's February 2014 economic forecast. For later years, the benchmark generally reflects the economic experience of the past few decades; it also incorporates two specific assumptions about fiscal policy—that debt held by the public is maintained at 78 percent of GDP, the level reached in 2024 in CBO's baseline budget projections, and that effective marginal tax rates on income from work and saving remain constant after that year. (Effective marginal tax rates on labor or capital income represent the percentage of an additional dollar of such income that is paid in federal taxes.) Thus, the economic benchmark and the revenue projections in this chapter do not incorporate the effects on people's behavior of the increase in marginal tax rates that would occur after 2024 under the extended baseline. See Chapter 6 for an analysis of the economic impact of the debt levels and marginal tax rates that CBO projects under the extended baseline. For more about the economic benchmark, see Appendix A.

Figure 5-1.

Total Revenues
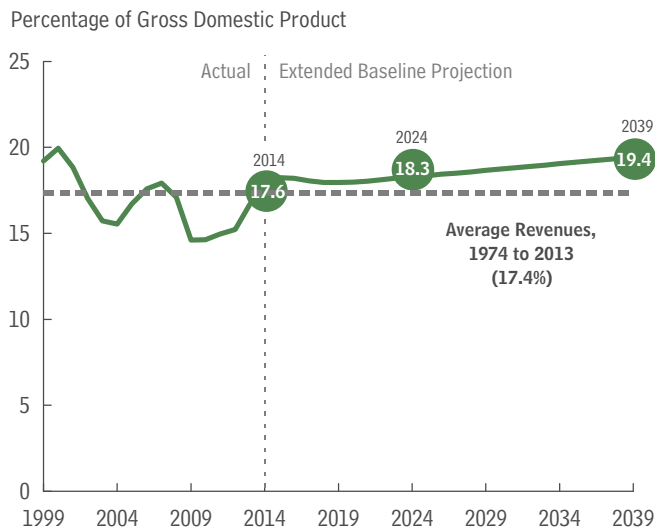
Percentage of Gross Domestic Product

Source: Congressional Budget Office.

Note: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period.

effects of the tax system in 2039 would be different from what they are today: A larger share of each additional dollar of income earned by households would go to taxes, and households throughout the income distribution would pay a greater share of their total income in taxes than households in similar places in that distribution pay today.

Revenues Over the Past 40 Years

Over the past 40 years, total federal revenues have ranged from a high of 19.9 percent of GDP (in 2000) to a low of 14.6 percent (in 2009 and 2010), with no evident trend over time (see Figure 5-2). The composition of total revenues during that period has varied as well. Individual income taxes, which account for about half of all revenues now, have ranged from slightly less than 10 percent of GDP (in 2000) to slightly more than 6 percent (in 2010). Payroll taxes, which generate about one-third of total revenues now, have varied between about 5 percent of GDP and over 6 percent during the past 40 years. (Those taxes consist primarily of payroll taxes credited to the Social Security and Medicare Hospital Insurance trust funds.) Corporate income taxes have fluctuated between about

1 percent of GDP and 3 percent since the 1970s, as have combined revenues from other sources.

Some of the variation in the amounts of revenue generated by different types of taxes has stemmed from changes in economic conditions and from the way those changes interact with the tax code. For example, in the absence of legislated tax reductions, receipts from individual income taxes tend to grow relative to GDP because rising real income tends to push a greater share of income into higher tax brackets—a phenomenon known as real bracket creep. In addition, because some parameters of the tax system are not indexed to increase with inflation, rising prices alone push a greater share of income into higher tax brackets.[3] However, during economic downturns, corporate profits generally fall as a share of GDP, which causes corporate tax revenues to shrink; and losses in households' income tend to push a greater share of total income into lower tax brackets, which, in turn, depresses individual income tax revenues. Thus, total tax revenues automatically decline relative to GDP when the economy is weak and rise relative to GDP when the economy is strong. By contrast, revenues derived from excise taxes have declined over time relative to GDP because many excise taxes are levied on the quantity of a good purchased (such as a gallon of gasoline) as opposed to a percentage of the price paid. Because those levies are not indexed for inflation, revenues have declined relative to GDP as prices have risen over time.

Tax revenues as a share of GDP have also varied over time as a result of legislative changes. In the past 40 years, lawmakers have enacted at least a dozen pieces of legislation that have raised or lowered revenues by 0.5 percent of GDP or more per year.

Revenue Projections Under CBO's Extended Baseline

CBO's extended baseline follows the agency's April 2014 baseline budget projections for the next decade and then

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3.   The parameters of the tax system include the amounts that define the various tax brackets; the amounts of the personal exemption, standard deductions, and credits; and tax rates. Many of the parameters—including the personal exemption, standard deduction, and tax brackets—are indexed for inflation, but some, such as the amount of the maximum child tax credit, are not. The effect of price increases on tax receipts was much more significant before 1984 when none of the parameters of the individual income tax were indexed for inflation.

Figure 5-2.

Revenues, by Source, 1974 to 2013

Percentage of Gross Domestic Product
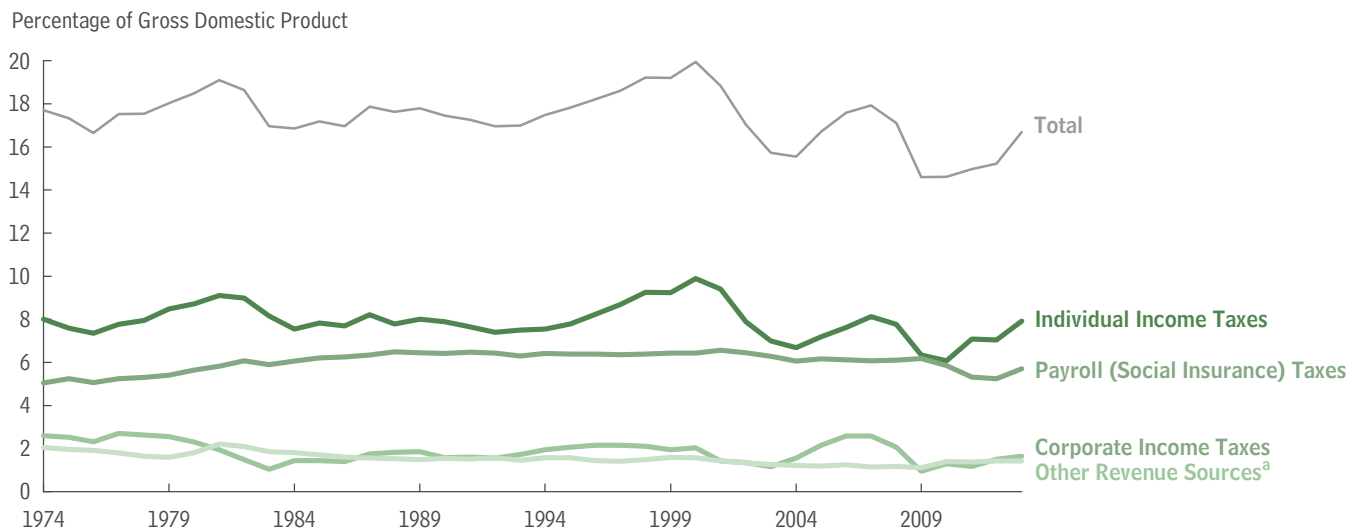
Source: Congressional Budget Office.

a.   Consists of excise taxes, remittances to the Treasury from the Federal Reserve System, customs duties, estate and gift taxes, and miscellaneous fees and fines.

extends the baseline concept beyond that 10-year window.[4] The extended baseline reflects the assumptions that, after 2024, the rules governing the individual income, payroll, excise, and estate and gift taxes would evolve as specified under current law and that revenues from corporate income taxes and all other sources (such as receipts from the Federal Reserve) would remain constant as a share of GDP.

Under current law, certain tax provisions are scheduled to expire during the next decade, and new provisions of law are scheduled to go into effect. Therefore, the baseline and extended baseline incorporate the following specific assumptions:

■   A new tax on certain employment-based health insurance plans with high premiums, which is scheduled to go into effect as a result of the ACA beginning in 2018, would be implemented as specified in current law.

■   Certain tax provisions that have recently expired would not be subsequently extended, and provisions

scheduled to expire over the next several years would do so, even if those provisions have been routinely extended in the past. In particular, rules allowing for accelerated depreciation deductions for certain business investments, which expired at the end of December 2013, would not be extended, and certain individual income tax credits would expire or decline in value after 2017.

Under the extended baseline, tax revenues are projected to rise from 17.6 percent of GDP in 2014 to 18.3 percent in 2024 and then to 19.4 percent in 2039. Increases in receipts from individual income taxes more than account for the 1.9 percentage-point projected rise in total revenues as a percentage of GDP over the next 25 years; receipts from all the other sources, taken together, are projected to decline slightly relative to GDP. Beyond the next 25 years, receipts would continue to rise slowly as a share of the economy.

The projected increase in tax receipts reflects several factors, including structural features of the income tax system, expiring and new tax provisions (including scheduled future tax increases enacted in the ACA), demographic trends, the ongoing economic recovery, and other factors (see Table 5-1).

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4.   See Congressional Budget Office, *Updated Budget Projections: 2014 to 2024* (April 2014), www.cbo.gov/publication/45229.

Table 5-1.

Sources of Growth in Total Revenues as a Percentage of GDP Between 2014 and 2039 Under CBO's Extended Baseline

Source of Growth	Percentage of GDP
Structural Features of the Individual Income Tax System (Including real bracket creep)[a]	1.8
Expiring and New Tax Provisions	0.9
Demographic Trends	0.3
Impact of Economic Recovery on Individual Income Taxes	0.2
Other Factors (Including all changes in corporate, payroll, excise, and estate and gift taxes)[b]	-1.3
Growth in Total Revenues Over the 2014–2039 Period	**1.9**

Source: Congressional Budget Office.

Notes: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period.

GDP = gross domestic product.

a.   "Real bracket creep" refers to the phenomenon in which rising real (inflation-adjusted) income causes an ever-larger proportion of income to be subject to higher tax rates.

b.   Excludes the effects on those revenue sources of expiring and new tax provisions, including those enacted in the Affordable Care Act, which are accounted for in a preceding line of the table.

Structural Features of the Individual Income Tax System

Rising real income causes an ever-larger proportion of income to be subject to higher tax rates, and it further increases taxes by reducing taxpayers' eligibility for various credits, such as the earned income tax credit and the child tax credit. In addition, some provisions of the tax code are not indexed for inflation, so cumulative inflation generates some increase in receipts relative to GDP. For example, the ACA imposed an additional tax on the investment income of individuals with income exceeding $200,000 and of families with income exceeding $250,000. Those thresholds are not indexed for inflation, so the tax would affect an increasing share of investment income over time and would boost revenues by a small but growing share of GDP.[5] Revenues from the individual income tax also depend on the distribution of income. CBO's projections reflect an expectation that earnings will grow faster for higher-income people than for others during the next two decades—as they have over the past several decades—and that the incomes of all taxpayers will grow at similar rates thereafter.[6] Altogether, if current laws remained in place, growth in people's income would increase income tax revenues relative to GDP by 1.8 percentage points between 2014 and 2039, CBO estimates.

Expiring and New Tax Provisions

Under CBO's extended baseline, tax provisions are assumed to evolve as specified under current law. Certain provisions are scheduled to expire during the next decade, and new ones are set to go into effect.

Several tax provisions either recently expired or are slated to expire over the next several years. Most significantly, businesses' ability to immediately deduct 50 percent of new investments in equipment from their taxable income expired at the end of calendar year 2013. Other recently expired provisions include tax credits for research and experimentation and a deferral of tax payments on certain

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5.   The ACA also imposed an additional Medicare tax of 0.9 percent, paid entirely by the employee, on earnings (wages and salaries) of individuals with income exceeding $200,000 and of families with income exceeding $250,000. Because those thresholds are not indexed for inflation, the tax would apply to an increasing share of earnings over time and thereby raise payroll tax revenue by larger amounts relative to GDP over time. However, CBO projects, that effect would be more than offset by a decline in the share of earnings that would be subject to the Social Security tax because a further slight increase in earnings inequality would cause a larger share of earnings to be above the taxable maximum for Social Security.

6.   See Jonathan A. Schwabish and Julie H. Topoleski, *Modeling Individual Earnings in CBO's Long-Term Microsimulation Model,* Working Paper 2013-04 (Congressional Budget Office, June 2013), www.cbo.gov/publication/44306.

types of foreign-earned income, both of which had been in effect for many years. And after 2017, several credits in the individual income tax system are scheduled to expire or to be scaled back.

In addition, several tax provisions enacted in the ACA went into effect in calendar year 2014 or will go into effect over the next several years. Those new provisions would begin to raise revenues as a share of GDP after 2014. In particular, an excise tax on employment-based health insurance whose value exceeds certain thresholds is scheduled to go into effect in 2018.[7] That tax is expected to increase revenues in two ways:

■ First, in those cases in which the tax applied, it would generate additional excise tax revenues.

■ Second, many individuals and employers would probably respond to the presence of the excise tax by shifting to lower-cost insurance plans to reduce the excise tax paid or to avoid paying it altogether. As a result, total payments of health insurance premiums for those individuals would be less than they would have been in the absence of the tax. However, CBO anticipates that total compensation paid by employers (including wages and salaries, contributions to health insurance premiums, pensions, and other fringe benefits) would not be affected over the long term, so lower expenditures for health insurance would mean higher taxable wages and salaries for employees and, as a result, higher payments of income and payroll taxes.

Thus, whether policyholders decided to pay the excise tax or to avoid it by switching to lower-cost plans, total tax revenues would ultimately rise compared with what they would have been in the absence of the tax. Although the threshold for the tax on high-premium health insurance plans is indexed for changes in overall consumer prices, health care costs will grow faster than prices over the long term, CBO projects; consequently, under the extended baseline a greater share of premiums would be subject to

the excise tax over time.[8] CBO projects that the excise tax would increase total revenues by 0.6 percent of GDP in 2039 and by higher percentages thereafter.

Together, under the extended baseline, the expiration of certain existing tax provisions and the scheduled introduction of others would raise receipts by 0.9 percent of GDP between 2014 and 2039, CBO projects.

Demographic Trends
During the next few decades, the retirement of members of the baby-boom generation (people born between 1946 and 1964) will cause them to withdraw money from retirement accounts and receive pension benefits, which will boost income tax revenues as a share of GDP. Depending on the specific characteristics of retirement plans—such as 401(k) plans and individual retirement accounts—some or all of the amounts withdrawn will be subject to taxation. Likewise, compensation that is deferred under employer-sponsored defined benefit plans is taxed when the benefits are paid.[9] Thus, the Treasury would receive significant tax revenues that have essentially been deferred for years. As a result, under the extended baseline, revenues as a share of GDP are projected to climb by about 0.3 percentage points between 2014 and 2039. That upward trend is expected to end in the mid-2040s, however, when almost all of the baby boomers will have reached retirement; beyond that point, revenues from taxable withdrawals would no longer grow faster than GDP.

Impact of the Economic Recovery on Individual Income Taxes
CBO anticipates that certain sources of income that had been unusually small during the economic downturn (for instance, capital gains realizations) will recover and return over the next few years to levels consistent with an economy moving along its long-term path for growth. Under the extended baseline, the effects of the recovery are projected to increase revenues from individual income taxes as a share of GDP by 0.2 percentage points by 2024, a boost that will be maintained in subsequent years.

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7. The other provisions of the ACA that will raise revenues include an annual fee on certain health insurance providers; penalties on certain employers that decline to offer sufficient health insurance coverage (as defined in the act) to their employees; penalties on certain individuals who do not obtain health insurance (the so-called individual mandate); and collections for risk adjustment (a program designed to reduce health insurers' risk).

8. The thresholds will be indexed to general inflation plus 1 percentage point for 2019 and to general inflation for 2020 and subsequent years.

9. A defined benefit plan is an employment-based retirement plan that promises retirees a certain benefit upon retirement. Typically, the benefit is based on a formula that takes into account an employee's length of service and salary.

Other Factors

Under the extended baseline, factors besides those already discussed would also affect the growth of federal revenues as a share of GDP. In particular, remittances to the Treasury from the Federal Reserve—which have been very large since 2010 because of increases in the size and changes in the composition of the central bank's portfolio—are projected to decline to more typical levels.

CBO also projects that under current law, excluding the effects of expiring provisions, corporate income tax revenues would decline as a share of GDP over the next decade. That projected decline stems largely from an expected drop in domestic economic profits relative to GDP, which in turn results from the rising burden of corporate interest payments, growing depreciation on the larger stock of business capital, and an increase in the share of income going to labor.

In addition, excluding the excise tax on high-premium health insurance plans, excise taxes are projected to decline as a share of GDP over time because many excise taxes are assessed as a fixed dollar amount per quantity of a good that is purchased and not as a percentage of the price paid for that good. Therefore, as overall prices rise over time, receipts from excise taxes tend to fall as a share of GDP. Moreover, payroll taxes for unemployment insurance are projected to decline as the economy continues to recover over the next few years, further reducing receipts as a share of GDP.

Taking all of the relevant factors together, CBO projects that—under current law and apart from the effects of scheduled changes to law—revenues from corporate income taxes, payroll taxes, excise taxes, estate and gift taxes, and other miscellaneous sources would decline by a combined 1.3 percent of GDP between 2014 and 2039 and remain about constant as a share of the economy thereafter. About two-thirds of that decline would occur by 2024.

Receipts Beyond the Next 25 Years

After 2039, federal tax receipts would continue to increase slowly relative to the size of the economy. Most of that growth would arise from the same structural features of the individual income tax system responsible for growing revenues over the next 25 years—principally, the effect of rising real income, which would push more income into higher tax brackets. To a lesser extent, the tax provisions enacted in the ACA, most notably the excise

tax on high-premium health insurance plans, would also continue to boost revenues as a percentage of GDP.

Long-Term Implications for Tax Rates and the Tax Burden

Even if no changes in tax law were enacted in the future, the effects of the tax system that would be in place would differ in significant ways from the effects of the tax system today. Increases in real income over time would push more income into higher tax brackets in the individual income tax, thereby raising people's effective marginal tax rates and average tax rates. (The effective marginal tax rate is the percentage of an additional dollar of income from labor or capital that is paid in federal taxes. The average tax rate is total taxes paid divided by total income.) Moreover, fewer taxpayers would be eligible for certain tax credits, such as the earned income and child credits, because rising real income would push them above the income limits for eligibility. Inflation would also raise tax rates, although to a much lesser extent because most of the key parameters of the tax code are indexed for inflation. Slightly more taxpayers would become subject to the alternative minimum tax (AMT) over time, although the share of taxpayers who would pay the alternative tax was greatly limited by the American Taxpayer Relief Act of 2012.[10] Thus, in the long run, people throughout the income distribution would pay a larger share of their income in taxes than people at the same points in the distribution pay today, and many taxpayers would face diminished incentives to work and save.

Marginal Tax Rates on Income From Labor and Capital

Under CBO's extended baseline, marginal tax rates on income from labor and capital would rise over time. The effective federal marginal tax rate on labor income—that

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10. The alternative minimum tax is a parallel income tax system with fewer exemptions, deductions, and rates than the regular income tax. Households must calculate the amount they owe under both the alternative minimum tax and the regular income tax and pay the larger of the two amounts. The American Taxpayer Relief Act raised the exemption amounts for the AMT for 2012 and, beginning in 2013, permanently indexed those exemption amounts for inflation. Also indexed for inflation were the income thresholds at which those exemptions phase out and the income threshold at which the second rate bracket for the AMT begins. Although rising real income would gradually make more taxpayers subject to the AMT, many of those newly affected would owe only slightly more than their regular income tax liability.

Table 5-2.

Estimates of Effective Federal Marginal Tax Rates Under CBO's Extended Baseline

Percent

	2014	**2024**	**2039**
Marginal Tax Rate on Labor Income	29	32	34
Marginal Tax Rate on Capital Income	18	18	19

Source: Congressional Budget Office.

Notes: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period.

The effective federal marginal tax rate on income from labor is the share of an additional dollar of such income that is paid in federal individual income taxes and payroll taxes, averaged across taxpayers using weights proportional to their labor income. The effective federal marginal tax rate on income from capital is the share of the return on an additional dollar of investment made in a particular year that will be paid in taxes over the life of that investment. Rates are calculated for different types of assets and industries, then averaged over all types of assets and industries using the share of asset values as weights.

is, the marginal tax rate on labor income averaged across taxpayers using weights proportional to their labor income—is projected to increase from about 29 percent in calendar year 2014 to 34 percent in 2039 (see Table 5-2). By contrast, the effective federal marginal tax rate on capital income (returns on investment) is projected to rise only from 18 percent to 19 percent over that period.

The projected increase in the effective marginal tax rate on labor income primarily reflects the following factors:

- *Real bracket creep under the regular income tax.* As households' inflation-adjusted income rose over time, they would be pushed into higher marginal tax brackets. (Because the thresholds for taxing income at different rates are indexed for inflation, increases in income that just kept pace with inflation would not generally raise households' marginal tax rates.) One consequence is that the share of ordinary income subject to the top rate of 39.6 percent would rise from 12 percent in 2014 to 17 percent by 2039, CBO estimates.[11]

- *The additional 0.9 percent tax on earnings above an established threshold that was enacted in the ACA.* Over time, that tax would apply to a growing share of labor income because the $250,000 threshold is not indexed for inflation.

- *Rising health care costs.* Rising health care costs tend to reduce marginal tax rates by reducing the share of compensation that is taxable. However, CBO anticipates that this effect would be more than offset in the next few decades by the excise tax on certain high-premium health insurance plans. That tax would affect a growing share of compensation over time because health care costs are expected to rise faster than the threshold for the tax.

- *The structure of premium subsidies in health insurance exchanges (or marketplaces).* Those subsidies are conveyed in the form of tax credits that phase out as income rises over a certain range, increasing marginal rates on income in that range. Because the average real value of the subsidies would grow over time but the income range over which they phased out would remain constant in real terms, the tax credits would phase out at a higher rate and therefore raise effective marginal tax rates by a greater amount.

The effective marginal tax rate on capital income would rise only slightly over the next 25 years, CBO projects. CBO estimates that real bracket creep would not raise that rate very much because a large share of capital income is already being taxed at the top rate in 2014. Moreover, the other key factors that would push up the effective marginal tax rate on labor income would not affect the tax rate on capital income.

The increase in the marginal tax rate on labor income would reduce people's incentive to work, and the increase in the marginal tax rate on capital income would reduce their incentive to save. However, the reductions in earnings and savings from higher taxes would also encourage people to work and save more in order to maintain the same amount of after-tax income and savings. Evidence suggests that the former behavioral responses typically prevail and that, on balance, higher marginal tax rates

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11. Ordinary income is all income subject to the income tax except long-term capital gains and dividends.

discourage economic activity.[12] (The overall effect of federal taxes on economic activity depends not only on marginal tax rates but also on the amount of revenues raised relative to federal spending and thereby on the resulting federal deficits and debt.) Those macroeconomic effects are not reflected in the analysis in this chapter but are addressed in Chapter 6 of this report.

Average Tax Rates for Some Representative Households

Most parameters of the tax code are not indexed for real income growth, and some are not indexed for inflation. As a result, the personal exemption, the standard deduction, the amount of the child tax credit, and the thresholds for taxing income at different rates all would tend to decline relative to income over time under current law. One consequence is that, under the extended baseline, average federal tax rates would increase in the long run.

The cumulative effect of rising prices would significantly reduce the value of some parameters of the tax system that are not indexed for inflation. As one example, CBO estimates that the amount of mortgage debt eligible for the mortgage interest deduction, which is not indexed for inflation, would fall from $1 million today to less than $600,000 in 2039 measured in today's dollars. As another example, the portion of Social Security benefits subject to taxation would increase from about 30 percent now to about 50 percent by 2039, CBO estimates, because the thresholds for taxing benefits are not indexed for inflation.

Even tax parameters that are indexed for inflation would lose value relative to income over the long term under the extended baseline. For example, according to CBO's projections, the current $3,950 personal exemption would rise by more than 80 percent by 2039 because it is indexed for inflation, but income per household would more than double during that period, so the value of the exemption relative to income would decline by more than 30 percent. If income grew at similar rates for higher-income and lower-income taxpayers, the decline in the value of the personal exemption relative to income would tend to boost the average tax rates of lower-income taxpayers more than the average tax rates of other taxpayers because the personal exemption is larger relative to

income for lower-income taxpayers. As another example, without legislative changes, the proportion of taxpayers claiming the earned income tax credit is projected to fall from 16 percent this year to 13 percent in 2039 as growth in real income would move more taxpayers out of the eligibility range for the credit.

Those developments and others would cause individual income taxes as a share of income to grow by varying amounts over time for households at different points in the income distribution. According to CBO's analysis, a married couple with two children earning the median income of $100,900 (including both cash income and other compensation) in 2014 and filing a joint tax return would pay about 4 percent of their income in individual income taxes (see Table 5-3).[13] By 2039, under current law, a similar couple earning the median income would pay 7 percent of their income in individual income taxes, an increase of 3 percentage points. For a married couple with two children earning half the median income, the change in individual income taxes as a share of income would be significantly greater, CBO anticipates: That family would receive a net payment equal to 10 percent of its income in 2014 in the form of refundable tax credits from the federal government, but by 2039 it would become a net taxpayer, paying less than 1 percent of its income in income taxes. By comparison, for a married couple with two children earning four times the median income, CBO projects that the share of income that they would pay in individual income taxes would be much higher in both 2014 and 2039 but rise much less—from 18 percent to 22 percent—between those years. After 2039, income taxes as a share of income would continue rising at each of the income levels—but the percentage-point increases after that year would be more equal across those levels.

By contrast, under current law, payroll taxes as a share of income would differ only slightly in 2039 from what they are today. Those taxes are principally levied as a flat rate on earned income below a certain threshold, which is indexed for both inflation and overall growth in real earnings. Thus, the changes over the next 25 years in the sum of income and payroll taxes as a share of income would be

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12. See Congressional Budget Office, *How the Supply of Labor Responds to Changes in Fiscal Policy* (October 2012), www.cbo.gov/publication/43674.

13. In the examples, all income received by taxpayers is assumed to be from labor compensation. Furthermore, median income is assumed to grow with average income, so income at each multiple of the median grows at the same rate. For details about the calculations, see Table 5-3.

Table 5-3.

Individual Income and Payroll Taxes as a Share of Total Income Under CBO's Extended Baseline

	Income (2014 dollars)[a]		Taxes as a Share of Total Income (Percent)	
	Cash	Total	Income Taxes	Income and Payroll Taxes[b]
Taxpayer Filing a Single Return				
Half the Median Total Income				
2014	10,900	17,500	-1	8
2039	15,000	25,400	2	11
Median Total Income				
2014	27,200	35,100	6	18
2039	38,700	50,900	7	19
Twice the Median Total Income				
2014	59,700	70,200	9	22
2039	85,900	101,800	12	25
Four Times the Median Total Income				
2014	125,500	140,300	14	27
2039	182,100	203,600	16	28
Married Couple (With Two Children) Filing a Joint Return[c]				
Half the Median Total Income				
2014	31,300	50,500	-10	-1
2039	44,800	73,200	*	10
Median Total Income				
2014	78,100	100,900	4	16
2039	112,800	146,400	7	19
Twice the Median Total Income				
2014	171,900	201,800	11	24
2039	248,700	292,800	14	27
Four Times the Median Total Income				
2014	367,200	403,600	18	28
2039	533,800	585,600	22	31

Source: Congressional Budget Office based on data from the March 2013 Current Population Survey.

Notes: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period.

Cash income includes compensation from wages and self-employment income. Total income includes cash income, the employer's costs for employment-based health insurance, and the employer's share of payroll taxes. For these examples, the premium on employment-based health insurance in 2039 is assumed not to exceed the excise tax threshold in the Affordable Care Act.

For these examples, taxpayers are assumed to itemize if itemized deductions are greater than the standard deduction. State and local taxes are assumed to equal 8 percent of wages; other deductions are assumed to equal 15 percent of wages.

* = between zero and 0.5 percent.

a. Income amounts have been rounded to the nearest $100.

b. Payroll taxes include the share paid by employers.

c. The examples for a married couple reflect the assumption that the spouses earn the same amount.

quite similar to the changes in income taxes as a share of income.

Although rising real income would contribute to rising average tax rates under current law, that real income growth would also mean that households in the future would have higher after-tax income than similar households at the same point in the income distribution have today. For example, from 2014 to 2039, real after-tax income for a couple earning the median income is projected to grow by about 40 percent under the extended baseline.

The Economic and Budgetary Effects of Various Fiscal Policies

Federal tax and spending policies have significant effects on the economy, and those economic effects, in turn, affect the budget. However, the budget projections presented in the preceding chapters of this report do not incorporate any effects of fiscal policy on the economy in the long run, relying instead on "benchmark" projections of economic variables. Unlike the economic forecast constructed by the Congressional Budget Office (CBO) for the traditional 10-year baseline period, which generally reflects current laws regarding taxes and spending, the economic benchmark that CBO uses for projections beyond the 10-year period reflects the assumption that marginal tax rates (the rates that apply to an additional dollar of income) and the ratio of debt to gross domestic product (GDP) will be constant after 10 years.

This chapter expands on the analysis in the preceding chapters in two ways. First, it shows how the budgetary policies that would be in place under the extended baseline would affect the economy in the long run—that is, how the economy that resulted from those policies would differ from CBO's economic benchmark—and how those economic effects would, in turn, feed back into the budget. Second, the chapter shows how the budget and the economy would evolve under three additional sets of fiscal policies: an extended alternative fiscal scenario that would result in larger deficits and more debt than in the extended baseline and two illustrative scenarios that would result in smaller deficits and lower debt.

Although changes in tax and spending policies can affect the economy in many ways, CBO's analysis in this chapter focuses on four important ones:

■ Higher debt crowds out investment in capital goods and thereby reduces output relative to what would otherwise occur.

■ Higher marginal tax rates discourage working and saving, which reduces output.

■ Larger transfer payments to working-age people discourage working, which reduces output.

■ Increased federal investment in education, infrastructure, and research and development (R&D) helps develop a skilled workforce, encourages innovation, and facilitates commerce, all of which increase output.

In each of those cases, the opposite change in policy has the opposite effect; for example, lower marginal tax rates increase output relative to what would otherwise occur.

Because the magnitude of the economic effects of specified changes in fiscal policies is uncertain, CBO reports not only a central estimate for the outcome of each set of policies but also a likely range.[1] When estimating output, CBO focused on effects on gross national product (GNP), which—unlike the more commonly cited GDP—includes the income that U.S. residents earn abroad and excludes the income that foreigners earn in this country; it is therefore a better measure of the resources available to U.S. households.

CBO estimates that the fiscal policies in the extended baseline would reduce output relative to what is projected in the economic benchmark, primarily because of

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1. For certain key variables in its long-term economic models, CBO has developed ranges of values based on the agency's reading of the research literature on those variables; each range is intended to cover roughly the middle two-thirds of the likely values for the variable. To calculate the ranges of estimates for the effects of each set of fiscal policies, CBO used the ranges of values for each variable. To calculate the central estimates, CBO used values for the variables at the midpoints of those ranges.

significant increases over time in the ratio of debt to out-
put and marginal tax rates on labor income; in addition,
the increase in debt would lead to higher interest rates.
According to CBO's central estimates, real (inflation-
adjusted) GNP in 2039 would be roughly 3 percent
lower than the amount projected in the benchmark and
interest rates would be about a third of a percentage point
higher.[2] Those economic changes, in turn, would worsen
the budgetary outlook: Under the extended baseline
incorporating economic feedback, federal debt held by
the public would rise to 111 percent of GDP in 2039,
compared with the 106 percent that is projected under
the extended baseline without economic feedback (as
described in Chapter 1).

For the three additional fiscal scenarios, CBO's analysis
yields the following economic and budgetary outcomes
(according to the agency's central estimates):

- Under the extended alternative fiscal scenario, certain
  policies that are now in place but are scheduled to
  change under current law are assumed to continue,
  and some provisions of current law that might be diffi-
  cult to sustain for a long period are assumed to be
  modified. Under that scenario, deficits excluding
  interest payments would be about $2 trillion larger
  over the first decade than those under the baseline;
  subsequently, such deficits would be larger than those
  under the extended baseline by rapidly increasing
  amounts, doubling as a percentage of GDP in less
  than 10 years. CBO projects that real GNP in 2039
  would be about 5 percent lower under the extended
  alternative fiscal scenario than under the extended
  baseline with economic feedback, and that interest
  rates would be about three-quarters of a percentage
  point higher. Reflecting the budgetary effects of those
  economic developments, federal debt would rise to
  183 percent of GDP in 2039 (see Figure 6-1).

- Under one illustrative scenario, deficit reduction is
  phased in so that deficits excluding interest payments
  are $2 trillion lower through 2024 than those under
  the baseline, and the reduction in the deficit in 2024
  as a percentage of GDP is continued in subsequent
  years. CBO projects that real GNP in 2039 would be
  about 3 percent higher and interest rates would be

about one-third of a percentage point lower under this
scenario than under the extended baseline with eco-
nomic feedback. After accounting for those economic
developments, CBO projects that federal debt in 2039
would be about 75 percent of GDP—about as large,
relative to the size of the economy, as it was in 2013.

- Under the other illustrative scenario, the amount of
  deficit reduction in the next 10 years is twice as large,
  being phased in so that deficits excluding interest
  payments are $4 trillion lower through 2024 than
  those under the baseline. As in the preceding scenario,
  the reduction in the deficit in 2024 as a percentage
  of GDP is continued in subsequent years. CBO
  projects that real GNP in 2039 would be about
  5 percent higher and interest rates would be about
  three-quarters of a percentage point lower under
  this scenario than under the extended baseline with
  economic feedback. With those economic effects
  accounted for, federal debt would fall to 42 percent
  of GDP in 2039, slightly above its level in 2007
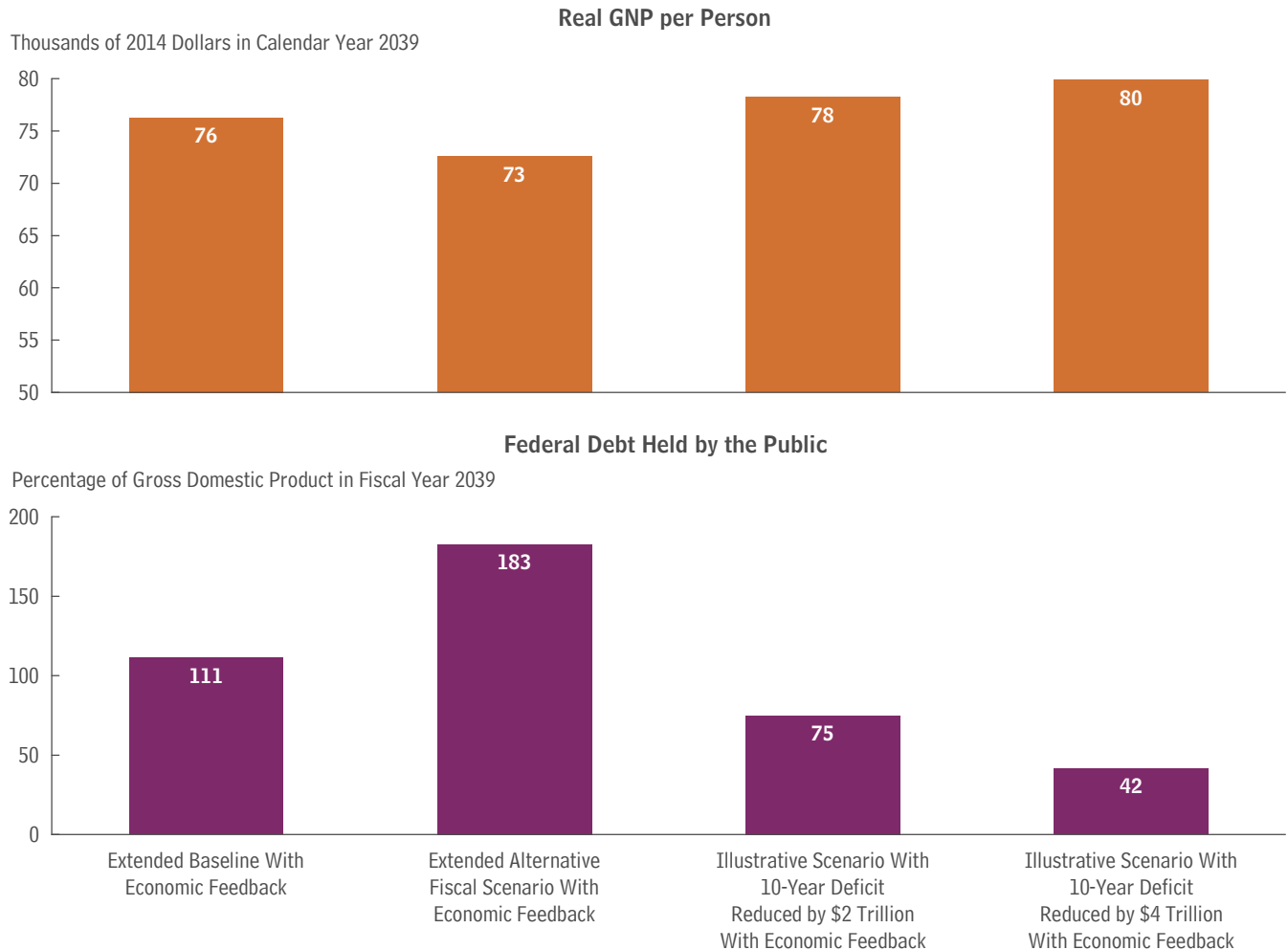 (35 percent) and its average over the past 40 years
  (39 percent).

The three additional fiscal scenarios would have signifi-
cant effects on the economy not only over the long term
(which is the focus of this chapter) but also during the
next few years. The scenarios that would raise output
in the long term relative to the extended baseline would
lower it in the short term, and the scenario that would
reduce output in the long term would raise it in the short
term. CBO estimates that the decrease in tax revenues
and increase in spending under the alternative fiscal sce-
nario would cause real GDP in 2015 to be 0.3 percent
higher than it would be under current law and would
cause the number of full-time-equivalent employees in
2015 to be 0.4 million higher than under current law.[3]
Under the first illustrative scenario, a drop in demand for
goods and services would cause real GDP to be 0.2 per-
cent lower and the number of full-time-equivalent
employees to be 0.2 million smaller in 2015 than under
current law. Under the second illustrative scenario,
with a larger decrease in demand, real GDP would be
0.4 percent lower in 2015, and the number of full-time-
equivalent employees would be 0.5 million smaller, than
under current law.

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2. For the results presented in this chapter, changes in interest rates
   refer to changes in both the average real return on private capital
   and the average real interest rate on federal debt.

3. A year of full-time-equivalent employment is equal to 40 hours of
   employment per week for one year.

Figure 6-1.

Effects in 2039 of the Fiscal Policies in CBO's Extended Baseline, Extended Alternative Fiscal Scenario, and Illustrative Scenarios With Smaller Deficits

Real GNP per Person

Thousands of 2014 Dollars in Calendar Year 2039

Federal Debt Held by the Public

Percentage of Gross Domestic Product in Fiscal Year 2039

| Extended Baseline With Economic Feedback | Extended Alternative Fiscal Scenario With Economic Feedback | Illustrative Scenario With 10-Year Deficit Reduced by $2 Trillion With Economic Feedback | Illustrative Scenario With 10-Year Deficit Reduced by $4 Trillion With Economic Feedback |

Source: Congressional Budget Office.

Notes: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period.

The extended alternative fiscal scenario incorporates the assumptions that certain policies that have been in place for a number of years will be continued and that some provisions of law that might be difficult to sustain for a long period will be modified.

In the illustrative scenarios with the 10-year deficit reduced by $2 trillion and by $4 trillion, those amounts are the cumulative reductions between 2015 and 2024 in deficits excluding interest payments relative to the baseline.

Real (inflation-adjusted) gross national product (GNP) differs from gross domestic product (GDP), the more common measure of the output of the economy, by including the income that U.S. residents earn abroad and excluding the income that nonresidents earn in this country.

The results are CBO's central estimates from ranges determined by alternative assessments about how much deficits ''crowd out'' investment in capital goods such as factories and computers (because a larger portion of people's savings is being used to purchase government securities) and how much people respond to changes in after-tax wages by adjusting the number of hours they work.

Long-Term Economic Effects of Federal Tax and Spending Policies

Federal tax and spending policies can affect the economy through many channels, including the amount of federal borrowing, marginal tax rates on labor and capital income, transfer payments to working-age people, and federal investment.[4]

How Increased Federal Borrowing Affects the Economy

Increased borrowing by the federal government generally draws money away from (that is, crowds out) private investment in productive capital in the long term because the portion of people's savings used to buy government securities is not available to finance private investment. The result is a smaller stock of capital and lower output in the long term than would otherwise be the case (all else held equal).

Two factors offset part of that crowding-out effect. One is that additional federal borrowing tends to raise private saving, which increases the total funds available to purchase federal debt and finance private investment. That response occurs for several reasons:

■ Additional federal borrowing tends to raise interest rates, which boosts the return on saving;

■ Some people anticipate that policymakers will raise taxes or cut spending in the future to cover the cost of paying interest on the additional accumulated debt, so those people increase their own saving to prepare for paying higher taxes or receiving less in benefits; and

■ The policies that give rise to deficits (such as tax cuts or increases in government transfer payments) put more money in private hands, some of which is saved.

However, the rise in private saving is generally a good deal smaller than the increase in federal borrowing, so greater federal borrowing leads to less *national* saving.[5] CBO's central estimate, which is based on the agency's reading of the research literature on this topic, is that private saving rises by 43 cents for every one-dollar increase in federal borrowing in the long run, leaving a net decline of 57 cents in national saving.

A second factor offsetting part of the crowding-out effect is that higher interest rates tend to increase net inflows of capital from other countries—by attracting more foreign capital to the United States and inducing U.S. savers to keep more of their savings at home. Those additional net inflows prevent investment in this country from declining as much as national saving does in the face of more federal borrowing. CBO's central estimate, again drawn from the research literature on the topic, is that net inflows of private capital rise by 24 cents for every one-dollar increase in government borrowing in the long run.

However, an increase in inflows of capital from other countries also means that more profits and interest payments will flow overseas in the future. Therefore, although flows of capital into the United States can help moderate a decline in domestic investment, part of the income resulting from that additional investment does not accrue to U.S. residents. The result is that greater net inflows of capital keep GDP from declining as much as it would otherwise but are less effective in restraining the decline in GNP.[6] Thus, other things being equal, increases in debt cause a greater reduction in GNP (and the well-being of U.S. households) than in GDP, and reductions in debt lead to a greater increase in GNP than in GDP.

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4. To analyze medium-term to long-term effects of changes in federal tax and spending policies, CBO used its enhanced version of a widely used model originally developed by Robert Solow. In CBO's model, people base their decisions about working and saving primarily on current economic conditions—especially wage levels, interest rates, and government policies. Their responses to changes in such conditions generally mirror their responses to economic and policy developments in the past; as a result, the responses reflect people's anticipation of future policies in a general way but not their expectations of particular future developments. For details of that model, see Congressional Budget Office, *CBO's Method for Estimating Potential Output: An Update* (August 2001), www.cbo.gov/publication/13250.

5. National saving comprises total saving by all sectors of the economy: personal saving; business saving, in the form of after-tax profits not paid out as dividends; and government saving or dissaving, in the form of surpluses or deficits of the federal government and state and local governments.

6. The difference in the effect of an increase in debt on GDP and GNP depends, in large part, on the amount of additional capital that foreigners invest in the United States and on the rate of return that they receive on their investments. The increase in the return on capital in this country and the increase in net holdings of U.S. assets by foreigners—both of which imply greater income earned by foreign investors—decrease GNP relative to GDP. In CBO's analyses of fiscal policy, the rate of return earned by foreign investors in the United States changes when the rate of return on capital in this country changes. However, to be consistent with U.S. experience in recent decades, that response is less than one-for-one.

With those two offsets to the crowding-out effect taken together, when the deficit goes up by one dollar, national saving falls by 57 cents and foreign capital inflows rise by 24 cents, leaving a decline of 33 cents in investment in the long run, according to CBO's central estimates. To reflect the wide range of estimates in the economics literature of how government borrowing affects national saving and domestic investment, CBO also uses a likely range of estimates for those effects: At the low end of that range, for each dollar that deficits rise, domestic investment falls by 15 cents; at the high end of that range, domestic investment falls by 50 cents.[7]

The effect of deficits on investment alters pretax wages and the return on capital, changing incentives to work and save. Lower investment leads to a smaller capital stock, which makes workers less productive and thereby decreases pretax wages relative to what they would otherwise be. Those lower wages reduce people's incentive to work. However, the productivity of existing capital is greater because more workers make use of each unit of capital—for example, each computer or piece of machinery—and that greater productivity raises the return on capital. A higher return on capital boosts the return on equity shares in the ownership of capital and boosts the return on other investments (such as interest rates on federal debt) that are competing for people's savings. The resulting increase in the return on savings, in turn, strengthens people's incentive to save.

CBO's estimates of the effects of higher federal debt on private saving, net capital inflows, and interest rates are based on historical experience. However, history may not be a good guide to the effects of rising debt in the extended baseline because the extended baseline shows a large, persistent increase in the ratio of debt to GDP—an outcome that lies outside historical experience in the United States, where previous large increases in debt have been temporary, such as during and immediately after wars and severe economic downturns (see Figure 1-1 on page 9). If participants in financial markets came to believe that policymakers intended to let federal debt keep rising relative to the size of the economy, interest rates would probably increase by more than the historical relationship between federal debt and interest rates would

suggest. In addition, the increases in federal debt might not affect private saving and net capital inflows in the same way that they have in the past.

As Chapter 1 discusses in greater detail, increased federal debt would have a number of negative consequences in the long term in addition to the effects just described:

■ Increased borrowing would increase the amount of interest that the government pays to its lenders, all else being equal. If policymakers wished to maintain the government benefits and services that are embodied in current law and not allow deficits to increase as interest payments grew, then tax revenues would have to increase as well. Alternatively, policymakers could choose to offset the rising interest costs, at least in part, by reducing benefits and services. Or they could allow deficits to increase for some time and then change fiscal policy to reduce deficits later—but that would ultimately require larger deficit reductions if policymakers wished to avoid long-term increases in the debt burden.

■ Increased borrowing would restrict policymakers' ability to use tax and spending policies to respond to unexpected challenges, such as economic downturns or financial crises. As a result, those challenges would tend to have larger negative effects on the economy and on people's well-being.

■ Increased borrowing would increase the probability of a fiscal crisis in which investors lost so much confidence in the government's ability to manage its budget that the government was unable to borrow at affordable rates. Such a crisis would present policymakers with extremely difficult choices and probably have a very significant negative impact on the country.

How Increased Marginal Tax Rates Affect the Economy

Increases in marginal tax rates on labor and capital income reduce output and income relative to what would be the case with lower rates (all else held equal). A higher marginal tax rate on capital income decreases the after-tax rate of return on saving, weakening people's incentive to save. However, because that higher marginal tax rate also decreases people's return on their existing savings, they need to save more to have the same future standard of living, which tends to increase the amount of saving. CBO concludes, as do most analysts, that the former effect outweighs the latter, so that a higher marginal tax

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7. For a review of evidence about the effect of deficits on investment, see Jonathan Huntley, *The Long-Run Effects of Federal Budget Deficits on National Saving and Private Domestic Investment*, Working Paper 2014-02 (Congressional Budget Office, February 2014), www.cbo.gov/publication/45140.

rate on capital income decreases saving. Specifically, CBO's analyses of fiscal policy incorporate an estimate that an increase in the marginal tax rate on capital income that decreases the after-tax return on saving by 1 percent results in a decrease in private saving of 0.2 percent. (A lower marginal tax rate on capital income has the opposite effect.) Less saving results in less investment, a smaller capital stock, and lower output and income.

Similarly, a higher marginal tax rate on labor income decreases people's incentive to work. However, because that higher marginal tax rate also decreases people's after-tax income from the work they are already doing, they need to work more to maintain their standard of living, which tends to increase the supply of labor. CBO concludes, as do most analysts, that the former effect outweighs the latter, so that a higher marginal tax rate on labor income decreases the labor supply. (A lower marginal tax rate on labor income has the opposite effect.) Fewer hours of work result in lower output and income.

To reflect the high degree of uncertainty about the size of that effect, CBO's analyses of fiscal policy use a likely range of values for how sharply people adjust the number of hours they work in response to changes in marginal tax rates.[8] The responsiveness of the labor supply to taxes is often expressed as the total wage elasticity (the change in total labor income caused by a 1 percent change in after-tax wages). The total wage elasticity equals the substitution elasticity, which measures the first of the effects just described, minus the income elasticity, which measures the second of the effects just described. In this analysis, CBO's central estimate for labor supply response corresponds to a total wage elasticity of about 0.19 (composed of a substitution elasticity of 0.24 and an income elasticity of 0.05). At the low end of CBO's likely range for labor supply response, the agency used a total wage elasticity of about 0.06 (composed of a substitution elasticity of 0.16 and an income elasticity of 0.10). At the high end of that range, CBO used a value of about 0.32 (composed of a substitution elasticity of 0.32 and an income elasticity of zero).[9]

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8. In CBO's analyses, those same values are used to estimate the effect on the labor supply of changes in pretax hourly wages.

9. For details on CBO's estimates of the responsiveness of the supply of labor to changes in the after-tax wage rate, see Congressional Budget Office, *How the Supply of Labor Responds to Changes in Fiscal Policy* (October 2012), www.cbo.gov/publication/43674.

How Increased Transfer Payments to Working-Age People Affect the Economy

Increases in transfer payments to working-age people discourage work by increasing the amount of resources available to those people and by making work less attractive relative to other uses of their time. An increase in payments raises people's income, so they can work less and maintain the same standard of living; that phenomenon, known as the income effect, tends to reduce the labor supply. In addition, an increase in payments tends to create an implicit tax on additional earnings because additional earnings cause people to receive reduced benefits from some transfer programs; that phenomenon, known as the substitution effect, also tends to reduce the labor supply. (Thus, in contrast with changes in marginal tax rates, changes in transfer payments generate income and substitution effects that generally work in the same direction.) Those reductions in labor supply take the form of some people's choosing to work fewer hours and other people's choosing to withdraw from the labor force altogether.

CBO's analysis in this chapter incorporates the income effect of changes in transfer payments to working-age people, using the same income elasticity that the agency used to analyze the response of the labor supply to changes in marginal tax rates. However, the analysis does not reflect the substitution effect of changes in transfer payments because CBO is still developing methods for estimating the complex array of implicit taxes arising from federal transfer policies.

How Increased Federal Investment Affects the Economy

Increases in federal investment can promote long-term economic growth by raising productivity.[10] Spending on education can help develop a skilled workforce, spending on R&D can encourage innovation, and spending on infrastructure such as roads and airports can facilitate commerce. If not for receiving a public education

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10. For further discussion, see Congressional Budget Office, *Federal Investment* (December 2013), www.cbo.gov/publication/44974. The analysis here focuses on federal investment for nondefense purposes. Defense investment contributes to the production of weapon systems and other defense goods, but much of it is sufficiently separate from domestic economic activity that it does not typically contribute to future private-sector output; the exception is the small portion of defense investment that goes to basic and applied research.

(funded in part by federal spending), many workers would have lower wages than they do; the development of the Internet, initially funded through government R&D, led to the creation of whole segments of today's economy; and without public highways, the trucking industry would face much higher costs. The result of that greater productivity is higher private-sector output. By contrast, decreases in federal investment can reduce productivity and long-term growth.

CBO's central estimate is that federal investment yields one-half of the return on the average investment by the private sector, with the return beginning five years after the investment, on average. However, the size of the return on federal investment is subject to considerable uncertainty, so CBO also uses a likely range of returns. At the low end, CBO uses a rate of return of zero on federal investment—that is, such investment has no effect on future private-sector output. At the high end, CBO uses a rate of return on federal investment equal to the return on the average investment by the private sector. The actual rate of return for a particular federal investment could lie outside that range; a project might have a negative return or, alternatively, yield a greater return than investment completed by the private sector.

Long-Term Effects of the Extended Baseline

The extended baseline generally incorporates the fiscal policies specified in current law. Those policies would cause deficits and debt to rise over time as percentages of GDP and would cause marginal tax rates to increase. Those policies also would increase transfers to working-age families and reduce federal investment as a percentage of GDP. Together, those changes would make output lower, and interest rates higher, than projected in the economic benchmark. Those economic effects, in turn, would worsen budgetary outcomes relative to those based on the economic benchmark.

Fiscal Policies in the Extended Baseline

Under the extended baseline, federal debt would be larger and marginal tax rates would be higher than the values CBO assumed for its economic benchmark. The increase in transfer payments and decline in federal investment as a share of GDP under the extended baseline are also not reflected in the economic benchmark after 2024.

Under the policies in the extended baseline, federal debt held by the public would rise from 72 percent of GDP in 2013 to 78 percent in 2024 and to 106 percent in 2039 (without accounting for economic feedback), CBO projects (see Table 6-1). Those percentages are larger than the ones underlying the economic benchmark, which incorporates the assumption that federal debt will rise to 78 percent of GDP by 2024 and then remain at that percentage thereafter.

In addition, marginal tax rates on labor income (such as wages and salaries) and capital income (income derived from wealth, such as stock dividends, realized capital gains, and owners' profits from businesses) would increase over time, as rising real incomes pushed more income into higher tax brackets. The effective marginal tax rate on labor income in 2039 would be about 34 percent, compared with about 29 percent now, and the effective marginal tax rate on capital income would be about 19 percent, compared with about 18 percent now (see Chapter 5 for details). By contrast, the economic benchmark reflects the assumption that effective marginal tax rates on income from labor and capital will rise through 2024 in line with CBO's estimates under current law but then remain constant thereafter at their 2024 levels (namely, 32 percent and 18 percent).

Transfer payments to working-age people would increase as a share of GDP under the extended baseline, CBO projects. The economic effects of the increase in those payments over the coming decade are incorporated in CBO's baseline economic forecast for the 2014–2024 period and thus are incorporated in the economic benchmark. However, the further increase in those payments beyond 2024—which is expected to occur as rising federal spending for health care more than offsets declining federal spending for some other transfer programs (relative to the size of the economy)—is not included in the economic benchmark.

Given the assumptions underlying the extended baseline, discretionary spending for nondefense purposes would decline significantly relative to GDP during the next decade (see Chapter 4 for details). Roughly half of nondefense discretionary spending represents investments in education, infrastructure, and R&D. If investment remained the same share of such spending as it has been in the past, then it also would fall markedly as a share of GDP over the next decade. After 2024 in the extended baseline, discretionary spending is projected to be a

Table 6-1.

Long-Run Effects on the Federal Budget of the Fiscal Policies in Various Budget Scenarios

Percentage of Gross Domestic Product

	2024	2039
	Revenues	
Without Economic Feedback		
Extended baseline	18.3	19
With Economic Feedback		
Extended baseline	18.3	19
Extended alternative fiscal scenario	18.0	18
Illustrative scenario with 10-year deficit reduced by $2 trillion	n.a.	n.a.
Illustrative scenario with 10-year deficit reduced by $4 trillion	n.a.	n.a.
	Spending Excluding Interest Payments	
Without Economic Feedback		
Extended baseline	18.8	21
With Economic Feedback		
Extended baseline	18.8	21
Extended alternative fiscal scenario	19.4	25
Illustrative scenario with 10-year deficit reduced by $2 trillion	n.a.	n.a.
Illustrative scenario with 10-year deficit reduced by $4 trillion	n.a.	n.a.
	Deficit (-) or Surplus Excluding Interest Payments	
Without Economic Feedback		
Extended baseline	-0.5	-2
With Economic Feedback		
Extended baseline	-0.5	-2
Extended alternative fiscal scenario	-1.4	-7
Illustrative scenario with 10-year deficit reduced by $2 trillion	0.9	*
Illustrative scenario with 10-year deficit reduced by $4 trillion	2.2	1
	Total Deficit (-) or Surplus	
Without Economic Feedback		
Extended baseline	-3.7	-6
With Economic Feedback		
Extended baseline	-3.7	-7
Extended alternative fiscal scenario	-5.0	-17
Illustrative scenario with 10-year deficit reduced by $2 trillion	-2.0	-4
Illustrative scenario with 10-year deficit reduced by $4 trillion	-0.3	-1
	Federal Debt Held by the Public	
Without Economic Feedback		
Extended baseline	78	106
With Economic Feedback		
Extended baseline	78	111
Extended alternative fiscal scenario	87	183
Illustrative scenario with 10-year deficit reduced by $2 trillion	69	75
Illustrative scenario with 10-year deficit reduced by $4 trillion	60	42

Source: Congressional Budget Office.

Notes: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period.

The extended alternative fiscal scenario incorporates the assumptions that certain policies that have been in place for a number of years will be continued and that some provisions of law that might be difficult to sustain for a long period will be modified.

In the illustrative scenarios with the 10-year deficit reduced by $2 trillion and by $4 trillion, those amounts are the cumulative reductions between 2015 and 2024 in deficits excluding interest payments relative to the baseline.

The results with economic feedback include the economic effects of the budget policies and the effects of that economic feedback on the budget. Those results are CBO's central estimates from ranges determined by alternative assessments about how much deficits "crowd out" investment in capital goods such as factories and computers (because a larger portion of people's savings is being used to purchase government securities) and how much people respond to changes in after-tax wages by adjusting the number of hours they work.

n.a. = not applicable; * = between -0.5 percent and zero.

constant share of GDP. Therefore, CBO projects that federal investment will be a constant share of GDP after 2024 as well. The economic effects of the reduction in investment over the coming decade are incorporated in CBO's baseline economic forecast and thereby in the economic benchmark for the 2014–2024 period. However, the effects beyond 2024—which would represent delayed effects of the decline in federal investment relative to GDP through 2024—are not included in the economic benchmark.

Output and Interest Rates Under the Extended Baseline

In CBO's assessment, larger federal debt and higher marginal tax rates on labor income are the aspects of the extended baseline that would have the largest effects on the economy. The projected rise in transfer payments and decline in federal investment as a share of GDP would also affect the economy. That economic feedback would cause output and interest rates to differ from the amounts without such feedback (that is, under CBO's economic benchmark).

Under the extended baseline, real GNP in 2039 would be about 3 percent below what is projected in the economic benchmark, the agency estimates.[11] As a result, real GNP per person in 2039 would be about $76,000 (in 2014 dollars) under the extended baseline with economic feedback from fiscal policies, compared with about $78,000 under the benchmark (which does not incorporate such feedback); primarily because of anticipated productivity growth, those amounts would be considerably greater than real GNP per person in 2013, which was about $56,000. Interest rates in 2039 would be about a third of a percentage point higher than those projected in the benchmark, CBO estimates. Beyond 2039, the fiscal policies in the extended baseline would generate larger declines in real GNP and larger increases in interest rates (relative to the benchmark) than in the first 25 years.

Those outcomes are CBO's central estimates. On the basis of the agency's likely ranges for key variables, CBO estimated that the reduction in real GNP in 2039 relative to the benchmark would range from about 1½ percent to

about 4 percent. The estimated increase in interest rates in 2039 would range from a very small amount to a little over half a percentage point. Those ranges reflect only a few sources of uncertainty regarding the effects of fiscal policies on the economy. Significant uncertainty surrounds CBO's projections even apart from the effects of fiscal policies. (That uncertainty is explored in Chapter 7.)

Budgetary Outcomes Under the Extended Baseline

The reduction in economic output and increase in interest rates (relative to the benchmark) caused by the fiscal policies in the extended baseline would make budgetary outcomes worse. Lower output implies less income and thus less tax revenue. Lower output also implies that for any given amount of federal debt, the ratio of debt to GDP would be higher. Moreover, higher interest rates mean larger interest payments on federal debt. Working in the other direction, lower output implies lower federal spending on health care and retirement programs.[12]

After incorporating those additional budgetary effects, CBO projects that debt held by the public in 2039 would be 111 percent of GDP—compared with 106 percent under the extended baseline without economic feedback, as presented in earlier chapters of this report (see Table 6-1 and Figure 6-2). In addition to the effects on output, income, and interest rates reported here, the high and rising amounts of federal debt under the extended baseline would impose significant constraints on policymakers and would raise the risk of a fiscal crisis, as discussed above.

Long-Term Effects of an Alternative Fiscal Scenario

CBO's extended alternative fiscal scenario is based on the assumptions that certain policies that are now in place but are scheduled to change under current law will be continued and that some provisions of law that might

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11. Projected real GNP in 2024 under the extended baseline equals that in the economic benchmark because the benchmark matches CBO's economic forecast during the 10-year budget window, and that economic forecast is consistent with the baseline tax and spending policies.

12. In this analysis (as well as the analysis in Chapter 7), decreases in GDP from incorporating economic feedback are estimated to reduce revenues (given current tax law), spending for Social Security (because lower earnings result in smaller benefits), and federal spending for health care programs (according to CBO's standard approach for projecting long-term cost growth, which is described in Chapter 2). However, CBO projects that other federal noninterest spending would remain at the amounts in the extended baseline even if GDP deviated from that baseline.

Figure 6-2.

Effects of the Fiscal Policies in CBO's Extended Baseline
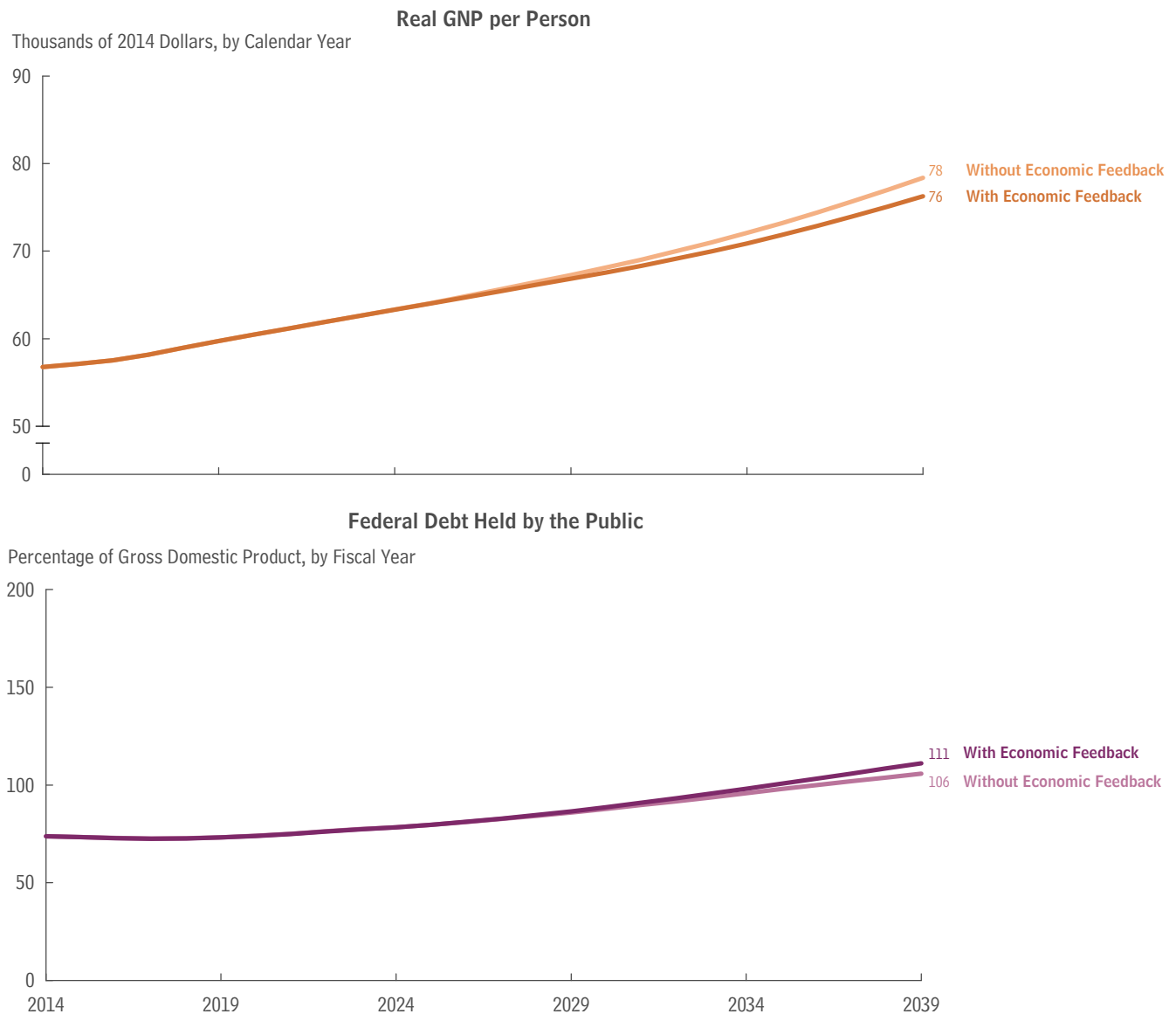
Real GNP per Person

Thousands of 2014 Dollars, by Calendar Year

78 Without Economic Feedback
76 With Economic Feedback

Federal Debt Held by the Public

Percentage of Gross Domestic Product, by Fiscal Year

111 With Economic Feedback
106 Without Economic Feedback

Source: Congressional Budget Office.

Notes: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period.

Real (inflation-adjusted) gross national product (GNP) differs from gross domestic product (GDP), the more common measure of the output of the economy, by including the income that U.S. residents earn abroad and excluding the income that nonresidents earn in this country.

The results with economic feedback include the economic effects of the budget policies and the effects of that economic feedback on the budget. Those results are CBO's central estimates from ranges determined by alternative assessments about how much deficits "crowd out" investment in capital goods such as factories and computers (because a larger portion of people's savings is being used to purchase government securities) and how much people respond to changes in after-tax wages by adjusting the number of hours they work.

be difficult to sustain for a long period will be modified. The scenario, therefore, captures what some analysts might consider to be current *policies*, as opposed to current *laws*.

Under the extended alternative fiscal scenario, deficits would be substantially larger than they would be in the extended baseline, and marginal tax rates on labor income and capital income would be lower. In addition, transfers to working-age people would be larger, and federal investment would be higher. Taken together, those differences would cause output to be lower and interest rates to be higher in the long run than under the extended baseline. Those economic effects, in turn, would further increase the gap between deficits and debt in this scenario and those in the extended baseline.

Fiscal Policies in the Extended Alternative Fiscal Scenario

In the extended alternative fiscal scenario, deficits excluding interest payments would be larger than they would be in the extended baseline by about $1.9 trillion through 2024 and by increasing amounts in subsequent years.[13] Deficits would be larger under this scenario than under the extended baseline because noninterest spending would be higher and revenues lower (see Table 6-1 on page 76).

Relative to the extended baseline, noninterest spending would be 0.6 percent of GDP higher under this scenario in 2024 and roughly 4 percent of GDP higher in 2039. Those differences stem from three assumptions about the policies underlying the scenario that differ from those underlying the extended baseline:

■ The automatic reductions in spending in 2015 and later required by the Budget Control Act of 2011 as subsequently amended would not occur—although the original caps on discretionary appropriations in that law would remain in place;

■ Lawmakers would act to maintain Medicare's payment rates for physicians at current levels; and

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13. For additional detail on the policies underlying the alternative fiscal scenario, see Congressional Budget Office, *The Budget and Economic Outlook: 2014 to 2024* (February 2014), www.cbo.gov/publication/45010. In contrast to the estimates of the budgetary effects of those policies that CBO published in that earlier report, the estimates shown in Table 6-1 in this report incorporate economic feedback.

■ Federal noninterest spending apart from that for Social Security, the major health care programs (net of offsetting receipts), and certain refundable tax credits would rise after 2024 to its average as a percentage of GDP during the past two decades—rather than fall significantly below that level, as it does in the extended baseline.

Eliminating the Budget Control Act's automatic spending reductions and raising projected spending for a broad set of programs after 2024 would increase transfers to working-age people. Those policy changes would also increase discretionary spending and therefore federal investment, CBO projects (as discussed above).

Revenues under the extended alternative fiscal scenario would be 0.3 percent of GDP lower than under the extended baseline in 2024 and roughly 1 percent of GDP lower in 2039. Those differences stem from two assumptions about the policies underlying the scenario that differ from those underlying the extended baseline:

■ About 70 expiring tax provisions, including one that allows businesses to deduct 50 percent of new investments in equipment immediately, will be extended through 2024; and

■ After 2024, revenues will equal 18.0* percent of GDP, matching the value they would have in 2024 given the previous assumption about expiring tax provisions and standing slightly higher than the average of 17.4 percent over the past 40 years—rather than rising over time as a percentage of GDP, as they do in the extended baseline.

Revenues are projected to grow over time relative to GDP in the extended baseline largely for two reasons: Rising real income would push a greater share of income into higher tax brackets; and, to a lesser extent, certain tax increases enacted in the Affordable Care Act would generate increasing amounts of revenue relative to the size of the economy. By contrast, during the past few decades, federal revenues as a percentage of GDP have fluctuated with no evident trend. The path of revenues in the extended alternative fiscal scenario shows what would happen if policymakers extended those expiring tax provisions and then made other changes to the law to keep revenues close to their historical percentage of GDP.

[*Value corrected on July 29, 2014]

Output and Interest Rates Under the Extended Alternative Fiscal Scenario

Compared with the extended baseline, the substantially larger debt under the extended alternative fiscal scenario would reduce output and income relative to that baseline because of the additional crowding out of capital investment. In addition, the larger transfers to working-age people would reduce the supply of labor. However, lower marginal tax rates on labor and capital income and more federal investment would boost output relative to the extended baseline.

On balance, in CBO's assessment, output would be lower and interest rates higher under the extended alternative fiscal scenario than they would be under the extended baseline with economic feedback. In its central estimates, CBO projects that real GNP would be 0.5 percent lower in 2024 and about 5 percent lower in 2039; according to CBO's likely ranges for key variables, the reduction in real GNP would range from 0.2 percent to 0.7 percent in 2024 and from about 2 percent to about 8 percent in 2039. However, even with the negative impact of fiscal policies under the alternative scenario, CBO projects that real GNP per person would be considerably higher in 2039 than in 2014 because of continued growth in productivity. Interest rates in 2039 would be about 1 percentage point higher under the alternative scenario than under the extended baseline, according to CBO's central estimate. Beyond 2039, the fiscal policies in the extended alternative fiscal scenario would generate much larger declines in real GNP and much larger increases in interest rates relative to the extended baseline.

Budgetary Outcomes Under the Extended Alternative Fiscal Scenario

Budgetary outcomes under the extended alternative fiscal scenario would be worsened by the economic changes that would result from the policies it embodies. With the effects of lower output and higher interest rates incorporated, federal debt held by the public under the extended alternative fiscal scenario would reach 183 percent of GDP in 2039—compared with 111 percent of GDP under the extended baseline with economic feedback—according to CBO's central estimate (see Figure 6-3).[14] Thus, debt would be much higher and rising much more rapidly than under the extended baseline.

In addition to the effects on output, income, and interest rates reported here, the other consequences of high and rising federal debt, discussed above, would be especially

acute under this scenario because the debt would be extremely high and would be rising so rapidly. Such a path for debt would impose considerable constraints on policymakers and would significantly raise the risk of a fiscal crisis—and it ultimately would be unsustainable.

Long-Term Effects of Two Illustrative Scenarios With Smaller Deficits

In a recent study, CBO projected economic developments during the coming decade under two illustrative budgetary paths that would decrease deficits gradually.[15] Relative to the extended baseline, the reductions in federal deficits and debt under those scenarios would cause output and income to be higher and the ratio of federal debt to GDP to be lower in the long run.

Fiscal Policies in the Two Illustrative Scenarios

In the two illustrative scenarios, CBO assumed that deficits excluding interest payments between 2015 and 2024 would be $2 trillion or $4 trillion smaller than those under current law. The reductions in the deficit relative to the extended baseline would be comparatively small in 2015 and would increase steadily through 2024; at that point, the reduction in the deficit excluding interest payments would be $360 billion, or nearly 1½ percent of GDP, under the first scenario, and $720 billion, or over 2½ percent of GDP, under the second scenario. In subsequent years, the reductions in the deficit excluding interest payments, measured as a percentage of GDP, would continue at the level achieved in 2024.

For the sake of simplicity and to avoid any presumption about which policies might be chosen to reduce the deficit, CBO analyzed those illustrative scenarios without specifying the tax and spending policies underlying them.

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14. Under the extended alternative fiscal scenario, the annual increases in revenues or reductions in noninterest spending needed to return debt in 2039 to its current percentage of GDP would be 3.4 percent of GDP for the 2015–2039 period. To return debt to its average percentage of GDP during the past 40 years, the annual increases in revenues or reductions in noninterest spending would be 4.8 percent of GDP. For a discussion of how CBO constructs those measures, see Chapter 1; for corresponding estimates over the next 75 years, see Appendix D. The estimates here, like those in Chapter 1, are calculated without economic feedback effects.

15. Congressional Budget Office, *Budgetary and Economic Outcomes Under Paths for Federal Revenues and Noninterest Spending Specified by Chairman Ryan* (April 2014), www.cbo.gov/publication/45211.

Figure 6-3.

Long-Run Effects of the Fiscal Policies in CBO's Extended Alternative Fiscal Scenario
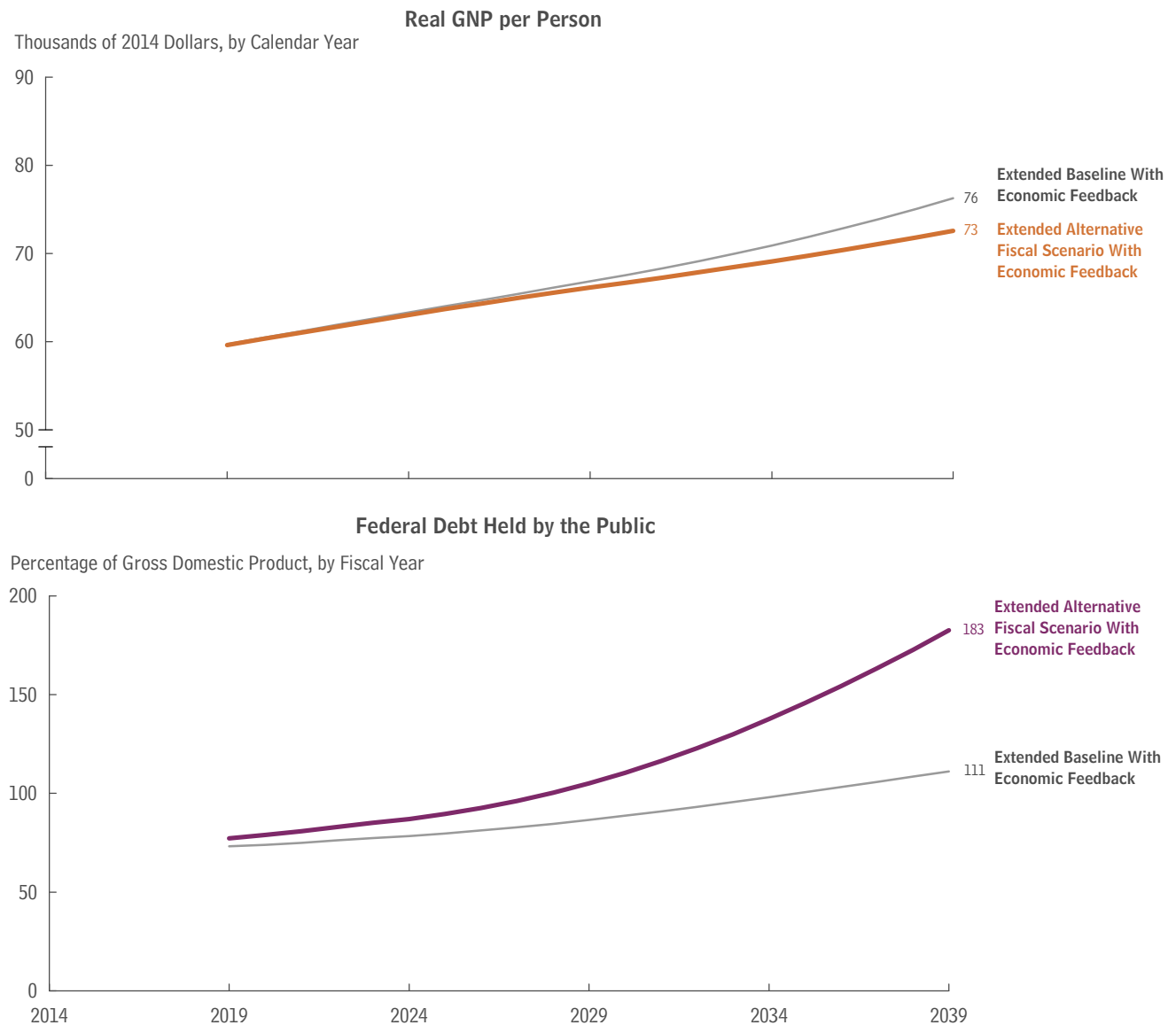
Real GNP per Person

Thousands of 2014 Dollars, by Calendar Year

Extended Baseline With Economic Feedback — 76

Extended Alternative Fiscal Scenario With Economic Feedback — 73

Federal Debt Held by the Public

Percentage of Gross Domestic Product, by Fiscal Year

Extended Alternative Fiscal Scenario With Economic Feedback — 183

Extended Baseline With Economic Feedback — 111

Source: Congressional Budget Office.

Notes: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period.

The extended alternative fiscal scenario incorporates the assumptions that certain policies that have been in place for a number of years will be continued and that some provisions of law that might be difficult to sustain for a long period will be modified.

Short-run effects are not shown here. For estimates of economic effects in 2015 and 2016, see Table 6-3.

Real (inflation-adjusted) gross national product (GNP) differs from gross domestic product (GDP), the more common measure of the output of the economy, by including the income that U.S. residents earn abroad and excluding the income that nonresidents earn in this country.

The results are CBO's central estimates from ranges determined by alternative assessments about how much deficits ''crowd out'' investment in capital goods such as factories and computers (because a larger portion of people's savings is being used to purchase government securities) and how much people respond to changes in after-tax wages by adjusting the number of hours they work.

As a result, the projected outcomes under the scenarios reflect no direct changes to incentives to work and save; in particular, marginal tax rates and transfers to working-age people are assumed to be the same as those under current law. Also, the contributions that government investment makes to future productivity and output are assumed to reflect their historical averages.

Therefore, the estimated economic effects presented here arise solely from the differences in deficits and debt. However, lessening budget deficits significantly (relative to what would occur under current law) without altering government investment or incentives to work and save would be very difficult. The overall economic impact of policies that lowered deficits would depend not only on the way they changed federal borrowing but also on the way they affected government investment and incentives to work and save.

Output and Interest Rates Under the Two Illustrative Scenarios

Under the scenario involving a $2 trillion reduction in deficits in the first decade, real GNP would be higher by 0.6 percent in 2024 and by about 3 percent in 2039, according to CBO's central estimates, than it would be under the extended baseline with economic feedback (see Table 6-2). According to CBO's likely ranges for key variables, the increase in real GNP would range from 0.3 percent to 0.9 percent in 2024 and from about 1 percent to about 4 percent in 2039. Interest rates in 2039 would be about one-third of a percentage point lower under that scenario than under the extended baseline, according to CBO's central estimate.

Under the scenario involving a $4 trillion reduction in deficits in the first decade, real GNP would be higher by 1.1 percent in 2024 and by about 5 percent in 2039, by CBO's central estimates, than it would be under the extended baseline with economic feedback. According to CBO's likely ranges for key variables, the increase in real GNP would range from 0.6 percent to 1.7 percent in 2024 and from about 2 percent to about 7 percent in 2039. Interest rates in 2039 would be about three-quarters of a percentage point lower under that scenario than under the extended baseline, according to CBO's central estimate.

CBO projects that under both illustrative scenarios, real GNP per person would be substantially higher in 2039 than in 2014. Beyond 2039, the fiscal policies in the two

illustrative scenarios would generate larger increases in real GNP and larger decreases in interest rates relative to the extended baseline.

Budgetary Outcomes Under the Two Illustrative Scenarios

The higher output and lower interest rates in the long run under the illustrative scenarios would improve budgetary outcomes. For the $2 trillion deficit reduction scenario, federal debt held by the public in 2039 would stand at 75 percent of GDP, according to CBO's central estimates, only slightly above the value of 72 percent at the end of 2013 and 36 percentage points lower than the value under the extended baseline with economic feedback (see Table 6-1 on page 76 and Figure 6-4 on page 84). For the $4 trillion deficit reduction scenario, federal debt held by the public would fall to 42 percent of GDP in 2039, 69 percentage points below the value under the extended baseline with economic feedback. By comparison, such debt was 35 percent of GDP in 2007 and has averaged 39 percent of GDP during the past 40 years.

The scenario with $2 trillion of deficit reduction in the first decade would also limit the other consequences of high and rising federal debt that were discussed above. Because debt would be fairly steady relative to GDP—albeit high by historical standards—the constraints on policymakers and the risk of a fiscal crisis would be smaller than they would be with the substantial increase in the debt-to-GDP ratio under the extended baseline. The scenario with $4 trillion of deficit reduction in the first decade would reduce the other consequences of high debt much more sharply. With debt returning nearly to the percentage of GDP that it represented on average during the past 40 years, the constraints on policymakers and risk of a fiscal crisis would be greatly diminished relative to what would occur under the extended baseline.

Short-Term Economic Effects of the Three Additional Fiscal Scenarios

The various fiscal policies whose long-term economic effects have been analyzed in this chapter would have short-term economic effects as well. In the short term, policies that increased federal spending or cut taxes (and thus boosted budget deficits) would generally increase the demand for goods and services, thereby raising output and employment relative to what would occur in the

Table 6-2.

Long-Run Effects on Real GNP of the Fiscal Policies in Various Budget Scenarios

Percentage Difference From Level in the Extended Baseline With Economic Feedback

	2024	**2039**
Extended Alternative Fiscal Scenario		
Central estimate	-0.5	-5
Range	-0.7 to -0.2	-8 to -2
Illustrative Scenario With 10-Year Deficit Reduced by $2 Trillion		
Central estimate	0.6	3
Range	0.3 to 0.9	1 to 4
Illustrative Scenario With 10-Year Deficit Reduced by $4 Trillion		
Central estimate	1.1	5
Range	0.6 to 1.7	2 to 7

Source: Congressional Budget Office.

Notes: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period.

The extended alternative fiscal scenario incorporates the assumptions that certain policies that have been in place for a number of years will be continued and that some provisions of law that might be difficult to sustain for a long period will be modified.

In the illustrative scenarios with the 10-year deficit reduced by $2 trillion and by $4 trillion, those amounts are the cumulative reductions between 2015 and 2024 in deficits excluding interest payments relative to the baseline.

Real (inflation-adjusted) gross national product (GNP) differs from gross domestic product, the more common measure of the output of the economy, by including the income that U.S. residents earn abroad and excluding the income that nonresidents earn in this country.

The central estimates and ranges reflect alternative assessments about how much deficits "crowd out" investment in capital goods such as factories and computers (because a larger portion of people's savings is being used to purchase government securities) and how much people respond to changes in after-tax wages by adjusting the number of hours they work.

absence of those policies. Similarly, policies that decreased federal spending or raised taxes (and thus decreased budget deficits) would generally reduce demand, thereby lowering output and employment relative to what would otherwise occur. Those effects would be especially strong under conditions like those currently prevailing in the United States, where the Federal Reserve is keeping short-term interest rates near zero and would probably not adjust those rates to offset the effects of changes in federal taxes and spending.

Effects of the Extended Alternative Fiscal Scenario

Under the extended alternative fiscal scenario, the increase in deficits relative to those under current law would cause real GDP to be higher in the next few years than it would be under current law, CBO estimates. The policies incorporated in that scenario would raise the demand for goods and services in the short run, increasing real GDP relative to that under current law by an estimated 0.3 percent in 2015 and 0.4 percent in 2016 (see Table 6-3 on page 85).[16] The policies would probably also increase real GDP for a few years after 2016, but

CBO has not estimated the effects in those years. The figures given for 2015 and 2016 represent the agency's central estimates. According to CBO's likely ranges for key variables, real GDP would be 0.1 percent to 0.5 percent higher in 2015, and 0.1 percent to 0.8 percent higher in 2016, than under current law.[17]

16. CBO's estimates of the short-term effects of the extended alternative fiscal scenario and the two illustrative scenarios on real GDP are very similar to the agency's estimates of the effects on real GNP. This analysis focuses on GDP to be consistent with CBO's other analyses of the short-term impact of fiscal policies. The estimates reported here refer to averages during the calendar years referenced; some of CBO's other analyses of the short-term impact of fiscal policies have focused on effects during particular quarters of years, such as the fourth quarter.

17. For a discussion of CBO's analytical approach to estimating the short-term economic effects of fiscal policy, see Felix Reichling and Charles Whalen, *Assessing the Short-Term Effects on Output of Changes in Federal Fiscal Policies*, Working Paper 2012-08 (Congressional Budget Office, May 2012), www.cbo.gov/publication/43278; and Congressional Budget Office, *How CBO Analyzes the Effects of Federal Fiscal Policies on the Economy* (forthcoming).

Figure 6-4.

Long-Run Effects of the Fiscal Policies in CBO's Illustrative Scenarios With Smaller Deficits
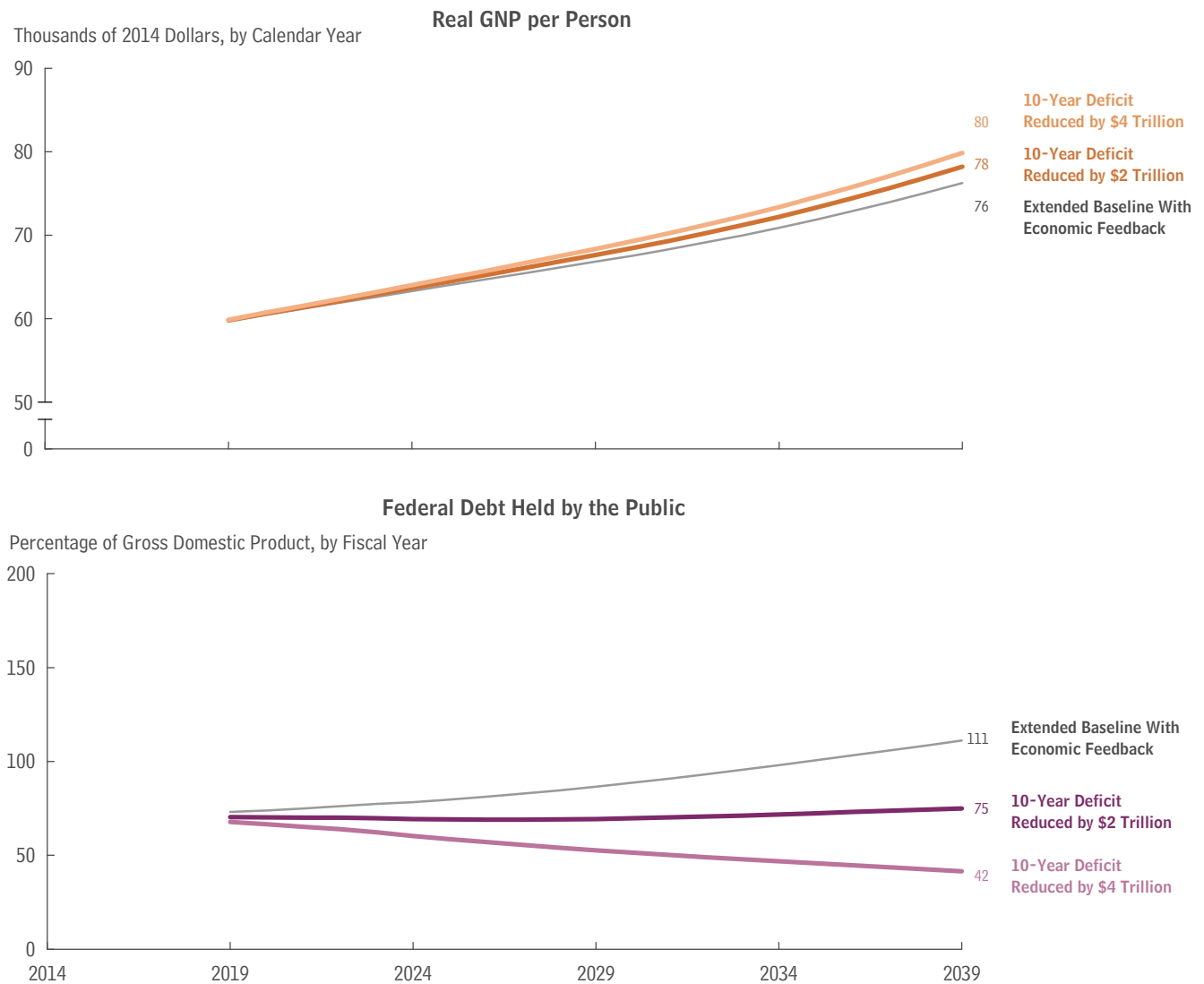
Real GNP per Person

Thousands of 2014 Dollars, by Calendar Year

10-Year Deficit
Reduced by $4 Trillion — 80

10-Year Deficit
Reduced by $2 Trillion — 78

Extended Baseline With
Economic Feedback — 76

Federal Debt Held by the Public

Percentage of Gross Domestic Product, by Fiscal Year

Extended Baseline With
Economic Feedback — 111

10-Year Deficit
Reduced by $2 Trillion — 75

10-Year Deficit
Reduced by $4 Trillion — 42

Source: Congressional Budget Office.

Notes: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period.

In the illustrative scenarios with the 10-year deficit reduced by $2 trillion and by $4 trillion, those amounts are the cumulative reductions between 2015 and 2024 in deficits excluding interest payments relative to the baseline.

Short-run effects are not shown here. For estimates of economic effects in 2015 and 2016, see Table 6-3.

Real (inflation-adjusted) gross national product (GNP) differs from gross domestic product (GDP), the more common measure of the output of the economy, by including the income that U.S. residents earn abroad and excluding the income that nonresidents earn in this country.

The results are CBO's central estimates from ranges determined by alternative assessments about how much deficits ''crowd out'' investment in capital goods such as factories and computers (because a larger portion of people's savings is being used to purchase government securities) and how much people respond to changes in after-tax wages by adjusting the number of hours they work.

Table 6-3.

Short-Run Effects of the Fiscal Policies in Various Budget Scenarios

	Inflation-Adjusted Gross Domestic Product (Percentage difference)		Full-Time-Equivalent Employment (Difference in millions)	
	2015	2016	2015	2016
Alternative Fiscal Scenario				
Central estimate	0.3	0.4	0.4	0.6
Range	0.1 to 0.5	0.1 to 0.8	0.1 to 0.6	0.2 to 1.0
Illustrative Scenario With 10-Year Deficit Reduced by $2 Trillion				
Central estimate	-0.2	-0.2	-0.2	-0.3
Range	-0.3 to -0.1	-0.4 to *	-0.4 to -0.1	-0.5 to -0.1
Illustrative Scenario With 10-Year Deficit Reduced by $4 Trillion				
Central estimate	-0.4	-0.4	-0.5	-0.6
Range	-0.7 to -0.1	-0.8 to -0.1	-0.8 to -0.2	-1.0 to -0.2

Source: Congressional Budget Office.

Notes: Figures reflect the differences in the levels between outcomes under a scenario and outcomes under CBO's baseline, which incorporates an assumption that current laws generally remain unchanged.

The alternative fiscal scenario incorporates the assumptions that certain policies that have been in place for a number of years will be continued and that some provisions of law that might be difficult to sustain for a long period will be modified.

In the illustrative scenarios with the 10-year deficit reduced by $2 trillion and by $4 trillion, those amounts are the cumulative reductions between 2015 and 2024 in deficits excluding interest payments relative to the baseline.

The central estimates and ranges reflect alternative assessments about how much deficits "crowd out" investment in capital goods such as factories and computers (because a larger portion of people's savings is being used to purchase government securities) and how much people respond to changes in after-tax wages by adjusting the number of hours they work.

* = between -0.05 percent and zero.

To produce that additional output, businesses would hire additional workers. According to CBO's central estimates, the policies in the alternative fiscal scenario would increase the number of full-time-equivalent employees by 0.4 million in 2015 and by 0.6 million in 2016 relative to the number under current law.

Effects of the Two Scenarios With Smaller Deficits
Under the two illustrative scenarios that reduce deficits, real GDP would be lower in the next several years than under current law, CBO estimates. Because the agency did not specify fiscal policies underlying those two scenarios, the estimated economic effects arise solely from the differences in overall deficits.

In the $2 trillion scenario, the reductions in the deficit excluding interest costs in fiscal years 2015 and 2016 amount to $40 billion and $76 billion, respectively. In the $4 trillion scenario, those reductions amount to $80 billion and $151 billion.[18] Under the first scenario,

real GDP in 2015 would be 0.2 percent lower than it is projected to be under current law (or between 0.1 percent and 0.3 percent lower, according to CBO's likely ranges for key variables); in 2016, real GDP would again be 0.2 percent lower (or between unchanged and

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18. CBO's central estimates here reflect the agency's assumption that in the two illustrative scenarios, each one-dollar change in budget deficits excluding interest payments relative to those under current law would, in the short term and under current economic conditions, change output cumulatively by one dollar over several quarters. That dollar-for-dollar response lies within the ranges of estimated effects on GDP of many policies that CBO examined in analyzing the macroeconomic effects of the American Recovery and Reinvestment Act of 2009. CBO's likely range of estimates implies that each one-dollar change in deficits excluding interest payments would, in the short term and under current economic conditions, change output cumulatively by between $0.33 and $1.67. For a similar approach, see Congressional Budget Office, *Budgetary and Economic Outcomes Under Paths for Federal Revenues and Noninterest Spending Specified by Chairman Ryan* (April 2014), www.cbo.gov/publication/45211.

0.4 percent lower). Under the second scenario, real GDP in 2015 would be 0.4 percent lower than it is projected to be under current law (or between 0.1 percent and 0.7 percent lower, according to CBO's likely ranges for key variables); in 2016, real GDP would again be 0.4 percent lower (or between 0.1 percent and 0.8 percent lower). By CBO's estimates, the policies would continue to decrease real GDP for a few years after 2016, but CBO has not estimated the effects in those years.

Because businesses would produce less, they would hire fewer workers. According to CBO's central estimates, full-time-equivalent employees under the first scenario would be 0.2 million fewer in 2015 and 0.3 million fewer in 2016 than they would be under current law; under the second scenario, full-time-equivalent employees would be 0.5 million fewer in 2015 and 0.6 million fewer in 2016 than they would be under current law.

The Uncertainty of Long-Term Budget Projections

Budget projections are inherently uncertain. The projections in this report generally reflect current law and estimates of future economic conditions and demographic trends. If future spending and tax policies differ from what is prescribed in current law, budgetary outcomes will differ from the Congressional Budget Office's (CBO's) extended baseline, as the preceding chapter shows. But even if future policies match what is assumed in the extended baseline, budgetary outcomes will undoubtedly differ from the projections in this report because of unexpected changes in the economy, demographics, and other factors.

To illustrate the uncertainty about long-term budget outcomes, CBO constructed alternate projections showing what would happen to the budget if various underlying factors differed from the values used in most of this report. Specifically, CBO considered the consequences of alternate paths for the following variables:

- The decline in mortality rates;

- The growth rate of total factor productivity (which refers to the efficiency with which labor and capital are used to produce goods and services, and which is often referred to in this chapter simply as "productivity");

- Interest rates on federal debt held by the public; and

- The growth rates of federal spending per beneficiary for Medicare and Medicaid.

Different paths for those four factors would affect the budget in various ways. For example, lower-than-projected mortality rates would mean higher life expectancy, which would increase the number of people receiving benefits from such programs as Social Security,

Medicare, and Medicaid; and faster growth in spending for Medicare and Medicaid would boost outlays for those two programs. Both of those changes would increase deficits and debt—which would lead to lower output and higher interest rates, economic feedback that would further worsen the budgetary outlook.[1] By contrast, faster growth in productivity and lower interest rates on federal debt held by the public would reduce deficits and debt— the first by raising output and increasing revenues, the second by lowering government interest payments.

For CBO's alternate projections, the ranges of variation for the four factors were based on the historical variation in their 25-year averages, as well as on consideration of possible future developments; together, those offer a guide (though admittedly an imperfect one) to the amount of uncertainty that surrounds projections of the factors over the next 25 years. To better capture overall uncertainty, CBO also constructed two projections in which all four factors simultaneously varied from their values under the extended baseline. In one of those cases, all of the factors varied in ways that affected the budget

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1. In cases incorporating negative economic feedback, output would be lower than projected without that feedback, leading to lower revenues (given current tax law), less spending on Social Security (because lower earnings result in smaller benefits), and less federal spending on health care programs (according to CBO's standard approach for projecting long-term cost growth, which is described in Chapter 2). However, CBO projects that other federal noninterest spending would remain at the amounts in the extended baseline even if output deviated from that baseline because of economic feedback. (Under alternate projections of total factor productivity, output differs from the extended baseline before incorporating economic feedback. In those cases, before incorporating such feedback, other federal spending is projected to be the same share of [the higher or lower] output as in the extended baseline.) [Footnote revised on July 29, 2014]

positively; in the other, all of the factors varied in ways that affected the budget negatively.[2]

The budgetary outcomes under the projections differ widely. The simulated variations in productivity, interest rates, and Medicare and Medicaid spending have large effects on the budget within 25 years, whereas the simulated variation in mortality rates does not. When only one of the factors is changed, CBO's projections of federal debt held by the public in 2039 range from 92 percent of gross domestic product (GDP) to 135 percent, compared with 111 percent under the extended baseline with economic feedback.[3] When all four factors are changed at once, federal debt in 2039 ranges from 75 percent to 159 percent of GDP. Those projected levels of debt are all high by historical standards, and a number of them exceed the peak of 106 percent of GDP that the United States reached in 1946.

The four factors listed above are not the only ones that could differ from CBO's expectations. For example, an increase in the birth rate or in labor force participation could boost the growth of the labor force and thus raise tax revenues. Similarly, a large disruption in the economy, such as an economic depression or a military conflict, could have significant effects on the budget that are not quantified in this analysis.

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2. An alternative approach to quantifying the uncertainty of budget projections would be to create a distribution of outcomes from a large number of simulations in which such factors as productivity growth, interest rates, and the rate of increase of health care costs varied. CBO generally uses that approach in its reports on the financial outlook for the Social Security trust funds. See Congressional Budget Office, *The 2013 Long-Term Projections for Social Security: Additional Information* (December 2013), www.cbo.gov/publication/44972; and *Quantifying Uncertainty in the Analysis of Long-Term Social Security Projections* (November 2005), www.cbo.gov/publication/17472. However, determining the appropriate variation in those factors and estimating the distribution of outcomes for the federal budget as a whole requires additional modeling tools that CBO has not yet developed.

3. As Chapter 6 explains, that version of the extended baseline incorporates the economic effects of the fiscal policies in the extended baseline and, in turn, the impact of those economic effects on budgetary outcomes. As a result, the economic and budget projections in the extended baseline with economic feedback differ somewhat from those presented in the first five chapters of this report.

Policymakers could address the uncertainty associated with long-term budget projections in various ways. For instance, they might design policies that partly insulated the federal budget from some unanticipated events; however, such policies could have unwanted consequences, such as shifting risk to individuals. Or policymakers might aim for a smaller amount of federal debt, to provide a buffer against the budgetary impact of adverse surprises and give future policymakers more flexibility in responding to unexpected crises.

The Long-Term Budgetary Effects of Differences in Mortality, Productivity, Interest Rates on Federal Debt, and Federal Spending on Health Care

Budgetary outcomes could differ from CBO's projections if mortality rates, the growth rate of productivity, interest rates on government debt, or the growth of federal spending on health care diverged from the paths that underlie the extended baseline projections in this report. Unexpected changes in mortality rates would gradually lead to changes in spending for Social Security, Medicare, and Medicaid. Changes in productivity would lead to changes in economic output, which would affect both revenues and spending. Changes in the interest rates on federal debt would affect the amount of interest paid by the government. And changes in the growth rate of federal health care spending, one of the largest components of the budget, would have significant implications for overall federal spending.

Under the projections of those four factors that are included in CBO's extended baseline, federal debt held by the public would equal 111 percent of GDP in 2039 (including economic feedback). Alternate projections of the factors would lead to the following outcomes:

■ If mortality rates declined, on average, 0.5 percentage points per year more slowly or more quickly than they do in CBO's extended baseline, federal debt held by the public in 2039 would be 110 percent of GDP or 113 percent of GDP, respectively.

■ If productivity grew, on average, 0.5 percentage points per year more quickly or more slowly than it does in CBO's extended baseline, federal debt held by the public in 2039 would be 94 percent of GDP or 130 percent of GDP, respectively.

■ If interest rates on government debt were
0.75 percentage points lower or higher than those
in CBO's extended baseline, federal debt held by the
public in 2039 would be 92 percent of GDP or
135 percent of GDP, respectively.

■ If Medicare and Medicaid spending per beneficiary
grew 0.75 percentage points per year more slowly or
more quickly than it does in CBO's extended baseline,
federal debt held by the public in 2039 would be
93 percent of GDP or 132 percent of GDP,
respectively.

■ If all four factors varied from their baseline values in
ways that positively affected the budget but varied
only half as much as in the previous cases, federal debt
held by the public in 2039 would be 75 percent of
GDP; if all four factors varied in ways that negatively
affected the budget but varied only half as much as in
the previous cases, federal debt held by the public
would be 159 percent of GDP.

Mortality

Mortality rates measure the number of deaths in a given
year per thousand people in a population. Lower-than-
projected mortality rates would mean higher life expec-
tancy, which would increase the number of people who
received benefits from Social Security, Medicare, Medic-
aid, and other mandatory spending programs—and
would therefore increase outlays for those programs.
Changes in mortality rates would also affect the budget
by changing the size of the labor force and thereby chang-
ing tax revenues; specifically, CBO projects that the aver-
age person would work three more months for each addi-
tional year of life expectancy, slightly increasing overall
labor force participation.[4]

Mortality rates have declined steadily over the past half
century, and CBO expects that the decline will continue.
The steepness of the future decline is quite uncertain,
however. CBO therefore constructed projections covering
a 1 percentage-point range—0.5 percentage points higher

and lower—around the 1.2 percent annual rate of decline
used for the agency's baseline projections. The agency
arrived at that 1 percentage-point range by comparing the
average annual change in mortality rates during the 25-
year periods beginning with the 1942–1966 period and
ending with the 1984–2008 period. The average annual
change varied by about 1 percentage point for men; it
varied by about 1 percentage point for women as well.[5]
Applying that 1 percentage-point range around the
1.2 percent rate used for CBO's extended baseline
resulted in rates of decline ranging from 0.7 percent
per year to 1.7 percent per year. Those two rates of
decline would mean that life expectancy for 65-year-olds
in 2039 would be 85.7 years or 87.9 years, respectively—
compared with 86.8 years in the extended baseline and
84.4 years for 65-year-olds today.

Those alternate projections for the decline in mortality
rates would lead to alternate budgetary projections:

■ If mortality rates declined by 0.7 percent a year—that
is, 0.5 percentage points more slowly than in the
extended baseline—outlays for Social Security,
Medicare, and Medicaid would be lower. That would
lead to less federal debt held by the public—
specifically, a projected 110 percent of GDP in 2039,
rather than the 111 percent that CBO projects under
the extended baseline with economic feedback (see
Figure 7-1). In addition, the estimated changes in
spending or revenues needed to keep federal debt held
by the public at its current percentage of GDP
(74 percent) over the 25-year period—the "fiscal
gap"—would be slightly smaller than CBO projects
under the extended baseline, although they would

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4. See Congressional Budget Office, *The 2013 Long-Term Budget
    Outlook* (September 2013), Appendix A, www.cbo.gov/
    publication/44521.

5. The rate of decline in *aggregate* mortality—that is, for both men
    and women—exhibited substantially less variation than the
    decline in mortality rates for men and women separately. From
    1950 through 1980, the decline in the mortality rate for women
    was faster than the decline in the mortality rate for men; after
    1980, the decline in the mortality rate for men was faster than
    the decline in the mortality rate for women. (That difference
    resulted in part from differences in how smoking rates evolved
    over time for men and for women.) In CBO's assessment, the
    variations in mortality rate decline of men and women considered
    separately are more representative of the uncertainty in mortality
    rates over the next 25 years.

Figure 7-1.

Federal Debt Given Different Rates of Mortality Decline

Percentage of Gross Domestic Product

Source: Congressional Budget Office.

Notes: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period.

Federal debt refers to debt held by the public. Estimates for the extended baseline with economic feedback are CBO's central estimates from ranges determined by alternative assessments about how much deficits ''crowd out'' investment in capital goods such as factories and computers (because a larger portion of people's savings is being used to purchase government securities) and how much people respond to changes in after-tax wages by adjusting the number of hours they work.

The faster decline in the mortality rate is 0.5 percentage points per year higher, and the slower decline in the mortality rate is 0.5 percentage points per year lower, than in the extended baseline with economic feedback.

round to the same 1.2 percent of GDP.[6] Although those differences are relatively small in 2039, they would grow substantially over time as the effect on mortality rates compounded and average life spans fell increasingly below those projected in the baseline.

■ In contrast, if mortality rates declined by 1.7 percent a year, or 0.5 percentage points more quickly than in the extended baseline, outlays for the same three programs would be higher, resulting in federal debt held by the public that reached a projected

113 percent of GDP in 2039. The 25-year fiscal gap would rise to 1.3 percent of GDP.

Productivity

Total factor productivity is an important determinant of economic output. Its growth stems from the introduction and spread of new technological approaches, from increases in workers' education and skill levels, and from the use of new processes that improve the efficiency of organizations.[7] CBO estimates that the growth of total factor productivity, which has averaged 1.4 percent per year since 1950, has accounted for over 40 percent of the increase in real (inflation-adjusted) nonfarm business output over that time. CBO's extended baseline incorporates the projection that such productivity will increase, on average, by 1.3 percent per year in the coming decades.

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6.   For a discussion of how CBO measures the fiscal gap, see Chapter 1. The fiscal gap estimates in this chapter, like those in Chapter 1, are calculated without economic feedback effects. It would not be informative to include the negative economic effects of rising debt (and their feedback effects on the budget) in the fiscal gap calculation because the fiscal gap shows the budgetary changes required to keep debt from rising in the first place; if those budgetary changes were made, the negative economic effects (and their feedback effects on the budget) would not occur.

7.   Total factor productivity is different from labor productivity, which measures the amount of goods and services that can be produced per hour of labor.

However, the growth rate of total factor productivity has often varied for extended periods. Periods of rapid growth have generally resulted from major technological innovations. For example, innovations in four critical areas—electricity generation, internal combustion engines, chemicals, and telecommunications—triggered a surge in productivity in the 1920s and 1930s. Another surge occurred in the 1950s and 1960s, spurred by the electrification of homes and workplaces, suburbanization, completion of the nation's highway system, and production of consumer appliances. The latest surge in productivity—a more modest one—began in the 1990s and is attributed to innovations involving computers and other types of information technology.[8]

A different growth rate for productivity would affect the federal budget by changing output and income and also, in CBO's assessment, by changing the interest rates paid by the federal government. Higher total factor productivity means that capital is more productive, which implies a higher rate of return from private capital investment, all else being equal. According to widely used economic models, if productivity grows faster, that rate of return remains higher over time. Because the federal government competes with private borrowers for investors' money, higher returns from private investment should push up interest rates paid by the federal government. Although empirical estimates of the relationship between productivity growth and interest rates are mixed, the theoretical relationship is clear enough for CBO to incorporate an effect on interest rates into this analysis.[9]

The future growth rate of productivity is quite uncertain. The nation could experience faster growth in productivity than is reflected in CBO's extended baseline, either steadily (for example, from ongoing gains from integrating information technology into the economy) or in a burst (for example, from a technological breakthrough, such as the development of a new source of energy). Conversely, the growth of productivity could be slower than in CBO's extended baseline if the rate of increase in workers' education levels declined or if technological innovation or the dispersion of previous technological innovations throughout the economy diminished.

Average productivity growth during recent 25-year periods, beginning in the 1950–1974 period and ending in the 1989–2013 period, varied by about 1 percentage point. CBO therefore projected economic and budgetary outcomes if total factor productivity grew 0.8 percent per year or 1.8 percent per year over the next 25 years—that is, 0.5 percentage points more slowly or more quickly than the 1.3 percent projected in the extended baseline.[10]

Those alternate projections for total factor productivity growth would lead to alternate budgetary projections:

■ If total factor productivity grew by 1.8 percent annually, 0.5 percentage points more quickly than in the baseline, then greater GDP would result in more revenue, smaller budget deficits, and less federal debt. Federal debt held by the public would be projected at 94 percent of GDP in 2039, rather than the 111 percent that CBO projects under the extended baseline with economic feedback (see Figure 7-2). The 25-year fiscal gap would be 0.6 percent of GDP, rather than the 1.2 percent that CBO projects under the extended baseline.

■ If productivity grew by 0.8 percent annually, 0.5 percentage points more slowly than in the baseline, slower economic growth would result in less revenue, bigger budget deficits, and more debt. That debt would be projected at 130 percent of GDP in 2039. The 25-year fiscal gap would rise to 1.9 percent of GDP.

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8. For further discussion, see Robert Shackleton, *Total Factor Productivity Growth in Historical Perspective*, Working Paper 2013-01 (Congressional Budget Office, March 2013), www.cbo.gov/publication/44002.

9. For example, in the Solow-type growth model that CBO used for this analysis, if productivity grew 0.5 percentage points more quickly than in the extended baseline with economic feedback, the average interest rate on federal debt held by the public in 2039 would be about 1 percentage point higher than the baseline value. For details of that model, see Congressional Budget Office, *CBO's Method for Estimating Potential Output: An Update* (August 2001), www.cbo.gov/publication/13250. In last year's long-term budget outlook, CBO presented two separate estimates of the effects of differences in productivity growth on budget outcomes: one with no accompanying change in interest rates, and the other with an increase in interest rates consistent with CBO's Solow-type growth model. This year's analysis includes only the second approach because CBO has concluded that changes in productivity growth are highly likely to affect interest rates.

10. For another approach to measuring uncertainty in long-run projections of productivity growth, see Ulrich K. Müller and Mark W. Watson, *Measuring Uncertainty About Long-Run Predictions* (draft, Princeton University, August 2013), http://tinyurl.com/lypfv4h (PDF, 7 MB).

Figure 7-2.

Federal Debt Given Different Rates of Productivity Growth

Percentage of Gross Domestic Product

Source: Congressional Budget Office.

Notes: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period.

Federal debt refers to debt held by the public. Estimates for the extended baseline with economic feedback are CBO's central estimates from ranges determined by alternative assessments about how much deficits "crowd out" investment in capital goods such as factories and computers (because a larger portion of people's savings is being used to purchase government securities) and how much people respond to changes in after-tax wages by adjusting the number of hours they work.

The lower productivity growth rate is 0.5 percentage points lower, and the higher productivity growth rate is 0.5 percentage points higher, than in the extended baseline with economic feedback.

Faster or slower productivity growth could also affect the budget in ways that are not incorporated in this analysis—for example, by changing the shares of the nation's income received by workers (as wages and salaries, for instance) and by the owners of capital (as corporate profits, for instance). In recent years, technological change appears to have affected productivity in ways that put downward pressure on labor's share (for example, by expanding options for using capital in place of labor), a trend that some economists believe will be long-lasting.[11] In addition, some types of ongoing technological change appear to be intensifying wage inequality.[12] Such shifts in the distribution of income could significantly affect tax

revenues and spending for some programs (such as Social Security); whether they would have a large net impact on the federal budget overall is unclear.

Interest Rates on Federal Debt

Interest rates affect the budget by changing the interest payments that the federal government makes on debt held by the public. Interest rates are at historic lows, but CBO projects that they will rise over the next few years and return to levels closer to their long-run average. As a result, interest payments on federal debt held by the public, which are currently a little over 1 percent of GDP, are projected to grow to over 3 percent of GDP by 2024, even though federal debt is projected to be only slightly larger relative to GDP in that year than it is currently.

However, projections of future interest rates on government debt are very uncertain, given how much those rates have varied in the past. CBO estimates that the real interest rate on 10-year Treasury notes averaged about 3 percent during the 1960s, about 1 percent during the 1970s, about 5 percent during the 1980s, about 4 percent

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11. For further discussion, see Congressional Budget Office, *How CBO Projects Income* (July 2013), www.cbo.gov/publication/44433.

12. See Erik Brynjolfsson and Andrew McAfee, *Race Against the Machine: How the Digital Revolution Is Accelerating Innovation, Driving Productivity, and Irreversibly Transforming Employment and the Economy* (Digital Frontier Press, 2012), www.raceagainstthemachine.com.

during the 1990s, about 2 percent between 2000 and 2007, and about 1 percent during the past six years.[13]

CBO's long-term projection of interest rates takes into account economic and financial factors such as the size of federal debt, the rate of growth of the labor force, the rate of growth of productivity, private saving, and the amount of inflows of capital from foreign investors, as Appendix A discusses further. Different projections of those factors would imply different projections of interest rates. For example, as explained above in the analysis of productivity, faster productivity growth implies higher interest rates, all else being equal. But many of the economic and financial factors that affect interest rates also affect the budget in other ways—for instance, faster productivity growth leads to faster income growth and higher revenues—and those additional effects complicate analyzing the relationship between interest rates and the budget.[14]

To isolate the budgetary effect of changes to the interest rate that the federal government pays on debt held by the public, CBO analyzed uncertainty in its projection of the spread between the federal government's borrowing rates and private borrowing rates. For any given level of private borrowing rates, changes to that spread affect the rate at which the federal government borrows but do not usually have significant direct effects on economic conditions or on the federal budget apart from interest payments.

The conditions that have historically determined the spread between government borrowing rates and private borrowing rates include portfolio preferences among U.S. and foreign investors, the perception of the underlying risk of private securities relative to federal debt, the response of financial institutions to regulations that require the holding of low-risk assets, and the liquidity of federal debt relative to that of private securities. For example, the difference between the rates of interest on 10-year Treasury notes and on highly rated corporate bonds rose from the 1990s to the 2000s, as investors became more averse to risk in the wake of the sharp stock market drop of the early 2000s; even after the economy

recovered, the difference remained larger than it had been before the drop.

To find a guide to the uncertainty surrounding the spread between government borrowing rates and private borrowing rates, CBO examined the average spread between the interest rate on 10-year Treasury notes and the interest rate on a large class of corporate debt (specifically, an index of corporate debt with a credit rating of BAA) during recent 25-year periods, beginning with the 1954–1978 period and ending with the 1989–2013 period. That spread varied over those periods by about 1 percentage point. However, the historical averages do not reflect certain sources of uncertainty about spreads in the future. For one thing, estimates of the risk premium—the additional return that investors require to hold assets that are riskier than Treasury securities—have been quite volatile in recent years, so more distant history may be a poor guide to the future premium. Also, private and sovereign foreign investors alike have been eager to invest in risk-free U.S. assets in recent years, but as emerging economies continue to grow and their financial markets develop, those investors may change their preferences. And the effect of regulatory changes enacted in response to the recent financial crisis on investors' demand for corporate and federal debt is very uncertain. To account for those sources of uncertainty and other factors that may not be fully represented by the particular measure of the spread used and the historical time period analyzed, CBO expanded the range of uncertainty used for this analysis from the 1.0 percentage point suggested by the historical data to 1.5 percentage points.[15]

Those alternate projections for the interest rate paid on federal debt held by the public would lead to alternate budgetary projections:

■ If the spread between the government and private borrowing rates was 0.75 percentage points larger than the average projected for the baseline—resulting in a lower government borrowing rate—but the economy was otherwise the same, then net interest would

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13. For comparisons of historical real interest rates, past values of the consumer price index were adjusted to account for changes over time in how that index measures inflation.

14. In addition, many economic and financial factors that affect the government's borrowing rate also affect interest rates in the private sector, which in turn affect private capital investment and thus income and output.

15. In the extended baseline without economic feedback, CBO projects that the federal government's nominal borrowing rate will average 4.1 percent between 2014 and 2039. The 1.5 percentage-point range of uncertainty about the spread between government and private borrowing rates implies that the government's nominal borrowing rate would be as low as 3.4 percent or as high as 4.9 percent, on average, over the same period.

Figure 7-3.

Federal Debt Given Different Interest Rates

Percentage of Gross Domestic Product

Source: Congressional Budget Office.

Notes: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period.

Federal debt refers to debt held by the public. Estimates for the extended baseline with economic feedback are CBO's central estimates from ranges determined by alternative assessments about how much deficits "crowd out" investment in capital goods such as factories and computers (because a larger portion of people's savings is being used to purchase government securities) and how much people respond to changes in after-tax wages by adjusting the number of hours they work.

The higher interest rate is an average interest rate on federal debt that is 0.75 percentage points higher relative to the return on capital, and the lower interest rate is a rate that is 0.75 percentage points lower, than in the extended baseline with economic feedback.

account for 3.6 percent of GDP by 2039, compared with 5.2 percent in the extended baseline with economic feedback.[16] Federal debt held by the public would be a projected 92 percent of GDP in 2039, rather than the 111 percent that CBO projected in that baseline (see Figure 7-3). The 25-year fiscal gap would be 0.7 percent of GDP, rather than the 1.2 percent that CBO projects under the extended baseline.[17]

■ If the spread between the government and private borrowing rates was 0.75 percentage points smaller than the average projected for the baseline, but the economy was otherwise the same, then net interest

would make up 7.5 percent of GDP in 2039, and federal debt held by the public would be projected to reach 135 percent of GDP. The 25-year fiscal gap would rise to 1.7 percent of GDP.

Federal Spending on Health Care

The federal government pays for health care through Medicare, Medicaid, subsidies for insurance purchased through the exchanges established under the Affordable Care Act, and other programs, as well as through tax preferences, especially the exclusion for employment-based

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16. The estimated effects on budget projections of changes in the government's borrowing rates do not incorporate any changes in remittances by the Federal Reserve or in the relative amounts of different types of taxable income (for example, profits and interest income). Such changes would have additional budgetary implications.

17. In estimating the fiscal gap under the alternate projections for interest rates, CBO altered the rate used to discount future taxes, noninterest spending, and debt by the same amount as other interest rates. Therefore, for example, in calculating the fiscal gap under the projection with lower interest rates, future primary deficits (that is, deficits excluding interest payments) and the end-of-period debt are given a greater weight than they are under projections with higher interest rates.

health insurance.[18] In CBO's extended baseline, federal spending on health care per beneficiary increases more slowly in the future than it has, on average, in recent decades, though it still substantially outpaces the growth of potential output per capita.[19] But the future growth of health care costs is quite uncertain, and it is consequently a significant source of budgetary uncertainty.

Many factors will affect federal spending on health care per beneficiary in the long term (for further discussion, see Chapter 2). One of them is the extent to which advances in health care technology raise or lower costs. New medical procedures or treatments may prove more effective in helping patients, which could lower costs. However, such procedures and treatments are often very expensive; and even services that are relatively inexpensive could make spending rise quickly if ever-growing numbers of patients used them.[20] Other factors that could affect health care costs are changes in the structure of payment systems and innovations in the delivery of health care.

In addition, federal spending on health care will be affected by the health of the population. Outlays for Medicare and Medicaid depend in part on the prevalence of certain medical conditions—such as cardiovascular and pulmonary diseases, diabetes, arthritis, and depression—among beneficiaries. The prevalence of those conditions and others could evolve in unexpected ways for various reasons, such as changes in behavior (for example, in smoking rates, participation in physical activity, or dietary patterns); new treatments for various illnesses; new medical interventions that reduced the occurrence or severity of certain conditions or diseases; and the emergence of epidemics.

The measure that CBO examined for this analysis of uncertainty was excess cost growth—that is, the

difference between the growth rate of health care spending per capita and the growth rate of potential output per capita.[21] During various 25-year periods, starting with the 1967–1991 period and ending with the 1988–2012 period, excess cost growth for the health care system as a whole varied by about 1 percentage point. In CBO's view, however, that range understates the uncertainty of future excess cost growth: Patients, health care providers, employers, and insurers may respond in a variety of ways to the changing pressures they will face—as may state and local governments, whose decisions affect federal spending for Medicaid (again, for further discussion, see Chapter 2). To account for uncertainty that may not be fully represented in the historical data, CBO used a larger range of variation—1.5 percentage points—and analyzed the effects of increasing or decreasing the projected rate of excess cost growth for Medicare and Medicaid by 0.75 percentage points, relative to the rate of growth in the extended baseline.[22] (CBO focused on Medicare and Medicaid because the projected size of those programs means that their rates of growth have particularly large effects on the federal budget.)

Those alternate projections for the growth of health care spending would lead to alternate budgetary projections:

■ If Medicare and Medicaid spending per beneficiary rose 0.75 percentage points per year more slowly than in the extended baseline, federal debt held by the public would be projected at 93 percent of GDP in 2039, rather than the 111 percent that CBO projects under the extended baseline with economic feedback (see Figure 7-4). The 25-year fiscal gap would be 0.7 percent of GDP, rather than the 1.2 percent that CBO projects under the extended baseline.

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18. Under that provision of the tax code, most payments that employers and employees make for health insurance coverage are exempt from income and payroll taxes.

19. Potential output is the maximum sustainable output of the economy.

20. See Congressional Budget Office, *Technological Change and the Growth of Health Care Spending* (January 2008), www.cbo.gov/publication/41665.

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21. The definition and calculation of excess cost growth are discussed in more detail in Chapter 2.

22. In the extended baseline, CBO projects that rates of excess cost growth in Medicare and Medicaid will match the rates in the agency's baseline projections for the next 10 years and will move in the succeeding 15 years toward estimated underlying rates. Those estimated underlying rates begin with the rate of excess cost growth experienced in the health care system in recent decades and are projected to decline gradually as people respond to the pressures of rising costs.

Figure 7-4.

Federal Debt Given Different Rates of Growth of Federal Health Care Spending

Percentage of Gross Domestic Product

Source: Congressional Budget Office.

Notes: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period.

Federal debt refers to debt held by the public. Estimates for the extended baseline with economic feedback are CBO's central estimates from ranges determined by alternative assessments about how much deficits "crowd out" investment in capital goods such as factories and computers (because a larger portion of people's savings is being used to purchase government securities) and how much people respond to changes in after-tax wages by adjusting the number of hours they work.

The higher growth rate of per-beneficiary federal spending on Medicare and Medicaid is 0.75 percentage points per year higher, and the lower growth rate is 0.75 percentage points per year lower, than in the extended baseline with economic feedback.

■ If Medicare and Medicaid spending per beneficiary rose 0.75 percentage points per year more quickly than in the extended baseline, federal debt held by the public would be projected at 132 percent of GDP. The 25-year fiscal gap would rise to 1.9 percent of GDP.

Multiple Factors

The previous cases illustrated what would happen to the federal budget if a single factor differed from the projections that CBO used in the extended baseline. However, multiple factors will undoubtedly differ from CBO's projections. Estimating the budgetary consequences of that circumstance is more complicated than simply adding together the outcomes of the individual cases. For example, higher-than-projected health care costs would have a larger effect on the budget if interest rates on federal debt were also higher than CBO projects—because the government would have to pay more interest on debt that resulted from the additional health care spending.[23]

Therefore, CBO examined what would happen if all four factors differed from the extended baseline in ways that

raised projected deficits relative to that baseline and also what would happen if all four factors varied in ways that lowered deficits. However, the likelihood that all four factors would vary from the extended baseline in ways that moved deficits in the same direction *and* that they would be at the ends of the ranges considered above is lower than the likelihood that a single factor would be at the end of its selected range. To make the likelihoods in the current cases closer to those in the earlier cases, CBO used ranges that were only half as large as the ranges used for those earlier cases. For example, in the first two cases above, the range for the rate of productivity growth was 1 percentage point, yielding growth rates that were 0.5 percentage points higher and lower than the values in

23. As another example, some of the factors under consideration may be correlated with each other, so that surprisingly high outcomes for one factor might tend to occur at the same time as surprisingly high—or surprisingly low—outcomes for other factors. However, CBO did not incorporate any correlations of that sort in its analysis except for the relationship between productivity growth and interest rates discussed earlier in the chapter.

Figure 7-5.

Federal Debt Given Different Rates of Mortality Decline, Productivity Growth, Interest, and Growth of Federal Health Care Spending

Percentage of Gross Domestic Product

Source: Congressional Budget Office.

Notes: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period.

Federal debt refers to debt held by the public. Estimates for the extended baseline with economic feedback are CBO's central estimates from ranges determined by alternative assessments about how much deficits "crowd out" investment in capital goods such as factories and computers (because a larger portion of people's savings is being used to purchase government securities) and how much people respond to changes in after-tax wages by adjusting the number of hours they work.

For this figure, CBO used ranges for the four factors that are half as large as the ranges used for the individual cases (shown in Figures 7-1 to 7-4).

the extended baseline. For the combined projections here, the range for the rate of productivity growth is 0.5 percentage points, so the rates used in the projections are 0.25 percentage points higher and lower than the values in the extended baseline.

Varying the four factors together would lead to the following budgetary projections:

■ If mortality rates declined 0.25 percentage points per year more slowly, productivity grew 0.25 percentage points per year more quickly, the difference between the average interest rate on government debt and private interest rates was about 0.4 percentage points greater, and federal costs per beneficiary for Medicare and Medicaid grew about 0.4 percentage points per year more slowly than under the extended baseline, federal debt held by the public would be projected

at 75 percent of GDP in 2039, rather than the 111 percent that CBO projects under the extended baseline with economic feedback (see Figure 7-5). The 25-year fiscal gap would be 0.1 percent of GDP, rather than the 1.2 percent that CBO projects under the extended baseline.

■ If mortality rates declined 0.25 percentage points per year more quickly, productivity grew 0.25 percentage points per year more slowly, the difference between the average interest rate on government debt and private interest rates was about 0.4 percentage points smaller, and federal costs per beneficiary for Medicare and Medicaid grew about 0.4 percentage points per year more quickly than under the extended baseline, federal debt held by the public would be projected at 159 percent of GDP in 2039. The 25-year fiscal gap would be 2.5 percent of GDP.

Other Sources of Uncertainty in the Long-Term Budget Outlook

The range of outcomes presented above conveys only part of the uncertainty associated with long-term budget projections. Those outcomes do not incorporate the possibility of other developments that could sharply increase federal debt relative to CBO's projections. Such developments could include an economic depression like the one that occurred in the United States in the 1930s; unexpectedly large losses on federal financial obligations, such as mortgage guarantees; and unpredictable catastrophes, such as a major natural disaster or world war. Similarly, the projections do not incorporate all circumstances that could *reduce* federal debt relative to CBO's projections. For example, a large and prolonged increase in labor force participation could lead to higher-than-expected revenues and lower-than-expected payments for various federal programs.

An Economic Depression

Recessions automatically affect the federal budget by reducing revenues significantly and raising outlays for safety net programs, such as unemployment insurance and nutrition assistance.[24] In addition, economic downturns have historically prompted policymakers to enact legislation that further reduces revenues and increases federal spending—to help people suffering from the weak economy, to bolster the financial condition of state and local governments, and to stimulate additional economic activity and employment. For example, debt as a share of GDP increased from 35 percent at the end of 2007 to 70 percent at the end of 2012, in large part because of the recession and weak recovery and the policy responses enacted to counter that problem.

The long-term projections of output and unemployment in this report reflect economic trends since the end of World War II, a period that includes periodic downturns that were not fully offset by upturns of similar magnitude.[25] But the projections do not incorporate the possibility of an event like the Great Depression of the 1930s. Such events are rare; for that reason and others, their magnitude and timing cannot readily be predicted.

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24. See Congressional Budget Office, *The Budget and Economic Outlook: 2014 to 2024* (February 2014), Appendix E, www.cbo.gov/publication/45010.

Uncertain Costs of Federal Financial Obligations

The federal government supports a variety of private activities through federal insurance and through federal credit programs that provide loans and loan guarantees.[26] CBO includes the expected losses from those credit and insurance programs in its baseline projections. But significantly greater losses could result from certain unexpected events, such as a major disruption in the financial system or a deep slump in the economy.

Federal insurance and credit programs generate losses when the support provided by the federal government exceeds the money taken in by the programs through fees, loan repayments, interest payments, asset sales, wage garnishment, and other means. For example, in the wake of the recent housing crisis, widespread defaults on guaranteed mortgages led to substantial outlays by the federal government. Widespread defaults on student loans or the bankruptcy of numerous companies with underfunded pension plans could lead to analogous costs for the

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25. Since the end of World War II, the unemployment rate has been about one-quarter of one percentage point higher, on average, than CBO's estimate of the natural rate of unemployment (the rate arising from all sources except fluctuations in aggregate demand). That difference implies that bouts of significant economic weakness (such as the 2007–2009 recession and its aftermath) have pushed the unemployment rate above CBO's estimate of the natural rate more than periods of significant economic strength have pushed it below that estimate. Consistent with that finding is CBO's projection that the unemployment rate in the long term will be 5.3 percent, which is about one-quarter of one percentage point higher than CBO's estimate of the natural rate of unemployment in the long term. For further discussion, see Appendix A.

26. Federal insurance includes coverage for deposits at financial institutions (provided by the Federal Deposit Insurance Corporation), insurance for workers' pensions (provided by the Pension Benefit Guaranty Corporation), and coverage for property against damage by floods (provided by the National Flood Insurance Program). The largest federal credit programs provide mortgage loan guarantees (through the Federal Housing Administration, Fannie Mae, and Freddie Mac); student loans; and federally backed loans to businesses (through the Small Business Administration, for example). A number of smaller programs include loan guarantees provided by the Department of Energy and terrorism risk insurance administered by the Treasury Department.

federal government in the future.[27] Conversely, long periods of particularly strong economic growth could allow federal insurance and credit programs to collect higher-than-projected repayments and cover lower-than-projected expenses.

Moreover, the federal government may have significant implicit liabilities apart from the liabilities created by formal government programs. In the event of a financial crisis, for example, federal policymakers might decide to provide monetary support to the financial system, as they did during the recent financial crisis. Such support would increase federal outlays relative to the projection in the extended baseline.

Catastrophes

The federal government also faces implicit obligations in the case of catastrophes. Natural and manmade disasters on a small scale occur fairly often in the United States; they may seriously damage local communities and economies, but they have rarely had significant, lasting impacts on the national economy. A catastrophe, by contrast—or an increased frequency of disasters, such as intense hurricanes or drought—could affect budgetary outcomes by reducing economic growth over a number of years, leading to substantial additional federal spending. For example, the nation could experience a massive earthquake, a nuclear meltdown or attack that rendered a significant part of the country uninhabitable, a pandemic, an asteroid strike, or a geomagnetic storm from a large solar flare. Participation in a major war could also have significant economic and budgetary impacts: The ratio of federal debt held by the public to GDP rose by 60 percentage points during World War II, for instance. Because catastrophic events are extremely rare, it is very difficult to estimate the probability of their future occurrence and their effects on the budget.

Changes in Demographics and Labor Force Growth

Demographic factors have significant effects on economic and budgetary outcomes. For instance, GDP depends to a large degree on the size of the labor force, which is related to the number of working-age adults; federal outlays for Medicare, Medicaid, and Social Security are closely linked to the number of people who are at least

65 years old. Higher rates of fertility or immigration would generally cause federal spending to decrease relative to GDP because they would increase the ratio of working-age adults to elderly ones. (Mortality, another demographic factor that affects the economy and the budget, was addressed separately above.) Such demographic factors could diverge relatively quickly from the trends projected in CBO's calculations—for example, because of a medical breakthrough that reduced mortality or because of the spread of a new infectious disease. Alternatively, shifts could occur gradually—for instance, if trends in fertility rates diverged steadily from their projected paths.

The growth of the labor force could also change for reasons other than demographic ones. Projections of the labor force combine estimates of the size of the population with estimates of the rates of participation in the labor force by people in different demographic groups. Those participation rates in turn depend on a number of factors, including economic conditions and public policies (especially those that involve taxes on labor or that directly affect people's incentive to work in some other way).[28] The overall rate of participation in the labor force has varied considerably over time. For example, it averaged 59 percent in the 1950s and 1960s, increased to more than 67 percent by 2000, and averaged a little more than 63 percent in the first half of 2013. The large increase from the 1960s to 2000 was mostly the result of an increasing number of women in the labor force. If the next 25 years saw a cultural shift of a different nature that had a similarly large effect on the overall rate of participation in the labor force, labor force growth could be significantly different from what CBO expects.

Higher or lower labor force growth would produce better or worse budgetary outcomes, all else being equal. If the labor force grew more quickly than projected in the extended baseline, the faster economic growth would result in higher revenues, smaller budget deficits, and a smaller ratio of federal debt to GDP. In contrast, if the labor force grew more slowly than projected in the extended baseline, the slower economic growth would result in lower revenues, larger budget deficits, and a greater ratio of debt to GDP.

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27. For more discussion, see James D. Hamilton, "Off-Balance-Sheet Federal Liabilities" (paper presented at the Third Annual *Cato Papers on Public Policy* Conference, Washington, D.C., June 6–7, 2013, revised July 17, 2013), http://dss.ucsd.edu/~jhamilto/Cato_paper.pdf (562 KB).

28. The rate of participation in the labor force has also changed over time within demographic groups; see Congressional Budget Office, *CBO's Labor Force Projections Through 2021* (March 2011), www.cbo.gov/publication/22011.

Implications of Uncertainty for the Design of Fiscal Policy

Policymakers could take uncertainty into account in various ways when making fiscal policy choices.[29] For example, they might decide to design policies that reduced the budgetary implications of certain surprises. However, such policies might have consequences that policymakers viewed as undesirable, such as increasing the risk borne by individuals. Policymakers might also decide to provide a buffer against events with negative budgetary implications by aiming for lower debt than they would otherwise.

Reducing the Budgetary Implications of Surprises

Fiscal policy cannot eliminate the risk factors that create uncertainty about budgetary outcomes, but it can reduce the budgetary implications of those factors. Under current law, for example, growth in Medicare and Medicaid outlays per beneficiary depends on the growth of health care costs. Some policymakers have proposed that growth in federal outlays per beneficiary of those programs be linked instead to measures of overall economic growth. Such a change could affect national spending for health care, the federal budget, individuals' costs, and the budgets of state and local governments. It might greatly reduce uncertainty about future federal outlays for Medicare and Medicaid; it might also greatly increase uncertainty about the future costs borne by the programs' beneficiaries and by state and local governments.[30]

Similarly, policymakers could reduce the budgetary implications of uncertainty about future life expectancy by indexing the eligibility age for programs such as Social Security or Medicare to average life spans. Under current law, if longevity increased more than expected, outlays for federal health care and retirement programs would exceed projections. If policies were changed so that the age of eligibility for those programs rose automatically with increases in longevity, the budgetary effects of such increases would be dampened. However, people would

face greater uncertainty about the timing and size of the benefits that they would receive.

In addition, policymakers could reduce the budgetary implications of unexpected rises in interest rates by increasing the share of government borrowing that was done through longer-term securities. Using that approach, the Treasury could lock in interest rates for a considerable period. However, interest rates on longer-term debt are typically higher than rates on shorter-term debt, so that approach would probably raise the interest that the federal government paid. Moreover, if interest rates were locked in for a long period, the federal government would benefit less from unexpected *declines* in interest rates.

Whether or not the federal budget directly bears the risk of uncertain outcomes, all risk is ultimately distributed among individuals—as taxpayers, as beneficiaries of federal programs, or as both. If federal spending for certain programs turned out to be higher than projected, the additional imbalance could be offset only through higher revenues or lower outlays for other programs or activities at some point in the future. If the additional imbalance was not offset, then deficits would be larger, resulting in lower future income. Conversely, if budget imbalances were smaller than expected, then an opportunity would exist to lower taxes or boost spending; it would also be possible to reduce future deficits, which would result in higher income. Which income groups or generations benefited the most from unexpected budgetary imbalances—or bore the largest burden—would depend on the policies that lawmakers enacted to deal with such imbalances.

Reducing Federal Debt

As an alternative or complementary approach, policymakers could improve the federal government's ability to withstand the effects of events that would significantly worsen the budgetary outlook. In particular, reducing the amount of federal debt held by the public would give future policymakers more flexibility in responding to extraordinary events. For example, a financial crisis in the future might have significant negative economic and budgetary implications—just as the recent financial crisis did: The ratio of federal debt held by the public to GDP increased by 35 percentage points between 2007 and 2012. If another financial crisis prompted a similar increase when the ratio of federal debt to GDP was already at a high level (such as its current level of

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29. See Alan J. Auerbach and Kevin Hassett, "Uncertainty and the Design of Long-Run Fiscal Policy," in Alan J. Auerbach and Ronald D. Lee, eds., *Demographic Change and Fiscal Policy* (Cambridge University Press, 2001), pp. 73–92, http://tinyurl.com/p93enfp.

30. Most proposed policy changes of that sort would affect both the expected federal outlays and uncertainty about those outlays, but those two effects are conceptually distinct.

74 percent), policymakers might be reluctant to accept the initial cost of a desired intervention in the financial system or the economy even if they expected to recoup at least part of that cost over time.

In addition, a high ratio of debt to GDP increases the risk of a fiscal crisis in which investors lose confidence in the government's ability to manage its budget and the government thus loses its ability to borrow at affordable

rates.[31] There is no way to predict the amount of debt that might precipitate such a crisis, but starting from a position of relatively low debt would reduce the risk.

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31. That sort of crisis might be triggered by an adverse event, such as a depression or a war, that quickly drove up the ratio of debt to GDP. For further discussion, see Congressional Budget Office, *Federal Debt and the Risk of a Fiscal Crisis* (July 2010), www.cbo.gov/publication/21625.
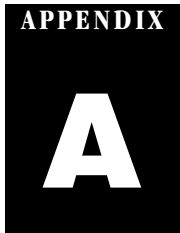
CBO's Projections of Demographic and Economic Trends

The long-term budget estimates in this report depend on projections for a host of demographic and economic variables, which the Congressional Budget Office (CBO) bases primarily on historical patterns. The set of projections for those variables, which CBO refers to as its economic benchmark, is consistent with the agency's baseline economic and budgetary projections over the next 10 years and with the assumptions that federal debt as a percentage of gross domestic product (GDP) and marginal tax rates (rates on an additional dollar of a taxpayer's income) remain constant thereafter. Projected annual values for the major demographic and economic variables over the next 75 years are included in the supplemental data for this report that are available on CBO's website (www.cbo.gov/publication/45471); average values are summarized in Table A-1.

Demographic Variables

The future size and composition of the U.S. population will affect federal tax revenues, federal spending, and the performance of the economy—for example, by influencing the size of the labor force and the number of beneficiaries of programs such as Medicare and Social Security. Population projections depend on projections of fertility, immigration, and mortality. CBO used projected values from the Social Security trustees for fertility rates but produced its own projections for immigration and mortality rates. Together, those projections imply a total U.S. population of 395 million in 2039, compared with 324 million today. CBO also produced its own projection of the rate at which people will qualify for Social Security's Disability Insurance program in coming decades.

Fertility

For fertility rates, CBO adopted the intermediate (mid-range) values published in the 2013 report of the Social Security trustees.[1] Those values imply an average fertility

rate of 2.0 children per woman over the next 25 years. (The trustees define that rate as the average number of children that a woman would have in her lifetime if she survived her entire childbearing period and, at each age of her life, experienced the birth rate estimated for that year.)

Immigration

For its economic benchmark, CBO projects that in the long run, net annual immigration (the net result of people leaving and entering the United States) will equal 3.2 immigrants for every 1,000 members of the U.S. population—the average ratio seen for most of the past two centuries.[2] On that basis, CBO projects that net annual immigration to the United States will amount to 1.2 million people in 2025 and 1.3 million in 2039. The amount of authorized and unauthorized immigration over the long term is subject to a great deal of uncertainty, however.

Mortality

Demographers have concluded that mortality rates have declined steadily in the United States for roughly the past

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1. See Social Security Administration, *The 2013 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds* (May 2013), www.ssa.gov/oact/tr/2013.

2. That ratio equals the estimated average net flow of immigrants between 1821 and 2002; see 2003 Technical Panel on Assumptions and Methods, *Report to the Social Security Advisory Board* (October 2003), p. 28, http://go.usa.gov/XKvT (PDF, 450 KB). That ratio was also the assumption recommended by the Social Security Advisory Board's most recent technical panel; see 2011 Technical Panel on Assumptions and Methods, *Report to the Social Security Advisory Board* (September 2011), p. 64, http://go.usa.gov/XKvm (PDF, 6.3 MB). For more details about U.S. immigration, see Congressional Budget Office, *A Description of the Immigrant Population—2013 Update* (May 2013), www.cbo.gov/publication/44134.

Table A-1.

Values for Demographic and Economic Variables Underlying CBO's
Long-Term Budget Projections

	Average Annual Values		
	Over the First 25 Years of the Projection Period (2014–2039)	Over the Entire Long-Term Projection Period (2014–2089)	Over the Last 25 Years of the Projection Period (2065–2089)
Demographic Variables			
Fertility rate (Children per woman)	2.0	2.0	2.0
Immigration rate (Per 1,000 people in the U.S. population)	3.8	3.4	3.2
Rate of mortality decline (Percent, adjusted for age and sex)	1.2	1.2	1.2
Rate of disability incidence (Per 1,000 people who have worked long enough to qualify for Disability Insurance but are not receiving benefits)	5.6 [a]	5.6 [a]	5.6
Economic Variables (Percent)			
Growth of the labor force	0.5	0.5	0.5
Growth of average hours worked	-0.1	*	*
Unemployment			
Unemployment rate	5.6	5.4	5.3
Natural rate of unemployment	5.2	5.1	5.0
Taxable earnings as a share of compensation	81	80	79
Inflation			
Growth of the CPI-U	2.4	2.5	2.5
Growth of the GDP deflator	2.0	2.1	2.1
Interest rates			
Real rates			
On 10-year Treasury notes and the OASDI and HI trust funds	2.5	2.5	2.5
On all federal debt held by the public	1.7	2.0	2.2
Nominal rates			
On 10-year Treasury notes and the OASDI and HI trust funds	4.9	5.0	5.0
On all federal debt held by the public	4.1	4.5	4.7
Growth of productivity			
Total factor productivity	1.3	1.3	1.3
Labor productivity	1.8	1.8	1.8
Growth of real earnings per worker	1.4	1.3	1.3
Growth of GDP			
Real GDP	2.3	2.3	2.3
Nominal GDP	4.3	4.4	4.4

Source: Congressional Budget Office.

Note: * = between -0.05 percent and zero; CPI-U = consumer price index for all urban consumers; GDP = gross domestic product; OASDI = Old-Age, Survivors, and Disability Insurance (Social Security); HI = Hospital Insurance (Part A of Medicare).

a.   This average is for years after 2024. (The method that CBO uses to project the number of workers who will qualify for Disability Insurance benefits over the 10 years covered by CBO's baseline differs from the method used for the rest of the long-term projection period.)

half century. In the absence of compelling reasons to expect that future trends will differ, CBO projects that mortality rates will fall at the same pace that they did, on average, between 1950 and 2008: by 1.17 percent a year.[3] (Mortality rates measure the number of deaths per thousand people in a population. Historically, declines in mortality rates have varied among age groups, but for simplicity, CBO projects the same rate of decline for all ages.) That extrapolation of past trends suggests that the average life expectancy for someone born in 2060 will be 85.2 years, substantially higher than CBO's estimate of 79.0 years for someone born today. Similarly, CBO projects that people who turn 65 in 2060 can be expected to live another 23.9 years, on average, which is 4.5 years longer than current 65-year-olds are expected to live. Those figures represent averages for all people of a given age and sex in those years.

CBO's projections also incorporate differences in mortality based on sex, marital status, education, and lifetime household earnings. (For people under 30, the mortality projections reflect only age and sex.) CBO expects that future increases in life expectancy will be larger for people with higher lifetime earnings than for those with lower earnings, which would be consistent with the pattern of past increases.[4] Today, on average, a 65-year-old man whose household is in the highest one-fifth (quintile) of the distribution of lifetime earnings will live more than three years longer, CBO projects, than a man of the same age whose household is in the lowest quintile of lifetime

earnings; for women, that difference in life spans is one year. CBO projects that by 2039, men in households with high lifetime earnings will live about six years longer than men in households with low lifetime earnings, and the corresponding difference for women will be about three years.

Disability

Another demographic variable that affects the federal budget is the rate of disability incidence, defined here as the rate at which people will become eligible for Social Security's Disability Insurance program. CBO projects that of the people who have worked long enough to qualify for disability benefits but who are not yet receiving them, an average of 5.6 per 1,000 will qualify each year after 2024 (adjusted for changes in the age and sex makeup of the population, relative to its composition in 2000).

Economic Variables

For the 2014–2024 period, CBO's benchmark projections of economic variables—such as the size of the labor force, inflation, interest rates, and earnings per worker—match the values in CBO's February 2014 economic forecast (which underlies the agency's most recent 10-year budget projections).[5] Beyond 2024, the benchmark generally reflects the economic experience of the past few decades. Thus, it does not incorporate the extent to which economic output and interest rates would change if federal debt as a percentage of GDP or marginal tax rates changed after 2024, as is projected to occur under current law. Rather, the benchmark reflects two specific assumptions about fiscal policy after 2024: that federal debt held by the public will be kept at 78 percent of GDP (the percentage at the end of 2024 in CBO's baseline budget projections) and that effective marginal tax rates on income from labor and capital will remain constant at their 2024 levels. (For estimates of how projected deficits

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3. That figure is greater than the 0.80 percent average annual decline projected in the Social Security trustees' 2013 report, but it is less than the 1.26 percent average annual decline recommended by the Social Security Advisory Board's 2011 Technical Panel on Assumptions and Methods. The panel's recommendation reflects a belief that the decrease in mortality will be larger in the future than in the past because of declines in smoking rates. However, because of uncertainty about the possible effects of many other factors, such as obesity and future medical technology, CBO has based its mortality projections on a simple extrapolation of past trends. For further discussion of mortality patterns in the past and methods for projecting mortality, see 2011 Technical Panel on Assumptions and Methods, *Report to the Social Security Advisory Board* (September 2011), pp. 55–64, http://go.usa.gov/XKvm (PDF, 6.3 MB). For additional background, see Hilary Waldron, "Literature Review of Long-Term Mortality Projections," *Social Security Bulletin,* vol. 66, no. 1 (September 2005), pp. 16–50, http://go.usa.gov/XKGk; and John R. Wilmoth, *Overview and Discussion of the Social Security Mortality Projections,* working paper for the 2003 Technical Panel on Assumptions and Methods (Social Security Advisory Board, May 5, 2005), http://go.usa.gov/XKGG (PDF, 480 KB).

4. For more information about mortality differences among groups with different earnings, see Julian P. Cristia, *The Empirical Relationship Between Lifetime Earnings and Mortality,* Working Paper 2007-11 (Congressional Budget Office, August 2007), www.cbo.gov/publication/19096; and Congressional Budget Office, *Growing Disparities in Life Expectancy* (April 2008), www.cbo.gov/publication/41681.

5. For more about that economic forecast, see Congressional Budget Office, *The Budget and Economic Outlook: 2014 to 2024* (February 2014), Chapter 2, www.cbo.gov/publication/45010.

and marginal tax rates would affect the economy under the extended baseline and some alternative policies, see Chapter 6.)

The Labor Market

Benchmark projections about the labor market include estimates of the growth of the labor force, the average number of hours that people work, the rate of unemployment, and the share of total compensation that people receive in the form of taxable earnings. Those factors affect the amount of tax revenues that the government collects and the amount of federal spending on certain programs, such as Social Security.

Growth of the Labor Force. The number of workers is expected to grow more slowly in coming decades than in past years because of such factors as the retirement of the large generation of baby boomers, lower birth rates, and an end to growth in women's participation in the labor market. The labor force expanded at an average rate of 1.7 percent a year between 1970 and 2007 (the most recent peak in the business cycle). However, CBO projects that it will grow by only about 0.5 percent a year, on average, from 2014 to 2039 and at a similar pace thereafter.

That slowdown in growth is expected to result both from more workers exiting the labor force and from fewer workers entering it. More workers are projected to leave the labor force than in past decades because the older members of the baby-boom generation have begun reaching retirement age (although the average age at which people leave the labor force because of retirement has increased slightly in recent decades). Fewer workers are projected to enter the labor force than in past decades for two reasons. First, birth rates have declined (for example, the average fertility rate was more than three children per woman in the 1950s and 1960s, compared with fewer than two children today). Second, participation by women in the labor force is not projected to increase, whereas in the past it rose significantly.

Increases in longevity, however, will cause participation in the labor force to be slightly greater than it would be without such improvements, CBO anticipates. CBO expects that the average person will work three more months for each additional year of life expectancy in the coming decades. For example, if life expectancy was four years longer for one cohort of workers than for an earlier cohort, the longer-lived cohort would work an average of one extra year (everything else being equal). CBO's projections also reflect the view that older people with more education will stay in the labor force longer than those with less education. That difference occurs because people with more education are more likely to be in the labor force when they enter their 60s and less likely to claim Social Security benefits at an early age.

Over the 1970–2007 period, the working-age population (people ages 20 to 64) grew by an average of 1.3 percent a year, but the labor force grew faster (by 1.7 percent a year) mainly because of large increases in the participation rate of women (a factor that was only partly offset by a decline in the participation rate of men). Over the next decade, the gap between those growth rates will narrow, CBO projects, with the working-age population increasing by about 0.5 percent a year and the labor force growing by about 0.7 percent a year. CBO expects only small changes in the participation rates of specific groups after 2024, so the labor force is projected to increase at roughly the same rate as the working-age population—about 0.5 percent a year, on average, over the entire 2014–2089 period.

Average Hours Worked. Different parts of the labor force work different numbers of hours, on average; for instance, men tend to work more hours than women do, and people between the ages of 30 and 40 tend to work more hours than do people between the ages of 50 and 60. CBO's projections are based on the view that those differences among groups will remain stable. However, CBO also expects that over the long term, the composition of the labor force will shift toward certain groups (such as older workers) that tend to work less, slightly reducing the average number of hours worked by the labor force as a whole. CBO estimates that by 2039, the average number of hours per worker will be about 1 percent less than it is today and will remain at that level thereafter.

The Unemployment Rate. In February 2014, CBO projected that the unemployment rate would decline from 7.1 percent at the end of 2013 to 5.8 percent at the end of 2017 and then to 5.5 percent in 2024. CBO estimated that the natural rate of unemployment would also decline, from 6.0 percent at the end of last year to 5.5 percent at the end of 2017 and to 5.2 percent in 2024. (The natural rate of unemployment is the rate that results from all sources other than fluctuations in overall demand related to the business cycle—for example, from

differences between the skills of people who are looking for work and the skills that employers consider necessary to fill vacant positions.) Those projected improvements reflect CBO's expectation that the economic expansion will strengthen in the next few years and that structural reasons for unemployment—such as problems in matching unemployed workers with available jobs, the stigma attached to long-term unemployment, and possible erosion of unemployed workers' job skills—will diminish.[6]

CBO projects that after 2017, the average unemployment rate will be about one-quarter of a percentage point higher than the natural rate of unemployment. That projection is based not on a forecast of specific cyclical movements in the economy but rather on CBO's estimate that the unemployment rate has been roughly that much higher than the natural rate since the end of World War II, on average, and has been higher than the natural rate in each of the past five business cycles.

After 2024, the average unemployment rate is projected to decline as the natural rate of unemployment slowly moves downward. Structural factors that are pushing up the natural rate will fade as some of the people unemployed for a long time retire (or otherwise permanently withdraw from the labor force) and as others eventually obtain stable jobs. The natural and actual rates of unemployment are projected to decrease to 5.0 percent and 5.3 percent, respectively, by 2028 and then to remain at those levels.

Taxable Earnings as a Share of Compensation. Workers' total compensation consists of taxable earnings and nontaxable benefits, such as paid leave and employers' contributions for health insurance and pensions. The share of total compensation paid in the form of taxable earnings has slipped over the years—from about 90 percent in 1960 to 80 percent in 2013—mainly because the cost of health insurance has grown more quickly than total compensation over the past several decades.[7]

Looking ahead, CBO expects that health care costs will continue to rise more rapidly than taxable earnings, a trend that by itself would further decrease the proportion of compensation that workers receive as taxable earnings.

However, the Affordable Care Act imposed an excise tax on some employment-based health insurance plans that have premiums above a specific threshold. Some employers and workers will respond to that tax—which is scheduled to take effect in 2018—by shifting to less expensive plans, thereby reducing the share of compensation composed of health insurance premiums and increasing the share composed of taxable earnings. CBO projects that the effects of the excise tax on the mix of compensation will roughly offset the effects of rising costs for health care for a few decades; after that, the effects of rising health care costs will outweigh the effects of the excise tax.[8] As a result, in CBO's benchmark, the share of compensation that workers receive as taxable earnings is projected to remain near 80 percent until about 2050 and to decline slightly thereafter. (For more about the projected effects of the excise tax, see Chapter 5; for a discussion of projected changes in the costs of health care, see Chapter 2.)

Inflation

The economic benchmark includes projections of the prices of various categories of goods and services. For that benchmark, CBO projects that the rate of inflation for consumer goods and services—as measured by the annual rate of change in both the consumer price index for urban wage earners and clerical workers (CPI-W) and the consumer price index for all urban consumers (CPI-U)—will average 2.4 percent over the 2014–2039 period and hold steady at 2.5 percent a year over the longer run. The projected long-term rate is similar to the average rate of inflation since 1990, a period when growth in the CPI-U averaged 2.6 percent a year.

The annual inflation rate for all final goods and services produced in the economy, as measured by the rate of increase in the GDP deflator, is projected to average 0.4 percentage points less than the annual increase in the consumer price indexes over the long term.[9] The GDP deflator grows more slowly than the consumer price

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6. See Congressional Budget Office, *The Slow Recovery of the Labor Market* (February 2014), www.cbo.gov/publication/45011.

7. For more details, see Congressional Budget Office, *How CBO Projects Income* (July 2013), www.cbo.gov/publication/44433.

8. CBO projects that the effects of the excise tax on the taxable share of compensation will diminish over time, both because CBO expects that most people will continue to want a significant amount of health insurance and because the Affordable Care Act set minimum levels of coverage for health insurance plans. Therefore, the number of additional people moving to less expensive insurance plans will eventually dwindle.

9. Final goods and services include goods and services bought by consumers, purchased for investment, or purchased by governments, as well as net exports.

indexes for two reasons: because it fully accounts for people's ability to shift their mix of purchases as some prices change relative to other prices, and because the items on whose prices the GDP deflator is based include a greater proportion of things (such as computers) whose prices are projected to increase more slowly than those of most other goods and services.

Interest Rates

CBO's economic benchmark includes projections of various interest rates that the federal government pays to borrow money, such as the rate on 10-year Treasury notes, the average rate on federal debt held by the public, and the average rate on holdings of the Social Security and Medicare trust funds.

CBO expects real (inflation-adjusted) interest rates on federal borrowing to be lower in the future than they have been, on average, in the past few decades. For example, the real interest rate on 10-year Treasury notes (calculated by subtracting the rate of increase in the CPI-U from the nominal yield on those notes) averaged roughly 3.1 percent between 1990 and 2007.[10] In the economic benchmark, that rate is projected to rise from its unusually low level today to 2.6 percent for the 2017–2024 period (in line with CBO's February 2014 economic forecast). After 2024, it is projected to equal 2.5 percent.

Factors Affecting Interest Rates. Using past trends as a starting point for projecting interest rates over the long term requires making judgments about what period in the past to consider. Real interest rates were very low in the 1970s because of an unexpected surge in inflation, and those rates were quite high in the 1980s as inflation declined unexpectedly rapidly.[11] Interest rates also fell sharply during the financial crisis and recession that began in 2007. To avoid those possibly less representative periods, CBO examined average interest rates and their

determinants between 1990 and 2007 and then considered how different those determinants might be over the long run.

In CBO's assessment, the following factors will probably reduce future interest rates on government securities relative to their 1990–2007 average:

■ Most important, the labor force is projected to grow much more slowly in the future than it has for the past few decades. If everything else remains equal, slower growth in the labor force will raise the amount of capital per worker in the long run, reducing the return on capital and therefore also reducing the return on alternative investments, such as government bonds.[12]

■ The share of total income going to high-income households is expected to remain higher in the future than it was during the past few decades. Higher-income households tend to save a greater proportion of their income, so that difference in the distribution of income will increase the total amount of savings available for investment (other things being equal) and thus increase the amount of capital per worker.

■ Total factor productivity—real output per unit of combined labor and capital services—will grow slightly more slowly in the future than it has in recent decades, CBO projects (as explained at the end of this appendix). For a given rate of investment, lower productivity growth reduces both the return on capital and interest rates (all else being equal).

■ The risk premium—the additional return that investors require to hold assets that are riskier than Treasury securities—will probably remain higher in the future than it was, on average, in the 1990–2007 period. Financial markets were already showing less appetite for risk in the early 2000s, so the risk premium was higher toward the end of that 18-year period than the average over the whole period. In addition, CBO expects that the demand for low-risk assets will be stronger in the wake of the financial crisis, in part because of the ways in which financial institutions have responded to oversight from regulators.

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10. Looking farther back, the real interest rate on 10-year Treasury notes averaged 3.2 percent between 1970 and 2007 and 2.9 percent between 1953 and 2007. For comparisons of historical real rates, past values of the consumer price index were adjusted to account for changes over time in how that index measures inflation.

11. Although real interest rates are calculated by subtracting inflation rates from nominal interest rates, inflation can still affect them. If lenders set nominal interest rates assuming that inflation will be a certain percentage and inflation ends up being much higher, real interest rates will be lower than lenders intended. If inflation ends up being lower than expected, the opposite will occur.

12. For more information about the relationship between the growth of the labor force and interest rates, see Congressional Budget Office, *How Slower Growth in the Labor Force Could Affect the Return on Capital* (October 2009), www.cbo.gov/publication/41325.

At the same time, in CBO's assessment, the following factors will tend to increase future interest rates on government securities relative to their 1990–2007 average:

■ Most important, if current laws do not change, federal debt will be much larger as a percentage of GDP than it was before 2007. CBO's economic benchmark is built on the assumption that the ratio of debt to GDP after 2024 will remain at its 2024 value, 78 percent—almost twice as high as the 40 percent average seen over the 1990–2007 period. Higher federal debt tends to crowd out private investment in the long run, reducing the amount of capital per worker and increasing both the return on capital and interest rates.

■ Net inflows of capital from other countries will be smaller as a percentage of GDP in the future than they have been, on average, in recent decades, CBO projects. In the 1990s and early to mid-2000s, rapid economic growth and high rates of saving in various nations with emerging market economies led to large flows of capital from those countries to the United States. As those nations' economies continue to grow, however, their consumption will probably increase relative to their saving—because markets for those countries' debt will develop and because average citizens will tend to receive more of the gains from economic growth—and their demand for domestic investment will rise. That combination of changes will reduce capital flows to the United States, decreasing domestic investment and the amount of capital per worker and increasing rates of return. (Those developments are consistent with CBO's projection that the United States' trade deficit, the gap between its imports and its exports, will be narrower in the future as a percentage of GDP than it has been for the past few decades.)

■ The capital share of income—the percentage of total income that goes to owners of capital—has been on an upward trend for the past few decades. CBO projects that it will decline somewhat over the next decade from its current, historically high level; however, the capital share will remain higher than its average of recent decades because the factors that appear to have contributed to its rise (such as technological change and globalization) will persist. Having a larger share of income go to the owners of capital directly boosts the return on capital and thus interest rates.

■ The retirement of the baby-boom generation and slower growth of the labor force will reduce the number of workers in their prime saving years, relative to the number of older people drawing down their savings. That reduction will decrease the total amount of savings available for investment (all else being equal), which will tend to reduce the amount of capital per worker and thereby push up interest rates. (CBO estimates that this effect will only partially offset the effect on savings of increased income inequality, described above, leaving a net increase in savings available for investment.)

Other factors not listed here will have smaller—and largely offsetting—effects on interest rates on federal borrowing over the long term, CBO estimates.

Projections of Interest Rates. Although some of the aforementioned factors have received considerable attention by researchers, others have not. The effects on future interest rates of some of the factors—such as the growth of the labor force and the amount of federal debt—can be quantified using available data, theoretical models, and estimates from the research literature. The extent to which other factors will affect interest rates is harder to quantify. For example, changes such as shifting preferences for high-risk rather than low-risk assets are not directly observable. Other factors, such as the distribution of income, are observable, but models and empirical estimates offer little guidance for quantifying their effects on interest rates. In addition, prices in financial markets do not definitively indicate investors' expectations about interest rates over the long term—among other reasons, because most of the government's outstanding debt securities have maturities that are much shorter than the 25-year period that is the focus of CBO's long-term projections.

With those considerable sources of uncertainty, CBO relied on its own economic models, the economics research literature, and other information as guides in assessing how different factors will influence interest rates in the future. Nevertheless, the projections ultimately reflect CBO's judgment.

The estimates and assumptions underlying the economic benchmark suggest that the inflation-adjusted rate of return on 10-year Treasury notes will be one-half to two-thirds of a percentage point lower in the coming decades than it was during the 1990–2007 period. Therefore, CBO projects that the interest rate on 10-year Treasury notes (adjusted for the rate of increase in the CPI-U) will rise in the next few years from its current, extraordinarily

low level to average 2.5 percent over the 2014–2039 period and over the longer term—compared with its average of 3.1 percent between 1990 and 2007.

The average interest rate on all federal debt held by the public tends to be a little lower than the rate on 10-year Treasury notes. The reason is that interest rates are generally lower on shorter-term debt than on longer-term debt, and the average maturity of federal debt is expected to remain at less than 10 years. Thus, CBO projects that the average real interest rate on all federal debt held by the public (adjusted for the rate of increase in the CPI-U) will be 1.7 percent over the 2014–2039 period and 2.2 percent over the longer term. (The average interest rate on all federal debt is projected to rise more slowly than the 10-year rate because only a portion of federal debt matures each year.) CBO generally uses the average interest rate on all federal debt as a discount rate when it calculates the present value of future streams of total federal revenues and outlays in its long-term projections, as it does in estimating the fiscal gap described in Chapter 1.[13]

The Social Security and Medicare trust funds hold special-issue bonds that generally earn interest rates that are higher than the average real interest rate on federal debt. Therefore, in projecting the balances in the trust funds and calculating the present value of future streams of revenues and outlays for those funds, CBO uses an interest rate equal to 2.5 percent in the long run.

Combining CBO's projections of average real interest rates with its projection of inflation as measured by the growth of the CPI-U produces estimates of average nominal interest rates. Over the 2014–2039 period, nominal rates are projected to average 4.9 percent on 10-year Treasury notes and 4.1 percent on all federal debt held by the public.

Output
In its economic benchmark, CBO projects that real gross domestic product will grow fairly quickly over the next few years, reflecting a recovery in aggregate demand. Thereafter, real GDP is projected to grow at a pace that

reflects increases in the capital stock, productivity, and the supply of labor.

Capital Stock. Over the next decade, growth in the nation's stock of capital will be driven by economic output, national saving, and international capital flows, CBO estimates. For simplicity, CBO projects that after 2024, the capital stock will expand at a pace sufficient to maintain a constant rate of return on capital. That projection is consistent with CBO's projection that the average real interest rate on all federal debt held by the public will remain fixed at 2.2 percent in the long term.

Productivity. Total factor productivity is projected to increase at an average annual rate of 1.3 percent from 2014 to 2039. That growth rate is slightly lower than the average rate of 1.4 percent seen both for the past two decades and since 1950. CBO expects productivity to grow more slowly in coming decades partly because increases in average educational attainment, which contributes to workers' skills, have slowed since 1980.[14] The effect of that slowing will be partly offset, however, by the aging of the labor force over the next few decades, as better health and longer life spans cause people to stay in the workforce longer than previous cohorts did. That older workforce will be composed of more highly educated workers, because workers with higher educational attainment tend to remain in the labor force longer.

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13. A present value is a single number that expresses a flow of income or payments over time in terms of an equivalent lump sum received or paid today. The present value of future cash flows depends on the interest rate used to translate those flows into current dollars. The lower that discount rate, the higher the present value of the future flows.

14. CBO calculates total factor productivity as the portion of growth in output not accounted for by growth in hours worked and in capital services. Therefore, when an increase in workers' skills makes each hour of work more productive, CBO measures that effect as an increase in total factor productivity. Various researchers have examined trends in workers' skills and the effect of those trends on future economic growth; that research has not reached a clear consensus about the size of the effect. For examples of recent research, see Claudia Goldin and Lawrence F. Katz, *The Race Between Education and Technology: The Evolution of U.S. Educational Wage Differentials, 1890 to 2005,* Working Paper 12984 (National Bureau of Economic Research, March 2007), www.nber.org/papers/w12984; David M. Byrne, Stephen D. Oliner, and Daniel E. Sichel, *Is the Information Technology Revolution Over?* Finance and Economics Discussion Series Paper 2013-36 (Board of Governors of the Federal Reserve System, March 2013), http://go.usa.gov/XXNR; John Fernald, *Productivity and Potential Output Before, During, and After the Great Recession,* Working Paper 2012-18 (Federal Reserve Bank of San Francisco, September 2012), http://tinyurl.com/pk8b666 (PDF, 480 MB); and Robert J. Gordon, *Is U.S. Economic Growth Over? Faltering Innovation Confronts the Six Headwinds,* Policy Insight 63 (Center for Economic Policy Research, September 2012), http://tinyurl.com/p57pzt5.

Another factor that is expected to slow the growth of total factor productivity is a lower projected amount of federal investment. Under the assumptions used for these projections, the government's nondefense discretionary spending is projected to decline over the next decade to a much smaller percentage of GDP than it has averaged in the past. Since the 1980s, about half of such spending has consisted of federal investment in physical capital (such as roads), education and training, and research and development.[15] Those forms of investment contribute to total factor productivity, CBO estimates, so as the economy adjusts to lower amounts of federal investment (consistent with less nondefense discretionary spending as a percentage of GDP), the growth rate of total factor productivity will be dampened slightly.

Supply of Labor. Total hours worked will grow at an average annual rate of 0.5 percent between 2014 and 2039, CBO estimates, on the basis of the projections of the size of the labor force, average hours worked, and unemployment described above.

The growth rates projected for the labor supply, the capital stock, and total factor productivity are consistent with CBO's projection for the average growth of labor productivity (real output per hour worked): 1.9 percent a year over the 2014–2024 period and 1.8 percent a year thereafter. Trends in prices, in the growth of nonwage compensation (such as employer-provided health insurance), and in average hours worked imply that real earnings per worker will grow more slowly than labor productivity: by an average of 1.5 percent a year over the 2014–2024 period and 1.4 percent a year over the 2014–2039 period.[16]

Real GDP. CBO's projection of the growth rate of real GDP—an annual average of 2.3 percent over both the 2014–2039 and the 2014–2089 periods—is much lower than the rate of economic growth seen in the past few

decades, primarily because of the slowdown that CBO anticipates in the growth of the labor force. Per capita real GDP is also expected to increase more slowly than in the past: at average annual rates of 1.5 percent over the 2014–2039 period and 1.6 percent between 2014 and 2089, compared with 2.1 percent during the 40 years before the start of the 2007–2009 recession.

Just as the unemployment rate is projected to be about one-quarter of a percentage point higher than the natural rate of unemployment in the long run, total GDP is projected to be half a percent lower than its potential (maximum sustainable) level. That projection is based on CBO's estimate that actual GDP has been roughly that much lower than potential GDP, on average, since the end of World War II—and has been lower than potential GDP, on average, in each of the past five business cycles. Those outcomes stem from the fact that actual output has fallen short of CBO's estimate of potential output during and after economic downturns to a larger extent and for longer periods than actual output has exceeded potential output during economic booms.

Combining CBO's projection for real economic growth with its projection for inflation as measured by the growth of the GDP deflator yields a projected annual growth rate for nominal GDP that averages 4.3 percent over the 2014–2039 period—higher than the 4.1 percent average nominal interest rate on all federal debt held by the public projected for that period.[17] The growth rate of GDP is expected to exceed the interest rate on federal debt by a larger margin during the next 10 years; after 2024, however, the growth rate of nominal GDP is projected to be below the average nominal interest rate on federal debt. When the growth rate of nominal GDP is less than the nominal interest rate, as in those long-term projections, the ratio of debt to GDP would tend to rise over time even if the federal budget excluding interest payments was in balance.

15. See Congressional Budget Office, *Federal Investment* (December 2013), www.cbo.gov/publication/44974.

16. Trends in prices are important in projecting those measures because real earnings per worker are calculated here using the CPI-U, and real output per hour is calculated using the GDP deflator. CBO projects that the CPI-U will grow 0.4 percentage points faster per year than the GDP deflator over the long term.

17. The growth rate of nominal GDP differs from the growth rate of real GDP by the rate of increase of the GDP deflator, whereas the nominal interest rate on federal debt differs from the real interest rate (as calculated here) by the rate of increase of the CPI-U. CBO projects that in the long run, the GDP deflator will grow at an average rate of 2.1 percent a year and the CPI-U will grow at an average rate of 2.5 percent a year.

Changes in CBO's Long-Term Projections Since September 2013

The long-term projections of federal revenues and outlays presented in this report are generally similar to the ones that the Congressional Budget Office (CBO) published in 2013 despite certain changes in law, revisions to some of the agency's assumptions and methods, and the availability of more-recent data.[1] Without economic feedback taken into account, debt is projected to rise from about 74 percent of gross domestic product (GDP) this year to 106 percent in 2039 under the extended baseline, whereas last year, CBO projected that debt would rise to 102 percent of GDP in 2039 (see Figure B-1). The nominal amount of debt projected for 2039 is nearly the same in both projections, but GDP is now projected to be a bit smaller, resulting in a slightly higher ratio of debt to GDP. Under the extended alternative fiscal scenario with economic feedback, debt is projected to rise to 183 percent of GDP in 2039, compared with the 190 percent of GDP projected for 2038 last year. That difference stems primarily from changes in CBO's assumptions about restraints on the growth of health care costs under that scenario and from changes in CBO's projection of the interest rate on federal debt.

Changes in Methods Underlying the Extended Baseline

Since last year, CBO has changed its projections of economic output and interest rates in the long run and has modified its expectations about spending for health care. Those changes, taken together, result in a projected path for debt that is similar to the one last year.

A Lower Projection of Nominal GDP

CBO's current projection of nominal GDP in 2039 is about 4 percent smaller than its estimate last year for two main reasons. First, CBO reduced its estimate of the annual growth of the GDP deflator by about 0.1 percentage point, reflecting the revision to historical inflation data published by the Bureau of Economic Analysis in the summer of 2013. Second, CBO reduced its projection of real (inflation-adjusted) potential GDP (that is, the maximum sustainable level of output), reflecting the 10-year economic projections that CBO published in February 2014.[2] Over the long term, real GDP is projected to grow at the same pace as real potential GDP.

A Lower Projection of Interest Rates

In last year's long-term analysis, the real interest rate on 10-year Treasury notes—calculated by subtracting the rate of increase in the consumer price index from the nominal yield on such notes—was projected to be 3.0 percent in the long run. On the basis of a comprehensive reevaluation, CBO now projects that rate to be 2.5 percent. Similarly, last year, the projected average real interest rate on government debt was 2.7 percent, but the agency now expects it to be lower by the same difference, or 2.2 percent.

CBO relied on economic models, the economics research literature, and other information as guides in assessing how different factors will influence interest rates in the future. Factors tending to reduce projected interest rates, relative to historical averages, include slower growth of the labor force and, to a lesser extent, of total factor

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1. See Congressional Budget Office, *The 2013 Long-Term Budget Outlook* (September 2013), www.cbo.gov/publication/44521.

2. For further discussion, see Congressional Budget Office, *The Budget and Economic Outlook: 2014 to 2024* (February 2014), pp. 44–46, www.cbo.gov/publication/45010.

Figure B-1.

Comparison of CBO's 2013 and 2014 Projections of Federal Debt Held by the Public Under the Extended Baseline

Percentage of Gross Domestic Product

Source: Congressional Budget Office.

Note: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the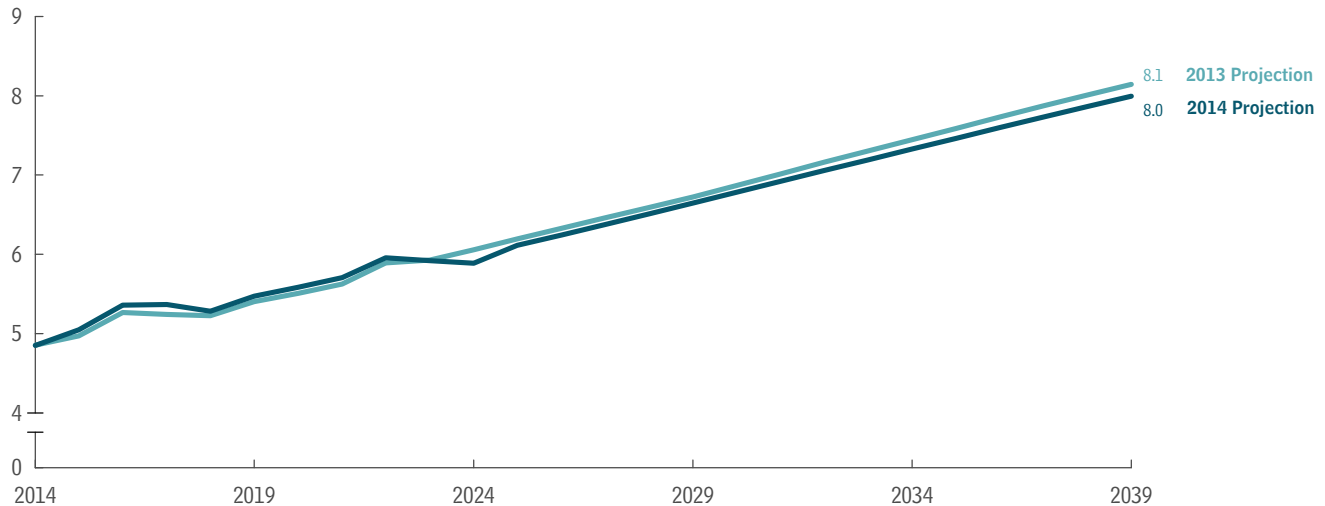 rest of the long-term projection period. These projections do not reflect the economic effects of the policies underlying the extended baseline. (For an analysis of those effects and their impact on debt, see Chapter 6.)

productivity (or average real output per unit of combined labor and capital services); the effect of greater income inequality on the saving rate; and an increased risk premium (that is, the additional return that investors require to hold assets that are riskier than Treasury securities). In CBO's current projections, those factors are only partially offset by factors tending to increase projected interest rates relative to historical averages, which include a higher ratio of debt to GDP, lower projected inflows of capital as a percentage of GDP, an increase in the share of output going to owners of capital, and a decline in the saving rate as the population ages.

CBO's reevaluation of how it projects interest rates involved both reconsidering the relative importance of factors included previously, such as the growth of the labor force, and adding factors not incorporated before, such as the effect of income inequality on the saving rate, the risk premium, the share of output going to owners of capital, and the effect of an aging population on the saving rate. (For more information on CBO's projection of interest rates, see Appendix A.)

A Revised Projection of the Growth Rate of Health Care Costs

CBO's projections of federal spending for the government's major health care programs have changed only slightly as a share of GDP since last year. Outlays for those programs—Medicare, Medicaid, the Children's Health Insurance Program, and subsidies for health insurance purchased through exchanges—are now projected to total 8.0 percent of GDP in 2039, compared with the 8.1 percent projected last year.

A key concept underlying CBO's long-term projections of health care spending is the rate of excess cost growth— that is, the growth in health care spending per person (adjusted to remove the effects of demographic changes) relative to the growth in potential GDP per person. CBO has slightly reduced its projection of that underlying rate of excess cost growth. As it did last year, CBO projects that the rate of excess cost growth will decline throughout the 75-year projection period, ending at 1.0 percent per year for Medicare and zero for Medicaid and private

insurance premiums.[3] However, last year, the underlying rate of excess cost growth was estimated to begin at 1.5 percent in 2012, which equaled the weighted average rate of excess cost growth experienced in the health care system between 1985 and 2011. This year, because of continued slow growth of health care spending in 2012, the underlying rate of excess cost growth is estimated to begin at 1.4 percent in 2013, which equals the weighted average rate of excess cost growth seen in the health care system between 1985 and 2012.

The agency projects that under current law, excess cost growth in Medicare and Medicaid will return to the underlying paths gradually over the 15 years beyond the next decade. For Medicare, the rate of excess cost growth in CBO's current projections moves smoothly and linearly from 0.7 percent in 2025 to 1.3 percent in 2039; thereafter, CBO has applied the underlying rate of excess cost growth, which declines from 1.3 percent in 2039 to 1.0 percent by the end of the projection period, in 2089. In last year's projections, the rate for 2024 through 2029 was 1.0 percent, which was an extension of the average rate for 2020 to 2023 with certain adjustments; thereafter, CBO applied the underlying rate of excess cost growth, which declined from 1.4 percent in 2030 to 1.0 in 2088. Consequently, over the first 25 years of the projection period, the resulting average rate of excess cost growth is 0.6 percent in this year's projections but was 0.8 percent in last year's.

For Medicaid, the rate of excess cost growth in CBO's current projections moves from 1.2 percent in 2025 to 0.9 percent in 2039; thereafter, CBO applied the underlying rate of excess cost growth, which declines from 0.9 percent in 2039 to zero in 2089. In last year's projections, the underlying rate of excess cost growth began in 2024. But in reconsidering the transition to that rate, CBO determined that—instead of an immediate jump in the year following the decade covered by its current-law baseline—a smooth transition over time better reflected the imprecise timing of the shift. For Medicaid, the average rate of excess cost growth in the first 25 years is

higher in this year's projections, at 1.5 percent, than it was last year, at 1.3 percent.

Changes in Spending and Revenues Under the Extended Baseline

In CBO's extended baseline, noninterest spending exceeds revenues throughout the next quarter century; the shortfall is similar to that projected in 2013. Interest costs on the debt are slightly lower because of lower interest rates.

Revenues
Federal revenues are projected to be slightly lower relative to GDP in coming decades than the amounts CBO projected in 2013 (see the top panel of Figure B-2). By 2024, revenues are projected to be 18.3 percent of GDP, whereas last year, the estimate was 18.6 percent. That gap is estimated to slowly widen in subsequent years because of the compounding effects of the lower percentage in 2024, slightly slower growth in pension distributions that are taxable, and other factors. By 2039, revenues are now projected to equal 19.4 percent of GDP, or 0.4 percentage points lower than the 19.8 percent estimate last year.

Noninterest Spending
Noninterest spending is projected to be about the same relative to GDP as what CBO projected in 2013 (see the middle panel of Figure B-2). Specifically, noninterest spending is projected to be slightly higher than last year's estimates for about the first decade of the projection period and then to fall below last year's estimates beginning in 2026. In 2039, it is projected to be 21.2 percent of GDP, or 0.2 percentage points lower than last year's estimate. Federal health care spending is projected to be about the same, Social Security spending slightly higher, and other noninterest spending slightly lower relative to GDP than the amounts CBO projected last year.

Federal Health Care Spending. CBO's current long-term projection of federal spending on the major health care programs is largely the same as last year's—though the growth rate of Medicare costs is slower than that projected last year, and the growth rate of Medicaid costs, slightly faster (see Figure B-3). Spending for Medicare is now estimated to amount to 4.6 percent of GDP in 2039, or about 0.3 percentage points less than what CBO estimated last year. That difference reflects lower projected spending for Medicare in the first 10 years and

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3. The growth of premiums for private health insurance affects federal spending on subsidies of premiums for insurance purchased through the exchanges, excise taxes on health insurance plans with high premiums, and the effect of the tax exclusion for employment-based health insurance.

Figure B-2.

Comparison of CBO's 2013 and 2014 Budget Projections Under the Extended Baseline
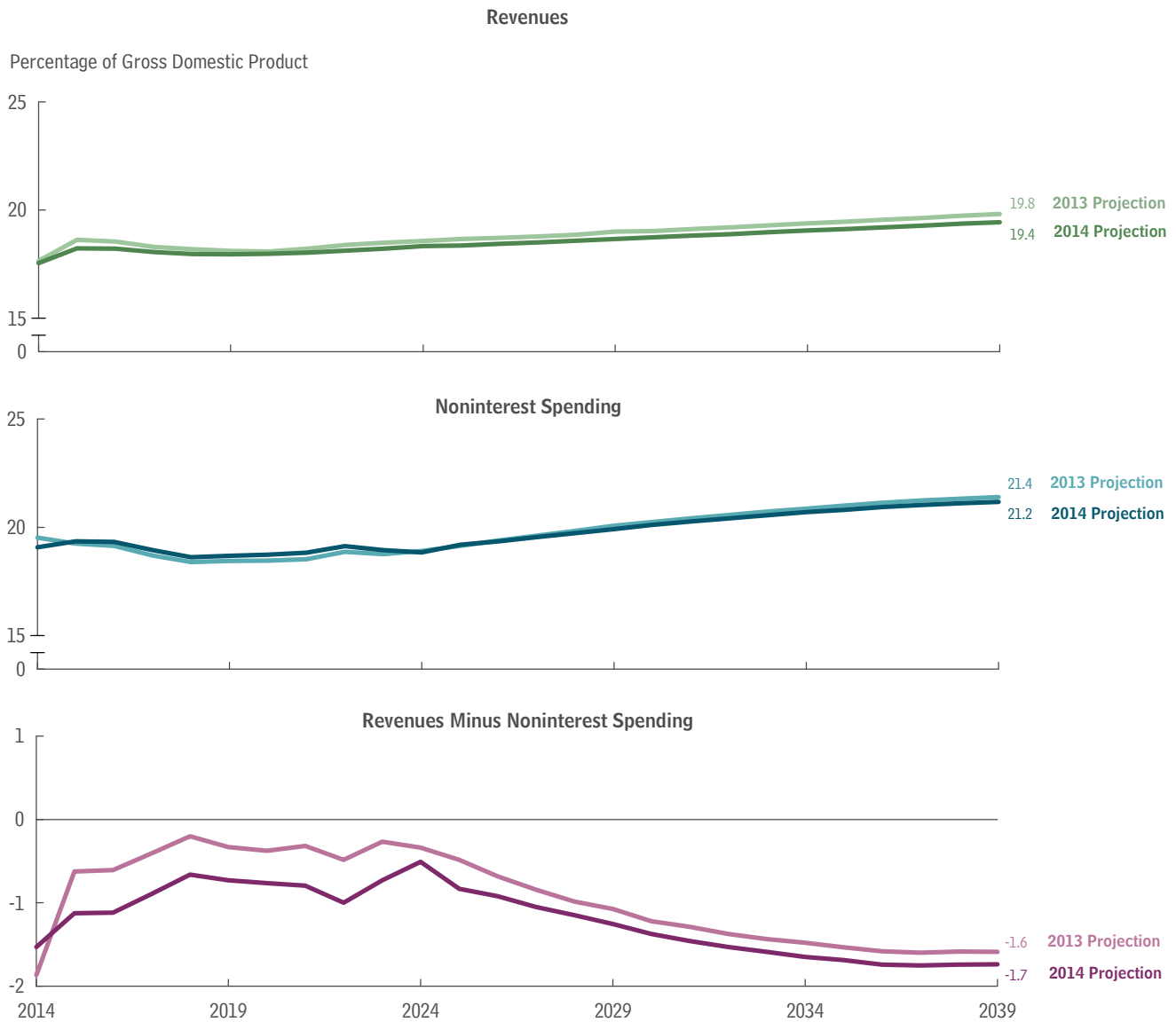
Revenues

Percentage of Gross Domestic Product

19.8 **2013 Projection**
19.4 **2014 Projection**

Noninterest Spending

21.4 **2013 Projection**
21.2 **2014 Projection**

Revenues Minus Noninterest Spending

-1.6 **2013 Projection**
-1.7 **2014 Projection**

2014   2019   2024   2029   2034   2039
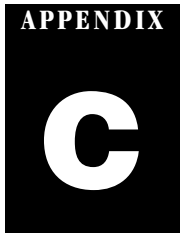
Source: Congressional Budget Office.

Note: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period.

slightly lower projections of the rate of excess cost growth thereafter. Combined federal spending for Medicaid, the Children's Health Insurance Program, and the exchange subsidies is projected to amount to 3.4 percent of GDP in 2039, or 0.2 percentage points higher than the sum projected last year; that difference reflects higher spending for Medicaid in the first 10 years, slightly higher excess cost growth thereafter, and lower estimates of GDP throughout the projection period.

Social Security Spending. The current 25-year projection of Social Security spending is slightly higher as a percentage of GDP than last year's, owing to the lower projected levels of GDP in this year's analysis (see Figure B-4). The 75-year actuarial deficit currently projected for Social Security, 4.0 percent of taxable payroll, is greater than the 3.4 percent estimated last year (see Table 3-1 on page 50). Revised projections of economic factors, primarily lower projected interest rates, account for about half of the

Figure B-3.

Comparison of CBO's 2013 and 2014 Projections of Federal Spending on the Major Health Care Programs Under the Extended Baseline

Percentage of Gross Domestic Product

Source: Congressional Budget Office.

Notes: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period.

The major health care programs consist of Medicare, Medicaid, the Children's Health Insurance Program, and subsidies offered through health insurance exchanges. (Medicare spending is net of offsetting receipts.)

Federal spending on the major health care programs is lower in 2024 than last year's estimate because 2024 contains only 11 payment dates for certain programs. CBO adjusts for the number of monthly payments only in the 10-year projection period.

0.6 percentage-point increase; changes to CBO's 10-year baseline projections account for another 0.2 percentage points; and updated data and other estimating changes account for the remaining 0.1 percentage point.

Other Noninterest Spending. Total federal spending on everything other than the major health care programs, Social Security, and net interest is now projected to equal a slightly smaller share of GDP throughout the next 25 years than the sum CBO projected last year (see Figure B-5). That difference stems from a reduction in CBO's baseline projections for discretionary spending (reflecting the 2014 appropriations) and from the extension for two more years of the automatic cuts that apply to mandatory spending and that were previously set to expire after 2021.[4]

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4.   For additional discussion, see Congressional Budget Office, *The Budget and Economic Outlook: 2014 to 2024* (February 2014), p. 99, www.cbo.gov/publication/45010.

Interest Costs

Although CBO's projection of debt held by the public expressed as a share of GDP is similar to the agency's estimate last year, interest outlays are slightly lower in this year's analysis because of lower projected interest rates (see Figure B-1 on page 114). In this year's report, interest spending in 2039 is projected to equal 4.7 percent of GDP, whereas last year, that figure was 5.0 percent.

Changes in Assumptions Incorporated in the Extended Alternative Fiscal Scenario

Under its extended alternative fiscal scenario last year, CBO assumed that lawmakers would not allow various restraints on the growth of Medicare costs and health insurance subsidies to exert their full effect after the first 10 years of the projection period. However, this year, after reassessing the uncertainties involved, CBO no

Figure B-4.

Comparison of CBO's 2013 and 2014 Projections of Spending on Social Security Under the Extended Baseline
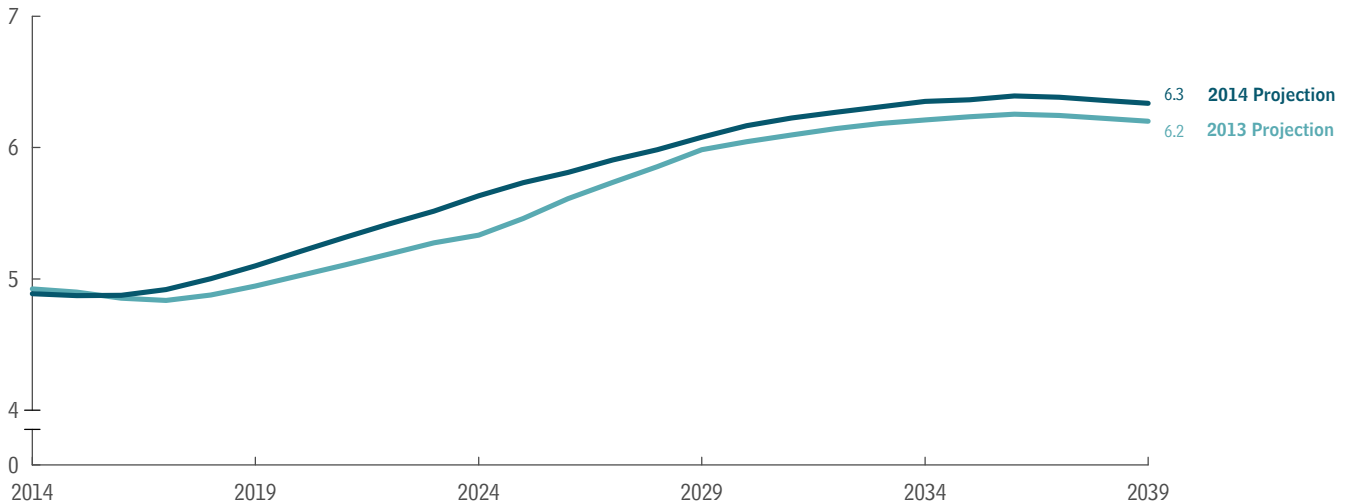
Percentage of Gross Domestic Product

Source: Congressional Budget Office.

Note: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period.

longer projects whether or when those restraints might wane. Instead, for those elements of the alternative fiscal scenario, there are now no differences from the extended baseline. For both, CBO projects that growth rates for Medicare costs will move linearly over 15 years (from 2024 to 2039) to the underlying rate that the agency has projected and that the exchange subsidies will do the same. (One exception to that new approach, though, concerns Medicare's payment rates for physicians' services. This year, as in previous years, projected spending under the alternative fiscal scenario reflects the assumption that those payment rates would be held constant at current levels rather than being cut by about a quarter at the beginning of 2015, as scheduled under current law.)

Changes in Estimated Economic Effects of Various Fiscal Policies

In this year's long-term analysis, the estimated effects on gross national product of fiscal policies that would increase or decrease future debt relative to that in the extended baseline are smaller than those in last year's analysis. Those reductions stem primarily from three factors. First, CBO reduced its projection of interest rates from last year's, so a given change in the deficit in one

year cumulates to a smaller change in debt in future years and therefore has less effect on output. Second, CBO incorporated the budgetary feedback from short-term economic effects of different fiscal policies into its long-term estimates this year, in contrast with last year's simpler but less accurate approach of leaving those effects aside. Because fiscal policies that increase deficits generally increase output in the short term, the budgetary feedback from the economic effects diminishes the size of the increase in deficits and thereby attenuates the long-term effects of those policies on debt and the economy; similarly, fiscal policies that decrease deficits generally have effects on output in the short term whose budgetary feedback attenuates the long-term effects of those policies. Third, under the extended alternative fiscal scenario, deficits excluding interest payments differ from those under the extended baseline by slightly less than they did in last year's analysis.

Changes in Methods for Analyzing Uncertainty

CBO changed two aspects of its approach to analyzing uncertainty in its long-term projections. First, in this year's analysis of the effect of different projections of total

Figure B-5.

Comparison of CBO's 2013 and 2014 Projections of Other Federal Noninterest Spending Under the Extended Baseline
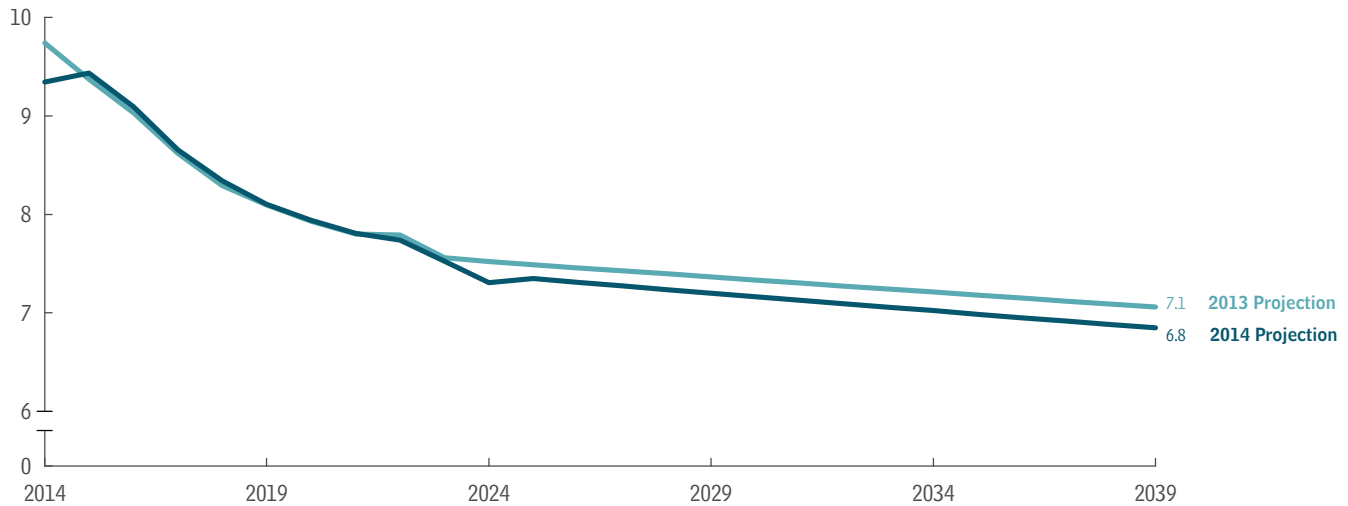
Percentage of Gross Domestic Product

Source: Congressional Budget Office.

Notes: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period.

Other federal spending is all spending other than that for the major health care programs, Social Security, and net interest.

Such spending is lower in 2024 than last year's estimate because 2024 contains only 11 payment dates for certain programs. CBO adjusts for the number of monthly payments only in the 10-year projection period.

factor productivity (or average real output per unit of combined labor and capital services), the alternate cases have interest rates that differ from those underlying the extended baseline but leave most other economic factors the same. In last year's analysis, CBO varied most economic factors, notably the supply of labor, with differences in the projections of productivity. The current approach more accurately reflects the fact that productivity growth has had little association with shifts in the supply of labor over long periods in the past. That change from last year's approach tends to lead to smaller differences in economic output between the alternate cases and the extended baseline (with economic feedback to the federal budget taken into account).

Second, in this year's analysis of the effect of different projections of total factor productivity, the alternate cases incorporate fiscal policies (before any economic feedback is taken into account) that keep much of discretionary spending at the same share of GDP as that in the extended baseline. In last year's analysis, the alternate cases kept discretionary spending fixed at its nominal level under the extended baseline. Allowing discretionary spending to vary in proportion to changes in GDP tends to lead to smaller differences in the ratio of debt to GDP between the alternate cases and the extended baseline (with economic feedback).

APPENDIX

C

Changes in CBO's Long-Term Projections Over the Past Two Decades

The Congressional Budget Office (CBO) has produced long-term projections of federal spending and revenues since the mid-1990s. Those projections are not intended to be a forecast of future outcomes; rather, they show the estimated paths that spending and revenues would take in coming years under the laws or policies in effect at the time. Thus, they are designed to provide a benchmark against which to measure proposed policy changes.

Those long-term paths have varied over the years, reflecting the enactment of new laws, unexpected economic developments, evolving demographic trends, changes in CBO's methodology, and other factors. In CBO's earliest long-term projections, published in 1996, the deficit was projected to equal 15 percent of gross domestic product (GDP) in 2030, and federal debt held by the public was projected to equal 180 percent of GDP in that year; the corresponding numbers for 2030 in the current projections are 5 percent and 88 percent.[1]

The estimates in 1996 incorporated much higher projections for noninterest spending relative to projected GDP than CBO's current projections do; noninterest spending was then projected to reach about 27 percent of GDP in 2030, compared with about 20 percent in the current projections. That downward revision reflects reductions (relative to projected GDP) in spending projections for Social Security, federal health care programs, and other programs. By contrast, projections of revenues in 2030

as a percentage of GDP have changed little, from about 20 percent in the 1996 analysis to about 19 percent currently. That similarity in the long-term revenue projections arises even though CBO has adopted a different approach to projecting revenues in recent years: The 1996 estimates incorporated the assumption that revenues would remain constant as a share of GDP in the long run (which is similar to how CBO now projects revenues for its extended alternative fiscal scenario, as described in Chapter 6), whereas recent estimates for the extended baseline are based on the assumption that revenues will generally reflect current law, which causes projected revenues to slowly rise as a percentage of GDP over time.[2]

The estimated size of the policy changes needed to make federal debt the same percentage of GDP in 75 years as the then-current level has correspondingly decreased since 1996. In 1996, CBO projected that achieving that goal for debt would require some combination of revenue increases and spending cuts equal to about 5 percent of GDP.[3] CBO's current estimate is 1.8 percent of GDP— although debt is now much larger relative to GDP than it was in 1996.

Although the current long-term budget outlook is more favorable than what CBO projected in 1996, the outlook has worsened considerably over the past several years

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1. The projections discussed in this appendix do not account for the ways in which tax and spending policies affect the economy, which in turn affects the federal budget. In 1996, CBO projected much larger deficits and debt with those economic feedback effects included. See Congressional Budget Office, *The Economic and Budget Outlook: Fiscal Years 1997–2006* (May 1996), pp. 77–78, www.cbo.gov/publication/14949.

2. The principal reason for that rise is that although the income levels that correspond to various tax rate brackets are set to increase with inflation each year, CBO projects that income will grow faster than inflation, meaning that a greater proportion of income will be taxed in higher brackets over time.

3. See Congressional Budget Office, *The Economic and Budget Outlook: Fiscal Years 1997–2006* (May 1996), p. xxiv, www.cbo.gov/publication/14949.

because of the severe economic downturn and significant changes in laws governing federal taxes and spending. In 2007, CBO projected that federal debt held by the public would equal 23 percent of GDP in 2039; by 2010, that projection had risen to 82 percent of GDP; and this year, CBO projects that debt would reach 106 percent of GDP in 2039 if current laws generally remained unchanged (see Figure C-1).[4]

Changes Between the 2007 and 2010 Projections

CBO's estimate of debt held by the public as a percentage of GDP in 2039 under the extended baseline more than tripled between 2007 and 2010. In 2007, CBO projected that debt would decline markedly relative to GDP through the mid-2020s but would increase thereafter, mainly because of rising federal spending for health care. In the 2010 projection, debt began at a much higher percentage of GDP and was projected to decline only slightly at first and then grow slowly through 2039. Those differences stemmed largely from the recession that began at the end of 2007 and from related legislation, both of which sharply increased the federal government's debt. That higher level of debt resulted in much larger federal interest payments in the 2010 projection.

Revenues ended up being considerably lower as a percentage of GDP in 2009 and 2010 than CBO had projected in 2007, mainly because of the recession. Although GDP was also smaller during those years than in CBO's 2007 projection, revenues fell more sharply than GDP did, which reduced revenues as a percentage of GDP. In 2007, CBO projected that revenues would increase steadily relative to GDP through 2039; by 2009, however, revenues as a percentage of GDP were about 3 percentage points lower than CBO had projected two years earlier. Nevertheless, in 2010, CBO projected that revenues would exceed the percentages of GDP in the 2007 projection by 2013. Thereafter, revenues were expected to grow more rapidly than was projected in 2007, in part because of an excise tax on certain health insurance plans with high

premiums that was enacted as part of the Affordable Care Act (ACA).

Unlike revenues, the government's noninterest spending ended up being much higher relative to GDP in 2009 and 2010 than CBO had projected in 2007. That outcome had multiple causes: GDP was smaller than in CBO's 2007 projection, which made any given amount of spending larger as a share of GDP; the economic downturn automatically led to higher spending for some federal programs (such as unemployment insurance benefits); and lawmakers enacted legislation that increased spending in response to the financial crisis and severe recession. Looking over the long term, CBO's 2010 projection of noninterest spending was consistently higher than its 2007 projection, partly because of downward revisions to projected GDP and upward revisions to federal spending on health care resulting from the ACA. However, the projected growth rate of noninterest spending relative to GDP was somewhat lower in the 2010 projection than in the 2007 projection.

CBO's 2010 projection of the difference between revenues and noninterest spending in 2039 was smaller than its 2007 projection of that difference. In 2007, CBO projected that revenues would be a larger percentage of GDP than would noninterest spending until 2027—at which point noninterest spending, mainly driven by rising health care costs, would begin to exceed revenues. That gap was projected to widen over time and reach 1.7 percent of GDP by 2039. In 2010, noninterest spending was greater than revenues, but CBO projected that it would fall below revenues by 2015 and remain below revenues through 2025. Thereafter, noninterest spending was projected to exceed revenues slightly through 2039, with the gap in that year equal to 0.3 percent of GDP.

Changes Between the 2010 and 2014 Projections

CBO now projects that if current laws generally remained the same, federal debt held by the public would be a higher percentage of GDP every year through 2039 than the agency projected in 2010. The outlook for federal debt has worsened over the past four years because, relative to GDP, CBO's long-term projections of revenues have declined to a greater extent than its long-term projections of noninterest spending.

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4. See Congressional Budget Office, *The Long-Term Budget Outlook* (December 2007), www.cbo.gov/publication/41650, and *The Long-Term Budget Outlook* (June 2010), www.cbo.gov/publication/21546. For that comparison, the projections from 2007 and 2010 were adjusted to account for statistical and definitional changes in the estimation of GDP made by the Bureau of Economic Analysis in July 2013.

Figure C-1.

Comparison of CBO's 2007, 2010, and 2014 Budget Projections Under the Extended Baseline
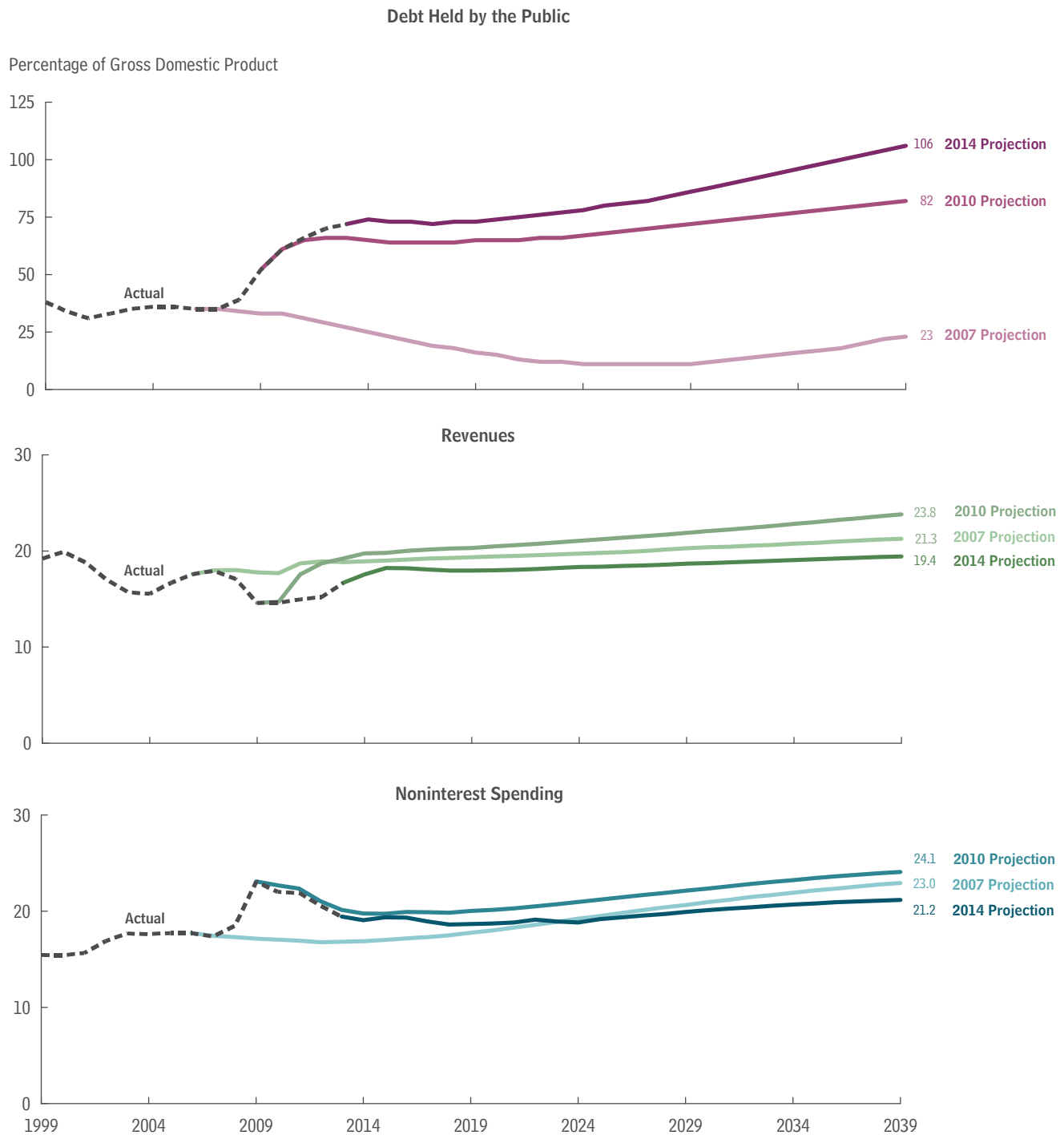
Debt Held by the Public

Percentage of Gross Domestic Product
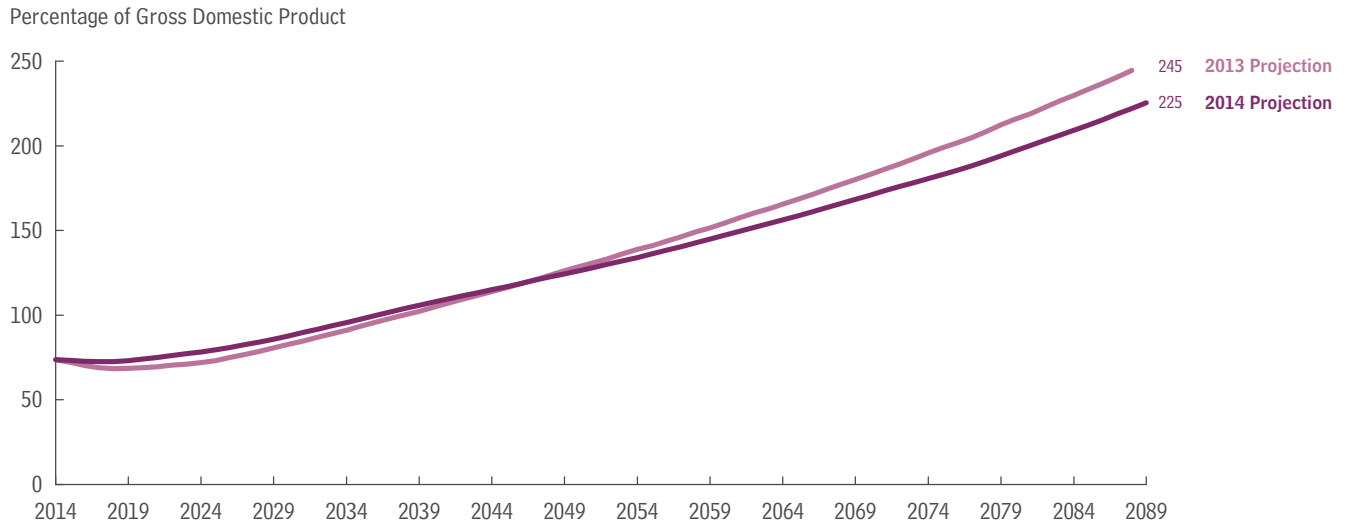

Revenues

Noninterest Spending

Source: Congressional Budget Office.

Note: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period.

The current revenue projection is lower than the 2010 projection primarily because of the enactment of the American Taxpayer Relief Act of 2012.[5] That law permanently extended some lower tax rates and other tax provisions, causing revenues to be significantly lower over time than they would have been otherwise. Revenues are now projected to rise to about 19 percent of GDP in 2039, more than 4 percentage points below the level projected in 2010.

Noninterest spending is currently projected to increase to about 21 percent of GDP in 2039, about 3 percentage points below the level projected in 2010. That reduction stems largely from the Budget Control Act of 2011 and

lower projections of growth in health care costs. The Budget Control Act, as amended, set caps on discretionary spending and specified automatic reductions in spending for Medicare and some other programs. In addition, since 2010, CBO has decreased its projections of health care costs considerably: Actual federal spending on health care has been lower than CBO had anticipated, and analysis by CBO and others suggests that such spending will grow more slowly in the future than CBO projected previously (see Chapter 2 for details).[6] As a result, the current projection of outlays for the government's major health care programs in 2039 is lower than CBO's 2010 projection by about 1½ percent of GDP.

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5. For more information, see Congressional Budget Office, *The 2013 Long-Term Budget Outlook* (September 2013), pp. 66–67, www.cbo.gov/publication/44521.

6. Also see Congressional Budget Office, "How Have CBO's Projections of Spending for Medicare and Medicaid Changed Since the August 2012 Baseline?" *CBO Blog* (February 21, 2013), www.cbo.gov/publication/43947.

Budget Projections Through 2089

In most of this report, the Congressional Budget Office (CBO) presents its long-term budget projections under the extended baseline for the next 25 years (through 2039). The figures and table in this appendix extend those projections for an additional 50 years (through 2089). Figure D-1 on page 127 shows federal debt held by the public, total spending and revenues, and components of total spending and revenues through 2089 (extending Summary Figure 1 on page 2).[1] Figures D-2 and D-3 on pages 128 and 129 compare CBO's current 75-year projections of debt held by the public, revenues, and noninterest spending with the projections published in 2013 (extending Figures B-1 and B-2 on pages 114 and 116). The data underlying all of those figures are included in the supplemental data posted with this report on CBO's website (www.cbo.gov/publication/45471).

In years beyond 2039, the pressures of rising federal budget deficits and debt would increase further unless policymakers changed the laws governing taxes and spending. Although projections for the very long term are highly uncertain, CBO anticipates that, under the assumptions used for the extended baseline, debt held by the public would be more than twice as large relative to gross domestic product (GDP) after 75 years as it would be after 25 years (without accounting for the harmful economic effects of such large debt).

One measure of the magnitude of the fiscal imbalance over the next 75 years comes from answering the following question: How much would policies have to change to avoid increasing federal debt further relative to the size of the economy? The estimated changes in noninterest

spending or revenues that would be needed to make the ratio of debt to GDP the same at the end of a given period as at the beginning of the period are often called the fiscal gap. A second measure of the magnitude of the fiscal imbalance lies in the answer to the question: How much would policies have to change to reduce debt to percentages of GDP more typical of those in recent decades? CBO provides both of those measures in Table D-1 on page 130.

In CBO's extended baseline, the fiscal gap for the 2015–2089 period amounts to 1.8 percent of GDP. That is, relative to projections that generally follow current law, a combination of cuts in noninterest spending and increases in revenues that totaled 1.8 percent of GDP in each year beginning in 2015—about $330 billion in that year—is estimated to result in debt that would equal the same percentage of GDP in 75 years that it is now (74 percent). If those changes came entirely from revenues or entirely from spending, they would amount to roughly a 9 percent increase in revenues or an 8 percent cut in noninterest spending relative to the amounts projected for the 2015–2089 period. The fiscal gap is larger over a 75-year horizon or a 50-year horizon than over 25 years, CBO estimates, because deficits are larger in later years under the extended baseline.

Increases in revenues or reductions in noninterest spending would need to be larger to reduce debt to the percentages of GDP that are more typical of those in recent decades. To return debt to its average share of GDP during the past 40 years (39 percent) by 2089, the government would need to pursue a combination of increases in revenues and cuts in noninterest spending (relative to current-law projections) that totaled 2.2 percent of GDP each year.[2] (In 2015, 2.2 percent of GDP

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1. Those figures and the analogous ones presented later in this appendix do not reflect the economic effects of the policies underlying the extended baseline. For an analysis of those effects, see Chapter 6.

2. That figure is calculated in the same manner as the fiscal gap except that it uses a different target for end-of-period debt.

would be about $400 billion.) If the changes came entirely from revenues, they would represent an increase of roughly 11 percent relative to the amount projected for the 2015–2089 period; if they came entirely from non-interest spending, they would represent a cut of roughly 10 percent from the amount projected for that period. Required policy changes to meet this objective are smaller over a 75-year horizon or a 50-year horizon than over 25 years, unlike the pattern of fiscal gaps, primarily because the changes that would be needed to reduce debt from its current share of GDP to its historical share would be smaller if spread over a larger number of years. Over time, that factor more than offsets the increases in deficits under the extended baseline that cause the sizes of fiscal gaps to become larger, CBO estimates.

CBO has made corresponding estimates for the extended alternative fiscal scenario described in Chapter 6. Under that scenario, the 25-year fiscal gap amounts to

3.4 percent of GDP, the 50-year fiscal gap to 5.6 percent of GDP, and the 75-year fiscal gap to 7.4 percent of GDP. Also, the annual increases in revenues or reductions in noninterest spending needed to return debt to its average percentage of GDP during the past 40 years would be 4.8 percent of GDP for the next 25 years, 6.3 percent of GDP for the next 50 years, and 7.9 percent of GDP for the next 75 years. Thus, the estimated changes needed to return debt to its historical relationship with GDP increase over longer horizons for this scenario—in contrast with the estimated changes for the extended baseline. Under both scenarios, spreading the policy changes that would be needed to reduce debt from its current share to its historical share over a larger number of years tends to reduce the size of the changes required in each year. However, in this scenario that tendency is outweighed by large increases in projected deficits over time, resulting in an increase in the size of the policy changes that would be required over longer time horizons.

Figure D-1.

Federal Debt, Spending, and Revenues Through 2089

Debt Held by the Public, Total Spending, and Total Revenues

Percentage of Gross Domestic Product

Components of Total Spending

Components of Total Revenues

Source: Congressional Budget Office.

Note: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period. These projections do not reflect the economic effects of the policies underlying the extended baseline. (For an analysis of those effects and their impact on debt, see Chapter 6.)

a.   Consists of spending on Medicare (net of offsetting receipts), Medicaid, the Children's Health Insurance Program, and subsidies offered through health insurance exchanges.

b.   Consists of excise taxes, remittances to the Treasury from the Federal Reserve System, customs duties, estate and gift taxes, and miscellaneous fees and fines.

Figure D-2.

Comparison of CBO's 2013 and 2014 Projections of Federal Debt Held by the Public Under the Extended Baseline Through 2089

Percentage of Gross Domestic Product

Source: Congressional Budget Office.

Notes: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period. These projections do not reflect the economic effects of the policies underlying the extended baseline. (For an analysis of those effects and their impact on debt, see Chapter 6.)

The end value for the 2013 projection is for 2088.

Figure D-3.

Comparison of CBO's 2013 and 2014 Budget Projections Under the Extended Baseline Through 2089

Revenues

Percentage of Gross Domestic Product

24.5   **2013 Projection**
23.9   **2014 Projection**

Noninterest Spending

26.7   **2013 Projection**
26.6   **2014 Projection**

Revenues Minus Noninterest Spending

-2.2   **2013 Projection**
-2.6   **2014 Projection**

Source: Congressional Budget Office.

Notes: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period. These projections do not reflect the economic effects of the policies underlying the extended baseline. (For an analysis of those effects, see Chapter 6.)

The end value for the 2013 projection is for 2088.

Table D-1.

Measures of the Fiscal Imbalance Under CBO's Extended Baseline

Percentage of Gross Domestic Product

Projection Period	Present Value of the Future Stream of Outlays or Revenues Over a Given Period		Change in Spending or Revenues Required to Meet Target Debt (Difference)
	Outlays Plus Starting Debt	Revenues Plus Target Debt	
Target Debt Equal to Debt in 2014			
2015 to 2039	22.6	21.4	1.2
2015 to 2064	22.4	20.9	1.5
2015 to 2089	23.3	21.5	1.8
Target Debt Equal to Historical Average Debt			
2015 to 2039	22.6	20.1	2.6
2015 to 2064	22.4	20.3	2.2
2015 to 2089	23.3	21.0	2.2

Source: Congressional Budget Office.

Notes: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period.

The change in spending or revenues required to meet target debt equals the present value of noninterest outlays and other means of financing minus the present value of revenues over the projection period with adjustments to make the ratio of federal debt to gross domestic product (GDP) at the end of the period equal to the target ratio. Specifically, current debt is added to the present value of outlays and other means of financing, and the present value of the target end-of-period debt (which equals GDP in the last year of the period multiplied by the target ratio of debt to GDP) is added to the present value of revenues to allow for the increase in the nominal value of federal debt that would occur even if that debt was maintained at its current share of GDP. A present value is a single number that expresses a flow of revenues or outlays over time in terms of an equivalent lump sum received or paid today. In calculating present values, CBO uses a discount rate equal to the average interest rate on federal debt held by the public (see Appendix A). Other means of financing include changes in the government's cash balances and the cash flows of federal credit programs (mostly programs that provide loans and loan guarantees). Historical average debt is the average level of debt as a percentage of GDP between 1974 and 2013 (39 percent).

List of Tables and Figures

Figures (Continued)

Figures (Continued)

About This Document

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Director

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