



The 2012 Long-Term Budget Outlook

Provided as a convenience, this "screen-friendly" version is identical in content to the principal, "print-friendly" version of the report.

Note: Unless otherwise indicated, in most of this report, the years referred to are federal fiscal years (which run from October 1 to September 30). In Chapter 2, budgetary variables such as the ratio of debt or deficits to gross domestic product are presented on a fiscal year basis, whereas economic variables such as gross national product or inflation are presented on a calendar year basis.

Numbers in the text and tables may not add up to totals because of rounding.

Summary

In the past few years, the federal government has been recording the largest budget deficits since 1945, both in dollar terms and as a share of the economy. Consequently, the amount of federal debt held by the public has surged. At the end of 2008, that debt equaled 40 percent of the nation's annual economic output (gross domestic product, or GDP)—a little above the 40-year average of 38 percent. Since then, the figure has shot upward: By the end of this year, the Congressional Budget Office (CBO) projects, federal debt will exceed 70 percent of GDP—the highest percentage since shortly after World War II. The sharp rise in debt stems partly from lower tax revenues and higher federal spending caused by the severe economic downturn and from policies enacted during the past few years. However, the growing debt also reflects an imbalance between spending and revenues that predated the recession.

Whether that debt will continue to grow in coming decades will be affected not only by long-term demographic and economic trends but also by policymakers' decisions about taxes and spending. The aging of the baby-boom generation portends a significant and sustained increase in the share of the population receiving benefits from Social Security and Medicare, as well as long-term care services financed by Medicaid. Moreover, per capita spending for health care is likely to continue rising faster than spending per person on other goods and services for many years (although the magnitude of that gap is uncertain). Without significant changes in government policy, those factors will boost federal outlays relative to GDP well above their average of the past several decades—a conclusion that holds under any plausible assumptions about future trends in demographics, economic conditions, and health care costs.

According to CBO's projections, if current laws remained in place, spending on the major federal health care programs alone would grow from more than 5 percent of GDP today to almost 10 percent in 2037 and would continue to increase thereafter.¹ Spending on Social Security is projected to rise much less sharply, from 5 percent of GDP today to more than 6 percent in 2030 and subsequent decades. Altogether, the aging of the population and the rising cost of health care would cause spending on the major health care programs and Social Security to grow from more than 10 percent of GDP today to almost 16 percent of GDP 25 years from now. That combined increase of more than 5 percentage points for such spending as a share of the economy is equivalent to about \$850 billion today. (By comparison, spending on *all* of the federal government's programs and activities, excluding net outlays for interest, has averaged about 18.5 percent of GDP over the past 40 years.) If lawmakers continued certain

1. The major health care programs consist of Medicare, Medicaid, the Children's Health Insurance Program, and health insurance subsidies that will be provided through the exchanges created by the Affordable Care Act, which comprises the Patient Protection and Affordable Care Act (Public Law 111-148) and the health care provisions of the Health Care and Education Reconciliation Act of 2010 (P.L. 111-152).

policies that have been in place for a number of years or modified some provisions of current law that might be difficult to sustain for a long period, the increase in spending on health care programs and Social Security would be even larger. Absent substantial increases in federal revenues, such growth in outlays would result in greater debt burdens than the United States has ever experienced.

Long-Term Scenarios

In this report, CBO presents the long-term budget outlook under two scenarios that embody different assumptions about future policies governing federal revenues and spending:

- The *extended baseline scenario*, which reflects the assumption that current laws generally remain unchanged; that assumption implies that lawmakers will allow changes that are scheduled under current law to occur, forgoing adjustments routinely made in the past that have boosted deficits.
- The *extended alternative fiscal scenario*, which 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, thus maintaining what some analysts might consider “current policies,” as opposed to current laws.²

Those scenarios span a wide range of possible policy choices, and neither represents a prediction by CBO of what policies will be in effect during the next several decades. Because budget projections of this type are inherently uncertain and become more so as they extend farther into the future, the report focuses on the next 25 years rather than a longer horizon.³

The Extended Baseline Scenario

Under the *extended baseline scenario*, debt would decline slowly from its high current levels relative to GDP. Federal debt held by the public would drift downward from an estimated 73 percent of GDP this year to 61 percent by 2022 and 53 percent by 2037 (see [Summary Figure 1](#)). That outcome would be the result of two key sets of policy assumptions:

- Under current law, revenues would rise steadily relative to GDP because of the scheduled expiration of cuts in individual income taxes enacted since 2001 and most recently extended in 2010; the growing reach of the alternative minimum tax

2. The two scenarios are extensions of CBO’s 10-year projections, as reported in Congressional Budget Office, *Updated Budget Projections: Fiscal Years 2012 to 2022* (March 2012).

3. Because considerable interest exists in the longer-term outlook, figures showing projections through 2087 are presented in Appendix B, and associated data are available on CBO’s Web site (www.cbo.gov).

(AMT); the tax provisions of the Affordable Care Act; the way in which the tax system interacts with economic growth; demographic trends; and other factors. Revenues would reach 24 percent of GDP by 2037—much higher than has typically been seen in recent decades—and would grow to larger percentages thereafter.

- At the same time, under this scenario, government spending on everything other than the major health care programs, Social Security, and interest—activities such as national defense and a wide variety of domestic programs—would decline to the lowest percentage of GDP since before World War II.

That significant increase in revenues and decrease in the relative magnitude of other spending would more than offset the rise in spending on health care programs and Social Security.

The Extended Alternative Fiscal Scenario

The budget outlook is much bleaker under the extended alternative fiscal scenario because of the changes in law that are assumed to take place. The changes under this scenario would result in much lower revenues and higher outlays than would occur under the extended baseline scenario. In particular:

- Almost all expiring tax provisions are assumed to be extended through 2022. Specifically, for this scenario, CBO assumed that the cuts in individual income taxes enacted since 2001 and most recently extended in 2010, which are now scheduled to expire at the end of calendar year 2012, would be extended; relief from the AMT for many taxpayers, which expired at the end of 2011, would be extended; the 2012 parameters of the estate tax (adjusted for inflation) would continue to apply, preventing increases in rates and in the share of assets that is taxable; and all other expiring tax provisions (with the exception of the current reduction in the payroll tax rate for Social Security) would be extended.
- After 2022, revenues under this scenario are assumed to remain at their 2022 level of 18.5 percent of GDP, just above the average of the past 40 years.
- This scenario also incorporates assumptions that through 2022, lawmakers will act to prevent Medicare's payment rates for physicians from declining; that after 2022, lawmakers will not allow various restraints on the growth of Medicare costs and health insurance subsidies to exert their full effect; that the automatic reductions in spending required by the Budget Control Act will not occur (although the original caps on discretionary appropriations in that law are assumed to remain in place); and that, as a percentage of GDP, federal spending for activities other than Social Security, the major health care programs, and interest payments will return to its average level during the past two decades (rather than fall significantly below that level, as it does under the extended baseline scenario).

Under those policies, federal debt would grow rapidly from its already high level, exceeding 90 percent of GDP in 2022. After that, the growing imbalance between revenues and spending, combined with spiraling interest payments, would swiftly push debt to higher and higher levels. Debt as a share of GDP would exceed its historical peak of 109 percent by 2026, and it would approach 200 percent in 2037.

Many budget analysts believe that the extended alternative fiscal scenario is more representative of the fiscal policies that are now (or have recently been) in effect than is the extended baseline scenario. The explosive path of federal debt under the alternative scenario underscores the need for large and timely policy changes to put the federal government on a sustainable fiscal course.

The Impact of Growing Deficits and Debt

In fact, the projections discussed above understate the severity of the long-term budget problem under the extended alternative fiscal scenario because they do not incorporate the negative effects that additional federal debt would have on the economy. In particular, large budget deficits and growing debt would reduce national saving, leading to higher interest rates, more borrowing from abroad, and less domestic investment—which in turn would lower the growth of incomes in the United States. Taking those effects into account, CBO estimates that gross national product (GNP) would be lower under the extended alternative fiscal scenario than it would be if debt remained at the 61 percent of GDP it would reach in 2022 under the extended baseline scenario.⁴ The reduction in GNP would lie in a broad range around 4 percent in 2027 and in a broad range around 13 percent in 2037. (Under the extended baseline scenario, GNP would be nearly identical to what it would be if the nation's debt burden remained constant.)

Rising levels of debt would have other negative consequences beyond those estimated effects on output:

- Greater debt would result in higher interest payments on that debt, which would eventually require higher taxes, a reduction in government benefits and services, or some combination of the two.
- Rising debt would increasingly restrict policymakers' ability to use tax and spending policies to respond to unexpected challenges, such as economic downturns or financial crises. As a result, the effects of such developments on the economy and people's well-being could be worse.

4. GNP differs from GDP primarily by including the capital income that residents earn from investments abroad and excluding the capital income that nonresidents earn from domestic investment. In the context of analyzing the impact of growing deficits and debt, GNP is a better measure because projected budget deficits would be partly financed by inflows of capital from other countries.

- Growing debt also would increase the probability of a sudden fiscal crisis, during which investors would lose confidence in the government's ability to manage its budget and the government would thereby lose its ability to borrow at affordable rates. Such a crisis would confront policymakers with extremely difficult choices. To restore investors' confidence, policymakers would probably need to enact spending cuts or tax increases more drastic and painful than those that would have been necessary had the adjustments come sooner.

The aging of the U.S. population and the rising costs for health care mean that the combination of budget policies that worked in the past cannot be maintained in the future. To keep deficits and debt from climbing to unsustainable levels, as they will if the set of current policies is continued, policymakers will need to increase revenues substantially above historical levels as a percentage of GDP, decrease spending significantly from projected levels, or adopt some combination of those two approaches. In fact, the current laws that underlie CBO's baseline projections provide for significant changes of those kinds in coming years. As projected under the extended baseline scenario, revenues would reach the historically high level of 24 percent of GDP in 2037, and spending for programs other than the major health care programs and Social Security would reach the lowest level relative to GDP since before World War II. Of course, many other approaches to constraining future deficits are possible as well.

Policymakers face difficult trade-offs in deciding how quickly to implement policies to reduce budget deficits. On the one hand, cutting spending or increasing taxes slowly would lead to a greater accumulation of government debt and might raise doubts about whether longer-term deficit reduction would ultimately take effect. On the other hand, abruptly implementing spending cuts or tax increases would give families, businesses, and state and local governments little time to plan and adjust, and would require more sacrifices sooner from current older workers and retirees for the benefit of younger workers and future generations. In addition, immediate spending cuts or tax increases would represent an added drag on the weak economic expansion.⁵

5. For discussion of the trade-offs policymakers face in deciding how quickly to implement policies to reduce budget deficits, see Congressional Budget Office, *Economic Effects of Reducing the Fiscal Restraint That Is Scheduled to Occur in 2013* (May 2012).

Chapter 1:

The Long-Term Outlook for the Federal Budget

The federal government has recently been recording the largest budget deficits relative to the size of the economy since 1945. As a result, the amount of federal debt held by the public is expected to exceed 70 percent of the economy's annual output, or gross domestic product (GDP), at the end of this fiscal year, the highest percentage in U.S. history except for a brief period during and shortly after World War II, and up from 40 percent at the end of 2008. That surge in debt reflects several factors: an imbalance between spending and revenues that predated the 2007–2009 recession and financial-market turmoil; a decline in tax revenues and an increase in spending on benefit programs caused by that economic downturn; and the costs of federal policies enacted in response to the downturn.

If current laws were to remain generally unchanged, an assumption that underlies the Congressional Budget Office's (CBO's) baseline projections, the budget deficit would drop markedly over the next few years and debt held by the public would decline gradually, reaching about 60 percent of GDP by 2022, in CBO's estimation.⁶ However, if the tax and spending policies that have recently been in effect were maintained, instead of expiring or changing as specified in current law, budget deficits and accumulated debt would be much greater. In particular, if lawmakers extended almost all expiring tax provisions, indexed the alternative minimum tax (AMT) for inflation, and prevented several policies that would restrain spending from taking effect, annual budget deficits would decline relative to GDP during the next few years but would increase steadily later in the decade. Under that alternative fiscal scenario, which is described in detail below, debt held by the public would equal more than 90 percent of GDP in 2022.

This report presents CBO's estimates for the long-term budget outlook under both sets of assumptions—an extended baseline scenario, which reflects the assumption that current laws generally remain unchanged, and an extended alternative fiscal scenario, which 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, thus maintaining what some analysts might consider “current policies,” as opposed to current laws.

Long-term budget projections are highly uncertain, but if current laws remained in effect, the aging of the population and rising costs for health care would push up

6. For details about CBO's most recent 10-year budget projections, see Congressional Budget Office, *Updated Budget Projections: Fiscal Years 2012 to 2022* (March 2012). For a discussion of changes in the projections since CBO's 2011 long-term budget analysis, see Appendix A.

federal spending relative to GDP in future decades. Under current laws, federal revenues would also increase, reaching significantly higher percentages of GDP during the next quarter century than have ever been seen in the United States. As a result, under the extended baseline scenario, federal debt would fall to less than 55 percent of GDP by 2037, CBO projects.

Under CBO's extended alternative fiscal scenario, however, revenues would not rise much above their average share of GDP during the past 40 years, so the gap between revenues and spending on government benefits and services would become increasingly large. As debt grew, so would net federal spending on interest, which would rise from about 1½ percent of GDP today to 10 percent by 2037. All told, under the extended alternative fiscal scenario, debt held by the public would balloon over the next quarter century, to almost 200 percent of GDP by 2037—a clearly unsustainable path for federal borrowing.

Moreover, those projections of federal debt under the long-term scenarios do not include the harmful effects that rising debt would have on economic growth and interest rates. If those and other economic effects of federal policies were taken into account, projected debt under the extended alternative fiscal scenario would increase even faster. Chapter 2 presents estimates of the scenarios' economic effects and the impact of those economic changes on the trajectory of debt under both scenarios.

In addition, the budget estimates in this report are based on projections of economic conditions, demographic trends, and other developments that are derived from the typical experience of the past several decades. But they do not incorporate the risk of sudden and extreme unfavorable events, such as the recent financial crisis and severe recession, that are rare and difficult to predict. A long-term perspective suggests that the United States will probably encounter such events again at some point and that those occurrences will probably cause significant and persistent worsening of the budget outlook relative to the projections contained in this report.

More generally, there is considerable uncertainty about long-term changes in demographics, the health status of the population, health care, productivity, interest rates, and many other factors that affect the federal budget in significant ways. Because the uncertainty of budget projections generally increases as the projections extend farther into the future, the report focuses on the next 25 years rather than on a longer horizon.⁷

The extended alternative fiscal scenario illustrates that putting the federal budget on a sustainable path will mean letting revenues increase substantially as a percentage of GDP relative to their historical average, decreasing spending significantly from projected levels, or adopting some combination of those two approaches. However, poli-

7. CBO presents figures showing certain projections for 75 years, through 2087, in Appendix B; associated data are provided on the agency's Web site (www.cbo.gov).

cymakers face difficult trade-offs in deciding how quickly to implement policies to reduce budget deficits. On the one hand, cutting spending or increasing taxes slowly would lead to a greater accumulation of government debt and might raise doubts about whether longer-term deficit reduction would ultimately take effect. On the other hand, abruptly implementing spending cuts or tax increases would give families, businesses, and state and local governments little time to plan and adjust, and would require more sacrifices sooner from current older workers and retirees for the benefit of younger workers and future generations. In addition, immediate spending cuts or tax increases would represent an added drag on the weak economic expansion.⁸

Alternative Scenarios for the Long-Term Budget Outlook

The two sets of long-term budget projections presented in this report are based on the following differing assumptions about future federal policy (see [Table 1-1](#)):

- The *extended baseline scenario* generally adheres closely to current law. It follows CBO's March 2012 baseline budget projections for the next decade and then extends the baseline concept beyond that 10-year window.⁹ The current-law assumption of the baseline scenario implies that many adjustments that lawmakers have routinely made in the past—such as changes to the AMT and to the Medicare program's payments to physicians—will not be made again.¹⁰ Because of the structure of current tax law, federal revenues over the long run would grow significantly faster than GDP under this scenario, ultimately rising well above the levels that U.S. taxpayers have seen in the past (for more details, see Chapter 6).
- The *extended alternative fiscal scenario* embodies several changes to current law that would continue certain tax and spending policies that are in place now or have been in place recently. Over the next decade, it follows CBO's March 2012 budget projections for the alternative fiscal scenario. Versions of some of the changes that the scenario incorporates—such as those related to the tax cuts originally enacted in 2001 and 2003, the AMT, many other expiring tax provisions, and Medicare's payments to physicians—have regularly been enacted in the past. Another of the

8. For discussion of the trade-offs policymakers face in deciding how quickly to implement policies to reduce budget deficits, see Congressional Budget Office, *Economic Effects of Reducing the Fiscal Restraint That Is Scheduled to Occur in 2013* (May 2012).

9. CBO's baseline is meant to be a benchmark for measuring the budgetary effects of proposed changes to federal revenues or spending. It consists of projections of budget authority, outlays, revenues, and the deficit for the current year and the following 10 years calculated according to rules set forth in the Balanced Budget and Emergency Deficit Control Act of 1985 and the Congressional Budget Act of 1974. Those projections are not intended to be predictions of future budgetary outcomes; rather, they represent CBO's best judgment of how economic and other factors would affect federal revenues and spending if current laws did not change.

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 AMT and the regular income tax and pay the larger of the two amounts.

scenario's assumptions is that the automatic spending reductions required by the Budget Control Act of 2011 (Public Law 122-25), which are set to take effect in January 2013, do not occur (although the original caps on discretionary appropriations in that law are assumed to remain in place).¹¹

After 2022, the extended alternative fiscal scenario also incorporates modifications to several provisions of current law that might be difficult to sustain for a long period. Thus, it includes changes to certain restraints on the growth of spending for Medicare and to indexing provisions that would slow the growth of federal subsidies for health insurance coverage. In addition, the scenario includes unspecified changes in tax law that would keep revenues constant as a share of GDP after 2022, and it incorporates the assumption that spending for programs other than Social Security and the major federal health care programs will generally represent a stable share of GDP in most years after 2022, as it has in recent decades.

The budget projections in most of this report understate the size of deficits under the extended alternative fiscal scenario because they do not incorporate the economic damage that would be caused by high and rising amounts of debt. To clearly illuminate long-term budgetary trends, as distinguished from the resulting economic effects, CBO generally assumes for the purpose of these projections that economic conditions will be stable after 2022 (a set of assumptions that it labels its economic "benchmark"). In particular, CBO assumes that economic variables such as GDP growth and interest rates will be the same as they would be if federal debt remained at 61 percent of GDP, the level it reaches in 2022 in CBO's baseline projections. In actuality, if debt grew faster than GDP, economic growth would slow, and real (inflation-adjusted) interest rates would rise. The budget projections in most of this report also omit the impact that different effective marginal tax rates would have on people's incentives to work and save.¹² Although the projections generally do not incorporate the economic effects of changes in debt or tax rates, those effects are discussed in detail in Chapter 2.

The Extended Baseline Scenario

Under CBO's current-law scenario, noninterest spending—all spending except net interest—would drop relative to GDP until 2018 but then rise in all future years.¹³ The recent severe recession and financial turmoil, as well as federal policies implemented in response to them, pushed noninterest outlays to 24 percent of GDP in 2009, the

11. CBO discussed alternative policy assumptions, including the assumptions underlying the alternative fiscal scenario over the next decade, in *The Budget and Economic Outlook: Fiscal Years 2012 to 2022* (January 2012), pp. 17–21.

12. Effective marginal tax rates on labor or capital income represent the percentage of the last dollar of such income that is taken by federal taxes.

13. In the federal budget, net interest primarily consists of the government's interest payments on debt held by the public, offset in part by interest income that the government receives from various sources.

highest level since World War II. In 2010 and 2011, such outlays were above 22 percent of GDP, and CBO projects that they will decline only slightly in 2012. However, as the economy expands, as the budgetary effects of those recent policies diminish, and as the reductions in spending directed by the Budget Control Act are implemented, noninterest spending is projected to fall below 20 percent of GDP by 2017. Within a few years, though, the aging of the population and rising costs for health care would again boost noninterest spending relative to economic output; such spending would reach 23 percent of GDP in 2037, in CBO's estimation (see the top panel of [Figure 1-1](#)).

If current law remained in effect, revenues would also rise considerably: By 2021, they would reach higher levels relative to the size of the economy than have ever been recorded in the nation's history. Specifically, revenues would jump from about 16 percent of GDP now to 19 percent in 2013 as the economic recovery increased taxable income and as the tax cuts enacted since 2001, including relief from the AMT, expired in 2012 and 2013 as scheduled.¹⁴ In later years, revenues would continue to rise relative to GDP, for three main reasons. First, ongoing increases in real income (that is, the income growth that remains after removing growth attributable to inflation) would push taxpayers into higher income tax brackets because those brackets are indexed for inflation but not for increases in real income. Second, ongoing inflation, although projected to be modest, and increases in real income would cause more people to owe tax under the AMT (because the AMT is not indexed for inflation or for real income growth). And third, the excise tax on certain high-premium health insurance plans, which is scheduled to take effect in 2018, would have a growing impact on revenues. Taken together, those factors would cause marginal tax rates to increase and federal revenues to grow faster than the economy, reaching almost 24 percent of GDP in 2037. By comparison, federal revenues averaged 18 percent of GDP between 1972 and 2011, peaking at 20.6 percent in 2000.

Under the extended baseline scenario, projected revenues as a share of GDP would exceed projected noninterest spending as a share of GDP beginning in 2015. The federal government would continue to run deficits throughout the 25-year projection period because net interest would generally be between 2 percent and 3 percent of GDP.¹⁵ However, deficits under this scenario would be small enough relative to the size of the economy that, by CBO's estimates, debt held by the public would decline to 53 percent of GDP by 2037. That level of debt would still be greater than in any year between 1956 and 2008.

14. See Box 4-1 in Congressional Budget Office, *The Budget and Economic Outlook: Fiscal Years 2012 to 2022*, pp. 82–83.

15. Several factors not directly included in the budget totals also affect the government's need to borrow from the public. Those factors 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. Changes in those factors were not modeled in this analysis.

The Extended Alternative Fiscal Scenario

Under CBO's alternative fiscal scenario, noninterest spending in 2022 would be higher by 0.7 percentage points of GDP than it would be in the baseline, and that difference would grow in later years. The higher noninterest spending stems from several assumptions of the extended alternative fiscal scenario: that through 2022, lawmakers will act to prevent Medicare's payment rates for physicians from declining; that after 2022, lawmakers will not allow various restraints on the growth of Medicare costs and health insurance subsidies to exert their full effect; that the automatic reductions in spending required by the Budget Control Act will not occur (although the original caps on discretionary appropriations in that law are assumed to remain in place); and that as a percentage of GDP, federal spending for activities other than Social Security, the major health care programs, and net interest will equal its average level during the past two decades (rather than fall significantly below that level, as it does under the extended baseline scenario) (see the bottom panel of [Figure 1-1](#)).

On the revenue side, the alternative fiscal scenario incorporates the assumption that almost all expiring tax provisions will be extended through 2022. Specifically, CBO assumes for that scenario that the cuts in individual income taxes enacted since 2001 and most recently extended in 2010, which are now scheduled to expire at the end of calendar year 2012, will be extended through 2022; that relief from the AMT, which expired at the end of 2011, will continue through 2022; that the 2012 parameters of the estate tax (adjusted for inflation) will apply through 2022; and that all other expiring tax provisions (with the exception of the current reduction in the payroll tax rate for Social Security) will be extended through 2022. Thereafter, revenues under the extended alternative fiscal scenario are assumed to remain at their 2022 level of 18.5 percent of GDP, just above the average of the past 40 years.

That path for revenues, combined with the spending policies described above, would produce a deficit equal to 17 percent of GDP in 2037. It would also push federal debt held by the public to more than 90 percent of GDP in 2022 and soon afterward to levels unprecedented in the United States, reaching almost 200 percent by 2037.

The Long-Term Outlook for Spending

With net interest excluded, federal outlays have averaged 18.7 percent of GDP over the past 40 years. Now, at roughly 22 percent, noninterest spending is unusually high because of the recent recession and the policies implemented in response to it. Noninterest outlays are projected to decline gradually relative to GDP until 2018, when they would equal 19 percent of GDP in CBO's current-law baseline and 20 percent under its alternative fiscal scenario.

Noninterest spending would rise again, however, under both of CBO's long-term budget scenarios—to 23 percent of GDP by 2037 under the extended baseline scenario

and to 26 percent under the extended alternative fiscal scenario (see [Table 1-2](#)). In both cases, noninterest outlays would continue to grow steadily in later years.

The gap between the two scenarios' projections of total spending is much greater than that for noninterest spending because of differences in net outlays for interest. Under the extended baseline scenario, interest costs would be significant but would remain a fairly stable share of GDP, reaching a maximum of 3 percent in the mid-2020s and then declining. Under the extended alternative fiscal scenario, in contrast, interest costs would rise sharply, reaching almost 10 percent of GDP by 2037. In that year, total spending would be 36 percent of GDP under the extended alternative fiscal scenario, or more than 10 percentage points of GDP higher than under the extended baseline scenario.

Outlays for Major Health Care Programs and Social Security

Federal spending for mandatory programs has accounted for a sharply rising share of noninterest outlays in the past few decades, averaging 60 percent in recent years.¹⁶ Most of that growth has been concentrated in the three largest programs—Social Security, Medicare, and Medicaid. Together, federal outlays for those three programs made up 46 percent of noninterest spending, on average, over the past 10 years, up from 27 percent in 1975.

Under CBO's two scenarios, the projected growth in noninterest spending as a share of GDP over the long term stems from increases in mandatory spending, particularly in outlays for the government's major health care programs: Medicare, Medicaid, the Children's Health Insurance Program (CHIP), and the insurance subsidies that will be provided through the exchanges created under the Affordable Care Act (ACA).¹⁷ Under both scenarios, total outlays for those health care programs would grow much faster than GDP, increasing from 5.4 percent of GDP in 2012 to about 10 percent in 2037.¹⁸ (For details about CBO's long-term projections of health care spending, see Chapter 3.) Spending for Social Security would rise much more slowly, from almost 5 percent of GDP in 2012 to more than 6 percent in the 2030s and beyond (see Chapter 4).

16. Lawmakers generally determine spending for mandatory programs by setting rules for eligibility, benefit formulas, and other parameters rather than by appropriating specific amounts each year. Discretionary spending, by contrast, is controlled by annual appropriation acts.

17. As used in this report, ACA refers to the Patient Protection and Affordable Care Act (P.L. 111-148) and the health care provisions of the Health Care and Education Reconciliation Act of 2010 (P.L. 111-152).

18. Those totals for major health care programs include gross Medicare spending (that is, they do not subtract offsetting receipts, which consist mainly of premiums paid by Medicare beneficiaries).

Under both scenarios, the trust funds for Social Security and Part A of Medicare would be exhausted over time.¹⁹ However, to measure the imbalance between the revenues for those programs and the outlays for benefits that are currently specified in law, CBO has assumed for this report that the two programs will continue to pay benefits as now scheduled. That assumption is consistent with a statutory requirement that CBO, in its baseline projections, assume that the federal government will continue to pay scheduled benefits after the trust funds have been exhausted. (Spending for other parts of Medicare also flows through a trust fund, but automatic infusions of money from the Treasury's general fund effectively ensure that it cannot be exhausted. Medicaid does not have a trust fund.)

Causes of Spending Growth. Two factors account for the projected increases in outlays relative to GDP for the government's large entitlement programs: the aging of the population and the rapid growth of health care spending per capita. (For a detailed breakdown of the roles played by those factors, see [Box 1-1](#).) The retirement of the large baby-boom generation born between 1946 and 1964 portends a long-lasting shift in the age profile of the U.S. population. That shift will substantially alter the balance between the working-age and retirement-age segments of the population. During the next decade alone, the number of people over the age of 65 is expected to rise by more than a third. Over the longer term, the share of people age 65 or older is projected to grow from about 13 percent now to 20 percent in 2037, whereas the share of people ages 20 to 64 is expected to fall from 60 percent to 55 percent. In later decades, the aging of the population is expected to continue, though at a slower rate, because of further increases in life expectancy.

In the case of Social Security, the aging of the population is the principal driver of the projected growth of spending as a percentage of GDP. Initial Social Security benefits are based on an individual's earnings, indexed to the overall growth of wages in the economy. Because average benefits increase at approximately the same rate as average earnings, economic growth does not significantly change spending for Social Security as a share of GDP. Rather, that measure of spending is linked to the ratio of the number of people in the workforce to the number who receive benefits. CBO projects that the number of workers per beneficiary will decline significantly over the next quarter century (from about three now to about two in 2037) and then continue to drift downward.

In the case of the major health care programs, both aging and rapid growth in per capita health care spending are responsible for the projected rise in federal outlays as a share of GDP because more elderly people will use increasingly expensive health

19. The balances of the trust funds represent the total amount that the government is legally authorized to spend on each program. For a discussion of the legal issues related to trust fund exhaustion, see Christine Scott, *Social Security: What Would Happen If the Trust Funds Ran Out?*, Report for Congress RL33514 (Congressional Research Service, August 2009).

care. However, CBO projects that growth in per capita spending for health care programs will moderate from its past pace even if federal laws do not change (see Chapter 3). Both Medicaid and CHIP are financed jointly by the federal government and state governments, so growth in federal spending per capita is expected to slow as states move to limit their costs. And even without changes to the laws governing Medicare, growth in per capita spending for that program is projected to slow (though to a lesser degree than for the other health care programs) because of future regulatory changes to the program and changes to the health care system as a whole. For example, the Centers for Medicare and Medicaid Services could expand demonstration programs that successfully slow the growth of spending for Medicare, and employers that sponsor insurance plans could work with insurers and providers to improve the health care system in ways that made the delivery of health care more efficient for all patients.

Differences Between the Long-Term Scenarios. Spending for Social Security would be identical under CBO's extended baseline and extended alternative fiscal scenarios. Spending for Medicaid, CHIP, and the health insurance exchange subsidies would be slightly higher under the alternative scenario because of differing assumptions about the subsidies (see Chapter 3).

In the case of Medicare, spending under the extended alternative fiscal scenario in 2037 would be 0.7 percentage points higher relative to GDP than it would be under the extended baseline scenario, and in later years, the difference would widen. The projected spending paths for Medicare differ for three main reasons:

- Under the current-law assumptions of the extended baseline scenario, Medicare's sustainable growth rate mechanism would reduce payment rates for physicians by 27 percent in January 2013 and by additional amounts in later years. Under the extended alternative fiscal scenario, by contrast, Medicare's payment rates for physicians would remain at their 2012 levels for the next decade.
- Under the extended baseline scenario, the Budget Control Act will reduce most Medicare payments for services furnished during the February 2013–January 2022 period by 2 percent, CBO projects. Nearly 90 percent of the program's spending will be subject to those reductions, in CBO's estimation. Under the extended alternative fiscal scenario, those reductions do not occur. Beyond 2022, the Budget Control Act does not mandate a reduction in spending under either scenario.
- Under the extended alternative fiscal scenario, several policies that will restrain the growth of spending for Medicare during the coming decade are assumed not to be in effect after 2022. By contrast, under the extended baseline scenario, those policies are assumed to remain in effect through 2029, causing the growth of spending for Medicare from 2023 through 2029 to be similar to that projected for 2020 through 2022. (Those policies are assumed to have no further effects on the rate of growth of Medicare spending after 2029, as explained in Chapter 3.)

The upshot of those differences is that spending on Medicare in 2029 is projected to be 12 percent higher under the extended alternative fiscal scenario than under the extended baseline scenario. That divergence persists in later years because the projected rates of growth of spending beyond that point are the same under the two scenarios.

Other Federal Outlays

A larger difference between the two scenarios involves projections of federal spending for everything besides the major health care programs and Social Security. Other noninterest spending (including the offsetting effects of Medicare premiums and other offsetting receipts) has represented more than 8 percent of GDP each year since before World War II and currently equals about 12 percent of GDP. Under the extended baseline scenario, it would fall to a little more than 7 percent of GDP in 2022 and then decline slowly thereafter, dropping below 7 percent of GDP in 2037. Under the extended alternative fiscal scenario, by contrast, it would be about 8 percent of GDP in 2022 and would increase to about 10 percent in 2027; thereafter, it would decline slowly, to about 9½ percent in 2037. (For more details about CBO's projections of other noninterest federal spending, see Chapter 5.)

Federal interest payments differ dramatically under the two scenarios. Net interest outlays would increase from 1½ percent of GDP now to roughly 3 percent in the mid-2020s under the extended baseline scenario; they would then decline gradually as the ratio of debt to GDP fell. Under the extended alternative fiscal scenario, annual interest spending would grow to 9½ percent of GDP by 2037 and would continue to rise sharply thereafter.

Other Noninterest Spending Under the Extended Baseline Scenario. In estimating such spending, CBO began with its baseline projections of outlays for 2012 through 2022 for programs other than the major health care programs and Social Security. That category of spending includes a variety of other mandatory programs (such as federal civilian and military retirement, certain veterans' programs, the Supplemental Nutrition Assistance Program, and unemployment compensation) as well as all discretionary programs. In the baseline, mandatory programs are generally assumed to operate as they would under current law; CBO's projections thus include reductions specified in the Budget Control Act. In CBO's baseline projections, most appropriations for the 2013–2021 period are assumed to be constrained by the caps and automatic enforcement procedures put in place by the Budget Control Act; for 2022, CBO projects discretionary funding under the assumption that it will grow from the 2021 amount at the rate of inflation. Funding for certain purposes, such as war-related costs, is not constrained by the caps established in the Budget Control Act, and CBO assumes that it will grow from its current amount at the rate of inflation.

Under those assumptions, other mandatory spending would decline sharply over the baseline period, from 3.2 percent of GDP in 2012 to 1.7 percent in 2022. Such

spending is unusually high now because of the automatic increase in outlays (such as for unemployment benefits and nutrition programs) that occurs during periods of economic weakness and because of certain policy actions. Discretionary spending would also decline as a share of GDP under the assumptions of the baseline, from 8.4 percent in 2012 to 5.6 percent in 2022. That drop occurs because the constraints on discretionary spending imposed by the Budget Control Act would limit the growth of such spending to a rate well below that of GDP. In 2022, then, other noninterest spending would total 7.3 percent of GDP.

Beyond that year, outlays for programs other than the major health care programs and Social Security are generally assumed to constitute the same share of GDP as in 2022—with two exceptions. Offsetting receipts for Medicare (mostly premiums paid by Medicare beneficiaries) and some refundable tax credits are handled differently; CBO does not assume that they remain steady but instead estimates budgetary outcomes for them under current law (as described in Chapter 3 and Chapter 6). Because of the estimated changes in those components after the baseline period, other noninterest spending is projected to decline from 7.3 percent of GDP in 2022 to 6.9 percent by 2037—lower than such spending has been at any point since the 1930s.

Other Noninterest Spending Under the Extended Alternative Fiscal Scenario. Under the alternative fiscal scenario, noninterest spending apart from outlays for the major health care programs and Social Security is projected to be somewhat higher than in the current-law baseline during the next decade, decreasing to 7.8 percent of GDP in 2022 rather than to 7.3 percent. That difference arises because the alternative fiscal scenario does not incorporate the automatic spending reductions specified by the Budget Control Act.

Beyond 2022, most such noninterest spending is assumed to return (during a five-year transition period) to its average share of GDP over the past 20 years, 9.9 percent, and then to remain at that share—with the exception of estimated changes in Medicare offsetting receipts. With the projected changes to those components included, other noninterest spending under this scenario is projected to decline to 9.6 percent of GDP by 2037. Since World War II, such spending has exceeded that level in all years except for the mid-1990s through the early 2000s.

Interest Spending. In CBO's baseline, net interest outlays increase from 1.4 percent of GDP in 2012 to 2.0 percent in 2017 and 2.5 percent in 2022. Even though federal debt is projected to decline as a share of GDP under the baseline's assumptions, interest spending increases because interest rates are expected to rebound from their current unusually low levels. Under the alternative fiscal scenario, federal debt and the government's interest costs would be greater, reaching 3.7 percent of GDP in 2022.

For its long-term budget projections, CBO assumed that interest rates would remain stable after 2022, meaning that net interest would change roughly in line with federal debt held by the public. Under the extended baseline scenario, interest spending would

peak at 3 percent of GDP in about 2025 and then decline thereafter as the amount of debt decreased relative to GDP. Under the extended alternative fiscal scenario, interest spending would grow to 9.5 percent of GDP in 2037 and rise to even higher levels in later years because of ballooning debt. Projections for the alternative scenario do not incorporate the effect of rising debt pushing up interest rates, which is discussed in Chapter 2.

The Long-Term Outlook for Revenues

Federal revenues have fluctuated between about 15 percent and about 21 percent of GDP over the past 40 years, averaging 18 percent. The composition of revenues has shifted over time, with payroll taxes producing a larger share of total tax receipts and corporate income taxes and excise taxes producing smaller shares.²⁰

After totaling nearly 18 percent of GDP in 2008, federal revenues fell sharply, primarily because of the severe recession, and were just over 15 percent of GDP from 2009 through 2011. CBO expects revenues to approach 16 percent of GDP this year. Under the current-law assumptions of CBO's baseline, revenues would rebound over the next few years with expected improvement in the economy, the recent or scheduled expirations of various tax provisions, and the imposition of new taxes, fees, and penalties that are scheduled to go into effect. Revenues would keep rising relative to GDP thereafter, largely because increases in taxpayers' real income would push more income into higher tax brackets and because more taxpayers would become subject to the AMT. As a result, revenues would reach nearly 19 percent of GDP in 2013 and over 21 percent of GDP in 2022.

Under the extended baseline scenario, revenues would continue to rise gradually in subsequent years, reaching roughly 24 percent of GDP by 2037. The increase in revenues after 2022 would occur largely for the same reasons that revenues increased in earlier years. Another contributor to the rise in revenues by 2037 would be the excise tax on certain high-premium health insurance plans that was enacted as part of the ACA. All told, average tax rates (taxes as a share of income) would rise considerably, and people at various places in the income distribution would pay a larger percentage of their income in taxes than people in the same places do today. In addition, the effective marginal tax rate on labor income would rise from about 28 percent now to about 36 percent in 2037.

For the extended alternative fiscal scenario, by contrast, CBO assumed that tax law would be changed over time to continue certain policies that are in place now or have recently been in place and to keep revenues as a percentage of GDP consistent with past patterns. Specifically, CBO assumed that all tax provisions that expired at the end

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

of 2011 or that are scheduled to expire in the next 10 years—other than the reduction in the payroll tax rate for Social Security that is scheduled to expire at the end of 2012—would be extended through 2022. Thus, under the alternative fiscal scenario, the tax cuts enacted since 2001 (except for the current payroll tax reduction) and relief from the AMT are assumed to continue, the estate tax is extended with the rates and exemption amounts scheduled to be in effect in 2012 (adjusted for inflation), and other expiring tax provisions are extended. Beyond 2022 under the extended alternative fiscal scenario, unspecified changes in the tax code keep total revenues at the same share of GDP as in 2022.

Under those assumptions, revenues in the extended alternative fiscal scenario would increase to 18.5 percent of GDP in 2022 (rather than to more than 21 percent in the extended baseline scenario) and would remain at that percentage in later years. As a result, the revenues projected under the alternative fiscal scenario are lower than those projected under the extended baseline scenario by 2.5 percent of GDP in 2014, by 2.7 percent in 2022, and by more than 5 percent of GDP in 2037. (For more details about CBO's long-term revenue projections, see Chapter 6.)

The Long-Term Fiscal Imbalance

The extended alternative fiscal scenario illustrates how the federal government faces a daunting long-term budgetary shortfall if it continues to maintain the major tax and spending policies that are currently in effect or have recently been in effect. How large is that imbalance? Two measures offer complementary perspectives: Projections of federal debt show how shortfalls accumulate over time, whereas estimated “fiscal gaps” summarize the shortfall over given periods in single values. Both measures show that projected revenues are insufficient to support projected spending under the extended alternative fiscal scenario. However, they also reveal how the increase in average tax rates and other changes to current policies under the extended baseline scenario limit or even eliminate the long-term shortfalls.

The Accumulation of Federal Debt

For a combination of federal spending and revenues to be sustainable over time, debt held by the public—which represents the amount that the government is borrowing in the financial markets (by issuing Treasury securities) to pay for federal operations and activities—must eventually grow no faster than the economy.²¹ If debt continued to rise rapidly relative to GDP, investors at some point would begin to doubt the government's

21. When the federal government borrows in financial markets, it competes with other participants for financial resources and can crowd out private investment. In contrast, federal debt held by trust funds and other government accounts (that debt and debt held by the public together make up gross federal debt) represents internal transactions of the federal government and thus has no direct effect on financial markets. For more discussion, see Congressional Budget Office, *Federal Debt and Interest Costs* (December 2010).

willingness to pay interest on it, and the government would need to cut spending, raise taxes, or pursue some combination of the two approaches. (For more discussion of that risk, see Chapter 2.) Therefore, a useful barometer of the federal government's financial position is the amount of federal debt held by the public relative to the nation's annual economic output. Such debt stood at 40 percent of GDP at the end of 2008, a little above its average during the preceding several decades. Since then, large deficits have caused debt held by the public to increase sharply—to 68 percent of GDP at the end of 2011 and, CBO projects, to 73 percent by the end of this year. Debt has exceeded 70 percent of GDP during only one other period in U.S. history: from 1943 through 1951, when it spiked (peaking at 109 percent of GDP) because of a surge in federal spending during World War II.

Under the assumptions of CBO's extended baseline scenario, debt held by the public would peak relative to GDP in 2013 and 2014, at about 76 percent. The budget would remain in deficit throughout the next quarter century, so debt would continue to increase. However, each year's shortfall would be less than 2 percent of GDP from 2015 through 2037, so debt would grow more slowly than the economy. As a result, debt held by the public would decline to 53 percent of GDP in 2037 and to lower levels thereafter (see [Figure 1-2](#)).

Under the extended alternative fiscal scenario, deficits would also decline for the next few years but would then grow again at a rapid pace. In 2022, debt held by the public would exceed 90 percent of GDP. After that, the growing imbalance between revenues and noninterest spending, combined with the spiraling cost of net interest, would swiftly push debt upward in an unsustainable way. Debt would surpass its past peak of 109 percent of GDP by 2026 and would reach almost 200 percent of GDP in 2037.

The explosive path of federal debt under the extended alternative fiscal scenario underscores the need for major changes in current policies to put the nation on a sustainable fiscal course. Current law, if continued, would lead to one set of such changes. As projected under the extended baseline scenario, revenues would reach the historically high level of 24 percent of GDP in 2037 (compared with 18.5 percent under the extended alternative fiscal scenario), and spending for programs other than the major health care programs and Social Security would reach the lowest level relative to GDP since before World War II: 7 percent of GDP in 2037 (compared with about 9½ percent under the extended alternative fiscal scenario). Thus, with the current-law assumptions of the extended baseline scenario, the sharp increase in outlays projected for the major health care programs and Social Security during the next few decades would be roughly balanced by increases in revenues and declines in other spending relative to GDP, and debt would grow slightly more slowly than the economy.

The Fiscal Gap

How much would policies have to change to avoid unsustainable increases in government debt? A useful answer comes from looking at the fiscal gap, which measures the

immediate change in spending or revenues that would be necessary to keep the debt-to-GDP ratio the same at the end of a given period as at the beginning of the period. The fiscal gap is conceptually similar to the actuarial imbalances for Medicare and Social Security (see [Table 3-2](#) and [Table 4-1](#)). All three measures quantify a long-term shortfall or surplus in present-value terms—that is, as a single number that describes a flow of future revenues or outlays in terms of an equivalent lump sum received or spent today—and can be expressed as a percentage of GDP.²²

The fiscal gap from 2012 to 2037 would amount to 4.6 percent under the extended alternative fiscal scenario (see [Table 1-3](#)). In other words, relative to projections under that scenario, an immediate and permanent reduction in spending or increase in revenues equal to 4.6 percent of GDP—for this year, more than \$700 billion—would be needed to prevent debt from rising above its current share of GDP for the next quarter century. If the change came entirely from revenues, it would amount to roughly a one-quarter increase in revenues relative to the amount projected for 2022 and later years. If the change came entirely from spending, it would represent a cut of roughly one-fifth in noninterest spending from the amount projected for that period.

In contrast, under the extended baseline scenario, the fiscal gap over the 2012–2037 period would be negative—that is, at the end of the period, federal debt would be smaller relative to the size of the economy than it is now. But that scenario already incorporates some substantial changes to current policies.

Waiting to close the fiscal gap that arises under the extended alternative fiscal scenario would make the necessary changes larger. To illustrate the costs of delay, CBO simulated the effects of closing the fiscal gap beginning in 2013, 2015, 2020, or 2025. Those simulations indicated that postponing action would substantially increase the size of the policy adjustments needed to put the budget on a sustainable course. For example, if lawmakers wanted to close the fiscal gap through 2037 but did not begin until 2015, they would have to reduce noninterest spending or increase revenues over that period by 5.2 percent of GDP—rather than by 4.8 percent, the percentage reduction or increase needed in 2013 (see [Figure 1-3](#)). If they waited until 2020 to close the fiscal gap through 2037, they would have to cut noninterest outlays or raise revenues over the remaining period by 6.8 percent of GDP. Moreover, those simulations omit the effects that deficits and debt would have on economic growth and interest rates in the

22. The fiscal gap equals the present value of revenues over a given period minus the present value of noninterest outlays over that period, adjusted to keep federal debt at its current percentage of GDP. Specifically, current debt is added to the outlay measure, 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 2011) is added to the revenue measure. The present value of a stream of future revenues is computed by taking the revenues for each year, discounting each value to 2012 dollars, and summing the resulting series. The same method is applied to the projected stream of noninterest outlays. CBO used a discount rate equal to the average real interest rate on federal debt held by the public, which was assumed to be 2.7 percent over the long term (as explained in Chapter 2).

intervening years; incorporating such effects would make the impact of delaying policy changes even larger.

Another perspective on the challenges involved in closing the fiscal gap comes from considering how much revenues would have to be increased and outlays reduced if changes were made gradually (rather than in a single year, as implied by the calculations presented so far). As one example of such gradual changes, CBO computed the paths of revenues and noninterest outlays necessary to return to the current debt-to-GDP ratio in 2037, assuming that the changes would begin in 2015 and that both revenues and outlays would diverge by steadily growing and equal percentages relative to their shares of GDP in 2014 under the extended alternative fiscal scenario (see [Figure 1-4](#)). Closing the fiscal gap through 2037 under those assumptions would require revenues to exceed 24 percent of GDP in 2037 and noninterest outlays to be less than 21 percent of GDP, both substantially different outcomes compared with their levels under the extended alternative fiscal scenario (18.5 percent for revenues and 26 percent for outlays). Under that approach, noninterest spending would continue to exceed revenues through 2023, but the noninterest surpluses that would exist from 2024 through 2037 would offset the debt accumulated between 2012 and 2023. If the fiscal gap was closed by 2037, noninterest surpluses would not be needed afterward to maintain a steady ratio of debt to GDP as long as budget deficits remained small as a percentage of GDP, the economy continued to grow, and interest rates remained at moderate levels.

The Uncertainty of Long-Term Budget Projections

Future budgetary outcomes will depend in large part on future policies—as evidenced by the fact that the two scenarios analyzed in this report, which use the same assumptions about future economic conditions but different assumptions about spending and tax policies, produce widely differing paths for federal debt. However, budgetary outcomes will depend on other factors as well, including changes in the economy, developments in financial markets, demographic trends, the evolution of the health care system, natural disasters, and major wars.²³

The budget estimates presented in this report are based on projections of economic conditions, demographic trends, and other developments that are derived from the typical experience of the past several decades but that do not incorporate the risk of sudden and extreme unfavorable events, such as the recent financial crisis and severe recession or a major war. Events of that sort generally cause significant and persistent worsening of the budget outlook. During the Civil War, World War I, and the Great

23. CBO has not quantified the uncertainty of its long-term budget projections, but it has done so for its long-term Social Security projections; see *CBO's 2011 Long-Term Projections for Social Security: Additional Information* (August 2011). That uncertainty analysis is not definitive because it is based on patterns of historical variation and future variation could differ. For example, mortality could suddenly improve or deteriorate to an extent that was not experienced in the past.

Depression, as well as over the past few years, debt climbed by about 30 percent of GDP; during World War II, debt surged by nearly 65 percent of GDP (see [Figure 1-5](#)). Owing to the difficulty of predicting the timing and nature of such events, the budget projections in this report do not incorporate them. However, a long-term perspective suggests that the United States will probably encounter one or more of them in coming decades.

A smaller amount of federal debt would give future policymakers more flexibility in responding to unfavorable developments. If the ratio of debt to GDP remained where it is today (at about 70 percent), an increase in that ratio of, for instance, 30 percentage points would cause debt to roughly equal the annual output of the economy. Such a high level of debt would greatly increase the risk that lenders would demand much higher interest payments in exchange for lending funds to the federal government. (For additional discussion of that risk, see the section titled “Other Consequences of Rising Federal Debt” in Chapter 2.)

Recessions and Financial Crises

The greater the frequency and severity of future recessions, the worse budgetary outcomes would be. Recessions have direct effects on the budget: They reduce revenues by significant amounts and also raise outlays for programs such as unemployment insurance and nutrition assistance.²⁴ In addition, recessions may prompt policymakers to enact legislation that further reduces revenues and increases spending in an attempt 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. In the recent economic downturn, the combination of automatic budgetary responses, such as the decline in tax revenues, and legislation such as the American Recovery and Reinvestment Act of 2009 (P.L. 111-5) had a profound impact on the federal budget. At the end of 2007, federal debt equaled 36 percent of GDP, and CBO projected that it would decline slightly relative to GDP over the next few years in the absence of a major downturn. By the end of 2011, however, debt was 68 percent of GDP.

Some recessions occur as a result of, or at the same time as, financial crises that can also induce large federal expenditures. For example, the federal government made substantial outlays at the end of the 1980s to resolve the savings and loan crisis and again in recent years to stabilize the U.S. financial system. In both cases, the policy

24. See Congressional Budget Office, *The Effects of Automatic Stabilizers on the Federal Budget* (April 2011).

actions ultimately had smaller effects on federal debt than recessions tend to have.²⁵ However, the costs of future interventions in financial markets could be much greater, in part because the financial industry has become more concentrated.²⁶ And if debt was at a level that made additional federal borrowing difficult, the government might have trouble financing the initial cost of a desired intervention in the markets, even if it expected to recoup at least part of that cost over time. Further, as recent experience has shown, the indirect effects of financial crises on the federal budget can be much larger than the direct effects, as resulting drops in economic activity can be both deep and long-lasting.

Long-Term Changes in Interest Rates on Federal Debt

Interest rates on Treasury securities have varied a good deal over time, so predicting their future path is difficult. For example, the real interest rate paid on federal debt averaged 4 percent in the 1980s but -1 percent in the 1970s (because inflation was higher than the nominal interest rate). For the economic benchmark underlying the projections in this report, CBO assumes that the real interest rate on federal debt will rise from less than 1 percent today to an ultimate value of 2.7 percent. (For an explanation of that and other economic projections, see the section titled “CBO’s Long-Term Economic Benchmark” in Chapter 2.)

One particular risk is that growing federal debt would increase the probability of a fiscal crisis, in which investors would lose confidence in the government’s ability to manage its budget and the government would thus lose its ability to borrow at affordable rates. It is possible that interest rates would rise gradually as investors’ confidence faltered, warning lawmakers of the worsening situation and giving them enough time to

25. Federal losses from the savings and loan crisis have been estimated at \$124 billion; see Timothy Curry and Lynn Shibut, “The Cost of the Savings and Loan Crisis: Truth and Consequences,” *FDIC Banking Review*, vol. 13, no. 2 (2000). Policy actions taken to stabilize the financial system in recent years included the Troubled Asset Relief Program (TARP), the conservatorship of Fannie Mae and Freddie Mac, and a set of initiatives by the Federal Reserve. CBO estimates that the net costs of the TARP will be \$32 billion (although the program’s cash flows have been much larger); see Congressional Budget Office, *Report on the Troubled Asset Relief Program—March 2012* (March 2012). On a fair-value basis, the costs of the government’s takeover and continuing operation of Fannie Mae and Freddie Mac will exceed \$300 billion, CBO estimates, but the net effect on federal debt is likely to be smaller than that; see the statement of Deborah Lucas, Assistant Director for Financial Analysis, Congressional Budget Office, before the House Committee on the Budget, *The Budgetary Cost of Fannie Mae and Freddie Mac and Options for the Future Federal Role in the Secondary Mortgage Market* (June 2, 2011). The direct effect of the Federal Reserve’s actions to stabilize the financial markets will be to increase remittances to the Treasury, reducing the budget deficit, CBO estimates. However, those actions increase uncertainty about the Federal Reserve’s future remittances; see Congressional Budget Office, *The Budgetary Impact and Subsidy Costs of the Federal Reserve’s Actions During the Financial Crisis* (May 2010).

26. As an illustration, the assets of the six largest bank holding companies increased from 15 percent of GDP in 1995 to about 55 percent in 2006 and 64 percent in 2010. See the statement of Simon Johnson, Professor of Entrepreneurship, Sloan School of Management, Massachusetts Institute of Technology, before the Senate Committee on the Budget (February 1, 2011).

make policy choices that could avert a crisis. Indeed, because interest rates on Treasury securities are unusually low today, such a crisis does not appear imminent in the United States. But as other countries' experiences show, investors can lose confidence abruptly, and interest rates on government debt can rise sharply and unexpectedly. (For more discussion of that risk, see the section titled "Other Consequences of Rising Federal Debt" in Chapter 2.)

Budgetary outcomes could be significantly affected if interest rates differed persistently from the path that underlies the projections in this report. Under the extended alternative fiscal scenario, net interest would account for 27 percent of federal outlays by 2037, CBO estimates. If interest rates were even moderately higher or lower than projected, total federal outlays would be significantly higher or lower, and the effect would compound over time. For example, if interest rates were 0.5 percentage points lower each year than projected, federal debt under the extended alternative fiscal scenario would be 185 percent of GDP in 2037 rather than 199 percent, as CBO projects. If interest rates were 0.5 percentage points higher, debt would equal 215 percent of GDP in 2037, and net interest would make up 30 percent of federal outlays.

Long-Term Changes in Demographics, Health Status, and Health Care

Demographic factors will also affect budgetary outcomes over the long run. Federal outlays as a share of GDP are sensitive to the ratio of the number of elderly people to the number of working-age adults because GDP depends to a large degree on the number of workers and because outlays for Medicare, Medicaid, and Social Security are closely linked to the number of elderly people. Higher rates of fertility or immigration would cause GDP to increase relative to federal spending, whereas faster-than-expected growth in life expectancy would cause federal spending to increase relative to GDP. Actual demographic trends could diverge relatively suddenly from the assumptions used for CBO's calculations—for example, through a medical breakthrough that reduced mortality or through the spread of a new infectious disease. Alternatively, such shifts could occur gradually—for instance, if trends in fertility rates or mortality improvements diverged steadily from the assumed paths.

The health status of the population could evolve in unexpected ways because of changes in behavior (for example, in smoking rates or dietary patterns), because of new medical procedures that reduced the occurrence of certain conditions or diseases, or because of new treatments for various illnesses. Such changes in health status would affect federal spending on health care programs and on programs for people with disabilities. For example, outlays for Medicare and Medicaid depend in part on the prevalence of conditions such as obesity, depression, and musculoskeletal disorders because people with multiple chronic conditions tend to use more medical care and to have a greater need for long-term care. Those individuals are also more likely to qualify for Social Security Disability Insurance and Supplemental Security Income. To the extent that changes in health status led to changes in life expectancy, such changes would

also affect the number of Medicare and Social Security beneficiaries and outlays for other entitlement programs.

One of the greatest sources of budgetary uncertainty is the future growth of health care costs. The health care system is continually evolving, and spending for health care has a large and growing effect on the federal budget—both through outlays for Medicare, Medicaid, and other health care programs and through tax preferences, especially the exclusion of employer-sponsored health benefits from income and payroll taxes. Although those developments will be affected by whatever federal policies are pursued, great uncertainty would exist even under a specified policy. Both of CBO's long-term budget scenarios show federal spending on health care per beneficiary increasing more slowly in the future than during the past several decades but still substantially outpacing the growth of per capita GDP. If, instead, federal spending on health care per beneficiary rose in line with per capita GDP, federal spending for the major health care programs in 2037 under the extended alternative fiscal scenario would be 8.6 percent of GDP, rather than 10.4 percent, the projection presented in this report. In contrast, if health care spending per beneficiary increased more rapidly relative to per capita GDP than CBO has assumed, federal health care spending would be even higher than the projection reported here.

Historically, technological changes have been the main driver of increases in health care costs. Future rates of growth of per-beneficiary costs for federal health care programs will depend largely on the extent to which advances in health technology raise or lower costs. However, changes in the structure of payment systems and the delivery of health care could also prove to be important; indeed, such changes could affect, and be affected by, advances in technology. (For further discussion, see Chapter 3.)

Long-Term Changes in Productivity

Long-term economic growth could differ greatly from the path that underlies the budget projections in this report. CBO assumes that in the long run, total factor productivity will grow by 1.3 percent annually, approximately the average rate seen over the past half century.²⁷ A small change in the growth of productivity can, over a long period, have a larger effect on GDP than most recessions do. For example, CBO estimates that during the depths of the recessions experienced since the 1970s, GDP was more than 4 percent lower, on average, than it could have been if the nation's labor force and capital stock had been fully utilized; in addition, output subsequently remained below potential levels for an average of three years. Over the course of a lengthy recession, the cumulative loss in GDP would be substantial, but as long as the economy fully recovered, GDP would return to its previous growth path. By comparison, if productivity growth was 0.3 percentage points lower every year than CBO had assumed, GDP in

27. Total factor productivity is average real GDP per unit of combined labor and capital services. Thus, the growth of total factor productivity is the growth of real output that is not explained by the growth of labor and capital.

the 10th year would be 3 percent lower than projected, but cumulative GDP over that decade would be lower by about 16 percent of one year's output, and that shortfall would be growing at an increasing rate. In other words, the shortfall from a recession is generally temporary, whereas a change in the long-term rate of productivity growth reduces output by an ever-increasing amount.

The nation could also experience unexpectedly high growth in productivity, most likely because of faster technological improvements. Such faster growth could occur steadily (for example, from the continued integration of information technology into the economy) or could result suddenly from a specific technological breakthrough (such as the development of a new source of energy).

Under the extended baseline scenario, faster economic growth from higher productivity (in the absence of changes in other economic measures, such as the unemployment rate, interest rates, or inflation rates) would result in higher revenues but have relatively little impact on the ratio of outlays to GDP because of the assumptions about spending policies that the scenario incorporates. As a result, budget deficits would be smaller. Slower economic growth would lead to correspondingly larger budget deficits under that scenario. Under the extended alternative fiscal scenario, even a large increase in productivity growth would not significantly change the projected growth in federal debt. Under that scenario, revenues are projected to be a fixed share of GDP, and, as under the extended baseline scenario, productivity has little effect on the ratio of outlays to GDP. But in either case, raising taxes or reducing outlays would be less burdensome if people's income was higher and more burdensome if their income was lower.

Catastrophic Events or Major Wars

Natural and manmade disasters occur fairly often, and even though they may have significant short-term effects on the national economy or long-term effects on certain regions or economic sectors, they rarely have a lasting impact on the national economy. However, an increased frequency of disasters or the occurrence of a catastrophic event could affect budgetary outcomes by reducing economic growth over a number of years or requiring massive additional federal spending, or both. For example, the country could experience more-frequent severe floods, hurricanes, tornadoes, and fires—as some models of climate change predict—or a single massive earthquake, a nuclear meltdown that rendered a large area of the country uninhabitable, or an asteroid strike. Other possibilities include an epidemic (whether on the scale of the 1918 pandemic flu, which killed roughly one out of every 150 people in the United States, or on the scale of the current AIDS epidemic in parts of Africa), a series of major terrorist attacks, a large war, or a number of smaller but sustained wars. Because estimates of future risk are generally based on experience and catastrophic events are extremely rare, estimating the probability of their future occurrence is very difficult.

Policy Choices

Government policy cannot eliminate the risk factors that create uncertainty about budgetary outcomes, although it can reduce or exacerbate the amount of risk in some cases. Moreover, different policy choices can allocate risk differently and thereby affect the uncertainty of budget projections. For example, under current law, outlays for Medicare and Medicaid depend on the growth of health care costs, but some policymakers have proposed that growth in outlays per beneficiary be linked to measures of overall economic growth, shifting both risk and control to individuals.²⁸ Such a change in policy would greatly reduce uncertainty about future federal outlays for those programs; it would also greatly increase uncertainty about future outlays by other parties, such as the programs' beneficiaries and state governments. (Most policy changes would affect both the amount of expected federal outlays and uncertainty about those outlays, but those two aspects are conceptually distinct.)

Although analysts sometimes speak of risk to the government, all risk is ultimately distributed among individuals—as taxpayers, as beneficiaries of federal programs, or as both. If spending turned out to be higher than projected, the additional imbalance could be offset only through higher revenues or lower outlays. If the additional imbalance was not offset, deficits would be larger, which would result in lower future incomes. Conversely, if budget imbalances were smaller than expected, an opportunity would exist for smaller future tax increases and smaller spending cuts; it would also be possible to reduce future deficits, which would result in higher incomes. How risk was distributed—for example, among which income groups or generations—would depend on the specific policies enacted to deal with an unexpected imbalance.

Chapter 2: The Economic Impact of Long-Term Budget Policies

To clearly identify long-term budgetary trends, the projections presented in the other chapters of this report do not incorporate the effects of fiscal policy on the economy. Rather, they are based on fixed “benchmark” projections of economic variables such as gross domestic product (GDP), inflation, and interest rates. By contrast, this chapter describes how the budgetary outcomes under the two scenarios analyzed in this report—the extended baseline scenario and the extended alternative fiscal scenario—would affect the economy in the long run and how those economic effects would feed back into the budget.

28. See, for example, Congressional Budget Office, *The Long-Term Budgetary Impact of Paths for Federal Revenues and Spending Specified by Chairman Ryan* (March 2012).

For the first decade of the projection period (through 2022), the economic benchmark underlying the Congressional Budget Office's (CBO's) long-term budget projections matches the agency's January 2012 economic forecast. For later years, the benchmark is generally aligned with the economic experience of the past few decades. In addition, the benchmark incorporates two specific assumptions about fiscal policy—that debt held by the public will be maintained at 61 percent of GDP, the level reached in 2022 in CBO's baseline budget projections, and that the effective marginal tax rates on income from work and saving will remain constant at the levels reached in 2022 in CBO's baseline budget projections. (A marginal tax rate is the rate that applies to the last dollar of income. The effective marginal tax rate is the weighted average of marginal tax rates across all taxpayers, with the weights depending on income.)

The long-term tax and spending policies projected under both the extended baseline scenario and the extended alternative fiscal scenario would lead to different outcomes for the economy than the policies reflected in the economic benchmark. (For details about those scenarios, see [Table 1-1](#).) CBO's analysis of the economic impact of those fiscal policies focuses on the effects of changes in the ratio of debt to GDP and changes in marginal tax rates, although other aspects of the policies might affect the economy in different ways as well. CBO reports effects of fiscal policy on gross national product (GNP), which differs from GDP—the more common measure of the economy's output—primarily because it includes the income that U.S. residents earn from their investments abroad and excludes the income that nonresidents earn from their investments in this country. This chapter focuses on GNP because larger budget deficits generate larger inflows of capital from other countries; as a result, a growing portion of the nation's income would have to be sent abroad as returns (in the form of profits or interest) on that invested capital and thus would not be available to U.S. households.

Under the *extended baseline scenario*—before accounting for the effects of fiscal policy on the economy (that is, under benchmark economic assumptions)—federal debt would fall from 61 percent of GDP in 2022 to 53 percent of GDP in 2037, and effective marginal tax rates on labor earnings and capital income (income derived from wealth, such as stock dividends, realized capital gains, or the owner's profits from a business) would rise over the same period. Marginal tax rates would rise considerably under the extended baseline scenario (in contrast to the benchmark, which assumes constant marginal rates after 2022) because increasing real (inflation-adjusted) incomes would push more income into higher tax brackets and because inflation would cause more people to become subject to the alternative minimum tax. In CBO's estimation, the fiscal policies incorporated in the extended baseline scenario would have the following effects on economic output:

- The lower debt and higher marginal tax rates projected in the extended baseline scenario would, on balance, raise real GNP slightly in 2037 relative to CBO's economic benchmark for that year. That finding represents CBO's "central estimate," which corresponds to the assumption that key parameters of economic behavior—

including the extent to which government borrowing crowds out capital investment and the response of labor supply to changes in marginal tax rates—equal the midpoints of the ranges used by CBO. Allowing for the full ranges that CBO uses for those parameters leads to estimates of effects on GNP ranging from about 1 percent higher to about 1½ percent lower than the economic benchmark.

- After 2037, the projected ratio of debt to GDP would continue to fall; marginal tax rates on capital income would continue to rise gradually, and marginal tax rates on labor income would rise further for a while and then eventually flatten. Over time, those developments would, on balance, generate growing positive effects on GNP, according to CBO’s central estimate. Different assumptions imply results ranging from greater increases to growing decreases in output relative to the benchmark levels in the years after 2037.

Under the *extended alternative fiscal scenario*, nearly all of the tax provisions scheduled to expire in 2012, 2013, and later in the decade—including the tax cuts enacted since 2001 and extended by the 2010 tax act—as well as higher exemption amounts for the alternative minimum tax, would be extended through 2022. Those extensions would reflect what some analysts might consider a continuation of “current policy,” as opposed to current law. Total revenues after 2022 are assumed to remain at the share of GDP they are projected to reach in 2022—18.5 percent—and effective marginal tax rates are assumed to remain at their 2022 levels. As a result, effective marginal tax rates under the alternative fiscal scenario would be significantly lower than they would be under the benchmark, but debt would be much greater—almost 200 percent of GDP by 2037, even before the effects of such debt on output and interest rates were taken into account.

In CBO’s estimation, the policies incorporated in the extended alternative fiscal scenario would eventually push real GNP well below its value in the economic benchmark:

- Real GNP would be reduced by about 4½ percent in 2027 and by about 13½ percent in 2037, according to CBO’s central estimates. Under different assumptions, reductions in GNP would range from slight to almost 8 percent in 2027 and from about 3½ percent to over 21 percent in 2037.²⁹
- Beyond 2037, as projected debt relative to GDP grew even more, the estimated negative effects on the nation’s output and income would increase.

29. Debt would reach 250 percent of GDP by 2035 under the assumptions leading to the most negative impact on GNP. CBO’s model cannot reliably estimate GNP after debt reaches that amount, in the agency’s judgment. The estimate of 21 percent represents the impact on GNP in 2035, when debt is approximately 250 percent of GDP.

Higher levels of debt would have a number of negative budgetary and economic consequences beyond those estimated effects of the extended alternative fiscal scenario on output:

- As federal debt grows, so does the amount of interest that the government pays to its lenders (all else being equal). If policymakers wished to maintain the benefits and services that the government is scheduled to provide 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 those rising interest costs, at least in part, by reducing benefits and services, or they could allow deficits to increase for some time as reflected in the estimates for the extended alternative fiscal scenario.
- Rising debt would increasingly 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, by extension, on people's well-being.
- Growing federal debt also would increase the probability of a sudden fiscal crisis, during which investors would lose confidence in the government's ability to manage the budget and the government would thereby lose its ability to borrow at affordable rates. Such a crisis would confront policymakers with extremely difficult choices and probably have a very significant negative impact on the country.

Under the extended alternative fiscal scenario, the path of federal debt would be unsustainable, so major policy changes would be required at some point. The longer the necessary adjustments were delayed, the greater would be the unfavorable consequences of the mounting debt; the more uncertain individuals, businesses, and financial markets would be about future government policies; and the more drastic the ultimate changes in policy would need to be. In addition, waiting to address the long-term budgetary imbalance and allowing debt to mount in the meantime would be detrimental to future generations, although many segments of the current population—especially the elderly—might benefit from such a delay.

CBO's Long-Term Economic Benchmark

The economic benchmark that underlies CBO's long-term budget estimates comprises projections for a host of demographic and economic variables. Annual values for selected demographic and economic variables through 2087 can be found in the supplementary data for this report on CBO's Web site, www.cbo.gov.

Demographic Variables

Future federal tax revenues, federal spending, and the performance of the economy will all be affected by the size and composition of the U.S. population—for example, through effects on the labor force and the number of beneficiaries of programs such as

Medicare and Social Security. For its long-term benchmark, CBO adopted the intermediate (midrange) values assumed in the 2011 report of the Social Security trustees for fertility and mortality rates as well as for rates of disability (that is, the rates at which people enter and leave Social Security's Disability Insurance program).³⁰

CBO's short-run and long-run projections for immigration, however, differ from those of the trustees. In CBO's view, the recent recession has had a greater effect on immigration—specifically, fewer immigrants have come to the United States in the past few years—than the trustees have estimated. (The number of immigrants entering the country in recent years must be estimated because the number of unauthorized immigrants is not known.) In contrast, CBO anticipates more immigration over the long term than the trustees project.³¹ For its benchmark, CBO assumed that, in the long run, the net amount of immigration would maintain its historical relationship to the size of the U.S. population: 3.2 immigrants per year per 1,000 people in the population.³² On that basis, CBO projects that net annual immigration to the United States will increase from 1.3 million people in 2022 to 1.6 million in 2087—rather than fall from 1.2 million to 1.0 million immigrants, as the trustees have estimated. However, because of the uncertainty surrounding demographic and economic trends and because the manner in which immigration law is implemented and enforced could change, the amount of authorized and unauthorized immigration over the long term is subject to a great deal of uncertainty.

Taken together, CBO's long-term assumptions about fertility, mortality, and immigration imply a total U.S. population of 389 million in 2037 and 500 million in 2087.

Economic Variables

For the period from 2012 through 2022, CBO's benchmark projections of economic variables such as interest rates, inflation, the labor force, and earnings per worker match those in its January 2012 economic forecast, which underlies the agency's most recent 10-year budget projections.³³ Beyond 2022, the economic benchmark does not reflect the effects that movements in marginal tax rates or in the debt-to-GDP ratio would have on economic growth and interest rates. Rather, for later years, the bench-

30. Social Security Administration, *The 2011 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds* (May 2011). Detailed data from the trustees' 2012 annual report were not available in time for CBO to incorporate in this analysis.

31. For more background on immigration, see Congressional Budget Office, *A Description of the Immigrant Population: An Update* (June 2011).

32. That ratio equals the estimated average net flow of immigrants over the period from 1821 to 2002. See Social Security Administration, Technical Panel on Assumptions and Methods, *Report to the Social Security Advisory Board* (October 2003), p. 28.

33. See Congressional Budget Office, *Updated Budget Projections: Fiscal Years 2012 to 2022* (March 2012).

mark is generally aligned with the economic experience of the past few decades. It also incorporates two specific assumptions about fiscal policy—that debt held by the public will be maintained at 61 percent of GDP, the level reached in 2022 in CBO’s baseline budget projections, and that the effective marginal tax rates on income from work and saving will remain constant at the levels reached in 2022.

Interest Rates. CBO’s benchmark projections include various interest rates, including the interest rate on 10-year Treasury notes, the average interest rate on federal debt held by the public, and the average interest rate on holdings of the Social Security and Medicare trust funds. For the long run, CBO projects a real interest rate on 10-year Treasury notes of 3.0 percent, which is near the average of the past four decades and slightly higher than the rate CBO projected for 2022 in its January 2012 economic forecast.³⁴

In the benchmark projections for interest rates, CBO took into account both the amount of federal debt relative to GDP, which is well above the level in recent decades, and the projected rate of growth of the labor force, which CBO estimates will be slower than in recent decades:

- An increase in government debt tends to raise interest rates by leading people to allocate a larger portion of their savings to the purchase of government securities, such as Treasury bonds, and thereby “crowding out” investment in productive capital goods, such as factories and computers. By itself, that effect would imply higher interest rates than those seen in the past few decades.
- However, the number of workers is likely to grow more slowly in coming decades than in past years because of the aging of the population, lower birth rates, and a tapering off of increases in labor force participation by women. The labor force grew by 1.6 percent per year, on average, over the 1970–2010 period, for example, but is projected to grow by only about 0.4 percent per year over the 2022–2087 period. Other things being equal, slower growth in the labor force will increase the ratio of the capital stock (the aggregate amount of capital goods) to the supply of labor. Having more capital goods per worker reduces the amount by which additional capital goods raise production—that is, it lowers the productivity of incremental units of capital. That lower productivity means that investment in capital will generate a smaller return, pushing interest rates lower.³⁵

The effects of those two factors on the rate for 10-year Treasury notes, CBO anticipates, will roughly offset each other.

34. The real interest rates presented in this report are adjusted for inflation as measured by the increase in the consumer price index.

35. See Congressional Budget Office, *How Slower Growth in the Labor Force Could Affect the Return on Capital* (October 2009).

The benchmark value for the average real interest rate on federal debt held by the public over the long term is slightly lower—at 2.7 percent—than the benchmark rate on 10-year Treasury notes. That difference arises because CBO anticipates that interest rates on short-term debt will be lower than those on long-term debt, as is typically the case, and because the average maturity of federal debt is expected to be less than 10 years. In general, CBO used the same 2.7 percent value as a discount rate for calculating the present value of future streams of total federal revenues and outlays. (The higher the discount rate, the lower the present value of the future flows.) However, the Social Security and Medicare trust funds hold longer-term debt, so CBO assumed that the rates of interest earned on the balances in those funds would be higher than the average real interest rate on federal debt. Therefore, in calculating the present value of future streams of revenues and outlays for the trust funds, CBO used 3.0 percent as the discount rate.

Inflation. CBO’s economic benchmark includes projections of the prices of a variety of goods and services. 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 and the consumer price index for all urban consumers—will be 2.5 percent in the long run. The two indexes measure the level of consumer prices using typical “market baskets” of specified goods and services purchased by those workers and consumers. The rate of 2.5 percent for the change in the prices of consumer goods and services is the same rate that CBO used for its long-term projections last year, and a little above the rate that CBO projected for 2022 in its January 2012 forecast.

CBO projects that the prices of most goods and services will rise at roughly the same rate over the long term. An important exception is the prices of capital goods. Over the past several decades, the prices of capital goods—and especially the prices of computer equipment—have increased more slowly, on average, than the consumer price indexes. CBO’s economic benchmark thus incorporates the assumption that, over the long term, the prices of capital goods will continue to rise more slowly than the prices of consumer goods and services—and, in particular, that the relative price of computer equipment will continue to fall.

CBO projects that the rate of inflation for all final goods and services produced by the economy, as measured by the rate of increase in the GDP deflator, will average 0.3 percentage points less per year after 2022 than the consumer price indexes will—about the same differential that CBO projects for the years through 2022. The GDP deflator grows more slowly than the consumer price indexes both because it fully accounts for the ability of buyers to shift their purchases as relative prices change and because it encompasses a greater proportion of items, such as computers, whose prices are projected to rise more slowly than the prices of most other goods and services.

Labor Market Factors. Important benchmark projections about the labor market include estimates of the unemployment rate, the share of total compensation received as taxable earnings, and average hours worked.

The Unemployment Rate. CBO projects that the unemployment rate will return to the natural rate of unemployment (the rate that reflects unemployment arising from all sources except fluctuations in overall demand related to the business cycle—for example, mismatches between the skills of available workers and the skills employers consider necessary to fill vacant positions) by 2018 and remain at that rate thereafter. According to CBO’s estimates, the natural rate rose from about 5 percent before the recession to about 6 percent, owing to mismatches between the skills and locations of available unemployed workers and the needs of employers, extended unemployment insurance benefits, and the difficulties that the long-term unemployed have finding work.³⁶ The effect of mismatches is expected to diminish gradually over the next five years as, for example, people acquire new skills and relocate. In addition, the effect of extended unemployment insurance benefits will dissipate quickly when those benefits expire at the end of this year as specified under current law. However, the difficulties faced by the long-term unemployed will be more persistent, owing to the stigma associated with their being unemployed for an extended period and the resulting erosion of their skills.³⁷ All told, the unemployment rate in CBO’s economic benchmark declines from its level of 8.1 percent in April 2012 to 5.5 percent in 2018 and 5.3 percent by 2022, matching CBO’s January 2012 economic forecast for that period; the rate declines to 5.0 percent by 2032 and then remains at that level.

Taxable Earnings as a Share of Compensation. Workers’ total compensation consists of taxable earnings and nontaxable benefits, such as employers’ contributions for health insurance and pensions, paid leave, and so on. Primarily because the cost of health insurance has grown more quickly than total compensation over the past several decades, the share of compensation represented by taxable earnings has slipped from about 90 percent in 1960 to about 80 percent in 2011.

Looking ahead, CBO expects that health care costs will continue to increase 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 instituted an excise tax on some employment-based health insurance plans that have premiums above a specified threshold. Some employers and workers will respond to that tax, which goes into effect in 2018, by shifting to less-expensive plans, thereby reducing the share of compensation attributable to health insurance premiums and increasing the share attributable to taxable earnings. CBO projects that the effects

36. See Congressional Budget Office, *The Budget and Economic Outlook: Fiscal Years 2012 to 2022* (January 2012), pp. 35–36.

37. See Congressional Budget Office, *Understanding and Responding to Persistently High Unemployment* (February 2012).

of the excise tax on the mix of compensation will more than offset the effects of rising costs for health care for a few decades; thereafter, the effects of rising health care costs will outweigh the effects of the tax.³⁸ As a result, in CBO's benchmark, the share of compensation that workers receive as taxable earnings first rises to about 84 percent in about 2050 and then falls, ending up near its projected 2022 level of 81 percent by 2087. (For more about the effects of the excise tax, see Chapter 6; for a discussion of trends in costs for health care, see Chapter 3.)

Average Hours Worked. Different segments of the population work different numbers of hours, on average; for example, 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 assumption that those patterns will remain stable. However, CBO also expects that over the long term the composition of the labor force will shift somewhat toward certain groups, such as older workers, who tend to work less, slightly reducing the average number of hours worked in the labor force as a whole. By 2087, CBO estimates, the average number of hours worked per person will have declined by 2 percent relative to the number of hours worked in 2022.

Real GDP and Earnings per Worker. In its economic benchmark, CBO projects that from 2023 through 2087, real GDP will grow at an average annual rate of 2.2 percent and real earnings per worker will grow at an average annual rate of 1.4 percent. Those rates of growth are derived from the demographic and economic variables described earlier and from assumptions about the growth of the capital stock and productivity.

The key elements underlying the projected growth of the capital stock are assumptions about federal fiscal policy, private (personal and business) saving, flows of capital to and from other countries, and the rate of increase in the prices of capital goods. In its long-term benchmark projections, CBO assumed that each dollar added to the federal budget deficit would increase private saving by 45 cents and net inflows of capital from other countries by 25 cents. Those two effects offset part of the decrease in investment in the domestic capital stock that would stem from higher budget deficits; as a result, such investment is assumed to be reduced by 30 cents for each dollar added to the deficit.³⁹ For the benchmark, in addition to assuming that debt held by the public would stay at 61 percent of GDP after 2022, CBO made a further adjustment to the path of

38. CBO projects that the effects of the excise tax on the taxable share of compensation will diminish over time, both because there is a limit to how little health insurance people are willing to carry and because the Affordable Care Act established minimum levels of coverage for health care plans. Therefore, the number of people moving to less-expensive plans will eventually dwindle.

39. Those values represent CBO's midrange assumptions about the effects of federal borrowing. On the basis of a review of recent research, CBO has reduced its midrange assumption of the effects of deficits on investment from 36 cents per dollar of deficit—the amount the agency assumed in Congressional Budget Office, *CBO's 2011 Long-Term Budget Outlook* (June 2011, corrected February 2012)—to 30 cents per dollar of deficit.

private saving to maintain a constant rate of return on investments in capital goods and thus a steady interest rate. Given the assumed response of international capital flows to the changes in private saving just noted, net capital inflows from other countries are projected to fall gradually relative to GDP over time.

Also influencing the projected growth of the capital stock is the assumption that the prices of capital goods will increase more slowly than those of other goods. The lower the prices of capital goods, the greater the rate of increase in the real capital stock for any given dollar amount of investment. Therefore, holding all else equal, CBO's assumption of slower growth in those prices boosts the projected growth of the capital stock relative to what would be projected under an assumption that those prices would rise at the same rate as general inflation.

CBO estimates that over the long term, total factor productivity—real output per unit of combined labor and capital services—will grow at an annual rate of 1.3 percent. That assumption, together with the growth projected for the supply of labor and capital, leads to average projected growth in labor productivity—real output per hour worked—of 1.7 percent a year.

CBO's projection of the long-run growth rate of real GDP—2.2 percent per year, on average, from 2023 through 2087—is substantially slower than the pace of economic growth experienced over the past few decades, primarily because CBO anticipates a slowdown in the growth of the labor force. At the same time, interest rates in the benchmark are projected to be close to their levels in recent decades. As a result, the projected average real interest rate on debt held by the public (2.7 percent) exceeds the projected average rate of growth of real output (2.2 percent)—in contrast with the experience of the past few decades, when interest rates were, on average, roughly equal to the annual growth of output. Thus, for any given budgetary policy, debt is projected to climb faster relative to output than it would if the differential were closer to its historical average.

How Changing Debt and Marginal Tax Rates Would Affect Output

This chapter describes how the budget outcomes under two scenarios would affect the economy in the long run. In particular, changes in government borrowing would alter investment and other economic outcomes in the following ways: An increase in debt relative to benchmark assumptions would reduce investment and boost interest rates; the reduction in investment would lower pretax wages, which would reduce people's incentives to work; and the increase in interest rates would strengthen people's incentive to save. Meanwhile, decreases in debt would have the opposite effects. In addition, higher marginal tax rates would discourage working and saving, whereas lower marginal tax rates would have the opposite effect.

In the short run—especially under conditions like those currently prevailing in the United States, with substantial unemployment and underused factories, offices, and

equipment—policies that increased federal budget deficits would generally boost demand, thereby increasing output and employment relative to what would occur with smaller deficits or a balanced budget.⁴⁰ However, the effects of that greater demand would be temporary because stabilizing forces in the economy (such as the responses of prices and market interest rates to greater demand, as well as actions by the Federal Reserve) tend to return output to its long-run potential level—that is, toward the amount of goods and services that the economy could produce if its capital and labor resources were fully employed. Because the analysis presented in this chapter focuses on the long-run effects of tax and spending policies on the economy, the estimates do not take those short-run effects on demand into account. Instead, the estimates reflect the assumption that, over the long run, output will always be at its potential level.

CBO estimated the economic effects of changes in debt and tax rates using the agency's Solow-type growth model, an enhanced version of a widely used model originally developed by Robert Solow.⁴¹ In CBO's Solow-type model, people base their decisions about working and saving primarily on current economic conditions—especially wage levels, interest rates, and government policies. In that model, people's responses to changes in such conditions are generally assumed to 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 specific future developments. For example, in the model, people are assumed to increase their saving in response to an increase in deficits, in part because they anticipate the future tax increases or spending cuts that typically follow a rise in deficits. However, they do not behave as if they anticipate the details of future changes in government policies.

Effects of Increased Government Borrowing

Increased government borrowing generally draws money away from (crowds out) private investment in productive capital, leading to a smaller stock of capital and lower output in the long run than would otherwise be the case. Deficits generally have that effect on private investment because the portion of people's savings used to buy government securities is not available to finance private investment.

Two factors offset part of that crowding-out effect. One is that additional government borrowing tends to lead to greater private saving, which increases the total funds available to purchase government debt and finance private investment. (In the economic

40. See Congressional Budget Office, *Economic Effects of Reducing the Fiscal Restraint That Is Scheduled to Occur in 2013* (May 2012); and statement of Douglas W. Elmendorf, Director, Congressional Budget Office, before the Senate Committee on the Budget, *Policies for Increasing Economic Growth and Employment in 2012 and 2013* (November 15, 2011).

41. For details of that model, see the appendix to Congressional Budget Office, *The Economic Impact of the President's 2013 Budget* (April 2012).

benchmark, private saving rises by 45 cents for every dollar increase in government borrowing.) That response occurs for several reasons:

- Additional government borrowing tends to raise interest rates, which boosts the return on saving;
- Some people anticipate that policymakers will raise taxes or lower spending in the future to cover the cost of paying interest on the accumulated debt, so they increase their own saving to prepare for paying higher taxes or receiving smaller benefits; and
- The policies that give rise to deficits (such as tax cuts or increases in government transfer payments, such as Social Security or unemployment benefits) put more money in private hands, some of which is probably saved.

Overall, however, the rise in private saving is generally a good deal smaller than the change in the deficit, so greater government borrowing leads to less national saving. (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, in the form of surpluses.)

A second factor offsetting some 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 U.S. investment from declining as much as national saving does in the face of more government borrowing. (In the economic benchmark, net inflows of private capital rise by 25 cents for every dollar increase in government borrowing.) But such inflows also create the obligation for more profits and interest to flow overseas. Therefore, although flows of capital into the United States can help moderate a decline in domestic investment, the income earned on that additional investment does not fully accrue to U.S. residents. (Capital inflows can also affect other aspects of the U.S. economy, such as the distribution of income, but those effects are beyond the scope of this analysis.) In this chapter, CBO emphasizes the effects of fiscal policies on gross national product because, unlike the more commonly cited gross domestic product, GNP is reduced by net flows of interest and profits to foreigners and therefore better represents the resources available to U.S. households.⁴²

42. Rising debt affects GDP and GNP differently, depending on the amount of additional capital that foreigners invest in the United States and the rate of return they receive on that additional investment. In recent decades, foreign investors have earned a lower average return on U.S. investments than domestic investors have. (For a related discussion, see Congressional Budget Office, *Why Does U.S. Investment Abroad Earn Higher Returns Than Foreign Investment in the United States?* November 2005.) However, economic theory suggests that, over the long run, there should be little difference between the returns that foreigners earn on their investments in the United States and the returns that domestic investors earn on comparable investments. In assessing the impact of rising federal debt on GNP, CBO assumed that the additional inflows of capital spurred by that rising debt would be invested in assets that earned the same return as that earned by domestic investments.

Because the crowding out of domestic investment reduces the capital stock, it alters pretax wages and rates of return on saving, which in turn changes the incentives to work and save. Specifically, the reduction in the capital stock makes workers less productive and 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 utilize each unit of capital—for example, each computer, piece of machinery, or structure. Because interest-bearing assets and real capital (or, equivalently, equity shares in ownership of capital) are alternative forms of financial investment, interest rates need to rise when the productivity of capital rises, or savings will flow away from interest-bearing assets to those equity shares. The resulting increase in interest rates strengthens the incentive to save.

To reflect the high degree of uncertainty that attends the effect of government borrowing on national saving and domestic investment, CBO produced estimates of the economic effects of the two budget scenarios using three assumptions about those effects. Those assumptions imply that for each dollar that deficits rise, national saving is reduced by 32 cents, 55 cents, or 71 cents, and domestic investment is reduced by 10 cents, 30 cents, or 50 cents. (Reflecting CBO's review of research in this area, the low assumption of the impact of deficits on investment is significantly smaller, and the midrange assumption slightly smaller, than those used for CBO's 2011 long-term budget outlook.)

Effects of Changes in Marginal Tax Rates

Changes in marginal tax rates (the rates that apply to an additional dollar of a taxpayer's income) also affect output and income. For example, a lower marginal tax rate on capital income (income derived from wealth, such as stock dividends, realized capital gains, or the owner's profits from a business) increases the after-tax rate of return on saving, strengthening the incentive to save; more saving implies more investment, a larger capital stock, and greater output and income. However, because that lower marginal tax rate increases people's after-tax returns on savings, they do not need to save as much to have the same future standard of living, which reduces the supply of saving. CBO concludes, as do most analysts, that the former effect outweighs the latter, such that a lower marginal tax rate on capital income increases saving. A higher marginal tax rate on capital income has the opposite effect. Specifically, CBO assumes that a change in the marginal tax rate on capital income that increases the after-tax return to saving by 1 percent results in an increase in private saving of 0.2 percent.

Similarly, a lower marginal tax rate on labor income increases the incentive to work, raising the number of hours people work and therefore the amount of output and income. However, because that lower marginal tax rate increases people's after-tax income from the work they are already doing, they do not need to work as much to maintain their standard of living, which reduces the supply of labor. Again, CBO concludes, as do most analysts, that the former effect outweighs the latter and that lower

marginal tax rates on labor income increase the labor supply. A higher marginal tax rate on labor income has the opposite effect.

To reflect the high degree of uncertainty that attends the effect of the marginal tax rate on labor supply, CBO produced estimates of the economic effects of the two budget scenarios using three assumptions about how people would adjust the number of hours they worked in response to changes in marginal tax rates (and changes in pretax wages as well):

- A “strong labor supply response,” under which workers’ response is on the high side of the consensus range of empirical estimates;
- A “weak labor supply response,” under which workers’ response is on the low side of the consensus range; and
- A “medium labor supply response,” under which workers’ response is roughly midway between strong and weak.

The responsiveness of 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, in turn, has two components: a substitution elasticity (which measures the effect of changes in *marginal* tax rates) and an income elasticity (which measures the effect of changes in *average* tax rates). In this analysis, CBO’s assumptions for labor supply response correspond to total wage elasticities of about 0.35 for the strong response (composed of a substitution elasticity of 0.35 and an income elasticity of zero); about -0.05 for the weak response (composed of a substitution elasticity of 0.15 and an income elasticity of -0.20); and about 0.15 for the medium response (composed of a substitution elasticity of 0.25 and an income elasticity of -0.1). (Reflecting CBO’s review of research in this area, the strong labor supply response is substantially stronger, and the weak labor supply response slightly weaker, than those used for CBO’s 2011 long-term budget outlook.)

Economic Effects of the Fiscal Policies in CBO’s Long-Term Budget Scenarios

The policies assumed in the extended baseline scenario and extended alternative fiscal scenario would affect economic outcomes such as output and interest rates. Those changes would, in turn, affect the budgetary outcomes under those scenarios.

Effects on Output and Interest Rates

According to CBO’s central estimates, real GNP under the extended baseline scenario would be little affected in 2027 and slightly higher in 2037, relative to the economic benchmark. Allowing for the full ranges that CBO uses for the key parameters of economic behavior, real GNP could be slightly higher or lower by 2027 and between

1.1 percent higher and 1.4 percent lower by 2037, relative to the benchmark (see [Table 2-1](#)). Those changes in GNP illustrate the effects of current law, which—if allowed to unfold—would result in lower debt and higher marginal tax rates over time than is assumed for the benchmark. Whereas the former would have a favorable impact on GNP, the latter would have an unfavorable impact; the direction of the overall effect would depend on the relative magnitude of those two factors. Interest rates would be lower than projected in the benchmark because of the reduced amount of government borrowing.

In contrast, by CBO's central estimates, real GNP under the extended alternative fiscal scenario would be 4.4 percent lower in 2027 and 13.4 percent lower in 2037, relative to the economic benchmark. Under different assumptions, the reduction in GNP would range from slight to 7.7 percent in 2027 and from 3.5 percent to over 21 percent in 2037, relative to the benchmark. Under the assumptions leading to the most negative effect on GNP, debt would reach 250 percent of GDP by 2035. CBO's model cannot reliably estimate GNP after debt reaches that amount, in the agency's judgment: The assumptions about private saving and capital inflows incorporated in CBO's model are based on historical experience, and if interest rates and the debt-to-GDP ratio rose to levels well outside of that experience, those assumptions might no longer be valid. In 2035, GNP would be 21 percent below the benchmark under the assumptions leading to the most negative effect on GNP; beyond 2035, the negative effect on GNP would grow under those assumptions as debt continued to increase relative to the size of the economy.

The impacts on GNP reflect the unfavorable effects of much higher debt offset, in part, by the favorable effects of lower marginal tax rates. (The latter effects reflect the assumption underlying the extended alternative fiscal scenario that many elements of current policy would continue—particularly that various tax cuts would be extended instead of allowed to expire, as is called for under current law). However, even accounting for the negative impact of fiscal policy under the alternative scenario, real GNP per person would be considerably higher in 2037 than it is now because of continued growth in productivity (see [Figure 2-1](#)). Interest rates would be higher than projected in the benchmark because of the increased amount of government borrowing: The rate on 10-year bonds would be higher by 0.7 percentage points in 2027 and by 1.9 percentage points in 2037, according to CBO's central estimates. Under different assumptions, the estimated increase in interest rates ranges from 0.2 to 1.3 percentage points in 2027, and from 0.5 to over 3.5 percentage points in 2037.⁴³

43. In 2035, when debt would equal 250 percent of GDP under this scenario, interest rates would be 3.5 percentage points above the benchmark under the assumptions leading to the largest increase in interest rates. Beyond 2035, the increase in interest rates would grow under those assumptions as debt continued to increase relative to the size of the economy.

The effect of the budgetary scenarios on GDP differs from that on GNP because GDP does not reflect flows of profits and interest overseas. As debt rises, net capital inflows from abroad increase, which over time leads to payments of profit and interest to foreigners that reduce GNP but do not affect GDP. Therefore, other things being equal, increases in debt cause a greater reduction in GNP than in GDP, and reductions in debt lead to a greater increase in GNP than in GDP. Under the extended baseline scenario, real GDP would be 0.3 percentage points lower in 2037 than it would be under the benchmark, according to CBO's central estimate. Under different assumptions, GDP could be between about 0.6 percent higher and 1.9 percent lower in 2037 than it would be under the benchmark (see [Table 1-1](#)). Under the extended alternative fiscal scenario, real GDP would be about 1.9 percent lower in 2027, and 6.6 percent lower in 2037, by CBO's central estimate. Under different assumptions, GDP could be between 1.7 percent higher and 4.4 percent lower in 2027, and between slightly higher and over 13 percent lower in 2037, than it would be under the benchmark.⁴⁴

The estimated effects on output and interest rates under the extended alternative fiscal scenario differ somewhat from those in CBO's 2011 long-term budget outlook.⁴⁵ Those changes are the result of several factors:

- First, projected deficits under the scenario are smaller through 2022 than they were last year because of the enactment of the Budget Control Act of 2011 (Public Law 112-25), slower projected growth in costs per beneficiary in certain federal health care programs, and changes in some of the policies included in the scenario. Last year CBO projected that under the alternative fiscal scenario—as projected on the basis of the benchmark economic assumptions, that is, without incorporating the economic effects of rising debt on output and interest rates—debt held by the public would be 105 percent of GDP in 2022, and the deficit would be 8.0 percent of GDP in that year. This year CBO projects that under the extended alternative fiscal scenario—again as projected on the basis of the benchmark economic assumptions—debt would be 93 percent of GDP in 2022 and the deficit would be 5.9 percent of GDP in that year. The smaller amounts of government borrowing imply less crowding out of capital and, therefore, smaller estimated negative effects on output in any given year, other things being equal.
- Second, on the basis of a review of research about the effects of deficits on investment, CBO reduced its low and midrange assumptions for those effects. Those changes lead to smaller estimated negative effects on output, other things being equal.

44. In 2035, when debt would equal 250 percent of GDP under this scenario, GDP would be 13 percent below the benchmark under the assumptions leading to the most negative effect on GDP. Beyond 2035, the negative effect on GDP would grow under those assumptions as debt continued to increase relative to the size of the economy.

45. See Congressional Budget Office, *CBO's 2011 Long-Term Budget Outlook*.

- Third, on the basis of a review of research about the responsiveness of labor supply to changes in after-tax wages, CBO substantially increased the assumed magnitude of the “strong labor supply response” and slightly decreased the assumed magnitude of the “weak labor supply response.” The impact of those revisions on the estimated effects on output varies because whether after-tax wages are higher or lower under the alternative scenario than under the benchmark varies, depending on other estimating assumptions.⁴⁶

Effects on Budgetary Outcomes

Differences in the levels of economic activity and interest rates that would occur under the two scenarios would, in turn, affect budgetary outcomes. Incorporating those effects would change the projections of debt as a percentage of GDP relative to the paths presented in Chapter 1.

Under CBO’s central estimates of the extended baseline scenario, higher output means that (for any amount of debt) the ratio of debt to GDP would be lower, and lower interest rates mean that interest payments on government debt would be lower. Thus, for any given amounts of revenues and noninterest spending, deficits and the public debt would be lower.⁴⁷ Incorporating those economic effects of fiscal policy reduces the projected debt-to-GDP ratio by about 2 percentage points in 2037, leading to a ratio of 51 percent according to CBO’s central estimate (see [Figure 2-2](#)). Under other assumptions, reductions in the debt-to-GDP ratio could range from a slight amount to as much as 3 percentage points in 2037, leading to a ratio of 50 percent to 52 percent.

In contrast, under CBO’s central estimates of the extended alternative fiscal scenario, lower output means that, for any amount of debt, the ratio of debt to GDP would be higher, and higher interest rates mean that interest payments on government debt would be higher. Thus, for any given amounts of revenues and noninterest spending, deficits and the public debt would be higher. Incorporating those economic effects increases the projected debt-to-GDP ratio by about 40 percentage points in 2037, leading to a ratio of 240 percent, according to CBO’s central estimate. Under other

46. Specifically, the marginal tax rates on labor income under this scenario are lower than they are under the benchmark, which tends to boost projected after-tax wages; but more crowding out of capital tends to depress both pretax and after-tax wages. As a result, the projected change in wages and, thus, the impact of revising the labor supply response depend on how much deficits are assumed to affect investment.

47. Higher output also implies higher revenues and, under the assumptions governing the two budget scenarios, greater spending on health care and retirement programs. By contrast, for the analysis in this chapter, other noninterest spending is assumed to be unaffected by differences in output from benchmark levels. That assumption differs from the one incorporated in the budgetary projections under benchmark economics presented in the other chapters of this report, as well as in the analysis of economic effects in CBO’s 2011 long-term budget outlook. In both cases, other noninterest spending varied proportionately with changes in output (as when, for example, GDP rises over time because of growth in productivity). The assumptions incorporated in this chapter’s analysis imply that increases in output relative to benchmark levels would slightly reduce the deficit.

assumptions, increases in the debt-to-GDP ratio could range from 5 to over 50 percentage points in 2037—leading to a ratio in that year of 205 percent to over 250 percent.

The Effects of Waiting to Resolve the Long-Term Budgetary Imbalance

In a previous analysis, CBO assessed the economic impact of waiting a decade to resolve the long-term budgetary imbalance.⁴⁸ The agency compared economic outcomes under a policy that would stabilize the ratio of debt to GDP starting in 2015 with outcomes under a policy that would delay stabilizing that ratio until 2025. Although any number of government policies could be implemented to keep the ratio of debt to GDP from increasing, CBO analyzed two possible policies: raising marginal tax rates or reducing government transfer payments (which were assumed to go mainly to older people). CBO performed its analysis using a model of the economy that differs from the Solow-type model used for the projections presented in this chapter. That model, a life-cycle growth model, reflects the assumption that people make decisions about how much to work and save on the basis of current and anticipated government policies and economic conditions (such as wages and interest rates).

CBO's analysis suggested that, depending on the policy used to stabilize the debt, delaying action for 10 years—which would allow the debt-to-GDP ratio to rise by an additional 40 percentage points under the assumptions used for that analysis—would cause real output to be lower by between 2½ percent and 7 percent in the long run than it would have been if the ratio had been stabilized earlier at a lower level. (Despite those potential reductions, real output would continue to be higher than it is now because of continued growth in productivity.) Most of the decline in output caused by delaying action would stem from two factors: the crowding out of investment in productive capital, which would reduce the size of the capital stock by between 7 percent and 18 percent; and the effects of higher marginal tax rates (which would ultimately be required under the policy that stabilizes debt by raising taxes) on people's incentives to work and save.

Another conclusion of CBO's analysis was that generations born after about 2015 would be worse off if action to stabilize the debt-to-GDP ratio was postponed from 2015 to 2025. People born before 1990, however, would be better off if action was delayed, largely because they would partly or wholly avoid the policy changes needed to stabilize the debt (leaving aside the negative effects stemming from a possible fiscal crisis and the government's reduced flexibility to respond to economic challenges, which were not incorporated in that earlier analysis and are discussed below). Generations born between 1990 and 2015 could either gain or lose from a delay, depending on the details of the policy used to stabilize the debt (again, leaving aside some other

48. Congressional Budget Office, *Economic Impacts of Waiting to Resolve the Long-Term Budget Imbalance* (December 2010).

negative effects of growing debt). In the long run, a 10-year delay would reduce the well-being of all future generations by amounts equivalent to a cut of roughly 1 percent to 3 percent in their lifetime spending, depending on the specific policies that were adopted.

Other Consequences of Rising Federal Debt

Persistent, substantial budget deficits—such as the deficits that CBO projects for coming decades under the extended alternative fiscal scenario—would have a number of significant negative consequences beyond those incorporated in CBO’s quantitative estimates. Those negative consequences include both budgetary and economic effects.⁴⁹

The Need for Higher Taxes or Less Spending on Government Programs

As federal debt grows, so does the amount of interest that the government pays to its lenders (all else being equal). If policymakers wished to maintain the benefits and services that the government is scheduled to provide and not allow deficits to increase as interest payments grow, then tax revenues would have to rise as well. Those revenues could be raised in numerous different ways. However, to the extent that additional tax revenues were generated by boosting marginal tax rates, those higher rates would discourage people from working and saving, further reducing output and income. Alternatively, policymakers could choose to offset the rising interest costs, at least in part, by reductions in benefits and services, or they could allow deficits to increase for some time, as reflected in the estimates for the extended alternative fiscal scenario.

To be sure, slowing the growth of government debt to hold down future interest payments would require increases in taxes or reductions in government benefits and services. But increases in interest costs as a share of the budget make attaining fiscal balance more difficult. Earlier action would permit the necessary changes in policy to be smaller and more gradual, and it would give people more time to adjust to them—although it would also require more sacrifices sooner from older workers and retirees for the benefit of younger workers and future generations.

A Reduced Ability to Respond to Domestic and International Problems

Having a relatively small amount of outstanding debt gives policymakers the ability to borrow to address significant unexpected events such as recessions, financial crises, and wars. In contrast, a large amount of debt leaves less flexibility for government actions to address financial and economic crises, which in many countries have been

49. For additional discussion, see Congressional Budget Office, *Federal Debt and the Risk of a Fiscal Crisis* (July 2010).

very costly for the governments as well as for citizens.⁵⁰ A large amount of debt could also harm national security by constraining military spending in times of crisis or limiting the country's ability to prepare for such a crisis.

In the United States, the size of the federal debt a few years ago gave the government the flexibility to boost spending and cut taxes to stimulate economic activity during the economic slump, to provide public funding to stabilize the financial sector, and to continue paying for other programs even as tax revenues dropped sharply because of the decline in output and incomes. If the amount of federal debt (relative to output) stayed at its current level or increased further, the government would find it more difficult to undertake similar policies in the future. As a result, future recessions and financial crises could have larger negative effects on the economy and people's well-being. Moreover, the reduced financial flexibility and increased dependence on foreign investors that would accompany rising debt could weaken the United States' international leadership.

An Increased Chance of a Fiscal Crisis

A rising level of government debt would have another significant negative consequence: Combined with an unfavorable long-term budget outlook, it would increase the probability of a fiscal crisis for the United States.⁵¹ In such a crisis, investors become unwilling to finance all of a government's borrowing needs unless they are compensated with very high interest rates; as a result, the interest rates on government debt 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, inflicting losses on investors who hold them. Such a decline could precipitate a broader financial crisis by causing losses for mutual funds, pension funds, insurance companies, banks, and other holders of federal 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 and when such a fiscal crisis might occur in the United States. In particular, there is no identifiable tipping point of debt relative to GDP that indicates a crisis is likely or imminent. All else being equal, however, the larger the debt, the greater the risk of a fiscal crisis.

Fiscal crises around the world have often begun during recessions and, in turn, have often exacerbated them. In a number of cases, a crisis was triggered by news that a government would, for any number of reasons, need to borrow an unexpectedly large

50. 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; and Carmen M. Reinhart and Vincent R. Reinhart, "After the Fall," in Federal Reserve Bank of Kansas City, *Macroeconomic Challenges: The Decade Ahead* (Kansas City: Federal Reserve Bank, 2011). See also Luc Laeven and Fabian Valencia, *Systemic Banking Crises: A New Database*, Working Paper No. 08-224 (Washington, D.C.: International Monetary Fund, November 2008).

51. See Congressional Budget Office, *Federal Debt and the Risk of a Fiscal Crisis*.

amount of money. Then, as investors lost confidence and interest rates spiked, borrowing became more difficult and expensive for the government. That development forced policymakers to take one or more of the following actions: to immediately and substantially cut spending and increase taxes to reassure investors; to renege on the terms of the country's existing debt; or to increase the supply of money and boost inflation. In some instances, the crisis made borrowing more expensive for private borrowers as well because uncertainty about the government's policy response to the crisis maintained or raised risk premiums throughout the economy.⁵² Higher private interest rates, combined with reductions in government spending and increases in taxes, have tended to worsen economic conditions in the short term.

If a fiscal crisis occurred in the United States, policymakers would have only limited—and unattractive—options for responding to it. In particular, the government would need to undertake some combination of three approaches: restructuring its debt (that is, seeking to modify the contractual terms of its existing obligations); pursuing inflationary monetary policy; and adopting an austerity program of spending cuts and tax increases. Thus, such a crisis would confront policymakers with extremely difficult choices and probably have a very significant negative impact on the country.

Moreover, even if a true fiscal crisis did not occur, the sustained surge in federal debt that is projected under the extended alternative fiscal scenario would probably increase interest rates more quickly and by a larger amount than is reflected in the estimates in this chapter. CBO's estimates of the economic effects of fiscal policy are based on historical relationships between public borrowing and economic outcomes, but the historical experience in the United States does not include persistent large increases in the ratio of debt to GDP; instead, large increases in debt (such as during times of war) have been temporary. If participants in financial markets come to believe that policymakers intend to allow large increases in debt relative to the size of the economy to continue indefinitely, interest rates will probably rise more than historical patterns would suggest. If such a reaction occurred as the extended alternative fiscal scenario unfolded, interest costs and the debt-to-GDP ratio would rise more quickly than in CBO's projections.

52. The risk premium is the additional return (over the risk-free rate) that investors require to hold assets that generate uncertain returns.

Chapter 3: The Long-Term Outlook for Major Federal Health Care Programs

Spending for health care in the United States has been growing faster than the economy for many years, posing a challenge not only for the federal government's two major health insurance programs, Medicare and Medicaid, but also for state and local governments and the private sector. Measured as a percentage of the nation's gross domestic product (GDP), total spending on health care services and supplies increased from 4.7 percent in 1960 to 9.8 percent in 1985 and 16.8 percent in 2010, the most recent calendar year for which data are available. Federal spending for Medicare and Medicaid rose from 2.2 percent of GDP in fiscal year 1985 to 5.6 percent in 2011. Underlying those trends, health care spending per person has grown faster than the nation's economic output per person by an average of 1.6 percentage points per year during the past 25 years (based on a calculation that gives more weight to more-recent years). Key factors contributing to that faster growth have been the emergence and increasing use of new medical technologies, rising personal income, and the expanding scope of health insurance coverage.

Such rates of growth cannot continue indefinitely, because if they did, total spending on health care would eventually account for all of the country's economic output—an impossible outcome. Instead, over time, people will try to limit their spending for health care in order to maintain their consumption of other goods and services. Private insurers and employers will adjust the insurance coverage they offer, the benefits they provide, and the amounts and nature of their payments to health care providers. In addition, state governments—which pay a large share of Medicaid's costs and have considerable influence on those costs—will need to reduce spending growth in order to balance their budgets. Those reactions to cost pressures will increase the incentives for health care providers to invest in cost-reducing technologies and to increase efficiency. Thus, even in the absence of changes in federal law, growth in spending on Medicaid and on health care financed through the private sector will gradually slow. The rate of growth of spending on Medicare is also likely to slow without changes in federal law, but to a lesser extent, reflecting changes in medical practices common to all patients; regulatory changes allowed under the law; and the increasing pressure of premiums and cost-sharing amounts, such as copayments and deductibles, on enrollees' finances.

Even assuming that such changes occur, the Congressional Budget Office (CBO) anticipates that federal spending on the government's major health care programs will continue to rise relative to GDP. CBO has projected spending for those health care programs—Medicare, Medicaid, the Children's Health Insurance Program (CHIP), and the insurance subsidies that will be provided through the health insurance exchanges

that will be established starting in 2014—under two scenarios.⁵³ Under the *extended baseline scenario*, which generally reflects current law, federal spending for those programs would grow from an estimated 5.4 percent of GDP in 2012 to 9.6 percent of GDP in 2037; in that year, 6.0 percent of GDP would be devoted to Medicare, and 3.6 percent would be spent on Medicaid, CHIP, and the exchange subsidies. For the *extended alternative fiscal scenario*, CBO assumes that several policies designed to restrain federal spending on health care will not be continued. As a result, under that scenario, mandatory federal spending on health care programs would grow faster, reaching 10.4 percent of GDP by 2037. Medicare spending would grow to 6.7 percent of GDP, while federal spending on Medicaid, CHIP, and the exchange subsidies would reach 3.7 percent of GDP—both higher than under the baseline scenario. Beyond 2037, under both scenarios, federal health care spending would continue to climb relative to GDP.

Quantifying the extent to which the rate of growth of health care spending will decline under current law is difficult. The growth of such spending relative to the growth of the economy has varied greatly from year to year during the past several decades, so projections of the difference in growth rates during the next few decades are very uncertain. As the projection period lengthens, the uncertainties mount because the likelihood of significant changes in medical practices and technology increases.

The enactment in March 2010 of the Affordable Care Act (ACA, which comprises the Patient Protection and Affordable Care Act [Public Law 111-148] and the health care provisions of the Health Care and Education Reconciliation Act of 2010 [P.L. 111-152]) has significant implications for federal spending on health care. The projections reported here are consistent with CBO's previous estimates of the effects of that legislation (except as modified to reflect the different policies assumed under the alternative fiscal scenario).⁵⁴ Looking beyond two decades, projecting the impact of the legislation on federal health care spending is very difficult because the uncertainties involved are so great. Consequently, CBO's approach in formulating the longer-term projections in this report has been to incorporate the projected effects of the ACA on the *level* of federal spending for health care over one or two decades (depending on the scenario) and to extrapolate such spending beyond those periods using the same *growth rates* that would have been applied in the absence of the legislation. The use of that

53. 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 5 and Table 1-2). 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 insurance subsidies that is analyzed in this chapter includes outlays for cost-sharing subsidies and for the refundable portion of premium subsidies; 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 6.

mechanical approach, which was also used in CBO's 2010 and 2011 long-term budget projections, reflects CBO's judgment that the agency does not currently have an analytic basis for projecting the effects of the ACA on the growth rate of federal health care spending over the very long term.⁵⁵

Overview of Major Government Health Care Programs

Today, a combination of private and public sources finances health care in the United States. CBO estimates that about 50 million people are covered by Medicare and about 55 million are covered by Medicaid, the two main sources of public financing.⁵⁶ Medicare provides nearly universal coverage for the elderly and also covers several million nonelderly people; Medicaid covers a variety of low-income people, including some who are elderly and some who are not. The majority of Americans under the age of 65, however, have private health insurance. CBO estimates that about 155 million nonelderly people currently have an employment-based health plan as their primary source of coverage, and about 11 million people have primary coverage purchased directly from an insurer. At any given time during this year, CBO projects, about 53 million people will be uninsured.⁵⁷

In 2010, the most recent calendar year for which data are available, total spending for health care in the United States amounted to about \$2.4 trillion, or 16.8 percent of the nation's GDP.⁵⁸ In that year, 51 percent of spending was financed privately; the rest of the spending came from public sources (see **Figure 3-1**):

- 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 deductibles and copayments for services covered by insurance, as well as pay-

54. CBO and the staff of the Joint Committee on Taxation recently updated their estimates of the effects of the health insurance coverage provisions of the ACA; see Congressional Budget Office, *Updated Estimates for the Insurance Coverage Provisions of the Affordable Care Act* (March 2012). Those estimates did not incorporate all of the budgetary effects of the ACA. For some provisions of that legislation (those unrelated to insurance coverage, which mostly involve ongoing programs or revenue streams), CBO does not separate out the effects of the legislation in its budget projections; consequently, for those provisions, isolating the effects attributable to the ACA would be very difficult. See the statement of Douglas W. Elmendorf, Director, Congressional Budget Office, before the Subcommittee on Health, House Committee on Energy and Commerce, *CBO's Analysis of the Major Health Care Legislation Enacted in March 2010* (March 30, 2011).

55. For further discussion of the challenges of projecting the long-term effects of legislation on federal health care spending, see Congressional Budget Office, *letter to the Honorable Max Baucus about different measures for analyzing current proposals to reform health care* (October 30, 2009).

56. Some people have coverage from more than one source at a time. Currently, about 8.4 million people with Medicaid coverage are also covered by Medicare, which is their primary source of coverage. All of the estimates here reflect average monthly enrollment during the year.

57. See Congressional Budget Office, *Updated Estimates for the Insurance Coverage Provisions of the Affordable Care Act*, Table 3.

ments for services not covered by insurance, accounted for another 12 percent of those expenditures.⁵⁹ Other sources of private funds, such as philanthropy, accounted for 4 percent of total health care spending.

- Federal spending for Medicare made up 21 percent of total expenditures on health care in 2010, and federal and state spending for Medicaid and CHIP accounted for 17 percent. Another 11 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, as well as by workers' compensation programs.

Medicare

In 2012, Medicare will provide federal health insurance for 50 million people who are elderly or disabled (the elderly make up about 85 percent of enrollees) or who have end-stage renal disease or amyotrophic lateral sclerosis (also known as Lou Gehrig's disease). People become eligible for Medicare on the basis of age when they reach 65; disabled individuals generally become eligible for the program 24 months after they qualify for benefits under Social Security's Disability Insurance program.

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 skilled nursing, 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's benefits through a private health insurance plan under Part C of Medicare. In 2011, gross spending for Medicare was \$560 billion. Spending for Medicare net of offsetting receipts (mostly premiums paid by beneficiaries) was \$480 billion that year.

The various parts of the program are financed in different ways. Part A benefits are financed primarily by a payroll tax (currently 2.9 percent of taxable earnings), the revenues from which are credited to the HI trust fund. Beginning in 2013, an additional 0.9 percent tax on wages over \$200,000 (\$250,000 for married couples) will also

58. This report defines "total health care spending" as health consumption expenditures in the national health expenditure accounts maintained by the Centers for Medicare and Medicaid Services. That concept excludes spending on medical research, structures, and equipment. Under a broader definition that includes those categories, total national health expenditures in 2010 were 17.9 percent of GDP. For more information, see Anne B. Martin and others, "Growth in U.S. Health Spending Remained Slow in 2010; Health Share of Gross Domestic Product Was Unchanged From 2009," *Health Affairs*, vol. 31, no. 1 (January 2012), pp. 208–219.

59. 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).

be credited to the HI trust fund.⁶⁰ For Part B, premiums paid by beneficiaries cover just over one-quarter of outlays, and the government's general funds cover the rest. 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 2011, 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 of the program's spending, and appropriations of general funds to the trust funds amounted to about 41 percent of the program's spending.⁶¹ The trust funds also receive money from other sources, including a portion of the federal income taxes that people pay on their Social Security benefits.

Cost-sharing requirements in Medicare vary widely, 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 who receive care in the fee-for-service portion of Medicare have supplemental insurance that covers many or all of the program's cost-sharing requirements. According to one recent study, the most common sources of supplemental coverage in 2007 were plans for retirees offered by former employers (held by 40 percent of beneficiaries in the fee-for-service part of Medicare), individually

60. Those thresholds will not be indexed for inflation. Also, beginning in 2013, certain individuals will be subject to a 3.8 percent Medicare tax on unearned income, but those revenues will not be credited to the HI trust fund.

61. Calculations based on data from Boards of Trustees, Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds, *2012 Annual Report of the Boards of Trustees of the Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds* (April 2012), Table II.B1. 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 plans.

The 41 percent figure represents the amounts appropriated and transferred from the general fund of the Treasury to the Medicare trust funds in 2011. A different calculation is used to determine whether the so-called 45 percent trigger requires the Medicare trustees to issue a Medicare funding warning under section 801 of the Medicare Modernization Act (P.L. 108-173). The calculation used to determine whether the trigger applies defines the general fund amount as the difference between total Medicare spending and receipts from dedicated financing sources (Medicare payroll taxes, the Medicare share of taxes on certain Social Security benefits, Part D payments by states, beneficiaries' premiums paid from nonfederal sources, and gifts). For that calculation, the amount from the general fund includes both the federal share of Medicare premiums paid by Medicaid and the primary surpluses or deficits of the trust funds—that is, the changes in the trust funds' balances excluding interest credited to the funds. (Thus, primary deficits—which would generate declines in the funds' balances, not counting interest—increase the general fund amount in that calculation.) Based on the calculation used for the Medicare funding warning, general funds accounted for 50 percent of Medicare spending in fiscal year 2011 (see Congressional Budget Office, *Medicare—March 2012 Baseline*, “Comparison of Medicare Spending and Dedicated Funding” [March 13, 2012], p. 4, www.cbo.gov/sites/default/files/cbofiles/attachments/43060_Medicare.pdf).

purchased medigap policies (32 percent of beneficiaries), and Medicaid (16 percent).⁶²

A number of provisions of law are set to 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. Under current law, those payment rates will be reduced by 27 percent in January 2013 and by additional amounts in subsequent years, CBO projects. (In recent years, legislation has been enacted to block similar reductions that were scheduled to occur.)
- The ACA contains numerous provisions that, on balance, will reduce federal spending on Medicare. The provisions with the greatest effect on the projected 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 prior law, those payment updates generally would have been equal to the estimated percentage change in the average cost of providers' inputs (such as labor and equipment). Under current law, however, those updates will equal those percentage changes in costs 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 much more output is being produced from a given level of inputs. (Under certain circumstances, the law also specifies additional reductions in the payment updates.)⁶³
- The ACA also established an Independent Payment Advisory Board (IPAB), which will be 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—would be required to 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. That proposal would go into effect automatically unless blocked or replaced by subsequent legislation. 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. According to CBO's projections, under current law, growth in Medicare spending will remain

62. Estimates are based on information in Medicare Payment Advisory Commission, *A Data Book: Healthcare Spending and the Medicare Program* (June 2011), p. 53.

63. Payment updates have frequently been set to be lower than the estimated increases in providers' costs, but those adjustments have generally not been permanent, applying for only one year or a few years.

below the IPAB's target growth rate during the next decade. However, the IPAB mechanism is expected to generate savings in some subsequent years because variation in Medicare's spending growth will cause it to exceed, in some years, the IPAB's target of 1 percentage point more than the rate of growth in per capita GDP.⁶⁴

- The Budget Control Act of 2011 (P.L. 112-25) specifies automatic procedures—sequestration, or the cancellation of funding—that will reduce most Medicare payments to providers for services furnished from February 2013 to January 2022. As a result of that law, according to CBO's estimates, nearly 90 percent of Medicare's spending will be subject to a 2 percent reduction, about 10 percent of Medicare's spending will be exempt from any reductions, and about 1 percent will be subject to the percentage reduction that applies to other nondefense spending that is subject to sequestration. All told, CBO projects that the sequestration will decrease gross Medicare spending by about \$100 billion between fiscal years 2013 and 2022 and will reduce net Medicare spending (with the effects on receipts from premiums taken into account) by about \$88 billion over that period.⁶⁵

Medicaid, CHIP, and Subsidies to Purchase Health Insurance Through Exchanges

Medicaid is a joint federal/state program that pays for health care services for a variety of low-income individuals. As a result of the ACA, most nonelderly people with income below 138 percent of the federal poverty level (FPL) will become eligible for Medicaid starting in 2014.⁶⁶ The people who will be newly eligible for Medicaid under that legislation consist primarily of nonelderly adults with low income who are not parents of dependent children. Most children and pregnant women in low-income families qualified for Medicare and CHIP under prior law. Some parents of those children also qualified for Medicaid, although the income thresholds vary by state.

The federal government's share of Medicaid's spending for benefits varies among the states. That share historically has averaged about 57 percent, but legislation temporarily boosted it in response to the economic downturn; in 2011, the federal share averaged about 64 percent. Beginning in 2014, the federal government will pay all of the costs of covering enrollees newly eligible under the program's expansion.

64. The IPAB mechanism can either result in savings or have no budgetary effect; it cannot increase spending. Taking into account the probabilities of those two potential outcomes, CBO estimates that eliminating the IPAB mechanism would be expected to increase spending by about \$3 billion between fiscal years 2012 and 2022. See Congressional Budget Office, *cost estimate for H.R. 452, the Medicare Decisions Accountability Act of 2011* (March 7, 2012).

65. The annual effects of the sequestration on Medicare spending are described in Congressional Budget Office, *Medicare—March 2012 Baseline* (March 13, 2012), www.cbo.gov/sites/default/files/cbofiles/attachments/43060_Medicare.pdf.

66. The ACA expanded eligibility for Medicaid to include nonelderly residents with income up to 133 percent of the federal poverty level. 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 \$23,050 for a family of four.

From 2017 to 2020, the federal share of that spending will decline gradually to 90 percent, where it will remain thereafter. According to CBO's estimates, those changes will result in a federal share of Medicaid spending that averages 61 percent by 2020.

In fiscal year 2011, federal spending for Medicaid was \$275 billion, of which \$251 billion covered benefits for enrollees. (In addition to benefits, Medicaid's spending included payments to hospitals that treat a "disproportionate share" of low-income patients, costs for the Vaccines for Children program, and administrative expenses.) According to the Centers for Medicare and Medicaid Services (CMS), states spent \$132 billion on Medicaid in calendar year 2010, the most recent year for which data are available.

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 individuals. Required services include inpatient and outpatient hospital services, services provided by physicians and laboratories, and nursing home and home health care. To be eligible for Medicaid, a person must have a low income and generally only a few assets—although the financial limits vary depending on the basis for an enrollee's eligibility. Groups that must be eligible include low-income children and families who would have qualified for the former Aid to Families with Dependent Children program, certain other low-income children and pregnant women, and most elderly and disabled individuals who qualify for the Supplemental Security Income program.

Subject to those requirements and other statutory limits, states have flexibility in administering the Medicaid program and determining its scope. Partly 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. States may choose to make additional groups of people eligible (such as individuals with income above the standard eligibility limits and those who 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. 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 2007.⁶⁷

About 68 million people will be enrolled in Medicaid at some point during 2012, CBO estimates; the average enrollment over the course of the year will be about 55 million. Those two ways of measuring enrollment yield divergent estimates because many people are eligible for Medicaid for only part of the year.

67. See Kaiser Commission on Medicaid and the Uninsured, *Medicaid Enrollment and Expenditures by Federal Core Requirements and State Options* (Washington, D.C.: Henry J. Kaiser Family Foundation, January 2012), p. 1.

Currently, about half of Medicaid's enrollees are children in low-income families, and another one-quarter are either the parents of those children or low-income pregnant women. The elderly and disabled constitute the remaining one-quarter of enrollees. Expenses tend to be higher for beneficiaries who are elderly and disabled, many of whom require long-term care, than for other beneficiaries. About 30 percent of federal Medicaid spending is for long-term care, which includes nursing home services, home health care, and certain other medical and social services for people with long-term health needs. Medicaid accounts for 47 percent of total spending on long-term care services and 39 percent of total spending on nursing home care in the United States.⁶⁸ Overall, the elderly and disabled account for about two-thirds of the program's spending.⁶⁹

CHIP is a joint federal/state program that provides health insurance coverage for uninsured children living in families with income that is fairly low but too high for them to qualify for Medicaid.⁷⁰ 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. In 2011, federal spending on CHIP was \$8.6 billion, and about 8 million people (mostly children) were enrolled in the program at some point during the year. The federal share of CHIP spending varies among the states but usually averages 70 percent.

Under the ACA, in 2014 certain people with income up to 400 percent of the FPL will be eligible for federal subsidies, provided through newly established health insurance exchanges, to reduce their cost of obtaining private health insurance. Subsidies will limit the percentage of income that eligible people have to pay to purchase a plan with a relatively low price providing a specified level of benefits; people choosing more expensive plans will have to pay additional amounts. In 2014, the percentages of income will range from 2 percent for the lowest-income households to 9.5 percent for households with income between 300 percent and 400 percent of the FPL. Those percentages will be indexed in future years. Initially, the percentages of income that enrollees must pay will be indexed so that the subsidies cover roughly the same share of the total premiums over time. After 2018, however, an additional indexing factor will probably apply; if so, the shares of income that enrollees have to pay will increase

68. CBO's calculations are based on published and unpublished data in the national health expenditure accounts provided by the Office of the Actuary, Centers for Medicare and Medicaid Services.

69. As the ACA is implemented, some of those proportions are expected to shift; for instance, by 2020, CBO estimates, the elderly and disabled will account for about one-fifth of the people enrolled in the program and just over half of the program's spending.

70. Under certain conditions, parents of children enrolled in CHIP are also eligible for the program, but they constitute a very small percentage of the program's enrollment.

more rapidly than in the preceding years, and the shares of the premiums that the subsidies cover will decline.⁷¹

People with income below 250 percent of the FPL will also be eligible to receive subsidies to reduce their cost-sharing requirements. People will not be eligible to receive subsidies through the exchanges if they already qualify for public coverage—including Medicaid—or if they are offered coverage through their employment, unless they would have to pay more than a specified share of their income for such coverage or if the benefits covered fall below a certain threshold.

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 period from 1993 to 2000, when spending for health care remained relatively stable as a share of the economy. Many analysts have attributed that lull in growth 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. In 2009 and 2010, health care spending was also stable as a share of GDP, largely as a result of the recession.

Spending for Medicare and Medicaid has also grown quickly in recent decades, in part because of rising enrollment and in part because of rising costs per enrollee. Between 1985 and 2011, gross federal spending for Medicare rose from 1.7 percent of GDP to 3.7 percent, and federal spending for Medicaid increased from 0.5 percent of GDP to 1.8 percent. Over that same period, total spending for Medicaid (including spending by the states) increased from 1.0 percent of GDP to 2.9 percent. From 2009 to 2011, however, federal spending for Medicare and Medicaid combined grew at a rate similar to that for the economy overall; federal spending for Medicaid grew more quickly than total spending for the program in those years because the federal government increased its share of spending in response to the economic downturn.

Underlying Factors

A crucial factor underlying the rise in per capita spending for health care in recent decades has been the emergence, adoption, and widespread diffusion of new medical technologies and services.⁷² Major advances in medical science allow providers to diagnose and treat illnesses in ways that previously were impossible. Many of those

71. The additional indexing factor will apply in any year (after 2018) in which the total costs of exchange subsidies exceed a specified percentage of GDP. CBO's baseline projections account for uncertainty about whether the additional indexing factor will apply, but CBO expects that eventually it will. See Congressional Budget Office, "Additional Information About CBO's Baseline Projections of Federal Subsidies for Health Insurance Provided Through Exchanges" (May 12, 2011).

innovations rely on costly new drugs, equipment, and skills. 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 medicine such advances and the resulting changes in clinical practice have generally increased total spending. At the same time, such technological advances, taken together, have enhanced the quality of health care, reduced the incidence of diseases, and extended life spans.

Other factors that have contributed to the growth of per capita spending on health care include increases in personal income and the expanded scope of health insurance coverage. Demand for medical care tends to rise as real (inflation-adjusted) family income increases. Moreover, the expanding scope of insurance coverage in recent decades, as evidenced by the substantial reduction in the percentage of health care costs that people pay out of pocket, has also increased demand, because insurance reduces the cost of receiving additional medical care. Spending on health care would also be expected to grow if people were developing more health problems or were becoming more likely to contract diseases, but the evidence is mixed on whether those factors have substantially increased the use of health care in the past few decades.⁷³

Disentangling the effects of technology, income, and insurance on the growth of health care spending is difficult because the growth of income and insurance coverage has increased the demand for new technologies. A recent study estimated that new medical technologies and rising income were the most important factors explaining the growth in health care spending since 1960, with the two accounting for similar shares of that growth.⁷⁴ But the study also noted that the effect of the expansion in insurance coverage on spending growth is highly uncertain. Another recent study concluded that the expansion of insurance coverage resulting from the introduction of Medicare had a substantial impact on national health care spending—raising spending not just for the elderly patients who gained coverage but for nonelderly patients as well. It attributed part of the impact to more rapid and widespread adoption of existing treatment

72. See Congressional Budget Office, *Technological Change and the Growth of Health Care Spending* (January 2008).

73. For additional discussion, see Congressional Budget Office, *Key Issues in Analyzing Major Health Insurance Proposals* (December 2008), p. 23. See also Congressional Budget Office, *How Does Obesity in Adults Affect Spending on Health Care?* Issue Brief (September 2010).

74. 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.

methods (such as those provided by cardiac intensive care units) but concluded that questions remained about the magnitude of those effects.⁷⁵

Studies that have analyzed the sources of growth in per capita health care spending in the past have consistently found that the aging of the population has had only a small effect. 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 1985 to 2012, the share of the population that was age 65 or older grew by about one-seventh, from almost 12 percent to more than 13 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 increase 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.⁷⁶ The remaining difference in 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 changes in the age composition of the population) exceeds the growth in potential output per capita.

75. 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. 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.

76. Potential GDP is the level of GDP that corresponds to a high rate of use of labor and capital. In the past, CBO measured excess cost growth using GDP per capita (rather than potential GDP per capita). However, GDP growth can vary substantially from year to year, so that approach can provide a misleading picture of the dynamics of health care spending—especially during a severe economic downturn like the most recent one. Accordingly, CBO has concluded that the smoother path of growth in estimated potential output provides a more useful benchmark for growth in health care costs.

According to CBO's calculations, rates of excess cost growth have ranged between 0.3 and 2.1 percentage points for various parts of the health care system and during various periods in the past several decades (see [Table 3-1](#)).⁷⁷ Excess cost growth was lower, on average, during the 1985–2010 period than during the longer 1975–2010 period. That slowing probably stems, at least in part, from two important shifts: First, private health insurance moved away from indemnity policies—which generally reimburse enrollees for their incurred medical costs and which predominated before the 1990s—and toward greater management of care. Second, Medicare shifted from cost-based payments to fee schedules that constrain price increases. Excess cost growth was even lower, on average, during the shorter 1990–2010 period, but that average gives substantial weight to the years in the 1990s when managed care was spreading most rapidly; some of that difference probably represented a one-time downward shift in health care costs rather than a change in the underlying growth rate.

In CBO's judgment, the rate of excess cost growth in overall health care spending since 1985 best reflects features of the health care and health insurance systems that are likely to endure for a number of years. It seems likely, though, that the later years within that period provide a more useful guide to the future than the earlier years in that period. Therefore, CBO calculated a weighted average of the annual growth rates between 1985 and 2010 (the latest year for which data are available), placing twice as much weight on the latest year as the earliest year.⁷⁸ The resulting growth rate—1.6 percentage points per year—serves as an anchor for CBO's long-term projections of health care costs.

CBO's Methodology for Long-Term Projections

CBO projected federal spending on major health care programs under two scenarios: an extended baseline scenario, which is intended to generally reflect the provisions of current law, and an extended alternative fiscal scenario, which 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 over a long period will be modified.

The projections through 2022 reflect detailed analysis of the programs involved. During that period, the projections for the extended baseline scenario match CBO's

77. For Medicare, CBO also adjusts for changes in the projected life expectancy (time until death) of beneficiaries. For Medicaid, CBO adjusts for changes in the program's case mix—that is, the proportions of beneficiaries who are children, disabled people, elderly people, and other adults—rather than for changes in age composition. The introduction of Medicare's Part D drug benefit in 2006 resulted in a one-time 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.

78. The weights increased linearly over time. CBO used a regression approach that allowed for the annual values to be weighted, rather than using a geometric average, as it has in past years.

March 2012 baseline projections, and the projections for the extended alternative fiscal scenario match CBO's March 2012 projections for the alternative fiscal scenario. Projecting federal health care spending over the longer term is more 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 followed a relatively formulaic approach for the projections beyond 2022. For both scenarios, the longer-term projections are based primarily on the projections of eligible populations and economic conditions described elsewhere in this report and on projections of excess cost growth in health care (along with certain additional adjustments described below).

Excess Cost Growth in the Long Term

CBO expects that the rate of excess cost growth in health care will decrease over time 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. Thus, 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.

The private sector will probably respond to rising costs for health care by pursuing various changes. Employers can intensify their efforts to reduce the costs of the insurance plans they sponsor—for example, by working with insurers to make the delivery of health care more efficient or by limiting the amount of insurance coverage they offer. To avoid higher premiums, employees can shift to plans with more tightly managed benefits or higher cost-sharing requirements. Some such changes are already under way; for instance, the percentage of workers with employer-sponsored insurance who are enrolled in high-deductible health plans jumped from 4 percent in 2006 to 17 percent in 2011.⁷⁹ The excise tax on certain health insurance plans with high premiums, which was enacted in the Affordable Care Act and will come into effect in 2018, will also encourage individuals and employers to choose plans with lower premiums.

State governments will probably respond to growing costs for Medicaid and CHIP by limiting the services they choose to cover or by tightening eligibility to reduce the number of beneficiaries. 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.

79. Kaiser Family Foundation and Health Research and Educational Trust, *Employer Health Benefits* (2011), p. 61.

Many features of the Medicare program cannot be altered without changes in federal law. Still, a slowdown in spending growth outside of Medicare will affect Medicare, which 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 individuals, businesses, 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 for providers and beneficiaries to reduce spending growth in Medicare, and it allows certain types of flexibility for CMS in managing the program. 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 beneficiaries’ income. From the providers’ perspective, with updates to Medicare’s payment rates generally scheduled to be smaller than the increases in the costs of providers’ inputs, the pressure to adopt cost-reducing procedures and technologies will be significant; other changes being made in the structure of payments to providers may also help to hold down spending. For example, in response to a decision by CMS to no longer pay hospitals for the additional costs incurred because of certain infections acquired during patients’ stays, some hospitals have begun adopting new medical techniques and devices in an effort to reduce such infections.⁸⁰ As another example, many hospitals and office-based physicians have, in recent years, adopted electronic health record systems in order to manage care more efficiently.⁸¹ Further, the Center for Medicare and Medicaid Innovation (CMI), like many state Medicaid agencies and private insurance companies and providers, is undertaking efforts to achieve cost savings by encouraging the coordination of care for high-risk patients in medical homes and accountable care organizations.⁸² Looking beyond the changes in payment systems and health care delivery that are now under way, CMS has broad authority under current law to make regulatory changes aimed at expanding demonstration projects that successfully slow the growth of spending for Medicare (and

80. See 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* (December 5, 2011).

81. See Ashish K. Jha and others, “Progress Toward Meaningful Use: Hospitals’ Adoption of Electronic Health Records,” *American Journal of Managed Care*, vol. 17, no. 12 (December 2011), pp. SP117–SP124. See also Chun-Ju Hsiao and others, *Electronic Health Record Systems and Intent to Apply for Meaningful Use Incentives Among Office-Based Physician Practices: United States, 2007–2011*, NCHS Data Brief No. 79 (Atlanta: Centers for Disease Control and Prevention, National Center for Health Statistics, November 2011).

82. Sections 3021 to 3027 of the Patient Protection and Affordable Care Act authorized the creation of the CMI. A list of ongoing CMI projects is available at www.innovations.cms.gov/initiatives/index.html. Although definitions vary, a medical home is generally viewed as a physician practice that serves as a central resource for a patient’s ongoing medical care. An accountable care organization is a group of physicians and other providers that is held accountable for the cost and quality of care delivered to patients.

Medicaid).⁸³ How effective the various incentives and administrative flexibility will ultimately prove to be at reducing spending growth in Medicare, though, is unclear.

A sizable slowdown in excess cost growth in the health care system, which CBO projects will occur over the long term even in the absence of changes in federal law, probably can be achieved only through significant changes in the nature of health care, access to care, the amount that people pay directly for care, or all of those characteristics. In the private sector, people will probably face increased cost-sharing requirements; new and potentially useful health technologies will probably be introduced more slowly or be used less frequently than they would without the pressures of rising costs; and more treatments and interventions may simply not be covered by insurance. In the public sector, people who would otherwise receive health insurance through Medicaid might become ineligible because of tightened eligibility rules or might be eligible but find that the scope of covered services has been reduced.

Projected Slowdown in Excess Cost Growth. 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. Consequently, CBO projects that excess cost growth will slow more in Medicaid spending and in private health insurance premiums than it will in Medicare spending. It may be difficult to envision how excess cost growth in Medicare's spending could outstrip excess cost growth in spending for Medicaid and private insurance premiums over such a long period, but such an outcome can occur. For instance, actions taken to reduce spending growth in the private sector could weaken the incentives to develop and disseminate new medical procedures and technologies for nonelderly people but have less of an effect on new procedures and technologies focused on diseases that principally affect the elderly.

The starting point for all of the paths of excess cost growth in CBO's long-term projections is the weighted average rate (calculated in the manner discussed above) of excess cost growth observed in the overall health care system between 1985 and 2010. For its projections, CBO then assumed the following:

- The rate of excess cost growth will decline to zero in 2087 (the final year of the current 75-year projection period) for both Medicaid and private insurance premiums and to 1.0 percentage point for Medicare.
- The underlying rate of excess cost growth in each sector will decline linearly—that is, by the same fractional number of percentage points—each year between 2011 and 2087. That linear decline reflects a judgment that, over time, the steps needed to

83. For a review of the effects on Medicare costs of previous demonstration projects, see Congressional Budget Office, *Lessons from Medicare's Demonstration Projects on Disease Management, Care Coordination, and Value-Based Payment*, Issue Brief (January 2012).

keep reducing growth rates will become increasingly onerous, but the pressure to take them will also intensify because of continued increases in health care spending.

- The projected rate of excess cost growth will equal the underlying rate beginning in 2023 under the extended alternative fiscal scenario and beginning in 2030 under the extended baseline scenario. Before those years, CBO's projected rates of excess cost growth incorporate certain adjustments that are described below.

The Extended Baseline Scenario

For 2013 through 2022, CBO's projections of spending for Medicare, Medicaid, CHIP, and exchange subsidies under the extended baseline scenario match those in its March 2012 baseline budget projections. For those 10 years, CBO's baseline projections imply an average annual rate of excess cost growth for Medicare of about zero; that is, spending per beneficiary for Medicare is projected to grow roughly in line with potential GDP per capita.⁸⁴ The implied annual rate of excess cost growth for federal Medicaid spending over that same period is 1.9 percentage points.⁸⁵

To project spending under the extended baseline scenario beyond the initial 10-year span, CBO transitioned from the growth rates for that decade to the underlying rates of excess cost growth described above in the following way:

- For Medicare, for the years from 2023 through 2029, CBO used a rate of excess cost growth of 0.6 percentage points—equal to the average rate for 2020 through 2022 with certain adjustments.⁸⁶ That figure reflects the projected effects of the ACA as well as other provisions of current law. After 2029, several policies that will restrain spending growth are assumed not to be in effect. As a result, for 2030 and beyond, CBO used the underlying rates of excess cost growth for Medicare

84. In last year's edition of this report, excess cost growth was calculated relative to GDP per capita, not potential GDP per capita; because CBO projects that actual GDP will increase more than potential GDP during the coming decade (as the economy recovers from the severe recession), reflecting excess cost growth relative to actual GDP would result in a rate that is 0.5 percentage points lower than excess cost growth projected relative to potential GDP, all else being equal.

85. The expansion of Medicaid benefits to people with income up to 138 percent of the federal poverty level will increase total Medicaid spending but not per beneficiary Medicaid spending and thus will not have a significant impact on excess cost growth. The changing federal share of Medicaid spending would affect federal Medicaid spending per beneficiary, but CBO adjusted for that difference.

86. Three adjustments were made in the calculation of excess cost growth for Medicare in those years: First, spending levels 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. Second, the effect of the sequestration under the Budget Control Act was removed because the sequestration will not affect spending after 2022. Third, the reductions in updates to payments for most providers specified in the Affordable Care Act were calculated on the basis of their projected long-run average of 1.2 percentage points, rather than the projected annual values in those years, which depend on a 10-year moving average and are affected by economic fluctuations.

described above.⁸⁷ Altogether, CBO projects that excess cost growth for Medicare will average 1.2 percentage points per year during the 2023–2087 period. CBO projects the number of Medicare beneficiaries to grow with the size of the population over age 65 and with the number of Social Security Disability Insurance recipients.⁸⁸

- For Medicaid, CBO estimated spending beyond the initial 10-year span by using the underlying rates of excess cost growth for Medicaid described above.⁸⁹ The agency projects that excess cost growth for the program will average 0.7 percentage points per year during the 2023–2087 period. The agency projects the number of Medicaid beneficiaries to grow with the size of the population adjusted for changes in the age distribution.
- For federal subsidies of health insurance premiums in the exchanges from 2023 through 2029, CBO used a growth rate consistent with its estimates for the latter part of the initial 10-year projection period. For 2030 and beyond, CBO used the underlying rates of excess cost growth for private insurance premiums described above.⁹⁰ The agency projected the number of people receiving different amounts of subsidies on the basis of two key factors: A smaller percentage of people will be eligible for subsidies over time because incomes are projected to increase more quickly than the eligibility thresholds, and federal subsidies will cover a declining share of the premiums over time because of the additional indexing factor described above.
- Spending on CHIP is currently subject to a statutory cap.⁹¹ CBO projected that spending on the program would be constant as a share of GDP after 2022.

The Extended Alternative Fiscal Scenario

For 2013 through 2022, CBO's projections of spending for Medicare, Medicaid, CHIP, and exchange subsidies under the extended alternative fiscal scenario match those in

87. By 2030, the underlying rate of excess cost growth for Medicare will have declined from 1.6 percentage points (the figure for 2011) to less than 1.5 percentage points; by 2087, it will have declined to 1.0 percentage point.

88. See Congressional Budget Office, *CBO's Long-Term Model: An Overview*, Background Paper (June 2009) for more information about how CBO projects the number of beneficiaries for Social Security Disability Insurance.

89. By 2023, the underlying rate of excess cost growth for Medicaid will have declined from 1.6 percentage points (the figure for 2011) to 1.3 percentage points; by 2087, it will have declined to zero.

90. By 2030, the underlying rate of excess cost growth for private health insurance premiums will have declined from 1.6 percentage points (the figure for 2011) to 1.2 percentage points; by 2087, it will have declined to zero.

91. Title XXI of the Social Security Act authorizes CHIP through September 2015. Consistent with statutory guidelines, CBO assumes in its baseline spending projections that funding for the program from 2016 through 2022 will continue at \$5.7 billion.

the alternative fiscal scenario that the agency published in March 2012.⁹² Those projections reflect the assumption that Medicare's payment rates for physicians' services will be held constant at their current level throughout the decade rather than dropping by 27 percent at the end of this year and more thereafter, as scheduled under current law. Under this scenario, excess cost growth for Medicare spending averages 0.6 percentage points per year during the 2013–2022 period. For that decade, the policies for Medicaid, CHIP, and exchange subsidies are assumed to be the same in the alternative fiscal scenario as in the baseline.

To project spending under the extended alternative fiscal scenario beyond the initial 10-year span, CBO transitioned from the growth rates for that decade to the underlying rates of excess cost growth previously described in the following way:

- For Medicare, CBO assumed that three policies that would restrain cost growth might be difficult to sustain over a long period—ongoing reductions in payment updates for most providers in the fee-for-service program, the sustainable growth rate mechanism for payment rates for physicians, and the IPAB—would not continue. Without those policies in place, CBO used the underlying rates of excess cost growth for Medicare described above for 2023 and beyond. As a result, CBO projects that excess cost growth for Medicare would average 1.3 percentage points per year between 2023 and 2087. Projections of the number of Medicare beneficiaries are the same as those under the extended baseline scenario.
- For Medicaid and CHIP, there are no assumed policy differences between the extended alternative fiscal scenario and the extended baseline scenario and thus no differences in projected spending.
- For federal subsidies of health insurance premiums in the exchanges, CBO applied the same rates of excess cost growth used for the extended baseline scenario. However, CBO assumed that two policies that affect the number of people receiving different amounts of subsidies and that might be difficult to sustain over a long period would be altered in the extended alternative fiscal scenario. First, CBO assumed that the eligibility thresholds would be modified after 2022 such that the shares of the population with incomes corresponding to the various ranges of subsidies remained constant. Second, CBO assumed that the additional indexing factor described above would have no effect after 2022, so federal subsidies would cover a constant share of the premiums per enrollee over time. Consequently, the projections for the extended alternative fiscal scenario imply that, over time, more people would be eligible for exchange subsidies, and the subsidies would cover a higher share of the premiums than would be the case under the extended baseline scenario.

92. See Congressional Budget Office, *Updated Budget Projections: Fiscal Years 2012 to 2022* (March 2012).

Long-Term Projections of Spending for Major Health Care Programs

Federal spending on major health care programs is projected to increase significantly as a share of the economy in the coming decades under both the extended baseline scenario and the extended alternative fiscal scenario.

Projected Spending

In 2012, federal spending on Medicare, Medicaid, and CHIP will amount to 5.4 percent of GDP, CBO expects, with Medicare spending equal to 3.7 percent of GDP and federal spending on Medicaid and CHIP equal to 1.7 percent of GDP. Under the extended baseline scenario, federal spending for those programs and for the exchange subsidies would rise to 9.6 percent of GDP in 2037; 6.0 percent would be for Medicare, and 3.6 percent would be for Medicaid, CHIP, and the exchange subsidies (see [Figure 3-2](#)).⁹³ Medicare spending net of offsetting receipts related to the program (mostly premiums) is projected to increase from 3.1 percent of GDP in 2012 to 5.0 percent in 2037.

Under the extended alternative fiscal scenario, federal spending on the major health care programs would be higher because CBO assumed that several policies designed to limit that spending would not continue. Gross Medicare spending would reach 6.7 percent of GDP by 2037 (with net Medicare spending amounting to 5.5 percent of GDP), and federal spending on Medicaid, CHIP, and the exchange subsidies would reach 3.7 percent of GDP—so total federal spending on those programs would be 10.4 percent of GDP (see [Figure 3-3](#)).

The projected rise in federal spending on the major health care programs relative to GDP results from both the continued aging of the population and continued expected growth in health care costs per beneficiary in excess of growth in potential GDP per capita. In CBO's extended baseline scenario, aging accounts for about three-fifths of the programs' spending growth over the next 25 years, and excess cost growth accounts for the remainder; over the longer term, excess cost growth is the predominant factor (see [Box 1-1](#)). Under the extended alternative fiscal scenario, because excess cost growth is higher than under the extended baseline scenario through 2029, aging accounts for about half of the programs' growth over the next 25 years.

Although the focus of this chapter is federal spending on health care, CBO also projected total national spending on health care. To do so, CBO combined its projections of federal spending on major health care programs with rough projections of other health care spending (see [Box 2-1](#)). According to that analysis, national spending on

93. 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 6. In all of the projections, the outlays for exchange subsidies are presented in combination with outlays for Medicaid and CHIP, both for ease of exposition and because they all constitute federal subsidies for health insurance for low- and moderate-income households.

health care as a share of GDP will continue to rise—from about 17 percent of GDP now to almost one-quarter of GDP by 2037.

Projections Under Alternative Assumptions About Excess Cost Growth

Although all long-term economic and demographic developments are uncertain, excess cost growth in health care may be particularly so. The current systems of health care and health care financing have existed for only a few decades, and medical procedures and technology continue to evolve rapidly. The projections in this report will undoubtedly prove to be inaccurate in one direction or another. Moreover, judging their accuracy will be difficult even after the fact, because they include an assumption that either federal law is generally unchanged through 2029 (in the case of the extended baseline scenario) or that certain specific changes in law occur (in the case of the extended alternative fiscal scenario). Other changes will certainly occur, however. Even without policy changes, though, actual spending for health care could be much lower or much higher than the figures contained in CBO's and other analysts' projections.

For comparison purposes, CBO projected federal spending for Medicare, Medicaid, CHIP, and the exchange subsidies using varying assumptions about excess cost growth after 2022 under the extended alternative fiscal scenario. For example, a projection in which excess cost growth is held constant at zero is useful because it isolates the effects that the aging of the population and policy changes have on spending (see [Figure 3-4](#)). In that case, the federal government's spending for major health care programs would increase from 5.4 percent of GDP in 2012 to 8.6 percent by 2037, rather than to the 10.4 percent in the path described above. If, instead, excess cost growth for those programs equaled 2.0 percentage points starting in 2022 and continuing indefinitely, federal spending for major health care programs would grow to 11.3 percent of GDP by 2037.

Financing of Major Health Care Programs

Federal spending on major health care programs is financed in various ways, as described earlier in this chapter. Federal spending on Medicaid, CHIP, and the exchange subsidies is funded entirely from general funds of the government. In contrast, Medicare is funded through a combination of payroll taxes, beneficiaries' premiums, general funds of the government, and some other sources. The amount of payroll taxes collected each year has declined over time relative to the amount of gross Medicare benefits paid—from about 70 percent in 1980 to an estimated 35 percent in 2012 (see [Figure 3-5](#)).

The share of those benefits financed by beneficiaries' premiums and other Medicare offsetting receipts has grown from 9 percent in 1980 to an estimated 15 percent in 2012.⁹⁴ Benefits are also financed by general funds and income taxes on benefits. According to CBO's projections, under the extended baseline scenario in 2037, receipts from payroll taxes would equal 24 percent of gross federal spending for Medicare, and beneficiaries' premiums would account for 17 percent. Under the extended alternative fiscal scenario in 2037, those shares would be similar.

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 non-interest 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.⁹⁵ That difference is usually shown as a percentage of the present value of taxable payroll over the same period. A negative estimated actuarial balance means that outlays plus the desired trust fund balance will exceed revenues plus the current balance; the value of the estimated actuarial balance 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, though, than projections of overall Medicare spending. Changes over time in the delivery of health care and in the health care system might lead to greater or lesser reliance on the services covered by Part A relative to the services covered by Part B or 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 of Medicare

94. That increase in the share of spending covered by premiums is largely the result of an increase in the portion of benefits covered by the parts of the program—Parts B and (since 2006) D—that are financed largely by a combination of premiums and general funds of the government. In 1980, Part B accounted for only 30 percent of Medicare spending; in 2012, Parts B and D will account for 54 percent of Medicare spending, CBO estimates. In 2012, the percentage of benefits covered by premiums and other offsetting receipts would be even higher, except that about two-thirds of Part D premiums are paid directly by beneficiaries to Part D plans and are not included in the calculation of that percentage.

95. A present value is a single number that expresses a flow of current and future income or payments in terms of an equivalent lump sum received or paid today. CBO's calculations are based on a real discount rate of 3 percent, which is the average interest rate that securities held in the trust fund are projected to receive in the long term.

are constructed on the assumption that such spending grows in line with projected spending for Medicare as a whole.

Under the extended baseline scenario, 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 3-2](#)). Eliminating a gap of that size would require an immediate and permanent increase in the basic rate of HI payroll taxes from its current 2.9 percent to 3.7 percent, an immediate and permanent cut in spending on Part A equal to about one-sixth of current spending, or some combination of tax increases and spending cuts with equal present value. In the longer term, the actuarial imbalance under this scenario is much larger, reaching 2.4 percent over the next 75 years. Under the extended alternative fiscal scenario, the projected imbalances are somewhat larger because Medicare spending is higher and receipts to the HI trust fund from income taxes paid on Social Security benefits are lower.

Another commonly used measure of the sustainability of Part A of Medicare is the timing of the trust fund's exhaustion. According to CBO's March 2012 baseline projections, under current law the balance of the HI trust fund will fall from \$246 billion at the end of fiscal year 2011 to \$68 billion at the end of fiscal year 2022, with a drop in the trust fund balance in the last year of that projection of almost \$17 billion.⁹⁶ Therefore, under the extended baseline scenario, CBO expects that the trust fund would be exhausted in the mid-2020s. The trust fund would be exhausted earlier under the extended alternative fiscal scenario. (The high degree of uncertainty that surrounds projections of health care costs suggests that identifying a specific year of exhaustion that far in the future would be overly precise.)

Once the HI trust fund was exhausted, it appears that total payments to health plans and providers for services covered under Part A of Medicare 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 benefit payments will continue to be made after trust funds have been exhausted, even if there is no legal authority to make such payments.⁹⁷

96. See Congressional Budget Office, *Medicare—March 2012 Baseline* (March 13, 2012), www.cbo.gov/sites/default/files/cbofiles/attachments/43060_Medicare.pdf.

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

Chapter 4: 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, 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, about 56 million people currently receive Social Security benefits. The Congressional Budget Office (CBO) estimates that outlays for that program in fiscal year 2012 will total \$769 billion, accounting for more than one-fifth 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 4.9 percent of GDP in 1983, the year that the last major piece of legislation affecting Social Security was enacted. Between 1984 and 2008, spending for Social Security fluctuated between 4.1 percent and 4.6 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 4.2 percent of GDP in 2007 to 4.9 percent of GDP in 2009 (see [Figure 4-1](#)). CBO anticipates that spending for Social Security will increase to 5.0 percent of GDP this year, and if the full benefits specified under current law are paid, spending will reach 6.2 percent of GDP in 2037 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—69 percent—are retired workers or the spouses and children of those people. 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.⁹⁸ However, 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

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

beneficiaries.⁹⁹ In dollar terms, retired workers and their dependents receive 68 percent of Social Security benefits, survivors receive 14 percent, and disabled workers and their spouses and children receive 18 percent of benefits.¹⁰⁰

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 benefit to reflect annual growth in consumer prices.

Workers born before 1938 were able to receive full retirement benefits at the age of 65. The full retirement age increases gradually for people born later; it will be 67 for people born after 1959. The age at which workers may start receiving reduced benefits, 62, remains the same.

The Social Security Administration estimates that workers who retire at age 65 in 2012 and who had average annual earnings—earnings equal to the average earnings of all workers in the country—throughout their career will qualify for an annual benefit of about \$17,500. That amount will replace approximately 40 percent of their pre-retirement earnings. In coming decades, the replacement rate will be lower for workers with average earnings who retire at age 65, 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 wages and because wages grow over time, the real (inflation-adjusted) value of those benefits will rise over time.

The Social Security program is funded by two sources of dedicated tax revenues. Roughly 97 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.¹⁰¹ Only earnings up to a maximum annual amount (\$110,100 in 2012) 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

99. See Congressional Budget Office, *Social Security Disability Insurance: Participation Trends and Their Fiscal Implications*, Issue Brief (July 2010).

100. 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 also are entitled to survivors' benefits. Those beneficiaries are classified as retired workers for the distribution of beneficiaries, but their benefit payments are prorated between the retired worker and the survivor categories for this analysis.

101. The workers' portion of the payroll tax was reduced by 2 percentage points for calendar years 2011 and 2012, but the reduction in tax revenues is being made up by reimbursements from the U.S. Treasury's general fund to the two Social Security trust funds. For the purposes of the calculations in this chapter, Social Security payroll tax revenues are considered to include those reimbursements.

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. CBO projects that earnings inequality will grow somewhat during the next few decades and that the share of earnings subject to the payroll tax, which has been above 85 percent in recent years, will be around 83 percent in coming decades.

The remaining share of tax revenues—3 percent—is collected from income taxes on benefits. Single filers 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 joint filers is \$32,000. Under current law, those thresholds remain fixed, with no adjustment for earnings growth or inflation.

Revenues from both sources are credited to the two Social Security trust funds (the Old-Age and Survivors Insurance Trust Fund and the Disability Insurance Trust Fund). Social Security benefits and the program's administrative costs are paid from those funds; benefit payments represent 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 currently credited to the funds (\$2.7 trillion at the end of April 2012) have accumulated over many years, during which 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.¹⁰² 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

102. 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 subject to the Social Security payroll tax. That share is called *covered wages* and includes wages above the taxable maximum. However, the Affordable Care Act (which comprises the Patient Protection and Affordable Care Act [Public Law 111-148] and the health care provisions of the Health Care and Education Reconciliation Act of 2010 [P.L. 111-152]) 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 represented by health insurance premiums and increasing the share of cash wages. (See Chapter 2, "Taxable Earnings as a Share of Compensation.") CBO projects that the effects of the excise tax will more than offset the effects of rising health care costs for several decades but that the reverse will be true thereafter. Therefore, the share of compensation that workers receive as covered wages will first rise and then fall, returning roughly to its 2022 level by 2087, and Social Security revenues and benefits will be greater over the next 75 years than they would be if health insurance premiums remained a constant share of compensation.

share of the population will draw Social Security benefits.¹⁰³ As a result, the total amount of benefits scheduled to be paid under current law will grow faster than the economy.

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. CBO projects that the gap will continue and that outlays will be greater than such revenues by around 10 percent over the next decade. After that, the shortfall will expand even more as increasing numbers of baby boomers reach retirement age. CBO projects that the population age 65 or older will increase by 87 percent between now and 2037, compared with an increase of just 12 percent over that period in the number of people ages 20 to 64. Today, that older group is about one-fifth the size of the younger group; at those rates of growth, it will be more than one-third the size of the younger group by 2037 (see [Figure 4-2](#)). About 100 million people will collect benefits in 2037, CBO projects, compared with 56 million who currently receive them. Moreover, the average benefit will have grown nearly as fast as GDP per person. CBO therefore estimates that, unless changes are made to Social Security, spending for the program will rise from 5.0 percent of GDP today to 6.2 percent by 2037. Spending will then dip slightly as members of the baby-boom generation die, but it will later turn upward as a result of beneficiaries' increasing life spans.

CBO's projections for Social Security benefits are based on the agency's detailed microsimulation 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, marital pairings and transitions, fertility, labor force participation, hours worked, earnings, payroll taxes, and claims for and amounts of Social Security benefits.¹⁰⁴

CBO's projections of outlays for Social Security are the same under both scenarios discussed in this report—the *extended baseline scenario* and the *extended alternative fiscal scenario*—but projections of Social Security revenues depend on which scenario is used. The revenues generated by payroll taxes are identical under the two scenarios; however, projections of revenues derived from the taxation of Social Security benefits are higher under the extended baseline scenario.¹⁰⁵ Under that scenario, which is based on the assumption that current laws remain unchanged, both the number of

103. For analysis of the outlook for the baby boomers' financial situation in retirement, see Congressional Budget Office, *Will the Demand for Assets Fall When the Baby Boomers Retire?* Background Paper (September 2009); and *The Retirement Prospects of the Baby Boomers*, Issue Brief (March 2004).

104. See Congressional Budget Office, *CBO's Long-Term Model: An Overview*, Background Paper (June 2009).

105. Those projections do not incorporate the economic effects of the two scenarios.

Social Security beneficiaries whose benefits are subject to taxation and their average income tax rates would be greater than they are today.¹⁰⁶ As a result, income taxes on Social Security benefits would grow from about 4 percent of benefits today to about 7 percent of benefits in 2037. Under the extended alternative fiscal scenario, which is based on the assumption that tax revenues remain close to their historical average share of GDP, the income taxes on Social Security benefits that are credited to the Social Security trust funds would grow to 4 percent of benefits by 2022 and then remain at that level. Consequently, the projections of Social Security's finances are less favorable under the extended alternative fiscal scenario than they are under the extended baseline scenario. According to that baseline scenario, by 2037, outlays scheduled to be paid under current law would exceed dedicated revenues (the combination of payroll taxes and taxes on benefits) by 22 percent; under the alternative fiscal scenario, outlays would exceed dedicated revenues by 26 percent.

Different generations will end up paying different total amounts of Social Security taxes and receiving different total amounts of benefits. CBO calculated lifetime benefits and payroll taxes for various birth cohorts—in this case, people born in different decades—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.¹⁰⁷ CBO projects that real median lifetime payroll taxes and median lifetime benefits will be greater, in general, for each successive cohort (see [Figure 4-3](#)). Over their lifetime, beneficiaries born in the 1940s will, on average, pay more in taxes (about \$195,000) than they will receive in benefits (about \$175,000). For those born in the 1980s, the opposite is true: On average, they will pay \$260,000 in taxes and receive \$285,000 in benefits, CBO estimates.

Taxes and benefits alike are higher for later cohorts because real earnings are projected to continue to grow. Continuing increases in life expectancy also contribute to the growth in lifetime benefits because later cohorts will live to receive Social Security benefits for longer periods.¹⁰⁸ For workers born from the 1940s through the 1980s, taken all together, lifetime payroll taxes will be roughly equal to lifetime benefits. But

106. For information about CBO's projections of total income taxes under the two scenarios, see Chapter 6. For details on the impact of differing assumptions about income taxes on Social Security benefits, see Congressional Budget Office, *The Outlook for Social Security* (June 2004), Box 3-1.

107. 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 combined shares paid by employers and employees. Benefits are those scheduled to be paid under current law, regardless of the balances projected for the trust funds. Benefits are net of income taxes paid on benefits and credited to the Social Security trust funds.

108. For additional analysis of the distribution of Social Security benefits and taxes, see *CBO's 2011 Long-Term Projections for Social Security: Additional Information* (August 2011).

benefits for earlier generations were considerably larger than their payroll taxes, and that historical imbalance contributes to the system's ongoing financial shortfall.¹⁰⁹

Calculations of lifetime payroll taxes and benefits are based on a real discount rate of 3.0 percent, the average long-term interest rate projected for securities held in the Social Security trust funds. If a higher interest rate was used for such discounting, the present value of lifetime benefits discounted to the year in which a beneficiary turns 62 would be smaller than the amounts shown here, but the present value of lifetime payroll taxes discounted to that year would be larger. Thus, because people generally receive benefits later in life than they pay payroll taxes, the present value of benefits would be smaller relative to the present value of payroll taxes using a higher discount rate.

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.¹¹⁰ For Social Security, that difference is traditionally presented as a percentage of the present value of taxable payroll. Under its extended baseline scenario, CBO estimates that over the next 75 years, the program's actuarial shortfall would be 1.9 percent of taxable payroll or 0.7 percent of GDP (see [Table 4-1](#)).¹¹¹ In other words, to bring the program into actuarial balance through 2086, payroll taxes could be increased immediately by 1.9 percent of taxable payroll and kept at that higher rate, 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. Because projected revenues under the extended alternative fiscal scenario are less, the shortfall under that scenario would be greater—2.4 percent of taxable payroll or 0.9 percent of GDP, CBO estimates.

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 stable financial path. Instead, such a policy would create surpluses during the next several decades but generate large deficits in later years and

109. See Congressional Budget Office, *How Pension Financing Affects Returns to Different Generations*, Issue Brief (September 2004).

110. 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.

111. To be consistent with the 75-year actuarial balance reported by the Social Security Trustees, the 75-year projection period used here begins in 2012 and ends in 2086. See Social Security Administration, *The 2012 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds* (April 23, 2012), www.socialsecurity.gov/OACT/TR/2012.

leave the system in a state of financial imbalance after 2086.¹¹² If such a policy was adopted, the 75-year measure used in this report would show no shortfall now because the measure includes the taxes paid by workers each year until 2086 but does not include the benefits that will be paid to those workers after 2086. That measure is known as the *75-year open-group unfunded obligation* because, with no change in law, the program will 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 Social Security to anyone born after 1997 (for estimates prepared today), thereby encompassing future taxes paid and benefits received only by people who are now 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 estimate that, when measured as a share of taxable payroll, the closed-group shortfall as of 2012 is more than 50 percent larger than the open-group shortfall.¹¹³

Another commonly used measure of Social Security's sustainability is the trust funds' date of exhaustion, which CBO projects will be in calendar year 2034 under the assumptions of the extended baseline scenario or in calendar year 2033 under those of the extended alternative fiscal scenario.¹¹⁴ 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

112. Both the fiscal gap presented in Table 1-3 and the estimates of the actuarial imbalance of Medicare's Hospital Insurance Trust Fund presented in Table 3-2 suffer from the same limitation.

113. Social Security Administration, *The 2012 Annual Report*, Tables IV.B6 and IV.B7, www.socialsecurity.gov/OACT/TR/2012. CBO has not estimated the closed group shortfall.

114. Under each scenario, CBO anticipates that the Disability Insurance Trust Fund will be exhausted in fiscal year 2016. Under the extended baseline scenario, the Old-Age and Survivors Insurance Trust Fund will be exhausted in calendar year 2038; under the extended alternative fiscal scenario, it will be exhausted in calendar year 2036. However, this document 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. That outcome was prevented by legislation that redirected revenues from the OASI trust fund to the DI trust fund. In part because of that experience, it is a common analytical convention to consider the DI and OASI trust funds as combined.

[On September 7, 2012, CBO revised this footnote to correct the date at which the OASI trust fund will be exhausted under the extended baseline scenario.]

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 baseline projections, assume that the Social Security Administration will continue to make benefit payments after trust funds have been exhausted, even without legal authority to make such payments.¹¹⁵

Chapter 5: The Long-Term Outlook for Other Noninterest Federal Spending

In 2011, half of federal spending went toward programs and activities other than the major health care programs (Medicare, Medicaid, and the Children's Health Insurance Program), Social Security, and net interest. That category, which is referred to in this report as other noninterest federal spending, includes discretionary programs funded through the annual appropriation process and mandatory programs (other than the major health care programs and Social Security) that usually are funded according to underlying statutes that establish eligibility and payment standards.¹¹⁶ Mandatory spending in this category also includes the refundable portions of the earned income tax credit, the child tax credit, and the American opportunity credit, which the budget records as outlays, and offsetting receipts such as Medicare premiums paid by beneficiaries and some other payments collected from the public.

The Congressional Budget Office (CBO) projected other noninterest federal spending under two scenarios, an *extended baseline scenario* and an *extended alternative fiscal scenario* (see [Figure 5-1](#)). In the extended baseline scenario, other noninterest federal spending for 2012 through 2022 equals the amounts in CBO's March 2012 baseline projections, which are based on the assumption that current law is generally unchanged. Under that assumption, such spending is projected to drop from 12.1 percent of gross domestic product (GDP) in 2011 to 7.3 percent in 2022. For projections beyond 2022, CBO assumed that most other noninterest federal spending would stay at the same share of GDP projected for that year—except for two components. CBO separately projected Medicare offsetting receipts (mostly premiums paid by Medicare beneficiaries, but also certain payments by states to Medicare from savings on Medicaid's prescription drug costs as well as amounts paid to and later recovered from Medicare providers) and some refundable tax credits (which are recorded in the budget as

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

116. For a discussion of federal spending categories, see Congressional Budget Office, *The Budget and Economic Outlook: Fiscal Years 2012 to 2022* (January 2012), Box 3-1, p. 48.

outlays) for consistency with the agency's long-term projections of Medicare outlays and total revenues. Including those components, other noninterest federal spending equals 6.9 percent of GDP in 2037 under this scenario.

In the extended alternative fiscal scenario, other noninterest federal spending for 2012 through 2022 equals the amounts in CBO's March 2012 projections for the alternative fiscal scenario. Those amounts are higher than in the baseline projections because the automatic spending reductions required by the Budget Control Act (Public Law 112-25), which are set to take effect in January 2013, are assumed not to occur (although the original caps on discretionary appropriations in that law remain in place). Under that assumption, other noninterest federal spending is projected to decline to 7.8 percent of GDP in 2022. For projections beyond 2022, CBO assumed that such spending would, during a five-year transition period, gradually return to its average share of GDP during the past 20 years (9.9 percent), and then remain at that share except for projected changes in Medicare offsetting receipts. Consistent with the revenue assumptions in the extended alternative fiscal scenario, refundable tax credits included in noninterest federal spending are constant as a share of GDP after 2022. With the projected path of those components included, other noninterest federal spending equals 9.6 percent of GDP in 2037 under this scenario.

Other Noninterest Federal Spending Over the Past Four Decades

During the past 40 years, federal spending other than that for the major health care programs, Social Security, and net interest has averaged 11 percent of GDP. Such spending declined from 14 percent of GDP in 1972 to 8 percent in the late 1990s; it stayed close to 10 percent through most of the first decade of the 2000s and then spiked to almost 14 percent in 2009 before receding slightly to about 12 percent of GDP in 2010 and 2011.

Discretionary Spending

A distinct pattern in the federal budget since the 1970s has been the diminishing share of spending that occurs through annual appropriations. As a share of total federal spending, discretionary spending fell from 56 percent in 1972 to 37 percent in 2011. Relative to the size of the economy, discretionary spending declined from 10.9 percent of GDP in 1972 to 9.0 percent in 2011.

Defense Discretionary Spending. Over the past four decades, defense discretionary spending has declined significantly, on balance, as a share of the economy (see [Figure 5-2](#)). At the height of the Vietnam War in the late 1960s, that category of spending reached a peak of 9.5 percent of GDP. During the mid- to late 1970s, it dropped to around 5 percent, and during the defense buildup between 1982 and 1986, it averaged 6 percent of GDP. After the end of the Cold War, defense spending fell again relative to GDP, to a low of 3.0 percent at the turn of the century. In 2002, however, such spending began to climb again; it reached 4.7 percent of GDP from

2009 through 2011, mainly as a result of operations in Iraq and Afghanistan. In 2012, the funding provided for defense activities declined both as a share of GDP and in dollar terms.

Nondefense Discretionary Spending. Nondefense discretionary spending—spending for education, transportation, income security, veterans’ health care, homeland security, and other purposes—totaled 4.3 percent of GDP in 2011. Over the past 40 years, nondefense discretionary spending has usually ranged between about 3 percent and 4 percent of GDP, although from 1975 to 1981 it averaged 5 percent of GDP. Funding from the American Recovery and Reinvestment Act of 2009 (P. L. 111-5), along with other funding associated with the federal government’s response to the recent recession, helped boost that share above 4 percent from 2009 through 2011. As with defense discretionary spending, however, the funding provided for activities in this category declined as a share of GDP in 2012, although it remained above 4 percent.

Other Mandatory Spending

Mandatory spending other than that for Medicare, Medicaid, the Children’s Health Insurance Program, and Social Security equaled 3.1 percent of GDP in 2011. The category includes unemployment compensation, federal civilian and military retirement benefits, the Supplemental Nutrition Assistance Program (formerly known as Food Stamps), veterans’ benefits, and other income security programs. The category also includes offsetting receipts, such as Medicare premiums, receipts from government agencies’ contributions to the federal civilian and military retirement programs, and proceeds from energy leases on the Outer Continental Shelf.

Other mandatory spending averaged almost 4 percent of GDP from the mid-1970s through the early 1980s. Then, between the mid-1980s and 2008, it averaged just a little more than 2 percent of GDP, with some fluctuations. In 2009, the amount of such spending more than doubled relative to GDP, to 4.7 percent, because of the financial crisis and recession and the federal government’s response to them. In particular, spending increased for unemployment insurance and federal nutrition programs, and additional outlays were recorded for the Troubled Asset Relief Program, deposit insurance, and payments to Fannie Mae and Freddie Mac (two institutions, now under government conservatorship, that facilitate the flow of funding for home loans nationwide). Some of that spending, however, was temporary, and other mandatory spending fell back to 2.9 percent of GDP in 2010 and 3.1 percent in 2011.

Projections of Other Noninterest Federal Spending Under CBO’s Long-Term Budget Scenarios

The extended baseline scenario and the extended alternative fiscal scenario embody two possible paths for other noninterest federal spending.

The Extended Baseline Scenario

In the extended baseline scenario for 2012 through 2022, CBO used its March 2012 baseline projections for other noninterest federal spending.¹¹⁷ Most discretionary appropriations for 2013 through 2021 are constrained by the caps and automatic enforcement procedures put in place by the Budget Control Act; for 2022, CBO assumed that such appropriations would equal the 2021 amount grown at the rate of inflation. Given those appropriations, discretionary spending would decline from 8.4 percent of GDP in 2012—which is already below the 2011 level of 9.0 percent—to 5.6 percent in 2022 (see [Table 5-1](#)).

In constructing baseline projections, mandatory programs are assumed to operate as they do under current law, including the automatic spending reductions put in place by the Budget Control Act. As the economy improves and those spending reductions take effect, other mandatory spending is projected to decline from 3.2 percent of GDP in 2012 to 1.7 percent in 2022. In all, under the baseline, other noninterest federal spending is projected to equal 7.3 percent of GDP in 2022—the lowest share since the 1930s.

For years after 2022, in this scenario, CBO assumed that most other noninterest federal spending would continue at a constant share of GDP. However, CBO modeled two components of that spending separately. Medicare offsetting receipts, which are recorded as negative outlays, are estimated to total 0.5 percent of GDP in 2012 and are projected to increase slightly faster than gross Medicare outlays; as those offsetting receipts rise, total spending falls. (Projections of those offsetting receipts were made as part of CBO's Medicare projections; see Chapter 3 for details.) Outlays for the refundable portions of the earned income tax credit, the child tax credit, and the American Opportunity Tax Credit are expected to equal 0.5 percent of GDP in 2012 and 2013 but to drop to 0.3 percent of GDP in 2014 because of the expiration of the temporary increase in the child tax credit at the end of calendar year 2012. Beyond 2014, those outlays are projected to decline further as incomes rise, to 0.1 percent of GDP in 2037. (Projections of those tax credits were made as part of CBO's revenue projections; see Chapter 6 for details.)

Because of the projected changes in those components, other noninterest federal spending is projected to decline to 6.9 percent of GDP by 2037 in this scenario.

The Extended Alternative Fiscal Scenario

In the extended alternative fiscal scenario for 2012 through 2022, CBO used its March 2012 projections for other noninterest federal spending under its alternative fiscal

117. CBO's most recent 10-year baseline projections were published in *Updated Budget Projections: Fiscal Years 2012 to 2022* (March 2012).

scenario.¹¹⁸ Such spending is higher under the alternative scenario than under the baseline scenario because the automatic spending reductions required by the Budget Control Act are assumed not to take effect, although the original caps on discretionary appropriations for 2013 through 2021 in that law are assumed to remain in place. For 2022, CBO assumed that such appropriations would equal the 2021 amount grown at the rate of inflation. Given those appropriations, discretionary spending would decline to 6.0 percent of GDP in 2022.

In the alternative scenario, mandatory programs excluding federal health care programs are assumed to operate as they do under current law apart from the automatic spending reductions. As the economy improves, other mandatory spending is projected to decline to 1.7 percent of GDP in 2022. In all, under the alternative scenario, other noninterest federal spending is projected to decline to 7.8 percent of GDP in 2022—the lowest share since the 1930s.

For years after 2022, in this scenario, CBO assumed that other noninterest federal spending would return to the same share of GDP as in recent decades. Specifically, such spending is assumed to increase linearly from 7.8 percent of GDP in 2022 to 9.9 percent in 2027—the average share for the period from 1992 through 2011. As in the extended baseline scenario, CBO modeled Medicare offsetting receipts and refundable tax credits separately. Medicare offsetting receipts are projected to increase slightly faster than Medicare outlays. The refundable portion of certain tax credits is assumed to remain a constant share of GDP, as are total revenues (see Chapter 6 for further discussion). All told, other noninterest federal spending is projected to decline to 9.6 percent of GDP by 2037.

Chapter 6: The Long-Term Outlook for Federal Revenues

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

Predicting 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. This analysis examines revenues under two sets of assump-

118. CBO's most recent 10-year projections for the alternative fiscal scenario were published in *Updated Budget Projections: Fiscal Years 2012 to 2022* (March 2012).

tions about future federal policy—an extended baseline scenario and an extended alternative fiscal scenario.

The *extended baseline scenario* generally adheres closely to current law. It follows the Congressional Budget Office's (CBO's) March 2012 baseline budget projections for the next decade and then extends the baseline concept beyond that 10-year window. The current-law assumption of the baseline scenario implies that many adjustments that lawmakers have routinely made in the past will not be made again. Under that scenario, the tax cuts that were enacted since 2001 and most recently extended by the Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010 (the 2010 tax act, Public Law 111-312) are assumed to expire as scheduled in 2012 or 2013. Other temporary tax provisions, including the reduction in the payroll tax rate enacted originally for 2011 and later extended through 2012, are also assumed to expire as scheduled. In addition, the exemption amounts for the individual alternative minimum tax (AMT), which reverted to their pre-2001 amounts in 2012, are assumed to remain at those lower amounts.¹¹⁹

Under the extended baseline scenario, federal revenues would rise considerably over time as a share of gross domestic product (GDP). The scheduled expiration of various tax reductions would boost receipts, as would the scheduled tax increases enacted in the Affordable Care Act.¹²⁰ In addition, the ongoing economic recovery, real (inflation-adjusted) growth in income over the long run, and the interaction of the tax system with inflation would cause revenues to grow more rapidly than GDP. Taking all of those factors together, revenues would rise from 15.8 percent of GDP in 2012 to 18.7 percent in 2013, 21.2 percent in 2022, and 23.7 percent in 2037 (see [Figure 6-1](#)).¹²¹ For comparison, revenues have averaged 17.9 percent of GDP during the past 40 years. By 2037, the tax system would be quite different from what it is today. Households at all points in the income distribution would pay a greater share of their income in taxes

119. In recent years, the Congress has enacted temporary increases in the AMT exemption amounts; the latest increase expired at the end of 2011.

120. The Affordable Care Act comprises the Patient Protection and Affordable Care Act (P.L. 111-148) and the health care provisions of the Health Care and Education Reconciliation Act of 2010 (P.L. 111-152).

121. The revenue projections presented in this chapter are based on CBO's benchmark economic projections. For the 2012–2022 period, the benchmark matches CBO's January 2012 economic forecast. For later years, the benchmark is generally aligned with the economic experience of the past few decades; it also incorporates two specific assumptions about fiscal policy—that debt held by the public will be maintained at 61 percent of GDP, the level reached in 2022 in CBO's baseline budget projections, and that the effective marginal tax rates on income from work and saving will remain constant after that year. (The marginal tax rate is the rate that would apply to an additional dollar of a taxpayer's income.) Thus, the economic benchmark and the revenue projections in this chapter do not incorporate the effects of rising marginal tax rates on people's behavior after 2022. See Chapter 2 for an analysis of the economic impact of the debt levels and marginal tax rates under the two scenarios analyzed in this report.

than similar households pay today, and a much larger share of households—nearly half—would be subject to the AMT.

The *extended alternative fiscal scenario*, by contrast, embodies several changes to current law that would continue certain tax and spending policies that are in place now or were in place recently. Nearly all of the tax provisions scheduled to expire over the next 10 years are assumed to be extended through 2022; therefore, the individual income tax provisions and the tax rates and effective exemption amount for the estate and gift taxes in effect in 2012 would be extended, as well as all corporate and miscellaneous tax provisions that expired at the end of 2011 or are scheduled to expire in the next decade (see [Table 6-1](#)). In addition, the relief from the AMT that was in effect in 2011 is assumed to be extended. The sole exception to those extensions is the temporary payroll tax cut first enacted in the 2010 tax act, which is assumed to expire as scheduled at the end of 2012.

After 2022, the extended alternative fiscal scenario is based on the assumption that tax policy evolves over time to maintain total revenues at the share of GDP reached in 2022, which CBO estimates would be 18.5 percent. In constructing this scenario, CBO did not make assumptions about the specific changes in tax provisions that policymakers would make, except to assume that payroll taxes will be the same as under the extended baseline scenario and that the effective marginal tax rates on capital and labor will remain constant at the levels they reach in 2022.

Revenues have moved above and below their 40-year average of 17.9 percent at different times but have typically returned to somewhere near that average, suggesting that changes in policy have offset the effects of other aspects of the tax system that otherwise would have increased revenues relative to GDP over time. In the extended alternative fiscal scenario, those sorts of policy changes are assumed to continue, although with revenues at a slightly higher share of GDP than their 40-year average. As a result, revenues would rise from 15.7 percent of GDP in 2012 to 16.7 percent in 2013 and 18.5 percent in 2022 and beyond. Under that scenario, revenues would be considerably lower than those projected under the extended baseline scenario—by more than 2 percent of GDP in 2022 and by more than 5 percent of GDP in 2037.

Revenues Over the Past 40 Years

Over the past 40 years, total federal revenues have ranged from a high of 20.6 percent of GDP (in 2000) to a low of 15.1 percent (in 2009 and 2010), with no evident trend over time (see [Figure 6-2](#)). During that period, however, the various sources of revenue have changed in importance. Individual income taxes, which account for about half of all revenues now, have varied from slightly more 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 grown from 4 percent to 6 percent of GDP over 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 and 3 percent of GDP since the 1970s, as have combined revenues from other sources.

Some of the variation in the composition of total tax revenues has stemmed from interactions between the tax code and the economy. For example, many excise taxes are levied on the quantity of a good purchased (for instance, cents per gallon of gasoline) as opposed to a percentage of the price paid. Because those levies are not indexed for inflation, revenues derived from excise taxes have declined relative to GDP as the general level of prices has risen. With individual income taxes, in contrast, receipts tend to grow relative to GDP in the absence of legislated tax reductions. That increase occurs because rising income tends to push a greater share of income into higher tax brackets (a phenomenon known as “real bracket creep”). Before 1984, when none of the parameters of the individual income tax were indexed for inflation, inflation by itself caused revenues to increase as a greater share of income was taxed at higher rates.¹²² Even since 1984, when many of the parameters of the tax system have been indexed for inflation, growth in real income has caused a greater share of income to be taxed at higher rates (and, because not all of the parameters of the tax system are indexed for inflation, rising prices have continued to have some effect).

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 Long-Term Budget Scenarios

The extended baseline scenario and the extended alternative fiscal scenario embody two possible paths for revenues over future decades. CBO’s assumptions about particular revenue sources under the two scenarios are summarized in [Table 6-1](#)).

The Extended Baseline Scenario

The extended baseline scenario generally adheres closely to current law. It follows CBO’s March 2012 baseline budget projections for the next decade and then extends the baseline concept beyond that 10-year window.¹²³ The current-law assumption of the baseline scenario implies that certain tax provisions will expire as scheduled and that new provisions of law will go into effect as scheduled. The specific assumptions are the following:

122. The parameters of the tax system are the amounts that define the various tax brackets, the amounts of the personal exemption and standard deductions, and tax rates.

123. See Congressional Budget Office, *Updated Budget Projections: Fiscal Years 2012 to 2022* (March 2012).

- The provisions of the Economic Growth and Tax Relief Reconciliation Act of 2001 (EGTRRA), the Jobs and Growth Tax Relief Reconciliation Act of 2003 (JGTRRA), and the American Recovery and Reinvestment Act of 2009 (ARRA) that were extended by the 2010 tax act will expire as scheduled¹²⁴;
- The AMT exemption amounts, which reverted to their pre-2001 amounts in 2012, are not raised, and the parameters of the AMT are not indexed for inflation; and
- Tax increases scheduled to go into effect in future years as a result of the Affordable Care Act will be implemented as specified in current law. Such increases include new taxes on earnings and investment income (beginning in 2013) and a new tax on certain employment-based health insurance plans with high premiums (beginning in 2018).

Under the extended baseline scenario, tax revenues would increase sharply in the next few years and then continue to rise somewhat faster than GDP; as a result, in that scenario, revenues rise from 15.8 percent of GDP in 2012 to 23.7 percent in 2037, an increase of 7.9 percentage points. The individual income tax system would be responsible for much of the increase in the ratio of total revenues to GDP because of the various ways in which its structure interacts with the economy. Under the extended baseline scenario, individual income tax receipts would rise as a share of GDP by 6.5 percentage points between 2012 and 2037. That projected increase reflects several factors, including the assumed expiration of tax-relief provisions that were extended by the 2010 tax act; the growing impact of the AMT; various structural features of the income tax system; scheduled future tax increases enacted in the Affordable Care Act; demographic trends; and the ongoing economic recovery. Total revenues would also increase relative to GDP because of other factors, including the assumption that the estate tax rates and exemption amount in 2013 will revert to those scheduled to be in effect before the temporary changes enacted in 2001 and 2010.

Expiring Individual Income Tax Provisions, Including the AMT. If left unchanged, certain aspects of current tax law would generate an increase in individual income tax revenues relative to GDP of 3.3 percentage points between 2012 and 2037 (see [Table 6-2](#)). Most of the provisions enacted since 2001 and extended by the 2010 tax act are scheduled to expire after December 31, 2012. If that occurs, certain features of the tax code would revert to prior law: Tax rates would rise, the value of some tax credits would decrease, other tax credits would expire, and thresholds for certain tax rates would change. Those changes would raise receipts as a share of GDP in 2013 and beyond.

Another factor that would increase revenues relative to GDP under current law is the growing impact of the AMT. The alternative minimum tax is a parallel individual income

124. Those three laws are Public Laws 107-16, 108-27, and 111-5.

tax system that provides fewer exemptions, deductions, and rates than the regular income tax. Households must calculate the amount they owe under both the AMT and the regular income tax and then pay the higher amount.¹²⁵ The parameters that determine the amount owed under the AMT are not indexed for inflation. Therefore, as inflation increases people's income over time, more taxpayers become subject to the AMT, and that tax claims a larger share of GDP. Since 2001, lawmakers have reduced the impact of the AMT by temporarily raising its exemption amounts. The most recent of those temporary adjustments expired at the end of 2011, however.

The effects of the expiration of various tax provisions and the growing reach of the AMT can be identified by comparing CBO's projections of individual income tax revenues under current law with two variants. The first variant is based on the assumption that policymakers will deviate from current law by permanently extending all of the regular income tax provisions scheduled to expire in the next 10 years but will not index the AMT parameters for inflation; the second variant reflects the assumption that policymakers will extend those regular income tax provisions and also index the AMT parameters.

Relative to the extended baseline scenario, extending the regular tax provisions alone would lower individual income tax revenues by 1.2 percent of GDP in 2014 and 1.0 percent in 2037 (see [Figure 6-3](#)). The decline in revenues as a share of GDP would diminish slightly over time, for two reasons. First, the revenue reductions stemming from provisions allowing for accelerated depreciation of property would lessen as deferred revenues from prior years offset future-year deferrals. Second, the impact of the AMT would grow steadily: As a greater share of individual income taxes was paid through the AMT, the effect of extending the regular tax provisions would decrease because many of those provisions do not benefit taxpayers who are subject to the AMT.

Relative to the extended baseline scenario, both extending the regular tax provisions of the 2010 tax act and permanently indexing the AMT parameters for inflation would lower revenues from individual income taxes by 1.8 percent of GDP in 2014 and 3.3 percent in 2037. That effect would increase over time as cumulative inflation caused more taxpayers to be subject to the AMT under current law.

Structural Features of the Individual Income Tax System. Even if the AMT was indexed for inflation and the tax provisions enacted since 2001 and temporarily extended by the 2010 tax act were made permanent, individual income tax revenues would continue to rise as a percentage of GDP. Most of the parameters of the individual income tax apart from the AMT are indexed for inflation, which prevents average tax rates (the share of income that people pay in taxes) from rising when income increases only with inflation.

125. Technically, a taxpayer owes the regular income tax plus any amount that, under the AMT, exceeds the regular tax. For more information on the AMT, see Congressional Budget Office, *The Individual Alternative Minimum Tax*, Issue Brief (January 2010).

Rising real income, however, 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 will generate some increase in receipts relative to GDP. All told, even if the AMT was indexed and the expiring tax provisions were extended, growth in people's income would increase income tax revenues relative to GDP by 1.8 percentage points between 2012 and 2037, CBO estimates.

Tax Provisions Enacted in the Affordable Care Act. Implementing several provisions of the Affordable Care Act will raise revenues as a share of GDP by 0.8 percentage points by 2037. One key provision of the legislation is an excise tax starting in 2018 on certain high-premium health insurance plans. Under that provision, employment-based plans with premiums exceeding a specified threshold will generally be subject to an excise tax of 40 percent. That tax, which will be levied on insurers but probably passed on to their customers, will increase revenues in two ways. First, in those cases in which the tax applies, it will generate additional excise tax revenues. Second, many individuals and employers will 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 will be less than they would have been in the absence of the tax. Because total compensation paid by employers would not be affected over the long term, lower expenditures for health insurance would mean higher taxable wages for employees and, as a result, higher payments of income and payroll taxes. Thus, whether policyholders pay the excise tax through higher premiums or avoid it by switching to lower-cost plans, total tax revenues will 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, a greater share of premiums will be subject to the excise tax over time.¹²⁶ Accordingly, CBO projects that the excise tax will increase total revenues by 0.5 percent of GDP in 2037 and by higher percentages thereafter.

The Affordable Care Act also imposes additional taxes on earnings and investment income of individuals with income in excess of \$200,000 and of families with income in excess of \$250,000. Those thresholds are not indexed for inflation. Because those new surtaxes will affect an increasing share of earnings and investment income over time, they will boost revenues by a small but growing share of GDP over the years, CBO projects. Other provisions of the health care legislation will also raise revenues as a share of GDP by a small amount.

126. The thresholds are initially set in law for 2018 and are indexed to general inflation plus 1 percent for 2019 and to general inflation for 2020 and subsequent years.

Demographic Trends. Over the next few decades, the retirement of members of the baby-boom generation (people born between 1946 and 1964) will cause income tax revenues to increase 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 may be subject to taxation. Likewise, compensation that is deferred under employer-sponsored defined-benefit plans is taxed when the benefits are paid. As baby boomers withdraw money from retirement accounts and receive pension benefits, those sums will boost taxable income to an increasing extent. Thus, the U.S. Treasury will receive significant tax revenues that have essentially been deferred for years, which will tend to boost tax receipts relative to GDP. As a result, under the extended baseline scenario, revenues as a share of GDP will climb by about 0.6 percentage points between 2012 and 2037. That upward trend will end in the mid-2030s, however, when essentially all of the baby boomers will have reached retirement, so beyond that point, revenues from taxable withdrawals will no longer grow faster than GDP.

Impact of Economic Recovery on Individual Income Taxes. CBO anticipates that revenues will grow faster than GDP over the next several years as the economy continues to expand—albeit slowly—with most of that growth coming from individual income taxes. Certain sources of income that had been unusually small during the downturn (for instance, capital gains realizations) are expected to recover and return to levels consistent with an economy slowly moving closer to its long-term path for growth. Under the extended baseline scenario, the effects of the recovery would increase revenues from individual income taxes as a share of GDP by a total of 0.5 percentage points through 2037, CBO estimates; most of that growth would occur by 2015.

Other Factors. Factors besides those already discussed also affect the growth of federal revenues as a share of GDP under the extended baseline scenario. CBO projects that corporate income tax revenues will rise as a share of GDP over the next 10 years, reflecting two developments: an anticipated continued rebound during the economic recovery from their historically low share of GDP in 2009 and the expiration of provisions allowing for accelerated depreciation of property after 2012. In addition, estate and gift taxes are expected to increase as a share of GDP after 2013. Starting in that year, the estate tax rate is scheduled to rise, and the dollar amount of an estate that is exempt from taxation is set to fall to \$1 million and not be indexed for inflation; as a result, a greater share of wealth will become subject to the tax over time. Excluding the excise tax on high-premium health insurance plans, excise taxes are projected to decline slightly 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 the general price level rises over time, excise taxes tend to fall as a share of GDP. Finally, the expiration of the temporary payroll tax cut after 2012 will raise revenues as a share of GDP by about 0.7 percentage points. On balance, CBO projects that, under current law and apart from the effects of the Affordable Care Act, revenues from corporate income taxes, estate and gift

taxes, federal excise taxes, payroll taxes, and other miscellaneous sources will rise by a combined 0.9 percent of GDP between 2012 and 2037 and by a smaller amount thereafter.

The Extended Alternative Fiscal Scenario

The extended alternative fiscal scenario embodies changes to current law that would continue certain tax and spending policies that are in place now or have been in place recently. Over the next decade, it follows CBO's March 2012 budget projections for the alternative fiscal scenario. This means that certain tax policies that expired at the end of 2011 or are scheduled to expire will be extended through 2022. Beyond the next decade, this scenario is based on the assumption that tax policies will be adjusted to maintain revenues at the same share of GDP reached in 2022.

Specifically, the following policies are assumed to be extended:

- Certain provisions enacted in EGTRRA, JGTRRA, and ARRA, and subsequently extended by the 2010 tax act, including the \$1,000 child tax credit, marriage-penalty relief, and lower tax rates for all taxpayers;
- AMT relief, which expired at the end of 2011—and which is assumed in this scenario to be extended by indexing the 2011 exemption amount and tax brackets for inflation after 2011;
- Estate tax rates and exemption amount in effect during 2012—and which is assumed in this scenario to be extended by indexing the exemption amount for inflation after 2012 (rather than reverting to the rates and exemption amount scheduled to apply in 2013 before the law was changed in 2001); and
- Almost all other provisions that expired at the end of 2011 or are scheduled to expire during the next decade, including a provision allowing for accelerated depreciation of property and the tax credit for research and experimentation. The sole exception is the temporary payroll tax cut enacted in the 2010 tax act, which is assumed to expire as scheduled after 2012.

Under those assumptions, the growth in revenues between 2012 and 2022 would amount to less than 3 percentage points of GDP compared with the projected increase of more than 5 percentage points under the current-law baseline. The projected growth in receipts during the decade is largely attributable to two factors that also matter in the baseline: the anticipated continued economic recovery over the next few years and the rise in receipts from estate, gift, and corporate taxes.

For the extended alternative fiscal scenario, CBO assumes that after 2022, changes will be made in the tax code to offset certain factors that under the extended baseline scenario would increase revenues over time relative to GDP; as a result, revenues remain constant as a share of GDP. The chief features of the current tax system that

would cause revenues to rise are real bracket creep, tax parameters that are not indexed to inflation, an increase in taxable withdrawals from retirement accounts, and the long-term growth of receipts from the excise tax on certain high-premium health insurance plans. With the effects of those features on total revenues offset by unspecified changes in the tax code under this scenario, revenues would reach 18.5 percent of GDP in 2022 and remain at that level through 2037, about 5 percentage points less in that year than under the extended baseline scenario.

Long-Term Implications for Tax Rates and the Tax Burden

The tax system that would be in place in the long run under either the extended baseline scenario or the extended alternative fiscal scenario would differ in significant ways from the current system. Under the extended baseline scenario, inflation and income growth over time would force many more taxpayers to pay the AMT, push up marginal and average tax rates, and cause the dollar value of some tax parameters to fall sharply in real terms and even more sharply relative to income. Changes to the tax system stemming from the expiration of provisions enacted since 2001 and extended by the 2010 tax act would also boost marginal and average tax rates. As a result of all those changes, people at various points in the income distribution would pay a larger share of their income in taxes than people at the same points pay today, and many taxpayers would have diminished incentives to work and save.

In the extended alternative fiscal scenario, CBO assumes that unspecified policy adjustments will be made after 2022 to keep revenues constant as a share of GDP. A wide range of policy choices could produce that outcome, and those choices would have significant effects on the economy and on the share of income paid in taxes by people at various income levels. The only specific assumptions that CBO made about tax provisions in this scenario after 2022 were that payroll taxes would be the same as under the extended baseline scenario and that effective marginal tax rates on capital and labor would remain constant at the levels they reach in 2022.

Impact of the AMT

If current law regarding the AMT remained unchanged, as assumed in the extended baseline scenario, the alternative minimum tax would ultimately affect a significant share of taxpayers. Just 3 percent of households paid the AMT in 2011—the last year in which temporarily higher exemption amounts were in effect under current law. However, in 2012—following the expiration of AMT relief at the end of 2011 but before the expiration at the end of 2012 of the income tax cuts extended by the 2010 tax act—the AMT will affect 18 percent of households, CBO estimates. In 2013, the share of households affected by the AMT is estimated to fall back partway, to 11 percent, because of the expiration of the income tax cuts extended by the 2010 tax act. In subsequent years, the share of households that owed more under the AMT than under the regular tax would gradually rise. By 2037, more than half of the nation's households would be subject to the alternative tax.

The AMT would also account for an increasing share of individual income tax liability over time. By 2037, roughly 11 percent of individual income tax liability would be attributable to the AMT, compared with less than 4 percent in both 2011 and 2013 (see [Figure 6-4](#)). Because taxpayers' liability under the AMT is calculated as the excess amount over the regular tax owed, the AMT's contribution to income tax receipts is much smaller than the share of people affected by the tax.

Under the extended baseline scenario, both the share of households subject to the AMT and the share of income tax revenues attributable to that tax would continue to rise after 2037. Sometime around 2065, revenues generated by the AMT would level off as a share of GDP as real bracket creep caused a greater share of income to be subject to the top marginal rate under the regular income tax. (Less bracket creep would occur under the AMT because most of the income subject to the AMT would be taxed at the top AMT rate by then.) Thereafter, the amount of additional tax liability under the AMT would decline as the amount of tax calculated under the regular tax rose. The AMT would continue to apply to many taxpayers, but the additional revenues attributable to it would diminish relative to GDP.

Marginal Tax Rates on Income from Labor and Capital

As a result of the expiration of various tax provisions and the effects of real bracket creep, marginal tax rates on income from labor would rise considerably under the extended baseline scenario. CBO estimates that under that scenario, the marginal tax rate on labor income would increase from about 28 percent in 2012 to 31 percent in 2013; that rise reflects the expiration of the temporary payroll tax reduction, the expiration of tax provisions extended by the 2010 tax act, and the introduction of the additional tax on earnings over \$250,000 (see [Table 6-3](#)). Between 2013 and 2037, the marginal tax rate on labor income would increase further—to 36 percent, CBO estimates. That increase reflects the following factors:

- Real bracket creep under the regular income tax;
- The rising share of taxpayers and income affected by the AMT;
- The additional 0.9 percent tax on earnings (effective beginning in 2013), which will apply to a growing share of labor income over time because the \$250,000 threshold is not indexed for inflation;
- The excise tax on certain high-premium health insurance plans (due to take effect in 2018), which will affect a growing share of compensation over time because health care costs are projected to rise faster than the threshold for the tax; and
- Rising marginal rates over time for taxpayers who receive the health insurance exchange subsidies, which are conveyed in the form of tax credits. The subsidies

will phase out over an income range that will be constant in real terms, thereby producing higher marginal rates in that range.

The marginal tax rate on income from capital also would rise considerably under the extended baseline scenario. CBO estimates that under that scenario, the marginal tax rate on capital income would rise by about 6 percentage points between 2012 and 2013 following the expiration of certain provisions enacted since 2001 (most notably those allowing for more rapid depreciation of property) and the introduction of the additional tax on investment income over \$250,000. Marginal rates on capital income would rise only slightly further between 2013 and 2037. The impact of real bracket creep and the expanding reach of the AMT would have little effect on the tax rate on capital income because a large share of capital income would already be taxed at the top rate in 2013.

Marginal tax rates on income from labor and capital would be 3 to 6 percentage points lower under the extended alternative fiscal scenario than under the extended baseline scenario during the 2013–2037 period. The marginal tax rate on labor income would be lower under the alternative fiscal scenario because that scenario incorporates an extension of various income tax provisions and continued relief from the AMT (which prevents more income from being taxed at higher rates under the AMT). The marginal tax rate on capital income would be lower under the alternative fiscal scenario because that scenario includes an extension of the provisions allowing for more rapid depreciation of property and an extension of the provisions holding down tax rates on capital gains and dividends that are scheduled to expire at the end of 2012. Also, after 2022, marginal tax rates on income from labor and capital would be lower under the extended alternative fiscal scenario because those rates are assumed to be unchanged in that scenario, compared with a continuing increase under the extended baseline scenario.

An increase in the marginal tax rate on labor income would reduce people's incentive to work, and an 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 effects typically prevail and that, on balance, higher marginal tax rates discourage economic activity. The overall effect of taxes on economic activity depends not only on marginal tax rates but also on the amount of government debt relative to the size of the economy. Those macroeconomic effects are not reflected in the analysis in this chapter but are analyzed in Chapter 2 of this report.

Average Tax Rates for Typical 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 decline relative to income over time. One consequence is that average tax rates increase over time under the extended baseline scenario. Because some parameters of the tax code (such as the personal exemption and the standard deduction) are larger relative to income for lower-income taxpayers, the decline in the value of those parameters relative to income would tend to boost the average tax rates of lower-income taxpayers more than the average tax rates of other taxpayers. The extended alternative fiscal scenario involves significantly lower federal revenues than the extended baseline scenario, so average tax rates would be lower under the alternative scenario for at least some households. However, CBO has not specified the tax policies that would be enacted under the alternative scenario, so the agency cannot analyze the average tax rates that would apply to households in different economic circumstances under that scenario.

Under the extended baseline scenario, the cumulative effect of rising prices will sharply reduce the value of some parameters of the tax system that are not indexed for inflation. Therefore, CBO estimates that the estate tax exemption, which is set to be \$1 million in 2013, would be worth less than \$600,000 in 2012 dollars by 2037; the same is true for the amount of mortgage debt eligible for the mortgage interest deduction, which is also limited to \$1 million under current law. The portion of Social Security benefits subject to taxation would increase from about 30 percent now to about 50 percent by 2037, CBO estimates, because the thresholds for taxing benefits are fixed in nominal terms.

Even tax parameters that are indexed for inflation would lose value relative to income over the long term under the extended baseline scenario. The current \$3,800 personal exemption is projected to rise by more than 75 percent by 2037 because it is indexed for inflation, but income per household is projected to more than double during that period, so the value of the exemption relative to income would decline by more than 30 percent. Moreover, without legislative changes, the proportion of taxpayers claiming the earned income tax credit would fall from 16 percent this year to 11 percent in 2037 as growth in real income moved 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 over time by varying amounts for households at different points in the income distribution. For example, a married couple with two children earning the median income of \$96,200 (including both cash income and other compensation) in 2012 and filing a joint tax return will pay about 4 percent of their income in individual income taxes (see [Table 6-4](#)).¹²⁷ By 2037, under the extended baseline scenario, a similar couple earning the median income would pay 13 percent of their income in individual income taxes, an increase of 9 percentage points. By comparison, if the same

127. In the examples, all income received by taxpayers is assumed to be from compensation. For details about the calculations, see [Table 6-4](#).

couple earned four times the median income, the share of income that they would pay in individual income taxes would rise by 2 percentage points—from 20 percent in 2012 to 22 percent by 2037. After 2037, income taxes as a share of income would continue rising at both income levels—but, again, by a greater proportion for the couple earning the median income. Taxes as a share of income for households at other points in the income distribution would also differ greatly from what they are today.

Despite rising average tax rates under the extended baseline scenario, growth in real income means 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 2012 to 2037, real after-tax income for a couple earning the median income is projected to grow by 38 percent under the extended baseline scenario, as the growth in pretax income would more than offset the increase in taxes.

Appendix A: Changes in CBO's Long-Term Projections Since June 2011

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 2011, despite certain changes in law, revisions to some of the agency's assumptions and methods, and the availability of more-recent data.¹²⁸ However, the small differences in the projections cumulate over the coming decades to produce somewhat different paths for federal debt.

As in its previous analysis, CBO again this year focused on outcomes under two scenarios. Under the *extended baseline scenario*, which generally adheres closely to current law, revenues and outlays would both grow steadily in coming decades, measured as a percentage of the economy's annual output, or gross domestic product (GDP). Debt under the scenario would slowly decline as a percentage of GDP; nevertheless, over the 25-year projection period, through 2037, it would remain at higher levels than those seen throughout most of U.S. history. The steady decline in debt as a percentage of GDP is a change from the slight increase projected in 2011.

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.

128. See Congressional Budget Office, *CBO's 2011 Long-Term Budget Outlook* (June 2011, corrected February 2012).

Under that scenario, revenues as a percentage of GDP would be just above their historical average, but outlays would grow steadily. Consequently, as shown in last year's analysis, debt in coming years would increase sharply from its already high level, reaching amounts relative to the size of the economy that would be unprecedented in the United States. (In last year's report, that scenario was referred to as the "alternative fiscal scenario." It is now called the "extended alternative fiscal scenario" to distinguish it from the alternative fiscal scenario most recently presented in CBO's March 2012 report *Updated Budget Projections: Fiscal Years 2012 to 2022*, which applies only through 2022.)

New Legislation and Changes in Assumptions and Methods

Although the conclusions of this year's long-term analysis are similar to those presented in the 2011 report, CBO's projections have been affected by new legislation and by updates to several of its assumptions about spending and revenues.

- **The Budget Control Act of 2011 (Public Law 112-25) reduces projected spending under both scenarios.** The Budget Control Act, enacted in August 2011, established caps on discretionary spending that will reduce outlays by over \$900 billion through 2021; those caps affect outlays under both of CBO's long-term scenarios. They also affect outlays projected for 2022 because CBO has assumed that appropriations in that year will equal the amount provided for 2021 increased by the rate of inflation. In addition, the Budget Control Act specifies further automatic reductions in discretionary spending and Medicare spending; only the extended baseline scenario incorporates those reductions.
- **Under the extended alternative fiscal scenario, so-called "other" noninterest spending is ultimately a larger share of GDP than it was in last year's analysis.** In the first 10 years of the projection period, through 2022, projections of spending other than that for major health care programs, Social Security, and interest—labeled in this report "other noninterest spending"—are similar to those presented in the 2011 report. As in last year's analysis, discretionary spending is assumed to grow more slowly than GDP, though for different reasons. Last year, discretionary spending was assumed to grow more slowly than GDP because of reduced spending on overseas military operations; this year, it is assumed to grow more slowly because of the caps on discretionary spending in the Budget Control Act. In part because of that change, other noninterest spending in 2022 is projected to be lower than it was last year.

CBO assumed for its 2011 analysis that after that initial 10-year period, other noninterest spending would remain approximately constant relative to GDP. But in this year's analysis, other noninterest spending under the extended alternative fiscal scenario is assumed to return to 9.9 percent of GDP—the average share seen in the past two decades—by 2027. As a result, such spending is now projected to be higher than it was in last year's analysis beginning in 2025.

- **The assumptions about excess cost growth, which underlie projections of health care spending, are lower in both of the scenarios this year than they were in the corresponding scenarios last year.** A key assumption underlying projections of long-term health care spending is the rate of excess cost growth—the increase in nominal 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. Excess cost growth in this year’s analysis, as in last year’s, is projected to decline throughout the 75-year projection period, ending at 1.0 percent per year for Medicare and zero for Medicaid and private insurance premiums. However, last year, the underlying rate of excess cost growth was assumed to begin at 1.7 percent in 2022, which equaled the average growth experienced in the health care system between 1985 and 2007. (Costs are not always assumed to grow at the underlying rate, though, as described in Chapter 3.) In contrast, this year, the assumed underlying rate of excess cost growth—1.6 percent—is set to equal a weighted average of the annual growth rates between 1985 and 2010. Further, CBO assumes that it begins to decline toward the rate it ultimately reaches earlier—in 2011, rather than at the end of the 10-year window. The difference between last year’s and this year’s estimates of the rate of excess cost growth for any individual year is small, so projections of health care spending for the first decades of the projection period are similar in this year’s analysis to those reported in 2011. However, the differences in the paths of excess cost growth compound over time, causing the divergence between last year’s and this year’s projections of health care spending to widen.

- **Because of a change in its methods, CBO’s estimates of the shares of growth in spending on the major health care programs and Social Security attributable to aging and to the rise in health care costs have changed.** In the 2011 analysis, CBO estimated that aging of the population explained 64 percent of the growth in federal spending on major health care programs and Social Security through 2035 and that excess cost growth explained 36 percent of that growth. In this year’s analysis, presented in [Box 1-1](#), CBO estimates that aging explains 75 percent of the growth through 2037 and excess cost growth accounts for 25 percent. The change in the shares explained by the two factors stems primarily from an improvement in the way CBO accounts for the negative excess cost growth projected for the initial years of the projection period. Other factors contributing to the change include the shift in the projection period, new detailed budget projections through 2022, and lower projections of excess cost growth in later years. (The change in the way CBO accounts for negative excess cost growth affects only the analysis presented in [Box 1-1](#); it does not affect projections of outlays elsewhere in the report.)

Changes in Projections Under the Extended Baseline Scenario

Compared with its estimates from the 2011 long-term outlook, CBO’s current projections of noninterest spending under the extended baseline scenario are lower throughout the projection period (see the top panel of [Figure A-1](#)).¹²⁹ Noninterest spending

129. Longer-term versions of some of the figures in this chapter are presented in Appendix B.

over the next decade is projected to be 0.5 percent of GDP lower, on average, than in the 2011 analysis. That difference widens to almost 1 percent of GDP over the following few decades, then grows to about 2 percent of GDP at the end of the 75-year projection period, in 2087. Most of the gap stems from the reductions in discretionary spending specified by the Budget Control Act, but lower spending on health care contributes to the divergence in later decades.

Projections of discretionary spending for 2017 and later are 1 percent of GDP lower than last year's projections. (CBO does not project discretionary spending separately after 2022, but the projections of other noninterest spending described in Chapter 5 depend in large part on the level of discretionary spending in 2022.) The difference between the 2011 and 2012 projections of other noninterest spending also grows over the next 75 years because of a refinement in the methods used to project income-related Medicare premiums: Those premiums, which are classified as offsetting receipts and therefore reduce other noninterest spending, are projected in this year's analysis to be larger than they were in the 2011 analysis.

Spending on health care in 2022 is projected to be higher than in last year's analysis, although projected spending in the years immediately before and after 2022 is almost the same (see [Figure A-2](#)). Spending is higher than in the 2011 analysis because the projection for 2022 is now part of the 10-year baseline and incorporates the effects of the timing of monthly Medicare payments to Medicare Advantage plans and prescription drug plans. In 2022, 13 such payments will be made because October 1, 2022, falls on a weekend and payments that would otherwise be made on that date (in fiscal year 2023) will instead be made in September (in fiscal year 2022). For the years outside the 10-year baseline period, CBO's spending projections assume 12 such monthly payments per year. Last year, 2022 was outside the 10-year window, and therefore CBO did not incorporate those timing effects. In the latter portion of the 75-year projection period, spending on health care is estimated to be lower than in last year's projections because of the cumulative effect of the downward revision to excess cost growth.

Federal revenues under the extended baseline scenario are expected to be similar in coming decades to those that CBO projected in 2011 (see the top panel of [Figure A-1](#)). After 2030, projected revenues grow slightly more slowly than they did in last year's analysis, remaining below 30 percent of GDP in 2087 rather than around 31 percent. That difference stems from lower projections of the effects of the excise tax on high health insurance premiums enacted in the Affordable Care Act and from various other technical changes to CBO's estimating methods.¹³⁰

130. The Affordable Care Act comprises the Patient Protection and Affordable Care Act (P.L. 111-148) and the health care provisions of the Health Care and Education Reconciliation Act of 2010 (P.L. 111-152).

Because of the lower spending projected under the extended baseline scenario, debt held by the public would decline as a percentage of GDP over the projection period (see the bottom panel of [Figure A-1](#)). By the 2070s, no federal debt would remain, in contrast to last year's projections, in which debt remained a roughly constant proportion of GDP. The decrease in projected debt is greater than the decrease in projected noninterest outlays in individual years because debt reflects the sum of the changes in annual noninterest outlays over time and because lower debt results in lower outlays for interest.

Changes in Projections Under the Extended Alternative Fiscal Scenario

Under the extended alternative fiscal scenario, noninterest spending in 2022 is projected to be lower by about 1 percent of GDP compared with what CBO projected last year, but such spending in 2037 is projected to be almost 1 percent of GDP higher (see the top panel of [Figure A-3](#)). The reduction in the first decade of the projection period occurs primarily because of the cuts in discretionary spending enacted in the Budget Control Act. The increase in projected spending in later years stems from CBO's assumption that by 2027, other noninterest spending will return to 9.9 percent of GDP, its average share during the past two decades. The gap between this year's projections of other noninterest spending and last year's shrinks over the 75-year projection period because this year's projections of Medicare premiums are larger than last year's (under both scenarios). Also, this year's projections of spending on health care are lower than last year's after the first decade because of the cumulative effect of the downward revision to excess cost growth.

Under the extended alternative fiscal scenario, projected revenues are quite similar to those presented in CBO's 2011 report. Revenues in this year's analysis are projected to be 18.5 percent of GDP after 2022, compared with 18.4 percent last year (see the top panel of [Figure A-3](#)).

Over the next 25 years, debt under this scenario grows steadily to about 200 percent of GDP (see the bottom panel of [Figure A-3](#)). During that period, debt is projected to be somewhat lower than CBO estimated last year, primarily because of slightly lower interest rates on debt held by the public near the beginning of the projection period. Ultimately, however, the projected interest rates are the same as those used in last year's analysis.

Appendix B: Long-Term Projections Through 2087

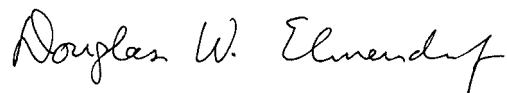
In Chapter 1 and Appendix A of this report, the Congressional Budget Office presents its long-term budget projections through 2037 under the extended baseline scenario and the extended alternative fiscal scenario (for details about the scenarios, see [Table 1-1](#)). The figures in this appendix extend the agency's projections under the two scenarios through 2087; they show noninterest spending (all spending except net interest), total revenues, and debt held by the public. The data underlying the figures are included in the supplementary data posted with this report on CBO's Web site (www.cbo.gov).

About This Document

This volume is one of a series of reports on the state of the budget and the economy that the Congressional Budget Office (CBO) issues each year. In accordance with CBO's mandate to provide objective, impartial analysis, the report makes no recommendations.

Prepared under the supervision of Joyce Manchester, the report represents the work of many analysts at CBO. Noah Meyerson wrote Chapters 1, 4, and 5 and Appendix A. Benjamin Page wrote Chapter 2, Julie Topoleski and Michael Levine wrote Chapter 3, and Joshua Shakin wrote Chapter 6. Julie Topoleski compiled Appendix B. Jessica Banthin, Linda Bilheimer, Tom Bradley, Melinda Buntin, Wendy Edelberg, Peter Fontaine, Holly Harvey, Jean Hearne, Jeffrey Holland, Alexandra Minicozzi, Lyle Nelson, Sam Papenfuss, William Randolph, Frank Sammartino, and Robert Stewart provided useful guidance. Michael Simpson developed the long-term budget simulations, with assistance from Charles Pineles-Mark, Jonathan Schwabish, and Julie Topoleski. Jonathan Huntley prepared the macroeconomic simulations. David Weiner coordinated the revenue simulations, which were prepared by Paul Burnham, Ed Harris, Athiphat Muthitacharoen, Larry Ozanne, Kurt Seibert, and Joshua Shakin. Priscila Hammett, Jimmy Jin, Michael Levine, and Kurt Seibert provided research assistance.

Christine Bogusz, Kate Kelly, Loretta Lettner, Leah Mazade, Jeanine Rees, John Skeen, and Sherry Snyder edited the report. Jeanine Rees prepared the report for publication, and Maureen Costantino and Jonathan Schwabish designed the cover. The report is available on CBO's Web site (www.cbo.gov).

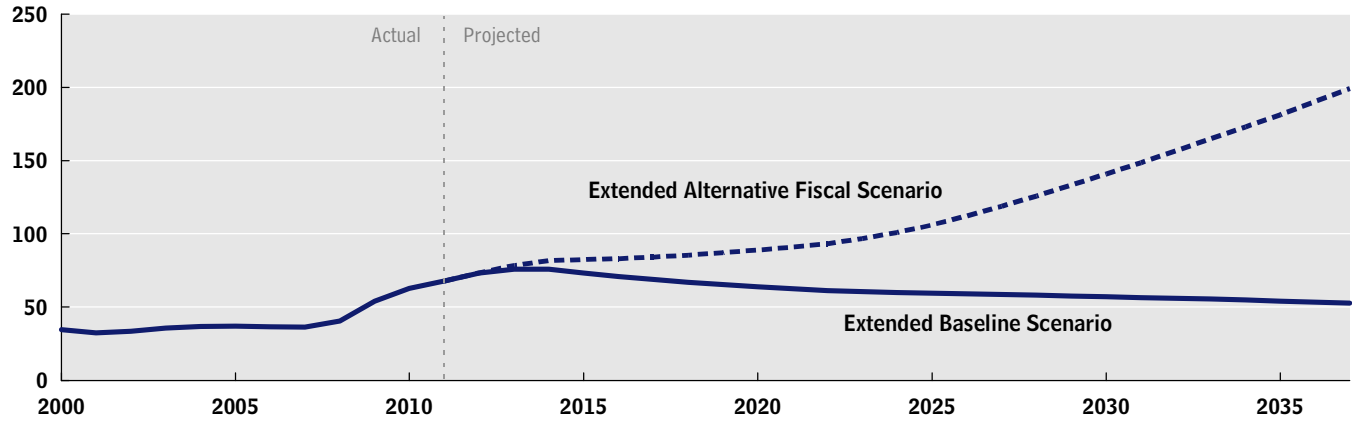


Douglas W. Elmendorf Director

June 2012

Summary Figure 1. **Return to Reference**
Federal Debt Held by the Public Under CBO’s Long-Term Budget Scenarios

(Percentage of gross domestic product)



Source: Congressional Budget Office.

Notes: The extended baseline scenario generally adheres closely to current law, following CBO’s 10-year baseline budget projections through 2022 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.

Debt does not reflect economic effects of the policies underlying the two scenarios. (For analysis of those effects and their impact on debt, see Chapter 2.)

Table 1-1. Return to Reference 1, 2, 3, 4**Assumptions About Spending and Revenues Underlying CBO's Long-Term Budget Scenarios**

	Extended Baseline Scenario	Extended Alternative Fiscal Scenario
	Assumptions About Spending	
Medicare	As scheduled under current law, ^a except that, after 2029, several policies that would restrain spending growth are assumed not to be in effect	As scheduled under current law, ^a except that: <ul style="list-style-type: none"> • Through 2022, payment rates for physicians are maintained at the 2012 levels (rather than at the lower rates that would apply under current law); • The automatic spending reductions required by the Budget Control Act of 2011 do not take effect; and, • After 2022, several policies that would restrain spending growth are assumed not to be in effect
Medicaid	As scheduled under current law	As scheduled under current law
CHIP	As projected in CBO's baseline through 2022; remaining constant as a share of GDP thereafter	As projected in CBO's baseline through 2022; remaining constant as a share of GDP thereafter
Exchange Subsidies	As scheduled under current law	As scheduled under current law, except that, after 2022: <ul style="list-style-type: none"> • A policy that would slow the growth of per-participant subsidies for health insurance coverage is assumed not to be in effect; and • Eligibility thresholds are assumed to be modified to maintain the share of the population eligible for subsidies
Social Security	As scheduled under current law ^a	As scheduled under current law ^a
Other Noninterest Spending	As projected in CBO's baseline through 2022; remaining at the 2022 level as a share of GDP thereafter, except that Medicare premiums, certain payments by states to Medicare, and some refundable tax credits are as scheduled under current law	As projected in CBO's baseline through 2022, except that automatic spending reductions required by the Budget Control Act do not take effect; other spending then increases gradually until 2027, when it reaches its average share of GDP over the past 20 years; thereafter, it remains at that share of GDP except that Medicare premiums and certain payments by states to Medicare are consistent with the projections of Medicare spending under this scenario

Continued

Table 1-1.

Continued

Assumptions About Spending and Revenues Underlying CBO's Long-Term Budget Scenarios

	Extended Baseline Scenario	Extended Alternative Fiscal Scenario
	Assumptions About Revenues	
Individual Income Taxes	As scheduled under current law	All provisions scheduled to expire in the next 10 years are extended through 2022, as is AMT relief, which was extended in the 2010 tax act but expired in 2011; revenues remain constant as a share of GDP thereafter
Payroll Taxes	As scheduled under current law	As scheduled under current law
Corporate Income Taxes	As scheduled under current law through 2022; remaining constant as a share of GDP thereafter	All provisions scheduled to expire in the next 10 years are extended through 2022; revenues remain constant as a share of GDP thereafter
Excise Taxes	As scheduled under current law	All provisions scheduled to expire in the next 10 years are extended through 2022; revenues remain constant as a share of GDP thereafter
Estate and Gift Taxes	As scheduled under current law	The 2012 tax rates and exemption amount (adjusted for inflation) continue through 2022; revenues remain constant as a share of GDP thereafter
Other Sources of Revenue	As scheduled under current law through 2022; remaining constant as a share of GDP thereafter	All provisions scheduled to expire in the next 10 years are extended through 2022; revenues remain constant as a share of GDP thereafter

Source: Congressional Budget Office.

Notes: The extended baseline scenario generally adheres closely to current law, following CBO's 10-year baseline budget projections through 2022 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.

For more details about CBO's most recent 10-year projections, see Congressional Budget Office, *Updated Budget Projections: Fiscal Years 2012 to 2022* (March 2012). Through 2022, the extended alternative fiscal scenario is consistent with the alternative fiscal scenario presented in that report.

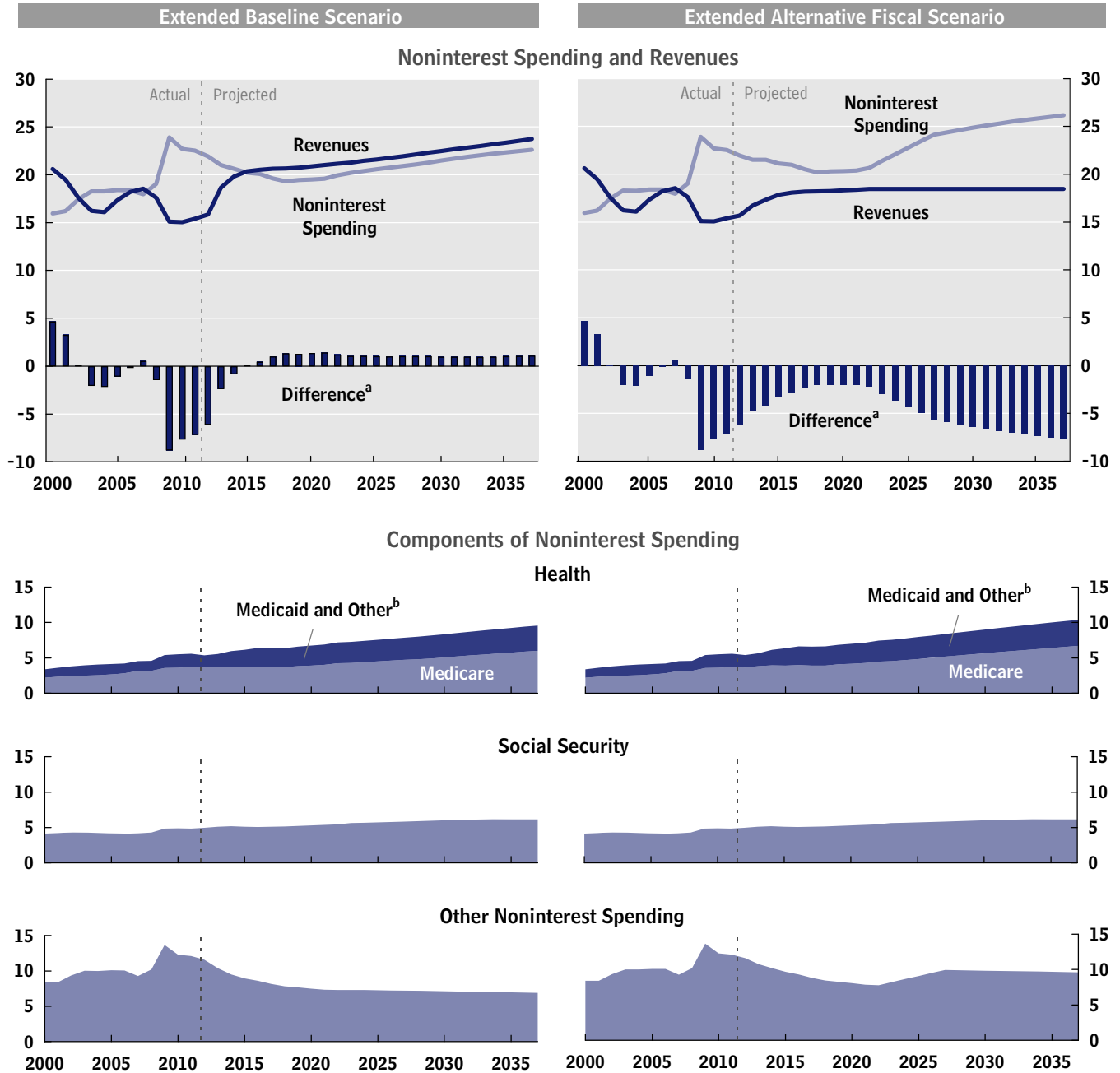
Tax provisions that expired at the end of December 2011 are also assumed to continue under the extended alternative fiscal scenario; nearly all of those provisions have been extended previously (some, such as the research and experimentation tax credit, more than once).

CHIP = Children's Health Insurance Program; GDP = gross domestic product; AMT = alternative minimum tax; 2010 tax act = Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010.

a. Full benefits as calculated under current law, regardless of the amounts available in the trust funds.

Figure 1-1. Return to Reference 1, 2
Noninterest Spending and Revenues Under CBO’s Long-Term Budget Scenarios

(Percentage of gross domestic product)



Source: Congressional Budget Office.

Note: The extended baseline scenario generally adheres closely to current law, following CBO’s 10-year baseline budget projections through 2022 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.

- a. Revenues minus noninterest spending.
- b. Includes the Children’s Health Insurance Program and exchange subsidies.

Table 1-2. **Return to Reference**
Projected Spending and Revenues Under CBO's Long-Term Budget Scenarios

(Percentage of gross domestic product)

	2012	2022	2037
Extended Baseline Scenario			
Spending			
Noninterest			
Social Security	5.0	5.4	6.2
Medicare ^a	3.7	4.2	6.0
Medicaid, CHIP, and exchange subsidies	1.7	3.0	3.6
Other	<u>11.6</u>	<u>7.3</u>	<u>6.9</u>
Subtotal	21.9	19.9	22.6
Net interest	<u>1.4</u>	<u>2.5</u>	<u>2.7</u>
Total	23.4	22.4	25.3
Revenues	15.8	21.2	23.7
Deficit (-) or Surplus			
Excluding net interest	-6.1	1.2	1.1
Total	-7.6	-1.2	-1.6
Debt Held by the Public at the End of the Year	73	61	53
Memorandum:			
Medicare Spending Net of Offsetting Receipts	3.1	3.6	5.0
Extended Alternative Fiscal Scenario			
Spending			
Noninterest			
Social Security	5.0	5.4	6.2
Medicare ^a	3.7	4.5	6.7
Medicaid, CHIP, and exchange subsidies	1.7	3.0	3.7
Other	<u>11.6</u>	<u>7.8</u>	<u>9.6</u>
Subtotal	22.0	20.7	26.1
Net interest	<u>1.4</u>	<u>3.7</u>	<u>9.5</u>
Total	23.4	24.3	35.7
Revenues	15.7	18.5	18.5
Deficit			
Excluding net interest	-6.3	-2.2	-7.7
Total	-7.7	-5.9	-17.2
Debt Held by the Public at the End of the Year	73	93	199
Memorandum:			
Medicare Spending Net of Offsetting Receipts	3.1	3.8	5.5

Source: Congressional Budget Office.

Notes: The extended baseline scenario generally adheres closely to current law, following CBO's 10-year baseline budget projections through 2022 and then extending the baseline concept for the rest of the long-term projection period. The extended alternative fiscal scenario incorporates several changes to current law that are widely expected to occur or that would modify some provisions of law that might be difficult to sustain for a long period.

The projections do not reflect economic effects of the policies underlying the two scenarios. (For analysis of those effects and their impact on debt, see Chapter 2.)

CHIP = Children's Health Insurance Program.

- a. Spending for Medicare reflects gross amounts. Beneficiaries' premiums and certain other receipts used to offset a portion of spending for Medicare are included in other noninterest spending. The memorandum line of the table shows Medicare spending net of offsetting receipts.

Box 1-1.**Return to Reference 1, 2, 3, 4**

How the Aging of the Population and Rising Costs for Health Care Affect Federal Spending on Major Health Care Programs and Social Security

In the Congressional Budget Office's (CBO's) long-term projections of federal spending, the growth of noninterest spending as a share of gross domestic product (GDP) results entirely from projected increases in spending on several large programs: Social Security, Medicare, Medicaid, and (to a lesser extent) the insurance subsidies that will be provided through the health insurance exchanges established by the Affordable Care Act (ACA).¹³¹ The health care programs are the main impetus behind that growth; they are responsible for about four-fifths of the total projected rise in spending on that set of programs over the next 25 years. Under both the extended baseline and extended alternative fiscal scenarios, noninterest spending other than that for the major health care programs and Social Security is projected, relative to GDP, to fall significantly from current levels during the same period.

Two factors underlie the projected rise in federal spending on the government's major health care programs and Social Security as a percentage of GDP: the aging of the U.S. population, which will increase the share of the population in those programs as well as affect the average age of beneficiaries, and growth in health care spending per beneficiary. Using the assumptions that underlie its two scenarios, CBO calculated how much of the projected rise in federal spending on the health care programs and Social Security would be attributable to aging and how much would be attributable to "excess cost growth"—the extent to which nominal health care costs per enrollee (after an adjustment for changes in the age profile of the population) grow faster than potential GDP per capita.¹³² CBO made that calculation by comparing the outlays projected under the two budget scenarios with the outlays that would occur under two alternative paths: one that included an aging population but no excess cost growth and one that included excess cost growth but no effects from an aging population.

The interaction between the aging of the population and excess cost growth accentuates the factors' individual effects. As aging causes the number of Medicare beneficia-

131. Noninterest spending is all spending except net interest, which consists primarily of the government's interest payments on debt held by the public, offset in part by interest income that the government receives from various sources. The ACA comprises the Patient Protection and Affordable Care Act (Public Law 111-148) and the health care provisions of the Health Care and Education Reconciliation Act of 2010 (P.L. 111-152).

132. CBO's extended baseline scenario generally adheres closely to current law; it follows CBO's March 2012 baseline budget projections through 2022 and then extends the baseline concept beyond that 10-year window. 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. Potential GDP is the level of output that corresponds to a high rate of use of labor and capital.

ries and elderly Medicaid beneficiaries to rise, higher health care spending per person has a greater impact. Conversely, when health care costs are growing, having more beneficiaries imposes a larger budgetary cost. That interaction can be identified separately—or, as in CBO’s analysis, it can be allocated in proportion to the shares that are attributable to aging and excess cost growth. Now and 2022 because provisions in current law will constrain that program’s spending; its excess cost growth is estimated to be negative in the early part of that period and positive toward the end. Excess cost growth for Medicaid, the Children’s Health Insurance Program, and private health insurance premiums is estimated to be positive, on average, during the period.

Through 2022, the aging of the population will cause spending on the major health care programs and Social Security to rise significantly, CBO projects. In fact, during that period, almost all of the projected growth in such spending as a share of GDP is effectively the result of aging. For Social Security, excess cost growth has no effect on projected growth. Under the extended baseline scenario, CBO anticipates no excess cost growth for Medicare, on average, between now and 2022 because provisions in current law will constrain that program’s spending; its excess cost growth is estimated to be negative in the early part of that period and positive toward the end. Excess cost growth for Medicaid, the Children’s Health Insurance Program, and private health insurance premiums is estimated to be positive, on average, during the period.

Explaining Projected Growth in Federal Spending on Major Health Care Programs and Social Security by 2037

(Percent)

	Aging	Excess Cost Growth
Extended Baseline Scenario		
Major Health Care Programs and Social Security	75	25
Major Health Care Programs	60	40
Extended Alternative Fiscal Scenario		
Major Health Care Programs and Social Security	68	32
Major Health Care Programs	52	48

Source: Congressional Budget Office.

Aging remains the more important factor for a few decades following the coming one. Of the total projected growth in spending on the major mandatory health care programs and Social Security under the extended baseline scenario between now and 2037, aging accounts for 75 percent, and excess cost growth accounts for 25 percent (see the table above).¹³³

Looking only at the major health care programs, CBO found that aging accounts for 60 percent of the programs' projected growth as a share of GDP by 2037, and excess cost growth accounts for 40 percent. The greater importance of aging is not surprising because the aging of the baby-boom generation (people born between 1946 and 1964) will significantly expand the number of people who participate in both the health care programs and Social Security in the next few decades. In contrast, the impact of excess cost growth is felt only in the health care programs. (For a discussion of the rates of excess cost growth that underlie those calculations, see Chapter 3.)

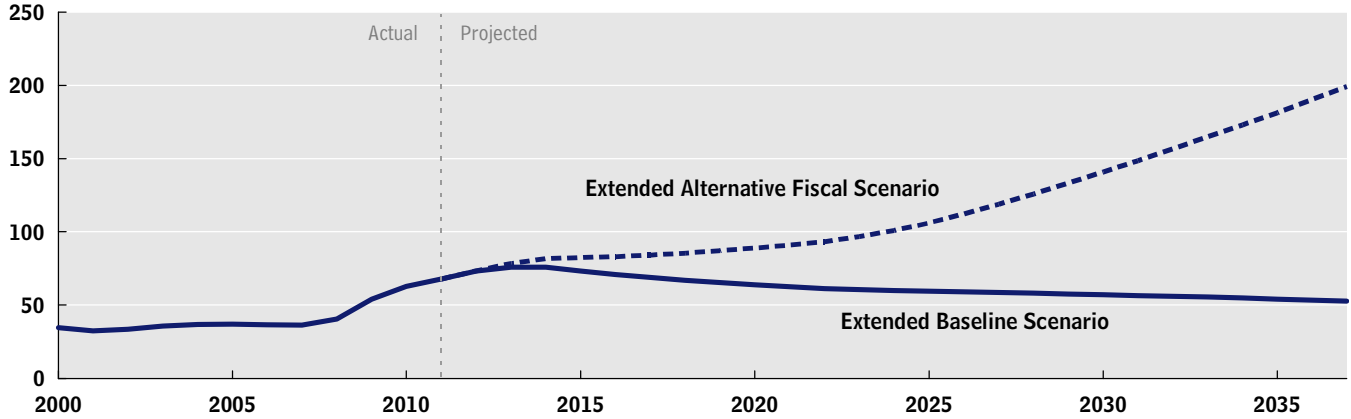
Under the extended alternative fiscal scenario, aging remains the more important factor, but excess cost growth plays a larger role. Of the total projected growth in spending on the major health care programs together with Social Security as a share of GDP, excess cost growth explains an additional 7 percentage points by 2037 and aging correspondingly less. For the major health care programs alone, excess cost growth explains an additional 8 percentage points, or about half of the growth ascribable to the two factors. The greater importance of growth in health care spending under the extended alternative fiscal scenario arises because Medicare spending is higher in 2013 and grows more quickly through 2029.

Over the longer term, however, the situation changes. Beyond 2037, the age profile of the population will stabilize, and the effect of aging on the programs' spending growth will diminish. As a result, excess cost growth accounts for an increasing share of the total projected growth in spending for the health care programs and Social Security and becomes the dominant factor in explaining the growth of spending on the health care programs alone.

133. A discussion of changes since *CBO's 2011 Long-Term Budget Outlook* (June 2011, corrected February 2012) was published appears in Appendix A.

Figure 1-2. **Return to Reference**
Federal Debt Held by the Public Under CBO’s Long-Term Budget Scenarios

(Percentage of gross domestic product)



Source: Congressional Budget Office.

Notes: The extended baseline scenario generally adheres closely to current law, following CBO’s 10-year baseline budget projections through 2022 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.

Debt does not reflect economic effects of the policies underlying the two scenarios. (For analysis of those effects and their impact on debt, see Chapter 2.)

Table 1-3. **Return to Reference**
Federal Fiscal Gap Under CBO's Long-Term Budget Scenarios

(Percentage of gross domestic product)

Projection Period	Present Value of the Future Stream of Revenues or Outlays Over a Given Period		Fiscal Gap (Difference)
	Revenues Plus Target Debt ^a	Outlays Plus Starting Debt ^a	
Extended Baseline Scenario			
2012 to 2037	23.9	23.2	-0.8
2012 to 2062	24.6	23.6	-1.0
2012 to 2087	25.6	24.5	-1.1
Extended Alternative Fiscal Scenario			
2012 to 2037	20.6	25.2	4.6
2012 to 2062	19.4	26.4	7.0
2012 to 2087	19.0	27.7	8.7

Source: Congressional Budget Office.

Notes: The extended baseline scenario generally adheres closely to current law, following CBO's 10-year baseline budget projections through 2022 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.

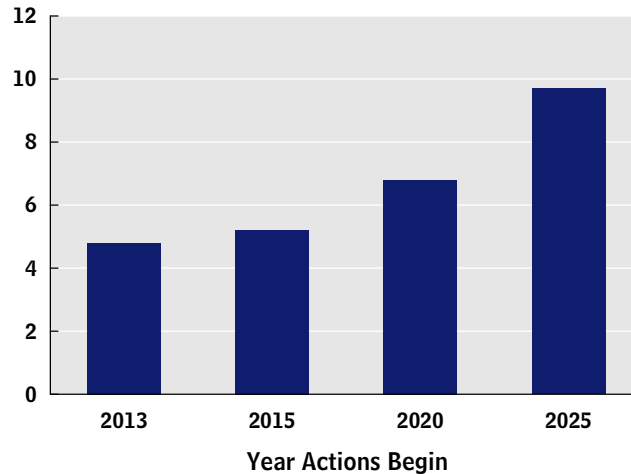
The fiscal gap is a measure of the difference between projected noninterest spending and revenues over a given period. It represents the extent to which the government would need to immediately and permanently either raise revenues or cut spending—or do both, to some degree—to make the government's debt the same size (relative to gross domestic product, or GDP) at the end of the period that it was at the end of 2011.

- a. To allow for the increase in the nominal value of federal debt that would occur even if that debt was maintained at its share of GDP at the end of 2011, the present value of the target end-of-period debt is added to revenues, and debt at the end of 2011 is added to outlays. (The target end-of-period debt is equal to GDP in the last year of the period multiplied by the ratio of debt to GDP at the end of 2011. A present value is a single number that describes a flow of future revenues or outlays in terms of an equivalent lump sum received or spent today.)

Figure 1-3.**Return to Reference**

Reductions in Noninterest Spending or Increases in Revenues in Various Years Needed to Close the Federal Fiscal Gap Through 2037 Under CBO's Extended Alternative Fiscal Scenario

(Percentage of gross domestic product)



Source: Congressional Budget Office.

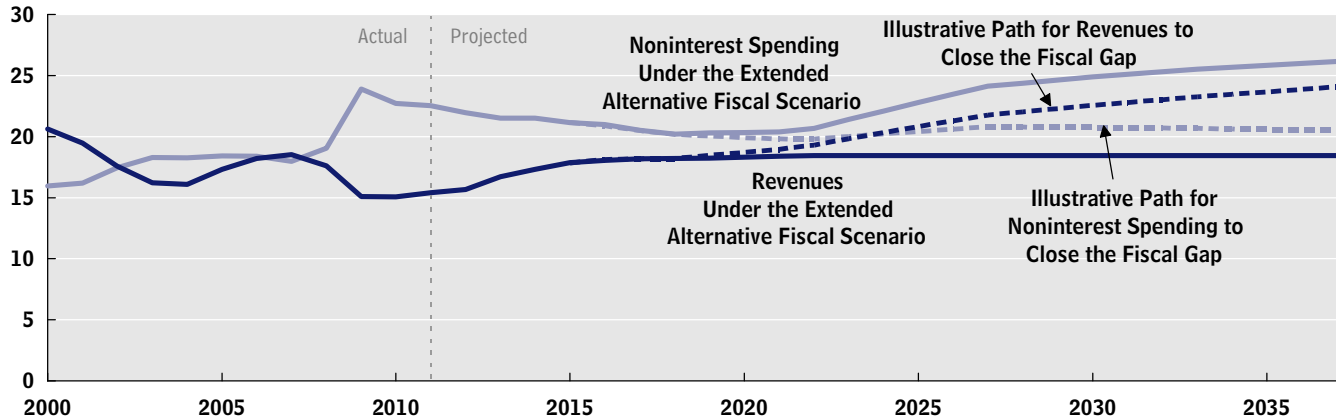
Notes: The extended alternative fiscal scenario incorporates the assumptions that certain policies that have been in place for a number of years will be continued and that some provisions of law that might be difficult to sustain for a long period will be modified.

The fiscal gap is a measure of the difference between projected noninterest spending and revenues over a given period. It represents the extent to which the government would need to immediately and permanently either raise tax revenues or cut spending—or do both, to some degree—to make the government's debt the same size (relative to gross domestic product) at the end of the period that it was at the end of 2011.

Figure 1-4. Return to Reference

Illustrative Paths for Revenues and Noninterest Spending Sufficient to Close the Fiscal Gap Through 2037 Under CBO’s Extended Alternative Fiscal Scenario

(Percentage of gross domestic product)



Source: Congressional Budget Office.

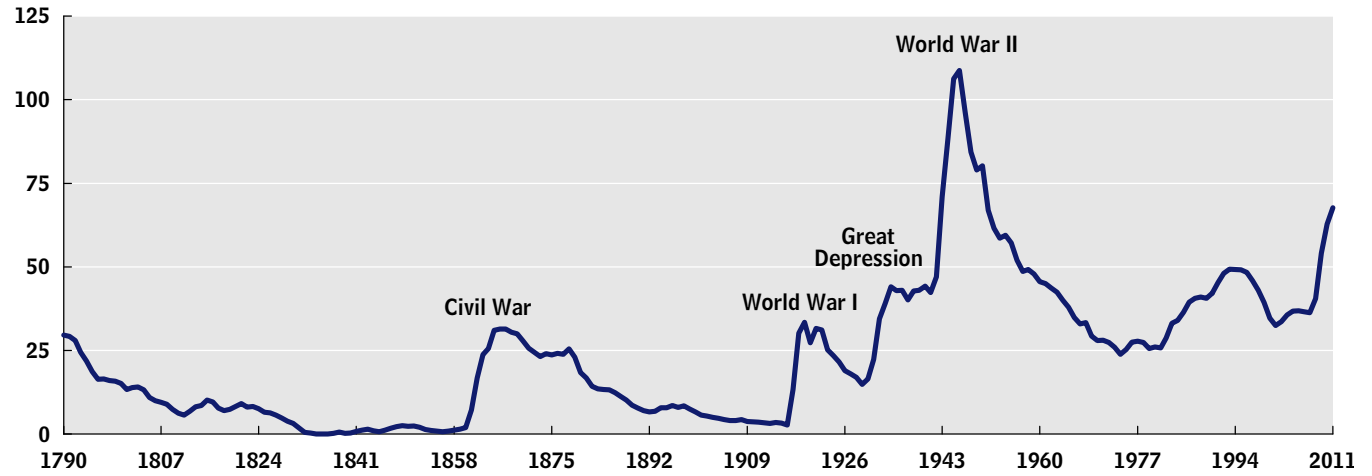
Notes: The extended alternative fiscal scenario incorporates the assumptions that certain policies that have been in place for a number of years will be continued and that some provisions of law that might be difficult to sustain for a long period will be modified.

The fiscal gap is a measure of the difference between projected noninterest spending and revenues over a given period. It represents the extent to which the government would need to immediately and permanently either raise tax revenues or cut spending—or do both, to some degree—to make the government’s debt the same size (relative to gross domestic product) at the end of the period that it was at the end of 2011.

Figure 1-5. **Return to Reference**

Federal Debt Held by the Public, 1790 to 2011

(Percentage of gross domestic product)



Sources: Congressional Budget Office; Office of Management and Budget.

Table 2-1.**Return to Reference**

Effects of the Fiscal Policies in CBO's Long-Term Budget Scenarios on Real GNP and GDP, Calendar Years 2027 and 2037

(Percentage difference from benchmark level)

	Extended Baseline Scenario		Extended Alternative Fiscal Scenario	
	GNP	GDP	GNP	GDP
2027				
Central estimate ^a	*	-0.1	-4.4	-1.9
Range	0.3 to -0.3	0.1 to -0.5	-0.2 to -7.7	1.7 to -4.4
2037				
Central estimate ^a	0.1	-0.3	-13.4	-6.6
Range	1.1 to -1.4	0.6 to -1.9	-3.5 to more negative than -21 ^b	0.3 to more negative than -13 ^b

Source: Congressional Budget Office.

Notes: The extended baseline scenario generally adheres closely to current law, following CBO's 10-year baseline budget projections through 2022 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.

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

CBO's benchmark is a set of economic projections that generally aligns with the economic experience of the past few decades and incorporates the assumptions that the ratio of debt to GDP is stable at 61 percent after 2022 and that the effective marginal tax rates on income from work and saving will remain constant at the levels reached in 2022 in CBO's baseline budget projections. For details, see the section titled "CBO's Long-Term Economic Benchmark."

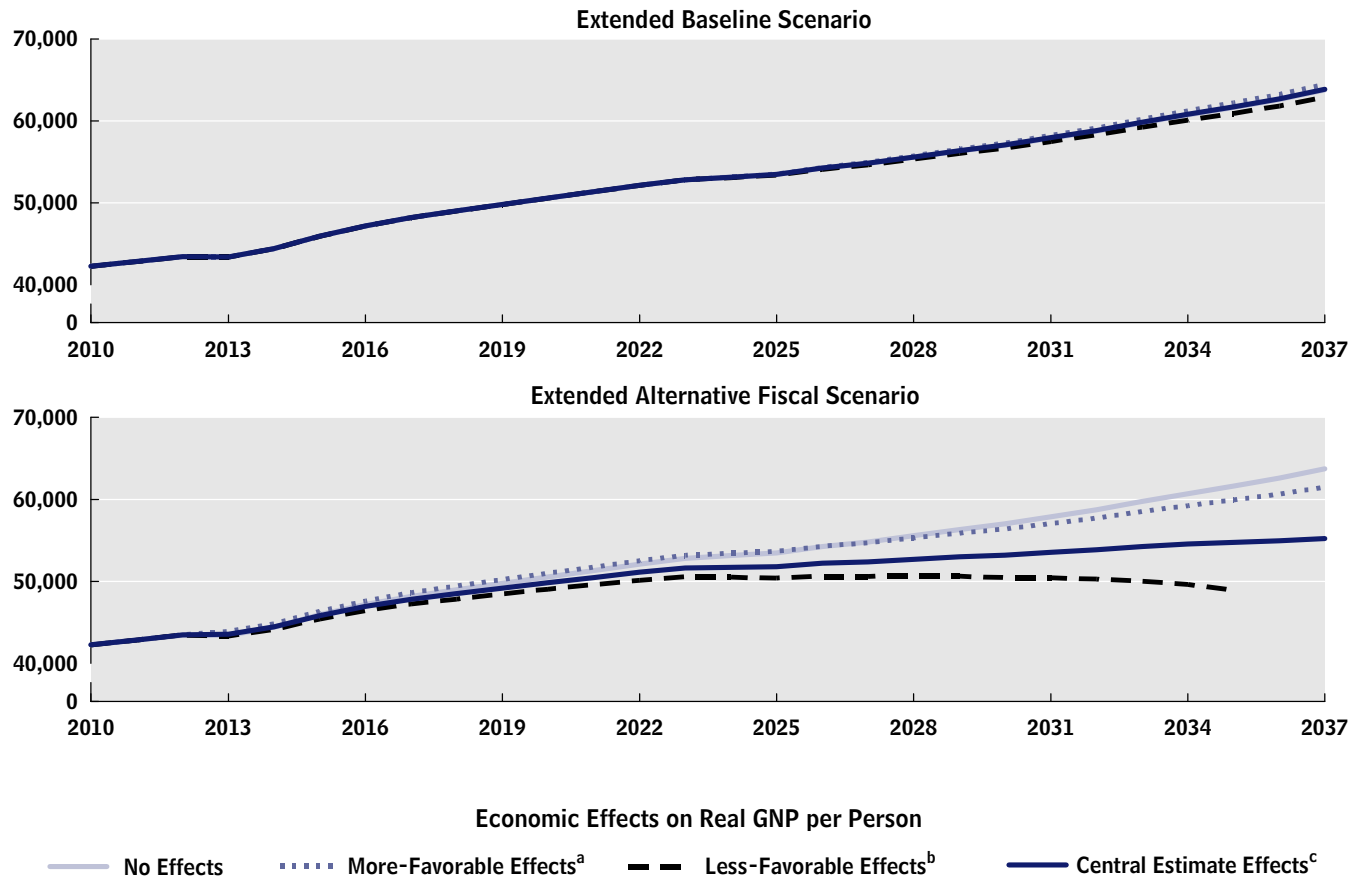
* = less than 0.05 percent.

- CBO's central estimate, which corresponds to the assumption that key parameters of economic behavior—including the extent to which government borrowing crowds out capital investment and the response of labor supply to changes in marginal tax rates—equal the midpoints of the ranges used by CBO.
- Debt would reach 250 percent of GDP by 2035 under the assumptions leading to these estimates. CBO's model cannot reliably estimate output after debt reaches that amount, in the agency's judgment. The values for the effect on output shown in the table are for 2035; the effect would be larger in 2037.

Figure 2-1. Return to Reference

Effects of the Fiscal Policies in CBO’s Long-Term Budget Scenarios on Real GNP per Person, Calendar Years 2010 to 2037

(2010 dollars)



Source: Congressional Budget Office.

Notes: The extended baseline scenario generally adheres closely to current law, following CBO’s 10-year baseline budget projections through 2022 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.

The range of estimates shown stems from varying assumptions 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 alterations in after-tax wages and interest rates by changing the number of hours they work and the amount they save.

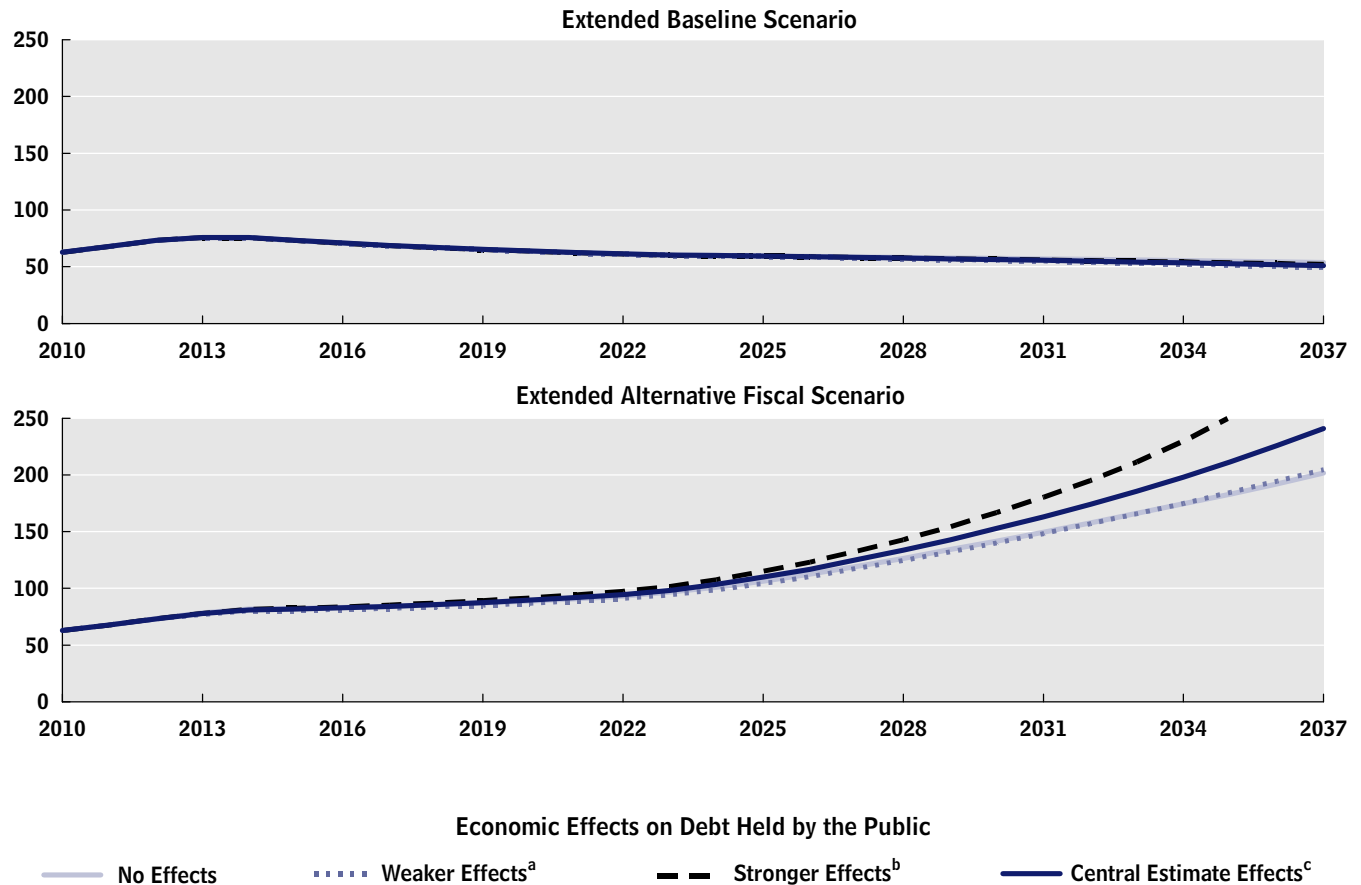
Real (inflation-adjusted) gross national product (GNP) differs from gross domestic product, the more common measure of the output of the economy, primarily by including the income that U.S. residents earn from their investments abroad and excluding the income that nonresidents earn from their investments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

- a. The highest estimated value for GNP per person in each year.
- b. The lowest estimated value for GNP per person in each year. Debt would reach 250 percent of gross domestic product by 2035 under the assumptions leading to these estimates. CBO’s model cannot reliably estimate GNP per person after debt reaches that amount, in the agency’s judgment.
- c. CBO’s central estimate, which corresponds to the assumption that key parameters of economic behavior—including the extent to which government borrowing crowds out capital investment and the response of labor supply to changes in marginal tax rates—equal the midpoints of the ranges used by CBO.

Figure 2-2. **Return to Reference**

Effects of the Fiscal Policies in CBO’s Long-Term Budget Scenarios on Federal Debt Held by the Public, Fiscal Years 2010 to 2037

(Percentage of gross domestic product)



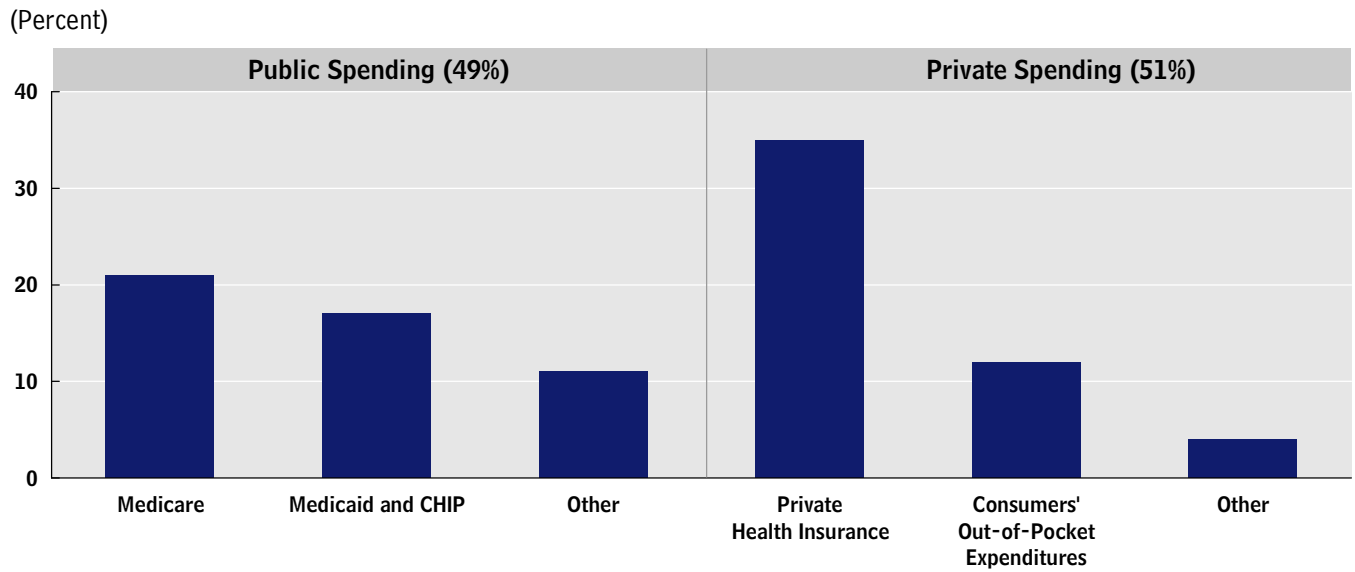
Source: Congressional Budget Office.

Notes: The extended baseline scenario generally adheres closely to current law, following CBO’s 10-year baseline budget projections through 2022 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.

The range of estimates shown stems from varying assumptions 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 alterations in after-tax wages and interest rates by changing the number of hours they work and the amount they save.

- a. The lowest estimated ratio of debt to GDP for each year.
- b. The highest estimated ratio of debt to GDP for each year.
- c. CBO’s central estimate, which corresponds to the assumption that key parameters of economic behavior—including the extent to which government borrowing crowds out capital investment and the response of labor supply to changes in marginal tax rates—equal the midpoints of the ranges used by CBO.

Figure 3-1. **Return to Reference**
Distribution of Spending for Health Care, 2010



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

Note: CHIP = Children's Health Insurance Program.

Table 3-1. **Return to Reference**
Excess Cost Growth in Spending for Health Care

(Percentage points)

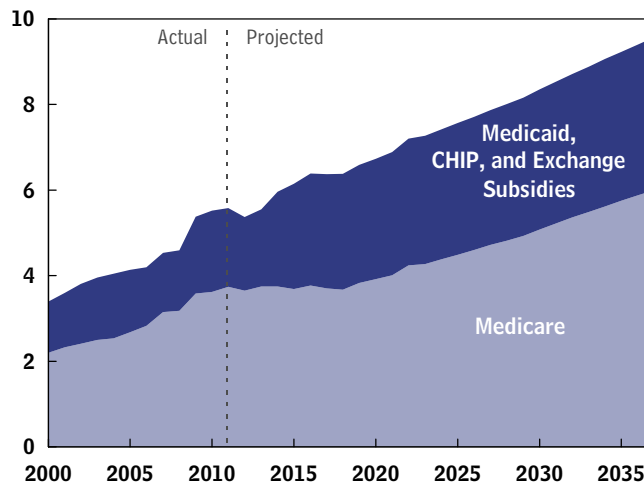
	Medicare	Medicaid	Other	Overall
1975 to 2010	2.1	1.8	2.0	2.0
1980 to 2010	1.8	1.4	1.9	1.8
1985 to 2010	1.5	0.9	1.7	1.6
1990 to 2010	1.4	0.3	1.4	1.3

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—adjusted for demographic characteristics of the relevant populations—exceeded the annual growth rate of potential gross domestic product (GDP) per capita, on average. (Potential GDP is CBO’s estimate of the output the economy would produce with a high rate of use of its capital and labor resources.) The historical 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.

Figure 3-2. **Return to Reference**
Federal Spending on Major Health Care Programs, by Category, Under CBO’s Extended Baseline Scenario

(Percentage of gross domestic product)



Source: Congressional Budget Office.

Notes: The extended baseline scenario generally adheres closely to current law, following CBO’s 10-year baseline budget projections through 2022 and then extending the baseline concept for the rest of the long-term projection period.

CHIP = Children’s Health Insurance Program.

Box 3-1.**Return to Reference****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 several components of those expenditures as closely as it analyzes the components that are part of the federal budget. To generate projections of national spending for health care, the agency has 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 and Medicaid Services (CMS).¹³⁴ The resulting projections are rough and involve substantial uncertainty—especially as they look farther into the future—and thus should be viewed with caution.

To project national spending for health care for the 2013–2022 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 projected such spending using its projections of payments by private health insurers and the CMS actuaries’ projections of spending in all other categories. Because those projections by CMS are available only through 2020, CBO used the historical rate of excess cost growth to extend them for the following two years.¹³⁵

To project national spending for health care after 2022, CBO again started with its projections of federal spending on the government’s major health care programs. CBO projected other spending for health care by combining its projections of demographic and economic changes with assumptions about excess cost growth for such spending.¹³⁶ As with the agency’s projections of federal health care 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 2010. CBO assumed that the rate of excess cost growth for other health care spending would slow from that historical rate—1.6 percentage points—in 2011 to zero in 2087, in reaction to the pressures that would develop from rising health care spending. Between 2011 and 2087, excess cost growth was assumed to decline linearly—that is, by the same number of fractional percentage points each year.

134. 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.

135. See Sean P. Keehan and others, “National Health Spending Projections Through 2020: Economic Recovery and Reform Drive Faster Spending Growth,” *Health Affairs*, vol. 30, no. 8 (August 2011).

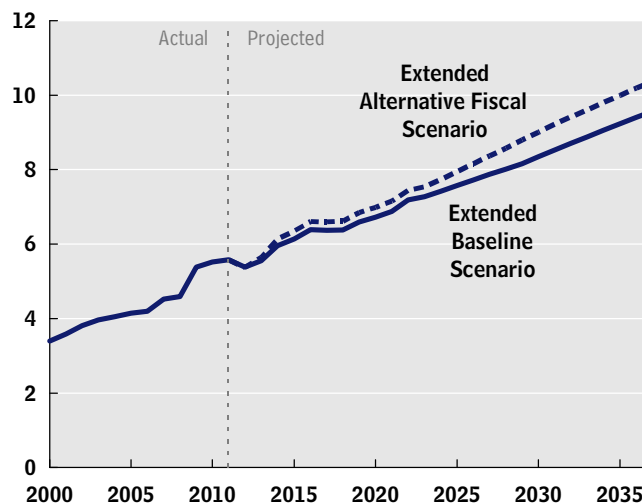
136. For the components derived using CMS’s projections, CBO used the underlying path of excess cost growth beginning in 2021.

National spending on health care has increased from 9.8 percent of GDP in 1985 to 16.8 percent of GDP in 2010, a rise of roughly two-thirds. Under CBO's extended baseline scenario, which generally reflects current law, national spending for health care would increase to almost one-quarter of GDP by 2037. Under the agency's extended alternative fiscal scenario, national spending on health care would be about 1 percent of GDP higher in 2037. The gap in spending between the two scenarios would widen after 2037.

Figure 3-3.**Return to Reference**

Federal Spending on Major Health Care Programs Under CBO's Long-Term Budget Scenarios

(Percentage of gross domestic product)



Source: Congressional Budget Office.

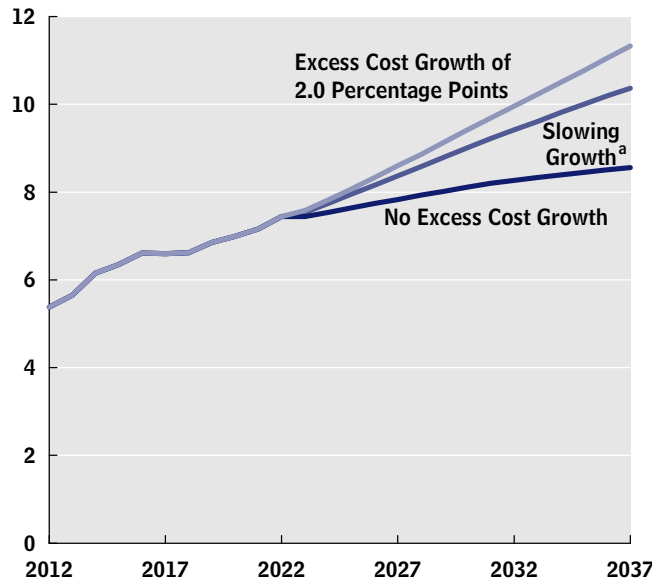
Note: The extended baseline scenario generally adheres closely to current law, following CBO's 10-year baseline budget projections through 2022 and then extending the baseline concept for the rest of the long-term projection period. The extended alternative fiscal scenario incorporates the assumptions 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.

Figure 3-4.

Return to Reference

Federal Spending on Major Health Care Programs Under CBO’s Extended Alternative Fiscal Scenario and Different Assumptions About Excess Cost Growth After 2022

(Percentage of gross domestic product)



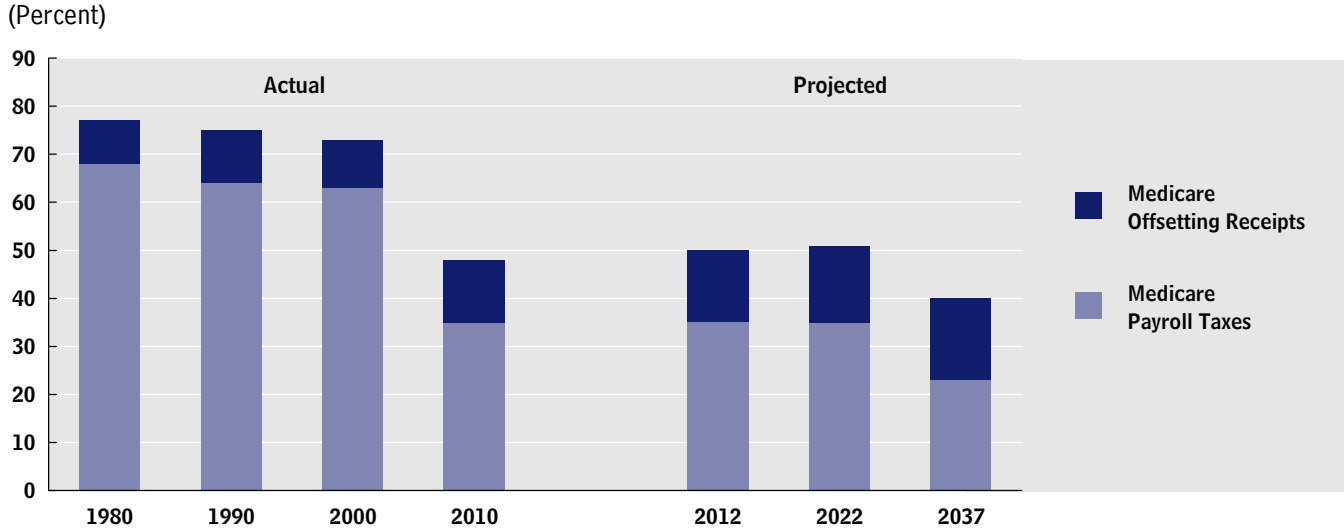
Source: Congressional Budget Office.

Notes: 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.

Excess cost growth refers to the extent to which the annual growth rate of nominal health care spending per beneficiary—adjusted for demographic characteristics of the relevant populations—is assumed to exceed the annual growth rate of potential gross domestic product per capita.

- a. In the extended alternative fiscal scenario, starting in 2023 federal spending on major health care programs follows the underlying paths of excess cost growth, which are assumed to decline each year from an initial value of 1.6 percentage points in 2011.

Figure 3-5. **Return to Reference**
Medicare Payroll Taxes and Offsetting Receipts as a Share of Medicare Benefits Under CBO’s Extended Baseline Scenario



Sources: Congressional Budget Office’s projections. Historical shares are based on data from the Office of Management and Budget.

Note: The extended baseline scenario generally adheres closely to current law, following CBO’s 10-year baseline budget projections through 2022 and then extending the baseline concept for the rest of the long-term projection period.

Table 3-2.**Return to Reference 1, 2**

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

(Percentage of taxable payroll)

Projection Period (Calendar years)	Income Rate	Cost Rate	Actuarial Balance (Difference)
25 Years (2012 to 2036)	3.6	4.4	-0.8
50 Years (2012 to 2061)	3.8	5.3	-1.6
75 Years (2012 to 2086)	3.9	6.3	-2.4

Source: Congressional Budget Office.

Notes: The extended baseline scenario generally adheres closely to current law, following CBO's 10-year baseline budget projections through 2022 and then extending the baseline concept for the rest of the long-term projection period.

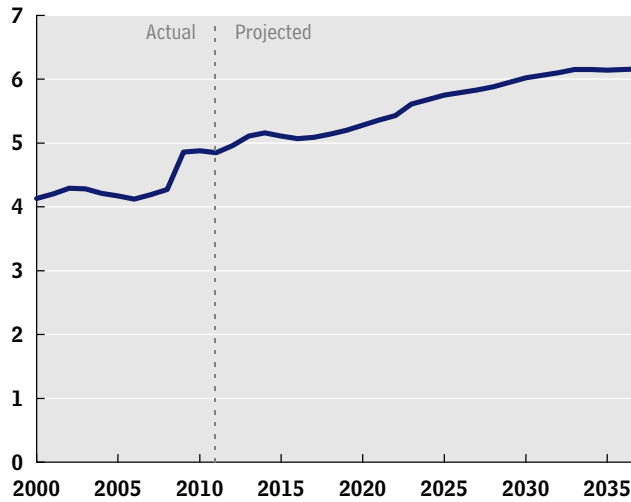
Over the relevant periods, the income rate is the present value of annual noninterest revenues (including the initial trust fund balance), and the cost rate is the present value of annual outlays (including the target trust fund balance at the end of the period), each divided by the present value of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

To be consistent with the Medicare trustees' latest report, the 25-, 50-, and 75-year periods for the financial measures reported here include 2012 and end in 2036, 2061, and 2086, respectively.

Figure 4-1. **Return to Reference**

Spending for Social Security Under CBO's Long-Term Budget Scenarios

(Percentage of gross domestic product)



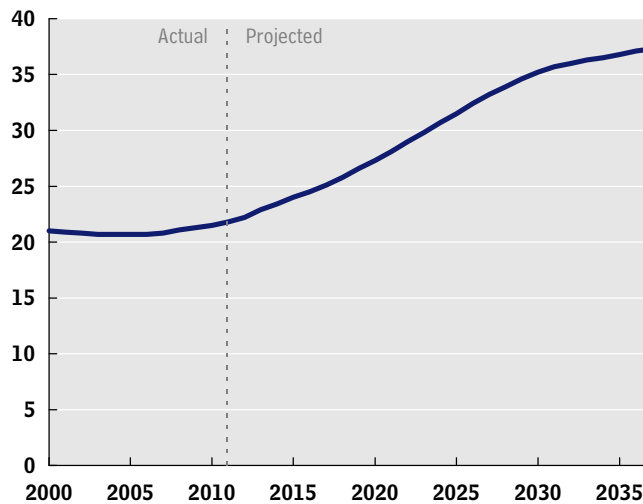
Source: Congressional Budget Office.

Note: Projected spending for Social Security is identical under CBO's two long-term budget scenarios—the extended baseline scenario and the extended alternative fiscal scenario.

Figure 4-2. **Return to Reference**

Population Age 65 or Older as a Share of the Population Ages 20 to 64

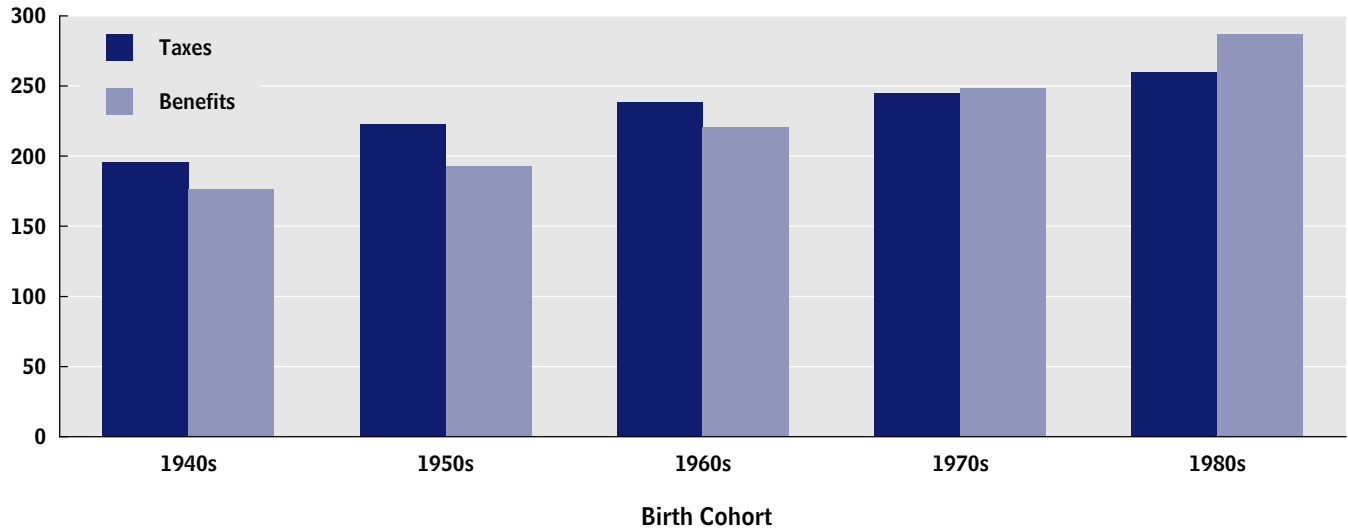
(Percent)



Source: Congressional Budget Office.

Figure 4-3. **Return to Reference**
Median Lifetime Scheduled Social Security Payroll Taxes and Benefits

(Thousands of 2012 dollars)



Source: Congressional Budget Office.

Note: To calculate present value, amounts are adjusted for inflation (to produce constant dollars) and discounted to age 62. Benefits are net of income taxes paid on benefits and credited to the Social Security trust funds. Scheduled benefits are benefits as calculated under the Social Security Act, regardless of the balances in the trust funds.

Table 4-1. **Return to Reference 1, 2**
Financial Measures for Social Security Under CBO's Long-Term Budget Scenarios

Projection Period (Calendar years)	Income Rate	Cost Rate	Actuarial Balance (Difference)
As a Percentage of Taxable Payroll			
<i>Extended Baseline Scenario</i>			
25 Years (2012 to 2036)	15.0	15.8	-0.7
50 Years (2012 to 2061)	14.4	15.9	-1.5
75 Years (2012 to 2086)	14.3	16.2	-1.9
<i>Extended Alternative Fiscal Scenario</i>			
25 Years (2012 to 2036)	14.8	15.8	-0.9
50 Years (2012 to 2061)	14.0	15.9	-1.8
75 Years (2012 to 2086)	13.8	16.2	-2.4
As a Percentage of Gross Domestic Product			
<i>Extended Baseline Scenario</i>			
25 Years (2012 to 2036)	5.6	5.8	-0.3
50 Years (2012 to 2061)	5.4	6.0	-0.6
75 Years (2012 to 2086)	5.4	6.1	-0.7
<i>Extended Alternative Fiscal Scenario</i>			
25 Years (2012 to 2036)	5.5	5.8	-0.3
50 Years (2012 to 2061)	5.3	6.0	-0.7
75 Years (2012 to 2086)	5.2	6.1	-0.9

Source: Congressional Budget Office.

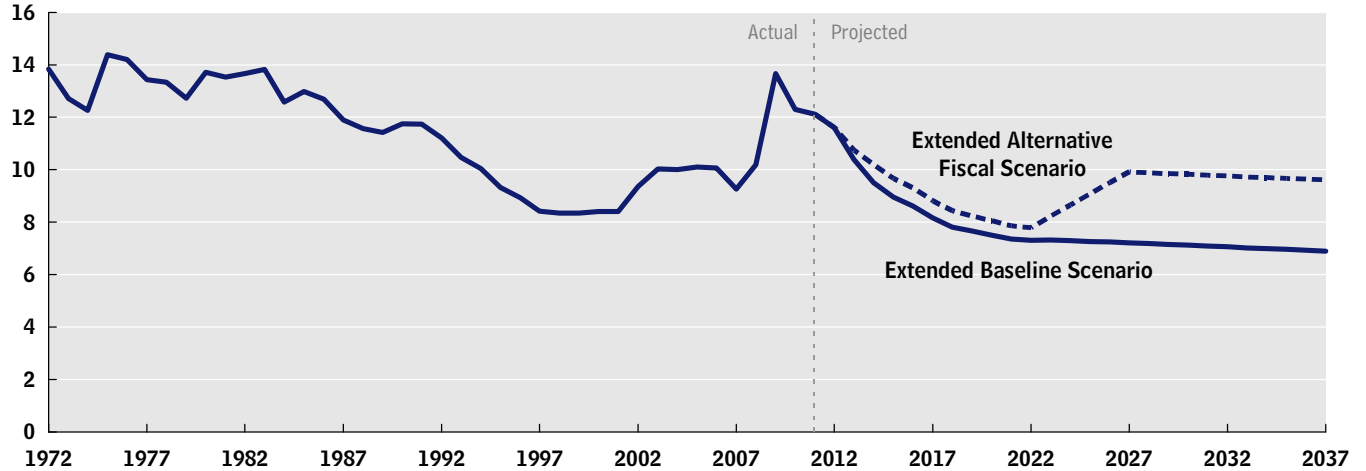
Notes: The extended baseline scenario generally adheres closely to current law, following CBO's 10-year baseline budget projections through 2022 and then extending the baseline concept for the rest of the long-term projection period. The extended alternative fiscal scenario incorporates the assumptions 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.

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 Social Security Trustees' Report, the 25-, 50-, and 75-year projection periods for the financial measures reported here begin in 2012 and end in 2036, 2061, and 2086, respectively.

Figure 5-1. **Return to Reference**
Other Federal Spending Under CBO’s Long-Term Budget Scenarios

(Percentage of gross domestic product)



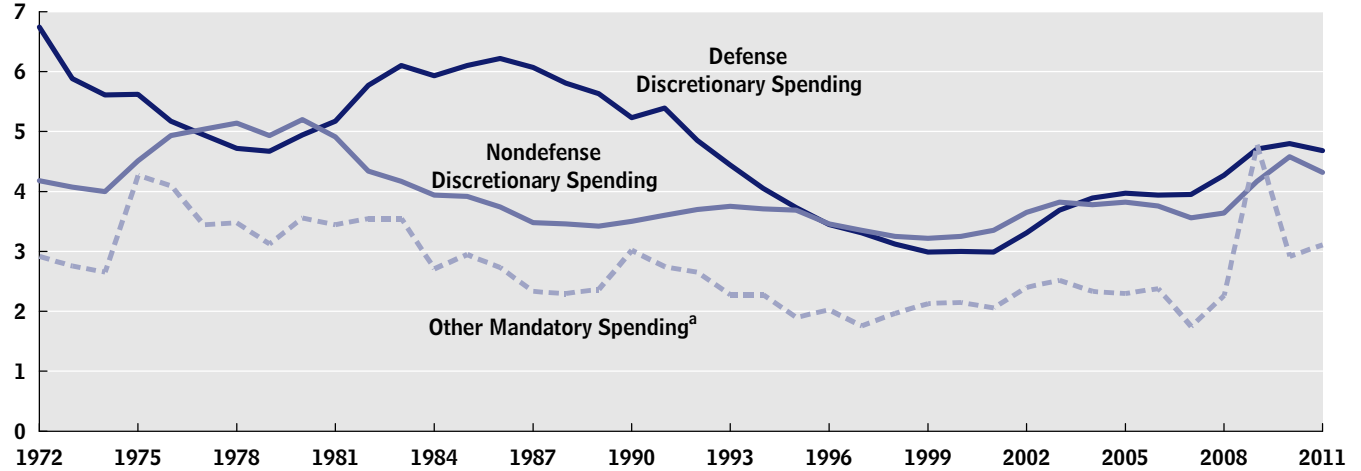
Source: Congressional Budget Office.

Notes: The extended baseline scenario generally adheres closely to current law, following CBO’s 10-year baseline budget projections through 2022 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.

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

Figure 5-2. **Return to Reference**
Other Federal Spending, by Category, 1972 to 2011

(Percentage of gross domestic product)



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.

Table 5-1.**Return to Reference****CBO's Baseline Projections of Other Federal Spending**

(Percentage of gross domestic product)

	2012	2022
Discretionary Spending		
Defense	4.3	3.0
Nondefense	4.1	2.6
Total	8.4	5.6
Other Mandatory Spending		
Civilian and military retirement	0.9	0.8
Unemployment compensation	0.7	0.2
Nutrition programs	0.6	0.4
Earned income and child tax credits	0.5	0.2
Veterans' benefits	0.4	0.4
Supplemental Security Income	0.3	0.3
Offsetting receipts	-1.3	-1.3
Other	1.0	0.6
Total	3.2	1.7
Total, Other Federal Spending	11.6	7.3

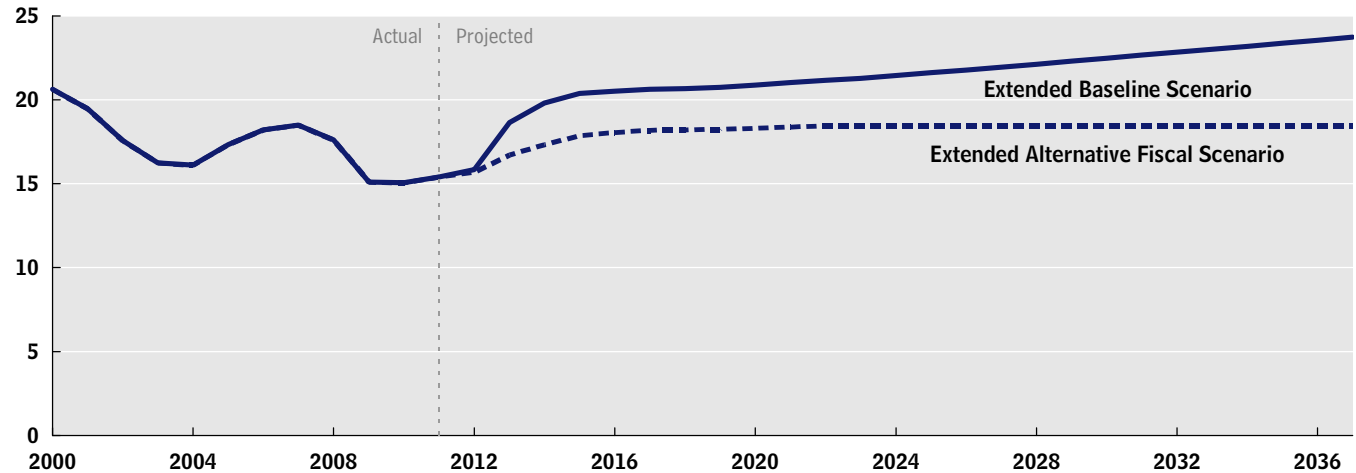
Source: Congressional Budget Office.

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

Figure 6-1. Return to Reference

Total Revenues Under CBO’s Long-Term Budget Scenarios

(Percentage of gross domestic product)



Source: Congressional Budget Office.

Note: The extended baseline scenario generally adheres closely to current law, following CBO’s 10-year baseline budget projections through 2022 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.

Table 6-1. **Return to Reference 1, 2**
Assumptions About Revenues Underlying CBO's Long-Term Budget Scenarios

	Extended Baseline Scenario	Extended Alternative Fiscal Scenario
Individual Income Taxes	As scheduled under current law	All provisions scheduled to expire in the next 10 years are extended through 2022, as is AMT relief, which was extended in the 2010 tax act but expired in 2011; revenues remain constant as a share of GDP thereafter
Payroll Taxes	As scheduled under current law	As scheduled under current law
Corporate Income Taxes	As scheduled under current law through 2022; remaining constant as a share of GDP thereafter	All provisions scheduled to expire in the next 10 years are extended through 2022; revenues remain constant as a share of GDP thereafter
Excise Taxes	As scheduled under current law	All provisions scheduled to expire in the next 10 years are extended through 2022; revenues remain constant as a share of GDP thereafter
Estate and Gift Taxes	As scheduled under current law	The 2012 tax rates and exemption amount (adjusted for inflation) continue through 2022; revenues remain constant as a share of GDP thereafter
Other Sources of Revenue	As scheduled under current law through 2022; remaining constant as a share of GDP thereafter	All provisions scheduled to expire in the next 10 years are extended through 2022; revenues remain constant as a share of GDP thereafter

Source: Congressional Budget Office.

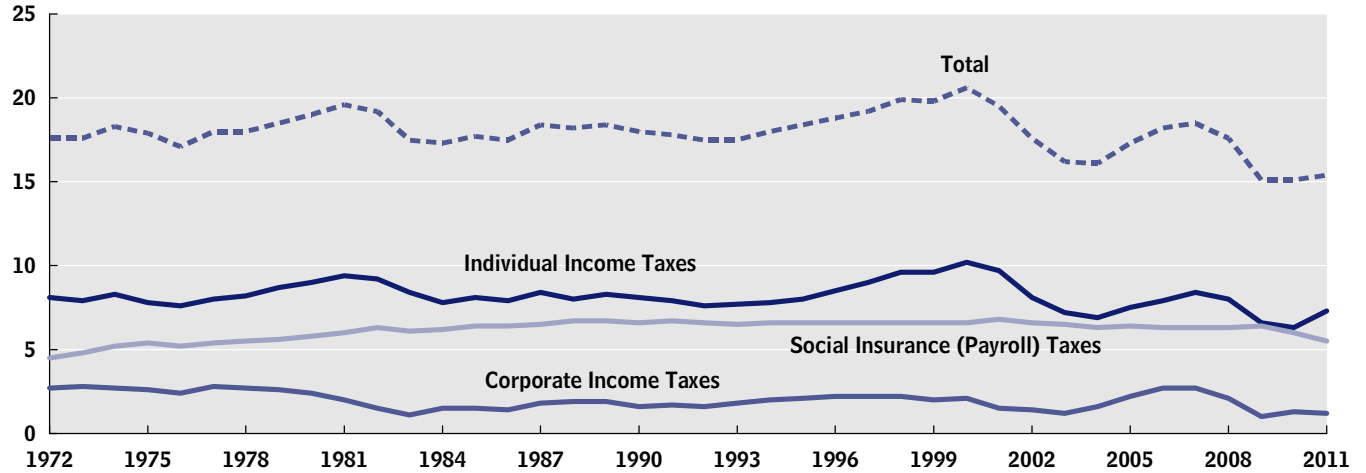
Notes: The extended baseline scenario generally adheres closely to current law, following CBO's 10-year baseline budget projections through 2022 and then extending the baseline concept for the rest of the long-term projection period. The extended alternative fiscal scenario incorporates the assumptions 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.

Tax provisions that expired at the end of December 2011 are also assumed to continue under the extended alternative fiscal scenario; nearly all of those provisions have been extended previously (some, such as the research and experimentation tax credit, more than once).

The assumptions under the extended alternative fiscal scenario through 2022 are identical to policy alternatives discussed in Congressional Budget Office, *The Budget and Economic Outlook: Fiscal Years 2012 to 2022* (January 2012). See "Policy Alternatives AMT = alternative minimum tax; 2010 tax act = the Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010; GDP = gross domestic product.

Figure 6-2. **Return to Reference**
Revenues, by Source, 1972 to 2011

(Percentage of gross domestic product)



Source: Congressional Budget Office.

Note: The extended baseline scenario generally adheres closely to current law, following CBO's 10-year baseline budget projections through 2022 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.

Table 6-2. **Return to Reference****Sources of Growth in Total Revenues as a Share of GDP Between 2012 and 2037 Under CBO's Extended Baseline Scenario**

Source of Growth	Percentage of GDP
Expiring Individual Income Tax Provisions, Including the AMT	3.3
Structural Features of the Individual Income Tax System (Including real bracket creep) ^a	1.8
Tax Provisions Enacted in the Affordable Care Act	0.8
Demographic Trends	0.6
Impact of Economic Recovery on Individual Income Taxes	0.5
Other Factors (Including corporate, payroll, excise, and estate and gift taxes) ^b	0.9
Growth in Total Revenues Over the 2012–2037 Period	7.9

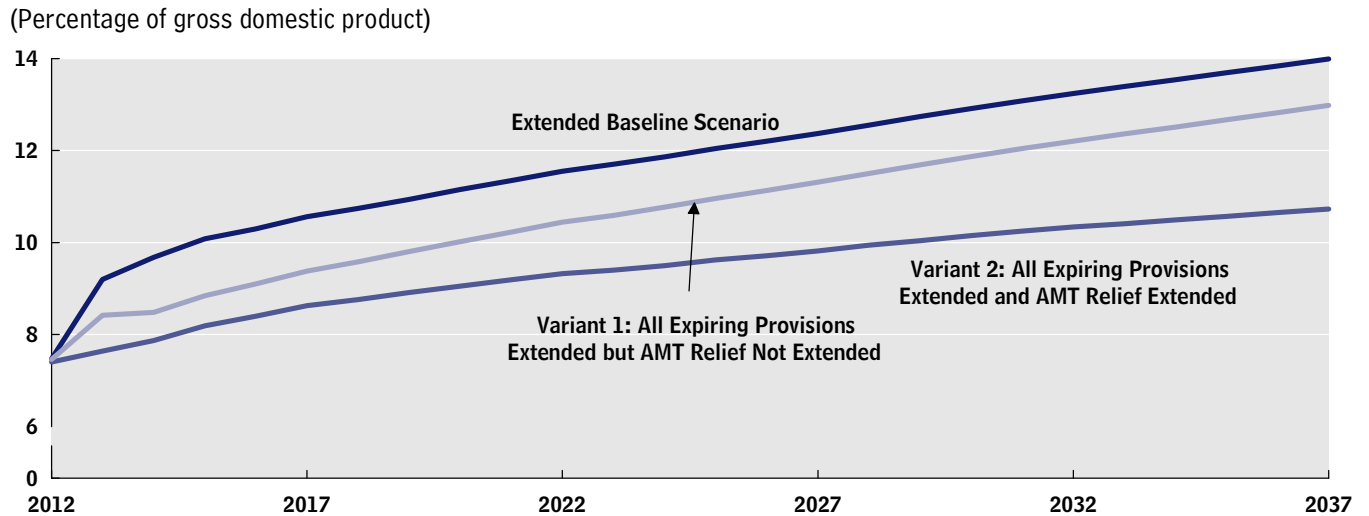
Source: Congressional Budget Office.

Notes: The extended baseline scenario generally adheres closely to current law, following CBO's 10-year baseline budget projections through 2022 and then extending the baseline concept for the rest of the long-term projection period.

GDP = gross domestic product; AMT = alternative minimum tax.

- 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 provisions enacted in the Affordable Care Act, which are accounted for in a preceding line of the table.

Figure 6-3. **Return to Reference**
Individual Income Tax Revenues Under CBO’s Extended Baseline Scenario and Two Variants



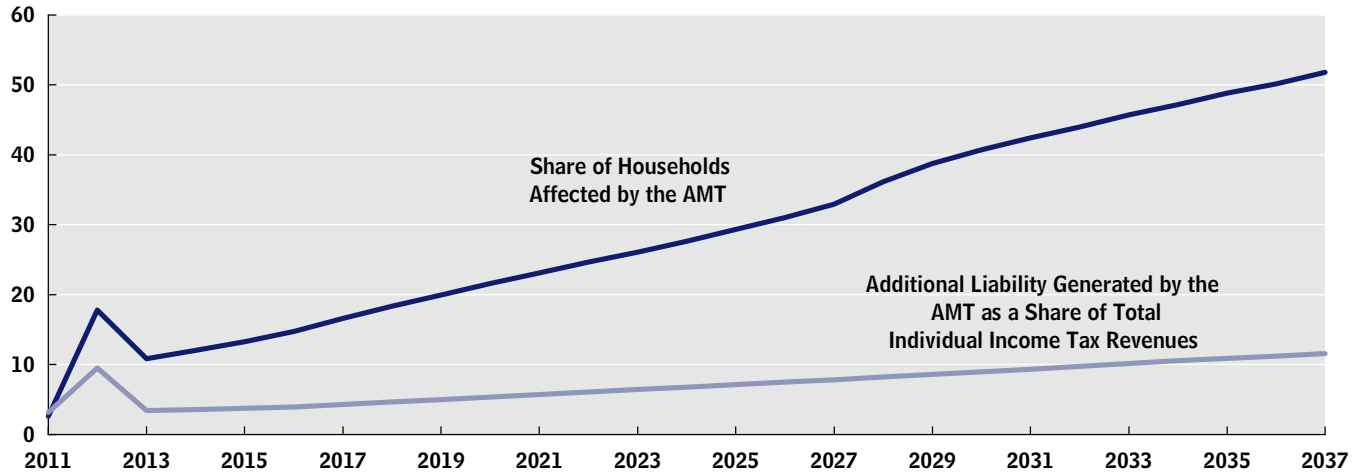
Source: Congressional Budget Office.

Notes: The extended baseline scenario generally adheres closely to current law, following CBO’s 10-year baseline budget projections through 2022 and then extending the baseline concept for the rest of the long-term projection period.

AMT = alternative minimum tax.

Figure 6-4. **Return to Reference**
Impact of the Alternative Minimum Tax on Individual Income Tax Liability Under CBO’s Extended Baseline Scenario

(By calendar year, in percent)



Source: Congressional Budget Office.

Notes: The extended baseline scenario generally adheres closely to current law, following CBO’s 10-year baseline budget projections through 2022 and then extending the baseline concept for the rest of the long-term projection period.

The shares of households and revenues rise in 2012 after the temporary increase in the AMT exemption expires. After 2012, the shares initially fall because the amount of regular income tax owed rises with the expiration of certain provisions of the Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010.

AMT = alternative minimum tax.

Table 6-3.**Return to Reference****Estimates of Effective Federal Marginal Tax Rates Under CBO's Long-Term Budget Scenarios**

(Percent)

Marginal Tax Rate On:	2012	2013	2022	2037
Extended Baseline Scenario				
Labor Income	28	31	34	36
Capital Income	15	21	21	22
Extended Alternative Fiscal Scenario				
Labor Income	27	28	30	30
Capital Income	15	16	17	17

Source: Congressional Budget Office.

Notes: The extended baseline scenario generally adheres closely to current law, following CBO's 10-year baseline budget projections through 2022 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.

The effective federal marginal tax rate on income from labor is the share of the last dollar of such income paid in federal individual income taxes and payroll taxes. The effective federal marginal tax rate on income from capital is the share of the last dollar of such income that is paid in federal individual income taxes and corporate taxes.

Table 6-4. **Return to Reference**
**Individual Income and Payroll Taxes as a Share of Income Under
 CBO's Extended Baseline Scenario**

	Income (2012 dollars) ^a		Taxes as a Share of Income (Percent)	
	Cash	Total	Income Taxes	Income and Payroll Taxes ^b
Taxpayer Filing a Single Return				
Half the Median Income				
2012	11,100	17,000	-1	8
2037	15,600	26,400	3	12
Median Income				
2012	27,000	33,900	6	17
2037	39,700	52,400	8	19
Twice the Median Income				
2012	58,700	67,700	9	21
2037	87,900	104,300	15	27
Four Times the Median Income				
2012	122,800	135,500	14	25
2037	186,100	208,500	20	32
Married Couple With Two Children and Filing a Joint Return^c				
Half the Median Income				
2012	31,400	48,200	-10	-1
2037	45,500	76,500	4	14
Median Income				
2012	76,400	96,200	4	14
2037	113,900	150,200	13	24
Twice the Median Income				
2012	166,500	192,200	13	25
2037	250,900	298,200	19	33
Four Times the Median Income				
2012	354,300	385,500	20	29
2037	537,800	594,400	22	32

Source: Congressional Budget Office based on data from the March 2011 Current Population Survey.

Notes: The extended baseline scenario generally adheres closely to current law, following CBO's 10-year baseline budget projections through 2022 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, employment-based health insurance, and the employer's share of payroll taxes. For 2037, the premium on employment-based health insurance is assumed not to exceed the excise tax threshold set forth in the Affordable Care Act.

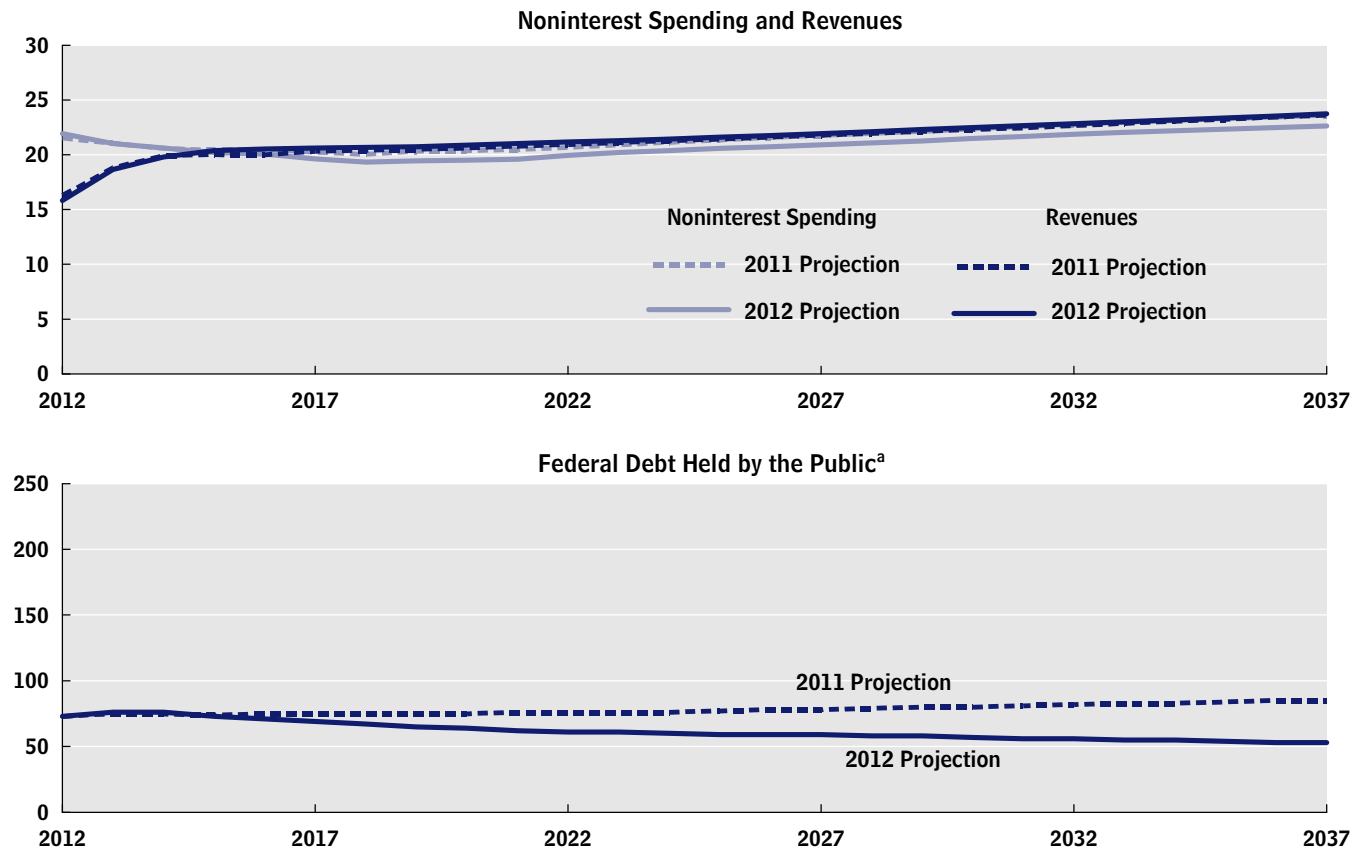
Taxpayers are assumed to itemize if implied itemized deductions are greater than the standard deduction. State and local taxes are assumed to be 8 percent of wages; other deductions are assumed to be 15 percent of wages.

Taxes in 2012 exclude the effect of the temporary payroll tax cut in effect for that year, enacted in the Temporary Payroll Tax Cut Continuation Act of 2011 and extended by the Middle Class Tax Relief and Job Creation Act of 2012.

- 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 assume that the spouses earn the same amount.

Figure A-1. Return to Reference 1, 2, 3
Comparison of CBO’s 2011 and 2012 Budget Projections Under the Extended Baseline Scenario

(Percentage of gross domestic product)



Source: Congressional Budget Office.

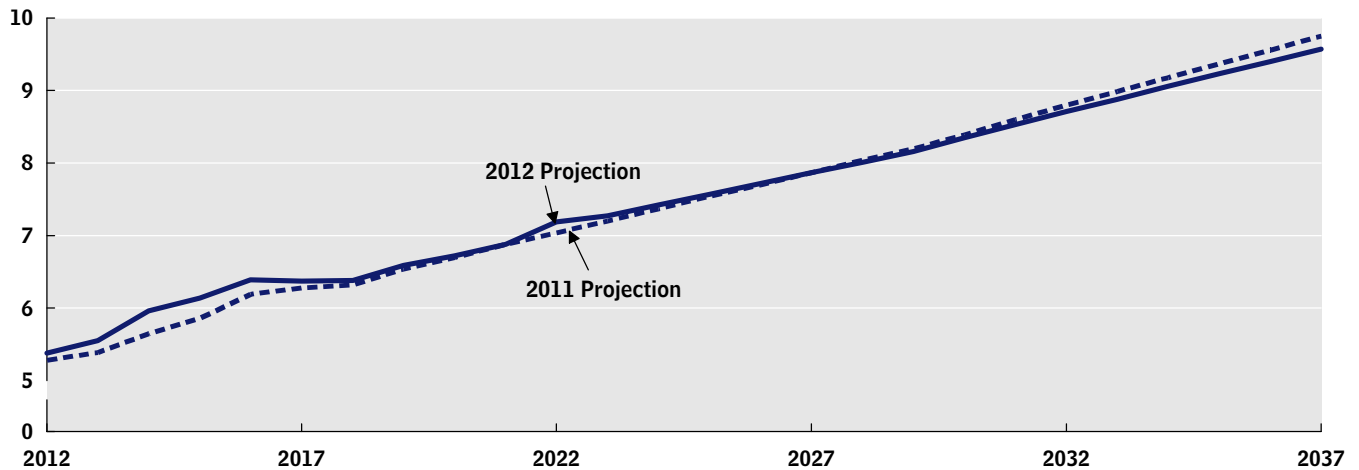
Note: The extended baseline scenario generally adheres closely to current law, following CBO’s baseline budget projections through 2022 and then extending the baseline concept for the rest of the long-term projection period.

a. Debt does not reflect economic effects of the policies underlying the scenario. (For analysis of those effects and their impact on debt, see Chapter 2.)

Figure A-2. **Return to Reference**

Comparison of CBO’s 2011 and 2012 Projections of Federal Spending on Major Health Care Programs Under the Extended Baseline Scenario

(Percentage of gross domestic product)

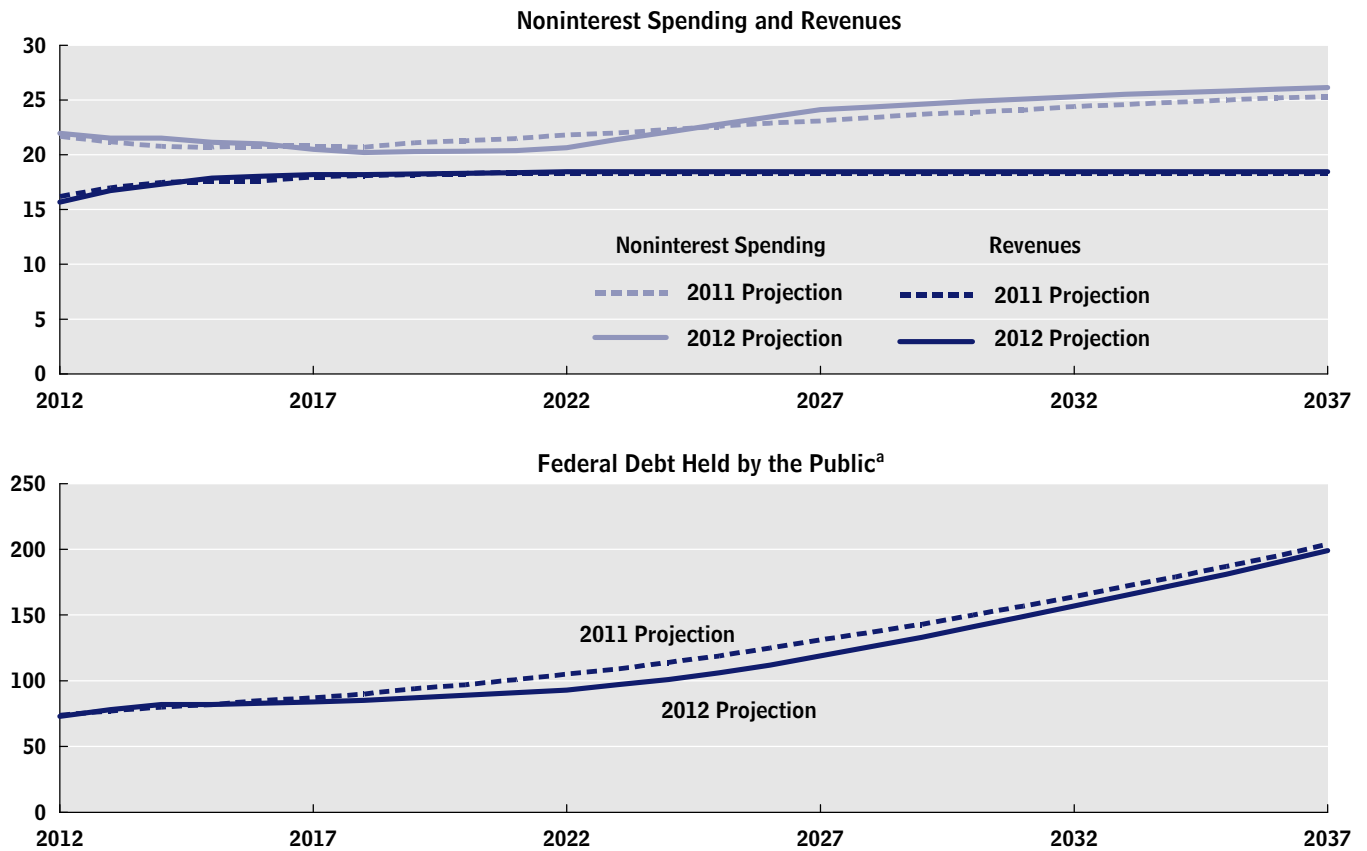


Source: Congressional Budget Office.

Note: The extended baseline scenario generally adheres closely to current law, following CBO’s baseline budget projections through 2022 and then extending the baseline concept for the rest of the long-term projection period.

Figure A-3. Return to Reference 1, 2, 3
Comparison of CBO’s 2011 and 2012 Budget Projections Under the Extended Alternative Fiscal Scenario

(Percentage of gross domestic product)



Source: Congressional Budget Office.

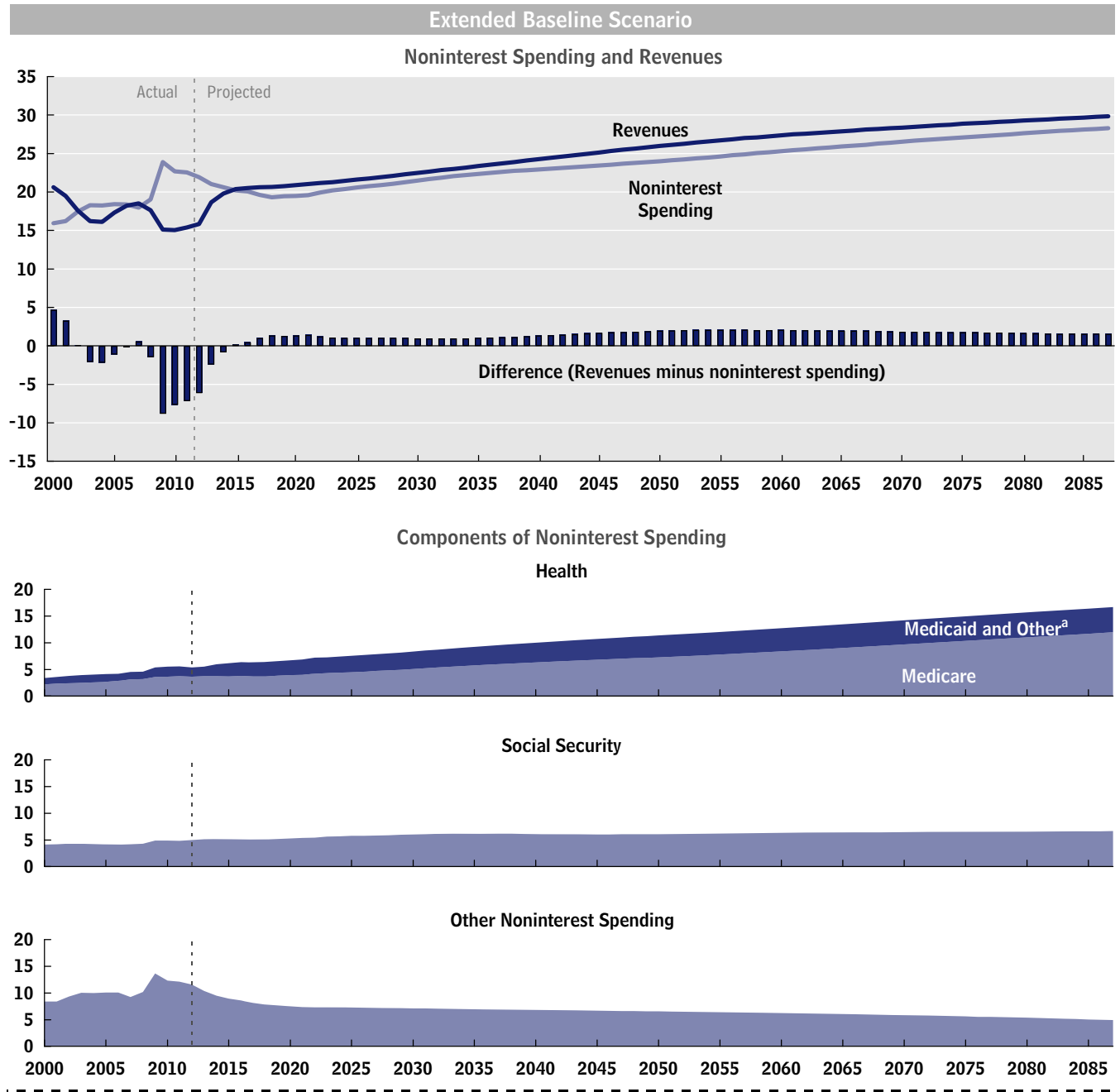
Note: The extended alternative fiscal scenario incorporates the assumptions that certain policies that have been in place for a number of years will be continued and that some provisions of law that might be difficult to sustain for a long period will be modified.

a. Debt does not reflect economic effects of the policies underlying the scenario. (For analysis of those effects and their impact on debt, see Chapter 2.)

Figure B-1.

Noninterest Spending and Revenues Under CBO's Long-Term Budget Scenarios Through 2087

(Percentage of gross domestic product)

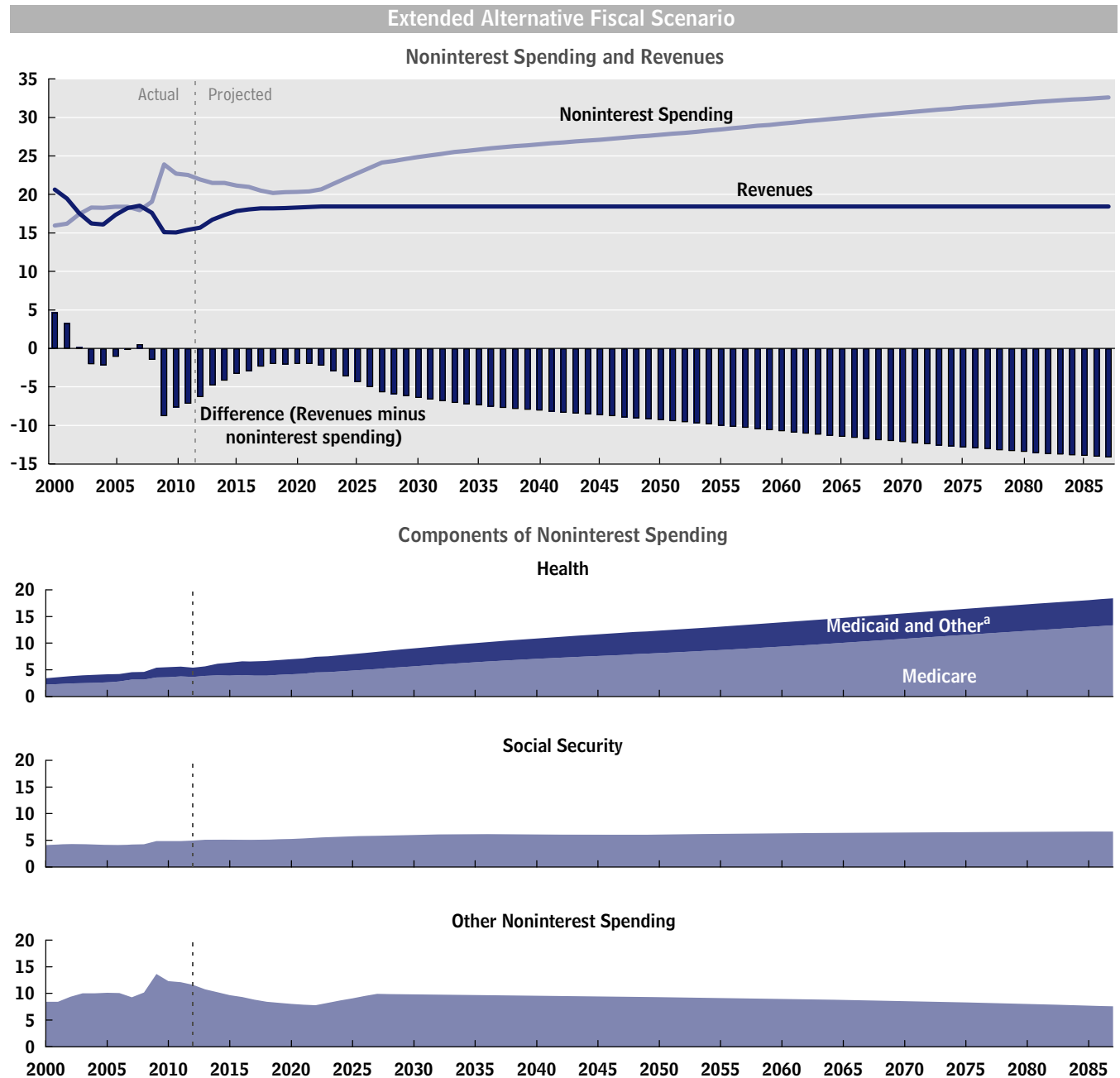


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Figure B-1. **Continued**

Noninterest Spending and Revenues Under CBO's Long-Term Budget Scenarios Through 2087

(Percentage of gross domestic product)



Source: Congressional Budget Office.

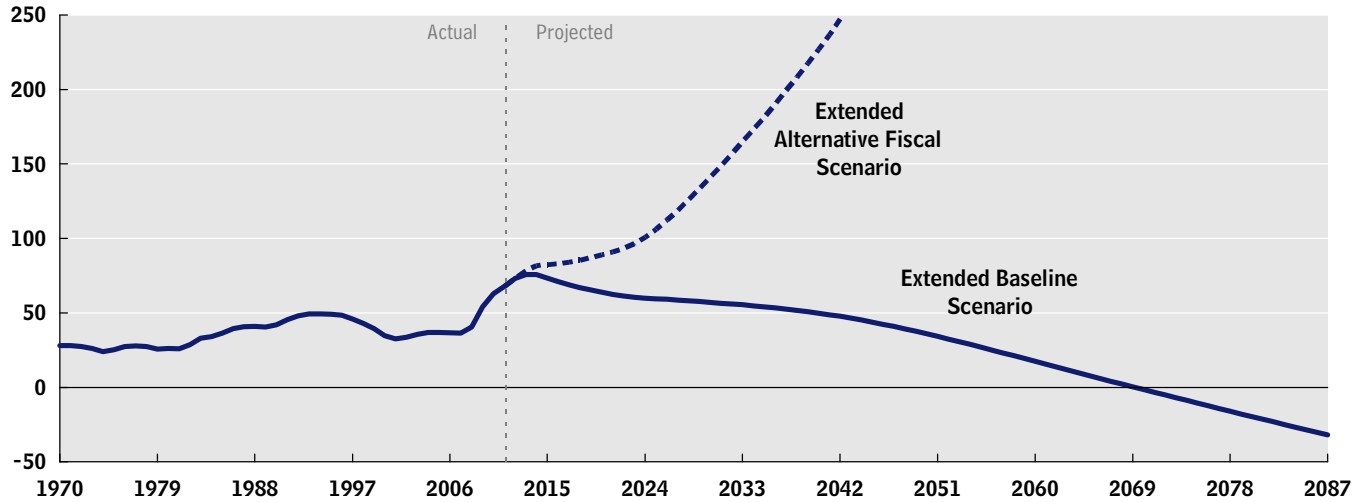
Note: The extended baseline scenario generally adheres closely to current law, following CBO's 10-year baseline budget projections through 2022 and then extending the baseline concept for the rest of the long-term projection period. The extended alternative fiscal scenario incorporates the assumptions 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.

a. Includes the Children's Health Insurance Program and exchange subsidies.

Figure B-2.

Federal Debt Held by the Public Under CBO’s Long-Term Budget Scenarios Through 2087

(Percentage of gross domestic product)



Source: Congressional Budget Office.

Notes: The extended baseline scenario generally adheres closely to current law, following CBO’s 10-year baseline budget projections through 2022 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.

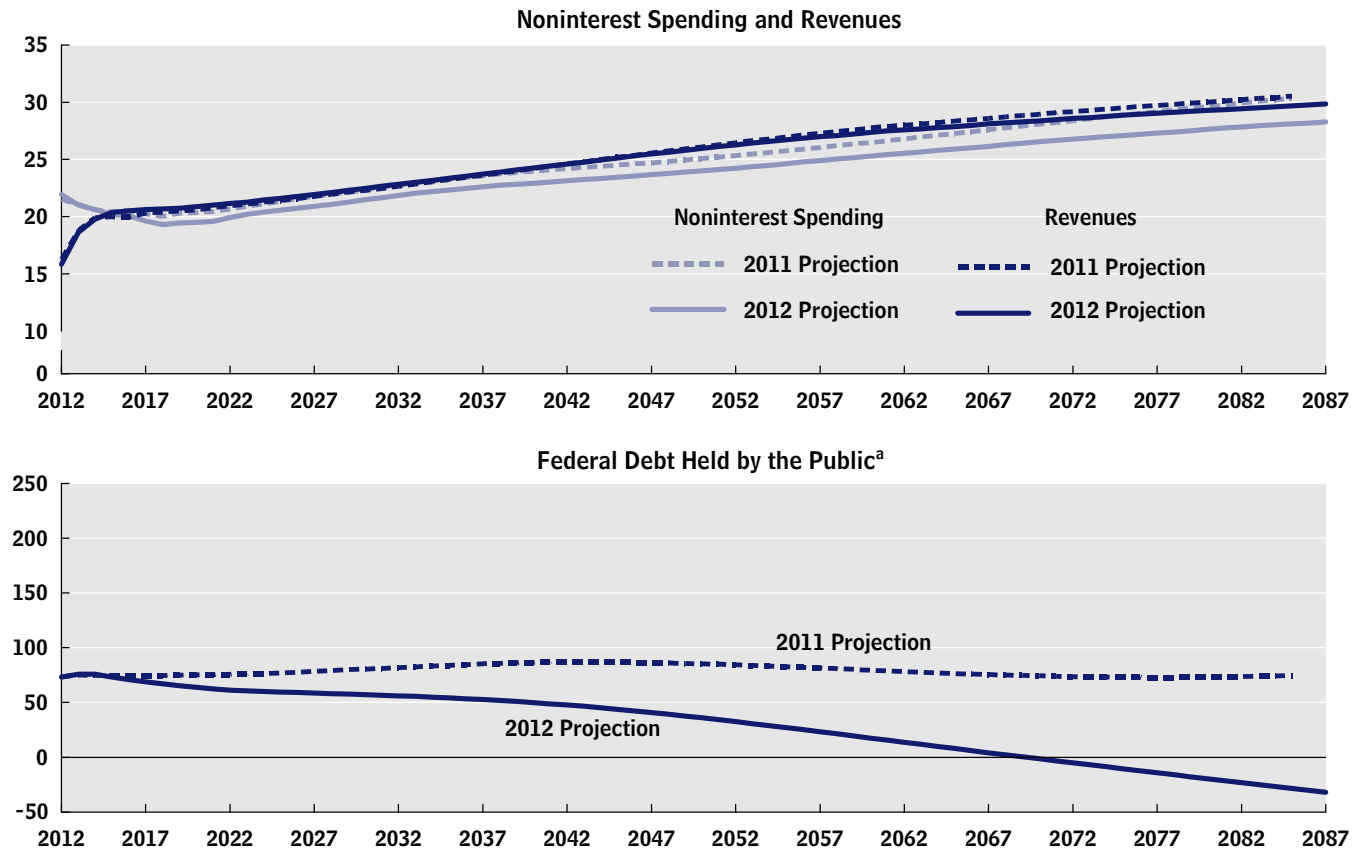
Negative amounts of debt held by the public indicate the cumulative amount of surpluses remaining after paying down publicly held debt available for redemption.

Debt does not reflect economic effects of the policies underlying the two scenarios. (For analysis of those effects and their impact on debt, see Chapter 2.)

Figure B-3.

Comparison of CBO’s 2011 and 2012 Budget Projections Under the Extended Baseline Scenario Through 2087

(Percentage of gross domestic product)



Source: Congressional Budget Office.

Notes: The extended baseline scenario generally adheres closely to current law, following CBO’s baseline budget projections through 2022 and then extending the baseline concept for the rest of the long-term projection period. In 2011, CBO’s published projections extended through 2085. Reasons that CBO’s projections changed between 2011 and 2012 are discussed in Appendix A.

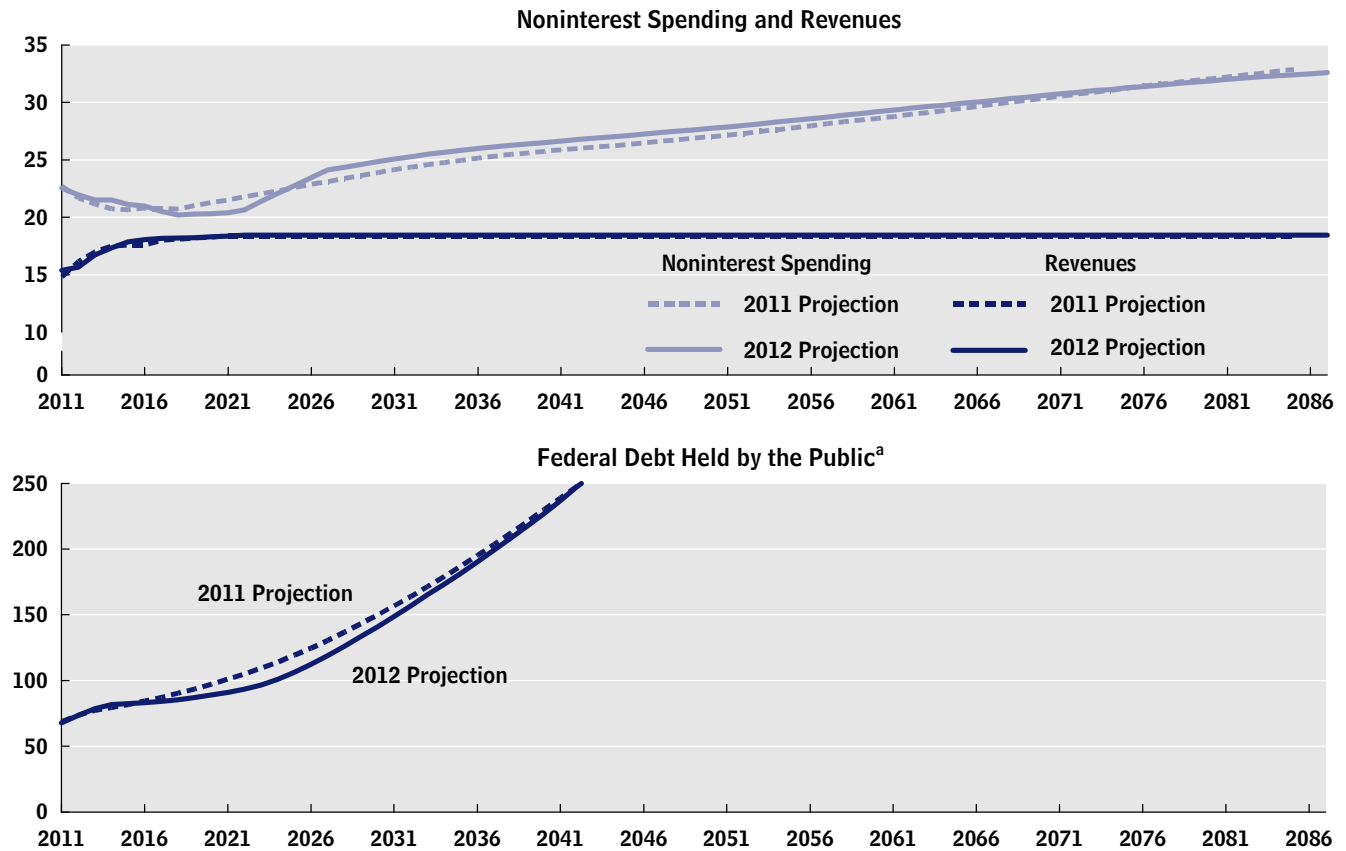
Negative amounts of debt held by the public indicate the cumulative amount of surpluses remaining after paying down publicly held debt available for redemption.

a. Debt does not reflect economic effects of the policies underlying the scenario. (For analysis of those effects and their impact on debt, see Chapter 2.)

Figure B-4.

Comparison of CBO’s 2011 and 2012 Budget Projections Under the Extended Alternative Fiscal Scenario Through 2087

(Percentage of gross domestic product)



Source: Congressional Budget Office.

Notes: 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 2011, CBO’s published projections extended through 2085. Reasons that CBO’s projections changed between 2011 and 2012 are discussed in Appendix A.

Negative amounts of debt held by the public indicate the cumulative amount of surpluses remaining after paying down publicly held debt available for redemption.

a. Debt does not reflect economic effects of the policies underlying the scenario. (For analysis of those effects and their impact on debt, see Chapter 2.)