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The Budget and Economic Outlook: 2017 to 2027

Provided as a convenience, this "screen-friendly" version is identical in content to the principal ("printer-friendly") version of the report. Any tables, figures, and boxes appear at the end of this document; click the hyperlinked references in the text to view them.

Notes

CBO's projections were completed before the new Administration took office on January 20, 2017. They do not incorporate any effects of executive orders or other actions taken by that Administration.

Unless otherwise indicated, all years referred to in describing the budget outlook are federal fiscal years, which run from October 1 to September 30 and are designated by the calendar year in which they end. Years referred to in describing the economic outlook are calendar years.

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

Some figures in this report contain vertical gray bars that indicate the duration of recessions. (A recession extends from the peak of a business cycle to its trough.)

As referred to in this report, the Affordable Care Act comprises the Patient Protection and Affordable Care Act (Public Law 111-148), the health care provisions of the Health Care and Education Reconciliation Act of 2010 (P.L. 111-152), and the effects of subsequent judicial decisions, statutory changes, and administrative actions.

Supplemental data for this analysis are available on CBO's website (www.cbo.gov/publication/52370), as is a glossary of common budgetary and economic terms (www.cbo.gov/publication/42904).

Summary

In fiscal year 2016, for the first time since 2009, the federal budget deficit increased in relation to the nation's economic output. The Congressional Budget Office projects that over the next decade, if current laws remained generally unchanged, budget deficits would eventually follow an upward trajectory—the result of strong growth in spending for retirement and health care programs targeted to older people and rising interest payments on the government's debt, accompanied by only modest growth in revenue collections. Those accumulating deficits would drive debt held by the public from its already high level up to its highest percentage of gross domestic product (GDP) since shortly after World War II.

CBO's estimate of the deficit for 2017 has decreased since August 2016, when the agency issued its previous estimates, primarily because mandatory spending is expected to be lower than earlier anticipated.[1] However, the current projection for the cumulative deficit for the 2017–2026 period is about the same as that reported in August.

CBO's economic forecast—which underlies its budget projections—indicates that under current law, economic growth over the next two years would remain close to the modest rate observed since the end of the recession in 2009. Nevertheless, economic growth would continue to outpace growth in potential (maximum sustainable) GDP and thus continue to reduce the amount of underused resources, or slack, in the economy. The result would be increases in hiring, employment, and wages, along with upward pressure on inflation and interest rates. In the later part of the 10-year projection period, output growth would be constrained by a relatively slow increase in the nation's supply of labor.

CBO's current economic projections differ from those it published in August because of revisions involving several factors that determine potential output. The agency now expects real (inflation-adjusted) GDP and real potential GDP in 2026 to be modestly lower than projected in August. It also expects interest rates to be lower in the first half of the projection period, but it projects a higher rate of labor force participation throughout the period than it reported in August.

CBO's budget and economic projections are predicated on the assumption that current laws generally remain in place. Budgetary and economic outcomes are difficult to project, however, and thus rather uncertain—even if there are no changes to the laws that govern federal taxes and spending. The agency strives to construct 10-year budget and economic projections that fall in the middle of the distribution of possible

1. See Congressional Budget Office, *An Update to the Budget and Economic Outlook: 2016 to 2026* (August 2016), www.cbo.gov/publication/51908.

outcomes, given both the fiscal policy embodied in current law and the availability of economic and other data.

The Budget Deficit for 2017 Is Projected to Be Similar to Last Year's

CBO's baseline estimate of the 2017 deficit is $559 billion, or 2.9 percent of GDP—less than the $587 billion deficit posted in 2016 (see Summary Table 1). Both totals, however, are affected by shifts in the timing of some payments. Outlays in 2016—and thus the deficit—were boosted by $41 billion because certain payments that were to be made on October 1, 2016 (the first day of fiscal year 2017), were instead made in fiscal year 2016 because October 1 fell on a weekend.[2]

For 2017, the net effect of those timing shifts and similar shifts in spending from fiscal year 2018 into fiscal year 2017 is to increase outlays by $4 billion. If not for those shifts, the deficit in 2016 would have been $546 billion (3.0 percent of GDP), and the deficit projected for 2017 would be $555 billion (2.9 percent of GDP).

If there are no further legislative changes, both revenues and outlays (adjusted to eliminate the timing shifts) are projected to rise by about 4 percent this year. Higher receipts from individual income taxes would be responsible for much of the projected revenue increase, and net interest payments would be the fastest-growing component of the increase in spending.

Outlays (if not for the timing shifts) and revenues would both rise at about the same rate as GDP, CBO estimates, so they would be roughly the same relative to the size of the economy in 2016 and 2017: 20.7 percent for outlays and 17.8 percent for revenues. Debt held by the public is projected to rise slightly relative to GDP.

Growing Deficits Through 2027 Are Projected to Drive Up Federal Debt

In CBO's baseline projections, budget deficits remain below 3.0 percent of GDP through 2019. But subsequently, continued growth in spending—particularly for Social Security, Medicare, and net interest—would outstrip growth in revenues, resulting in larger deficits and increasing debt. By 2027, the deficit would reach 5.0 percent of GDP—$1.4 trillion.

2. October 1 will fall on a weekend again in 2017, 2022, and 2023. In such cases, certain payments due on October 1 are made at the end of September and thus are recorded in the previous fiscal year. Those shifts noticeably boosted projected spending and deficits in fiscal year 2016 and, in CBO's projections, increase them in 2022; the timing shifts reduce federal spending and deficits in fiscal years 2018 and 2024.

Revenues

If current laws generally remained unchanged, revenues would rise from 17.8 percent of GDP in 2017 to 18.4 percent by 2027. They have averaged 17.4 percent of GDP over the past 50 years.

Only revenues from individual income taxes would grow faster than the economy over the course of the decade. CBO's baseline includes the following projections:

- Receipts from individual income taxes increase by a total of 1.1 percentage points of GDP over the 10-year period as a result of several factors, including real bracket creep (the process by which, as income rises faster than prices, an ever-larger proportion of income becomes subject to higher tax rates), rising distributions from tax-deferred retirement accounts, and an increase in the share of wages and salaries earned by higher-income taxpayers.

- Remittances from the Federal Reserve, which have been unusually high since 2010, drop by 0.2 percentage points of GDP to return to more typical amounts.

- Payroll tax receipts decline by 0.1 percentage point of GDP, primarily because of the expected increase in the share of wages going to higher-income taxpayers.

- Corporate income tax receipts as a share of GDP also fall by 0.1 percentage point between 2017 and 2027.

Outlays

In CBO's projections, outlays remain near 21 percent of GDP for the next few years, which is higher than their average of 20.3 percent over the past 50 years. Later in the coming decade, the growth in outlays would exceed growth in the economy, and, by 2027, outlays would rise to 23.4 percent of GDP. That increase reflects significant growth in mandatory spending and interest payments, which is offset somewhat by a decline in discretionary spending as a share of GDP. More specifically, CBO's baseline includes the following projections:

- Outlays for mandatory programs increase as a share of GDP by 2.4 percentage points from 2017 to 2027—mainly because of the aging of the population and rising per capita health care costs. Social Security and Medicare account for nearly all of that increase.

- Because of rising interest rates and, to a lesser extent, growing federal debt held by the public, the government's interest payments on that debt rise sharply over the next 10 years—nearly tripling in nominal terms and almost doubling relative to GDP.

- Discretionary spending drops from 6.3 percent of GDP in 2017 to 5.3 percent in 2027—a smaller percentage relative to the size of the economy than in any year since 1962 (the first year for which comparable data are available).

Debt Held by the Public

As deficits accumulate in CBO's baseline, debt held by the public rises from 77 percent of GDP ($15 trillion) at the end of 2017 to 89 percent of GDP ($25 trillion) by 2027. At that level, debt held by the public would be the largest since 1947 and more than twice the average over the past five decades in relation to GDP (see Summary Figure 1).

Beyond the 10-year period, if current laws remained in place, the pressures that contributed to rising deficits during the baseline period would accelerate and push debt up even more sharply. Three decades from now, for instance, debt held by the public is projected to be nearly twice as high, relative to GDP, as it is this year—and a higher percentage than any previously recorded.

Such high and rising debt would have serious negative consequences for the budget and the nation:

- Federal spending on interest payments would increase substantially as a result of increases in interest rates, such as those projected to occur over the next few years.
- Because federal borrowing reduces total saving in the economy over time, the nation's capital stock would ultimately be smaller, and productivity and total wages would be lower.
- Lawmakers would have less flexibility to use tax and spending policies to respond to unexpected challenges.
- The likelihood of a fiscal crisis in the United States would increase. There would be a greater risk that investors would become unwilling to finance the government's borrowing unless they were compensated with very high interest rates; if that happened, interest rates on federal debt would rise suddenly and sharply.

The Projected Deficit for 2017 Is Smaller Than CBO's August 2016 Estimate, but the Cumulative Deficit Is Largely Unchanged

The deficit that CBO now projects for 2017 is $35 billion less than the amount the agency estimated in August. Revenues and outlays alike are expected to be lower: revenues by $17 billion, mostly as a result of lower receipts from individual income taxes, and outlays by $52 billion, mostly because of reductions in mandatory spending.

For the 2017–2026 period, CBO now projects a cumulative deficit that is just $6 billion (or less than 0.1 percent) larger than it projected in August, and the total remains at $8.6 trillion for that period. By 2026, debt held by the public is projected to total $23 trillion, about the same as in the August projections.

CBO Expects Moderate Economic Growth to Continue

According to CBO's current baseline projections, continued economic expansion over the next two years will virtually eliminate slack in the economy, thus putting upward pressure on inflation and interest rates. After that, the economy is expected to grow a bit more slowly. The projections for later years do not reflect predictions about business-cycle fluctuations or possible changes in fiscal policy; rather, they are based primarily on projected trends of underlying factors, such as productivity, growth in the labor force and in the number of hours worked, inflation, and interest rates.

Economic Growth

CBO estimates that, in real terms, GDP will expand at an average annual pace of 2.1 percent from the fourth quarter of 2016 to the fourth quarter of 2018, after having risen at an annual rate of 1.8 percent last year (see Summary Figure 2). Most of the growth in output during the coming years will be driven by consumer spending, business investment, and residential construction, CBO anticipates.

According to CBO's projections, actual and potential GDP alike will expand at an average annual rate of 1.9 percent during the second half of the 10-year period. CBO estimates that the growth of potential output over that period will be faster than it has been since the 2007–2009 recession, mainly because the productivity of the labor force is projected to rise, returning closer to its average of the preceding two decades. However, that rate of output growth represents a significant slowdown from the average over the 1980s, 1990s, and early 2000s, mainly because of the slower growth projected for the nation's supply of labor, which is largely attributable to the ongoing retirement of baby boomers and the relatively stable labor force participation rate among working-age women. (The labor force participation rate is the percentage of people in the civilian noninstitutionalized population who are at least 16 years old and are either working or seeking work.)

The Labor Market

The shortfall between actual and potential employment, CBO's primary measure of slack in the labor market, was about 1.6 million people at the end of 2016.[3] That shortfall is projected to disappear in 2018 as the result of two developments. First, the strengthening economy is expected to slow the downward trend in the rate of labor force participation as the increase in employers' demand for labor continues to draw workers back into the labor force. Second, increases in hiring will lower the unemployment rate, which is projected to reach 4.4 percent by the end of 2018. As

3. Potential employment is the number of people employed when unemployment is at its natural rate—the rate that arises from all sources except fluctuations in aggregate demand—and when labor force participation is at its potential rate. (Aggregate demand is the overall demand for goods and services in the economy.)

slack in the labor market dissipates over the next two years, hourly wages are expected to rise.

Over the next five years, the monthly increase in nonfarm payroll employment, which is estimated to average 160,000 jobs in the first half of 2017, is projected to settle down to an average of 64,000 jobs. That slower pace of job growth primarily reflects relatively slow growth in the labor force, which is affected by the ongoing retirement of the baby boomers. In CBO's projections, the unemployment rate averages 4.9 percent over the later part of the projection period.

Inflation

CBO expects prices to rise at a modest pace over the next few years. The agency anticipates that the diminishing slack in the economy and higher oil prices will put upward pressure on prices for goods and services. That pressure will be somewhat alleviated by the effects of a strong dollar in relation to other currencies, which will reduce the cost of imported goods. In CBO's projections, the rate of inflation, as measured by the price index for personal consumption expenditures, rises to 1.9 percent in 2017 and to 2.0 percent in 2018. It remains, on average, at the Federal Reserve's longer-run goal of 2 percent throughout the rest of the coming decade.

Interest Rates

As the slack in the economy continues to diminish, the Federal Reserve will continue to reduce its support of economic growth, in CBO's view. Thus, the federal funds rate—the interest rate that financial institutions charge one another for overnight loans of their monetary reserves—is expected to rise gradually over the next few years, reaching 1.1 percent in the fourth quarter of 2017, 1.6 percent in the fourth quarter of 2018, and 3.1 percent in the later part of the projection period. Interest rates on short-term Treasury securities are expected to follow a similar pattern.

A projected rise in longer-term rates reflects the anticipated increase in short-term rates and an expected increase in the term premium from historically low levels. (The term premium is paid to bondholders as compensation for the extra risk associated with longer-term securities.) In CBO's estimation, the term premium has remained low because of heightened concern about global economic growth and increased demand for longer-term Treasury securities as a hedge against possible economic adversity. CBO projects that the interest rate on 10-year Treasury notes will rise from 2.1 percent in the fourth quarter of 2016 to 3.6 percent in the later part of the projection period.

Although CBO projects that interest rates will rise above those currently in effect, they are projected to remain low by historical standards, for several reasons: slower growth in the labor force, slightly slower growth in productivity, and only partial dissipation of the factors that have increased the demand for Treasury securities and held down the term premium.

Real GDP Is Projected to Be Modestly Lower Than CBO Estimated in August

CBO's current economic projections differ somewhat from those the agency made in August 2016. Most significantly, potential and actual real GDP are expected to grow more slowly. As a result, those measures are 0.8 percent lower than CBO previously projected for 2026 (the last year in the previous projection period). CBO's projection of economic output is lower because of improvements in the agency's analytical methods and because of data that became available between early July and early December 2016. Nominal GDP is expected to be a little lower, on average, over the decade.

Other changes are relatively small. CBO now estimates that over the next decade, more people will be working than it estimated in August. That change results from an upward revision to the projected labor force participation rate, which is partially offset by a downward revision in the projected size of the population. Also, interest rates are expected to be lower in the first half of the decade than they were in the August projections. The slower rise in interest rates that CBO now projects stems partly from an anticipated slowing in the pace of rate increases by the Federal Reserve.

Chapter 1: The Budget Outlook

After declining for several years, federal budget deficits are on a path to rise during the next decade, the Congressional Budget Office projects (see Figure 1-1). Those shortfalls are projected to occur mainly because, under current law, growth in revenues would be outpaced by growth in spending for major benefit programs—primarily retirement and health care programs targeted to older people—and for interest on the federal debt.

As required by statute, when constructing its 10-year baseline projections, CBO incorporates the assumption that current laws governing taxes and spending will generally remain unchanged in future years.[4] Under that assumption, in CBO's baseline for the 2017–2027 period:

- Revenues rise by about 4 percent a year, on average, increasing from 17.8 percent of gross domestic product (GDP) in 2017 to 18.4 percent in 2027—about a

4. CBO constructs its baseline in accordance with provisions set forth in the Balanced Budget and Emergency Deficit Control Act of 1985 (Deficit Control Act, Public Law 99-177) and the Congressional Budget and Impoundment Control Act of 1974 (P.L. 93-344). CBO's baseline is not intended to be a forecast of budgetary outcomes; rather, it is meant to provide a neutral benchmark that policymakers can use to assess the potential effects of policy decisions.

percentage point above their average over the 50-year period from 1967 to 2016 (see Figure 1-2).

- Outlays rise faster than revenues—by about 5 percent a year, on average—increasing from 20.7 percent of GDP in 2017 to 23.4 percent in 2027, approximately 3 percentage points above their 50-year average. Relative to the size of the economy, the increase in mandatory spending—specifically, for Social Security and Medicare—and payments for interest on the government's debt would more than offset a significant projected decline in discretionary outlays, which are already more than 2 percentage points below their 50-year average.

- The deficit falls over the next two years—in large part because of shifts in the timing of some payments that affected outlays in 2016 and will do so again in 2017 and 2018—reaching a low of $487 billion in 2018. However, the deficit increases over the remainder of the projection period, reaching $1.4 trillion or 5.0 percent of GDP in 2027 (see Table 1-1 on page 94). Over the past 50 years, the annual deficit has averaged 2.8 percent of GDP.

Such a pattern over the next 10 years would cause debt held by the public to increase from 77 percent of GDP at the end of both 2017 and 2018 to 89 percent at the end of 2027. Such high and rising debt would have significant consequences, both for the economy and for the federal budget. In particular:

- Federal spending on interest payments would increase substantially as a result of rising interest rates, such as those projected to occur over the next few years.

- Because federal borrowing reduces national saving over time, the nation's capital stock ultimately would be smaller, and productivity and income would be lower than would be the case if the debt was smaller.

- Lawmakers would have less flexibility to use tax and spending policies to respond to unexpected challenges, such as significant economic downturns or financial crises.

- The likelihood of a fiscal crisis in the United States would increase. Specifically, the risk that investors would become unwilling to finance the government's borrowing, unless they were compensated with very high interest rates, would increase. If that occurred, interest rates on federal debt would rise suddenly and sharply relative to rates of return on other assets.

Projected deficits and debt for the coming decade reflect the weighty long-term budgetary challenges

facing the nation. The aging of the population is already a significant issue: The population age 65 and older is projected to grow by 39 percent through 2027, whereas the population ages 20 to 64 is projected to grow by just 3 percent. In CBO's

baseline, projected spending for people age 65 or older in five large programs—Social Security, Medicare, Medicaid, and military and federal civilian retirement—increases from about 37 percent of all federal noninterest spending in 2017 to about 45 percent in 2027. In addition, health care costs per beneficiary (after adjusting for the aging of the population) are projected to grow faster than the economy over the long term, contributing to growth in spending for Medicare and Medicaid in particular. The effects on the federal budget of the aging population and rapidly growing health care costs are already apparent over the 10-year horizon—especially for Social Security and Medicare—and will grow in size beyond the baseline period. Unless laws governing fiscal policy were changed—that is, spending for large benefit programs was reduced, increases in revenues were implemented, or some combination of those approaches was adopted—debt would rise sharply relative to GDP after 2027.[5]

CBO's current projections for the coming decade have changed little since its previous publication of 10-year projections in August 2016.[6] Deficits under current law are now projected to be just $6 billion higher between 2017 and 2026 (the 10-year projection period CBO used last year). Relative to CBO's previous set of projections, deficits are lower in the first half of the period (by a cumulative $131 billion) and higher in the second half (by $136 billion). All told, the cumulative deficit over the 10-year period is projected to total $8.6 trillion, or 3.8 percent of GDP, which is unchanged from August.

A Review of 2016

In fiscal year 2016, the budget deficit rose for the first time in a number of years, totaling $587 billion—about one-third more than the $438 billion shortfall recorded in 2015. As a percentage of GDP, the deficit increased from 2.4 percent in 2015 to 3.2 percent last year, the first such increase since 2009. Part of the increase in the deficit is attributable to the shifting of certain payments from fiscal year 2017 into fiscal year 2016 (because October 1, 2016, fell on a weekend). Even without that shift of $41 billion in payments, the budget shortfall would have increased in 2016, amounting to $546 billion, or 3.0 percent of GDP. Revenues were nearly unchanged, edging up by $17 billion (or 0.5 percent), while outlays (with adjustments to exclude the effects of the timing shifts) rose by $125 billion (or 3.4 percent).

In total, debt held by the public increased by $1.1 trillion in 2016, reaching 77 percent of GDP—about 4 percentage points higher than the amount recorded in 2015, marking the highest ratio since 1950. Debt increased both because of the rise in the budget deficit and for other reasons. For example, about $200 billion of that increase stemmed from payments to the G-Fund of the Thrift Savings Plan, which were made to

5. For a more detailed discussion of the consequences of elevated debt in particular and a long-term overview for the budget generally, see Congressional Budget Office, *The 2016 Long-Term Budget Outlook* (July 2016), www.cbo.gov/publication/51580.
6. For CBO's previous baseline budget projections, see Congressional Budget Office, *An Update to the Budget and Economic Outlook: 2016 to 2026* (August 2016), www.cbo.gov/publication/51908.

compensate for amounts that were not invested during the previous debt-ceiling impasse. Another $155 billion stemmed from an increase in the cash balance held by the Treasury.[7]

Revenues

Total revenues rose by just $17 billion (or 0.5 percent) in 2016, decreasing from 18.2 percent of GDP in 2015 to 17.8 percent. The biggest change was in collections of corporate income taxes: Such receipts decreased by $44 billion (or 13 percent), from 1.9 percent of GDP in 2015 to 1.6 percent in 2016. That was the lowest percentage of GDP since 2012 and below the average of 2.0 percent of GDP over the past 50 years. Part of the decline stemmed from the enactment in December 2015 of the Consolidated Appropriations Act, 2016 (Public Law 114-113), which extended—retroactively and prospectively—certain tax rules, including those that allowed businesses with large amounts of investments in equipment to immediately deduct from their taxable income 50 percent of the costs of those investments. CBO estimates that the retroactive extension of those provisions for tax year 2015, followed by a prospective extension for 2016, resulted in some revenue reductions that normally would have happened in 2015 occurring in 2016 instead. Another part of the decline may reflect taxable profits that were lower in calendar year 2016 than they were during 2015. The reasons for the decline will become clearer as detailed information from corporate income tax returns becomes available over the next two years.

Receipts from individual income taxes, the largest source of revenues, rose by just $5 billion (or less than 1 percent), and therefore fell as a share of the economy, from 8.6 percent of GDP in 2015 to 8.4 percent of GDP in 2016. However, that percentage in 2016 was still higher than in any year since 2001, except for 2015. The slow growth in those receipts in 2016 resulted from the offsetting effects of different types of payments. Receipts from amounts withheld from paychecks rose by $26 billion (or 2 percent), which was less than the growth rate of the economy and the growth rate of wages and salaries over the same period.[8] The increase in withheld taxes was largely offset by a $20 billion decline in nonwithheld payments of income taxes, net of refunds. The reasons for that decline will become clearer as data from tax returns become available; but the decrease may, in part, reflect weakness in nonwage income in 2015, which would have reduced taxes paid in 2016.

7. During that impasse, which took place between March and November 2015, the Treasury took a number of "extraordinary measures" to borrow additional funds without breaching the debt ceiling, including disinvesting the Thrift Savings Plan's G Fund. Once the debt limit was raised in November 2015, the G Fund was made whole (with interest).
8. The amounts currently reported for individual income and payroll taxes in 2016 reflect allocations of total withholding on the basis of estimates by the Department of the Treasury. When actual data from 2016 tax returns become available, the department may reallocate the 2016 receipts from those two sources by adjusting the amounts recorded for 2017 (or some subsequent year).

Receipts from both payroll taxes and remittances from the Federal Reserve grew faster than the economy, offsetting some of the decline in corporate and individual income tax revenues relative to GDP.[9] Receipts recorded from payroll taxes, the second-largest source of revenues, rose by $50 billion (or 5 percent), exceeding the rate of growth of wages and salaries. They increased from 5.9 percent of GDP in 2015 to 6.1 percent in 2016. Remittances to the Treasury from the Federal Reserve rose by $19 billion, from 0.5 percent of GDP in 2015 to 0.6 percent of GDP in 2016—the highest level ever recorded for that source. The increase in such payments occurred largely because the Fixing America's Surface Transportation Act (P.L. 114-94) required the Federal Reserve to remit most of its surplus account to the Treasury. The central bank remitted the required additional amount, $19 billion, in late December 2015.

Outlays

Federal spending in 2016 rose to $3.9 trillion (or 20.9 percent of GDP) compared with $3.7 trillion (or 20.6 percent) in 2015. By comparison, outlays over the past 50 years have averaged 20.3 percent of GDP. The growth in outlays in 2016 occurred because of the following changes, which reflect adjustments to exclude the effects of shifts in the timing of payments:

- Mandatory spending rose by 4 percent, increasing to 13.0 percent of GDP (compared with 12.8 percent in 2015).[10]
- Discretionary spending increased by 1 percent but fell to 6.4 percent of GDP (compared with 6.5 percent in 2015).[11]
- Net interest spending increased by 8 percent, rising to 1.3 percent of GDP (compared with 1.2 percent in 2015).

Mandatory Spending. Outlays for mandatory programs totaled $2.4 trillion in 2016, $133 billion more than the amount recorded in 2015. Without the shift in the timing of payments, which totaled $37 billion, mandatory spending would have grown by $96 billion. The largest increases in net outlays, compared with spending in 2015, are attributable to growth in Social Security, Medicare, and Medicaid, as well as a decrease in receipts from the auction of licenses to use the electromagnetic spectrum (the proceeds of which are recorded as reductions in mandatory outlays). Those

9. The income produced by the various activities of the Federal Reserve System, minus the cost of generating that income and the cost of the system's operations, is remitted to the Treasury and counted as revenues in the budget.
10. Mandatory spending is governed by statutory criteria and is not normally controlled by the annual appropriation process.
11. Discretionary spending is controlled by annual appropriation acts that specify the amounts that are to be provided for a broad array of government activities, including, for example, defense, law enforcement, and transportation.

increases in outlays were partially offset by lower amounts recorded for credit programs related to higher education and housing.

Social Security. Spending for Social Security totaled $910 billion in 2016, $28 billion—or about 3 percent—more than in 2015. That increase was about 1 percentage point below the rate of growth in 2015, primarily because beneficiaries did not receive a cost-of-living adjustment (COLA) in January 2016. (The COLA was 1.7 percent in 2015).

Medicare. In total, Medicare outlays—net of premiums and other offsetting receipts—grew by $48 billion (or 9 percent) in 2016. That amount overstates underlying growth in spending for the program, however, because it reflects a $22 billion shift in the timing of certain payments from 2017 to 2016. In the absence of that shift in payments, Medicare spending would have risen by $26 billion (or 5 percent) last year, largely because of increased spending per person, particularly for prescription drugs. Spending for such drugs increased by roughly 15 percent last year, after adjustments for timing shifts and reconciliation payments.[12] Much of that increase stemmed from spending for people whose out-of-pocket costs for prescription drugs exceeded the catastrophic limit on such spending.

Medicaid. Spending for Medicaid grew by $19 billion (or 5 percent) last year—about one-third the rate of growth recorded in 2015. The slower growth in 2016 occurred in part because the optional expansion of coverage authorized by the Affordable Care Act (ACA) has been in place for two years and the rapid growth in enrollment that occurred during the initial stage of the expansion has begun to moderate. CBO estimates that total enrollment in Medicaid was 0.4 percent higher in 2016 than in the previous year.

Spectrum Auctions. The Federal Communications Commission occasionally auctions licenses for commercial use of the electromagnetic spectrum. Receipts from such auctions are recorded in the budget as reductions in mandatory outlays. Net receipts from the auction held in 2015 totaled $30 billion that year and $8 billion in 2016. The lower receipts in 2016 had the effect of boosting outlays by $22 billion that year relative to the total in the previous year.

Higher Education. Mandatory outlays for higher education, which equaled $22 billion in 2015, fell to $8 billion in 2016. Those outlays include the subsidy costs for federal student loans issued in the current year, revisions to the subsidy costs of loans made in past years, and mandatory spending for the Federal Pell Grant Program. The Department of Education recorded a revision to the subsidy costs for past loans that resulted in a $7 billion increase in outlays in 2016; the revision in 2015 was larger, increasing outlays by $18 billion.[13] That difference accounted for most of the drop in

12. Reconciliation payments are adjustments to payments to prescription drug plans on the basis of actual expenditures. They typically occur two years after the initial disbursements were made.

mandatory outlays for higher education last year. In addition, mandatory outlays for Pell grants fell by nearly $4 billion.[14]

Federal Housing Administration's Credit Programs. The Department of Housing and Urban Development recorded revisions to the subsidy costs for past mortgage guarantees that resulted in a net $10 billion reduction in outlays in 2016. In 2015, the department increased its earlier estimates of such costs by $4 billion. As a result, outlays in 2016 were, on net, $14 billion lower than in 2015.

Discretionary Spending. In total, discretionary outlays increased in 2016 by $15 billion (or 1 percent). Defense outlays inched up by $0.4 billion (or 0.1 percent) to $584 billion last year, the first increase in nominal terms since 2011. If not for the shift in the payment date for military compensation, however, outlays would have declined again in 2016—to $580 billion. That reduction stemmed from a drop in spending for overseas contingency operations (primarily for activities in Afghanistan and related missions), which fell by roughly $5 billion, CBO estimates; other defense spending rose slightly. Measured as a share of GDP, outlays for defense totaled 3.2 percent in 2016. By comparison, as recently as 2010—when spending for overseas contingency operations was roughly $95 billion above last year's level of about $70 billion—defense outlays totaled 4.7 percent of GDP.

Nondefense discretionary outlays rose to $600 billion in 2016, an increase of $15 billion (or 3 percent). Roughly a quarter of that increase is the result of a lower negative subsidy rate for mortgage guarantees by the Federal Housing Administration. (A negative subsidy indicates that the transactions are recorded as generating net income for the government.) Because such receipts are recorded as reductions in discretionary outlays, the decline in receipts caused overall spending for nondefense programs to rise. The remaining growth in nondefense discretionary spending was the result of a number of relatively small increases in outlays for various programs. Such spending measured 3.3 percent of GDP in 2016, unchanged from the percentage recorded in 2015.

Net Interest. Outlays in this category consist of the government's interest payments on debt held by the public minus interest income the government receives. In 2016, such outlays totaled $241 billion, $18 billion (or 8 percent) more than the amount recorded

13. Under the Federal Credit Reform Act of 1990, a program's subsidy costs are calculated by subtracting the present value of the government's projected receipts from the present value of its projected payments. The estimated subsidy costs can be increased or decreased in subsequent years to reflect updated assessments of the payments and receipts associated with the program. 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) at a specific time. The present value depends on the rate of interest (the discount rate) that is used to translate future cash flows into current dollars.

14. Most of the Pell grant program is funded through discretionary appropriations; such outlays rose by $2 billion in 2016. All told, spending for Pell grants dipped by $2 billion in 2016, primarily because of a drop in the number of students receiving such grants.

in 2015. That increase resulted primarily from adjustments to the principal of inflation-protected securities.[15] (Those adjustments are made monthly to account for inflation, using the consumer price index for all urban consumers, and are recorded as interest outlays.) The continued accumulation of debt also contributed to the increase in outlays for interest.

The Budget Outlook for 2017

If the laws governing taxes and spending generally remain unchanged in fiscal year 2017, CBO projects, the budget deficit will decrease by $29 billion to $559 billion. That drop in the deficit, however, is attributable to shifts in the timing of some payments, which boosted the deficit significantly in 2016 but will have a much smaller net effect this year.[16] Without those shifts, CBO estimates, the deficit would total $555 billion this year, slightly larger than the $546 billion deficit that would have been recorded without the shifts in 2016. Measured relative to the size of the economy, this year's deficit is projected to total 2.9 percent, CBO estimates, slightly below last year's level.

CBO estimates that, under current law, both revenues and outlays (adjusted for shifts in timing) would increase by about 4 percent in 2017, compared with increases of 0.5 percent and 3.4 percent, respectively, in 2016. A number of factors are responsible for those changes. Although total revenues are expected to grow roughly in line with GDP in 2017, some sources of revenue grow more quickly and some more slowly in CBO's baseline projections. Most notably, receipts from individual income taxes, which barely grew in 2016, are expected to increase by about 7 percent in 2017, while Federal Reserve remittances, which were boosted significantly in 2016 by a one-time transfer to the Treasury, drop back down in CBO's projection for 2017.

In terms of outlays, net interest payments are anticipated to increase by 12 percent in 2017 (after growing by 8 percent last year), primarily because of higher interest rates. Adjusted for the effects of timing shifts, mandatory spending is projected to increase by 3.6 percent in 2017, about half a percentage point less than in 2016, in part because spending for Medicare (net of premiums) is projected to grow more slowly. In addition, adjusted discretionary outlays are projected to increase by 2.5 percent in 2017, a faster pace than in 2016, in part because appropriations not constrained by the caps on discretionary funding (established by the Budget Control Act of 2011, P.L. 112-25) are greater so far this year.

15. At the end of fiscal year 2016, $1.2 trillion in Treasury inflation-protected securities was outstanding.

16. Because October 1, 2016, fell on a weekend, an estimated $41 billion in payments that were due on that day were instead made at the end of September 2016. As a result, outlays in 2016 were boosted (and outlays in 2017 were reduced) by the amount of those payments. Similarly, outlays in 2017 will be boosted by the shift of an estimated $45 billion in payments from fiscal year 2018 to 2017 because October 1, 2017, also falls on a weekend. All told, outlays in 2017 will be $4 billion higher, on net, as a result of those shifts.

Revenues

CBO projects that if current laws remain unchanged, revenues will increase by $137 billion in 2017, reaching $3.4 trillion. Because revenues in CBO's baseline projections rise at about the same rate in 2017 as the agency expects GDP to increase, they are estimated to remain at 17.8 percent of GDP, the same percentage as in 2016, and above the average of 17.4 percent of GDP recorded over the past 50 years.

The relative stability in revenues as a percentage of GDP in 2017 reflects movements in the following components:

- Individual income tax receipts are projected to rise by about $105 billion, from 8.4 percent of GDP to 8.6 percent. The most significant source of the increase is continued economic growth, which will cause people's income this year, in the aggregate, to rise faster than the rate of inflation. The inflation rate from the previous year is used to adjust the tax brackets each January, and when income rises faster than inflation, more of that income is pushed into higher tax brackets (the phenomenon known as real bracket creep).

- Remittances from the Federal Reserve System are projected to decline by $27 billion, from 0.6 percent of GDP to 0.5 percent. That decline largely reflects two factors: First, remittances were unusually high in 2016 because legislation last year required the central bank to remit most of its surplus account to the Treasury. Second, interest rates increased, resulting in more interest paid on reserves (and other instruments) in 2017.

- Changes in other sources of revenues are smaller and mostly offsetting relative to GDP. Receipts from miscellaneous fees rise slightly, largely because penalties on employers who do not provide qualifying health insurance to their employees are scheduled to be collected for the first time. Receipts from corporate income taxes also rise slightly following the temporary reduction in receipts collected in 2016, discussed above, which resulted from legislation enacted in December 2015. Receipts from excise taxes decline slightly, largely as a result of a one-year moratorium in 2017 on a tax imposed on health insurance providers.

Outlays

In the absence of changes to laws governing federal spending, and assuming that full-year appropriations equal the annualized funding provided in the Further Continuing and Security Assistance Appropriations Act, 2017 (P.L. 114-254, the current continuing resolution), outlays in 2017 will total $4.0 trillion, CBO estimates, $109 billion more than in 2016. Outlays are projected to total 20.7 percent of GDP this year, about 0.3 percentage points less than the share recorded in 2016. If not for the shifts in the timing of certain payments, outlays in 2017 would rise by $146 billion, or 3.8 percent, CBO estimates—more slowly than the 4.1 percent average annual rate of growth recorded between 2005 and 2015.

Mandatory Spending. Under current law, spending for mandatory programs (adjusted for timing shifts) will rise by $87 billion in 2017, CBO estimates, to a total of $2.5 trillion (see Table 1-2 on page 96). Such outlays are anticipated to total 12.9 percent of GDP this year, down from the 13.0 percent that would have been recorded in 2016. The largest year-over-year changes are as follows:

Social Security. CBO anticipates that, under current law, Social Security outlays will increase by $30 billion (or 3.3 percent) in 2017, a slightly faster rate of increase than that recorded in 2016, primarily because beneficiaries received a 0.3 percent COLA in January 2017 (whereas beneficiaries did not receive a COLA in 2016). The number of Social Security beneficiaries is projected to grow by 1.7 percent this year, about the same as the increase in 2016.

Medicare. Medicare outlays (net of premiums and other offsetting receipts and adjusted for shifts in timing) will rise by $23 billion, or 4.1 percent, in 2017, CBO projects. That growth is less than last year's rate of 4.8 percent primarily because of greater receipts from premiums paid by Medicare beneficiaries in 2017. Enrollment is projected to increase by 2.7 percent in 2017, faster than the 2.3 percent rate of increase recorded last year.

Medicaid. Spending for Medicaid is expected to increase by $20 billion (or 5.5 percent) in 2017. The projected rate of growth in outlays is about the same as last year's and is well below the average annual rate of growth recorded over the two years before that, primarily because the optional expansion of coverage authorized by the ACA will have been in place for three years and because the rapid growth in enrollment that occurred during the initial stage of the expansion has moderated. CBO projects that, under current law, total enrollment in the program will increase by about 1 percent in 2017, a slightly faster rate of increase than in 2016.

Health Insurance Subsidies and Related Spending. Subsidies that help people who meet income and other eligibility criteria to purchase health insurance through marketplaces (sometimes referred to as exchanges) and to meet their cost-sharing requirements, along with related spending, are expected to increase by $9 billion in 2017 (compared with an increase of $4 billion last year), reaching a total of $51 billion. The higher spending reflects an increase in the average subsidy per enrollee. Premiums for individual policies for the second-lowest-cost "silver" plan in the marketplaces—the benchmark for determining marketplace subsidies—rose by about 21 percent, on average, from 2016 to 2017. CBO and the staff of the Joint Committee on Taxation (JCT) estimate that about 9 million people will receive marketplace subsidies, on average, during calendar year 2017, roughly the same number as in 2016 (see Box 1-1).

Higher Education. Reflecting the negative subsidy rates estimated for new student loans, CBO projects, mandatory outlays for higher education will total –$6 billion in 2017, compared with $8 billion in 2016. About half of that $14 billion reduction will occur

because in 2016 the Department of Education recorded a revision to the subsidy costs for past loans that resulted in a $7 billion increase in outlays. No such revision has yet been recorded in 2017, and CBO has no basis for determining what revision, if any, might be made this year. Moreover, the estimated subsidy rates in 2017 are slightly more negative than those used in 2016 to estimate the costs of new loans.

Federal Housing Administration's Credit Programs. CBO does not project any mandatory outlays in 2017 for the Department of Housing and Urban Development's credit programs because no revisions to the subsidy costs for past guarantees have yet been recorded (such revisions reduced outlays by $10 billion in 2016).

Discretionary Spending. Almost all agencies are currently operating under a continuing resolution that holds most appropriations at 2016 levels through April 28, 2017. However, on an annualized basis, budget authority enacted so far in 2017 exceeds the amounts provided last year by $17 billion (or 1.4 percent).[17] That increase occurs largely because additional funding was provided for activities that are not constrained by the caps. Specifically, appropriations designated for overseas contingency operations are $11 billion higher; funding for activities designated as emergency requirements or for disaster relief is also slightly higher. All told, discretionary budget authority enacted so far in 2017 totals $1,185 billion, on an annualized basis (see Table 1-3). On that basis, defense funding would increase by $6 billion (or 1.1 percent) this year and budget authority for nondefense discretionary programs would grow by $10 billion (or 1.8 percent).[18]

If appropriations for the entire year turned out to be those assumed in the baseline, discretionary outlays also would rise—by $29 billion (or 2.5 percent) from the 2016 amount. (That rise reflects a downward adjustment of $4 billion in 2016 to exclude the effects of the shifts in payment dates for military compensation.) Outlays for defense programs (adjusted for shifts in timing) would rise by $9 billion (or 1.6 percent). Most categories of defense spending would be largely unchanged from last year's amounts; the major exceptions are increases in procurement ($4 billion, or 3.5 percent) and in research and development ($3 billion, or 4.8 percent). All told, CBO estimates that defense outlays would equal $589 billion in 2017 (3.1 percent of GDP).

17. Under the rules that govern its baseline, CBO assumes full-year funding for 2017 on the basis of amounts provided in the Further Continuing and Security Assistance Appropriations Act, 2017.

    Budget authority is the authority provided by federal law to incur financial obligations that will result in immediate or future outlays of federal government funds. Such authority may be provided in an appropriation act or an authorization act.

18. At the time of enactment, CBO estimated that appropriations under the continuing resolution currently in place were $3 billion above the cap on nondefense budget authority for 2017 and $3 billion below the defense cap. Under the provisions of P.L. 114-254, however, the Office of Management and Budget—which has the authority to determine whether the caps have been breached and a sequestration would be necessary—must postpone issuing its report on that subject until 15 days after the expiration of the continuing resolution.

In the baseline, outlays for nondefense programs rise by $20 billion (or 3.4 percent) this year, to a total of $620 billion (3.2 percent of GDP). That increase is the result of relatively small increases or decreases in outlays for various programs. The largest is a nearly $4 billion increase in spending for medical care for veterans, reflecting increases in appropriations related to medical facilities and community-care providers.

Net Interest. CBO estimates that, under current law, outlays for net interest will rise by $29 billion in 2017, to $270 billion. Although interest rates on securities issued by the Treasury are expected to remain very low by historical standards, CBO expects they will rise over the course of the year. Those higher rates, along with a larger amount of debt, would boost interest payments, which will edge up to 1.4 percent of GDP in 2017, CBO estimates (still well below their 50-year average of 2.0 percent).

CBO's Baseline Budget Projections for 2018 to 2027

Under the assumption that current laws governing taxes and spending remain in place, the budget deficit is projected to dip to 2.4 percent of GDP in 2018. That drop, however, is largely attributable to shifts in the timing of certain payments from 2018 into 2017.[19] Over the following nine years, the projected deficit increases in most years relative to the size of the economy, reaching 5.0 percent of GDP by 2027.[20] Although revenues are projected to increase as a share of GDP from 18.1 percent in 2018 to 18.4 percent in 2027, outlays (excluding the effects of shifts in timing) are projected to increase faster each year, driven by the aging of the population, the rising costs of health care, and escalating interest payments.

Revenues

In CBO's baseline, total revenues rise from 17.8 percent of GDP this year to 18.4 percent in 2027. That growth mainly reflects an increase, relative to GDP, in revenues from individual income taxes that is partially offset by decreases in remittances from the Federal Reserve and, to a lesser extent, by decreases in payroll and corporate income tax receipts relative to GDP (see Figure 1-3). The most significant movements over the next decade in sources of revenues are the following:

- Individual income tax receipts are projected to increase relative to GDP in each year from 2018 to 2027 because of real bracket creep (the process in which, as income rises faster than prices, an ever-larger proportion becomes subject to higher tax

19. Without those shifts, the deficit for 2018 would drop less sharply, to 2.7 percent of GDP. The drop in 2018 results from several factors, including the following: receipts from individual income taxes that rise faster than GDP; a tax on health insurers that is scheduled to be reinstated; and caps on budget authority for discretionary programs that are scheduled to be lower in 2018 than this year.

20. October 1 will also fall on a weekend in both 2022 and 2023, causing certain payments that are due on those days to be made instead at the end of September, thus shifting them into the previous fiscal year. If not for those shifts (which noticeably boost the projected deficit in fiscal year 2022 and reduce it in fiscal year 2024), the deficit would rise in each year between 2019 and 2027.

rates); rising distributions from tax-deferred retirement accounts; an expected increase in the share of wages and salaries received by high earners; and other factors.

- Payroll tax receipts are projected to decrease slightly relative to GDP, primarily as a result of an expected continued increase in the share of wages and salaries received by high earners, which will cause a greater share of earnings to be above the maximum amount subject to Social Security payroll taxes. (That amount, which is indexed to growth in average earnings for all workers, is $127,200 in calendar year 2017.) The resulting reduction in payroll taxes relative to GDP offsets roughly three-quarters of the expected increase in individual income tax receipts that is projected to occur for the same reason.

- Corporate income tax receipts are projected to both rise and fall slightly as a share of GDP over the course of the decade—rising slightly through 2020 and then declining by slightly more through 2027.

- Remittances to the Treasury from the Federal Reserve—which have been unusually large since 2010 because of changes in the size and composition of the central bank's portfolio—are projected to decline to more typical levels.

All told, CBO estimates, under current law revenues would grow over the 2017–2027 period by $1.7 trillion—an average annual increase of about 4 percent. That is slower by roughly 1 percentage point than the average rate of increase CBO projects for outlays.

Individual Income Taxes. If current laws remain generally unchanged, receipts from individual income taxes are expected to rise markedly relative to GDP over the next 10 years—from 8.6 percent in 2017 to 9.7 percent by 2027, which would be a greater share of GDP than has been recorded in all but one of the past 50 years. That increase relative to the size of the economy would result mainly from the following factors:

Real Bracket Creep. The most significant factor pushing up taxes relative to income is real bracket creep. That phenomenon occurs because the income tax brackets and exemptions under both the regular income tax and the alternative minimum tax are indexed only to inflation.[21] If income grows faster than inflation, as generally occurs when the economy is growing, more income is pushed into higher tax brackets. That factor causes projected revenues, measured as a percentage of GDP, to rise in CBO's baseline by 0.4 percentage points from 2017 to 2027.

21. The alternative minimum tax is similar to the regular income tax but its calculation includes fewer exemptions, deductions, and rates. People who file individual income tax returns must calculate the tax owed under each system and pay the larger of the two amounts.

Retirement Income. As the population ages, taxable distributions from tax-deferred retirement accounts (including individual retirement accounts, 401(k) plans, and traditional defined benefit pension plans) will tend to grow more rapidly than GDP. CBO expects the retirement of members of the baby-boom generation to cause a gradual increase in distributions from tax-deferred retirement accounts relative to GDP. Under current law, CBO projects, those growing taxable distributions would boost revenues relative to GDP by 0.3 percentage points over the next decade.

Relatively Faster Growth in Earnings of Higher-Income Taxpayers. In CBO's baseline projections, earnings from wages and salaries are expected to increase faster for higher-earning taxpayers than for others during the next decade—as has generally been the case for the past several decades—causing a larger share of income to be subject to higher income tax rates. Over the next 10 years, CBO projects, faster growth in earnings for higher-earning taxpayers would boost individual income tax revenues relative to GDP by about 0.2 percentage points. That increase would be partially offset by a projected decrease in payroll tax receipts (as explained below).

Other Factors. CBO anticipates that over the next decade, other factors would further boost individual income tax revenues by 0.2 percentage points. The most significant of those remaining factors is the expectation that the unexplained weakness in recent receipts, which is beyond what can be accounted for in current economic data, would gradually dissipate over the next several years. Specifically, taxable income as a share of GDP and effective tax rates (total taxes as a percentage of total income) fluctuate from year to year, but CBO expects them to return to levels more consistent with those seen in history—taking into account changes in the structure of tax law and longer-term trends in income and demographics.

Payroll Taxes. In CBO's baseline projections, receipts from payroll taxes remain roughly stable, declining from 6.0 percent of GDP this year to 5.9 percent in 2020 and continuing at that level through 2027. The main reason for the small decline is that earnings from wages and salaries are expected to increase faster for higher-earning taxpayers than for others, which will push an increasing share of such earnings above the maximum amount per taxpayer that is subject to Social Security taxes.

Corporate Income Taxes. Under current law, CBO projects, corporate income tax receipts would rise from 1.7 percent of GDP in 2017 to 1.8 percent of GDP in 2020 and then gradually decline to 1.6 percent of GDP by 2027. That pattern over the next decade is the net effect of four main factors:

- A temporary increase in receipts between 2017 and 2020 that results from a phaseout between 2018 and 2020 of provisions allowing firms with large amounts of investment in equipment (and certain other property) to immediately deduct from their taxable income 50 percent of the costs of those investments in 2017.

- An increase in receipts between 2017 and 2020 that results because the weakness in tax collections in 2016 and early in this fiscal year (beyond that which can be explained by currently available data on business activity) is not expected to be permanent. CBO anticipates that the factors that are responsible (which will not become apparent until information from tax returns becomes available over the next two years) will gradually dissipate.

- A reduction in receipts relative to GDP over the next several years that reflects a projected decline in domestic economic profits relative to GDP. Total nonlabor income, of which economic profits are a part, is projected to grow less rapidly than output—reversing a trend since 2000. Economic profits, in particular, are held down by an increase in the growth of labor compensation and rising interest payments on businesses' debt (see Chapter 2).

- An expected increase in the use of certain strategies that many businesses and investors employ to reduce their tax liabilities. One such strategy is for firms to organize their business activity in a way that reduces income that is subject to the corporate income tax. For example, a business may split its business activity in such a way that reduces the share of its income that is subject to the corporate income tax, or a new business may choose to organize as an entity that is subject only to the individual income tax.[22] Another strategy is to increase the amount of corporate income that is shifted out of the United States through a combination of methods such as setting more aggressive transfer prices, increasing the use of intercompany loans, undertaking corporate inversions, and using other techniques.[23]

Receipts From Other Sources. The federal government also collects revenues in the form of remittances from the Federal Reserve System, excise taxes, estate and gift taxes, customs duties, and miscellaneous fees and fines. CBO projects that, under current law, revenues from all of those sources would decline from 1.5 percent of GDP this year to 1.2 percent in 2027.

Most of that decline reflects projected remittances from the Federal Reserve, which CBO anticipates will fall from 0.5 percent of GDP this year to 0.3 percent of GDP by

22. For a detailed analysis of the taxation of business income through the individual income tax, see Congressional Budget Office, *Taxing Businesses Through the Individual Income Tax* (December 2012), www.cbo.gov/publication/43750.

23. To allocate profits among U.S. and foreign affiliates, transactions between those affiliates must be assigned a price, known as the transfer price. By strategically setting transfer prices, a corporation can reduce the share of total profits that it reports on U.S. tax returns. A corporate inversion refers to a process through which a U.S. corporation changes its country of tax residence, often by merging with a foreign company. Inversions reduce U.S. corporate tax revenues both because the inverted U.S. corporation no longer must pay U.S. taxes on earnings in other countries and because a corporation can shift additional income out of the United States through the use of intercompany loans and the resulting interest expenses.

2027, just above the average over the 2001–2008 period. Since 2008, the central bank has significantly expanded and changed the composition of its asset holdings, boosting its earnings and subsequent remittances to the Treasury to far above typical amounts. CBO expects that the size of the Federal Reserve's portfolio, along with its remittances, will gradually decline as the central bank phases out its current policy of reinvesting maturing Treasury and other securities that it holds. CBO estimates that the Federal Reserve's balance sheet will return to a more typical size, relative to the stock of currency that it issues, by 2023. Further contributing to the reduction in remittances over the next several years, rising interest rates will increase the amount of interest the Federal Reserve pays on reserves, CBO projects.

Receipts from excise taxes are projected to remain relatively flat as a share of GDP over the next decade. About 80 percent of excise tax receipts over the coming decade will come from taxes related to highways, tobacco, aviation, and health insurance.[24] Overall, excise taxes are projected to rise slightly from 0.4 percent of GDP in 2017 to 0.5 percent in 2018 following the end of a moratorium on the tax on health insurance providers. After 2018, excise taxes in CBO's baseline gradually fall back to 0.4 percent of GDP, in part reflecting improvements in vehicles' fuel economy (mainly, CBO projects, because of increases in the government's fuel economy standards) that reduce gasoline consumption and the associated tax revenues. Taxes on tobacco products are also expected to decline, continuing trends in consumption that have been occurring for many years. Taxes on aviation, including airline tickets, aviation fuels, and various aviation-related transactions, are projected to remain unchanged as a share of GDP over the next decade.

In addition, under current law, receipts from estate and gift taxes, customs duties, and miscellaneous fees and fines are projected to remain nearly unchanged as a percentage of GDP over the next 10 years.

Tax Expenditures. CBO's revenue projections reflect current tax law, which includes an array of exclusions, deductions, preferential rates, and credits that reduce revenues for any given level of tax rates in the individual, payroll, and corporate income tax systems. Some of those provisions are called tax expenditures because, like government spending programs, they provide financial assistance for particular activities as well as to certain entities or groups of people.[25]

Like conventional federal spending, tax expenditures contribute to the federal budget deficit. They also influence people's choices about working, saving, and investing, and

24. Under current law, most aviation taxes are scheduled to expire on September 30, 2017, and most highway taxes on September 30, 2022. In general, CBO's baseline incorporates the assumption that expiring tax provisions will follow the schedules set forth in current law. However, the Balanced Budget and Emergency Deficit Control Act of 1985 requires that CBO's baseline incorporate the assumption that expiring excise taxes dedicated to trust funds (including most highway and aviation taxes) will be extended.

they affect the distribution of income. Tax expenditures are more similar to the largest benefit programs than they are to discretionary spending programs: They are not subject to annual appropriations, and any person or entity that meets the legal requirements can receive the benefits. Because of their budgetary treatment, however, tax expenditures are much less transparent than spending on benefit programs.[26]

The tax expenditures with the largest effects on revenues are the following:

- The exclusion from workers' taxable income of employers' contributions for health care, health insurance premiums, and premiums for long-term care insurance;
- The exclusion of contributions to and the earnings of pension funds (minus pension benefits that are included in taxable income);
- Preferential tax rates on dividends and long-term capital gains;
- The deductions for state and local taxes (on nonbusiness income, sales, real estate, and personal property); and
- The deferral for profits earned abroad, which certain corporations may exclude from their taxable income until those profits are returned to the United States.

Tax expenditures have a substantial effect on federal revenues. On the basis of estimates prepared by JCT, CBO expects that those and other tax expenditures will total over 8 percent of GDP in 2017—equal to nearly half of all federal revenues projected for the year (see Figure 1-4).

However, the total amount of tax expenditures does not represent the increases in revenues that would occur if tax expenditures were eliminated, because repealing a tax provision would change incentives and lead taxpayers to modify their behavior in ways that would diminish the impact of the repeal on revenues. For example, if preferential tax rates on realizations of capital gains were eliminated and those gains were instead taxed as ordinary income, taxpayers would reduce the amount of capital gains they realized. As a result, the amount of additional revenues that would be produced by eliminating the preferential rates would be smaller than the estimated size of the tax expenditure.

25. The Congressional Budget and Impoundment Control Act of 1974 defines tax expenditures as "those revenue losses attributable to provisions of the Federal tax laws which allow a special exclusion, exemption, or deduction from gross income or which provide a special credit, a preferential rate of tax, or a deferral of tax liability."

26. For a more thorough discussion of tax expenditures, see Joint Committee on Taxation, *Estimates of Federal Tax Expenditures for Fiscal Years 2015–2019*, JCX-141R-15 (December 2015), http://go.usa.gov/cVM89; and Congressional Budget Office, *The Distribution of Major Tax Expenditures in the Individual Income Tax System* (May 2013), www.cbo.gov/publication/43768.

Outlays

Under current law, total outlays in CBO's baseline are projected to hover around 21 percent of GDP through 2020, rise to 22 percent the following year, and then remain at that level for several years before reaching 23 percent at the end of the projection period. In nominal terms, outlays would grow, on net, by $2.6 trillion between 2017 and 2027, CBO estimates—an average annual increase of about 5 percent. Social Security, Medicare, and net interest on federal debt account for 70 percent of the total increase in outlays (see Figure 1-5).

Mandatory Spending. The Deficit Control Act requires CBO's projections for most mandatory programs to be made in keeping with the assumption that current laws continue unchanged. Thus, CBO's baseline projections for mandatory spending reflect the estimated effects of economic factors, caseload growth, and other factors that affect the cost of those programs. The projections also incorporate a set of across-the-board reductions (known as sequestration) that are required under current law for spending on certain mandatory programs.

Mandatory outlays (net of offsetting receipts and with adjustments for shifts in the timing of certain payments) are projected to increase from $2.5 trillion in 2017 to $4.3 trillion in 2027, an average yearly increase of 5.7 percent. Those outlays are projected to equal 12.9 percent of GDP in 2017 and then to rise each year through the end of the projection period, reaching 15.4 percent of GDP in 2027. By comparison, the highest percentage for mandatory spending in any year since 1962 (the earliest year for which such data have been reported) was 14.5 percent in 2009; that was the only year such outlays have exceeded 14.0 percent of GDP.

Much of the growth in mandatory spending—particularly for Social Security and Medicare—results from the aging of the population. The number of people age 65 or older is now more than twice what it was 50 years ago. Over the next decade, as members of the baby-boom generation age and as life expectancy continues to increase, that number is expected to rise by more than one-third, boosting the number of beneficiaries of those programs (see Figure 1-6). As a result, projected spending for Social Security and Medicare for people age 65 or older increases from roughly one-third of all federal noninterest spending in 2017 to about 42 percent in 2027. Including Medicaid as well as military and federal civilian retirement boosts projected spending for that population from 37 percent of noninterest outlays in 2017 to 45 percent in 2027.

Growth in health care spending per enrollee also contributes to the increase in mandatory spending. Although health care spending grew more slowly in the past several years than it has historically, CBO projects that spending per enrollee in federal health care programs will grow more rapidly over the coming decade than it has in recent years. For example, spending per enrollee in Medicare is projected to increase

at an average annual rate of 4.3 percent between 2017 and 2027, about 3 percentage points faster than the average rate recorded over the past five years.

Social Security and Medicare. All told, spending for two programs—Social Security and Medicare—drives nearly three-quarters of the growth in mandatory spending. Outlays for Social Security are estimated to total 4.9 percent of GDP (or $940 billion) in 2017 and then are projected to rise steadily, reaching 6.0 percent of GDP (or $1.7 trillion) in 2027 (see Figure 1-7). At $589 billion (adjusted for timing shifts), spending for Medicare remains at 3.1 percent of GDP in CBO's baseline for 2017 and then increases each year, growing to 4.2 percent ($1.2 trillion) in 2027.

Other Mandatory Programs. Aside from spending on Social Security and Medicare, all other mandatory spending (adjusted for shifts in timing) is projected to remain relatively steady as a percentage of GDP, increasing from 5.0 percent in 2017 to 5.2 percent in 2027. That category includes spending on other health programs (such as Medicaid and subsidies for health insurance purchased through marketplaces), income support programs (such as unemployment compensation and the Supplemental Nutrition Assistance Program, or SNAP), military and civilian retirement programs, most veterans' benefits, and major agriculture programs. Projected outlays for Medicaid edge up over the period, from 2.0 percent in 2017 to 2.3 percent in 2027, while all other mandatory spending in this category remains near 3.0 percent.

Assumptions About Expiring Programs. In keeping with the rules established by the Deficit Control Act, CBO's baseline projections incorporate the assumption that some mandatory programs will be extended when their authorization expires, although the rules provide for different treatment for programs created before and after the Balanced Budget Act of 1997 (P.L. 105-33). All mandatory spending programs that predate that act and have current-year outlays greater than $50 million are assumed to continue in CBO's baseline projections. For programs established after 1997, continuation is assessed program by program, in consultation with the House and Senate Budget Committees.

CBO's baseline projections therefore incorporate the assumption that the following programs whose authorizations expire within the current projection period will continue: SNAP, Temporary Assistance for Needy Families, the Children's Health Insurance Program, rehabilitation services, the Child Care Entitlement, trade adjustment assistance for workers, parts of child nutrition, the Promoting Safe and Stable Families program, and most farm subsidies. In addition, the Deficit Control Act directs CBO to assume that a COLA for veterans' compensation, which has routinely been authorized in the past, will continue to be provided each year. In CBO's projections, the assumption that expiring programs will be extended and that COLAs for veterans' compensation will continue accounts for about $1.1 trillion in outlays between 2018 and 2027, roughly half of which is for SNAP. That amount represents about 3 percent of all mandatory spending net of offsetting receipts.[27]

Discretionary Spending. An array of federal activities is funded or controlled through annual appropriations. Such discretionary spending includes most spending on national defense as well as outlays for highway programs, elementary and secondary education, housing assistance, international affairs, and the administration of justice, for example. In total, discretionary spending is projected to increase from $1.2 trillion in 2017 to $1.5 trillion in 2027, an average yearly increase of 2.0 percent. Measured as a share of GDP, however, discretionary outlays are projected to drop from 6.3 percent in 2017 to 5.3 percent in 2027, the smallest percentage in any year to date since 1962 (the earliest year for which such data have been reported).

Through 2021, CBO's baseline incorporates the caps on budget authority for discretionary programs that are currently in place; in later years, the baseline reflects the assumption that such funding keeps pace with inflation (consistent with the provisions of Section 257 of the Deficit Control Act). Some elements of discretionary funding are not constrained by the caps and are generally assumed to grow with inflation from the amounts provided in 2017: the appropriations designated for overseas contingency operations; activities designated as emergency requirements; disaster relief (up to certain limits); certain efforts to reduce overpayments in benefit programs; and programs designated in the 21st Century Cures Act (P.L. 114-255), subject to the limits set in that legislation.[28]

For 2018, the caps on discretionary budget authority are $5 billion lower than for 2017—$3 billion lower for nondefense programs and $2 billion lower for defense programs.[29] (That estimate incorporates the automatic reductions required by law and excludes adjustments for overseas contingency operations and other activities not constrained by the caps.) However, the changes in budget authority relative to 2017 incorporated in the baseline differ from the changes in the cap levels for two main reasons:

- Discretionary budget authority for nondefense programs declines by $24 billion in 2018; much of that decline—$17 billion—stems from reductions in mandatory budget authority that are included in the current continuing resolution for 2017 to help keep appropriations within the limit set by the cap on nondefense funding. (When reductions in mandatory programs are included in appropriation acts, the savings are credited against the discretionary funding provided in those acts in

27. For details on these programs, see Congressional Budget Office, "10-Year Budget Projections" (January 2017), Supplemental Table 2, www.cbo.gov/publication/51118.
28. Spending for certain transportation programs is controlled by obligation limitations, which also are not constrained by the caps on discretionary spending.
29. The Bipartisan Budget Act of 2015 (P.L. 114-74) canceled the automatic reductions in discretionary spending for 2017 imposed by the Budget Control Act of 2011 and set new caps for that year that are, in total, $30 billion above what the limits would have been if the automatic spending reductions had occurred. (That law also made changes to the caps for 2016.) No adjustments have been made to the caps and automatic reductions in place for 2018 through 2021.

judging compliance with the caps.) Over the past six years, such offsets to discretionary budget authority have averaged about $18 billion a year; none have yet been included in CBO's baseline for 2018 because no such changes have been enacted for that year. Without such offsets, discretionary budget authority in 2018 would have to be noticeably lower than the funding in 2017 in order to comply with the caps.

- Budget authority for defense programs is $2 billion greater in 2018 than in 2017 largely because funding for overseas contingency operations is assumed to grow from this year's amount at the rate of inflation.

Discretionary budget authority after 2018 would rise by about 2 percent a year, on average, reflecting the rate of increase in the caps pursuant to the Budget Control Act of 2011 and under the assumption that such budget authority grows with inflation after the caps expire in 2021.

Under those assumptions, total discretionary outlays in CBO's baseline are about the same in 2018 as in 2017 and then keep pace with the projected 2 percent annual increase in budget authority, reaching $1.5 trillion, or 5.3 percent of GDP, by the end of the projection period. By comparison, the lowest percentage for discretionary spending in any year since 1962 was 6.0 percent in 1999, and the average over the past 50 years has been 8.6 percent.

Net Interest. Rising interest rates and growing federal debt are projected to boost outlays for net interest significantly. In the baseline, they nearly triple in dollar terms, rising from $270 billion (or 1.4 percent of GDP) in 2017 to $768 billion (or 2.7 percent of GDP) in 2027—which would be the largest ratio since 1998.

Most of the projected increase in the government's borrowing costs is attributable to rising interest rates. During the next two years, slack in the economy is expected to continue to diminish, and the Federal Reserve is expected to gradually reduce support for economic growth in response. As a result, CBO anticipates that interest rates on Treasury securities will rise noticeably over the next several years from their current, unusually low, levels. CBO estimates that the interest rate on 3-month Treasury bills will rise from 0.4 percent in the fourth quarter of 2016 to 2.8 percent by the second half of 2021 and will remain there through 2027. The rate on 10-year Treasury notes is projected to rise from 2.1 percent in the fourth quarter of 2016 to 3.6 percent during the first half of 2023 and to remain there through 2027. (For further discussion, see Chapter 2.) The remainder of the increase in net interest costs occurs mainly because of interest payments on the greater amount of debt held by the public that would accrue over the next decade as a result of the projected deficits.

Federal Debt

Federal debt held by the public consists mostly of the securities that the Treasury issues to raise cash to fund the federal government's activities and to pay off its maturing

liabilities.[30] The Treasury borrows money from the public by selling securities in the capital markets; that debt is purchased by various buyers in the United States, by private investors overseas, and by the central banks of other countries. Of the $14.2 trillion in federal debt held by the public at the end of 2016, 57 percent ($8.0 trillion) was held by domestic investors and 43 percent ($6.2 trillion) was held by foreign investors.[31] Other measures of federal debt are sometimes used for various purposes, such as to provide a more comprehensive picture of the government's financial condition or to account for debt held by federal trust funds.

Debt Held by the Public. Under the assumptions that govern CBO's baseline, the federal government is projected to borrow another $10.1 trillion from the end of 2017 through 2027, boosting debt held by the public to 89 percent of GDP by the end of the projection period (see Table 1-4).

That amount of debt relative to the size of the economy would be the greatest since 1947 and more than double the 50-year average of 40 percent. Debt that high relative to historical standards—and heading higher—could have significant negative consequences for the budget and the economy.

The net amount the Treasury borrows by selling securities (the amounts that are sold minus the amounts that have matured) is determined primarily by the annual budget deficit. In addition, several factors—collectively labeled "other means of financing" and not directly included in budget totals—also affect the government's need to borrow from the public. Those factors include changes in the government's investments in the Thrift Savings Plan's G Fund and cash balance, as well as the cash flows associated with federal credit programs (such as student loans) because only the subsidy costs of those programs (calculated on a present-value basis) are reflected in the budget deficit. CBO projects that those other means of financing will add $111 billion to federal borrowing in 2017 and then steadily decrease to about $55 billion in additional borrowing each year from 2022 through 2027.

Other Measures of Federal Debt. Three other measures are sometimes used in reference to federal debt:

- *Debt held by the public minus financial assets* subtracts the value of the government's financial assets, such as student loans, from debt held by the public. That measure provides a more comprehensive picture of the government's financial

30. A small amount of debt held by the public is issued by other agencies, mainly the Tennessee Valley Authority.

31. The largest U.S. holders of Treasury debt are the Federal Reserve System (17 percent), individual households (10 percent), and mutual funds (10 percent); investors in China and Japan have the largest foreign holdings of Treasury securities, together accounting for 16 percent of U.S. public debt. For additional information, see Congressional Budget Office, *Federal Debt and Interest Costs* (December 2010), Chapter 1, www.cbo.gov/publication/21960.

condition and its overall impact on credit markets than does debt held by the public. Calculating that measure is not straightforward, however, because neither the financial assets to be included nor the methods for evaluating them are well defined. Under CBO's baseline assumptions, that measure is roughly 10 percent smaller than debt held by the public but varies roughly in line with it.

- *Gross federal debt* consists of debt held by the public and debt issued to government accounts (for example, the Social Security trust funds). The latter type of debt does not directly affect the economy and has no net effect on the budget. In CBO's projections, debt held by the public increases by $10.1 trillion between the end of 2017 and the end of 2027, and debt held by government accounts falls by $0.4 trillion, reflecting declines in the balances of many trust funds.[32] As a result, gross federal debt is projected to rise by $9.7 trillion over that period and to total $30.0 trillion at the end of 2027. Nearly one-fifth of that sum would be debt held by government accounts.

- *Debt subject to limit* is the amount of debt that is subject to the statutory limit on federal borrowing; it differs from gross federal debt mainly because most debt issued by agencies other than the Treasury and the Federal Financing Bank is included in gross debt but excluded from the debt limit (the difference between the two measures totals $7 billion in CBO's projections for 2027). Currently, there is no statutory limit on the issuance of new federal debt because the Bipartisan Budget Act of 2015 suspended the debt ceiling from November 2, 2015, through March 15, 2017. In the absence of any legislative action on the debt limit before the suspension ends, the amount of borrowing accumulated during that period will be added to the previous debt limit of $18.1 trillion on March 16, 2017. In CBO's baseline projections, the amount of outstanding debt subject to limit increases from $20.4 trillion at the end of 2017 to $30.0 trillion at the end of 2027. (For the purpose of those projections, CBO assumes that increases in the statutory ceiling will occur as necessary.)

Changes in CBO's Baseline Since August 2016

CBO's current estimate of the cumulative deficit between 2017 and 2026 is just $6 billion (or 0.1 percent) higher than it estimated in August 2016 when the agency last completed a set of baseline projections (see Table 1-5). Deficits are smaller than projected in August (by generally decreasing amounts) in the first half of the 10-year period and larger (by increasing amounts) in the second half. In total, revenues and outlays are both lower by $0.3 trillion. (For additional details about those changes, see Appendix A.)

32. In keeping with the rules in section 257 of the Deficit Control Act, CBO's baseline incorporates the assumption that scheduled payments will continue to be made in full after the trust fund has been exhausted, even though there is no legal authority to make such payments.

Changes for 2017

CBO now estimates that both revenues and outlays in 2017 will be lower than the agency projected in August, by $17 billion (or 0.5 percent) and $52 billion (or 1.3 percent), respectively, resulting in a deficit that is $35 billion smaller. Technical updates to CBO's estimates of revenues and outlays—that is, revisions that do not stem from legislation or changes in economic projections—constitute the largest changes, reducing the projected deficit by $40 billion. CBO's revised economic forecast reduced the projected deficit for this year by $4 billion while enacted legislation has increased the deficit for this year by $8 billion.

Revenues in 2017 are $27 billion lower than previously estimated for technical reasons, primarily because collections from corporate income taxes have been lower in recent months than can be explained by currently available economic data.

Technical revisions have resulted in a reduction in estimated outlays of $66 billion for 2017. The bulk of that change stems from lower estimates of mandatory spending. The largest change—a reduction of $17 billion—relates to receipts from Fannie Mae and Freddie Mac, and stems from differences between CBO's budgetary treatment and the Administration's.[33] Other programs for which CBO has reduced its estimate of outlays for technical reasons include those related to agriculture ($7 billion) and Medicaid ($4 billion).

Changes for 2017 Through 2026

In total, CBO has reduced its projections of both revenues and outlays over the 10-year projection period—by $315 billion (or 0.8 percent) and $310 billion (0.6 percent), respectively. The largest changes result from technical updates, which lower estimates of both revenues and outlays. A portion of the reduction in outlays for technical reasons is offset by higher projected spending stemming from recent legislation. Adjustments resulting from CBO's revised economic forecast are much smaller.

The 10-year change in revenues is dominated by a $300 billion reduction for technical reasons. The biggest single reason is that CBO has reduced its projections of revenues

33. Because the government placed Fannie Mae and Freddie Mac into conservatorship in 2008 and now controls their operations, CBO considers their activities governmental and includes the budgetary effects of their activities in its projections as if they were federal agencies. On that basis, for the 10-year period after the current fiscal year, CBO projects subsidy costs of their new activities using procedures that are similar to those specified in the Federal Credit Reform Act of 1990 for determining the costs of federal credit programs—but with adjustments to reflect the associated market risk. The Administration, in contrast, considers Fannie Mae and Freddie Mac to be outside the federal government for budgetary purposes and records cash transactions between those two entities and the Treasury as federal outlays or receipts. As a result, in its baseline, CBO treats the current fiscal year differently to provide its best estimate of the amount that the Treasury ultimately will report as the federal deficit for 2017. It is that change in methodology for estimating outlays in 2017 that accounts for the $17 billion reduction in projected outlays for 2017 since August.

from individual income taxes, and only partially offset that change by increasing its projection of revenues from payroll taxes, to reflect a lower share of total wages and salaries received by high earners.

Updates attributable to technical factors reduced projected outlays between 2017 and 2026 by $433 billion. Among the largest such changes, projections for Social Security spending are lower by $87 billion (or 0.7 percent), mainly because caseloads are now expected to be smaller than previously projected. Projected spending for Medicare has been reduced by $82 billion (or 1 percent), mostly as result of updated information on actual spending in 2016. Medicaid outlays are projected to be $63 billion (or 1 percent) lower than previously estimated, largely because of a decrease in projected spending for aged and disabled enrollees. Lastly, CBO's estimate of net interest outlays decreased by $62 billion (or 1 percent) over the 10-year period as a result of technical updates, in part reflecting an increase in estimated receipts from the financing accounts associated with the government's credit programs.

Changes to CBO's economic forecast further reduce revenues and outlays in the baseline, but by much smaller amounts—$16 billion and $4 billion, respectively.

The effects on outlays of legislation enacted after CBO prepared its August baseline offset a portion of the technical and economic changes, increasing outlays by $127 billion over the 10-year period. That increase is largely a result of legislation that provided additional funding not constrained by the discretionary caps, primarily funding for overseas contingency operations. Because projections of future appropriations for such operations are based on the assumption that they will equal current appropriations, with an adjustment for inflation, the larger amount provided for 2017 caused CBO to increase its projection of discretionary outlays for the 2017–2026 period by $84 billion. Legislation boosted projected revenues by $1 billion through 2026.

Uncertainty in Budget Projections

Even if federal laws remained unchanged for the next decade, actual budgetary outcomes would differ from CBO's baseline projections because of unanticipated changes in economic conditions and in a host of other factors that affect federal spending and revenues. The agency aims for its projections to be in the middle of the distribution of possible outcomes, given the baseline assumptions about federal tax and spending policies, while recognizing that there will always be deviations from any such projections.

CBO's projections of outlays depend on the agency's economic projections for the coming decade, which include forecasts for such variables as interest rates, inflation, and the growth in productivity. Discrepancies between those forecasts and actual economic outcomes can cause significant differences between baseline budget projections and budgetary outcomes.

For instance, CBO's current economic forecast anticipates that interest rates on 3-month Treasury bills will increase from 0.4 percent in the fourth quarter of 2016 to 2.8 percent by the second half of 2021 (and will remain there through 2027) and that interest rates on 10-year Treasury notes will rise from 2.1 percent in the fourth quarter of 2016 to 3.6 percent during the first half of 2023 (and remain there through 2027). If interest rates were 1 percentage point higher than projected each year from 2018 through 2027 and if all other economic variables were unchanged, cumulative deficits projected for the 10-year period would be about $1.6 trillion higher, mostly as a result of larger interest payments on debt issued by the Treasury. Conversely, if interest rates are lower than CBO projects, deficits would be lower. (For further discussion of how some key economic projections affect budget projections, see Appendix B.)

Uncertainty also surrounds myriad technical factors that can substantially affect CBO's baseline projections of outlays. For example, spending per enrollee for Medicare and Medicaid is very difficult to predict. If per capita costs in those programs rose 1 percentage point faster or slower per year than CBO has projected for the next decade, total federal outlays for Medicare and Medicaid would be roughly $900 billion higher or lower for that period.

Projections of revenues also are sensitive to a variety of factors. Revenues depend on total amounts of wages and salaries, corporate profits, and other income, all of which are encompassed by CBO's economic projections. For example, if the growth in productivity was 0.1 percentage point lower than projected each year, which translates into annual economic growth that is lower by about 0.1 percentage point than the rates that underlie the agency's baseline budget projections, revenues would be $315 billion lower (and outlays would be $42 billion lower) over the 2018–2027 period.

Even fairly small deviations in revenues and outlays relative to CBO's projections could have a substantial effect on budget deficits. For example, if revenues projected for 2017 were too high or too low by 3 percent (a range that has included about two-thirds of the deviations between actual amounts and CBO's projections in the past), then they would be about $100 billion higher or lower than in the agency's baseline.[34] Similarly, if outlays projected for 2017 were too high or too low by 3 percent, then they would deviate from CBO's baseline by about $120 billion. Such differences for both revenues and outlays could largely offset each other, thus having little net effect on the deficit, or they could both push the deficit in the same direction, thus compounding the differences.

34. Projection errors have tended to be larger for longer horizons than for shorter ones. CBO's six-year revenue projections—those that estimate revenues for the fifth fiscal year after the year in which they are released—have, on average, overestimated revenues by 5.3 percent. The mean absolute error of those projections (that is, the average of the errors without regard to direction) is 10.4 percent. See Congressional Budget Office, *CBO's Revenue Forecasting Record* (November 2015), www.cbo.gov/publication/50831.

Alternative Assumptions About Fiscal Policy

CBO's baseline budget projections are intended to show what would happen to federal spending, revenues, and deficits if current laws generally remained unchanged. Future legislative action, however, could lead to markedly different budgetary outcomes.

To assist policymakers and analysts who may hold differing views about the most useful benchmark against which to consider possible changes to laws, CBO has estimated the effects on budget projections of some alternative assumptions about future policies (see Table 1-6 on page 104). The discussion below focuses on how those policy actions would directly affect revenues and outlays. Such changes also would influence the costs of servicing the federal debt (shown separately in the table).

Discretionary Spending

Policymakers could vary discretionary funding in many ways from the amounts projected in the baseline. For example, after 2017, if appropriations grew each year through 2027 at the same rate as inflation, rather than being constrained by the caps, discretionary spending would be $577 billion higher over the 2018–2027 period than it is in CBO's baseline. If, by contrast, lawmakers kept appropriations for 2018 through 2027 at the nominal 2017 amount, total discretionary outlays would be $949 billion lower over that period. Under that scenario (sometimes called a freeze in regular appropriations), total discretionary spending would fall from 6.3 percent of GDP in fiscal year 2017 to 4.4 percent in 2027. (In CBO's baseline, such spending is already projected to fall to 5.3 percent of GDP in 2027, reflecting the caps on most new discretionary funding through 2021 and adjustments for inflation thereafter.)

Automatic Spending Reductions

The Budget Control Act of 2011 put in place automatic procedures to reduce discretionary and mandatory spending through 2021. Those procedures require equal reductions (in dollar terms) in defense and nondefense spending. The Bipartisan Budget Act of 2015 canceled the discretionary reductions for 2016 and 2017 and instead set new caps for those years. That act also extended the required reductions to mandatory spending (through a process called sequestration) through 2025. If lawmakers chose to prevent those automatic cuts each year—starting in 2018—without making other changes that reduced spending, total outlays over the 2018–2027 period would be $989 billion (or nearly 2 percent) higher than the amounts in CBO's baseline. Total discretionary outlays would be $869 billion (or 6.5 percent) higher, and outlays for mandatory programs—most of which are not subject to sequestration—would be $120 billion (or 0.4 percent) higher.[35]

35. Because of interactions between the effects of different policy options, the estimated budgetary effects of this option cannot be added to the estimated budgetary effects of either of the other alternatives that affect discretionary spending.

Revenues

A number of tax provisions have recently expired or are scheduled to expire over the next decade. Most of these provisions have been extended several times. Most recently, the Consolidated Appropriations Act, 2016, made permanent some provisions that had expired or were scheduled to expire and temporarily extended others, in many cases through December 31, 2016. That law also phases out the ability of businesses with large amounts of investment to expense (immediately deduct from their taxable income) qualifying investments in equipment, allowing those companies to expense 50 percent of such investment through 2017, 40 percent in 2018, and 30 percent in 2019, after which the partial-expensing provisions are scheduled to expire. That law also postponed for one or two years certain taxes related to health care.

If the provision allowing for 50 percent expensing became permanent after 2017, it would reduce revenues by about $247 billion over the 2018–2027 period, JCT estimates. If instead the provision allowing for 30 percent expensing became permanent after 2019, it would reduce revenues by about $152 billion from 2020 through 2027. If all other tax provisions that either expired at the end of last month or are scheduled to expire before 2027 were permanently extended, CBO and JCT estimate, revenues would be lower by a total of $199 billion over the 2018–2027 period.

Deficits also would increase if delays in the implementation of certain taxes established by the ACA were extended or made permanent. The Consolidated Appropriations Act, 2016, suspended for 2016 and 2017 the medical device tax that took effect in 2013, placed a moratorium for 2017 on the health insurance provider tax that took effect in 2014, and postponed for two years (to 2020) the start of the tax on high-premium health insurance plans. Permanently repealing those taxes would reduce revenues by a total of $311 billion over the 2018–2027 period.

The Long-Term Budget Outlook

Beyond the coming decade, the fiscal outlook is significantly more daunting. In CBO's most recent long-term projections—which extend through 2047—budget deficits rise steadily. Those long-term projections follow CBO's 10-year baseline projections for the first decade and then extend the baseline concept for subsequent years (see Table 1-7 on page 106).[36] Although long-term budget projections are highly uncertain, the aging of the population and growth in per capita spending on health care would almost certainly boost federal spending significantly relative to GDP after 2027 if current laws generally remained in effect. Federal revenues also would continue to increase relative to GDP under current law, but they would not keep pace with outlays. As a result, CBO estimates, public debt would reach 145 percent of GDP by 2047 (taking into account the effects on the economy of the rising debt), higher than any percentage previously recorded in the United States (see Figure 1-8).

Moreover, debt would still be on an upward path relative to the size of the economy in 2047, a trend that would ultimately be unsustainable. To avoid the negative consequences of high and rising federal debt and to put debt on a sustainable path, lawmakers will have to make significant changes to tax and spending policies—increasing revenues more than they would under current law, reducing spending for large benefit programs below the projected amounts, or adopting some combination of those approaches.

Chapter 2: The Economic Outlook

The Congressional Budget Office estimates that if current laws governing federal taxes and spending generally remain in place, the economy will grow, during the coming decade, at roughly the modest rate observed since the end of the 2007–2009 recession. CBO estimates that the nation's real gross domestic product (GDP)—that is, total output adjusted to remove the effects of inflation—grew by 1.8 percent last year on a fourth-quarter-to-fourth-quarter basis, restrained by weak growth of business and residential investment (see Table 2-1). But CBO expects business investment to strengthen, helping to raise the growth of output to 2.3 percent this year and 1.9 percent in 2018. From 2017 to 2027, CBO estimates that real output will expand at an average rate of 1.9 percent per year.

The projected growth of output will raise employment and virtually eliminate slack—that is, unused productive resources—in the economy over the next two years, in CBO's view. At the end of 2016, actual output was about 1 percent smaller than CBO's estimate of potential (that is, maximum sustainable) output. CBO expects that output gap, which is one measure of slack, to nearly disappear by the end of 2018,

36. The long-term projections reported here incorporate the current baseline for the first 10 years. For subsequent periods, CBO has not fully updated all of the projections that it reported in its most recent long-term budget outlook, but the agency has updated its long-term economic projections on an interim basis and applied them to estimates for Social Security spending and net interest. For other components of the budget, CBO adopted the simplified approach that it has regularly used between full updates—in this case, by incorporating the growth rates for such components from the extended baseline in CBO's July 2016 report (its most recent full update).

    Details on the interim long-term economic and budgetary projections presented here are included with the supplemental data for this report, available online at www.cbo.gov/publication/52370. For the most recent full update from July 2016, see Congressional Budget Office, *The 2016 Long-Term Budget Outlook* (July 2016), www.cbo.gov/publication/51580. For additional information about the simplified approach used here for spending and revenues projections unrelated to Social Security and net interest, see Congressional Budget Office, *Budgetary and Economic Outcomes Under Paths for Federal Revenues and Noninterest Spending Specified by Chairman Price, March 2016* (March 2016), pp. 13–14, www.cbo.gov/publication/51260. CBO expects to publish its next complete update of its long-term economic and budgetary projections in the spring of 2017.

after reaching 6 percent during the 2007–2009 recession. Another measure of slack, the shortfall between actual and potential employment, was about 1.6 million people at the end of 2016 and is expected to disappear in 2018. As it does so, CBO expects the unemployment rate to fall from 4.7 percent in the fourth quarter of 2016 to 4.4 percent in the fourth quarter of 2018.

As slack diminishes, CBO expects the rate of inflation to rise and the Federal Reserve to reduce its support of the economy. The rate of inflation, as measured by the price index for personal consumption expenditures (PCE), is projected to rise from 1.5 percent in 2016 to the Federal Reserve's goal of 2 percent by 2018 and to stay there, on average, for the rest of the projection period. CBO expects the Federal Reserve to steadily raise the target for the federal funds rate (the interest rate that financial institutions charge each other for overnight loans of their monetary reserves) over the next few years. The rising federal funds rate would push up other interest rates in the economy, restraining the overall demand for goods and services and working to prevent inflation from rising above 2 percent.

Unlike CBO's projections for the next two years, its projections for the 2021–2027 period do not reflect its predictions of business-cycle fluctuations. Rather, they are based primarily on projections of underlying trends in such variables as the size of the labor force, the number of hours worked, capital investment, and productivity—that is, trends that those variables follow after the effects of business-cycle fluctuations are removed. Those trends determine CBO's estimate of the economy's potential output.

CBO estimates that potential output over the 2021–2027 period will grow more quickly than it has grown since the 2007–2009 recession, mainly because the agency projects growth in the productivity of the labor force to accelerate nearly to its average over the past 25 years. Nevertheless, the growth of potential output is projected to be slower than its long-term historical average because the working-age population, and hence the labor force, are expected to grow more slowly than they did in the past. Real interest rates are likewise projected to be higher than they were in recent years but lower than they were before the recession.

Many developments, such as unexpected changes in international conditions or in business confidence, could make economic outcomes differ significantly from what CBO has projected, even if the federal tax and spending policies specified in current law remained substantially unchanged. Because of that uncertainty, the agency constructs its projections so that they fall in the middle of the distribution of possible outcomes.

CBO's current economic projections differ in some respects from its last projections, which were published in August 2016. Because it revised its projections of several factors that determine potential output, the agency now expects real GDP and real potential GDP in 2026 to be modestly lower than projected in August. CBO expects

interest rates to be lower in the first half of the projection period than it expected in August.

The economic projections in this report do not differ significantly from those of most other forecasters. They are generally similar to the *Blue Chip* consensus forecast that was published this month and to the latest forecasts by Federal Reserve officials.

Recent Economic Developments

In CBO's assessment, the economy is currently on solid ground. Although growth was weak in the first half of 2016, it picked up in the second half, suggesting that the economy has good momentum at the start of 2017. During the year as a whole, CBO estimates that GDP grew slightly more quickly than potential GDP did, reducing the output gap slightly to 1.0 percent. Similarly, healthy employment growth reduced the shortfall between actual and potential employment by half—to just 1.6 million people by the end of last year. Those reductions in slack, as well as recent increases in inflation toward the Federal Reserve's 2 percent target, prompted the central bank to raise its target for the federal funds rate.

Gross Domestic Product

Driven by consumer spending, real GDP grew by an estimated 1.8 percent from the fourth quarter of 2015 to the fourth quarter of 2016, about as much as it grew the previous year. However, the estimated 2.6 percent growth in the second half of the year was more than twice as fast as the growth in the first half, which had been held down by weak business and residential investment. Government purchases of goods and services made a slight contribution to growth in 2016, as did net exports.

Consumer Spending. CBO estimates that real spending on consumer goods and services grew at an annual average rate of 2.6 percent during the second half of 2016, a rate only slightly slower than the 2.9 percent of the first half of the year. In CBO's assessment, the main factor behind the growth in consumer spending was an increase in labor income, which reflected continuing growth in hours worked, employment, and wages. The recent growth in consumer spending is one indication of substantial momentum in the economy.

Business Investment. Business investment was soft for much of 2016 but began to rebound by year's end. One component of that investment, spending on business equipment, declined during the first three quarters of last year but began to improve in the fourth quarter, according to monthly data on shipments and orders of capital goods released late in 2016. That decline was surprising in light of developments that would normally indicate rising investment, such as growing GDP, but it may be the result of lower business confidence, falling commodity prices, and slow growth of productivity. The first three quarters of 2016 also saw declines in petroleum drilling activity (which is part of business investment in structures), reflecting low oil prices. However, following a

recent rise in oil prices, the number of active drilling rigs rose as well, indicating that investment in structures probably rebounded in the fourth quarter.

Residential Investment. Spending on residential investment declined in the second and third quarters of 2016. The main reason was that the value of newly constructed single-family homes declined—though the number of homes under construction increased. However, data on construction, housing starts, permits, and home builders' sentiment late in the year indicate that the housing sector finished 2016 strongly. Furthermore, robust household formation and continuing gains in home prices and rents are good indicators of the sector's underlying momentum, even though mortgage rates began to rise late last year and will probably temper the growth of household formation.[37]

Government Purchases. Real purchases by governments boosted real GDP slightly in 2016, CBO estimates. Federal purchases grew solidly in the third quarter, reversing declines in the first half of the year. But those gains were largely offset by a sharp reduction in purchases by state and local governments, which may reflect a slowdown in state and local tax receipts.

Net Exports. CBO estimates that net exports (that is, exports minus imports) contributed modestly to the growth of real GDP during 2016. Real exports grew slightly more than real imports did, partly because the economy of the United States grew more slowly than did those of its major trading partners, restraining U.S. demand for imported goods and services relative to foreign demand for U.S. exports. Late in the year, however, U.S. economic growth strengthened. Also, the dollar appreciated, and the stronger dollar made U.S. exports more expensive in foreign markets. Partly as a result, exports fell and imports rose, suggesting that trade was not adding to real output by year's end.

The Labor Market

The modest increase in economic output during 2016 was enough to ensure that labor markets kept improving. Payrolls grew by 180,000 jobs per month, on average. The labor force participation rate increased slightly in 2016, even though the aging of the population exerted downward pressure on it.[38] The unemployment rate fell to 4.7 percent in the fourth quarter, down from 5.0 percent in the fourth quarter of 2015 and from 5.7 percent in the fourth quarter of 2014. Much of the decline over those two years stemmed from a drop in long-term unemployment (that is, unemployment lasting at least 27 consecutive weeks), as some people who had been unemployed for a long time obtained jobs.[39]

37. Household formation is measured by the change in the number of occupied housing units.

38. The labor force participation rate is the percentage of people in the civilian noninstitutionalized population who are at least 16 years old and are either working or seeking work.

The primary measure that CBO uses to assess the degree of slack in the labor market is the estimated shortfall between employment and potential employment. Potential employment is the number of people employed when unemployment is at its natural rate—the rate that arises from all sources except fluctuations in aggregate demand—and when labor force participation is at its potential rate. (Aggregate demand is the overall demand for goods and services in the economy.) CBO estimates that the employment shortfall shrank from 3.2 million people at the beginning of last year to 1.6 million people at the end of the year. That decline reflects an increase in the labor force participation rate relative to its potential as well as a drop in the unemployment rate. (For more discussion of the current amount of slack, see Box 2-1.)

Tightening labor markets during the past year have put upward pressure on employees' compensation, as businesses have had to compete harder to attract workers. That rise in compensation is indicated, for example, by the employment cost index (ECI) for workers in private industry, which measures the average cost of an hour of labor, including wages, salaries, and benefits. Between the fourth quarter of 2015 and the fourth quarter of 2016, the ECI rose by an estimated 2.4 percent, up from a 1.9 percent increase in the previous year.[40]

Inflation

Consumer price inflation rose last year. Specifically, the PCE price index increased by 1.5 percent between the fourth quarters of 2015 and 2016, nearing the Federal Reserve's goal of a 2 percent annual increase. By contrast, the index rose by just 0.4 percent in 2015, held down by a large drop in crude oil prices. A different measure of consumer prices, the consumer price index for all urban consumers (CPI-U), rose by 1.8 percent last year after rising by just 0.4 percent in 2015. Inflation in core consumer prices—that is, prices excluding prices for food and energy—showed less of a step-up last year: The core PCE price index grew by 1.8 percent in 2016, up from 1.4 percent in 2015, and the core CPI-U grew by 2.2 percent, up from 2.0 percent in 2015.

The increase in inflation had three main sources: increasing wages, which resulted from tightening labor markets; robust growth in the prices of many services, especially for housing and health care; and modestly higher energy prices. The strong exchange

39. For some evidence on the propensity of the long-term unemployed to find jobs, see Rob Dent and others, *How Attached to the Labor Market Are the Long-Term Unemployed?* (Federal Reserve Bank of New York, November 2014), http://tinyurl.com/kt772t8; and Rob Valletta, *Long-Term Unemployment: What Do We Know?* FRBSF Economic Letter 2013-03 (Federal Reserve Bank of San Francisco, February 2013), http://tinyurl.com/mxqty5j.

40. An additional indicator of recent acceleration in wage growth comes from the Federal Reserve Bank of Atlanta, which measures the median change from year to year in the hourly wages recorded in the Current Population Survey. That indicator shows average wage growth of 3.3 percent in the first half of 2016, compared with 3.1 percent in 2015. See Federal Reserve Bank of Atlanta, Center for Human Capital Studies, "Wage Growth Tracker," www.frbatlanta.org/chcs/wage-growth-tracker (December 12, 2016).

value of the dollar, however, worked in the opposite direction, suppressing the prices of many imported goods and services.

Monetary Policy and Financial Markets

Interest rates, the exchange value of the dollar, and stock prices all increased in the second half of 2016. In CBO's estimation, those increases resulted partly from recent economic and financial developments. They probably also resulted from an abrupt change in financial-market participants' expectations about federal fiscal and regulatory policy following the U.S. Congressional and Presidential elections in November. Because CBO's projections are based on current law, they reflect the assumption that no new fiscal and regulatory policies will be enacted into law and that financial-market participants will ultimately adjust their expectations accordingly.

At its December 2016 meeting, the Federal Open Market Committee, which is the arm of the Federal Reserve that makes monetary policy, slightly reduced its support of economic growth by raising the target range for the federal funds rate by 0.25 percentage points, making it 0.50 percent to 0.75 percent. Short-term interest rates increased in response to that rate hike. For instance, the 3-month Treasury bill rate increased from 0.30 percent at the end of the first half of 2016 to 0.50 percent by the end of the year.

In the second half of 2016, long-term interest rates also rose, and that rise was particularly sharp in the two weeks following the elections. The rate on 10-year Treasury notes, for example, jumped by about 0.4 percentage points during that period, reaching 2.3 percent in late November. All told, the interest rate on 10-year Treasury notes increased from 1.6 percent at the end of the first half of 2016 to 2.5 percent by the end of the year.

Higher interest rates and the prospect of further increases in the next few years contributed to the appreciation of the dollar in the second half of 2016. In general, when interest rates rise, foreign investors increase their demand for dollars to take advantage of the higher rates of return on U.S. securities. The dollar appreciated by 4.2 percent in the second half of the year.[41] Again, much of that increase was concentrated in the two weeks following the elections, when the dollar appreciated by 2.5 percent. The resulting stronger dollar reduced the competitiveness of U.S.-based production—hampering exports, encouraging imports, and thus restraining demand for U.S. goods and services, in CBO's estimation.

Stock prices also increased in the second half of 2016. The Standard & Poor's 500 index, for example, rose by 8 percent. Here as well, gains were concentrated in the period following the elections, when the index rose by 3 percent. The increase in stock

41. That calculation is based on the broad trade-weighted U.S. dollar exchange rate published by the Board of Governors of the Federal Reserve.

prices reduced the cost to businesses of financing investments—which, in CBO's estimation, is likely to lead to an increase in demand for such investments. It also increased household wealth, which will support consumer spending.

The Economic Outlook for 2017 to 2020

CBO expects real GDP to grow by 2.3 percent this year and by 1.9 percent next year on a fourth-quarter-to-fourth-quarter basis. The agency anticipates that most of that growth will come from consumer spending, business investment, and residential investment.

The projected growth of output will virtually eliminate slack in the economy over the next two years, CBO projects. Because GDP is projected to grow faster than potential GDP, the output gap nearly disappears in CBO's forecast (see Figure 2-1). In addition, CBO expects slack in the labor market to disappear over the next two years, as increased demand for workers reduces the unemployment rate and draws more workers into the labor force. The reduced slack will help boost the rate of inflation to the Federal Reserve's target rate of 2 percent, according to CBO's estimate.

CBO expects that monetary policy and the federal tax and spending policies set in current law would remove some support for output growth. Monetary policy's support of economic growth over the next few years wanes in CBO's projections; the Federal Reserve is expected to raise short-term interest rates as the economy nears its potential output, the labor market tightens, and inflation rises. And the federal fiscal policy specified in current law is projected to lower the growth of output modestly over the next few years.

Unlike the projections for 2017 and 2018, CBO's projections for the subsequent two years do not reflect expected cyclical developments in the economy. Rather, they serve as transitions to the values that CBO projects for the 2021–2027 period—which are based on anticipated longer-term economic trends, rather than on predictions of business-cycle fluctuations.

Contributions to the Growth of Real GDP

CBO expects that consumer spending, business investment, and residential investment will drive the growth of real GDP in the short term (see Figure 2-2). Consumer spending, which accounts for over two-thirds of economic output, is expected to provide the largest contribution to economic growth, as it has generally done in the past. However, the pickup in economic growth that CBO projects for 2017 stems largely from faster growth in business fixed investment—particularly investment in equipment and structures. (Business fixed investment also includes investment in intellectual property products.) Total purchases by all levels of government are projected to add to the growth of real GDP through 2020. In contrast, net exports will

restrain growth this year and to a lesser extent in the following three years, CBO projects.

Consumer Spending. CBO expects growth in consumer spending on goods and services to slow and to approach the expected growth rate of disposable income, which likewise falls in CBO's projections. In those projections, real consumer spending increases by 2.2 percent between the fourth quarters of 2016 and 2017, down from an estimated 2.8 percent in 2016, and at a slower rate next year (see Table 2-2). Meanwhile, growth in real disposable income drops from an estimated 2.5 percent last year to an average of 2.0 percent during the next two years. Disposable personal income is projected to grow more slowly for several reasons, the most significant of which is that the growth of employees' real compensation is expected to slow as employment gains slow (see Figure 2-3). Also, CBO expects that energy prices will continue to rebound through the end of 2017, reducing some of the extra purchasing power that consumers gained in recent years, and that structural features of the tax code will increase personal tax liabilities.

Several other factors are expected to support consumer spending. One such factor is further increases in housing prices, which will boost households' wealth. Another is further improvements in households' creditworthiness and access to credit. Overall, households' debt and debt-service payments are currently low, as are delinquency rates on consumer loans; such light debt burdens, along with rising employment and disposable income, will give households greater capacity to borrow for major purchases. Partly offsetting those effects are rising interest rates on mortgage and consumer loans, which restrain consumer spending in CBO's forecast.

Business Investment. CBO projects that real business fixed investment will grow considerably more quickly over the next few years than it did last year. The projected growth is strongest in 2017, at 5.0 percent, and between 1.7 percent and 2.7 percent in each of the following three years. In 2016, real business fixed investment grew by just 0.2 percent, CBO estimates. Inventory investment is expected to boost growth this year but to have little effect on growth thereafter.

Business investment will grow strongly in 2017 for a variety of reasons, CBO anticipates:

- The number of drilling rigs in operation will probably continue the rebound begun in mid-2016 in response to rising oil prices, boosting investment in mining structures (see Figure 2-3).
- Both the national office vacancy rate and the national industrial availability rate are near the lows reached during the last business cycle, suggesting a need to boost investment in nonmining structures.[42]

- The factors that caused investment in equipment to decline in 2016—among them lower business confidence, falling commodity prices, and slow growth of productivity—will partly abate in 2017, leading to healthy growth.
- Orders for capital goods, a leading indicator of investment in equipment, began to rebound in late 2016.
- Investment in intellectual property products, such as software, will repeat the solid growth posted in 2016.

Investment is projected to grow more slowly after 2017, mainly because oil prices are projected to remain steady and because CBO estimates that the cyclical rebound in investment spending following the 2007–2009 recession will be largely complete. A slower rate of growth in the future will be sufficient to enable businesses to replace depreciated equipment and expand capacity.

Other factors also temper CBO's projections of business investment after this year. Partial-expensing provisions in the tax code, which encourage investment by letting businesses deduct new capital expenses from their taxable income more rapidly than they could otherwise, are scheduled to gradually expire during the 2018–2020 period. The increase in interest rates anticipated in CBO's forecast will also exert some downward pressure on investment.

Residential Investment. CBO expects that real residential investment—which consists of the construction of new dwellings, improvements of existing dwellings, and brokers' fees and other transaction costs—will grow by 6.7 percent in 2017. Residential investment is projected to grow by 5.0 percent a year over the subsequent three years, on average.

CBO anticipates that the construction of new dwellings will be the primary contributor to the growth of residential investment, mainly because of healthy household formation (see Figure 2-3). The number of households increased by an average of about 1.2 million per year from 2014 to 2016, well above the 0.6 million average annual increase of the preceding eight years. The earlier weakness probably stemmed mainly from a sharp tightening of mortgage-lending standards during the 2007–2009 recession and from weak employment growth. Even though lending standards remain tighter than they were before 2007, they have loosened moderately over the past few years. As they continue to loosen and as employment continues to improve, annual household formation will continue at a strong pace from 2017 to 2020, CBO expects, averaging about 1.2 million households per year. Rising mortgage rates will provide a modest drag on housing construction.

42. The office vacancy rate is the amount of vacant office space for lease divided by the total square footage of office space. The industrial availability rate is the supply of available space in large industrial buildings as a percentage of the total amount of such space.

CBO anticipates that stronger growth in the demand for housing will put some upward pressure on house prices. Those prices increased by 5.5 percent in 2016 and will increase by about 2.5 percent per year, on average, over the 2017–2020 period, CBO projects. (That projection incorporates an expected increase in the supply of housing units, which will temper the price increases resulting from stronger housing demand.)

Government Purchases. If current laws governing federal taxes and spending generally remained in place, total real purchases of goods and services by federal, state, and local governments would grow by 0.5 percent in 2017, CBO projects. In the following three years, they would grow by an annual average of 0.8 percent.

The 2017 projection is attributable to an estimated increase of 1.5 percent in real state and local purchases, which offsets an estimated decline of 1.1 percent in real federal purchases. From 2018 to 2020, real federal purchases are projected to continue to decline, but more slowly than this year. (That projection incorporates the assumption that the statutory caps on nominal funding for discretionary programs will hold the growth of federal consumption and investment spending to a rate below that of inflation; see Chapter 1 for more discussion of the effect of the caps on projected outlays.)[43] Real state and local purchases are expected to grow at roughly the same pace as in 2017; in CBO's view, state and local governments will increase spending as their tax revenues rebound after a weak year.

Net Exports. CBO expects real net exports to fall from 2017 through 2020.[44] In 2017, CBO anticipates that real net exports will decline by $61 billion and that real imports will exceed real exports by $612 billion. That gap is expected to widen to $672 billion by 2019 before stabilizing in 2020 and beyond.

CBO's projections of net exports in 2017 and 2018 are strongly influenced by the significant increase in the exchange value of the dollar last year and by the agency's forecast of that exchange value (see Figure 2-3).[45] During the second half of 2016 alone, the export-weighted U.S. dollar appreciated by 4.2 percent, partly because investors raised their expectations of future interest rates in the United States. That development boosted the dollar by increasing demand for dollar-denominated assets

43. Discretionary spending spans an array of federal activities funded or controlled through annual appropriations. Such spending includes most defense spending as well as outlays for highway programs, elementary and secondary education, housing assistance, international affairs, and the administration of justice, for example. In broad terms, it includes defense and nondefense expenditures for operations and investment but not transfer payments from the government for Social Security, various health care programs (especially Medicare and Medicaid), and other social insurance and pension programs.

44. Net exports are currently negative: The United States imports more than it exports. A decrease in net exports indicates that imports are increasing more than exports.

45. CBO's measure of the exchange value of the dollar is an export-weighted average of the exchange rate indexes between the dollar and the currencies of leading U.S. trading partners. An increase in that measure indicates that the dollar is appreciating.

in relation to demand for assets denominated in other currencies. In CBO's forecast, a similar expectation by investors—that long-term interest rates in the United States will keep rising in relation to those in its trading partners—continues to apply upward pressure to the dollar through 2017. As a result, foreign goods and services become relatively less expensive and U.S. exports relatively more expensive. CBO therefore projects that real net exports will fall in 2017 and 2018.

In later years, CBO expects real net exports to stabilize as the economies of the nation's major trading partners, especially Canada and Mexico, grow more quickly. Stronger economic growth and higher inflation in those nations will encourage their central banks to gradually tighten monetary policies, pushing up interest rates in those countries and reducing the exchange value of the dollar. As a result, net U.S. exports are projected to decline less in 2019 and 2020 than in previous years and then to remain relatively flat.

The Labor Market

According to CBO's estimates, the growth of aggregate demand will increase the demand for labor, eliminating the shortfall between actual and potential employment by the end of 2018 (see Figure 2-4).[46] That estimate is the effect of two expected developments. First, the gap between the actual and potential rates of labor force participation is projected to narrow; second, the unemployment rate is projected to fall below its estimated natural rate in 2017 and 2018. Also, increased demand for labor and competition for workers are expected to boost the growth of hourly labor compensation over those two years.

CBO's labor market projections for 2019 and 2020, by contrast, do not reflect expected cyclical developments in the economy. Instead, they serve as transitions to the values that CBO projects for later years, which are based primarily on long-term trends in the supply of labor. Consequently, the unemployment rate is projected to rise slightly so that it reaches its historical relationship with the natural rate of unemployment—increasing slack in the labor market to its average level over past decades.

Employment. CBO projects that nonfarm payroll employment will increase more slowly over the next few years than it has recently—by an average of about 160,000 jobs per month in the first half of 2017, 116,000 jobs per month in the second half of 2017, and 94,000 jobs per month in 2018. One reason that employment growth is projected to slow is that as the employment shortfall shrinks, fewer people without jobs will be available to enter employment. A second reason is the retirement of baby boomers—people born between 1946 and 1964—which will slow the growth of the labor force. CBO's employment projections imply that the number of people employed, measured

46. All else being equal, changes in aggregate demand affect businesses' decisions about whether to increase production, invest in equipment, and hire workers, which in turn affect income, demand, and output.

as a percentage of the population, will increase by about one-quarter of a percentage point—to 60.0 percent—by the end of 2017 and then decline.

Labor Force Participation. CBO expects the labor force participation rate to average 62.8 percent this year and to slowly decline over the rest of the projection period (see Figure 2-5). The rate was 62.8 percent last year, roughly where it has stood, on average, since 2014, and 0.7 percentage points below CBO's estimate of the potential rate. CBO projects that the actual rate will fall to 62.4 percent in 2020. After 2018, the rate would be roughly one-tenth of a percentage point below the potential rate, reflecting CBO's estimate of the long-term relationship between the two.

Several factors have been pushing down the labor force participation rate during the past two decades and are expected to keep doing so during the next 10 years:

- Members of the baby-boom generation will continue to retire from the labor force in large numbers; this factor is the most important.
- The lingering effects of the 2007–2009 recession and ensuing weak recovery will continue to hold down participation slightly, in CBO's view. Despite recent declines in long-term unemployment, some of the people who lost jobs in the recession left the labor force and will not return.
- Federal tax and spending policies are expected to lower participation rates slightly. In particular, under the current-law assumptions that govern its projections, CBO anticipates that people would keep responding to provisions of the Affordable Care Act by reducing the amount of labor that they are willing to supply over the next few years.[47] The structure of the tax code, which pushes some people with rising income into higher tax brackets, would also lower participation rates.
- Long-term trends involving particular groups of people, such as a growing number of people with disabilities, are projected to push down the overall participation rate slightly.

The long-term factors pushing down the labor force participation rate are expected to be largely offset in 2017 and 2018 by continued improvement in hiring, as solid employment growth and rising wages draw some workers back into the labor force and keep others from leaving.

Unemployment. CBO projects that the unemployment rate will fall from 4.7 percent in the fourth quarter of 2016 to 4.5 percent by the end of 2017 and to 4.4 percent by the end of 2018, which would be about 0.3 percentage points below the agency's

47. For more detail, see Edward Harris and Shannon Mok, *How CBO Estimates the Effects of the Affordable Care Act on the Labor Market*, Working Paper 2015-09 (Congressional Budget Office, December 2015), www.cbo.gov/publication/51065.

estimate of the natural rate of unemployment (see Figure 2-6). That decline in the unemployment rate reflects a projected increase in demand for labor that would reduce the number of unemployed people. However, the stronger demand for labor would also encourage people to remain in the labor force or rejoin it, making the labor force larger and thus moderating the decline in the unemployment rate. Even though the unemployment rate is expected to be relatively low during 2017, CBO anticipates that some slack will remain in the labor market, because fewer people will be participating in the labor force than would do so if the economy was operating at its potential.

CBO expects the natural rate of unemployment to be 4.7 percent through 2020. That expectation reflects the rate's decline in recent years—which has occurred as the composition of the workforce has shifted toward older workers, who tend to have lower unemployment rates, and away from less educated workers, who tend to have higher unemployment rates.

Labor Compensation. As slack diminishes and firms must compete harder for a shrinking pool of unemployed or underemployed workers, growth in hourly compensation will rise, in CBO's assessment. CBO estimates that the employment cost index for workers in private industry will grow by more than 3 percent per year, on average, over the next several years, up from the 2 percent average from 2010 through 2015 (see Figure 2-7). Other measures of compensation, such as the average hourly earnings of production and nonsupervisory workers in private industries, are similarly expected to grow more quickly than in recent years. CBO's projections of labor compensation also are based on its projections of productivity and inflation.

Inflation

CBO expects prices to rise at a modest pace over the next few years. As measured by the personal consumption expenditures price index, the rate of inflation is projected to rise to 1.9 percent in 2017 and to 2.0 percent by 2018

(see Figure 2-8). That expectation is consistent with the agency's projection of diminishing slack in the economy and with widely held expectations of low and stable inflation. It also reflects CBO's forecast of higher prices for crude oil, which will boost prices for energy goods and services.[48] Working in the opposite direction is the increase in the exchange value of the dollar in 2016, which in the near term will suppress the prices of imported final goods and of goods that use imported inputs.

48. The member nations of the Organization of Petroleum Exporting Countries (OPEC) reached an agreement in November 2016 to reduce oil production, which led to a spike in energy prices at the end of the year. The price impact was incorporated into CBO's economic projections. However, several factors may limit the agreement's effect on oil prices, including a poor record of compliance by OPEC nations when such agreements have been made in the past and higher U.S. production in response to higher prices.

After 2018, CBO projects PCE inflation to remain at 2.0 percent. That projection reflects CBO's judgment that consumers and businesses expect the Federal Reserve to successfully adjust monetary policy to prevent inflation from deviating from its target for long. Similarly, in CBO's forecast, core PCE inflation reaches 1.9 percent in 2017 and 2.0 percent in 2018, where it remains thereafter.

The consumer price index for all urban consumers and its core version are expected to increase a little more quickly than their PCE counterparts because they are calculated differently. For example, the PCE price index includes all goods and services consumed in the United States, including those purchased by employers or the federal government, whereas the CPI-U includes only purchases by individual consumers in urban areas.

Monetary Policy and Interest Rates

As slack in the economy keeps diminishing, the Federal Reserve will continue to reduce its support of economic growth, in CBO's view. CBO expects the federal funds rate to rise gradually over the next few years, reaching 1.1 percent in the fourth quarter of 2017 and 2.8 percent by the end of 2020 (see Figure 2-9).

CBO projects that interest rates on federal borrowing will also rise gradually over the next few years. The interest rate on 3-month Treasury bills is projected to rise from 0.4 percent in the fourth quarter of 2016 to 2.5 percent by the end of 2020. Over the same period, the interest rate on 10-year Treasury notes is projected to rise from its average of 2.1 percent in the fourth quarter of 2016 to 3.2 percent in 2020.

The projected increase in the 10-year rate reflects the anticipated increase in the 3-month rate and an expected increase in the term premium—the premium paid to bondholders for the extra risk associated with holding longer-term bonds. The projected rise in both long-term and short-term rates is consistent with CBO's projection that output will grow somewhat faster than potential output for the next two years. Although financial-market participants may currently expect changes in policies that lead to faster output growth, CBO's projection is based on current law. As such, the forecast reflects the assumption that market participants ultimately adjust their expectations.

In addition, various factors—such as investors' heightened concern about relatively weak global economic growth—that pushed the term premium to historically low levels in recent years are expected to dissipate.[49] The term premium rose after the recent elections, but it remains low. CBO projects that it will continue to rise over the next several years. Still, because the factors that pushed up the term premium are expected

49. In recent years, demand for long-term Treasury securities rose as they increasingly served as a hedge against the prospect of weak growth.

to dissipate slowly, CBO expects that the interest rate on 10-year notes will rise more slowly and stabilize slightly later than will the rate on 3-month bills.[50]

Despite CBO's expectation that the 10-year rate will rise, the agency does not expect it to return to the levels seen in the two decades before the 2007–2009 recession. Because of several factors discussed below, interest rates will probably remain low by historical standards throughout the 10-year projection period (see "The Economic Outlook for 2021 to 2027").

Federal Fiscal Policy

Fiscal policy affects aggregate demand not only through government spending on goods and services, which contributes directly to GDP, but also through the federal tax code and federal transfer programs.

If current laws governing fiscal policy remained generally the same, that policy would modestly dampen aggregate demand for goods and services over the next four years. Specifically, four broad developments in fiscal policy that are projected under current law reduce growth in aggregate demand in CBO's projections:[51]

- Partly because of statutory caps limiting the growth of discretionary spending, the federal government's real purchases of goods and services decline, slightly reducing real GDP growth through 2020.
- Various provisions of law governing the taxation of investment spending are phased out, reducing businesses' incentive to invest and tempering the growth of their investment in equipment from 2018 through 2020.
- As households' income rises, structural features of the tax system increase their average tax rates. That increase in tax liability reduces their disposable (that is, after-tax) income, dampening the growth of consumer spending.
- The stimulus provided by automatic stabilizers—the automatic decreases in revenues and increases in outlays that occur when the economy weakens—continues to diminish as the economy improves.[52]

50. In addition, long-term rates have probably been held down by the influence of the Federal Reserve's large portfolio of long-term assets. CBO expects that portfolio to shrink gradually, beginning later this year; that development will put upward pressure on the term premium and the 10-year rate.

51. The effects of those changes are incorporated in CBO's projections, but the agency has not separately quantified the impact of each.

52. For more discussion of automatic stabilizers, see Frank Russek and Kim Kowalewski, *How CBO Estimates Automatic Stabilizers*, Working Paper 2015-07 (Congressional Budget Office, November 2015), www.cbo.gov/publication/51005.

The Economic Outlook for 2021 to 2027

CBO's projections of GDP, labor market outcomes, inflation, and interest rates for 2021 to 2027—unlike its projections for 2017 and 2018—are not based on forecasts of cyclical developments in the economy. Rather, they are based on projections of underlying trends in key variables that determine the growth of potential output, such as the size of the labor force, the number of hours worked, capital investment, and productivity—that is, trends that those variables follow after the effects of business-cycle fluctuations are removed. CBO also considers the effects on those variables of the federal tax and spending policies specified in current law.

CBO's projections for the 2021–2027 period include the following:

- Actual and potential real GDP will grow at an average rate of 1.9 percent per year. Real GDP will stay one-half of one percent below potential GDP—as it has roughly done, on average, over many years.[53]
- The unemployment rate will average 4.9 percent, slightly above the estimated natural rate of 4.7 percent. That gap is consistent with the projected gap between actual and potential GDP.
- Both overall inflation and core inflation will average 2.0 percent per year as measured by the PCE price index and a slightly higher rate as measured by the CPI-U.
- The interest rates for 3-month Treasury bills and 10-year Treasury notes will average 2.8 percent and 3.6 percent, respectively.

Output and Potential Output

Actual and potential real output are projected to grow more quickly during the 2021–2027 period than they did during the past decade because of faster growth in productivity and stronger business investment. Nevertheless, slower growth in the nation's supply of labor will keep economic growth weaker than it was during the 1980s, 1990s, and early 2000s.

Growth in Potential Output Compared With Growth Since the Last Recession. CBO expects potential output to grow by 1.9 percent per year, on average, from 2021 to 2027 (see Table 2-3 on page 120). Such growth would be faster than the average of 1.4 percent per year estimated for the 2008–2016 period. The main reason for the projected increase in the rate of growth is that CBO expects the potential productivity of the labor force (the ratio of potential GDP to the potential labor force) to grow more quickly—at an average rate of 1.4 percent per year, which would be substantially faster

53. See Congressional Budget Office, *Why CBO Projects That Actual Output Will Be Below Potential Output on Average* (February 2015), www.cbo.gov/publication/49890.

than the 0.9 percent average rate that CBO estimates for the 2008–2016 period. By contrast, CBO anticipates that the potential labor force will grow slightly more slowly than it did from 2008 to 2016, offsetting some of the effect of faster productivity growth on potential output.

In CBO's projections, the faster growth of potential labor force productivity is concentrated in the nonfarm business sector, which accounts for about three-quarters of GDP. (In the agency's analysis, growth in nonfarm business output is composed of growth in hours of labor, in capital services—the flow of services available for production from the stock of capital goods—and in total factor productivity, or TFP, which is the average real output per unit of combined labor and capital services.) In particular, CBO expects growth in potential TFP in the nonfarm business sector to quicken from its unusually slow pace of 0.7 percent per year since 2008 to 1.2 percent during the 2021–2027 period, a rate that is just below its average pace since 1990.[54]

Part of the projected increase in the growth of potential labor force productivity reflects CBO's projection of faster growth in capital services. The growth of capital services in the nonfarm business sector has been restrained since 2008 because of weak investment, which itself has been partly a response both to the cyclical weakness of aggregate demand for goods and services and to the slow growth of TFP. In the longer term, the growth of capital services generally depends on increases in potential TFP and potential hours worked. In CBO's projections, much of the increase in the growth of capital services between the 2008–2016 period and the 2021–2027 period comes from higher potential TFP.

Growth in Potential Output Compared With Growth in Previous Business Cycles. Even though the projected growth rate of potential output over the 2021–2027 period is higher than recent growth rates, it is more than a percentage point lower than the 3.1 percent average annual growth rate between 1981 and 2007. More than three-quarters of that difference reflects slower growth of the potential labor force, which will result mainly from the ongoing retirement of baby boomers and from a relatively stable labor force participation rate among working-age women. (That rate increased sharply from the 1960s to the mid-1990s.) Also, federal tax and spending policies set in current law are projected to cause some people to work less than they would have in earlier decades. The rest of the difference in the growth rate results from slower projected growth of potential labor force productivity—1.4 percent per year from 2021 to 2027, on average, a lower rate than the 1.7 percent of the 1981–2007 period. That slowdown is attributable mainly to slower projected growth of potential TFP in the

54. CBO projects that by the end of 2021, growth in potential TFP will gradually return to a rate equal to the weighted average of the growth rates estimated between 1991 and 2015. The projected rate for 2021 through 2027 is slightly slower than the unweighted average for the 1991–2015 period because CBO places more weight on the relatively slow growth of TFP during the recession and recovery than on the faster growth rates of the 1990s and early 2000s.

nonfarm business sector. But it is also due partly to slower projected growth of nonfarm business capital services, which, in turn, largely results from slower projected growth of productivity and the labor force.

The Labor Market

CBO projects that gains in payroll employment will average 64,000 jobs per month from 2021 to 2027. That rate of growth reflects the growth of the labor force and changes in the unemployment rate. In turn, labor force growth stems from population growth and changes in the rate of labor force participation. Other important aspects of the labor market are the number of hours worked per employee and the amount of compensation per hour.

Labor Force. The labor force is projected to grow at an average rate of 0.5 percent annually from 2021 to 2027, slightly below its average annual growth rate since 2007. Underlying that projection is population growth of 0.8 percent per year, on average, and a slowly declining rate of labor force participation. Because of that decline in labor force participation, CBO expects the share of the population that is employed to fall to 58.0 percent in 2027. (At the end of 2016, it stood at 59.8 percent.)

CBO projects a potential rate of labor force participation of 61.1 percent in 2027. That rate is about 1¼ percentage points lower than what the agency projects for 2021 and about 4¾ percentage points lower than the estimated rate at the end of 2007. The single largest factor contributing to the decline in the rate is the aging of the population; older people tend to participate less in the labor force than younger ones do. In addition, the structure of the tax code will reduce workers' incentive to supply labor, and declining participation rates by less skilled workers will further reduce the potential participation rate over that period, in CBO's estimation. However, CBO also estimates that many of those declines will be roughly offset by a projected increase in participation arising from a more educated workforce; rates of participation are higher among more educated workers than among less educated ones.

Unemployment. In CBO's projections, the unemployment rate follows its long-term relationship with the natural rate of unemployment. Specifically, the unemployment rate falls from 5.0 percent in the fourth quarter of 2020 to 4.9 percent in the fourth quarter of 2027, staying roughly a quarter of a percentage point higher than the natural rate of 4.7 percent.[55] The natural rate's decline over that period reflects a shift in the composition of the workforce toward older workers, who tend to have lower unemployment rates, and away from less educated workers, who tend to have higher ones.

55. The projected gap of 0.25 percentage points between the unemployment rate and the natural rate corresponds to the projected gap of –0.5 percent between output and potential output.

Hours Worked. Average weekly hours of production and nonsupervisory work are projected to fall slightly—from 33.5 hours worked in 2021 to 33.3 hours worked in 2027. The decline reflects a long-term downward trend in average weekly hours over the entire postwar period. That downward trend, however, has slowed considerably over the past 25 years, and CBO expects its pace to remain slow.

Compensation. Real compensation per hour in the nonfarm business sector, a measure of labor costs that is closely related to the factors underlying potential output, will grow at an average annual rate of 1.8 percent between 2021 and 2027, CBO projects. That projection is consistent with the agency's projection that the annual growth of labor productivity in that sector will average 1.8 percent over the period, reflecting the close historical relationship between growth in productivity and growth in real compensation. Although that relationship broke down in the early 2000s, when real compensation per hour grew more slowly than productivity, in recent years the two have grown at similar rates, suggesting that the relationship has been largely restored. CBO expects that the relationship will continue in the future.

Inflation

In CBO's projections, inflation as measured by the overall PCE and the core PCE price indexes equals 2.0 percent per year, on average, over the 2021–2027 period. That rate is consistent with the Federal Reserve's longer-run goal and is broadly in line with widely held expectations. As measured by the CPI-U and the core CPI-U, projected inflation is higher during the period, at 2.4 percent and 2.3 percent per year, respectively. The projected difference between inflation as measured by the CPI-U and inflation as measured by the PCE price index is close to the average difference over the past several decades. CBO expects overall inflation to be higher than core inflation from 2021 to 2027 because energy prices are expected to grow slightly faster than prices of other goods and services.

Interest Rates

CBO projects that the interest rates on 3-month Treasury bills and 10-year Treasury notes will average 2.8 percent and 3.6 percent, respectively, during the 2021–2027 period. The federal funds rate is projected to average 3.1 percent. The projected real interest rate on 10-year Treasury notes—that is, the rate after the effect of expected inflation, as measured by the CPI-U, is removed—averages 1.2 percent between 2021 and 2027. That rate would be well above the current real rate but more than a percentage point below the average real rate between 1990 and 2007. (The 1990–2007 period allows useful comparisons because it featured fairly stable expectations of inflation and no severe economic downturns or financial crises.)

According to CBO's analysis, average real interest rates on Treasury securities will be lower than they used to be for several reasons. CBO expects slower growth of the labor force and slightly slower growth of productivity, both of which will reduce the rate of

return on capital. Furthermore, a greater share of total income is expected to go to high-income households, which will increase private saving and make more funds available for borrowing. CBO also expects the demand for Treasury securities relative to the demand for risky assets to be higher than its 1990–2007 average. That relatively higher demand for Treasury securities implies higher prices and therefore lower interest rates. And net inflows of capital from other countries, measured as a percentage of GDP, are also expected to be greater, again making more funds available for borrowing.

CBO expects the term premium to be smaller from 2021 to 2027, on average, than it was before the late 1990s. Over the past two decades, the prices of long-term Treasury securities and of risky assets in the United States have moved in opposite directions. In other words, periods with weaker economic growth and lower returns in the stock market have been associated with increases in the prices of Treasury securities, which was not the case before the late 1990s. As a result, investors trying to protect themselves from adverse economic surprises may be purchasing more long-term Treasury securities than they used to. A related factor is that investors may have increased their demand for financial assets, such as long-term Treasury securities, that can protect them from unexpectedly low inflation. Altogether, that greater demand for long-term Treasury securities will result in a term premium and long-term interest rates that are lower than they were before the late 1990s, CBO anticipates.

Other factors are projected to push real interest rates up from their earlier average, but not by enough to offset the factors pushing rates down. Federal debt is projected to be higher as a percentage of GDP, increasing the supply of Treasury securities. The country's ratio of older people, who will be drawing down their savings, to younger workers in their prime saving years will be higher than it was before; that will decrease saving, thereby making fewer funds available for borrowing. And a larger share of income will come from capital, increasing returns on capital assets with which Treasury securities compete.[56]

In addition to considering those factors, CBO relies on information from financial markets when it projects interest rates over the long term, and incorporating that information has tended to reduce the agency's projections. The current interest rate on long-term Treasury securities is determined in large part by investors' expectations of interest rates on shorter-term securities several years into the future. Current prices in financial markets indicate that investors expect short-term interest rates to rise only gradually and to remain low, possibly because they expect certain forces putting downward pressure on interest rates in the United States to persist over the next decade. One force is weakness in global financial and monetary conditions, which has

56. For a more detailed discussion of the factors affecting future interest rates, see Congressional Budget Office, *The 2016 Long-Term Budget Outlook* (July 2016), pp. 100–103, www.cbo.gov/publication/51580.

resulted in a flight to low-risk securities and currencies, especially U.S. Treasury securities. A second force is low interest rates on foreign assets, which push down rates on U.S. assets that can be substituted for them.

Projections of Income for 2017 to 2027

Economic activity and tax revenues depend on aggregate income—the total amount of income in the economy—and on its distribution among various categories, such as labor income, domestic economic profits, proprietors' income, and interest and dividend income. CBO therefore projects income in those categories over the next 10 years, estimating each category's share of gross domestic income (GDI, the income earned in the production of GDP).[57] The categories of income that affect revenues most strongly are labor income (especially wage and salary payments) and domestic economic profits.[58]

In CBO's projections, labor income grows more quickly than other kinds of income for the next few years, increasing its share of GDI from an estimated average of 58.0 percent in 2016 to 59.1 percent in 2020 (see Figure 2-10). That happens because CBO expects dissipating slack in the labor market to improve workers' bargaining power, raise compensation per hour, and reduce the share of income that goes to domestic economic profits. After 2020, however, hourly compensation is projected to grow in line with productivity, stemming further rises in labor's share of GDI. Furthermore, even though labor's share of GDI rises in CBO's projections over the next few years, it does not return to its 1980–2000 average of nearly 60 percent, because some factors that have depressed that share since 2000 are expected to continue during the coming decade. One such factor is globalization, which has tended to move the production of labor-intensive goods and services to countries with lower labor costs. Another factor is technological change, which appears to have increased returns to capital more than returns to labor.

CBO projects that domestic economic profits, which equaled an estimated 8.9 percent of GDI in 2016, will fall to 7.5 percent by 2027. Over the next several years, that decline is expected to occur largely because labor compensation will rise as a share of income but also because corporate interest payments are projected to increase (the result of rising interest rates).

57. In principle, GDI equals GDP because each dollar of production yields a dollar of income; in practice, the two quantities differ because of difficulties in measuring them.

58. Calculating domestic economic profits involves adjusting estimates of corporations' domestic profits to remove distortions in depreciation allowances caused by tax rules and to exclude the effects of inflation on the value of inventories. Estimates of domestic economic profits exclude certain income of U.S.-based multinational corporations that is derived from foreign sources, most of which does not generate corporate income tax receipts in the United States.

In CBO's projections, GDI grows more slowly than GDP through 2020, but at the same rate thereafter. In the national accounts that track those quantities, total income has persistently exceeded total output by more than 1 percent since 2014, but CBO projects that the discrepancy will become smaller from 2017 to 2020, largely because CBO projects that nonlabor income will grow less rapidly than output—reversing a trend since 2000. Starting in 2021, GDI is projected to exceed GDP by about one-half of 1 percent, which is the average discrepancy since 2000.

Another measure of overall income, real gross national product (GNP), is projected to grow at an average rate of 1.8 percent per year between 2017 and 2027. Unlike the more commonly cited GDP, GNP includes income that U.S. residents earn abroad and excludes income that foreigners earn in this country. GNP is therefore a better measure than GDP of the resources available to U.S. households.

Some Uncertainties in the Economic Outlook

Even if no significant changes were made to the federal policies specified in current law, economic outcomes would undoubtedly differ from CBO's projections. The agency therefore constructs its 10-year economic projections so that they fall in the middle of the distribution of possible outcomes, given the fiscal policy embodied in current law and the available economic data. The economy will inevitably fluctuate over the projection period, but CBO expects periods of weak and strong economic growth to balance out, on average, in a way that is consistent with its projections.

It is possible, however, that periods of weak and strong economic growth will not balance out, particularly during a given 10 years. If a prolonged period of weaker-than-projected growth was not offset by a period of stronger-than-projected growth, CBO's projections of growth over the entire 10-year period would probably turn out to be too high; so would its projections of interest rates and inflation, in all likelihood. Similarly, if a prolonged period of stronger-than-projected growth was not offset by a period of weaker-than-projected growth, CBO's 10-year projections of growth, interest rates, and inflation would probably turn out to be too low.

CBO's projections for 2017 to 2020 and its projections for 2021 to 2027 are uncertain for different reasons.

Uncertainty From 2017 to 2020

Over the next five years, many developments—such as unforeseen changes in the labor market, the housing market, business confidence, or international conditions—could make economic growth and other variables differ from what CBO has projected. On the one hand, the agency's current forecast of employment and output for the 2017–2020 period may be too pessimistic. For example, firms might respond to the expected increase in aggregate demand for goods and services with more robust hiring and investment than CBO anticipates. If so, the unemployment rate could fall more sharply

and inflationary pressures could rise more quickly than CBO projects. Or a greater-than-expected easing of mortgage lending standards could support more rapid growth of the number of households and residential investment than CBO anticipates, accelerating the housing market's recovery and further boosting house prices. Households' increased wealth could then buttress consumer spending, raising GDP. In addition, CBO's forecast of economic growth in 2019 and 2020 reflects a transition to the long-run trends that the agency projects. If the transition period extended beyond 2020, economic growth would be faster, on average, from 2017 to 2020.

On the other hand, CBO's forecast for 2017 to 2020 may be too optimistic. For example, if the increased tightness of labor markets does not lead to increases in hourly wages and benefits, household income and consumer spending could grow more slowly than CBO anticipates. A sharp decline in the rate of economic growth in China could weaken the U.S. economy by disrupting the international financial system and reducing global economic growth; so could an increase in uncertainty in the United Kingdom and the European Union as a result of the former's vote to leave the latter.

In addition, there is a possibility that the economy will enter a recession in the next few years because of those developments or others. The current economic expansion has lasted more than 7 years—longer than the average expansion (about 5 years) of the previous 11 business cycles, a sequence that began in 1945. The duration of economic expansions has varied greatly—the longest expansion since 1945 lasted 10 years, the shortest only 1—and an expansion's longevity alone is typically not what makes it end. Recessions are usually preceded by imbalances in key sectors of the economy, such as housing, or by rapidly rising wages. At present, CBO and many other forecasters do not anticipate such imbalances in the near future.

To roughly quantify the degree of uncertainty in its projections for the next four years, CBO analyzed its past forecast errors for the growth rate of real GDP and inflation. In CBO's view, there is approximately a two-thirds chance that the average annual growth rate of real GDP

will be between 0.5 percent and 3.3 percent over the next four years. That is, there is a two-thirds chance that real GDP in 2020 will be within roughly $1 trillion of the projected value of $18 trillion (in 2009 dollars; see Figure 2-11). Similarly, CBO's forecast errors for inflation (as measured by the CPI-U) suggest that there is a roughly two-thirds chance that the average annual rate of inflation will fall between 1.7 percent and 3.0 percent over the next four years.[59]

Uncertainty From 2021 to 2027

The factors that will determine the economy's output later in the coming decade are also uncertain. For example, if the labor force grew more quickly than expected—say, because older workers chose to stay in the labor force longer than expected—the economy could grow considerably more quickly than it does in CBO's projections. The

natural rate of unemployment could be lower than expected, or productivity could grow more rapidly; those developments would likewise make the economy grow more quickly. By contrast, the economy could grow more slowly than expected—for instance, if the growth rate of labor productivity did not increase from its postrecession level, as it does in CBO's projections.

The recent rise in income inequality adds to uncertainty about the growth of output. Economists' findings about how income inequality generally affects economic growth have been mixed: Some studies conclude that it raises growth, others that it slows growth, and still others that it has no effect. In fact, the cause and the effect may be the reverse: Economic growth could be directly increasing or decreasing income inequality. When a study concludes that a clear relationship exists between inequality and growth, that conclusion usually depends on factors specific to the time and place being studied. Economists continue to examine the issue, and CBO will update its analysis if research yields a more definitive conclusion. In the meantime, CBO's projections include effects of income inequality only implicitly—that is, to whatever extent past changes in inequality have affected economic growth.

Comparison With CBO's August 2016 Projections

CBO's current economic projections differ from those that it issued in August 2016 in a number of ways (see Table 2-4). For one thing, real GDP and potential GDP are now expected to grow more slowly during the next 10 years, and both are now projected to be 0.8 percent lower in 2026, the last year of CBO's previous projection. Nominal GDP also is expected to be slightly lower in 2026 than was projected in August. Other changes to the projections are more modest: The unemployment rate is slightly higher this year and slightly lower next year, interest rates are lower in the first half of the projection period, and the labor force is larger throughout the projection period.

Revisions to Projected Output

CBO's projection of economic output is lower than it was in August because of changes in CBO's analytical methods and because of data that became available between early July and early December 2016. The largest revision was to the agency's estimate of potential output, which is now lower in each year of the 2016–2026 period. Estimated potential output in 2016 is now lower by about 0.4 percent than it was in August; in 2026, it is about 0.8 percent lower.

59. The root-mean-square error of CBO's four-year-ahead projections of the annual average growth rate of real GDP since 1976 is 1.4 percentage points. The root-mean-square error of CBO's four-year-ahead projections of the annual average rate of inflation since 1983—that is, after an extraordinary rise and fall in the rate of inflation during the late 1970s and early 1980s—is 0.6 percentage points. For more on the inherent uncertainty underlying economic forecasts, see Congressional Budget Office, *CBO's Economic Forecasting Record: 2015 Update* (February 2015), www.cbo.gov/publication/49891.

The main reason that CBO reduced its projection of potential output was that it lowered its estimate of potential TFP in the nonfarm business sector, both in recent history and throughout the projection period. CBO also lowered its projection of capital services, which grow about one-tenth of a percentage point more slowly in the current projection than in the August projection. The resulting downward revisions to potential output were partially offset by an upward revision to the size of the potential labor force, which resulted from the net effect of changed projections of both labor force participation and the population (see "Revisions to Labor Market Projections" on page 61).

The downward revision to CBO's estimate of historical potential TFP in the nonfarm business sector—which is now estimated to have been about 0.7 percent lower in 2016 than the agency thought previously—results partly from the inclusion of new data but mainly from two changes that CBO has made to its method of estimation. The most significant change is to the way the agency accounts for business-cycle effects in estimating potential TFP; it attributes less of the slow growth of TFP since 2007 to cyclical weakness and more to underlying trends, resulting in a lower estimate of growth in potential TFP during the 2000s. The second methodological change involves the way CBO accounts for the acceleration of TFP growth in the late 1990s and early 2000s. CBO now estimates that more of that acceleration reflected stronger potential TFP growth, a change that slightly boosts projected potential TFP growth and offsets part of the downward adjustment that results from the first change. Together, those two changes lower CBO's estimates of the recent growth of potential TFP and of its current level, as well as modestly lower the projected growth rate of potential TFP during the 2017–2026 period.

Growth of capital services has been revised downward, mostly because of a reassessment of the forecast for investment in business equipment. Real private investment in such equipment was weaker in 2016 than CBO expected in August, declining by an estimated 3.6 percent rather than by 0.3 percent. That unexpected weakness led CBO to reassess the near-term outlook for investment in equipment. Although the agency's medium-term projection for that investment (which is independent of business-cycle effects) has not changed since August, the near-term projection is weaker, because CBO now expects growth in aggregate demand to provide a smaller boost. In addition, CBO reduced its projection of the growth of the population, which resulted in lower projections of real residential investment in every year from 2017 to 2027.

Largely as a result of downward revisions to projected growth of exports, residential investment, and business fixed investment, CBO anticipates that output will grow more slowly in the near term than it projected in August. The agency currently projects that real GDP will grow at an annual rate of 2.1 percent, on average, during 2017 and 2018; in August, the projection was 2.2 percent.

CBO's projection of nominal GDP is slightly higher in the near term and slightly lower in the later years of the projection period than it was in August. The upward revision in the near term reflects revisions to historical data—which were released after CBO's August forecast was complete and which revealed that nominal GDP and inflation measured by the GDP price index were higher during the 2013–2016 period than had previously been estimated. However, CBO's projection of growth in nominal GDP from 2017 to 2026 is lower than it was in August, largely because CBO projects that real GDP growth will be slower. As a result, CBO's projection of nominal GDP is about 0.4 percent lower in 2026 than it was in August.

Revisions to Labor Market Projections

Over the next decade, CBO estimates, more people will be working than the agency estimated in August. That change results from an upward revision to the projected labor force participation rate, partially offset by a downward revision to the projected size of the population. Revisions to the projected unemployment rate have smaller effects on projected employment.

For the next two years, CBO projects, the labor force participation rate will be about three-tenths of a percentage point higher than projected in August. That upward revision reflects recently released data showing that participation last year was greater than CBO estimated in August; CBO expects that improvement to persist.

After 2018, CBO projects, the labor force participation rate will be roughly 1 percentage point higher than projected in August, a change that is due to an upward revision to the potential labor force participation rate over that period. That increase, in turn, results from two factors. First, CBO revised upward the projected average level of educational attainment, because recent data showed that a larger portion of the population received bachelor's degrees in 2016 than CBO had anticipated. Since more educated workers participate at higher rates than less educated ones do, a higher average level of educational attainment increases the participation rate. Second, CBO revised upward its projection of the future participation rates of the young people who entered the labor force during and after the most recent recession, expecting their rates to be closer to those of previous cohorts at similar ages. The upward revisions to the projected rate of labor force participation boost CBO's projection of the potential labor force—that is, the number of people who would be employed or seeking work if the economy was producing its maximum sustainable amount of output.

The effects on the labor force of the upward revisions to the rate of labor force participation are partially offset by downward revisions to the projected growth of the civilian noninstitutional population. Specifically, CBO now expects the population in 2027 to be 1.1 percent (or 3.2 million people) smaller than projected in August. That revision arises primarily because the agency has significantly reduced its projection of net immigration—and in particular its projection of the flow of unauthorized immigrants—to better reflect historical trends. Although unauthorized immigration is

very difficult to measure, the best estimates suggest that there has been roughly no increase in the number of unauthorized immigrants since 2005; the number had increased substantially in earlier years.[60]

CBO's current projection of the unemployment rate in 2017 is slightly higher than it was in August, largely because of the upward revision to projected labor force participation. Even though the unemployment rate's decline has recently paused, the underlying momentum of the labor market is putting downward pressure on that rate, in CBO's assessment. To incorporate the recent pause into the projection while taking into account that underlying momentum, CBO pushed back the projected point at which the unemployment rate will bottom out by roughly one year: The rate is now expected to reach 4.4 percent in the middle of 2018, rather than in the middle of 2017, as CBO projected in August.

Revisions to Projected Interest Rates

CBO anticipates that interest rates will rise more slowly over the next several years than it projected in August. The slower projected increase of short-term interest rates partly reflects the fact that CBO now projects a slower pace of Federal Reserve rate hikes, in light of recent data that point to slower domestic and foreign economic growth than was expected in August. Federal Reserve officials and private-sector forecasters have similarly lowered their projections of the federal funds rate in the near term since August, despite the increase in interest rates in late 2016. Long-term rates are also expected to be lower over the next five years—partly reflecting the expected slower increase in short-term rates and partly reflecting CBO's expectation that the factors suppressing the term premium will dissipate more slowly than previously thought.

Comparison With Other Economic Projections

CBO's projections of the growth of real GDP, the unemployment rate, inflation, and interest rates in 2017 and 2018 are generally very similar to the *Blue Chip* consensus—the average of roughly 50 forecasts by private-sector economists that was published in the January 2017 *Blue Chip Economic Indicators* (see Figure 2-12). The exceptions are CBO's projections of interest rates: The projection of the interest rate on 3-month Treasury bills is at the bottom of, or slightly below, the middle two-thirds of the *Blue Chip* forecasts in 2017 and 2018, and the projection of the rate on 10-year Treasury notes is slightly below the range of *Blue Chip* forecasts in 2017 and slightly below the middle two-thirds of the *Blue Chip* forecasts in 2018.

CBO projects slightly faster growth of real output over the coming year than do most of the Federal Reserve officials whose forecasts were reported at the December 2016 meeting of the Federal Open Market Committee (see Figure 2-13). The Federal

60. Jeffrey S. Passel and D'Vera Cohn, *Overall Number of U.S. Unauthorized Immigrants Holds Steady Since 2009* (Pew Research Center, September 2016), http://tinyurl.com/j45zwo5.

Reserve reports three sets of forecasts: a median, a range, and a central tendency. The median is calculated from forecasts made by the members of the Board of Governors of the Federal Reserve System and the presidents of the Federal Reserve Banks. The range is based on the highest and lowest of those forecasts. The central tendency is the range without the three highest and three lowest projections. CBO's projections of the growth of real GDP are within the full range in each of the periods projected by the Federal Reserve (2017, 2018, 2019, and the longer term) and within the central tendency in 2017, 2018, and the longer term. CBO's projections of the unemployment rate and inflation are within the central tendency in each of the periods projected.

CBO's projections differ from those of the other forecasters at least partly because they are based on current law, whereas the other forecasters are probably assuming that changes in law will take place. The differences may also reflect differences in the economic news available when the forecasts were completed and differences in the economic and statistical models used.

Appendix A: Changes in CBO's Baseline Since August 2016

If current laws affecting spending and revenues generally remained unchanged, the cumulative deficit from 2017 through 2026 would total $8.6 trillion, the Congressional Budget Office projects. That amount is $6 billion more than CBO projected in its August 2016 baseline—a difference of less than 0.1 percent (see Table A-1).[61] For 2017, CBO estimates that the deficit will total $559 billion, which is $35 billion less than the $594 billion projected in August.

The differences between the current projections and those CBO published in August 2016 consist of three types of changes:

61. See Congressional Budget Office, *An Update to the Budget and Economic Outlook: 2016 to 2026* (August 2016), www.cbo.gov/publication/51908. CBO constructs its baseline projections in accordance with provisions of the Balanced Budget and Emergency Deficit Control Act of 1985 (Public Law 99-177) and the Congressional Budget and Impoundment Control Act of 1974 (P.L. 93-344). To project revenues and mandatory spending, CBO assumes that current laws, with only a few exceptions, will remain unchanged throughout the 10-year projection period. To project discretionary spending, CBO assumes that most annual appropriations through 2021 will adhere to the caps and automatic spending reductions established for the 2012–2021 period in the Budget Control Act of 2011 (P.L. 112-25), as amended. It also assumes that appropriations thereafter will increase from the 2021 amounts at the rate of inflation. Certain discretionary appropriations are not constrained by the caps, such as those designated for overseas contingency operations. In CBO's baseline projections, those appropriations generally increase at the rate of inflation. CBO's baseline is not intended to predict budgetary outcomes; rather, it serves as a benchmark against which to measure the potential effects of changes in laws governing taxes and spending.

- Legislative changes, which are directly tied to the enactment of new laws;
- Economic changes, which stem from the agency's updated economic forecast; and
- Technical changes, which result from factors other than new laws or updated assessments of the economy.

For the 2017–2026 period, technical changes to projections of outlays and revenues caused the largest difference, reducing CBO's deficit projection by $133 billion. That result was slightly more than offset by the effects of newly enacted legislation, which increased the projection of the deficit by $127 billion, and by changes arising from CBO's updated economic forecast, which increased it by $12 billion.

Legislative Changes

The effect of new legislation on CBO's updated deficit projections both for 2017 and for the 10-year projection period is seen almost entirely in changes to outlays. Since the August 2016 baseline was published, the differences in CBO's revenue projections that have been attributable to legislative changes have been close to zero. All in all, legislative changes—mostly stemming from recent appropriations—added $127 billion (or 1.5 percent) to the projected 10-year cumulative deficit.

Changes in Discretionary Spending

On net, legislative changes to discretionary programs enacted since August led CBO to boost its estimates of outlays by $9 billion for 2017 and by a cumulative total of $117 billion for the 10-year projection period. Because most discretionary spending is subject to the caps established by the Budget Control Act of 2011, legislative changes to outlay projections in the baseline result chiefly from changes in appropriations for programs that are not constrained by the caps: overseas contingency operations, disaster relief, emergency requirements, program integrity initiatives, and certain health-related programs.[62]

Legislative changes since August primarily have involved funding for overseas contingency operations, as provided in the Further Continuing and Security Assistance Appropriations Act, 2017 (Public Law 114-254). For the current year, that funding (on an annualized basis) is $11 billion more than the amount provided in 2016. (Some of those funds would not be spent in 2017.) Because, as specified by law, projections of future appropriations for such operations are based on the assumption that funding will equal current amounts with an adjustment for inflation, the larger amount provided for

62. Overseas contingency operations are war-related activities (primarily in Afghanistan), and program integrity initiatives aim to reduce improper benefit payments in Disability Insurance, Supplemental Security Income, Medicare, Medicaid, and the Children's Health Insurance Program. For more information on the discretionary caps, see Congressional Budget Office, *Sequestration Update Report: August 2016* (August 2016), www.cbo.gov/publication/51873.

2017 led CBO to increase its projection of discretionary outlays by $84 billion for the 2017–2026 period.

Excluding supplemental funding, appropriations in 2017 also have risen by $2 billion for activities designated as emergency requirements and by $1 billion for disaster relief; combined, the extrapolation of those two types of funding contributes another $24 billion to the increase in discretionary outlays between 2017 and 2026. Furthermore, the Continuing Appropriations and Military Construction, Veterans Affairs, and Related Agencies Appropriations Act, 2017, and Zika Response and Preparedness Act (P.L. 114-223) provided supplemental funding for fiscal year 2016 that will add $1.5 billion to outlays over the 2017–2026 period, CBO estimates.

The 21st Century Cures Act (P.L. 114-255) authorized additional discretionary funding for certain programs that would not be counted against the discretionary caps. The spending projections that result from extrapolation of such funding provided for 2017 added $5 billion to CBO's projection of discretionary outlays for the 2017–2026 period. (The 2017 appropriations were provided by P.L. 114-254.)

Changes in Mandatory Spending

Recently enacted legislation led CBO to lower its estimates of mandatory outlays by $1 billion for 2017 and by $6 billion for the 2017–2026 period. The largest reductions for the 10-year period were attributable to the enactment of the 21st Century Cures Act, which, among its other effects, resulted in a $3.5 billion reduction in outlays projected for the Prevention and Public Health Fund and a $1 billion increase in offsetting receipts (that is, negative outlays) from additional sales of oil from the Strategic Petroleum Reserve.

Changes in Debt Service

Excluding the cost of debt service, the changes that CBO made to its projections of revenues and outlays because of recently enacted legislation increased its projection of the cumulative deficit for the 2017–2026 period by $110 billion. The resulting growth in the estimate of federal borrowing led CBO to raise its cumulative projection of outlays for interest payments on federal debt by $16 billion for the 10-year period.

Economic Changes

CBO's economic forecast from early December 2016, which underlies the budget projections in this report, updated the agency's projections of gross domestic product (GDP), the unemployment rate, interest rates, inflation, and other factors that affect federal spending and revenues. In total, compared with the August 2016 baseline projections, the December economic forecast led the agency to decrease its estimate of the deficit by $4 billion for the current year but to raise it by $12 billion for the 2017–2026 period.

Changes in Revenues

Overall, CBO's revenue projections were not substantially affected by the updated economic forecast, which included relatively small changes to the projections of nominal GDP (which are lower by 0.1 percent, on average, over the 2017–2026 period than in the agency's August projections). The composition of GDP and other elements of the forecast that affect revenues changed modestly, leading to small and largely offsetting revisions to CBO's revenue projections. As a result, economic revisions are relatively minor, on net: The agency increased its 2017 revenue projection by $10 billion (or 0.3 percent) but reduced the cumulative revenue projection for the 2017–2026 period by $16 billion (a negligible percentage).

The largest differences in the revenue projections that arise from changes in the economic forecast concern corporate income tax receipts, which are $87 billion (or about 2 percent) higher in CBO's updated projections for the next 10 years. That change is attributable to updated projections of domestic economic profits, which are higher by about 3 percent over the coming decade, reflecting upward revisions to profits in the national income and product accounts (NIPAs) for recent quarters, lower business interest payments resulting from lower projected interest rates, and other factors. (The NIPAs, which are produced by the Bureau of Economic Analysis, track components of the nation's economic output and income that CBO uses in its economic analyses.)

Changes in the economic forecast since August led CBO to reduce its projections of revenues from the collection of other types of taxes and fees. Most significantly, CBO lowered its projections of revenues from individual income taxes by $47 billion (or 0.2 percent) over the 2017–2026 period. That slight decline relative to the August baseline was primarily attributable to a reduction of about 15 percent in projections of income received by people in the form of monetary interest—a relatively small part of the individual income tax base. The revision to interest income largely reflected recent NIPA data, which showed that, beginning in 2015, smaller amounts of such interest income have been earned than previously had been estimated, suggesting a lower path of interest income going forward for a given projection of interest rates. CBO also lowered its projections of interest rates, which contributed to the decrease in estimated interest income.

In addition, CBO lowered its projections of payroll taxes (by $27 billion, or 0.2 percent), of revenues from customs duties (by $24 billion, or 5 percent), and of receipts from other sources (by $5 billion). The small reductions in revenues from those sources reflected slightly lower wages and imports, among other factors.

Changes in Outlays

Changes in the economic forecast led CBO to increase its estimate of outlays by $6 billion for 2017, but to lower the projection for the 2017–2026 period by $4 billion. The updated 10-year total is the result of largely offsetting changes: an

increase in projected mandatory spending ($53 billion), an increase in discretionary outlays ($5 billion), and a decrease in projected net interest costs ($63 billion).

Mandatory Spending. CBO increased its projections of mandatory spending by $1 billion for 2017 and by $53 billion for the 2017–2026 period. The largest economic changes occurred in CBO's projections for Medicare, outlays for certain refundable tax credits, the Supplemental Nutrition Assistance Program (SNAP), and Social Security.

Medicare. Under current law, payment rates for much of Medicare's fee-for-service sector (such as hospital care and services provided by home health agencies and skilled nursing facilities) are updated automatically. Those updates are tied to changes in the prices of the labor, goods, and services that health care providers purchase, coupled with an adjustment for economywide gains in productivity (the ability to produce the same output using fewer inputs, such as hours of labor, than before) over a 10-year period. In general, CBO's current projections show a larger difference between price growth and productivity growth (inflation is now higher relative to productivity) than the agency forecast in August. Consequently, CBO now anticipates higher payment rates for Medicare services than it did in August—a change that increases Medicare outlays in CBO's baseline projections for the 2017–2026 period by $70 billion (or 1 percent).

Earned Income and Child Tax Credits. Projected outlays for these two refundable tax credits are $34 billion higher over the 2017–2026 period because of revisions to CBO's economic forecast.[63] About three-quarters of that increase is attributable to the earned income tax credit. CBO projects that employment will be higher and wages will be lower than it did in August, resulting in lower earnings per worker. The refundable portion of those credits tends to increase when earnings are lower among lower-earning taxpayers.

Supplemental Nutrition Assistance Program. Since August, changes in the economic forecast have led CBO to lower its spending projections for SNAP over the 2017–2026 period by about $20 billion (or 3 percent). An unexpected decline in food prices in 2016 led CBO to lower projected food prices, and thus projected SNAP benefits, in subsequent years.

Social Security. Because of lower projections of inflation and wage growth, CBO also lowered its projections of outlays for Social Security for the 2017–2026 period by $12 billion (or 0.1 percent). In August, CBO estimated that Social Security beneficiaries would receive a 0.6 percent cost-of-living adjustment (COLA) in January

63. Refundable tax credits reduce a filer's income tax liability overall; if the credit exceeds the rest of the filer's income tax liability, the government pays all or some portion of that excess to the taxpayer. See Congressional Budget Office, *Refundable Tax Credits* (January 2013), www.cbo.gov/publication/43767.

2017; the actual COLA was 0.3 percent. In the other direction, CBO increased its forecast of the January 2018 COLA by 0.2 percentage points; its COLA projections for other years remain unchanged from the August baseline.

Net Interest. Since August, CBO has revised its projections of net interest costs because of changes in the agency's forecasts for interest rates and inflation. It also has made new projections of government borrowing as a result of changes in the economic outlook (see Table A-1). Together, those revisions, mostly related to updated interest rates, led CBO to reduce its baseline projection of net interest spending by $63 billion for the 2017–2026 period.

CBO has changed its projections for rates on most Treasury securities relative to those included in its August report. In the current projections, those rates are lower by an average of about 0.15 percentage points (or 15 basis points) for the first half of the coming decade but about the same as before over the second half. As a result, CBO reduced its projection of net interest outlays by $53 billion over the 2017–2026 period.

CBO further reduced its projection of net interest outlays by $9 billion over that period to account for debt service effects. That reduction reflects the net effect of updates to projections of revenues and outlays attributable to CBO's new economic forecast, which led the agency to raise its projection of the total deficit for the 2017–2026 period by $21 billion (not including the effects of debt service). However, because that net increase in the 10-year deficit results from reductions in the deficits projected for the first six years, followed by increases in the deficits projected for the final four years, the cumulative effect is to reduce CBO's projection of debt service costs for the 2017–2026 period.

Technical Changes

In total, technical updates to CBO's budget projections led the agency to reduce its estimate of the 2017 deficit by $40 billion, almost one-third of the total revision for technical reasons over the 10-year period. In nearly every year, such changes lowered projections of both revenues and outlays relative to those reported in August 2016; reductions in revenues are outpaced by downward adjustments to outlays for most years, reducing projected deficits. Many of the changes in this category stem from new data or from information that became available from federal agencies after September 2016, the end of the prior fiscal year.

Changes in Revenues

Overall, CBO reduced its revenue projections by $300 billion (or 1 percent) for the 2017–2026 period to incorporate various technical adjustments. Revenue projections fell by $27 billion for 2017, rose by $4 billion for 2018, and declined for each year over the 2019–2026 period by a total of $277 billion.

The reduction in 2017 and slight increase in 2018 are mostly attributable to new data on tax collections, along with CBO's expectation that some revenues from capital gains taxes will be shifted out of 2017 and into 2018. The new data show that corporate and individual income taxes have been lower in recent months than can be explained by currently available economic data. Although the main factors responsible for the shortfall will be clearer when additional data from tax returns and other sources become available, CBO slightly lowered its revenue projections for 2017 and 2018 in response. CBO also revised its estimate of the point at which the government would receive some payments for individual income tax liabilities incurred in calendar years 2016 and 2017. The most significant adjustment to the timing of tax payments arises because some taxpayers appear to have deferred realizing their capital gains from late in calendar year 2016 until calendar year 2017 or 2018, anticipating legislation to lower tax rates on those gains. As a result, CBO reduced its projections of revenues in fiscal year 2017 but increased them by a corresponding amount in 2018 (slightly more than offsetting the reduction in taxes that arises from other factors, such as new data on tax collections) and, to a smaller extent, in 2019.

All told, for technical reasons, CBO lowered its projections of revenues from individual income taxes over the 2017–2026 period by $177 billion (or about 1 percent). The most significant reason is a downward revision to the share of total wages and salaries received by high earners. Data for recent years show smaller-than-expected increases in the share of wages and salaries received by high earners. In response, CBO made a downward revision to projected increases in that share over the next decade. That change reduced CBO's projections of individual income tax revenues because people with lower income are subject to lower income tax rates. Increases in projected revenues from capital gains taxes offset part of that reduction. Reflecting the fact that capital gains realizations in 2014 and 2015 were higher than CBO expected, the agency raised its projection of revenues from capital gains over the 2017–2026 period.[64]

Technical reasons also led CBO to lower its projection of corporate income tax revenues by $85 billion (or about 2 percent) for the 2017– 2026 period. The change largely reflects a slight reduction in the projected average tax rate on corporate profits, based on historical data from the NIPAs and on information from corporate income tax returns about the corporate tax base as a share of domestic economic profits. It also reflects CBO's expectation that the recent declines in corporate tax collections that are not explained by currently available data on profits will take several years to fully dissipate.

64. Higher tax rates on capital gains took effect in 2013, and it is likely that many taxpayers shifted a portion of those gains from 2013 to 2012 in anticipation of that change. In calendar years 2014 and 2015—the first two after the rate changes—the amount of gains realized would have been unaffected by significant shifting of gains in anticipation of the rate change.

In addition, for technical reasons, CBO lowered its projection of revenues from smaller sources by $77 billion, on net, over the 2017–2026 period. Most of that change reflects lower penalties that would be collected from employers that do not offer health insurance to their employees. The change in those collections stems from CBO's higher projections of enrollment in employment-based coverage.

CBO boosted its projection of revenues from one main source—payroll taxes—for technical reasons. With a smaller share of wages and salaries received by high earners, a larger share will be received by people whose annual earnings are below the maximum amount subject to Social Security payroll taxes (currently $127,200). The positive effect on payroll taxes is about half as large as the resulting negative effect on individual income taxes. The increase projected for payroll taxes was reduced somewhat because new information from tax returns showed a smaller amount of total wages covered by the payroll tax system than CBO previously expected. Overall, CBO raised its projections of payroll taxes for technical reasons by $39 billion over the 2017–2026 period.

Changes in Outlays

Largely because of technical updates to spending estimates for various mandatory programs and to estimates for certain offsetting receipts, CBO lowered 2017 outlays in the baseline by $66 billion. For the 2017–2026 period, the projection of outlays was lowered by $433 billion (or 1 percent), mostly because of changes to estimates of mandatory outlays.

Mandatory Spending. Technical revisions have reduced the amount of mandatory spending estimated for the current year by $55 billion (or 2 percent). For the 2017–2026 period, technical updates decreased the total projection for mandatory spending by $337 billion (or 1 percent).

Social Security. CBO has reduced its projection of outlays for Social Security over the 2017–2026 period by $87 billion (or 1 percent). Two-thirds of that reduction is in Old-Age and Survivors Insurance (OASI); the other third is in Disability Insurance (DI). The largest change CBO made to its estimate of OASI spending stemmed from updated population projections, which reduced by 0.4 percent the number of eligible beneficiaries. The largest change in DI outlays resulted from a reduction in caseloads of about 2 percent (recent data have shown smaller caseloads than previously projected).

Medicare. Technical revisions caused CBO to decrease its projection of Medicare outlays by $82 billion (or 1 percent) for the 2017–2026 period, mostly because spending for Medicare last year was less than CBO had anticipated in its August baseline. The main factors responsible for the shortfall will be clearer when more detailed data about the program's spending become available. Meanwhile, in

response, CBO has made slight downward revisions to its projection of spending over the next decade.

Medicaid. CBO's 10-year projection of spending for Medicaid is $63 billion (or 1 percent) lower than the agency estimated in August. That change arises largely from a reduction in CBO's projection of enrollment in the Supplemental Security Income program (whose recipients automatically receive Medicaid benefits), based on recent data showing smaller caseloads than previously projected. In addition, information from the Centers for Medicare & Medicaid Services led CBO to allocate more managed care spending to long-term services and supports and somewhat less to acute care services. Because CBO anticipates that spending will rise more slowly for long-term services and supports than for acute care services, that change reduced spending projections overall.

Earned Income and Child Tax Credits. CBO has decreased its combined projection of outlays for these refundable tax credits by $47 billion over the 2017–2026 period. (Projected outlays for the earned income tax credit are down by $36 billion, and those for the child tax credit are lower by $11 billion.) CBO now projects that lower earners will receive a larger share of total wages and salaries than it did in August, which will tend to reduce eligibility for the refundable credits.

Deposit Insurance. Net outlays for deposit insurance are projected to be $38 billion higher over the 2017–2026 period than CBO reported in its August 2016 baseline. Most of that change ($31 billion) stems from a reduction in CBO's estimate of the amount of insurance premiums collected for the Deposit Insurance Fund, which is administered by the Federal Deposit Insurance Corporation (FDIC). The change better reflects assessments levied by the FDIC over the past several years, and it accounts for new FDIC regulations. The remaining $7 billion is primarily attributable to reduced interest earnings on the Deposit Insurance Fund because of a lower projected balance and because of other small changes in the estimates for programs administered by the FDIC and the National Credit Union Administration.

Pension Benefit Guaranty Corporation. CBO's 10-year projections of net outlays for that agency are $24 billion lower than it projected in the previous baseline. (Net outlays are negative because collections from premiums and other sources exceed gross outlays, which are primarily for benefit payments. CBO's new projections are more negative than the previous ones.) The largest source of the decrease in net outlays was an increase in projected receipts from variable-rate premiums paid by underfunded single-employer pension plans, reflecting newly available data on premiums for the first part of fiscal year 2017. The updated baseline also includes the effects of an increase in projected interest receipts, which are intragovernmental transfers that do not affect the deficit.

Fannie Mae and Freddie Mac. For 2017, CBO's updated baseline reports a $17 billion reduction in net outlays associated with Fannie Mae and Freddie Mac, two institutions

that facilitate the flow of funding for home loans nationwide. In CBO's baseline, the budgetary treatment of those entities in the current fiscal year is different from that in the later years of the projection period: For the current year, the baseline includes an estimate of the net cash payments from those entities to the Treasury, following the treatment in the Administration's budget reports. For later years, the baseline includes risk-adjusted projections of subsidy costs.[65] CBO estimates that the net payments from Fannie Mae and Freddie Mac will total $15 billion in 2017 (on the basis of their most recent quarterly financial releases); those payments are recorded in the budget as offsetting receipts (reductions in outlays). By comparison, CBO's August baseline showed an estimated subsidy cost—that is, additional outlays—of about $3 billion for their activities in 2017. All told, that conceptual difference reduces 2017 outlays in the baseline by $17 billion.

For the 2018–2026 period, CBO now estimates that those subsidy costs will total $14 billion—about $4 billion more than it projected in August. CBO expects that Fannie Mae and Freddie Mac will guarantee fewer mortgages over the next decade but that those mortgages will have higher associated fair-value costs.

In total, CBO's projection of net outlays for Fannie Mae and Freddie Mac is $13 billion lower for the 2017–2026 period than its August projection.

Other Mandatory Programs. Technical updates concerning other mandatory programs led CBO to lower its outlay projections by $23 billion for 2017 and by $58 billion for the 10-year period.

The largest changes for 2017 include a $7 billion reduction in estimated outlays for agriculture programs and a $3 billion reduction in subsidies for health insurance purchased through the marketplaces established under the Affordable Care Act. The net effect of smaller adjustments in other programs further reduced CBO's estimate of 2017 outlays by about $13 billion.

For the 2017–2026 period, the largest technical change was an $18 billion increase in projected receipts from contributions by federal agencies toward their employees' retirement (shown as a reduction in outlays). Those projections were updated to account for new information on the average retirement benefit received by new retirees

65. The government placed Fannie Mae and Freddie Mac into conservatorship in 2008 and now controls their operations. As a result, CBO considers the two entities' activities to be governmental and includes their budgetary effects in its projections as though they were federal agencies. On that basis, for the 10 years after the current fiscal year, CBO projects subsidy costs for new activities according to procedures that are similar to those specified in the Federal Credit Reform Act of 1990 for determining the costs of federal credit programs—but with adjustments to reflect the associated market risk. The Administration, in contrast, considers Fannie Mae and Freddie Mac to be outside the federal government for budgetary purposes and records cash transactions between those entities and the Treasury as federal outlays or receipts. (In CBO's view, those transactions should be considered intragovernmental.)

in 2016 and for revised projections from the Office of Personnel Management of the number and characteristics of future retirees.

In addition, CBO and the staff of the Joint Committee on Taxation reduced by $16 billion their 10-year projections of outlays associated with the health insurance marketplaces. The largest component of that change was a reduction of $15 billion in outlays for the risk adjustment program, which transfers funds from health insurance plans that attract a relatively small proportion of high-risk enrollees (people with serious chronic conditions, for example) to plans that attract a relatively large proportion of such people in both the nongroup and the small-group insurance markets. CBO lowered its estimate because actual spending in 2016 was less than the amount that it had previously anticipated. (CBO also made a corresponding reduction to its projection of revenues from the risk adjustment program. Collections and payments for risk adjustment ultimately offset each other, but because of differences in the timing of collections and payments, slight discrepancies between the two will occur in any given period.) Most of the remaining $1 billion reduction is the net effect of changes associated with subsidies for health insurance obtained through the marketplaces established under the Affordable Care Act. Those changes include a decrease in projected spending resulting from a lower projection of subsidized enrollment through the marketplaces, partially offset by an increase in spending arising from an increase in estimated premiums for such insurance.

Lower projections of spending related to crop insurance ($13 billion) and the National Flood Insurance Program ($10 billion) also contributed to the overall reduction in CBO's 10-year spending projections.

Discretionary Spending. As a result of technical updates, CBO's estimates of discretionary outlays for 2017 are $6 billion lower than those in the August baseline; projected outlays for the 2017–2026 period are $34 billion (or 0.1 percent) lower. The largest changes over the 10-year period arise from downward adjustments to spending for certain military activities of the Department of Defense (mostly in the areas of operation and maintenance and procurement, to bring projections more in line with historical spending patterns) and from lower projected outlays for medical services provided by the Department of Veterans Affairs (largely because of recent trends of slower spending).

Net Interest. Technical changes led CBO to decrease its projections of net interest outlays by $6 billion for 2017 and by $62 billion for the 2017–2026 period. The longer-term decrease is mainly attributable to an increase in projected interest payments from the financing accounts associated with federal credit programs. CBO has increased its estimate of the balances held by those accounts—mostly as a result of higher-than-expected disbursements of student loans. After reviewing recent patterns of such payments, CBO also increased the average interest rate that it projects will be paid to the Treasury from those financing accounts.

CBO raised its projection of debt service costs by $9 billion for the 2017–2026 period. That effect stems largely from the additional debt that would be required to finance the increased activity in the federal credit programs, partially offset by the projected reduction in the cumulative deficit stemming from technical changes in other areas of the budget.

Appendix B: How Changes in Economic Projections Might Affect Budget Projections

The federal budget is highly sensitive to economic conditions. Revenues depend on the total amount of income that is subject to taxation—including wages and salaries, other income received by individuals, and corporate profits. Those types of income generally rise or fall with overall economic activity, although not necessarily in proportion. In addition, the Treasury regularly refinances portions of the government's outstanding debt—and issues more debt to finance new deficits—at market interest rates. Thus, the amount that the federal government spends to pay interest on its debt is directly tied to those rates. Finally, spending for many mandatory programs is affected by inflation, either explicitly through cost-of-living adjustments or indirectly in other ways.

To show how the economic outlook can affect projections of the federal budget, the Congressional Budget Office has constructed simplified scenarios to illustrate rough "rules of thumb." The rules provide a sense of how differences in individual economic variables would affect the budget totals. Changes in any single variable, however, would quite likely affect many other variables in ways that would depend crucially on the cause of the original change and on the general economic conditions prevailing at the time. Estimating that full set of effects would require a more comprehensive analysis that could not be summarized in a simple rule.

CBO has developed rules of thumb for three variables:

- Productivity growth, which affects gross domestic product (GDP) and other economic variables,
- Interest rates, and
- Inflation.

All three rules of thumb reflect alternative assumptions about economic conditions beginning in January 2017.

CBO's first rule of thumb shows the effects of productivity growth that is 0.1 percentage point lower each year than in the agency's economic projections, which translates into annual rates of economic growth that are about 0.1 percentage point lower than those that underlie its baseline budget projections.[66] (The budget projections are summarized in Chapter 1, and the economic projections are described in Chapter 2.) The rule of thumb for interest rates shows the effects of rates that are 1 percentage point higher each year than the rates used in the baseline. (In this scenario, inflation is held equal to the rate underlying the baseline, so the rule shows the effects of higher *real* interest rates.) Finally, the rule of thumb for inflation shows the effects of inflation that is 1 percentage point higher each year than in the baseline.

Each rule of thumb is roughly symmetrical. Thus, if productivity growth was 0.1 percentage point higher than in CBO's baseline, or if interest rates or inflation were 1 percentage point lower, the effects would be about the same as those shown here, but with the opposite sign.[67]

In addition to being symmetrical, the rules are also roughly scalable for moderate differences in growth rates. For example, a difference in inflation of 1.1 percentage points in each year, rather than 1 percentage point, would increase the change in the deficit by about 10 percent—but such a calculation would be less useful for a substantially different rate of inflation.

CBO chose variations of 0.1 percentage point for productivity and 1 percentage point for inflation and interest rates solely for simplicity. Those differences do not necessarily indicate the extent to which actual economic performance might differ from CBO's projections. For example, CBO estimates that there is roughly a two-thirds chance that the average annual growth rate of real GDP over the next five years will be within 1.4 percentage points above or below the forecast rate. Similarly, there is about a two-thirds chance that the average annual rate of inflation (as measured by the consumer price index for all urban consumers) over the next five years will be within 0.6 percentage points—and the average interest rate (on 3-month Treasury bills, in real terms), within 1.7 percentage points—of the rate in CBO's forecast.[68]

66. In previous years, CBO analyzed a potential change in the rate of real economic growth, relative to its baseline projections, without characterizing the underlying cause of such a change or incorporating effects on other economic variables. This year, CBO examined a more complex (but still simplified) scenario—one in which a change in productivity growth affects GDP, income (including wages), and interest rates.

67. Interest rates on short-term Treasury securities are unlikely to be much lower in the near term. Rates on 3-month Treasury securities were 0.30 percent in the last quarter of 2016, and CBO forecasts that they will remain below 1 percent through most of this calendar year.

Slower Growth of Productivity

Productivity is an important determinant of economic output. Higher productivity leads to stronger economic growth, which in turn improves the budget's bottom line, whereas lower productivity reduces GDP, thereby worsening the budget outlook.

The first rule of thumb illustrates the budgetary effects of slightly weaker growth in productivity than expected. Specifically, if productivity grew at a rate that was 0.1 percentage point lower each year than in CBO's baseline projections, annual deficits would be larger by amounts that would climb to $56 billion by 2027, CBO estimates. The cumulative deficit from 2018 through 2027 would be $273 billion higher (see Table B-1).

In this simplified analysis, CBO examined how slower growth of total factor productivity (that is, real output per unit of combined labor and capital services) might affect GDP, income (including wages), and interest rates.[69] CBO found that lower-than-projected productivity growth would lead to slower growth in GDP because both labor and capital would be producing less than they are currently projected to produce in CBO's baseline. If workers produced less, they would earn less, so total wages and labor income would be lower. Meanwhile, if capital production was lower, the returns on that capital would also decline. Because Treasury securities compete with other investments for investors' money, lower private returns imply that rates on Treasury securities would also be lower. Other variables, such as the allocation of taxable income, unemployment, and inflation, could also be affected; however, this rule of thumb does not include the effects of changes in those variables.

CBO estimates that if actual productivity growth was about 0.1 percentage point lower each year than it is projected to be, GDP growth and income growth would also be about 0.1 percentage point lower each year. Meanwhile, interest rates would be about 1 basis point below CBO's forecast for 2017; that difference would increase by 1 additional basis point in each subsequent year.[70] By the end of the 10-year period, GDP and total income would be 1.1 percent lower than they are in the baseline, and interest rates would be about 10 basis points lower.

If economic growth slowed in each year as a result of that lower productivity, taxable income would also grow more slowly than projected, and tax revenues would be

68. Those prediction ranges are based on analysis of CBO's forecasting accuracy over the past four decades for GDP and since 1983 for inflation and interest rates. For related discussion, see Congressional Budget Office, *CBO's Economic Forecasting Record: 2015 Update* (February 2015), www.cbo.gov/publication/49891.

69. For further discussion about growth in productivity, its relationship to GDP, and the uncertainty of projections of such growth, see Congressional Budget Office, *The 2016 Long Term Budget Outlook* (July 2016), pp. 80–82, www.cbo.gov/publication/51580.

70. A basis point is equal to one one-hundredth of a percentage point. For example, the difference between interest rates of 5.5 percent and 5.0 percent is 50 basis points.

lower—$2 billion less than in the baseline in 2017 and $63 billion less in 2027. Over the 2018–2027 period, the drop in revenues stemming from the slower growth in income would increase deficits by a total of $315 billion. Slower growth in income would also lead to $5 billion less in mandatory outlays: Reductions to Social Security payments that resulted from lower earnings and other similar, but smaller, effects would reduce mandatory spending by $11 billion, but $6 billion of that amount would be offset by an increase in outlays for the refundable portions of the earned income and child tax credits.[71]

Because slower productivity growth also lowers interest rates, the amount of interest that the federal government would pay on its debt would decrease by $63 billion over the 2018–2027 period. However, if revenues were reduced by the amounts indicated above, the federal government would need to borrow more to finance the resulting net increase in the deficit. That additional borrowing would add $27 billion to interest payments over the period. On net, CBO estimates, those effects would result in interest outlays that were $36 billion less over the 10-year period than in the agency's baseline.

Higher Interest Rates

The second rule of thumb illustrates the sensitivity of the budget to changes in interest rates, which affect the flow of interest payments to and from the federal government. When the budget is in deficit, the Treasury must borrow additional funds from the public to cover the shortfall. Moreover, each year the Treasury refinances a substantial portion of the nation's outstanding debt at market interest rates. Those rates also help determine how much the Federal Reserve remits to the Treasury. Changes in interest rates could affect economic growth, taxable income, unemployment, and inflation; however, this rule of thumb does not include the effects of changes in those variables.

CBO estimates that if interest rates were 1 percentage point higher than projected in the baseline and all other economic variables were unchanged, the deficit would progressively worsen over the projection period by amounts increasing from $36 billion in 2017 to $262 billion in 2027. The cumulative deficit for the 2018–2027 period would be $1.6 trillion higher (see Table B-1).

Most of that difference would arise because the government's interest costs would be substantially larger. The difference in interest costs would amount to only $17 billion in 2017 because most marketable government debt is in the form of securities that have maturities greater than one year. As the Treasury replaced maturing securities and increased borrowing to cover future deficits, however, the budgetary effects of higher interest rates would mount. Under this scenario, the added costs of higher interest rates

71. Tax credits reduce a taxpayer's income tax liability; if a refundable credit exceeds a taxpayer's other liability, all or a portion of the excess is refunded to the taxpayer and recorded as an outlay in the budget.

on the debt projected in CBO's baseline would reach $210 billion in 2027 and would total $1.3 trillion over the 2018–2027 period.

As part of its conduct of monetary policy, the Federal Reserve buys and sells Treasury and other securities. It also pays interest on reserves (deposits that banks hold at the central bank). The interest that it earns on its portfolio of securities and the interest that it pays on reserves affect its remittances to the Treasury, which are counted as revenues. If all interest rates were 1 percentage point higher for the coming decade than CBO projects, the Federal Reserve's remittances would be smaller for several years because higher interest payments on reserves would outstrip additional interest earnings on its portfolio. Over time, however, the current holdings in the portfolio would mature and be replaced with higher-yielding investments. CBO projects that by 2023 the Federal Reserve's remittances would be larger if interest rates were higher than projected. Overall, rates that were 1 percentage point higher than in CBO's baseline (all else being equal) would cause revenues from the Federal Reserve's remittances to be $27 billion smaller between 2018 and 2027.

The larger deficits generated by the increase in interest rates would require the Treasury to borrow more than it is projected to borrow in the baseline. That additional borrowing would raise the cost of servicing the debt by amounts that would reach $63 billion in 2027 and total $264 billion over the 2018–2027 period.

Higher Inflation

The third rule of thumb shows the budgetary effects of inflation that is 1 percentage point higher, for all price and wage indexes, than in CBO's baseline each year—with no differences in other economic variables except for interest rates, as described below. Although higher inflation increases both revenues and outlays, the impact on outlays would be greater, and the net effect would be substantially larger budget deficits. Changes in inflation could also lead to changes in economic growth and unemployment; however, this rule of thumb does not include the effects of changes in those variables.

If each year inflation was 1 percentage point higher than the rate underlying CBO's baseline, total revenues over the 10-year period would be about 6 percent greater than in the baseline, and total outlays, about 7 percent greater, CBO estimates. The cumulative deficit for the 2018–2027 period would be $1.3 trillion higher (see Table B-1).†

Effects on Revenues

Larger increases in wage rates and prices generally lead to greater labor income, profits, and other income, which in turn generate larger collections of individual income taxes, payroll taxes, and corporate income taxes. The parameters in the individual income tax system that affect most taxpayers—including the income

[†Value corrected on March 15, 2017]

thresholds for both the regular and the alternative minimum tax brackets, the standard deduction, and personal exemptions—are indexed for inflation. Therefore, the share of taxpayers' income that is taxed at certain rates does not change very much when income increases because of higher inflation, so tax collections tend to rise roughly proportionally with income under those circumstances. However, some parameters of the individual income tax system are not indexed for inflation. For example, the income thresholds for the surtax on investment income are fixed in nominal dollars, so if income rose because of higher inflation, the surtax would apply to a larger share of taxpayers' income.

For the payroll tax, rates are mostly the same across income levels, and the maximum amount of earnings subject to the Social Security tax rises (after a lag) with average wages in the economy; therefore, higher wage inflation leads to a roughly proportional increase in payroll tax revenues. Similarly, although the brackets for the corporate income tax are not indexed for inflation, nearly all corporate profits are taxed at the top rate. Consequently, an increase in profits resulting from higher inflation generates a roughly proportional increase in corporate tax revenues. All told, inflation that was 1 percentage point higher each year than CBO projects would add $2.6 trillion to projected revenues in CBO's baseline between 2018 and 2027.

Effects on Mandatory Spending

Higher inflation would also increase the cost of a number of mandatory spending programs, adding $1.7 trillion to projected spending. Benefits for many mandatory programs are automatically adjusted each year to reflect increases in prices. Specifically, benefits paid for Social Security, federal employees' retirement programs, disability compensation for veterans, the Supplemental Nutrition Assistance Program, Supplemental Security Income, the refundable portion of the earned income tax credit, and the child nutrition programs, among others, are adjusted (with a lag) for changes in the consumer price index, one of its components, or other measures of inflation. Many of Medicare's payment rates are also adjusted annually for inflation. Spending for some other programs, such as Medicaid, is not formally indexed to price changes but tends to grow with inflation because the costs of providing benefits under those programs increase as prices rise. In addition, to the extent that initial benefit payments to participants in retirement and disability programs are linked to wages, increases in nominal wages resulting from higher wage inflation boost future outlays for those programs.

Effects on Discretionary Spending

Higher inflation would raise CBO's baseline projections of spending for discretionary programs in two main ways. First, higher inflation would increase CBO's baseline projections of outlays for most discretionary programs after 2021. The Budget Control Act of 2011 (Public Law 112-25), as modified by subsequent legislation, imposed caps on most discretionary budget authority through 2021, and CBO's baseline incorporates

the assumption that appropriations for most purposes will equal those caps. Higher inflation would not alter the statutory caps and thus would have no effect on CBO's projections of spending constrained by those limits. However, for the years following 2021—when, under current law, caps will no longer be in place—CBO's baseline projections incorporate the assumption that the discretionary funding that is currently subject to the caps will increase with inflation from the 2021 amount. As a result, inflation that was 1 percentage point higher than in the baseline each year would boost projected outlays from 2022 through 2027 by a total of $225 billion.†

Although the caps on discretionary appropriations are not indexed for inflation, higher inflation would diminish the amount of goods that could be acquired and the benefits and services that could be provided under those fixed caps.[72] If, over time, higher inflation led lawmakers to adjust the discretionary caps, the effect on spending and on the deficit would be greater.

Second, higher inflation would increase discretionary outlays in CBO's baseline over the 2018–2027 period because the law specifies that the caps may be adjusted to accommodate appropriations for certain purposes. In 2017, those adjustments include $84 billion designated for overseas contingency operations (war-related activities, primarily in Afghanistan), $8 billion in funding provided for disaster relief, $2.7 billion in funding for emergencies, and $1.5 billion for initiatives aimed at enhancing program integrity by reducing improper payments from certain benefit programs. In its baseline, CBO generally extrapolates the funding provided for those purposes in future years based on the amounts appropriated for 2017, with adjustments for inflation. If inflation was 1 percentage point higher each year, projected outlays for those purposes would increase by $53 billion between 2018 and 2027. All told, CBO's projections of discretionary outlays for the 10-year period would rise by $278 billion.†

Effects on Net Interest Costs

Inflation also has an impact on outlays for net interest because it affects interest rates. If inflation was 1 percentage point higher than CBO projects, for example, then interest rates would be 1 percentage point higher (all else being equal). As a result, new federal borrowing would incur higher interest costs, and outstanding inflation-indexed securities would be more costly for the federal government. In addition, higher interest rates would first reduce and then increase revenues from the Federal Reserve's remittances to the Treasury (as explained above in the section on higher interest rates). The direct effect of such higher rates would be to add $1.7 trillion in interest costs to CBO's baseline projection of outlays. Moreover, the effects of higher inflation would increase debt by a little more than $1 trillion over the 10-year period, boosting interest costs by an additional $194 billion.†

72. In CBO's baseline, the cap for 2018 is slightly lower than the cap for 2017. From 2019 through 2021, the caps grow by about 2.5 percent each year.

[†Values corrected on March 15, 2017]

Appendix C: CBO's Economic Projections for 2017 to 2027

The tables in this appendix expand on the information in Chapter 2 by showing the Congressional Budget Office's economic projections for each year from 2017 to 2027 (by calendar year in Table C-1 and by fiscal year in Table C-2). CBO's projections for 2021 to 2027—unlike its projections for 2017 and 2018—are not based on forecasts of cyclical developments in the economy. Rather, they are based on projections of underlying trends in key variables that determine the growth of potential output, such as the size of the labor force, the number of hours worked, capital investment, and productivity—that is, the trends those variables follow after the effects of business-cycle fluctuations are removed. CBO also considers the effects on those variables of the federal tax and spending policies specified in current law. CBO's projections for 2019 and 2020 do not reflect expected cyclical developments in the economy. Instead, they serve as transitions to the values that CBO projects for the 2021–2027 period.

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 issues each year. It satisfies the requirement of section 202(e) of the Congressional Budget Act of 1974 for CBO to submit to the Committees on the Budget periodic reports about fiscal policy and to provide baseline projections of the federal budget. In keeping with CBO's mandate to provide objective, impartial analysis, this report makes no recommendations.

CBO's Panel of Economic Advisers commented on an early version of the economic forecast underlying this report. Members of the panel are Katharine Abraham, Alan Auerbach, David Autor, Olivier Blanchard, Markus Brunnermeier, Mary Daly, Steven Davis, Robert Hall, Jan Hatzius, Donald Kohn, Nellie Liang, Gregory Mankiw, Emi Nakamura, Jonathan Parker, Adam Posen, James Poterba, Valerie Ramey, Brian Sack, Robert Shimer, Justin Wolfers, and Mark Zandi. Diego Comin, Ronald Lee, Kathleen Mullen, Patrick Newport, and Maurice Obstfeld attended the panel's meeting as guests. Although CBO's outside advisers provided considerable assistance, they are not responsible for the content of this report.

The CBO staff members who contributed to this report—by preparing the economic, revenue, and spending projections; writing the report; reviewing, editing, fact-checking, and publishing it; compiling the supplemental materials posted along with it on CBO's website (at www.cbo.gov/publication/52370); and providing other support—are listed on the following pages.

Keith Hall Director

January 2017

Economic Projections

The economic projections were prepared by the Macroeconomic Analysis Division, with contributions from analysts in other divisions. That work was supervised by Jeffrey Werling, Robert Arnold, and Kim Kowalewski.

Gloria Chen	Inflation, house prices
Daniel Fried	Net exports, exchange rates, energy prices
Edward Gamber	Interest rates, monetary policy, current-quarter analysis

Ronald Gecan	Energy prices
Mark Lasky	Business investment, housing
Jason Levine	Financial markets
Joshua Montes	Labor markets
Jeffrey Perry	Financial markets
John Seliski	Federal, state, and local government spending and revenues
Robert Shackleton	Potential output, productivity
Claire Sleigh	Motor vehicle sector, research assistance
Adam Staveski	Housing, model and data management
Christopher Williams	Consumer spending, incomes

Revenue Projections

The revenue projections were prepared by the Tax Analysis Division, supervised by John McClelland, Mark Booth, Ed Harris, and Janet Holtzblatt. In addition, the staff of the Joint Committee on Taxation offered valuable assistance.

Paul Burnham	Retirement income
Dorian Carloni	Corporate income taxes
Jacob Fabian	Customs duties
Nathaniel Frentz	Federal Reserve System earnings, miscellaneous fees and fines
Pamela Greene	Corporate income taxes
Bilal Habib	Wage distribution, refundable tax credits
Peter Huether	Excise taxes
Shannon Mok	Estate and gift taxes, refundable tax credits
Kevin Perese	Tax modeling, Federal Reserve System earnings
Molly Saunders-Scott	International taxation, business taxation
Kurt Seibert	Payroll taxes, depreciation, tax modeling
Joshua Shakin	Individual income taxes
Naveen Singhal	Capital gains realizations, tax modeling

Spending Projections

The spending projections were prepared by the Budget Analysis Division, with contributions from analysts in other divisions. That work was supervised by Theresa Gullo, Holly Harvey, Sam Papenfuss, Tom Bradley, Kim Cawley, Chad Chirico, Sheila

Dacey, Jeffrey Holland, Sarah Jennings, and Adam Wilson of the Budget Analysis Division, as well as by Jessica Banthin of the Health, Retirement, and Long-Term Analysis Division and Damien Moore of the Financial Analysis Division.

Defense, International Affairs, and Veterans' Affairs

Kent Christensen	Defense (projections, working capital funds, operation and maintenance, procurement, scorekeeping)
Sunita D'Monte	International affairs
Ann Futrell	Veterans' health care and employment training services, international food assistance
Raymond Hall	Defense (research and development, stockpile sales, atomic energy, Navy procurement)
William Ma	Defense (operation and maintenance, procurement, compensation for radiation exposure and energy employees' occupational illness, other defense programs)
David Newman	Defense (military construction and family housing, military activities in Afghanistan), veterans' housing and education benefits, reservists' education benefits
David Rafferty	Military retirement
Dawn Sauter Regan	Defense (military personnel)
Matthew Schmit	Military health care
Dwayne Wright	Veterans' compensation and pensions, other benefits for disabled veterans

Health

Susan Yeh Beyer	Health insurance coverage
Julia Christensen	Food and Drug Administration, prescription drugs
Kate Fritzsche	Health insurance marketplaces, other programs
Daniel Hoople	Medicaid, Children's Health Insurance Program
Lori Housman	Medicare
Jamease Kowalczyk	Medicare

Sean Lyons	Health insurance coverage
Paul Masi (formerly of CBO)	Medicare, Federal Employees Health Benefits program
Sarah Masi	Health insurance marketplaces, other programs
Kevin McNellis	Medicare
Alexandra Minicozzi	Health insurance coverage
Eamon Molloy	Health insurance coverage
Health (Continued)	
Andrea Noda	Medicaid prescription drugs, long-term care, Public Health Service
Romain Parsad	Health insurance coverage
Allison Percy	Health insurance coverage
Ezra Porter	Health insurance coverage
Lisa Ramirez-Branum	Medicaid, health insurance coverage, Health Resources and Services Administration
Lara Robillard	Medicare
Robert Stewart	Medicaid, Children's Health Insurance Program, Indian Health Service
Ellen Werble	Prescription drugs, Public Health Service, National Institutes of Health
Zoe Williams	Medicare
Rebecca Yip	Medicare Part D, prescription drugs, Public Health Service
Income Security and Education	
Christina Hawley Anthony	Unemployment insurance, training programs, Administration on Aging, Smithsonian Institution, arts and humanities
Elizabeth Cove Delisle	Housing assistance
Kathleen FitzGerald	Supplemental Nutrition Assistance Program, other nutrition programs
Jennifer Gray	Social Services Block Grant program, support programs for children and families, child nutrition and other nutrition programs
Justin Humphrey	Student loans, higher education

Wendy Kiska	Pension Benefit Guaranty Corporation
Leah Koestner	Elementary and secondary education, Pell grants
Alec MacMillen	Child Care and Development Block Grant, refugee assistance
Susanne Mehlman	Temporary Assistance for Needy Families, Child Support Enforcement program, foster care, child care programs, Low Income Home Energy Assistance Program
Noah Meyerson	Old-Age and Survivors Insurance, Social Security trust funds, Pension Benefit Guaranty Corporation
Emily Stern	Disability Insurance, Supplemental Security Income

Natural and Physical Resources

Tiffany Arthur	Agriculture, science, space exploration
Megan Carroll	Energy, air and water transportation
Mark Grabowicz	Administration of justice, Postal Service
Kathleen Gramp	Energy, Outer Continental Shelf receipts, spectrum auction receipts, Orderly Liquidation Fund
Jeff LaFave	Conservation and land management, Federal Housing Administration, other housing credit programs
James Langley	Agriculture
Matthew Pickford	General government, legislative branch
Sarah Puro	Highways, mass transit, Amtrak, deposit insurance, credit unions
Stephen Rabent	Commerce, Small Business Administration, Universal Service Fund
Robert Reese	Community and regional development, administration of justice, Federal Emergency Management Agency, Bureau of Indian Affairs, other natural resources
Jon Sperl	Pollution control and abatement, recreational resources
Aurora Swanson	Water resources, Fannie Mae and Freddie Mac

Other Areas and Functions

Shane Beaulieu	Computer support
Barry Blom	Federal pay, monthly Treasury data
Joanna Capps	Appropriation bills (Labor, Health and Human Services, and Education; Legislative Branch; State and Foreign Operations)
Meredith Decker	Other interest, debt limit
Karen Dinh	Computer support
Avi Lerner	Interest on the public debt, automatic budget enforcement and sequestration, Troubled Asset Relief Program
Amber Marcellino	Federal civilian retirement, historical data
Jeffrey Perry	Fannie Mae and Freddie Mac, Federal Housing Administration
Dan Ready	Various federal retirement programs, national income and product accounts, federal pay
Mitchell Remy	Fannie Mae and Freddie Mac, Federal Housing Administration

Other Areas and Functions (Continued)

Justin Riordan	Appropriation bills (Commerce, Justice, and Science; Financial Services and General Government)
Mark Sanford	Appropriation bills (Agriculture and Food and Drug Administration; Defense)
Esther Steinbock	Appropriation bills (Energy and Water Development; Military Construction and Veterans Affairs; Transportation and Housing and Urban Development)
J'nell Blanco Suchy	Appropriation bills (Homeland Security; Interior), authorization bills
Patrice Watson	Database system administrator

Long-Term Projections

The long-term projections were prepared by the Health, Retirement, and Long-Term Analysis Division and the Macroeconomic Analysis Division. That work was supervised by Julie Topoleski and Felix Reichling. Stephanie Hugie Barello, Jonathan Huntley, and Michael Simpson prepared the projections.

Writing

Christina Hawley Anthony wrote the summary. Barry Blom wrote Chapter 1, with assistance from Nathaniel Frentz and Joshua Shakin. Charles Whalen and Christopher Williams wrote Chapter 2. Amber Marcellino wrote Appendix A, with assistance from Pamela Greene. Dan Ready wrote Appendix B, with assistance from Nathaniel Frentz. Claire Sleigh compiled Appendix C.

Reviewing, Editing, Fact-Checking, and Publishing

Wendy Edelberg, Jeffrey Kling, and Robert Sunshine reviewed the report. The editing and publishing were handled by CBO's editing and publishing group, supervised by Benjamin Plotinsky, and the agency's web team, supervised by Deborah Kilroe.

Christine Bogusz, Kate Kelly, Loretta Lettner, Bo Peery, and Benjamin Plotinsky edited the report; Maureen Costantino, Christian Howlett, and Gabe Waggoner produced the graphics and prepared the report for publication; and Robert Dean, Annette Kalicki, Adam Russell, and Simone Thomas published the report on CBO's website.

Zachary Byrum, Kent Christensen, Meredith Decker, Jacob Fabian, Ann Futrell, Peter Huether, Alec MacMillen, David Newman, Stephen Rabent, Robert Reese, Claire Sleigh, and Adam Staveski fact-checked the report.

Jacob Fabian, Lori Housman, Amber Marcellino, Dan Ready, Lara Robillard, Claire Sleigh, and Adam Staveski compiled supplemental data, which are posted with this report on CBO's website. Bo Peery and Simone Thomas coordinated the presentation of those materials.

Summary Table 1. Return to Reference

CBO's Baseline Budget Projections

	Actual, 2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	Total 2018-2022	Total 2018-2027
							In Billions of Dollars							
Revenues	3,267	3,404	3,604	3,733	3,878	4,019	4,176	4,346	4,527	4,724	4,931	5,140	19,410	43,078
Outlays	3,854	3,963	4,091	4,334	4,562	4,816	5,135	5,346	5,554	5,890	6,228	6,548	22,938	52,504
Deficit	-587	-559	-487	-601	-684	-797	-959	-1,000	-1,027	-1,165	-1,297	-1,408	-3,528	-9,426
Debt Held by the Public at the End of the Year	14,168	14,838	15,416	16,092	16,845	17,704	18,721	19,776	20,858	22,078	23,430	24,893	n.a.	n.a.
							As a Percentage of Gross Domestic Product							
Revenues	17.8	17.8	18.1	18.1	18.1	18.1	18.1	18.1	18.2	18.2	18.3	18.4	18.1	18.2
Outlays	20.9	20.7	20.5	21.0	21.3	21.7	22.3	22.3	22.3	22.8	23.1	23.4	21.4	22.2
Deficit	-3.2	-2.9	-2.4	-2.9	-3.2	-3.6	-4.2	-4.2	-4.1	-4.5	-4.8	-5.0	-3.3	-4.0
Debt Held by the Public at the End of the Year	77.0	77.5	77.4	77.9	78.8	79.9	81.3	82.6	83.8	85.3	87.0	88.9	n.a.	n.a.

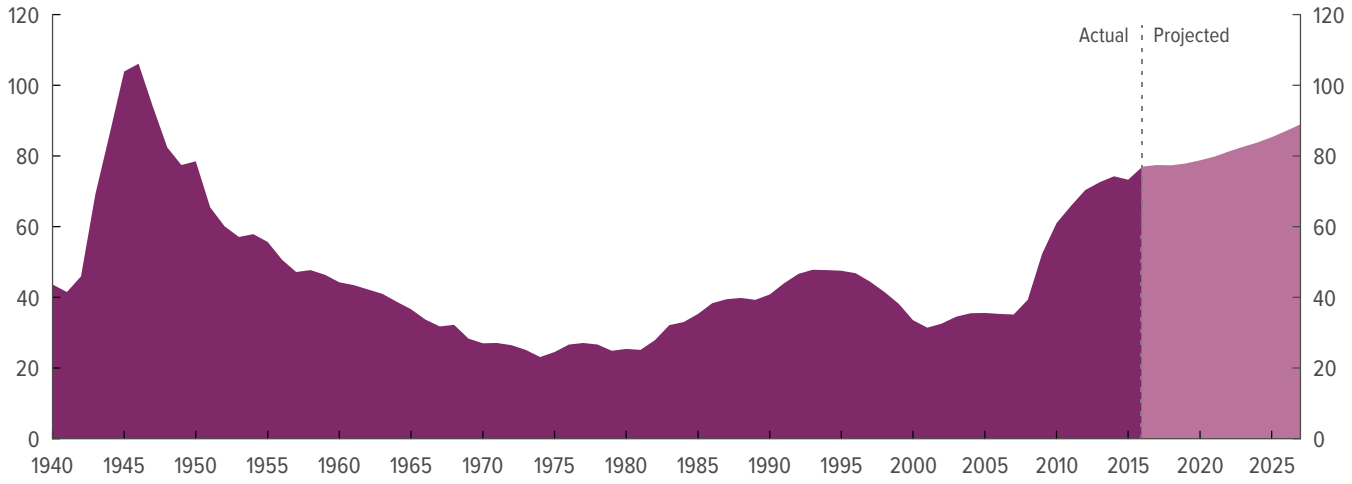
Source: Congressional Budget Office.

n.a. = not applicable.

Summary Figure 1. Return to Reference

Federal Debt Held by the Public

Percentage of Gross Domestic Product

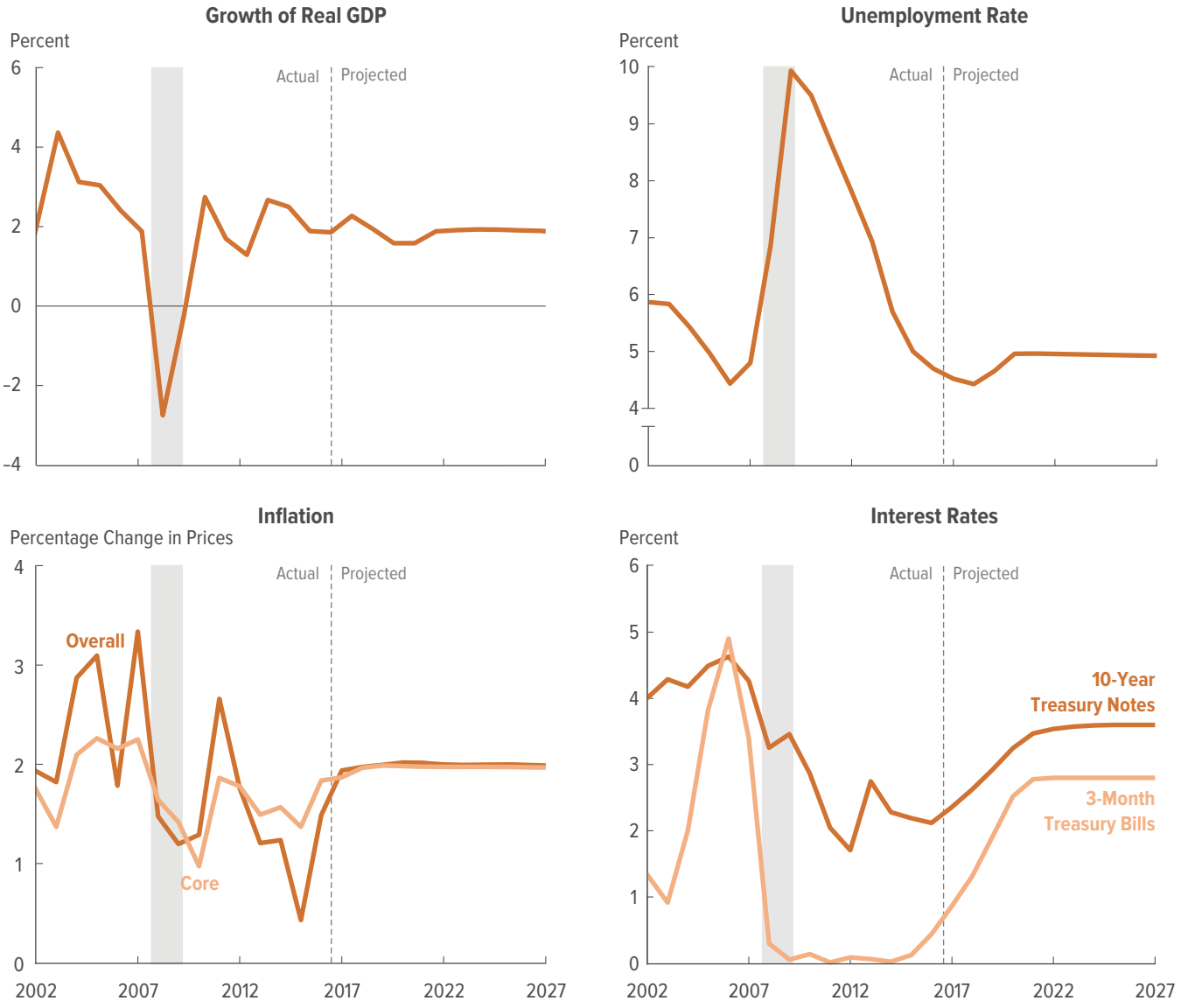


Source: Congressional Budget Office.

Summary Figure 2. Return to Reference

Actual Values and CBO's Projections of Key Economic Indicators

CBO projects that economic activity will expand at a pace this year and next that will lower the unemployment rate and place upward pressure on inflation and interest rates.



Source: Congressional Budget Office, using data from the Bureau of Economic Analysis, the Bureau of Labor Statistics, and the Federal Reserve.

Real GDP is the output of the economy adjusted to remove the effects of inflation. The unemployment rate is a measure of the number of jobless people who are available for work and are actively seeking jobs, expressed as a percentage of the labor force. The overall inflation rate is based on the price index for personal consumption expenditures; the core rate excludes prices for food and energy.

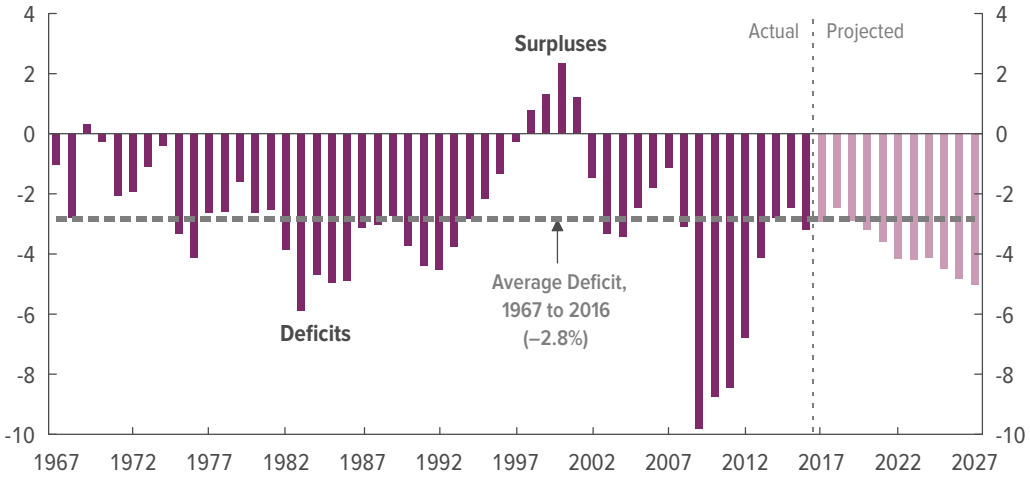
For real GDP growth and inflation, percentage changes are measured from the fourth quarter of one calendar year to the fourth quarter of the next. For the unemployment and interest rates, data are fourth-quarter values.

GDP = gross domestic product.

Figure 1-1. Return to Reference

Total Deficits and Surpluses

Percentage of Gross Domestic Product



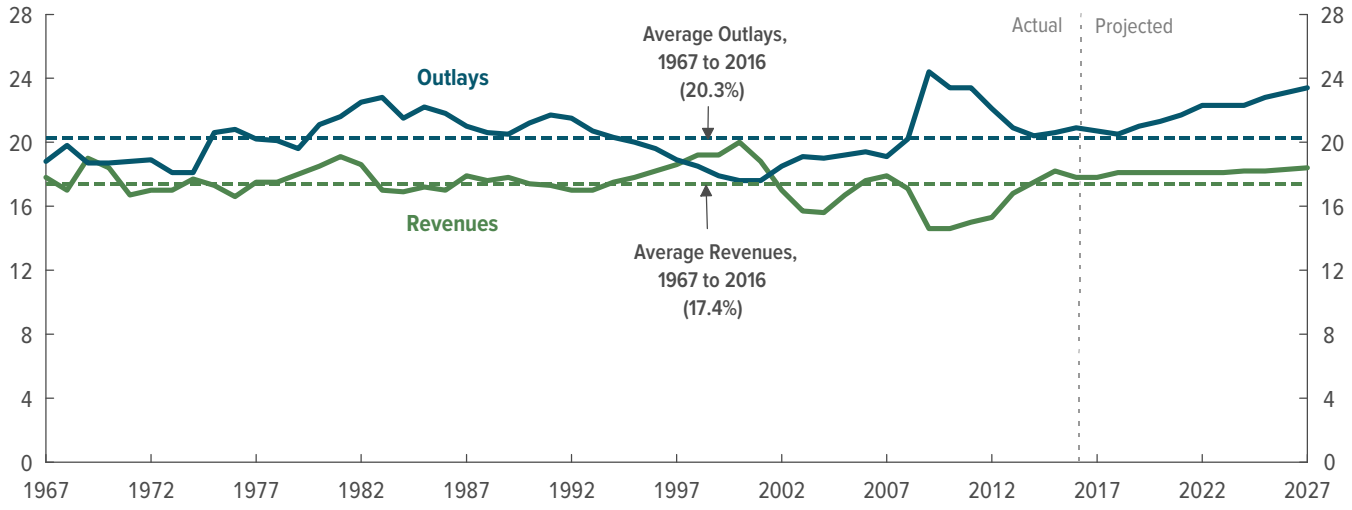
Deficits as a percentage of gross domestic product are projected to exceed their 50-year average for most of the 2017–2027 period as spending for Social Security, Medicare, and interest on the federal debt rises faster than revenues.

Source: Congressional Budget Office.

Figure 1-2. Return to Reference

Total Revenues and Outlays

Percentage of Gross Domestic Product



Source: Congressional Budget Office.

Table 1-1. Return to Reference

CBO's Baseline Budget Projections, by Category

	Actual, 2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	Total 2018-2022	Total 2018-2027
							In Billions of Dollars							
Revenues														
Individual income taxes	1,546	1,651	1,781	1,871	1,957	2,052	2,148	2,249	2,355	2,470	2,590	2,714	9,809	22,187
Payroll taxes	1,115	1,150	1,190	1,230	1,265	1,312	1,364	1,417	1,468	1,525	1,583	1,640	6,361	13,993
Corporate income taxes	300	320	340	352	382	377	381	385	396	408	422	439	1,832	3,882
Other	306	283	293	280	274	278	284	295	308	322	336	347	1,408	3,016
Total	**3,267**	**3,404**	**3,604**	**3,733**	**3,878**	**4,019**	**4,176**	**4,346**	**4,527**	**4,724**	**4,931**	**5,140**	**19,410**	**43,078**
On-budget	2,457	2,566	2,734	2,834	2,951	3,060	3,183	3,318	3,462	3,622	3,789	3,958	14,760	32,911
Off-budget[a]	810	838	870	899	928	959	993	1,028	1,064	1,102	1,142	1,182	4,649	10,168
Outlays														
Mandatory	2,429	2,484	2,585	2,764	2,925	3,097	3,329	3,455	3,583	3,827	4,076	4,305	14,700	33,946
Discretionary	1,184	1,209	1,210	1,238	1,257	1,284	1,315	1,340	1,367	1,405	1,439	1,475	6,304	13,330
Net interest	241	270	295	332	380	435	492	550	604	657	714	768	1,934	5,228
Total	**3,854**	**3,963**	**4,091**	**4,334**	**4,562**	**4,816**	**5,135**	**5,346**	**5,554**	**5,890**	**6,228**	**6,548**	**22,938**	**52,504**
On-budget	3,078	3,157	3,227	3,409	3,575	3,761	4,008	4,143	4,271	4,524	4,774	5,000	17,980	40,692
Off-budget[a]	776	806	864	925	987	1,055	1,127	1,204	1,283	1,366	1,454	1,548	4,958	11,812
Deficit (-) or Surplus	**-587**	**-559**	**-487**	**-601**	**-684**	**-797**	**-959**	**-1,000**	**-1,027**	**-1,165**	**-1,297**	**-1,408**	**-3,528**	**-9,426**
On-budget	-621	-591	-494	-575	-624	-701	-826	-825	-809	-902	-985	-1,042	-3,219	-7,781
Off-budget[a]	34	32	6	-26	-60	-96	-134	-176	-218	-264	-312	-366	-309	-1,645
Debt Held by the Public	14,168	14,838	15,416	16,092	16,845	17,704	18,721	19,776	20,858	22,078	23,430	24,893	n.a.	n.a.
Memorandum:														
Gross Domestic Product	18,403	19,157	19,926	20,661	21,378	22,168	23,037	23,948	24,899	25,889	26,917	27,985	107,171	236,809
							As a Percentage of Gross Domestic Product							
Revenues														
Individual income taxes	8.4	8.6	8.9	9.1	9.2	9.3	9.3	9.4	9.5	9.5	9.6	9.7	9.2	9.4
Payroll taxes	6.1	6.0	6.0	6.0	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
Corporate income taxes	1.6	1.7	1.7	1.7	1.8	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.7	1.6
Other	1.7	1.5	1.5	1.4	1.3	1.3	1.2	1.2	1.2	1.2	1.2	1.2	1.3	1.3
Total	**17.8**	**17.8**	**18.1**	**18.1**	**18.1**	**18.1**	**18.1**	**18.1**	**18.2**	**18.2**	**18.3**	**18.4**	**18.1**	**18.2**
On-budget	13.3	13.4	13.7	13.7	13.8	13.8	13.8	13.9	13.9	14.0	14.1	14.1	13.8	13.9
Off-budget[a]	4.4	4.4	4.4	4.4	4.3	4.3	4.3	4.3	4.3	4.3	4.2	4.2	4.3	4.3
Outlays														
Mandatory	13.2	13.0	13.0	13.4	13.7	14.0	14.4	14.4	14.4	14.8	15.1	15.4	13.7	14.3
Discretionary	6.4	6.3	6.1	6.0	5.9	5.8	5.7	5.6	5.5	5.4	5.3	5.3	5.9	5.6
Net interest	1.3	1.4	1.5	1.6	1.8	2.0	2.1	2.3	2.4	2.5	2.7	2.7	1.8	2.2
Total	**20.9**	**20.7**	**20.5**	**21.0**	**21.3**	**21.7**	**22.3**	**22.3**	**22.3**	**22.8**	**23.1**	**23.4**	**21.4**	**22.2**
On-budget	16.7	16.5	16.2	16.5	16.7	17.0	17.4	17.3	17.2	17.5	17.7	17.9	16.8	17.2
Off-budget[a]	4.2	4.2	4.3	4.5	4.6	4.8	4.9	5.0	5.2	5.3	5.4	5.5	4.6	5.0
Deficit (-) or Surplus	**-3.2**	**-2.9**	**-2.4**	**-2.9**	**-3.2**	**-3.6**	**-4.2**	**-4.2**	**-4.1**	**-4.5**	**-4.8**	**-5.0**	**-3.3**	**-4.0**
On-budget	-3.4	-3.1	-2.5	-2.8	-2.9	-3.2	-3.6	-3.4	-3.2	-3.5	-3.7	-3.7	-3.0	-3.3
Off-budget[a]	0.2	0.2	*	-0.1	-0.3	-0.4	-0.6	-0.7	-0.9	-1.0	-1.2	-1.3	-0.3	-0.7
Debt Held by the Public	77.0	77.5	77.4	77.9	78.8	79.9	81.3	82.6	83.8	85.3	87.0	88.9	n.a.	n.a.

Source: Congressional Budget Office.

n.a. = not applicable; * = between zero and 0.05 percent.

a. The revenues and outlays of the Social Security trust funds and the net cash flow of the Postal Service are classified as off-budget.

Box 1-1. Return to Reference

The Expansion of Medicaid and Nongroup Health Insurance Under the Affordable Care Act

Because of the complexity of the analysis involved, the Congressional Budget Office and the staff of the Joint Committee on Taxation (JCT) generally produce one major update per year to their 10-year projections of health insurance coverage for people under age 65. In preparing the January 2017 baseline, the agencies did not undertake a complete update of those coverage projections, but did update projections of insurance coverage that has the greatest effects on the federal budget and of the associated subsidy costs.[1] CBO's projections were completed before the new Administration took office on January 20, 2017. They do not incorporate any effects of executive orders or other actions taken by that Administration.

Health Insurance Coverage

The updated projections focus on the coverage stemming from the expansion of eligibility for Medicaid under the Affordable Care Act (ACA) and the nongroup coverage purchased through the health insurance marketplaces (sometimes referred to as exchanges).

Medicaid. By CBO's estimates, an average of 12 million noninstitutionalized residents of the United States under age 65 will have health insurance in any given month in calendar year 2017 because they were made eligible for Medicaid under the ACA. That expanded eligibility for Medicaid applies principally to adults whose income is up to 138 percent of the federal poverty guidelines; the federal government pays nearly all of the costs of expanding Medicaid coverage to those new enrollees. On average, 17 million people are projected to have such coverage in 2027, if current laws remained in place.

Nongroup Coverage. In addition, CBO and JCT estimate that, in calendar year 2017, 9 million people per month, on average, will receive subsidies for nongroup coverage purchased through the health insurance marketplaces established under the ACA. Subsidized health insurance is now available to many individuals and families with income between 100 percent and 400 percent of the federal poverty guidelines who meet certain other conditions; they can purchase coverage through designated marketplaces and receive tax credits that subsidize their insurance premiums, as well as cost-sharing subsidies. That number is projected to be 11 million in 2027 under current law.

Overall, including people who do not receive subsidies for their insurance, CBO and JCT expect that 10 million people per month, on average, will have insurance purchased through the marketplaces in 2017; that number is projected to grow to 13 million by 2027. Not all nongroup coverage is purchased through the marketplaces. In total, CBO and JCT estimate that 18 million people will have nongroup coverage in 2017 and that 20 million people would have such coverage in 2027. From 2017 through 2027, under current law, the number of uninsured people under age 65 would remain around 27 million or 28 million.

Federal Subsidies

CBO and JCT currently estimate that federal spending for people made eligible for Medicaid by the ACA will be $70 billion, or 0.4 percent of gross domestic product (GDP), in fiscal year 2017. Such spending is projected to rise at an average annual rate of about 7 percent, reaching $142 billion (or 0.5 percent of GDP) in 2027. For the 2018–2027 period, such spending is projected to total $998 billion if current laws remained in place.

The agencies also estimate net federal subsidies for coverage obtained through the marketplaces to be $49 billion, or 0.3 percent of GDP, in fiscal year 2017. Those subsidy amounts are projected to rise at an average annual rate of about 9 percent, reaching $110 billion (or 0.4 percent of GDP) in 2027. For the 2018–2027 period, the net subsidy is projected to total $919 billion under current law.

1. For more information, see Congressional Budget Office, "Federal Subsidies for Health Insurance (Includes Effects of the Affordable Care Act)" (January 2017), www.cbo.gov/publication/51298.

Table 1-2. Return to Reference

Mandatory Outlays Projected in CBO's Baseline

Billions of Dollars

	Actual, 2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	Total 2018-2022	Total 2018-2027
Social Security														
Old-Age and Survivors Insurance	767	797	847	903	963	1,025	1,090	1,158	1,230	1,306	1,383	1,465	4,826	11,368
Disability Insurance	144	144	148	154	159	167	174	182	190	198	207	217	801	1,795
Subtotal	910	940	995	1,056	1,121	1,191	1,264	1,340	1,420	1,504	1,590	1,681	5,628	13,164
Major Health Care Programs														
Medicare[a]	692	705	716	791	849	912	1,019	1,052	1,085	1,200	1,303	1,402	4,288	10,330
Medicaid	368	389	408	428	450	474	499	525	554	584	616	650	2,259	5,189
Health insurance subsidies and related spending[b]	42	51	61	70	80	85	90	93	98	101	104	106	385	887
Children's Health Insurance Program	14	15	11	6	6	6	6	6	6	6	6	6	34	62
Subtotal[a]	1,116	1,159	1,196	1,295	1,385	1,477	1,613	1,676	1,742	1,891	2,029	2,165	6,966	16,468
Income Security Programs														
Earned income, child, and other tax credits[c]	85	87	86	88	88	88	90	92	93	95	97	98	441	915
Supplemental Nutrition Assistance Program	73	71	69	67	67	67	66	66	66	67	68	69	335	672
Supplemental Security Income	59	55	52	58	60	62	68	66	62	70	72	74	300	645
Unemployment compensation	33	32	33	35	41	45	47	49	51	54	56	59	202	472
Family support and foster care[d]	31	31	32	33	33	33	33	34	34	34	35	35	164	336
Child nutrition	23	24	25	26	27	28	29	31	32	33	35	36	135	302
Subtotal	304	299	297	307	315	323	335	337	340	353	362	372	1,577	3,341
Federal Civilian and Military Retirement														
Civilian[e]	99	100	103	107	110	114	118	122	126	130	135	139	552	1,204
Military	62	58	55	62	64	66	73	70	66	73	75	77	320	682
Other	3	3	3	2	2	3	4	6	6	2	9	9	15	47
Subtotal	164	161	162	170	176	183	195	197	198	206	219	225	887	1,932
Veterans' Programs														
Income security[f]	87	85	82	94	97	101	113	108	103	116	120	125	488	1,061
Other[g]	20	21	19	18	18	19	20	20	20	22	23	24	95	205
Subtotal	107	106	101	112	116	120	134	129	123	139	143	149	582	1,266
Other Programs														
Agriculture	13	12	17	14	14	15	14	14	14	15	15	15	74	147
MERHCF	10	10	11	11	12	13	13	14	15	15	16	17	60	137
Deposit insurance	-13	-14	-13	-7	-6	-6	-8	-8	-8	-9	-9	-9	-39	-82
Fannie Mae and Freddie Mac[h]	0	0	2	1	1	*	2	2	2	2	2	2	5	16
Higher education	8	-6	-3	-2	-1	*	1	1	1	1	1	1	-6	-1
Other	48	66	70	70	67	69	68	66	65	65	68	67	343	674
Subtotal	66	68	84	87	87	90	90	89	88	90	94	93	438	892

Continued

Table 1-2. Continued

Mandatory Outlays Projected in CBO's Baseline

Billions of Dollars

	Actual, 2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	Total 2018-2022	Total 2018-2027
Offsetting Receipts														
Medicare[i]	-104	-113	-126	-137	-148	-157	-170	-178	-189	-205	-223	-237	-737	-1,768
Federal share of federal employees' retirement														
Social Security	-17	-17	-17	-18	-18	-19	-20	-20	-21	-22	-22	-23	-92	-200
Military retirement	-19	-18	-18	-18	-19	-19	-19	-20	-20	-20	-21	-21	-93	-195
Civil service retirement and other	-34	-37	-38	-39	-39	-40	-41	-42	-43	-44	-45	-46	-197	-416
Subtotal	-70	-72	-73	-75	-76	-78	-80	-82	-84	-86	-88	-90	-382	-811
Receipts related to natural resources	-8	-9	-12	-12	-11	-11	-11	-12	-13	-13	-14	-14	-58	-124
MERHCF	-7	-7	-8	-9	-9	-10	-10	-11	-12	-12	-13	-14	-47	-109
Fannie Mae and Freddie Mac[h]	-14	-15	0	0	0	0	0	0	0	0	0	0	0	0
Other	-34	-34	-30	-32	-31	-31	-31	-31	-32	-39	-24	-24	-154	-305
Subtotal	-237	-250	-249	-264	-276	-287	-302	-314	-329	-355	-362	-380	-1,378	-3,117
Total Mandatory Outlays	**2,429**	**2,484**	**2,585**	**2,764**	**2,925**	**3,097**	**3,329**	**3,455**	**3,583**	**3,827**	**4,076**	**4,305**	**14,700**	**33,946**
Memorandum:														
Mandatory Spending Excluding the Effects of Offsetting Receipts	2,666	2,734	2,834	3,028	3,201	3,384	3,631	3,769	3,912	4,182	4,437	4,685	16,078	37,063
Spending for Medicare Net of Offsetting Receipts	588	592	590	654	701	755	849	874	897	995	1,080	1,165	3,550	8,562
Spending for Major Health Care Programs Net of Offsetting Receipts[j]	1,012	1,046	1,070	1,158	1,237	1,320	1,444	1,498	1,554	1,686	1,806	1,927	6,229	14,700

Source: Congressional Budget Office.

Data on spending for benefit programs in this table generally exclude administrative costs, which are discretionary.

MERHCF = Department of Defense Medicare-Eligible Retiree Health Care Fund (including TRICARE for Life); * = between zero and $500 million.

a. Gross spending, excluding the effects of Medicare premiums and other offsetting receipts. (Net Medicare spending is included in the memorandum section of the table.)

b. Spending to subsidize health insurance purchased through the marketplaces established under the Affordable Care Act and provided through the Basic Health Program and spending to stabilize premiums for health insurance purchased by individuals and small employers.

c. Includes outlays for the American Opportunity Tax Credit and other credits.

d. Includes the Temporary Assistance for Needy Families program, the Child Support Enforcement program, the Child Care Entitlement program, and other programs that benefit children.

e. Includes benefits for retirement programs in the civil service, foreign service, and Coast Guard; benefits for smaller retirement programs; and annuitants' health care benefits.

f. Includes veterans' compensation, pensions, and life insurance programs.

g. Primarily education subsidies. (The costs of veterans' health care are classified as discretionary spending and thus are not shown in this table.)

h. Cash payments from Fannie Mae and Freddie Mac to the Treasury are recorded as offsetting receipts in 2016 and 2017. Beginning in 2018, CBO's estimates reflect the net lifetime costs—that is, the subsidy costs adjusted for market risk—of the guarantees that those entities will issue and of the loans that they will hold. CBO counts those costs as federal outlays in the year of issuance.

i. Includes premium payments, recoveries of overpayments made to providers, and amounts paid by states from savings on Medicaid's prescription drug costs.

j. Consists of spending for Medicare (net of premiums and other offsetting receipts), Medicaid, and the Children's Health Insurance Program as well as outlays to subsidize health insurance purchased through the marketplaces established under the Affordable Care Act and related spending.

Table 1-3. Return to Reference

Discretionary Spending Projected in CBO's Baseline

Billions of Dollars

	Actual, 2016[a]	2017[a]	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	Total 2018-2022	Total 2018-2027
Budget Authority														
Defense	607	613	615	630	645	660	677	693	710	728	746	764	3,227	6,868
Nondefense	561	571	548	561	575	588	603	618	633	649	665	681	2,874	6,120
Total	**1,168**	**1,185**	**1,163**	**1,191**	**1,220**	**1,248**	**1,279**	**1,311**	**1,343**	**1,376**	**1,410**	**1,445**	**6,102**	**12,988**
Outlays														
Defense	584	589	595	613	628	642	662	673	685	706	724	741	3,140	6,668
Nondefense	600	620	616	625	629	641	653	667	683	699	715	733	3,164	6,662
Total	**1,184**	**1,209**	**1,210**	**1,238**	**1,257**	**1,284**	**1,315**	**1,340**	**1,367**	**1,405**	**1,439**	**1,475**	**6,304**	**13,330**
Memorandum:														
Caps in the Budget Control Act (As Amended), Including Automatic Reductions to the Caps														
Defense	548	551	549	562	576	590	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Nondefense	518	519	516	529	542	555	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total	1,067	1,070	1,065	1,091	1,118	1,145	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Adjustments to the Caps[b]														
Defense	59	65	66	68	69	70	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Nondefense*	26	32	32	32	33	33	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total*	84	98	99	99	102	104	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Source: Congressional Budget Office.

CBO's baseline projections incorporate the assumption that the caps on discretionary budget authority and the automatic enforcement procedures specified in the Budget Control Act of 2011 (as amended) remain in effect through 2021. CBO assumes full-year funding for 2017 on the basis of amounts provided in the Further Continuing and Security Assistance Appropriations Act, 2017.

Nondefense discretionary outlays are usually higher than budget authority because of spending from the Highway Trust Fund and the Airport and Airway Trust Fund that is subject to obligation limitations set in appropriation acts. The budget authority for such programs is provided in authorizing legislation and is not considered discretionary.

n.a. = not applicable.

a. The amount of budget authority for 2016 and for 2017 in CBO's baseline does not match the sum of the spending caps plus adjustments to the caps mostly because changes to mandatory programs included in the appropriation acts for those years were credited against the caps. Those changes (which reduced mandatory budget authority in both years) appear in their normal mandatory accounts.

b. Funding for overseas contingency operations, emergencies, disaster relief, certain program integrity initiatives (which identify and reduce overpayments in some benefit programs), and programs designated in the 21st Century Cures Act is not constrained by the statutory caps established by the Budget Control Act. [*Values for 2017 through 2021 corrected on January 25, 2017]

Figure 1-3. Return to Reference

Major Changes in Projected Revenues From 2017 to 2027

	Revenues as a Percentage of GDP		Percentage-Point Change	Major Reasons for Change
	2017	2027	–1.5 0 1.5	
Individual Income Taxes	8.6	9.7	1.1	• Real bracket creep[a] • Increased distributions from retirement accounts, relative to GDP • Rising wage inequality
Payroll Taxes	6.0	5.9	–0.1	Rising wage inequality
Corporate Income Taxes	1.7	1.6	–0.1	Net effect of four different changes
Federal Reserve Remittances	0.5	0.3	–0.2	Return to historical averages

Source: Congressional Budget Office.

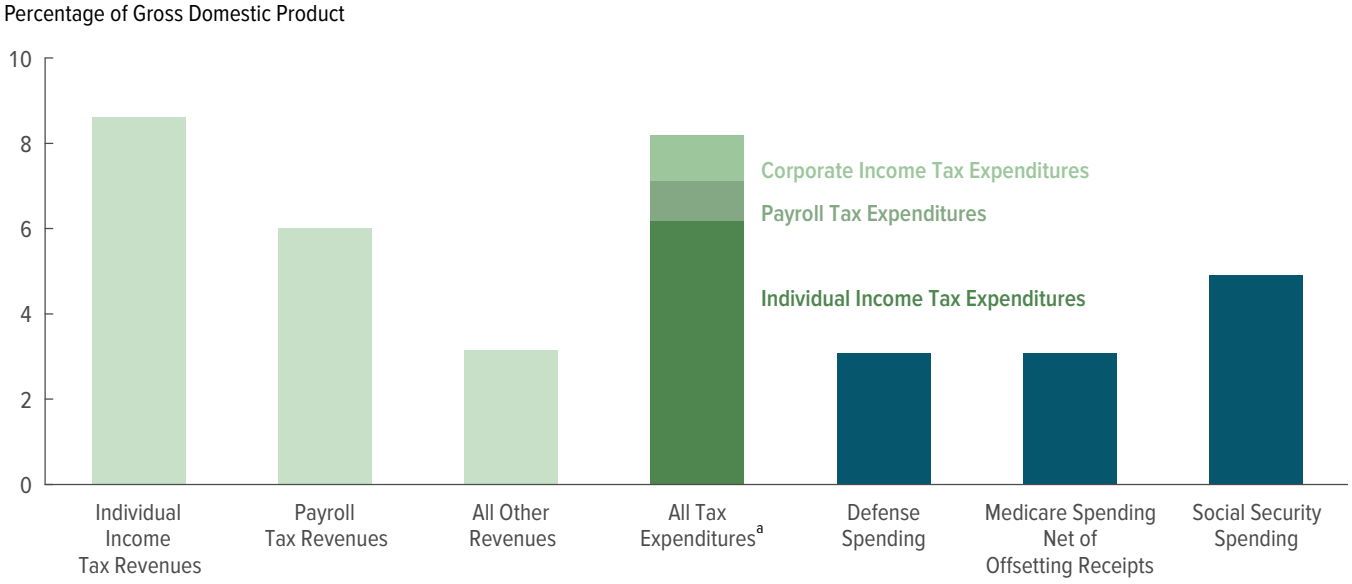
GDP = gross domestic product.

a. Real bracket creep occurs when more income is pushed into higher tax brackets because people's income is rising faster than inflation.

Figure 1-4. Return to Reference

Revenues, Tax Expenditures, and Selected Components of Spending in 2017

Tax expenditures, projected to total more than $1.5 trillion in 2017, cause revenues to be lower than they would be otherwise and, like spending programs, contribute to the deficit.

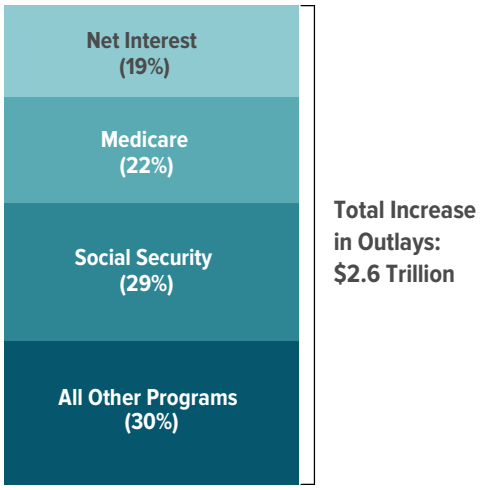


Source: Congressional Budget Office, using estimates by the staff of the Joint Committee on Taxation. For more information, see Joint Committee on Taxation, *Estimates of Federal Tax Expenditures for Fiscal Years 2015–2019*, JCX-141R-15 (December 2015), http://go.usa.gov/cUK2G. Those estimates were prepared before the enactment of the Consolidated Appropriations Act, 2016, and do not include the effects of that law.

a. This total is the sum of the estimates for all of the separate tax expenditures and does not account for any interactions among them. However, CBO estimates that in 2017, the total of all tax expenditures roughly equals the sum of each considered separately. Furthermore, because estimates of tax expenditures are based on people's behavior with the tax expenditures in place, the estimates do not reflect the amount of revenue that would be raised if those provisions of the tax code were eliminated and taxpayers adjusted their activities in response to the changes. The outlay portions of refundable tax credits are included in tax expenditures. Those payments would be reported in the budget as "other mandatory spending," a category not shown in this figure.

Figure 1-5. Return to Reference

Components of the Total Increase in Outlays in CBO's Baseline Between 2017 and 2027

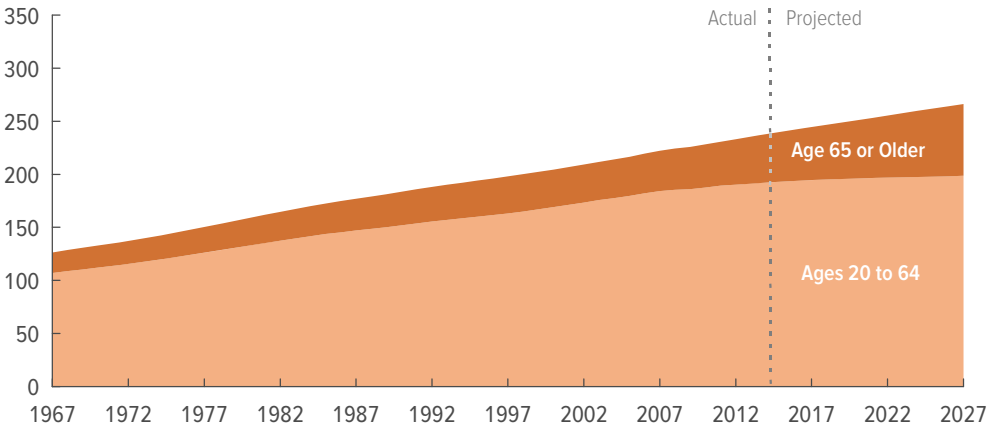


Source: Congressional Budget Office.

Figure 1-6. Return to Reference

Population, by Age Group

Millions of People



The number of people age 65 or older in the United States—now more than twice what it was 50 years ago—is expected to grow by more than one-third over the next 10 years. Thus, enrollment in Social Security's Old-Age and Survivors Insurance program and Medicare will continue to rise.

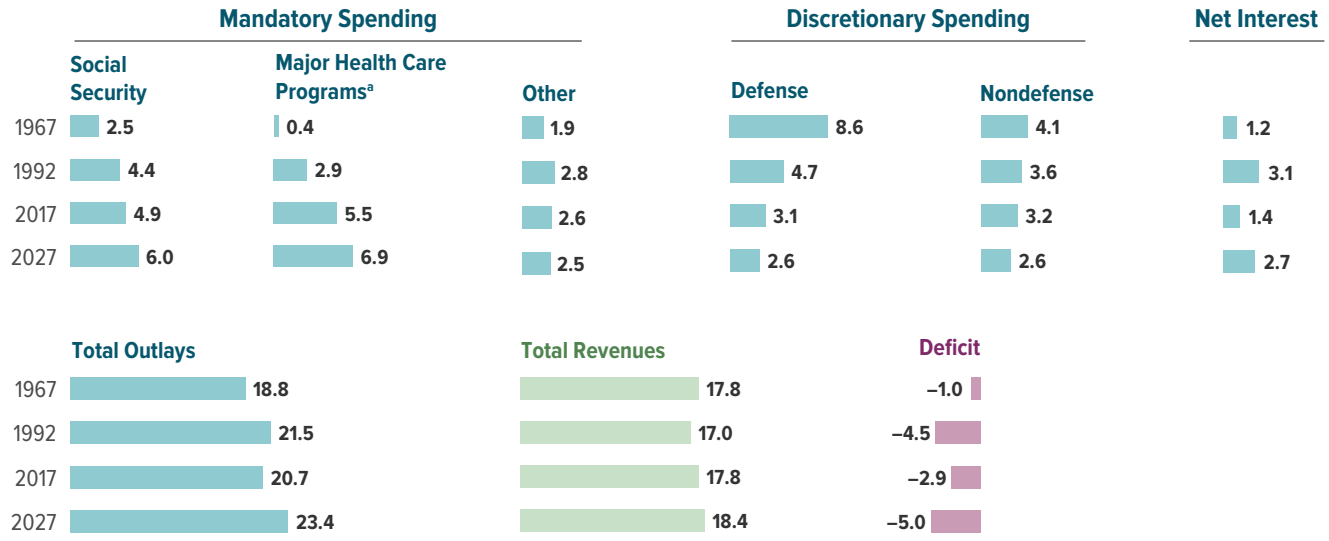
Source: Congressional Budget Office.

This figure shows actual data through calendar year 2014, the most recent year for which such data are available.

Figure 1-7. Return to Reference

Spending and Revenues Projected in CBO's Baseline, Compared With Actual Values 25 and 50 Years Ago

Percentage of Gross Domestic Product



Source: Congressional Budget Office.

a. Consists of spending on Medicare (net of premiums and other offsetting receipts), Medicaid, and the Children's Health Insurance Program as well as outlays to subsidize health insurance purchased through the marketplaces established under the Affordable Care Act and related spending.

Table 1-4. Return to Reference

Federal Debt Projected in CBO's Baseline

Billions of Dollars

	Actual, 2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Debt Held by the Public at the Beginning of the Year	13,117	14,168	14,838	15,416	16,092	16,845	17,704	18,721	19,776	20,858	22,078	23,430
Changes in Debt Held by the Public												
Deficit	587	559	487	601	684	797	959	1,000	1,027	1,165	1,297	1,408
Other means of financing	465	111	91	76	69	63	57	55	54	54	55	55
Total	1,052	669	578	677	752	859	1,016	1,056	1,081	1,220	1,352	1,463
Debt Held by the Public at the End of the Year												
In billions of dollars	**14,168**	**14,838**	**15,416**	**16,092**	**16,845**	**17,704**	**18,721**	**19,776**	**20,858**	**22,078**	**23,430**	**24,893**
As a percentage of GDP	**77.0**	**77.5**	**77.4**	**77.9**	**78.8**	**79.9**	**81.3**	**82.6**	**83.8**	**85.3**	**87.0**	**88.9**
Memorandum:												
Debt Held by the Public Minus Financial Assets[a]												
In billions of dollars	12,551	13,110	13,598	14,199	14,882	15,679	16,638	17,639	18,666	19,832	21,128	22,536
As a percentage of GDP	68.2	68.4	68.2	68.7	69.6	70.7	72.2	73.7	75.0	76.6	78.5	80.5
Gross Federal Debt[b]	19,537	20,355	21,074	21,839	22,627	23,497	24,464	25,466	26,480	27,581	28,825	30,024
Debt Subject to Limit[c]	19,538	20,356	21,075	21,841	22,631	23,501	24,469	25,471	26,486	27,587	28,832	30,032
Average Interest Rate on Debt Held by the Public (Percent)	2.0	2.1	2.2	2.3	2.5	2.7	2.9	3.1	3.2	3.3	3.3	3.4

Source: Congressional Budget Office.

GDP = gross domestic product.

a. Debt held by the public minus the value of outstanding student loans and other credit transactions, cash balances, and other financial instruments.

b. Federal debt held by the public plus Treasury securities held by federal trust funds and other government accounts.

c. The amount of federal debt that is subject to the overall limit set in law. Debt subject to limit differs from gross federal debt mainly because most debt issued by agencies other than the Treasury and the Federal Financing Bank is excluded from the debt limit. That limit was most recently set at $18.4 trillion but has been suspended through March 15, 2017. On March 16, 2017, the debt limit will be raised to its previous level plus the amount of federal borrowing that occurred while the limit was suspended.

Table 1-5. Return to Reference

Changes in CBO's Baseline Projections of the Deficit Since August 2016

Billions of Dollars

											Total	
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2017-2021	2017-2026
Deficit in CBO's August 2016 Baseline	-594	-520	-625	-714	-806	-954	-988	-1,000	-1,128	-1,243	-3,258	-8,571
Changes												
Legislative												
Revenues	*	*	*	*	*	*	*	*	*	*	*	1
Outlays	8	9	16	11	13	14	14	14	14	15	57	127
Subtotal	-8	-9	-16	-11	-13	-13	-13	-13	-14	-15	-57	-127
Economic												
Revenues	10	*	1	5	4	2	-2	-7	-12	-17	20	-16
Outlays	6	-3	-16	-20	-11	-3	3	7	13	20	-45	-4
Subtotal	4	3	17	25	16	5	-5	-14	-26	-36	65	-12
Technical												
Revenues	-27	4	-13	-27	-33	-39	-38	-41	-43	-45	-96	-300
Outlays	-66	-35	-36	-43	-40	-41	-43	-41	-45	-42	-220	-433
Subtotal	40	39	23	16	6	3	6	1	3	-3	124	133
Increase (-) or Decrease in the Deficit	**35**	**32**	**24**	**30**	**9**	**-6**	**-13**	**-27**	**-37**	**-54**	**131**	**-6**
Deficit in CBO's January 2017 Baseline	-559	-487	-601	-684	-797	-959	-1,000	-1,027	-1,165	-1,297	-3,127	-8,577
Memorandum:												
Changes in Revenues	-17	4	-12	-22	-29	-36	-40	-47	-55	-61	-76	-315
Changes in Outlays	-52	-28	-36	-52	-38	-31	-27	-20	-18	-7	-207	-310

Source: Congressional Budget Office.

* = between –$500 million and 500 million.

Table 1-6. Return to Reference

Budgetary Effects of Selected Policy Alternatives Not Included in CBO's Baseline

Billions of Dollars

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	Total 2018-2022	Total 2018-2027
Policy Alternatives That Affect Discretionary Outlays													
Increase Discretionary Appropriations at the Rate of Inflation After 2017[a]													
Increase (-) in the deficit[b]	0	-29	-45	-52	-56	-61	-63	-65	-67	-68	-70	-243	-577
Debt service	0	*	-1	-2	-4	-6	-9	-11	-14	-16	-19	-14	-82
Freeze Discretionary Appropriations at the 2017 Amount[c]													
Increase (-) or decrease in the deficit[b]	0	-13	-3	18	43	71	101	132	165	200	235	117	949
Debt service	0	*	*	*	1	2	5	9	14	20	28	3	79
Policy Alternative That Affects Both Discretionary and Mandatory Outlays													
Prevent the Automatic Spending Reductions Specified in the Budget Control Act[d]													
Increase (-) in the deficit[b]	n.a.	-61	-88	-97	-100	-104	-107	-110	-121	-101	-101	-450	-989
Debt service	n.a.	*	-2	-4	-8	-12	-16	-20	-24	-29	-33	-26	-148
Policy Alternatives That Affect the Tax Code[e]													
Extend Partial Expensing of Equipment and Property[f]													
At 50 percent rate													
Increase (-) in the deficit[b]	n.a.	-8	-19	-46	-52	-37	-25	-18	-15	-13	-13	-162	-247
Debt service	n.a.	*	*	-1	-3	-4	-5	-6	-7	-8	-9	-8	-44
At 30 percent rate													
Increase (-) in the deficit[b]	n.a.	n.a.	n.a.	-27	-39	-28	-18	-13	-11	-9	-8	-93	-152
Debt service	n.a.	n.a.	n.a.	*	-1	-2	-3	-4	-4	-5	-5	-4	-26
Extend Other Expiring Tax Provisions[g]													
Increase (-) in the deficit[b]	-5	-12	-12	-14	-16	-17	-20	-23	-26	-29	-31	-71	-199
Debt service	*	*	*	-1	-1	-2	-3	-3	-4	-5	-7	-5	-27

Continued

Table 1-6. Continued

Budgetary Effects of Selected Policy Alternatives Not Included in CBO's Baseline

Billions of Dollars

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	Total 2018-2022	Total 2018-2027
Policy Alternatives That Affect the Tax Code[e] (Continued)													
Repeal Certain Postponed or Suspended Health Taxes[h]													
Increase (-) in the deficit[b]	n.a.	-16	-17	-21	-26	-29	-32	-36	-40	-45	-50	-108	-311
Debt service	n.a.	*	*	-1	-2	-3	-4	-5	-7	-8	-10	-6	-40
Memorandum:													
Deficit in CBO's January 2017 Baseline	-559	-487	-601	-684	-797	-959	-1,000	-1,027	-1,165	-1,297	-1,408	-3,528	-9,426

Sources: Congressional Budget Office; staff of the Joint Committee on Taxation.

n.a. = not applicable; * = between –$500 million and zero.

a. These estimates reflect the assumption that appropriations will not be constrained by caps set by the Budget Control Act of 2011 (as amended) and will instead grow at the rate of inflation from their 2017 level. Discretionary funding related to federal personnel is inflated using the employment cost index for wages and salaries; other discretionary funding is inflated using the gross domestic product price index.

b. Excludes debt service.

c. This option reflects the assumption that appropriations would generally be frozen at the 2017 level through 2027.

d. The Budget Control Act of 2011 specified that if lawmakers did not enact legislation originating from the Joint Select Committee on Deficit Reduction that would reduce projected deficits by at least $1.2 trillion, automatic procedures would go into effect to reduce both discretionary and mandatory spending during the 2013–2021 period. Those procedures are now in effect and take the form of equal cuts (in dollar terms) in funding for defense and nondefense programs. For the 2018–2021 period, the automatic procedures lower the caps on discretionary budget authority specified in the Budget Control Act (caps for 2016 and 2017 were revised by the Bipartisan Budget Act of 2015); for the 2022–2027 period, CBO has extrapolated the reductions estimated for 2021. Nonexempt mandatory programs will be reduced through sequestration; those provisions have been extended through 2025. The budgetary effects of this option cannot be combined with either of the other alternatives that affect discretionary spending.

e. These estimates are from CBO and the staff of the Joint Committee on Taxation and are preliminary.

f. This alternative would extend the provisions that allow businesses with large amounts of investment to expense (immediately deduct from their taxable income) a portion of the cost of their investment in equipment and certain other property. Under current law, the portion that can be expensed is 50 percent through 2017, 40 percent in 2018, and 30 percent in 2019, after which the provisions expire. One option would extend the 50 percent allowance permanently beyond 2017, and the other option would extend the 30 percent allowance permanently beyond 2019. In both cases, the alternative would include provisions that allow businesses to accelerate alternative minimum tax credits in lieu of the partial-expensing provisions, which expire under current law after 2019. Policymakers could choose to extend the partial-expensing provisions at a percentage of either 30 percent or 50 percent, but not both; that is, the options could not be applied together and the separate budgetary estimates added together.

g. This option would extend about 50 tax provisions that expired or are due to expire between December 31, 2016, and December 31, 2027. It does not include an extension of the partial-expensing provisions or a repeal of certain health-related provisions; those effects are shown separately.

h. This option would repeal the health insurance provider tax, the medical device excise tax, and the excise tax on certain health insurance plans with high premiums. All were postponed for either one or two years in the Consolidated Appropriations Act, 2016. The component of the estimate from repealing the high-premium excise tax does not include largely offsetting effects that would result because some people who would otherwise have been enrolled in insurance through Medicaid or the marketplaces established by the Affordable Care Act would instead enroll in employment-based coverage.

Table 1-7. Return to Reference

Key Projections in CBO's Extended Baseline

Percentage of Gross Domestic Product

			Projected Annual Average			
	2017	2018	2019-2022	2023-2027	2028-2037	2038-2047
Revenues						
Individual income taxes	8.6	8.9	9.2	9.5	10.0	10.4
Payroll taxes	6.0	6.0	5.9	5.9	5.9	5.9
Corporate income taxes	1.7	1.7	1.7	1.6	1.6	1.6
Other	1.5	1.5	1.3	1.2	1.3	1.4
Total Revenues	**17.8**	**18.1**	**18.1**	**18.3**	**18.7**	**19.3**
Outlays						
Mandatory						
Social Security	4.9	5.0	5.3	5.8	6.2	6.3
Major health care programs[a]	5.5	5.4	5.9	6.5	7.6	8.8
Other	2.6	2.6	2.7	2.5	2.4	2.1
Subtotal	13.0	13.0	13.9	14.8	16.2	17.2
Discretionary	6.3	6.1	5.8	5.4	5.3	5.4
Net interest	1.4	1.5	1.9	2.5	3.4	5.0
Total Outlays	**20.7**	**20.5**	**21.6**	**22.8**	**24.9**	**27.6**
Deficit	**-2.9**	**-2.4**	**-3.5**	**-4.5**	**-6.2**	**-8.2**
Debt Held by the Public at the End of the Period	**77**	**77**	**81**	**89**	**113**	**145**
Memorandum:						
Social Security						
Revenues[b]	4.6	4.6	4.6	4.5	4.5	4.5
Outlays[c]	4.9	5.0	5.3	5.8	6.2	6.3
Contribution to the Federal Deficit[d]	-0.3	-0.4	-0.8	-1.3	-1.7	-1.8
Medicare						
Revenues[b]	1.5	1.5	1.5	1.5	1.5	1.4
Outlays[c]	3.7	3.6	4.1	4.7	5.8	6.9
Offsetting receipts	-0.6	-0.6	-0.7	-0.8	-1.0	-1.2
Contribution to the Federal Deficit[d]	-1.6	-1.5	-1.9	-2.3	-3.3	-4.2
Gross Domestic Product at the End of the Period (Trillions of dollars)	19.2	19.9	23.0	28.0	41.9	63.0

Source: Congressional Budget Office.

This table satisfies a requirement specified in section 3111 of S. Con. Res. 11, the Concurrent Resolution on the Budget for Fiscal Year 2016.

The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2027 and then extending most of the concepts underlying those baseline projections for the rest of the long-term projection period.

a. Consists of spending for Medicare (net of premiums and other offsetting receipts), Medicaid, and the Children's Health Insurance Program as well as outlays to subsidize health insurance purchased through the marketplaces established under the Affordable Care Act and related spending.

b. Includes payroll taxes other than those paid by the federal government (which are intergovernmental transactions). Also includes income taxes paid on Social Security benefits, which are credited to the trust funds.

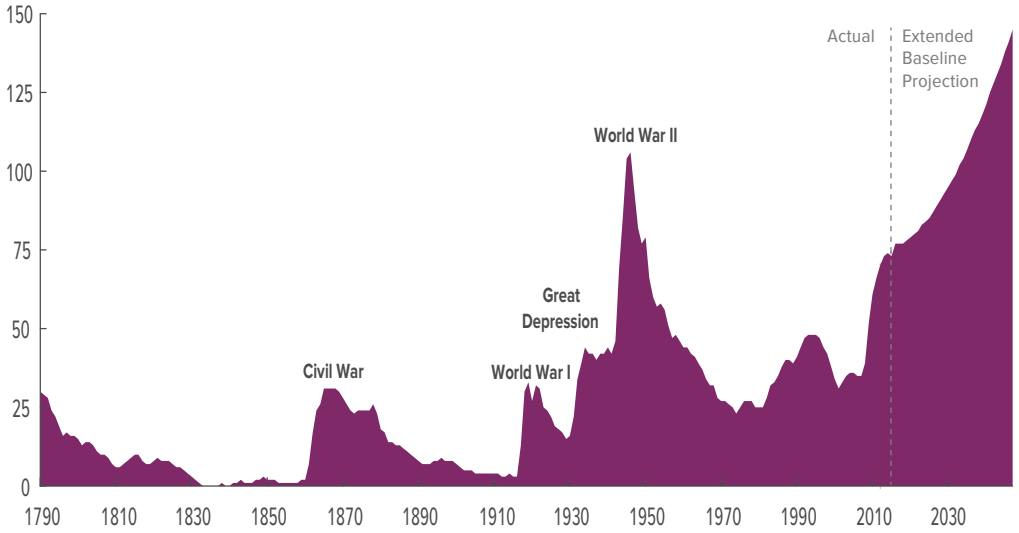
c. Does not include outlays related to administration of the program, which are discretionary. For Social Security, outlays do not include intergovernmental offsetting receipts stemming from payroll taxes paid by federal government employers to the Social Security trust funds.

d. The net increase in the deficit shown in this table differs from the change in the trust fund balance for the associated program. It does not include intergovernmental transactions, interest earned on balances, and outlays related to administration of the program.

Figure 1-8. Return to Reference

Federal Debt Held by the Public

Percentage of Gross Domestic Product



High and rising federal debt would reduce national saving and income in the long term; increase the government's interest payments, thereby putting more pressure on the rest of the budget; limit lawmakers' ability to respond to unforeseen events; and increase the likelihood of a fiscal crisis.

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

The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2027 and then extending most of the concepts underlying those baseline projections for the rest of the long-term projection period (in this case, through 2047).

Table 2-1. Return to Reference

CBO's Economic Projections for Calendar Years 2017 to 2027

	Actual, 2015	Estimated, 2016[a]	Forecast 2017	Forecast 2018	Projected Annual Average 2019-2020	Projected Annual Average 2021-2027
			Percentage Change From Fourth Quarter to Fourth Quarter			
Gross Domestic Product						
Real[b]	1.9	1.8	2.3	1.9	1.6	1.9
Nominal	3.0	3.5	4.1	3.8	3.5	4.0
Inflation						
PCE price index	0.4	1.5	1.9	2.0	2.0	2.0
Core PCE price index[c]	1.4	1.8	1.9	2.0	2.0	2.0
Consumer price index[d]	0.4	1.8 [e]	2.3	2.3	2.4	2.4
Core consumer price index[c]	2.0	2.2 [e]	2.2	2.3	2.3	2.3
GDP price index	1.1	1.6	1.8	1.9	1.9	2.0
Employment Cost Index[f]	2.1	2.5	3.0	3.2	3.2	3.1
			Fourth-Quarter Level			
Unemployment Rate (Percent)	5.0	4.7 [e]	4.5	4.4	5.0 [g]	4.9 [h]
			Percentage Change From Year to Year			
Gross Domestic Product						
Real[b]	2.6	1.6	2.3	2.0	1.6	1.9
Nominal	3.7	2.9	4.2	3.9	3.5	3.9
Inflation						
PCE price index	0.3	1.1	1.9	2.0	2.0	2.0
Core PCE price index[c]	1.4	1.7	1.8	1.9	2.0	2.0
Consumer price index[d]	0.1	1.3 [e]	2.4	2.3	2.3	2.4
Core consumer price index[c]	1.8	2.2 [e]	2.2	2.3	2.3	2.3
GDP price index	1.1	1.3	1.9	1.9	1.9	2.0
Employment Cost Index[f]	2.3	2.4	2.7	3.1	3.2	3.1
			Annual Average			
Unemployment Rate (Percent)	5.3	4.9 [e]	4.6	4.4	4.7	4.9
Payroll Employment (Monthly change, in thousands)[i]	231	188 [e]	138	94	37	64
Interest Rates (Percent)						
Three-month Treasury bills	0.1	0.3 [e]	0.7	1.1	2.0	2.8
Ten-year Treasury notes	2.1	1.8 [e]	2.3	2.5	3.0	3.6
Tax Bases (Percentage of GDP)						
Wages and salaries	43.5	44.1	44.2	44.3	44.4	44.3
Domestic economic profits	9.4	9.1	8.9	8.4	8.0	7.5

Sources: Congressional Budget Office; Bureau of Economic Analysis; Bureau of Labor Statistics; Federal Reserve.

Economic projections for each year from 2017 to 2027 appear in Appendix C.

GDP = gross domestic product; PCE = personal consumption expenditures.

a. Values for 2016 do not reflect the values for GDP and related series released by the Bureau of Economic Analysis since early December 2016.

b. Nominal GDP adjusted to remove the effects of inflation.

c. Excludes prices for food and energy.

d. The consumer price index for all urban consumers.

e. Actual value for 2016.

f. The employment cost index for wages and salaries of workers in private industries.

g. Value for the fourth quarter of 2020.

h. Value for the fourth quarter of 2027.

i. Calculated as the monthly average of the fourth-quarter-to-fourth-quarter change in payroll employment.

Box 2-1. Return to Reference

Current Slack in the Labor Market

A small amount of underused resources, or slack, remains in the labor market. The Congressional Budget Office bases that assessment on its analysis of the employment shortfall, on various other measures of underused labor, and on such indicators as the growth of compensation and rates of hiring and quitting.

The employment shortfall, CBO's primary measure of slack in the labor market, is the difference between actual employment and the agency's estimate of potential (maximum sustainable) employment. Potential employment is what would exist if the unemployment rate equaled its natural rate—that is, the rate that arises from all sources except fluctuations in aggregate demand for goods and services—and if the labor force participation rate equaled its potential rate. Consequently, the employment shortfall has two components: an unemployment component and a participation component. The unemployment component is the difference between the number of jobless people seeking work at the current rate of unemployment and the number who would be jobless at the natural rate of unemployment. The participation component is the difference between the number of people in the current labor force and the number who would be in the labor force at the potential labor force participation rate. CBO estimates that the employment shortfall was about 1.6 million people in the fourth quarter of 2016; the entire shortfall stemmed from a depressed labor force participation rate.

The employment shortfall accounts for the most important sources of slack in the current labor market, but it does not account for all of them. One source of slack that is not accounted for in the employment shortfall is an unusually large percentage of part-time workers who would prefer to work full time. In the fourth quarter of 2016, about 5.7 million workers, or 3.8 percent of all employed workers, were employed part time for economic reasons—that is, because employers were offering them part-time jobs, even though they would have preferred full-time jobs. That 3.8 percent rate was still 0.7 percentage points higher than the rate in the fourth quarter of 2007. But it is hard to determine how much of that 0.7 percentage-point difference represented slack, because part of the increase since 2007 might have been related to structural factors. One such factor is that employment has been shifting to industries that employ a larger fraction of part-time workers, such as service industries. That development may be increasing the share of employees who work fewer hours than they would like.[1]

Another source of slack is the number of people who are marginally attached to the labor force—that is, who are not looking for work now but have looked for it in the past 12 months. That number is larger than it was before the recession—1.8 million people in the fourth quarter of 2016, up from about 1.4 million in the fourth quarter of 2007. Because the elevated number of marginally attached workers is closely related to the depressed rate of labor force participation, it is largely reflected in CBO's measure of the employment shortfall. Marginally attached workers are also included in the U-6 measure of underused labor computed by the Bureau of Labor Statistics, along with the number of unemployed people and the number of people employed part time for economic reasons.[2] In the fourth quarter of 2016, the U-6 measure stood at 9.3 percent, down slightly from 9.9 percent in the fourth quarter of 2015 but higher than the 8.5 percent observed before the recession.

Some measures of the number of hours worked, such as the average number of hours worked per week, could also indicate slack in the labor market. CBO does not use hours to measure slack because the agency forecasts average hours worked per week for only a portion of the economy (the nonfarm business sector). Nonetheless, by the end of 2015, the average number of hours worked per week had largely returned to its prerecession level, and in the nonfarm business sector, it had returned to its usual relationship with potential average hours worked per week. That fact suggests that any cyclical influence on the average number of hours worked per week is not currently a significant source of labor market slack.[3]

Other economic indicators offer mixed signals about the amount of slack remaining in the labor market. The growth of hourly labor compensation increased during 2016—a sign that slack has diminished considerably—but continues to grow more slowly than labor productivity and inflation, indicating that slack still exists. Two other indicators—the rate at which job seekers are hired and the rate at which workers are quitting their jobs, both measured as a fraction of total employment—show little evidence of slack: Both are currently near their prerecession levels.

1. See Rob Valletta and Catherine van der List, *Involuntary Part-Time Work: Here to Stay?* FRBSF Economic Letter 2015-19 (Federal Reserve Bank of San Francisco, June 2015), http://tinyurl.com/pbywpck.

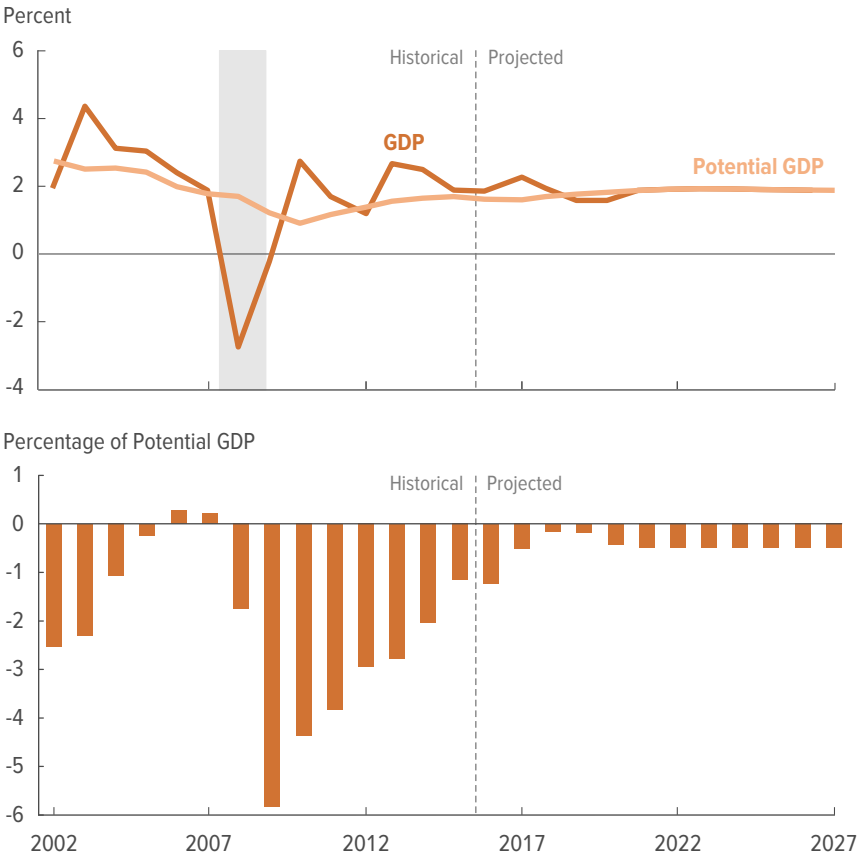
2. The U-6 measure is the number of unemployed workers, marginally attached workers, and workers employed part time for economic reasons as a percentage of the labor force plus all marginally attached

workers. By contrast, the unemployment rate that is generally reported in the news—the U-3 unemployment rate—is the number of unemployed workers as a percentage of the labor force.

3. The percentage of workers who are working part time for economic reasons is above its prerecession level. Yet the average number of weekly hours worked per job has returned to its prerecession level. The apparent contradiction can be reconciled by noting two developments. First, the number of workers who hold multiple jobs is depressed, so the average number of hours worked per worker is lower than it would be otherwise. Second, the increase in the average number of weekly hours worked per job partly reflects an increase in overtime hours, which may have been concentrated in some jobs even as workers in other jobs would have preferred more hours.

Figure 2-1. Return to Reference

Growth of Real GDP and Real Potential GDP, and the Output Gap



Real GDP growth is expected to be stronger than the **growth of real potential GDP** over the next two years . . .

. . . reducing the **output gap**, or difference between the economy's actual and potential output. CBO projects that the gap will largely disappear by the end of 2018 and then transition to its historical average of roughly –0.5 percent by 2021.

Sources: Congressional Budget Office; Bureau of Economic Analysis.

Real GDP is the output of the economy adjusted to remove the effects of inflation.

The output gap equals the difference between historical or projected GDP and CBO's estimate of potential GDP and is expressed as a percentage of potential GDP. Potential GDP is CBO's estimate of the maximum sustainable output of the economy. When GDP is less than potential GDP, the gap between the two shrinks whenever GDP grows faster than potential GDP.

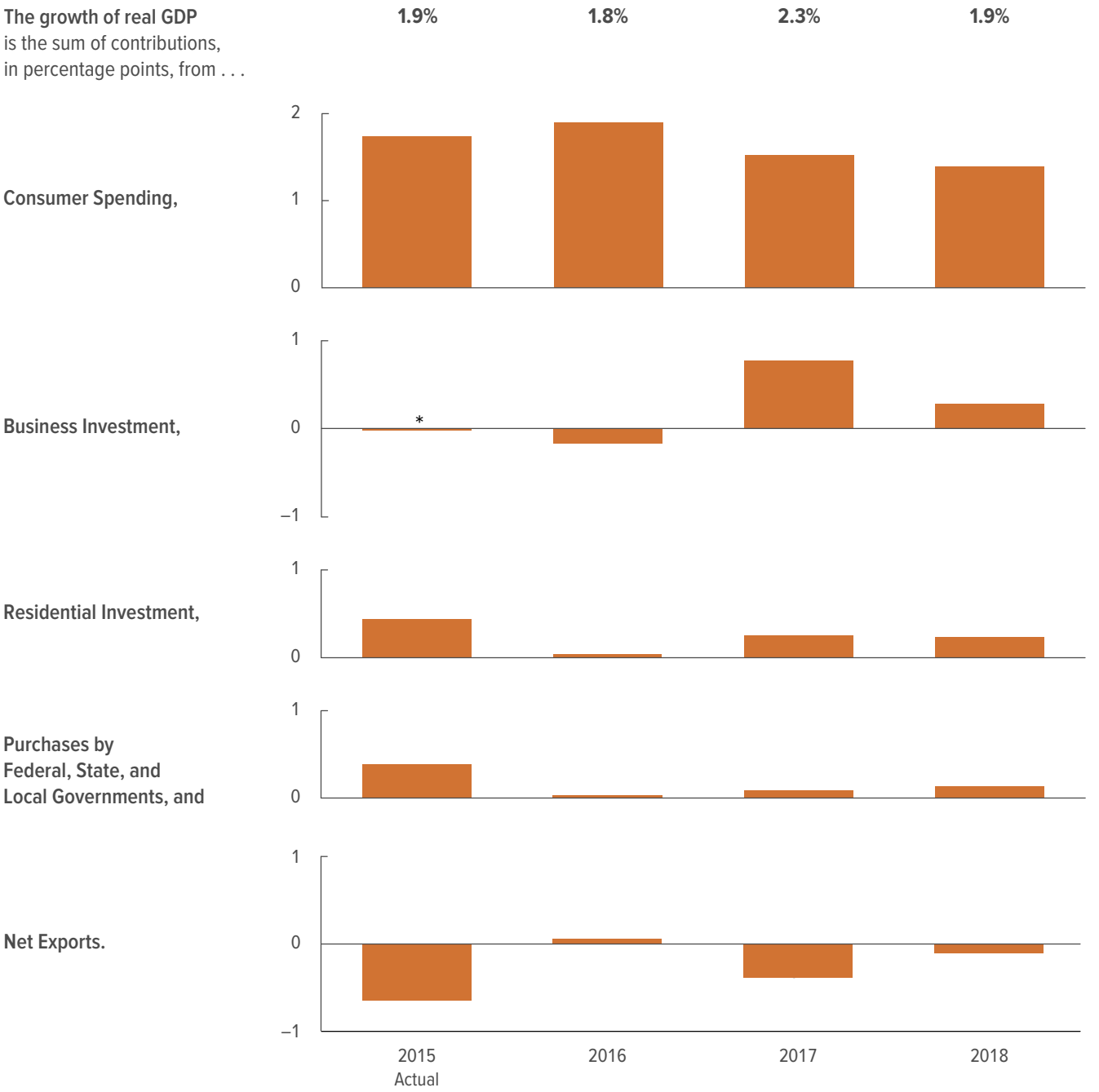
For real GDP growth and real potential GDP growth, percentage changes are measured from the fourth quarter of one calendar year to the fourth quarter of the next. Values for the output gap are for the fourth quarter of each year.

GDP = gross domestic product.

Figure 2-2.

Return to Reference

Projected Contributions to the Growth of Real GDP



Sources: Congressional Budget Office; Bureau of Economic Analysis.

The values show the contribution of the major components of GDP to the growth rate of real GDP (that is, GDP adjusted to remove the effects of inflation). CBO calculated those components' contributions by weighting their growth rates by their shares of nominal GDP. Consumer spending consists of personal consumption expenditures. Business investment comprises purchases of equipment, nonresidential structures, and intellectual property products, as well as the change in inventories. Residential investment comprises the construction of single-family and multifamily structures, manufactured homes, and dormitories; spending on home improvements; and brokers' commissions and other ownership transfer costs. Purchases by federal, state, and local governments are taken from the national income and product accounts. Net exports are exports minus imports.

Changes are measured from the fourth quarter of one calendar year to the fourth quarter of the next.

GDP = gross domestic product; * = between –0.05 percent and zero.

Table 2-2. Return to Reference

Projected Growth of Real GDP and Its Components

Percent

	Actual, 2015	Estimated, 2016[a]	Forecast 2017	Forecast 2018
Real GDP	1.9	1.8	2.3	1.9
Components of Real GDP				
Consumer spending	2.6	2.8	2.2	2.0
Business investment	-0.1	-1.3	6.2	2.2
Business fixed investment	0.8	0.2	5.0	2.7
Residential investment	13.1	1.0	6.7	5.9
Purchases by federal, state, and local governments	2.2	0.2	0.5	0.8
Federal	1.7	-0.2	-1.1	-0.4
State and local	2.5	0.4	1.5	1.5
Exports	-2.2	2.0	1.9	1.7
Imports	2.5	1.3	4.3	2.1
Memorandum:				
Net Exports (Change in billions of 2009 dollars)	-112.6	8.0	-75.0	-22.7

Sources: Congressional Budget Office; Bureau of Economic Analysis.

Real GDP is the output of the economy adjusted to remove the effects of inflation. Consumer spending consists of personal consumption expenditures. Business investment comprises business fixed investment—purchases of equipment, nonresidential structures, and intellectual property products—and the change in inventories. Residential investment comprises the construction of single-family and multifamily structures, manufactured homes, and dormitories; spending on home improvements; and brokers' commissions and other ownership transfer costs. Purchases by federal, state, and local governments are taken from the national income and product accounts. Net exports are exports minus imports.

Changes are measured from the fourth quarter of one calendar year to the fourth quarter of the next.

GDP = gross domestic product.

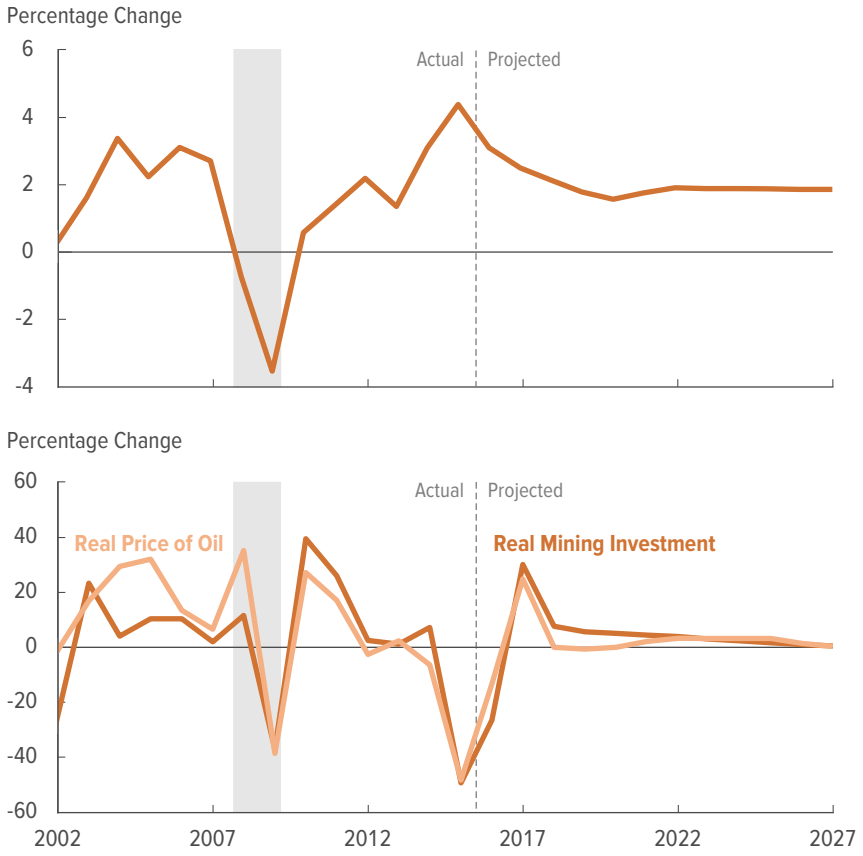
a. Values for 2016 do not reflect the values for GDP and related series released by the Bureau of Economic Analysis since early December 2016.

Figure 2-3. Return to Reference 1, 2, 3, 4

Factors Underlying the Projected Contributions to the Growth of Real GDP

Slowing growth in **employees' real compensation**, mostly because of slower employment growth, is projected to constrain consumer spending over the next few years.

One factor contributing to the faster growth of business investment this year is faster growth in **mining investment**, the result of higher **oil prices**.



Source: Congressional Budget Office, using data from the Bureau of Economic Analysis, the Census Bureau, and the Federal Reserve.

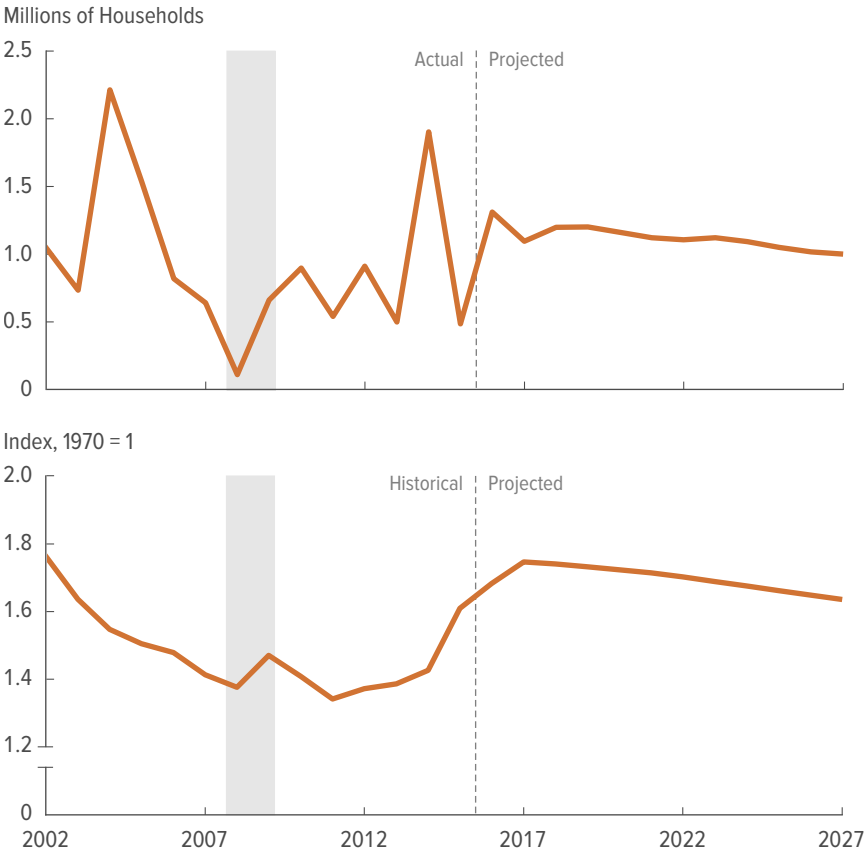
The total amount of employees' real (inflation-adjusted) compensation is the sum of wages, salaries, and supplements divided by the price index for personal consumption expenditures. Percentage changes in employees' real compensation are measured from the average of one calendar year to the next.

Real mining investment includes real investment in exploration, shafts, wells, and machinery. Percentage changes in that investment are measured from the fourth quarter of one calendar year to the fourth quarter of the next. The real price of oil is the annual average spot price of a barrel of West Texas Intermediate oil divided by the price index for GDP. Percentage changes in the real price of oil are measured from the average of one calendar year to the next.

Continued

Figure 2-3. Continued

Factors Underlying the Projected Contributions to the Growth of Real GDP



Robust **household formation** will support the growth of residential investment over the next few years.

A significant increase in the **exchange value of the U.S. dollar** last year and a projected increase this year are expected to contribute to lower net exports over the next few years.

Household formation is the change in the number of occupied housing units from the fourth quarter of the previous year to the fourth quarter of the year indicated.

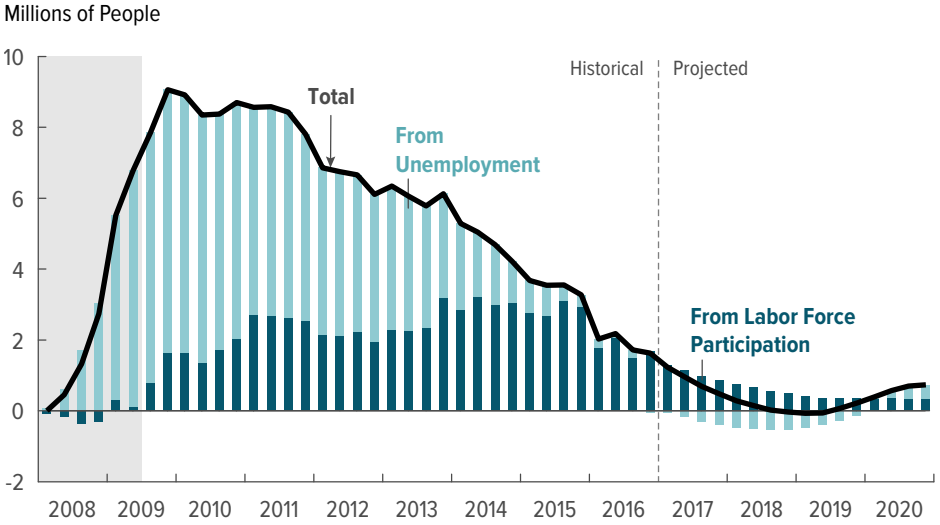
The measure of the exchange value of the U.S. dollar is an index of the export-weighted average of exchange rates between the dollar and the currencies of the United States' leading trading partners. A higher value indicates a stronger dollar.

Data are calendar year averages.

GDP = gross domestic product.

Figure 2-4. Return to Reference

The Employment Shortfall



CBO expects the employment shortfall to disappear by the end of 2018.

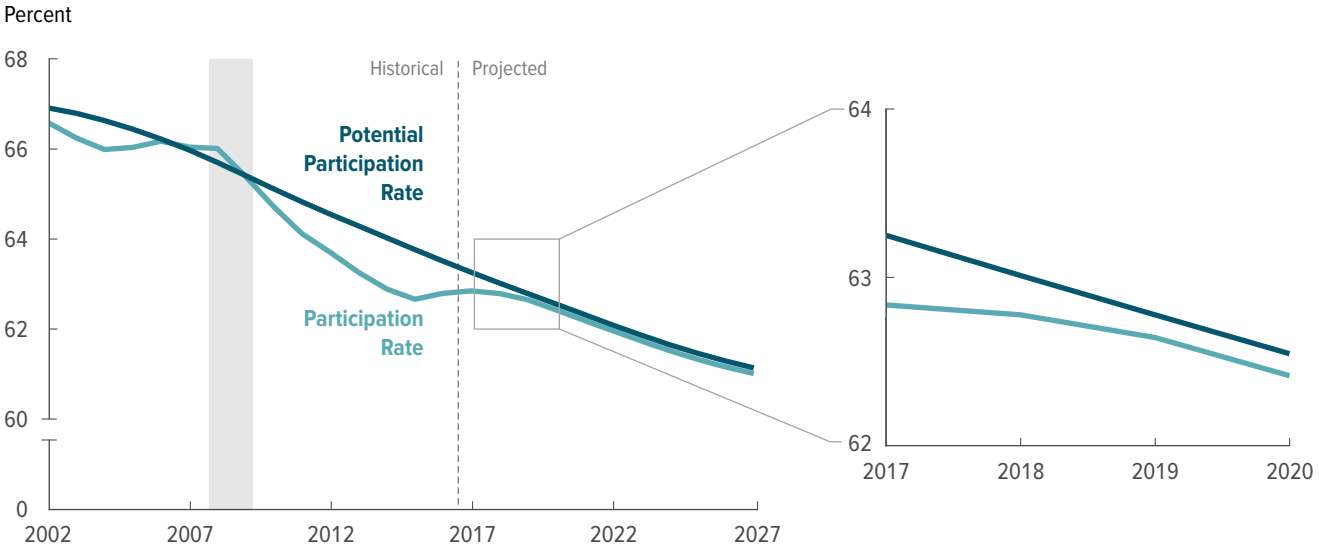
Source: Congressional Budget Office, using data from the Bureau of Labor Statistics.

The employment shortfall is the sum of two components. The first, the employment shortfall from unemployment, is the number of people who are not employed but would be if the unemployment rate equaled its natural rate (the rate arising from all sources except fluctuations in the overall demand for goods and services). That component is projected to be less than zero this year through 2019, reflecting CBO's estimate that the unemployment rate will be below its natural rate during that period. The second component, the employment shortfall from labor force participation, is the number of people who are not employed but would be if the rate of labor force participation equaled its potential.

Figure 2-5. Return to Reference

Labor Force Participation Rates

CBO expects the rate of labor force participation to continue to decline over the next decade as more baby boomers retire.



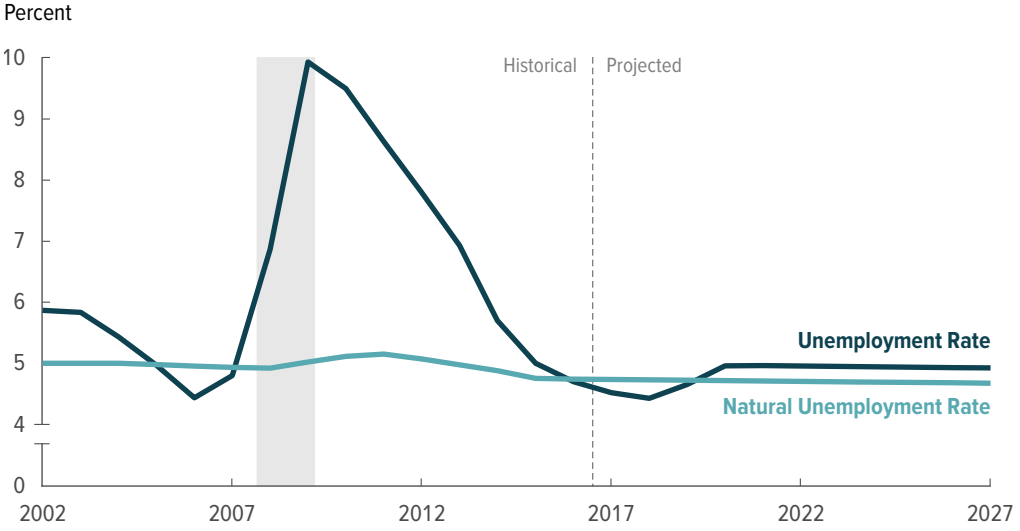
Sources: Congressional Budget Office; Bureau of Labor Statistics.

The participation rate is the percentage of people in the civilian noninstitutionalized population who are at least 16 years old and in the labor force. The labor force consists of people who are employed and people who are unemployed but who are available for work and are actively seeking jobs. The potential participation rate is the participation rate without the effects of the business cycle.

Data are calendar year averages.

Figure 2-6. Return to Reference

Actual and Natural Unemployment Rates



In CBO's projections, the unemployment rate falls below the agency's estimate of its natural rate during the next two years because economic growth boosts employment. In the longer term, those two rates return to their average historical relationship.

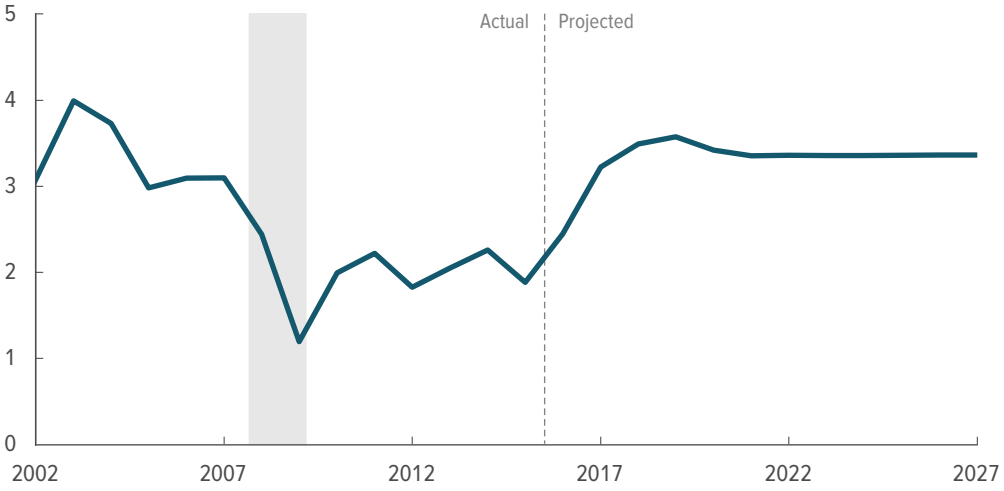
Sources: Congressional Budget Office; Bureau of Labor Statistics.

The unemployment rate is a measure of the number of jobless people who are available for work and are actively seeking jobs, expressed as a percentage of the labor force. The natural unemployment rate is the rate of unemployment arising from all sources except fluctuations in the overall demand for goods and services.

Data are fourth-quarter values.

Figure 2-7. Return to Reference

Hourly Labor Compensation



CBO projects that hourly labor compensation will rise more quickly over the next several years than in 2016, spurred by growth in productivity, prices, and the demand for labor (which will reduce slack in the labor market).

Source: Congressional Budget Office, using data from the Bureau of Labor Statistics.

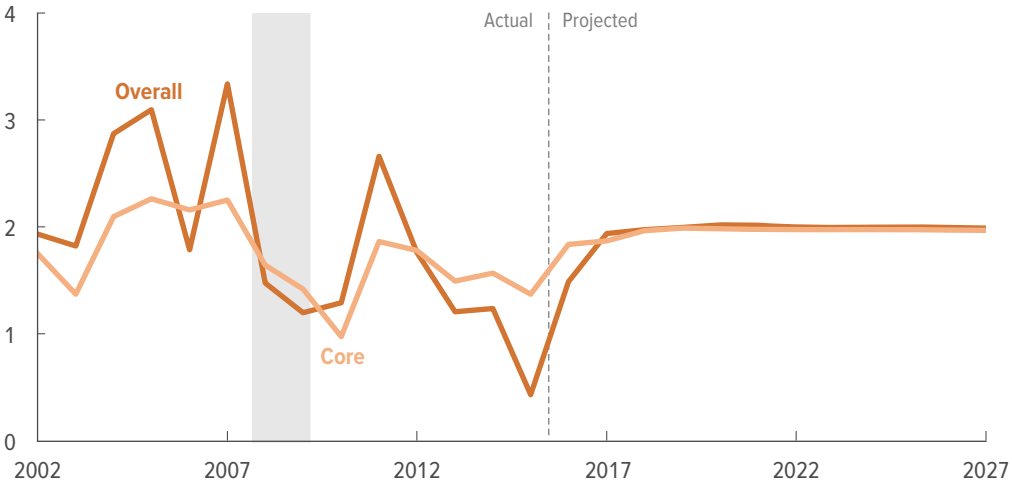
Hourly labor compensation is measured by the employment cost index for the total compensation—wages, salaries, and employers' costs for employees' benefits—of workers in private industry.

Percentage changes are measured from the fourth quarter of one calendar year to the fourth quarter of the next.

Figure 2-8. Return to Reference

Inflation

Percentage Change in Prices



CBO anticipates that over the next two years, as slack in the economy diminishes, inflation will rise to the Federal Reserve's goal of 2 percent.

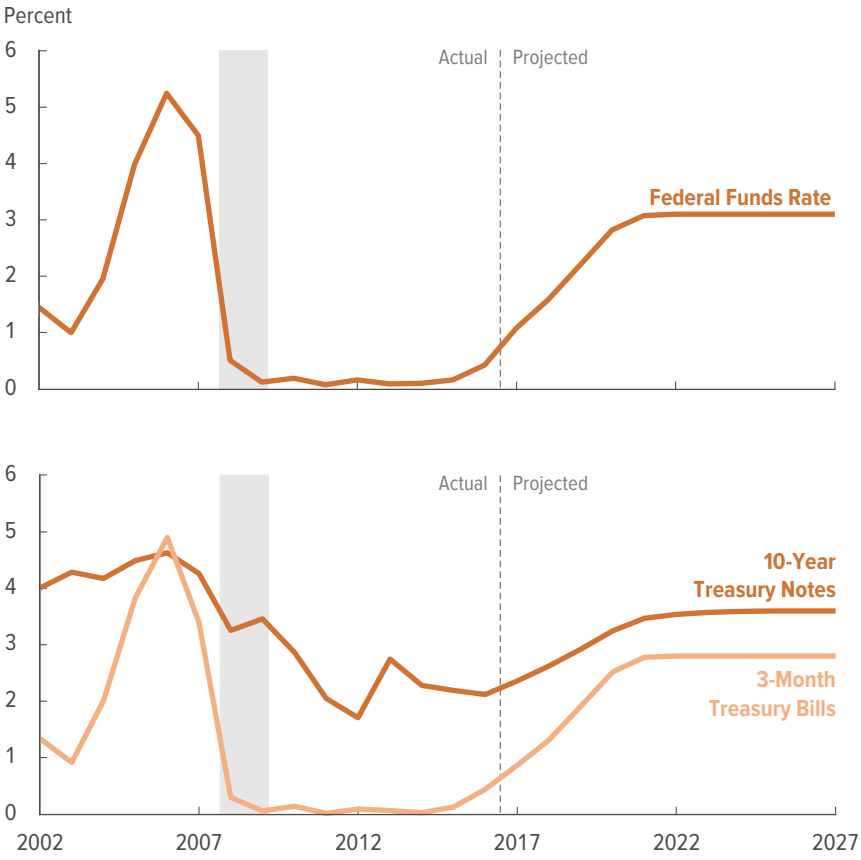
Source: Congressional Budget Office, using data from the Bureau of Economic Analysis.

The overall inflation rate is based on the price index for personal consumption expenditures; the core rate excludes prices for food and energy.

Percentage changes are measured from the fourth quarter of one calendar year to the fourth quarter of the next.

Figure 2-9. Return to Reference

Interest Rates



CBO expects the Federal Reserve to continue increasing the federal funds rate through 2021.

In CBO's projections, interest rates on Treasury securities also rise, reflecting continued economic improvement and increases in the federal funds rate.

Sources: Congressional Budget Office; Federal Reserve.

The federal funds rate is the interest rate that financial institutions charge each other for overnight loans of their monetary reserves.

Data are fourth-quarter values.

Table 2-3. Return to Reference

Key Inputs in CBO's Projections of Potential GDP

Percent

	Average Annual Growth							Projected Average Annual Growth		
	1950-1973	1974-1981	1982-1990	1991-2001	2002-2007	2008-2016	Total, 1950-2016	2017-2020	2021-2027	Total, 2017-2027
Overall Economy										
Potential GDP	4.0	3.2	3.4	3.3	2.4	1.4	3.2	1.7	1.9	1.8
Potential Labor Force	1.6	2.5	1.7	1.2	1.0	0.5	1.4	0.5	0.5	0.5
Potential Labor Force Productivity[a]	2.4	0.6	1.7	2.0	1.4	0.9	1.7	1.2	1.4	1.3
Nonfarm Business Sector										
Potential Output	4.1	3.5	3.6	3.7	2.6	1.6	3.4	2.0	2.2	2.1
Potential Hours Worked*	1.4	2.3	1.7	1.4	0.3	0.5	1.3	0.4	0.4	0.4
Capital Services	3.8	3.8	3.5	3.8	2.7	1.7	3.4	2.2	2.1	2.1
Potential TFP	1.9	0.9	1.3	1.5	1.6	0.7	1.4	0.9	1.2	1.1
Contributions to the Growth of Potential Output (Percentage points)*										
Potential hours worked	0.9	1.6	1.1	0.9	0.1	0.3	0.9	0.3	0.3	0.3
Capital input	1.2	0.9	1.2	1.3	0.9	0.6	1.1	0.7	0.7	0.7
Potential TFP	1.9	0.9	1.3	1.5	1.6	0.7	1.4	0.9	1.2	1.1
Total Contributions	4.0	3.5	3.5	3.6	2.6	1.6	3.4	1.9	2.2	2.1
Potential Labor Productivity[b]	2.7	1.2	1.9	2.3	2.4	1.2	2.1	1.6	1.8	1.7

Source: Congressional Budget Office.

Potential GDP is CBO's estimate of the maximum sustainable output of the economy.

The table shows compound annual growth rates over the specified periods calculated using calendar year data.

GDP = gross domestic product; TFP = total factor productivity.

a. The ratio of potential GDP to the potential labor force.

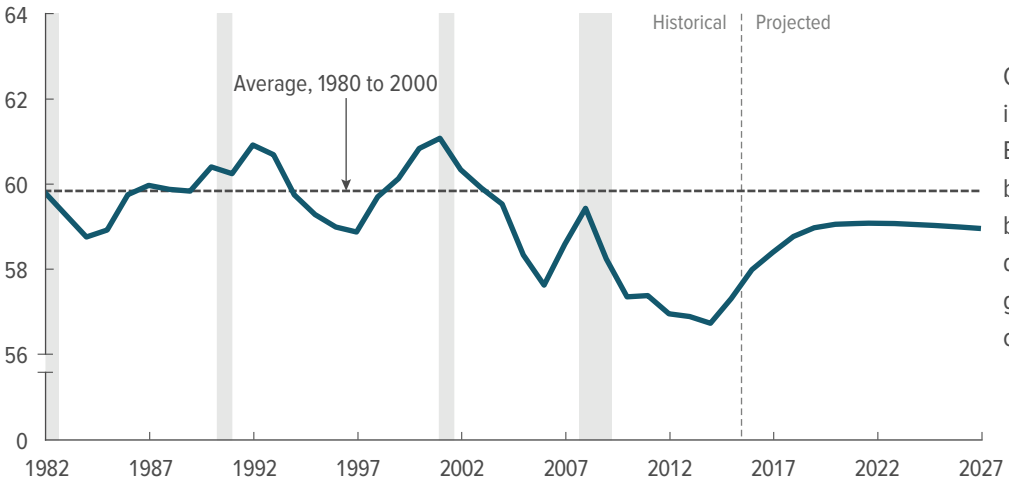
b. The ratio of potential output to potential hours worked in the nonfarm business sector.

 [*Values corrected on April 12, 2019]

Figure 2-10. Return to Reference

Labor Income

Percentage of Gross Domestic Income



CBO expects labor's share of income to rise in the near term. But it is expected to remain below its 1980–2000 average because of factors that have depressed it since 2000, such as globalization and technological change.

Source: Congressional Budget Office, using data from the Bureau of Economic Analysis.

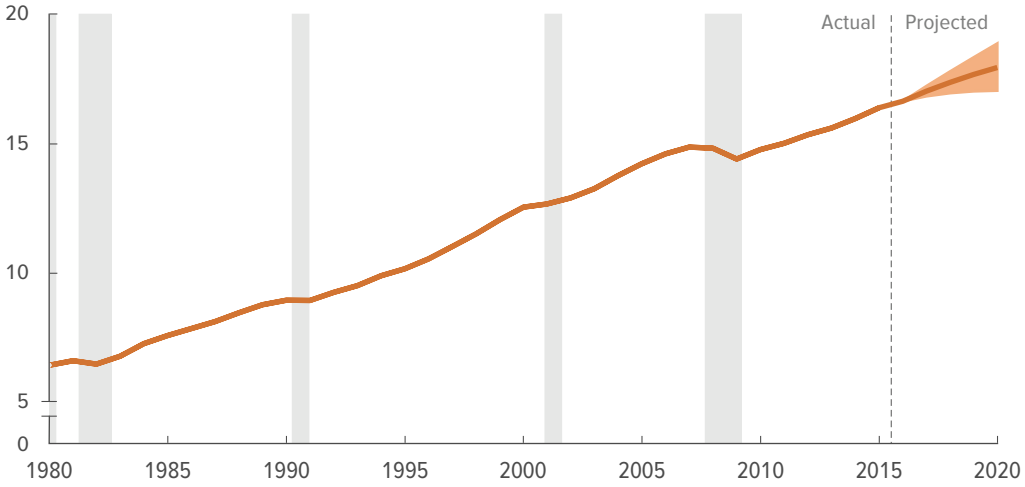
Labor income is the sum of employees' compensation and CBO's estimate of proprietors' income that is attributable to labor. Gross domestic income is all income earned in the production of gross domestic product. For further discussion of labor's share of gross domestic income, see Congressional Budget Office, *How CBO Projects Income* (July 2013), www.cbo.gov/publication/44433.

Data are calendar year averages.

Figure 2-11. Return to Reference

The Uncertainty of CBO's Projection of Real GDP

Trillions of 2009 Dollars



In CBO's baseline projections, real GDP grows at an average annual rate of 1.9 percent over the 2017–2020 period—but there is a roughly two-thirds chance that the growth will be between 0.5 percent and 3.3 percent.

Sources: Congressional Budget Office; Bureau of Economic Analysis.

The shaded area around CBO's baseline projection of real GDP (that is, nominal GDP adjusted to remove the effects of inflation) is one way of illustrating the uncertainty of that projection. The area is based on the errors in CBO's one-year through four-year projections from 1976 through 2015 of the average annual growth rate of real GDP.

Data are calendar year averages.

GDP = gross domestic product.

Table 2-4. Return to Reference

Comparison of CBO's Current and Previous Economic Projections for Calendar Years 2016 to 2026

				Annual Average		
	2016[a]	2017	2018	2016-2020	2021-2026	Total, 2016-2026
	Percentage Change From Fourth Quarter to Fourth Quarter					
Real GDP[b]						
January 2017	1.8	2.3	1.9	1.8	1.9	1.9
August 2016	2.0	2.4	2.1	1.9	2.0	2.0
Nominal GDP						
January 2017	3.5	4.1	3.8	3.7	4.0	3.8
August 2016	3.5	4.3	3.9	3.8	4.0	3.9
PCE Price Index						
January 2017	1.5	1.9	2.0	1.9	2.0	1.9
August 2016	1.5	2.0	2.0	1.9	2.0	1.9
Core PCE Price Index[c]						
January 2017	1.8	1.9	2.0	1.9	2.0	2.0
August 2016	1.8	1.9	2.0	1.9	2.0	2.0
Consumer Price Index[d]						
January 2017	1.8 [e]	2.3	2.3	2.2	2.4	2.3
August 2016	1.8	2.3	2.3	2.2	2.4	2.3
Core Consumer Price Index[c]						
January 2017	2.2 [e]	2.2	2.3	2.3	2.3	2.3
August 2016	2.3	2.2	2.3	2.3	2.3	2.3
GDP Price Index						
January 2017	1.6	1.8	1.9	1.8	2.0	1.9
August 2016	1.5	1.8	1.8	1.8	2.0	1.9
Employment Cost Index[f]						
January 2017	2.5	3.0	3.2	3.0	3.1	3.1
August 2016	2.8	3.1	3.3	3.1	3.1	3.1
Real Potential GDP						
January 2017	1.6	1.6	1.7	1.7	1.9	1.8
August 2016	1.5	1.6	1.7	1.7	2.0	1.8

Continued

Table 2-4. Continued

Comparison of CBO's Current and Previous Economic Projections for Calendar Years 2016 to 2026

				Annual Average		
	2016[a]	2017	2018	2016-2020	2021-2026	Total, 2016-2026
				Annual Average		
Unemployment Rate (Percent)						
January 2017	4.9 [e]	4.6	4.4	4.7	4.9	4.8
August 2016	4.8	4.5	4.6	4.7	4.9	4.8
Interest Rates (Percent)						
Three-month Treasury bills						
January 2017	0.3 [e]	0.7	1.1	1.2	2.8	2.1
August 2016	0.3	0.7	1.4	1.5	2.8	2.2
Ten-year Treasury notes						
January 2017	1.8 [e]	2.3	2.5	2.5	3.5	3.1
August 2016	1.8	2.3	2.8	2.7	3.6	3.2
Tax Bases (Percentage of GDP)						
Wages and salaries						
January 2017	44.1	44.2	44.3	44.3	44.3	44.3
August 2016	44.3	44.4	44.4	44.3	44.3	44.3
Domestic economic profits						
January 2017	9.1	8.9	8.4	8.5	7.5	7.9
August 2016	8.7	8.4	8.2	8.2	7.3	7.7

Sources: Congressional Budget Office; Bureau of Labor Statistics; Federal Reserve.

GDP = gross domestic product; PCE = personal consumption expenditures.

a. Values for 2016 do not reflect the values for GDP and related series released by the Bureau of Economic Analysis since early December 2016.

b. Nominal GDP adjusted to remove the effects of inflation.

c. Excludes prices for food and energy.

d. The consumer price index for all urban consumers.

e. Actual value for 2016.

f. The employment cost index for wages and salaries of workers in private industries.

Figure 2-12. Return to Reference

Comparison of CBO's Economic Projections With Those From the *Blue Chip* Survey

CBO's projections are generally within the middle two-thirds of the range of forecasts from the *Blue Chip* survey.

Sources: Congressional Budget Office; Wolters Kluwer, *Blue Chip Economic Indicators* (January 10, 2017).

The full range of forecasts from the *Blue Chip* is based on the highest and lowest of the roughly 50 forecasts. The middle two-thirds of that range omits the top one-sixth of the forecasts and the bottom one-sixth.

Real GDP is the output of the economy adjusted to remove the effects of inflation. Consumer price inflation is calculated with the consumer price index for all urban consumers. Real GDP growth and inflation rates are measured from the average of one calendar year to the next.

The unemployment rate is a measure of the number of jobless people who are available for work and are actively seeking jobs, expressed as a percentage of the labor force. The unemployment rate and interest rates are calendar year averages.

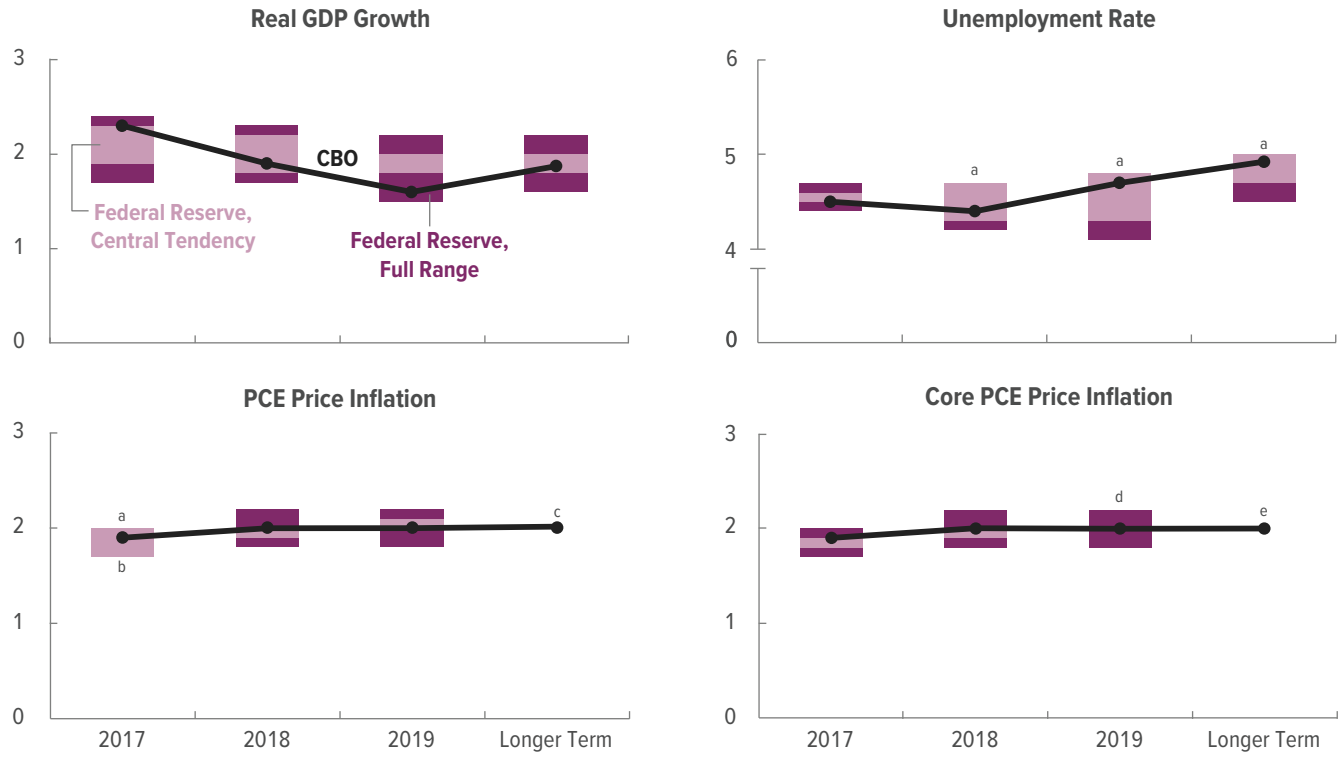
GDP = gross domestic product.

Figure 2-13. Return to Reference

Comparison of CBO's Economic Projections With Those by Federal Reserve Officials

CBO's projections are generally within the central tendency—roughly speaking, the middle two-thirds—of the range of forecasts by Federal Reserve officials.

Percent



Sources: Congressional Budget Office; Board of Governors of the Federal Reserve System, "Economic Projections of Federal Reserve Board Members and Federal Reserve Bank Presidents Under Their Individual Assessments of Projected Appropriate Monetary Policy, December 2016" (December 14, 2016), http://go.usa.gov/x9Y5T (PDF, 110 KB).

The full range of forecasts from the Federal Reserve is based on the highest and lowest of the 17 projections by the Board of Governors and the president of each Federal Reserve Bank. The central tendency is that range without the 3 highest and 3 lowest projections—roughly speaking, the middle two-thirds of the range.

For CBO, longer-term projections are values for 2027. For the Federal Reserve, longer-term projections are described as the value at which each variable would settle under appropriate monetary policy and in the absence of further shocks to the economy.

Real GDP is the output of the economy adjusted to remove the effects of inflation.

The unemployment rate is a measure of the number of jobless people who are available for work and are actively seeking jobs, expressed as a percentage of the labor force.

The core PCE price index excludes prices for food and energy.

Real GDP growth and inflation rates are measured from the fourth quarter of one calendar year to the fourth quarter of the next. The unemployment rate is a fourth-quarter value.

GDP = gross domestic product; PCE = personal consumption expenditures.

a. The upper ends of the full range and central tendency are equal.

b. The lower ends of the full range and central tendency are equal.

c. For PCE price inflation in the longer term, the range and central tendency equal 2 percent.

d. The central tendency equals 2 percent.

e. The Federal Reserve does not indicate a range or central tendency for core PCE price inflation in the longer term.

Table A-1. Return to Reference 1, 2

Changes in CBO's Baseline Projections of the Deficit Since August 2016

Billions of Dollars

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	Total 2017-2021	Total 2017-2026
Deficit in CBO's August 2016 Baseline	-594	-520	-625	-714	-806	-954	-988	-1,000	-1,128	-1,243	-3,258	-8,571
Legislative Changes												
Changes in Revenues	*	*	*	*	*	*	*	*	*	*	*	1
Changes in Outlays												
Mandatory outlays	-1	-2	-2	-1	1	1	*	-1	-1	*	-5	-6
Discretionary outlays	9	11	17	11	12	11	11	12	12	12	59	117
Debt service	*	*	*	1	1	2	2	3	3	4	3	16
Total Change in Outlays	8	9	16	11	13	14	14	14	14	15	57	127
Increase (-) in the Deficit From Legislative Changes	**-8**	**-9**	**-16**	**-11**	**-13**	**-13**	**-13**	**-13**	**-14**	**-15**	**-57**	**-127**
Economic Changes												
Changes in Revenues												
Individual income taxes	-4	-12	-9	-2	*	*	-2	-4	-6	-8	-27	-47
Corporate income taxes	16	14	8	9	11	10	8	6	3	2	59	87
Payroll taxes	-1	-1	1	-1	-3	-3	-3	-4	-5	-6	-5	-27
Other	-1	-2	*	-1	-3	-4	-5	-5	-5	-4	-6	-30
Total Change in Revenues	10	*	1	5	4	2	-2	-7	-12	-17	20	-16
Changes in Outlays												
Mandatory outlays												
Medicare	*	*	1	2	5	7	10	12	15	19	7	70
Earned income and child tax credits	1	1	2	3	3	4	4	5	5	6	10	34
Supplemental Nutrition Assistance Program	*	-2	-2	-2	-2	-2	-2	-2	-2	-2	-9	-20
Social Security	-1	*	*	*	*	-1	-1	-2	-2	-3	-2	-12
Other	1	-2	-5	-5	-2	-2	-1	-1	-1	-2	-12	-19
Subtotal, mandatory	1	-4	-5	-2	3	6	9	12	15	18	-7	53
Discretionary outlays	0	1	1	1	*	1	1	1	1	1	2	5
Net interest outlays												
Effect of rates and inflation	5	*	-12	-18	-13	-8	-5	-3	-1	1	-37	-53
Debt service	*	*	*	-1	-1	-2	-2	-2	-1	*	-3	-9
Subtotal, net interest	5	*	-12	-19	-15	-10	-7	-5	-2	1	-40	-63
Total Change in Outlays	6	-3	-16	-20	-11	-3	3	7	13	20	-45	-4
Increase (-) or Decrease in the Deficit From Economic Changes	**4**	**3**	**17**	**25**	**16**	**5**	**-5**	**-14**	**-26**	**-36**	**65**	**-12**

Continued

Table A-1. Continued

Changes in CBO's Baseline Projections of the Deficit Since August 2016

Billions of Dollars

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	Total 2017-2021	Total 2017-2026
Technical Changes												
Changes in Revenues												
Individual income taxes	-11	12	4	-9	-17	-24	-26	-31	-35	-39	-22	-177
Corporate income taxes	-17	-11	-8	-8	-8	-7	-7	-6	-6	-7	-52	-85
Payroll taxes	2	3	1	-1	*	3	6	7	8	10	5	39
Other	*	*	-10	-9	-8	-11	-10	-10	-10	-9	-28	-77
Total Change in Revenues	-27	4	-13	-27	-33	-39	-38	-41	-43	-45	-96	-300
Changes in Outlays												
Mandatory outlays												
Social Security	-3	-4	-5	-7	-8	-9	-11	-12	-14	-15	-26	-87
Medicare	-1	-2	-5	-8	-8	-10	-11	-9	-16	-13	-24	-82
Medicaid	-4	-6	-8	-7	-7	-8	-7	-7	-5	-4	-33	-63
Earned income and child tax credits	-1	-2	-3	-3	-4	-5	-6	-7	-8	-9	-12	-47
Deposit insurance	-3	*	4	6	5	4	5	5	6	6	12	38
Pension Benefit Guaranty Corporation	-2	-2	-3	-3	-3	-2	-2	-2	-3	-2	-13	-24
Fannie Mae and Freddie Mac	-17	*	*	0	*	1	1	1	1	1	-18	-13
Other	-23	-7	-7	-11	-4	-2	-2	-2	*	-1	-51	-58
Subtotal, mandatory	-55	-23	-27	-32	-29	-31	-33	-33	-38	-37	-166	-337
Discretionary outlays	-6	-6	-2	-3	-3	-3	-3	-3	-2	-2	-21	-34
Net interest outlays												
Debt service	*	*	*	*	*	1	1	2	2	2	*	9
Other	-6	-6	-7	-7	-8	-8	-9	-8	-7	-6	-33	-71
Subtotal, net interest	-6	-6	-7	-7	-8	-7	-7	-6	-5	-4	-33	-62
Total Change in Outlays	-66	-35	-36	-43	-40	-41	-43	-41	-45	-42	-220	-433
Increase (-) or Decrease in the Deficit From Technical Changes	**40**	**39**	**23**	**16**	**6**	**3**	**6**	**1**	**3**	**-3**	**124**	**133**
All Changes												
Total Increase (-) or Decrease in the Deficit	**35**	**32**	**24**	**30**	**9**	**-6**	**-13**	**-27**	**-37**	**-54**	**131**	**-6**
Deficit in CBO's January 2017 Baseline	-559	-487	-601	-684	-797	-959	-1,000	-1,027	-1,165	-1,297	-3,127	-8,577
Memorandum:												
Changes in Revenues	-17	4	-12	-22	-29	-36	-40	-47	-55	-61	-76	-315
Changes in Outlays	-52	-28	-36	-52	-38	-31	-27	-20	-18	-7	-207	-310

Source: Congressional Budget Office.

* = between –$500 million and $500 million.

Table B-1.

Return to Reference 1,

How Selected Economic Changes Might Affect CBO's Baseline Budget Projections

Billions of Dollars

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	Total 2018-2022	Total 2018-2027
Productivity Growth Is 0.1 Percentage Point Lower per Year													
Changes in Revenues	-2	-6	-10	-15	-20	-26	-32	-39	-47	-55	-63	-78	-315
Changes in Outlays													
Mandatory outlays	*	*	*	*	-1	-1	-1	-1	-1	-1	-1	-2	-5
Net interest													
Lower interest rates	*	-1	-1	-2	-4	-5	-7	-8	-10	-12	-14	-13	-63
Debt service	*	*	*	*	1	2	2	3	5	6	8	3	27
Subtotal, net interest	*	-1	-1	-2	-3	-3	-4	-5	-5	-6	-6	-10	-36
Total Change in Outlays	*	-1	-1	-2	-3	-4	-5	-5	-6	-6	-7	-12	-42
Increase (-) in the Deficit	**-2**	**-5**	**-9**	**-13**	**-17**	**-22**	**-28**	**-34**	**-41**	**-48**	**-56**	**-67**	**-273**
Interest Rates Are 1 Percentage Point Higher per Year													
Changes in Revenues	-19	-21	-16	-10	-7	-3	1	4	6	9	11	-58	-27
Changes in Outlays													
Higher interest rates	17	48	70	90	109	129	146	163	177	193	210	446	1,335
Debt service	1	2	4	8	13	19	26	34	43	52	63	46	264
Total Change in Outlays	17	49	74	98	122	148	172	197	220	246	272	492	1,599
Increase (-) in the Deficit	**-36**	**-71**	**-90**	**-108**	**-130**	**-151**	**-171**	**-193**	**-214**	**-237**	**-262**	**-550**	**-1,626**
Inflation Is 1 Percentage Point Higher per Year													
Changes in Revenues	1	33	75	118	163	212	265	325	387	455	528	601	2,561
Changes in Outlays													
Mandatory outlays	3	16	40	68	99	136	172	210	260	313	372	359	1,687
Discretionary outlays[a†]	0	1	2	3	4	12	23	36	50	65	82	22	278
Net interest													
Higher interest rates[b]	26	64	90	114	137	161	183	204	223	245	267	567	1,688
Debt service[†]	*	1	3	5	9	13	18	24	31	40	49	32	194
Subtotal, net interest[†]	26	66	93	119	146	174	201	228	255	284	316	599	1,882
Total Change in Outlays[†]	29	83	135	190	249	322	396	474	565	663	769	980	3,847
Increase (-) in the Deficit[†]	**-28**	**-50**	**-60**	**-72**	**-86**	**-110**	**-131**	**-150**	**-178**	**-208**	**-241**	**-378**	**-1,286**
Memorandum:													
Deficit in CBO's January 2017 Baseline	-559	-487	-601	-684	-797	-959	-1,000	-1,027	-1,165	-1,297	-1,408	-3,528	-9,426

Source: Congressional Budget Office.

* = between –$500 million and $500 million.

a. Most discretionary spending through 2021 is governed by caps established by the Budget Control Act of 2011. In CBO's baseline, that spending would not be affected by changes in projected inflation.

b. The change in outlays attributable to higher interest rates in this scenario differs from the estimate in the rule of thumb for interest rates because the principal of inflation-protected securities issued by the Treasury grows with inflation.

[†Values corrected on March 15, 2017]

Table C-1. Return to Reference

CBO's Economic Projections, by Calendar Year

	Estimated, 2016[a]	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
						Percentage Change From Year to Year						
Gross Domestic Product												
Real[b]	1.6	2.3	2.0	1.7	1.5	1.8	1.9	1.9	1.9	1.9	1.9	1.9
Nominal	2.9	4.2	3.9	3.6	3.5	3.8	3.9	4.0	4.0	4.0	4.0	4.0
Inflation												
PCE price index	1.1	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Core PCE price index[c]	1.7	1.8	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Consumer price index[d]	1.3 [e]	2.4	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Core consumer price index[c]	2.2 [e]	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4
GDP price index	1.3	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Employment Cost Index[f]	2.4	2.7	3.1	3.3	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.1
						Calendar Year Average						
Unemployment Rate (Percent)	4.9 [e]	4.6	4.4	4.5	4.9	5.0	5.0	5.0	4.9	4.9	4.9	4.9
Payroll Employment (Monthly change, in thousands)[g]	188 [e]	138	94	45	29	60	64	64	64	64	64	65
Interest Rates (Percent)												
Three-month Treasury bills	0.3 [e]	0.7	1.1	1.7	2.3	2.7	2.8	2.8	2.8	2.8	2.8	2.8
Ten-year Treasury notes	1.8 [e]	2.3	2.5	2.8	3.1	3.4	3.5	3.6	3.6	3.6	3.6	3.6
Tax Bases (Percentage of GDP)												
Wages and salaries	44.1	44.2	44.3	44.4	44.4	44.4	44.4	44.4	44.3	44.3	44.2	44.2
Domestic economic profits	9.1	8.9	8.4	8.1	7.9	7.7	7.5	7.4	7.4	7.5	7.5	7.6
Tax Bases (Billions of dollars)												
Wages and salaries	8,190	8,559	8,913	9,249	9,578	9,939	10,326	10,726	11,142	11,570	12,015	12,476
Domestic economic profits	1,682	1,719	1,699	1,694	1,702	1,718	1,746	1,801	1,871	1,950	2,040	2,136
Nominal GDP (Billions of dollars)	18,563	19,352	20,114	20,838	21,565	22,381	23,261	24,182	25,143	26,142	27,181	28,258

Source: Congressional Budget Office.

GDP = gross domestic product; PCE = personal consumption expenditures.

a. Values for 2016 do not reflect the values for GDP and related series released by the Bureau of Economic Analysis since early December 2016.

b. Nominal GDP adjusted to remove the effects of inflation.

c. Excludes prices for food and energy.

d. The consumer price index for all urban consumers.

e. Actual value for 2016.

f. The employment cost index for wages and salaries of workers in private industries.

g. Calculated as the monthly average of the fourth-quarter-to-fourth-quarter change in payroll employment.

Table C-2. Return to Reference

CBO's Economic Projections, by Fiscal Year

	Actual, 2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
						Percentage Change From Year to Year						
Gross Domestic Product												
Real[a]	1.6	2.2	2.1	1.8	1.5	1.7	1.9	1.9	1.9	1.9	1.9	1.9
Nominal	2.8	4.1	4.0	3.7	3.5	3.7	3.9	4.0	4.0	4.0	4.0	4.0
Inflation												
PCE price index	0.8	1.8	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Core PCE price index[b]	1.6	1.8	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Consumer price index[c]	0.9	2.2	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Core consumer price index[b]	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4
GDP price index	1.2	1.8	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.1
Employment Cost Index[d]	2.3	2.6	3.1	3.3	3.3	3.1	3.1	3.1	3.1	3.1	3.1	3.1
						Fiscal Year Average						
Unemployment Rate (Percent)	4.9	4.7	4.5	4.5	4.8	5.0	5.0	5.0	4.9	4.9	4.9	4.9
Payroll Employment (Monthly change, in thousands)[e]	205	155	101	59	25	55	64	64	64	64	64	65
Interest Rates (Percent)												
Three-month Treasury bills	0.2	0.6	1.0	1.5	2.1	2.6	2.8	2.8	2.8	2.8	2.8	2.8
Ten-year Treasury notes	1.9	2.2	2.5	2.7	3.0	3.4	3.5	3.6	3.6	3.6	3.6	3.6
Tax Bases (Percentage of GDP)												
Wages and salaries	44.1	44.2	44.3	44.4	44.4	44.4	44.4	44.4	44.3	44.3	44.2	44.2
Domestic economic profits	9.0	9.0	8.5	8.2	8.0	7.7	7.5	7.5	7.4	7.4	7.5	7.5
Tax Bases (Billions of dollars)												
Wages and salaries	8,108	8,474	8,826	9,169	9,492	9,846	10,228	10,625	11,036	11,462	11,902	12,360
Domestic economic profits	1,647	1,721	1,701	1,692	1,702	1,712	1,736	1,785	1,853	1,928	2,017	2,111
Nominal GDP (Billions of dollars)	18,403	19,157	19,926	20,661	21,378	22,168	23,037	23,948	24,899	25,889	26,917	27,985

Source: Congressional Budget Office.

GDP = gross domestic product; PCE = personal consumption expenditures.

a. Nominal GDP adjusted to remove the effects of inflation.

b. Excludes prices for food and energy.

c. The consumer price index for all urban consumers.

d. The employment cost index for wages and salaries of workers in private industries.

e. Calculated as the monthly average of the fourth-quarter-to-fourth-quarter change in payroll employment.