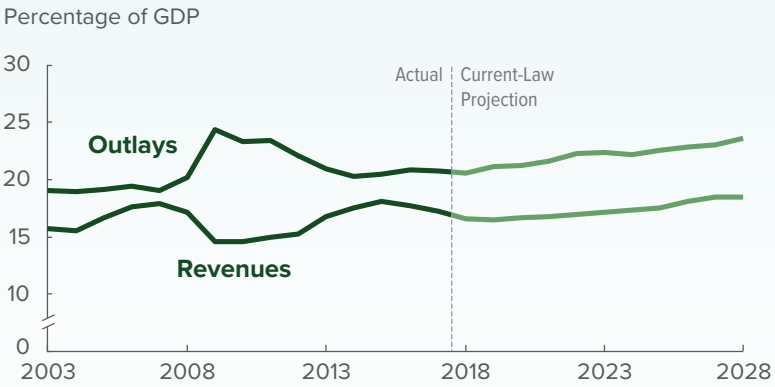
CONGRESS OF THE UNITED STATES
CONGRESSIONAL BUDGET OFFICE

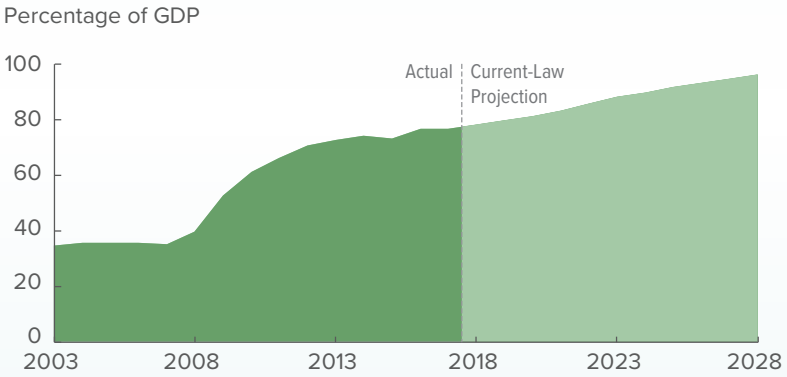
CBO

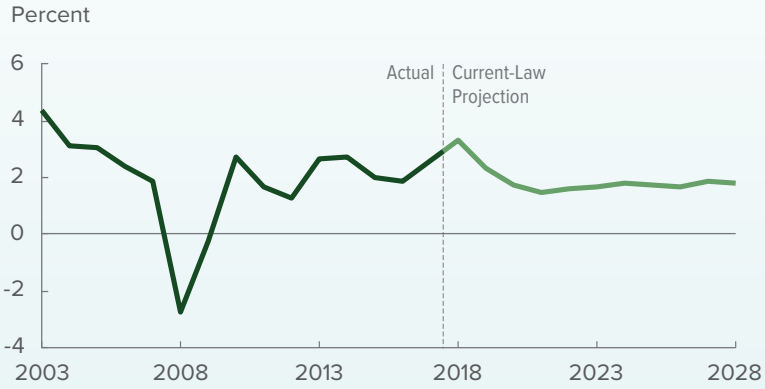
The Budget and Economic Outlook: 2018 to 2028



Over the next decade, the gap between **outlays** and **revenues** is projected to be persistently large.

That imbalance would cause **federal debt held by the public** to rise to nearly 100 percent of GDP.





The **growth of real GDP** is projected to be relatively strong this year and next and then to moderate.

APRIL 2018

Notes

This report is usually published in January. This year, it was published in April to give the Congressional Budget Office time to analyze and incorporate some of the effects of recent major legislation, particularly Public Law 115-97 (originally called the Tax Cuts and Jobs Act and called the 2017 tax act in this report), which was enacted on December 22, 2017; the Bipartisan Budget Act of 2018 (P.L. 115-123), which was enacted on February 9, 2018; and the Consolidated Appropriations Act, 2018 (P.L. 115-141), which was enacted on March 23, 2018. Unless the report notes otherwise, the projections in it do not reflect economic developments, administrative actions, or regulatory changes that occurred after mid-February 2018.

Because CBO had little time to incorporate the effects of recent legislation into its projections, it was not feasible to perform the analysis necessary to produce the 30-year budget projections mandated by section 3108 of the concurrent resolution on the budget for fiscal year 2016 (S. Con. Res. 11). CBO will release those projections in a few months.

The report includes preliminary updates to projections of subsidies for employment-based health insurance and for insurance purchased through the marketplaces established under the Affordable Care Act. CBO and the staff of the Joint Committee on Taxation expect to complete final estimates later this spring, when CBO will publish a report about subsidies for health insurance coverage for people under age 65.

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.

As referred to in this report, the Affordable Care Act comprises the Patient Protection and Affordable Care Act (P.L. 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/53651), as are a glossary of common budgetary and economic terms (www.cbo.gov/publication/42904), a description of how CBO prepares baseline budget projections (www.cbo.gov/publication/53532), and previous editions of the report (https://go.usa.gov/xQrzS).

Contents

Summary

In the Congressional Budget Office's baseline projections, which incorporate the assumption that current laws governing taxes and spending generally remain unchanged, the federal budget deficit grows substantially over the next few years. Later on, between 2023 and 2028, it stabilizes in relation to the size of the economy, though at a high level by historical standards.

As a result, federal debt is projected to be on a steadily rising trajectory throughout the coming decade. Debt held by the public, which has doubled in the past 10 years as a percentage of gross domestic product (GDP), approaches 100 percent of GDP by 2028 in CBO's projections. That amount is far greater than the debt in any year since just after World War II. Moreover, if lawmakers changed current law to maintain certain current policies—preventing a significant increase in individual income taxes in 2026 and drops in funding for defense and nondefense discretionary programs in 2020, for example—the result would be even larger increases in debt.

Projected deficits over the 2018–2027 period have increased markedly since June 2017, when CBO issued its previous projections. The increase stems primarily from tax and spending legislation enacted since then—especially Public Law 115-97 (originally called the Tax Cuts and Jobs Act and called the 2017 tax act in this report), the Bipartisan Budget Act of 2018 (P.L. 115-123), and the Consolidated Appropriations Act, 2018 (P.L. 115-141). The legislation has significantly reduced revenues and increased outlays anticipated under current law.

In CBO's economic projections, which underlie its budget projections, output grows at a faster pace this year than in 2017, as the recent changes in fiscal policy add to existing momentum in spending on goods and services. Growth in actual GDP outpaces growth in potential (that is, maximum sustainable) GDP both this year and next, pushing the unemployment rate down. After 2019, economic growth is projected to slow, eventually matching CBO's estimate of the economy's maximum sustainable rate of growth.

Real GDP (that is, GDP adjusted to remove the effects of inflation) and real potential GDP are now projected to be greater throughout the coming decade than projected last June, in part because of the significant recent changes in fiscal policy. Also, interest rates are projected to be higher and the unemployment rate lower in the next few years than CBO projected previously.

Even if federal laws did generally remain in place, budgetary and economic outcomes would be difficult to predict and thus uncertain. CBO's projections, especially its economic projections, are even more uncertain than usual this year, because they incorporate estimates of the economic effects of the recent changes in fiscal policy—and those estimates are themselves uncertain. CBO aims to formulate projections that fall in the middle of the distribution of possible outcomes.

Economic Growth Is Projected to Be Relatively Strong This Year and Next and Then to Moderate

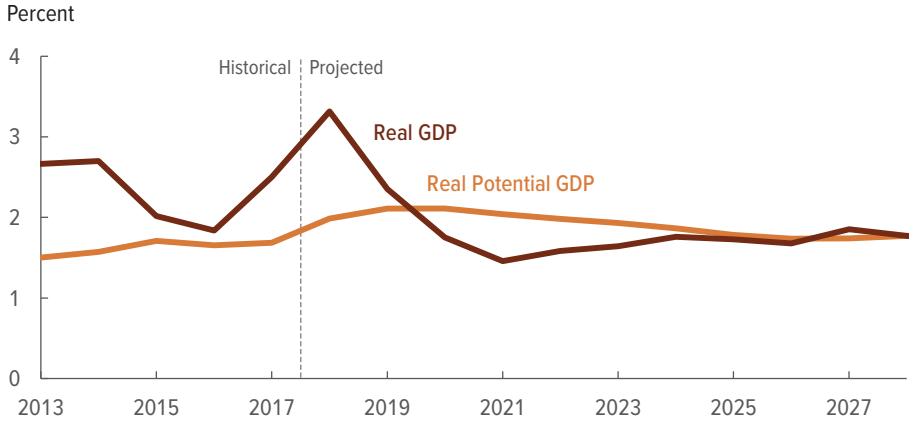
In CBO's projections, the growth of real GDP exceeds the growth of real potential output over the next two years, putting upward pressure on inflation and interest rates (see Summary Figure 1). But during the 2020–2026 period, a number of factors dampen economic growth: higher interest rates and prices, slower growth in federal outlays, and the expiration of reductions in personal income tax rates. After 2026, economic growth is projected to rise slightly, matching the growth rate of potential output by 2028.

Economic Growth

Between 2018 and 2028, actual and potential real output alike are projected to expand at an average annual rate of 1.9 percent. In CBO's forecast, the growth of potential GDP is the key determinant of the growth of actual GDP through 2028, because actual output is very

Summary Figure 1.

Growth of Real GDP and Real Potential GDP



In CBO's projections, **real GDP growth** and **real potential GDP growth** average 1.9 percent over the 2018–2028 period, even though real GDP grows more rapidly at first.

Source: Congressional Budget Office.

Real values are nominal values that have been adjusted to remove the effects of inflation. Potential GDP is CBO's estimate of the maximum sustainable output of the economy. The growth of real GDP and of real potential GDP is measured from the fourth quarter of one calendar year to the fourth quarter of the next.

GDP = gross domestic product.

near its potential level now and is projected to be near its potential level at the end of the period.

Potential output is projected to grow more quickly than it has since the start of the 2007–2009 recession, as the growth of productivity increases to nearly its average over the past 25 years and as the recent changes in fiscal policy boost incentives to work, save, and invest. Nonetheless, potential output is projected to grow more slowly than it did in earlier decades, held down by slower growth of the labor force (which results partly from the ongoing retirement of baby boomers).

In CBO's projections, real GDP expands by 3.3 percent this year and by 2.4 percent in 2019 (see Summary Table 1). It grew by 2.6 percent last year. Most of the growth in output in the next two years is driven by consumer spending and business investment, but federal spending also contributes a significant amount this year. After averaging 1.7 percent from 2020 through 2026, real GDP growth is projected to average 1.8 percent in the last two years of the 2018–2028 period.

Effects of Recent Legislation on the Economy

The recently enacted legislation has shaped the economic outlook in significant ways. In CBO's projections, the effects of the 2017 tax act on incentives to work, save, and invest raise real potential GDP throughout the 2018–2028 period. In addition, all three major laws mentioned above provide fiscal stimulus, raising real GDP more than potential GDP in the near term. Over the longer term, all of those effects, as well as the larger federal budget deficits resulting from the new laws, exert upward pressure on interest rates and prices.

The largest effects on GDP over the decade stem from the tax act. In CBO's projections, it boosts the level of real GDP by an average of 0.7 percent and nonfarm payroll employment by an average of 0.9 million jobs over the 2018–2028 period.* During those years, the act also raises the level of real gross national product (GNP) by an annual average of about $470 per person in 2018 dollars. (GNP differs from GDP by including the income that U.S. residents earn from abroad and excluding the income that nonresidents earn from domestic sources; it is therefore a better measure of the income available to U.S. residents.) Those projected effects grow in the earlier years of the period and become smaller in the later years.

The other two laws are estimated to increase output in the near term but dampen it over the longer term. The fiscal stimulus that they provide boosts GDP by 0.3 percent in 2018 and by 0.6 percent in 2019, in CBO's assessment. However, the larger budget deficits that would result are estimated to reduce the resources available for private investment, lowering GDP in later years.

[*Value for nonfarm employment corrected on April 17, 2018]

Summary Table 1.

CBO's Projections of Key Economic Indicators for Calendar Years 2018 to 2028

	Actual, 2017	2018	2019	2020	Annual Average 2021–2022	Annual Average 2023–2028
	Percentage Change From Fourth Quarter to Fourth Quarter					
Gross Domestic Product						
Real[a]	2.6	3.3	2.4	1.8	1.5	1.7
Nominal	4.5	5.2	4.5	3.9	3.7	3.9
Inflation						
PCE price index	1.7	1.8	2.0	2.1	2.1	2.0
Core PCE price index[b]	1.5	1.9	2.1	2.2	2.1	2.0
	Annual Average					
Unemployment Rate (Percent)	4.4	3.8	3.3	3.6	4.4	4.8
Payroll Employment (Monthly change, in thousands)[c]	181	211	182	62	25	57
Interest Rates (Percent)						
Three-month Treasury bills	0.9	1.9	2.9	3.6	3.7	2.8
Ten-year Treasury notes	2.3	3.0	3.7	4.1	4.1	3.7

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

PCE = personal consumption expenditures.

a. Real values are nominal values that have been adjusted to remove the effects of inflation.

b. Excludes prices for food and energy.

c. Calculated as the change in payroll employment from the fourth quarter of one calendar year to the fourth quarter of the next, divided by 12 (the average monthly amount).

GDP Is Projected to Be Greater Than CBO Previously Estimated

CBO's current economic projections differ from those that the agency made in June 2017 in a number of ways. The most significant is that potential and actual real GDP are projected to grow more quickly over the next few years. As a result, the levels of those measures are 1.6 percent higher than CBO previously estimated for 2027 (the last year in the previous projection period). Projected output is greater because of recently enacted legislation, data that became available after CBO's previous economic projections were completed, and improvements in the agency's analytical methods. Also, because inflation is now anticipated to be higher, the level of nominal GDP is projected to be 2.4 percent higher in 2027 than previously estimated.

Over the next decade, the unemployment rate is lower in CBO's current projections than in its previous ones—particularly during the next few years, when economic stimulus boosts demand for labor. Also, both short- and long-term interest rates are projected to be higher, on average, from 2018 to 2023—by roughly 0.7 percentage points and 0.4 percentage points, respectively—than projected in June. That faster rise in interest rates primarily reflects stronger overall demand.

Deficits Are Projected to Be Large by Historical Standards

CBO estimates that the 2018 deficit will total $804 billion, $139 billion more than the $665 billion shortfall recorded in 2017 (see Summary Table 2). Both amounts, however, are affected by shifts in the timing of some payments. Outlays in 2018—and thus the deficit—have been reduced by $44 billion because October 1, 2017 (the first day of fiscal year 2018), fell on a weekend; as a result, certain payments that were to be made on that day were instead made in September, in fiscal year 2017. If not for those shifts, the deficit projected for 2018 would be $848 billion.[1]

1. October 1 will fall on a weekend again in 2022, 2023, and 2028. The resulting shifts noticeably boost projected spending and deficits in 2022 and 2028; they reduce spending and the deficit in 2024.

Summary Table 2.

CBO's Baseline Budget Projections

	Actual, 2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total 2019–2023	Total 2019–2028
							In Billions of Dollars							
Revenues	3,316	3,338	3,490	3,678	3,827	4,012	4,228	4,444	4,663	5,002	5,299	5,520	19,234	44,162
Outlays	3,982	4,142	4,470	4,685	4,949	5,288	5,500	5,688	6,015	6,322	6,615	7,046	24,893	56,580
Deficit	-665	-804	-981	-1,008	-1,123	-1,276	-1,273	-1,244	-1,352	-1,320	-1,316	-1,526	-5,660	-12,418
Debt Held by the Public at the End of the Year	14,665	15,688	16,762	17,827	18,998	20,319	21,638	22,932	24,338	25,715	27,087	28,671	n.a.	n.a.
							As a Percentage of Gross Domestic Product							
Revenues	17.3	16.6	16.5	16.7	16.7	16.9	17.2	17.4	17.5	18.1	18.5	18.5	16.8	17.5
Outlays	20.8	20.6	21.2	21.3	21.6	22.3	22.3	22.2	22.6	22.9	23.1	23.6	21.8	22.4
Deficit	-3.5	-4.0	-4.6	-4.6	-4.9	-5.4	-5.2	-4.9	-5.1	-4.8	-4.6	-5.1	-4.9	-4.9
Debt Held by the Public at the End of the Year	76.5	78.0	79.3	80.9	83.1	85.7	87.9	89.6	91.5	93.1	94.5	96.2	n.a.	n.a.
Memorandum:														
Deficit as a Percentage of GDP, Adjusted to Exclude Timing Shifts[a]	-3.5	-4.2	-4.6	-4.6	-4.9	-5.1	-5.1	-5.1	-5.1	-4.8	-4.6	-4.8	-4.9	-4.9

Source: Congressional Budget Office.

GDP = gross domestic product; n.a. = not applicable.

a. The adjusted amounts exclude the effects of shifting payments from one fiscal year into another so that those payments are not made on a weekend.

In CBO's projections, budget deficits continue increasing after 2018, rising from 4.2 percent of GDP this year to 5.1 percent in 2022 (adjusted to exclude the shifts in timing). That percentage has been exceeded in only five years since 1946; four of those years followed the deep 2007–2009 recession. Deficits remain at 5.1 percent between 2022 and 2025 before dipping at the end of the period, primarily because some tax provisions are scheduled to expire under current law, boosting revenues. Over the 2021–2028 period, projected deficits average 4.9 percent of GDP; the only time since World War II when the average deficit has been so large over so many years was after the 2007–2009 recession.

Revenues

For the next few years, revenues hover near their 2018 level of 16.6 percent of GDP in CBO's projections. Then they rise steadily, reaching 17.5 percent of GDP by 2025. At the end of that year, many provisions of the 2017 tax act expire, causing receipts to rise sharply—to 18.1 percent of GDP in 2026 and 18.5 percent in 2027 and 2028. They have averaged 17.4 percent of GDP over the past 50 years.

Outlays

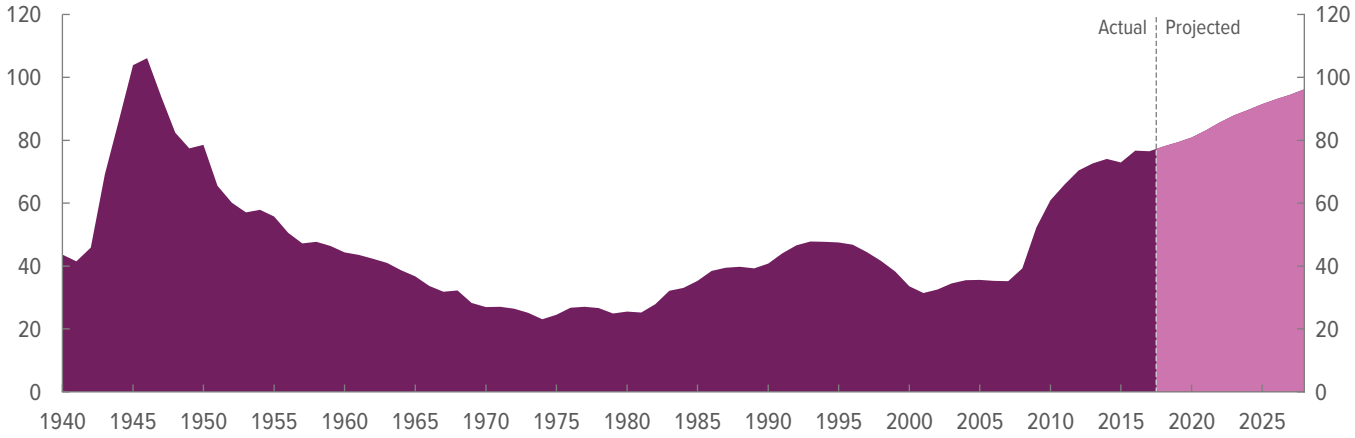
In CBO's projections, outlays for the next three years remain near 21 percent of GDP, which is higher than their average of 20.3 percent over the past 50 years. After that, outlays grow more quickly than the economy does, reaching 23.3 percent of GDP (adjusted to exclude shifts in timing) by 2028.

That increase reflects significant growth in mandatory spending—mainly because the aging of the population and rising health care costs per beneficiary are projected to increase spending for Social Security and Medicare, among other programs. It also reflects significant growth in interest costs, which are projected to grow more quickly than any other major component of the budget, the result of rising interest rates and mounting debt. By 2028, net outlays for interest are projected to be roughly triple what they are this year in nominal terms and

Summary Figure 2.

Federal Debt Held by the Public

Percentage of Gross Domestic Product



Source: Congressional Budget Office.

roughly double when measured as a percentage of GDP. In contrast, discretionary spending in the projections declines in relation to the size of the economy.

Deficits Are Projected to Be Larger Than CBO Previously Estimated

The deficit that CBO now estimates for 2018 is $242 billion larger than the one that it projected for that year in June 2017. Accounting for most of that difference is a $194 billion reduction in projected revenues, mainly because the 2017 tax act is expected to reduce collections of individual and corporate income taxes.

For the 2018–2027 period, CBO now projects a cumulative deficit that is $1.6 trillion larger than the $10.1 trillion that the agency anticipated in June. Projected revenues are lower by $1.0 trillion, and projected outlays are higher by $0.5 trillion.

Laws enacted since June 2017—above all, the three mentioned above—are estimated to make deficits $2.7 trillion larger than previously projected between 2018 and 2027, an effect that results from reducing revenues by $1.7 trillion (or 4 percent) and increasing outlays by $1.0 trillion (or 2 percent).[2] The reduction in projected revenues stems primarily from the lower individual income tax rates that the tax act has put in place for much of the period. Projected outlays are higher mostly because the other two pieces of legislation will increase discretionary spending. Those revenue reductions and spending increases would result in larger deficits and thus in higher interest costs than CBO previously projected.

In contrast, revisions to CBO's economic projections caused the agency to reduce its estimate of the cumulative deficit by $1.0 trillion. Expectations of faster growth in the economy and in wages and corporate profits led to an increase of $1.1 trillion in projected tax receipts from all sources. Other changes had relatively small net effects on the projections.

Debt Held by the Public Is Projected to Approach 100 Percent of GDP

As deficits accumulate in CBO's projections, debt held by the public rises from 78 percent of GDP (or $16 trillion) at the end of 2018 to 96 percent of GDP (or $29 trillion) by 2028. That percentage would be the largest since 1946 and well more than twice the average over the past five decades (see Summary Figure 2).

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

2. Those estimates generally reflect the budgetary effects reported in CBO's cost estimates at the time the new laws were enacted and do not include the budgetary effects of information that has become available in recent months about the 2017 tax act. Those adjustments are classified as technical updates.

- Federal spending on interest payments on that debt would increase substantially, especially because interest rates are projected to rise 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.

Deficits and Debt Would Be Larger If Some Current Policies Were Continued

CBO also analyzed an alternative scenario in which current law was altered to maintain major policies that are now in place and to provide more typical amounts of emergency funding than the sums provided for 2018. Specifically, CBO analyzed what would happen if:

- More than 50 expiring revenue provisions were extended, including the individual income tax provisions of the 2017 tax act;

- Delays in implementing certain taxes established by the Affordable Care Act were extended or made permanent;

- Scheduled limits on discretionary appropriations did not take effect, and most appropriations instead grew each year from their 2018 amount at the rate of inflation; and

- Lawmakers provided inflation-adjusted emergency appropriations for nondefense discretionary programs equal to the average amount of such funding from 2012 through 2017—about $11 billion—each year between 2019 and 2028, rather than the roughly $100 billion a year projected in the baseline.

In that scenario, far larger deficits and much greater debt would result than in CBO's baseline projections for the 2019–2028 period. Deficits would be larger by an average of a full percentage point of GDP, rising by a total of $2.6 trillion to yield a cumulative deficit of nearly $15 trillion over that period. And debt held by the public would reach about 105 percent of GDP by the end of 2028, an amount that has been exceeded only once in the nation's history. Moreover, the pressures contributing to that rise would accelerate and push debt up even more sharply in subsequent decades.

CHAPTER

1

The Economic Outlook

Overview

In the Congressional Budget Office's projections for 2018 through 2028, the economy follows a marked cyclical path: Economic growth rises notably this year, slows during the next few years, and then rises to match the growth of potential output—the maximum sustainable output of the economy—in the last years of the projection period. Over the next few years, the demand for output exceeds the sustainable supply of output (that is, there is excess demand in the economy). That excess demand pushes up inflation and interest rates and exerts downward pressure on the unemployment rate, which was already below CBO's estimate of the natural rate of unemployment (the rate arising from all sources other than fluctuations in the economy) at the end of last year. Higher interest rates slow the growth of output, and the excess demand begins to diminish after 2019. By 2022, the excess demand disappears, easing the pressure on inflation, interest rates, and the labor market.

The cyclical path in CBO's economic forecast reflects recent economic developments; the changes to federal tax policies made by Public Law 115-97, referred to here as the 2017 tax act; recent legislation that increased projected discretionary spending; and the assumption that fiscal policy will generally unfold as scheduled under current law. At the end of last year, the growth rate of the U.S. economy was trending upward, and the slack in the economy—that is, underused productive resources, such as unemployed workers—was almost gone. The recent tax cuts will, in CBO's view, increase the supply of labor and capital in the economy, thereby raising potential output throughout the projection period. Nevertheless, because the tax cuts boost after-tax incomes, they, along with the increases in federal spending, are expected to add excess demand in the next few years. Near the end of the projection period, the scheduled expiration of the reduction in tax rates on personal income temporarily and slightly reduces demand in the economy.

CBO's current projections suggest a stronger economic outlook than those that the agency published in June 2017; in particular, the amount of output is higher throughout the projection period. CBO's current outlook also is stronger than the consensus outlook of about 50 private-sector forecasters. Although all forecasts involve some degree of uncertainty, CBO's current projections are particularly uncertain because they incorporate estimates of the likely economic impact of the recent changes in fiscal policy that, although based on past experience, are themselves uncertain.

The Overall Pattern of CBO's Economic Projections

In CBO's current projections, both real gross domestic product (or GDP, the total output of goods and services adjusted to remove the effects of inflation) and real potential GDP grow at an average annual rate of 1.9 percent over the 2018–2028 period.[1] Projected growth of real GDP over the next two years is faster than it is during the rest of the projection period (see Figure 1-1). The growth of real potential GDP also is faster over the next few years than it is in later years.

Potential Output. In CBO's analysis, potential GDP represents the agency's estimate of the trend around which actual GDP fluctuates over business cycles.[2] Given the state of the economy, the average growth of real potential GDP is the key determinant of CBO's projection of the average growth of real GDP over the next 11 years.

In CBO's forecast, real potential GDP grows faster, on average, over the projection period than it has over the past decade. That occurs mainly because the growth in productivity per unit of combined labor and capital services is projected to rise to nearly its average over the

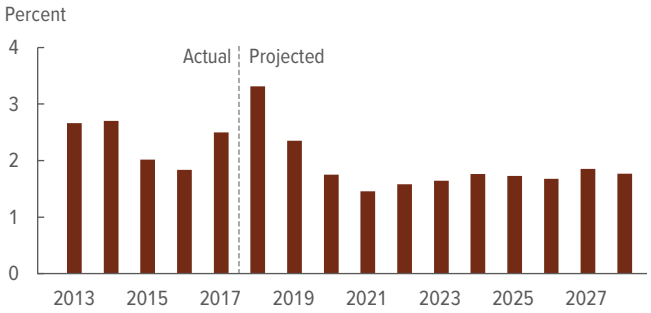
1. For an explanation of how CBO constructs its projections, see Robert W. Arnold, *How CBO Produces Its 10-Year Economic Forecast*, Working Paper 2018-02 (Congressional Budget Office, February 2018), www.cbo.gov/publication/53537.

2. See Robert Shackleton, *Estimating and Projecting Potential Output Using CBO's Forecasting Growth Model*, Working Paper 2018-03 (Congressional Budget Office, February 2018), www.cbo.gov/publication/53558.

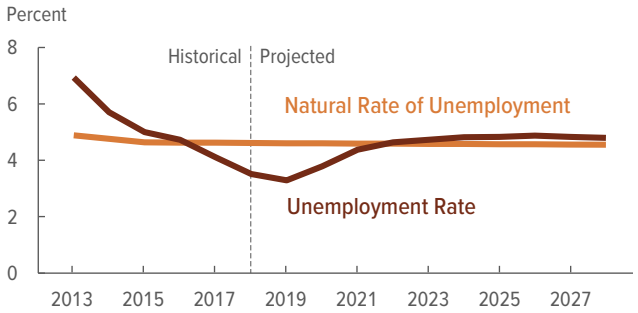
Figure 1-1.

CBO's Economic Forecast at a Glance

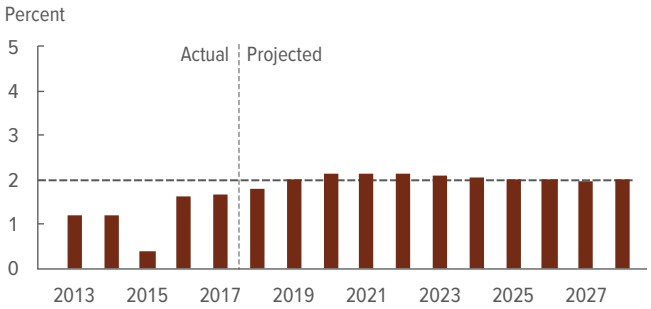
1 Spurred by fiscal stimulus, **real GDP growth** is expected to be 3.3 percent this year and 2.4 percent next year.



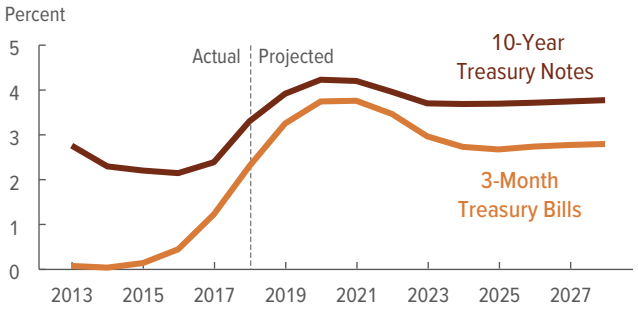
2 The projected growth creates excess demand in the economy, pushing the **unemployment rate** significantly below the **natural rate.**



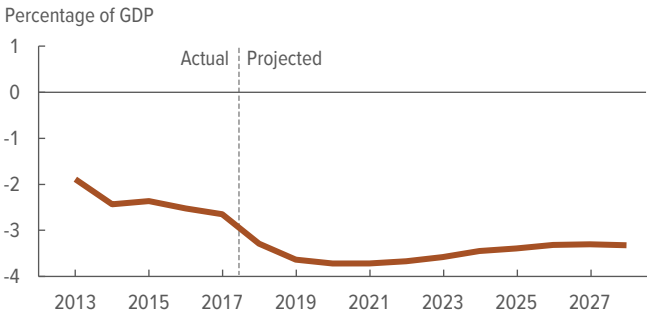
3 By 2020, excess demand pushes **consumer price inflation** slightly above the Federal Reserve's target of 2 percent.



4 **Interest rates** rise over the next few years as the Federal Reserve raises the federal funds rate to reduce inflationary pressures.



5 Because the fiscal stimulus lowers national saving, **net international lending** by the United States decreases (that is, the nation's borrowing from abroad increases).



6 CBO expects the **average annual growth of real potential GDP** to be faster over the next five years than it has been in recent years, in part because of the greater incentives to work and invest that stem from the 2017 tax act.

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

Real values are nominal values that have been adjusted to remove the effects of inflation. Excess demand exists when the demand for goods and services exceeds the amount that the economy can sustainably supply. The unemployment rate is the number of jobless people who are available for and actively seeking work, expressed as a percentage of the labor force. The natural unemployment rate is the rate arising from all sources except fluctuations in the overall demand for goods and services. Consumer price inflation is based on the price index for personal consumption expenditures. The federal funds rate is the interest rate financial institutions charge each other for overnight loans of their monetary reserves. Net international lending by the United States is national saving minus domestic investment. Potential GDP is CBO's estimate of the maximum sustainable output of the economy.

Real GDP growth and inflation are measured from the fourth quarter of one calendar year to the fourth quarter of the next. For the unemployment rate and interest rates, data are fourth-quarter values. The average annual growth rates of real potential GDP are compound annual growth rates over the specified period calculated using calendar year data.

GDP = gross domestic product.

past 25 years. Also, the agency projects that reductions in marginal income tax rates will boost incentives to work and invest and thereby raise potential output.

At the same time, in CBO's forecast, the larger federal deficits projected under current law lower national saving and increase the nation's borrowing from abroad, raising interest rates and thus tending to slow potential output growth by reducing—or crowding out—some capital investment. Finally, the expiration of the cuts in individual income taxes that will, under current law, take effect at the end of 2025, reduces the incentive to work, modestly slowing the growth of hours worked and potential output.

The Outlook for the Next Two Years. CBO projects that recent legislation—the 2017 tax act and the legislation affecting discretionary spending—will strengthen the momentum in household and business spending, adding to the excess demand in the economy. In percentage terms, the resulting gap between real GDP and real potential GDP would be the largest it has been since 2000. Correspondingly, in CBO's projections, employment picks up considerably this year, and during this year and next, the unemployment rate falls significantly below the agency's estimate of the natural rate of unemployment, and inflation and interest rates rise (see Table 1-1).

The Outlook for the Rest of the Projection Period. Rising interest rates and prices, along with the slower growth in federal outlays after 2019 projected under current law, restrain demand and thus keep the growth of actual GDP below the growth of potential GDP from 2020 to 2026, in CBO's projections. (The excess demand in the economy is eliminated by 2022, and actual GDP returns to a level slightly below potential GDP—the historical relationship between the two measures—by 2024.) The higher marginal tax rates on personal income that follow from the expiration of temporary provisions of the 2017 tax act at the end of calendar year 2025 also contribute to the slower growth in actual GDP in 2025 and 2026 because the reduction in disposable personal income restrains consumer spending (and some consumers change their behavior in anticipation of the rise in taxes). That slower growth, in turn, raises the unemployment rate slightly and somewhat lowers short-term interest rates in those years.

CBO anticipates an end to that episode of slightly slower growth by 2027. In the agency's projections, the growth of output rises slightly in 2027, once again returning output to its historical level relative to potential output in 2027 and 2028. Also in 2027, the unemployment rate falls and returns to its historical level relative to the natural rate, interest rates rise, and the rate of inflation is 2 percent.

Uncertainty Surrounding the Projections

CBO's current economic projection is particularly uncertain. The recent changes in fiscal policy add uncertainty to those projections throughout the forecast period. CBO's estimates of the responses of households and businesses to changes in incentives to work and invest are based on the effects of similar policies in the past, but none of those previous episodes is a perfect guide to the future. Moreover, because many of the recent tax provisions are scheduled to change during the projection period, CBO estimated how individuals and businesses might react to the scheduled shifts in policy. The forecast for economic growth could be understated if capital investment and the labor supply increase more than CBO anticipates in response to changes in the tax code. Conversely, economic growth could be overstated if the incentive effects of the tax changes are smaller than the agency expects.

In the long term, key determinants of long-run growth, such as the labor force, the capital stock (equipment, structures, intellectual property products, and inventories), and productivity, could evolve much differently than expected. In the near term, many developments, including changes in consumer or business confidence or in international conditions and trade agreements, could make economic outcomes differ significantly from CBO's projections. Although inflation has been low for a long time, it might rise more than CBO expects in response to excess demand over the next few years, causing the Federal Reserve to raise its policy interest rate more than CBO anticipates. History suggests that the risks of recession may increase when the economy's growth begins to slow over the next few years, especially if, for example, households or businesses take on too much debt during the current upturn.

Comparisons With Other Projections

CBO's current economic projections differ from those that it published in June 2017. In large part, those differences reflect recent enactment of the 2017 tax act and legislation that increased projected discretionary spending. In particular, CBO now anticipates a more

Table 1-1.

CBO's Economic Projections for Calendar Years 2018 to 2028

	Actual, 2017	2018	2019	2020	Annual Average 2021–2022	Annual Average 2023–2028
	Percentage Change From Fourth Quarter to Fourth Quarter					
Gross Domestic Product						
Real[a]	2.6	3.3	2.4	1.8	1.5	1.7
Nominal	4.5	5.2	4.5	3.9	3.7	3.9
Inflation						
PCE price index	1.7	1.8	2.0	2.1	2.1	2.0
Core PCE price index[b]	1.5	1.9	2.1	2.2	2.1	2.0
Consumer price index[c]	2.1	2.0	2.3	2.4	2.5	2.4
Core consumer price index[b]	1.7	2.3	2.5	2.6	2.5	2.4
GDP price index	1.9	1.8	2.1	2.1	2.2	2.1
Employment Cost Index[d]	2.8	3.1	3.6	3.6	3.4	3.2
	Fourth-Quarter Level (Percent)					
Unemployment Rate	4.1	3.5	3.3	3.8	4.6[e]	4.8[f]
	Percentage Change From Year to Year					
Gross Domestic Product						
Real[a]	2.3	3.0	2.9	2.0	1.5	1.7
Nominal	4.1	5.0	4.9	4.1	3.7	3.9
Inflation						
PCE price index	1.7	1.8	1.9	2.1	2.1	2.0
Core PCE price index[b]	1.5	1.8	2.0	2.2	2.2	2.0
Consumer price index[c]	2.1	2.2	2.2	2.4	2.5	2.4
Core consumer price index[b]	1.8	2.1	2.4	2.6	2.6	2.4
GDP price index	1.8	1.9	2.0	2.1	2.2	2.1
Employment Cost Index[d]	2.6	2.9	3.4	3.6	3.5	3.2
	Annual Average					
Unemployment Rate (Percent)	4.4	3.8	3.3	3.6	4.4	4.8
Payroll Employment (Monthly change, in thousands)[g]	181	211	182	62	25	57
Interest Rates (Percent)						
Three-month Treasury bills	0.9	1.9	2.9	3.6	3.7	2.8
Ten-year Treasury notes	2.3	3.0	3.7	4.1	4.1	3.7
Tax Bases (Percentage of GDP)						
Wages and salaries	43.1	43.2	43.5	43.9	44.1	44.3
Domestic corporate profits[h]	8.9	9.5	9.6	9.0	8.4	8.0

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

Economic projections for each year from 2018 to 2028 appear in Appendix D.

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

a. Real values are nominal values that have been 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 industry.

e. Value for the fourth quarter of 2022.

f. Value for the fourth quarter of 2028.

g. Calculated as the change in payroll employment from the fourth quarter of one calendar year to the fourth quarter of the next, divided by 12 (the average monthly amount).

h. Consists of domestic profits, adjusted to remove distortions in depreciation allowances caused by tax rules and to exclude the effect of inflation on the value of inventories.

pronounced cyclical pattern of faster growth followed by slower growth over the first half of the projection period, as the current expansion is fortified by a fiscal policy that expands overall demand by significantly more than it expands overall supply in the first few years.

CBO's estimate of potential output has risen because the 2017 tax act's changes to incentives increase potential GDP in the early years of the forecast period above the levels that CBO projected in June. That difference diminishes in later years as some of the incentive effects of the tax changes are reversed, but potential output remains higher throughout the period than it was in the agency's June projections. As economic output returns over the projection period to its average historical level relative to potential output, those higher estimates of potential output translate into projections of actual output that are also higher than the agency projected last summer.

The economic projections in this report differ somewhat from those of most other forecasters. The agency's projections for 2018 and 2019 suggest a stronger economic outlook than does the *Blue Chip* consensus (the average of the roughly 50 forecasts by private-sector economists published in the March 2018 *Blue Chip Economic Indicators*) or the latest forecasts by Federal Reserve officials.

Recent Economic Developments

Economic conditions at the end of last year were robust. The growth of real GDP, measured on a year-over-year basis, had been rising for a year and a half (see Figure 1-2). Slack in the labor market, as measured by the employment gap, had almost disappeared, and wage growth continued to climb gradually, although price inflation remained low. (The employment gap is the difference between the number of people employed and an estimate of the number of people who would be employed in the absence of cyclical fluctuations in the economy.) In response to the improving economic conditions, the Federal Reserve had raised its policy interest rate—the federal funds rate (the interest rate that financial institutions charge each other for overnight loans of their monetary reserves).

Developments so far this year suggest that actual output will continue to grow faster than potential output, as it did last year. In the first two months of 2018, employment grew notably faster than its 2017 monthly average, and the unemployment rate remained near its low for the current cycle, 4.1 percent. Consumer and business confidence are both high, at least in part because of recent tax legislation. The *Blue Chip* consensus forecast of the growth of real GDP for 2018 published in early March was higher than the consensus forecast published at the end of last year. Those developments, along with the expected boost to near-term growth stemming from fiscal policy, helped push the interest rate on 10-year Treasury notes to a four-year high of 2.9 percent in February.

The Economic Effects of Recent Changes in Fiscal Policy

Three major pieces of legislation enacted in the past few months significantly changed fiscal policy and, in CBO's estimation, will have measurable economic effects. One, the 2017 tax act, substantially altered the taxation of personal and business income. The second, the Bipartisan Budget Act of 2018 (P.L. 115-123), increased the caps on discretionary funding in 2018 and 2019 and provided substantial funding for emergency disaster assistance. The third, the Consolidated Appropriations Act, 2018 (P.L. 115-141), provided appropriations for 2018.

In CBO's view, the effects of the tax act on incentives to work, save, and invest will raise real potential GDP. Effects of the tax and spending legislation are projected to raise the level of real GDP significantly in the coming years through fiscal stimulus, increasing real GDP by more than they raise potential GDP in the near term. In CBO's projections, those effects, as well as the larger federal budget deficits that will result from the new laws, put upward pressure on interest rates and prices, which tempers the increase in real output over the longer term.

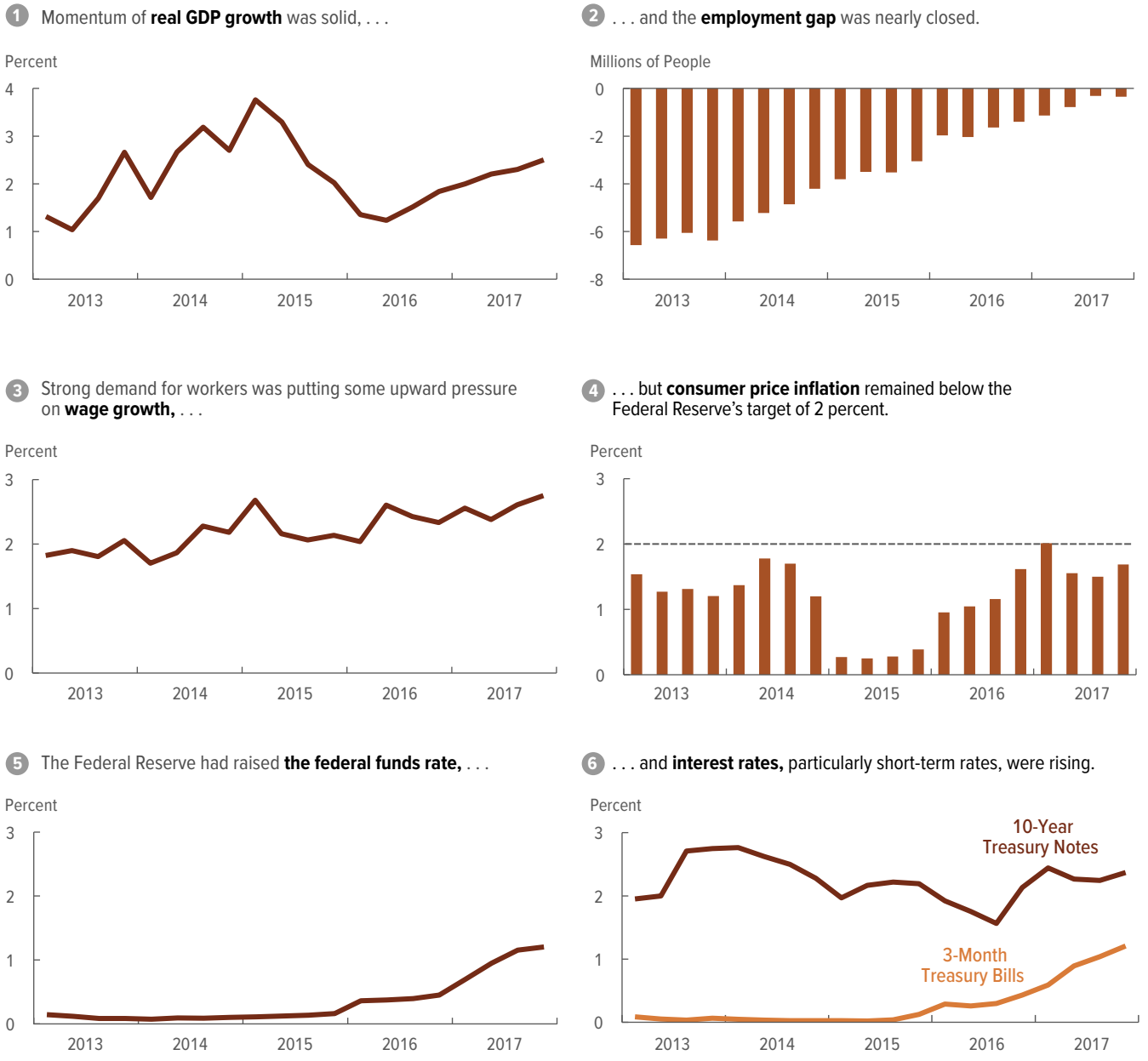
Effects of the 2017 Tax Act

CBO estimates that the new tax law will have appreciable effects on the U.S. economy (see Figure 1-3). The lower marginal income tax rates that will be in place for much of the projection period will encourage workers to work more hours and businesses to increase investment in productive capital, thereby raising employment, income, and potential output. In addition, the increase in after-tax income will boost spending in the near term, boosting actual output relative to potential output.

Many of the law's provisions are scheduled to phase out or expire over the 2023–2026 period, so by 2028, the anticipated economic effects are less pronounced but still

Figure 1-2.

Economic Conditions at the End of 2017



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

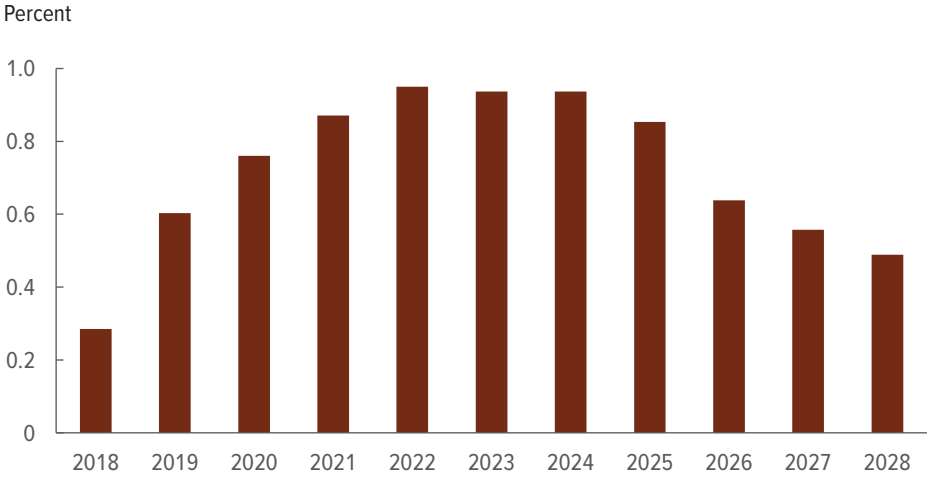
Real values are nominal values that have been adjusted to remove the effects of inflation. The employment gap is the difference between the number of people employed and CBO's estimate of the number of people who would be employed in the absence of cyclical fluctuations in the economy. Wages are measured by the employment cost index for wages and salaries of workers in private industry. Consumer price inflation is based on the price index for personal consumption expenditures. The federal funds rate is the interest rate that financial institutions charge each other for overnight loans of their monetary reserves.

Data are quarterly. Real GDP growth, wage growth, and inflation are measured as percentage changes from the same quarter of the previous year.

GDP = gross domestic product.

Figure 1-3.

Economic Effects of the 2017 Tax Act on Real GDP



In CBO's projections, the effect of the 2017 tax act is an **increase in the level of real GDP** by 0.7 percent, on average, over the 2018–2028 period. Later in the period, the effects are tempered as some tax provisions expire and as increased borrowing crowds out private investment.

Source: Congressional Budget Office.

Real values are nominal values that have been adjusted to remove the effects of inflation. Percentage differences are calculated using calendar year values.

GDP = gross domestic product.

positive. Over the projection period, annual real GDP in CBO's forecast is 0.7 percent higher, on average, because of the tax law, and nonfarm employment is projected to be higher by about 0.9 million jobs, on average.* (For details on CBO's estimates of the effects of the law, see Appendix B.)

Effects of Federal Spending Policies

CBO projects a substantial increase in federal outlays in both 2018 and 2019 as a result of the Bipartisan Budget Act of 2018 and the Consolidated Appropriations Act, 2018. Most of that projected increase in outlays stems from higher spending for goods and services. The effects of recent spending legislation are projected to boost the annual level of real GDP by 0.3 percent in 2018 and by 0.6 percent in 2019. Although the rise in federal spending is likely to stimulate the economy in the near term, it is projected to lower real GDP in later years because of the larger budget deficits that result.[3]

Federal Deficits and the Crowding Out of Private Activity

The recent changes in fiscal policy will, in CBO's estimation, add a significant amount to the federal deficit, particularly in the next few years. The agency estimates that greater federal borrowing ultimately reduces private investment below what it would have been without the additional borrowing.

When the government borrows, it borrows from households and businesses whose saving would otherwise be financing private investment. Although an increase in government borrowing strengthens people's incentive to save, the additional saving by households and businesses is less than the increase in borrowing. The result is not only reduced private investment but also lower economic output and national saving (that is, total saving by all

3. Those estimates of the effect of spending on real GDP are consistent with the path of discretionary spending in CBO's baseline budget projections. However, those estimates are not fully reflected in CBO's economic forecast. CBO had completed that forecast before the enactment of the Consolidated Appropriations Act, 2018, which provided discretionary funding. That economic forecast incorporates a preliminary projection of discretionary spending that is greater for most of the 2018–2028 period than the amounts included in the agency's baseline budget projections. The lower path of discretionary spending implies a smaller boost to GDP in the near term, which would reduce projected real GDP by about one-quarter of a percent in 2020 compared with CBO's economic projections. In addition, real GDP would be slightly greater in later years because the smaller projected deficits would encourage greater private investment.

[*Value for nonfarm employment corrected on April 17, 2018]

sectors of the economy). However, private investment generally falls less than national saving does because the higher interest rates that result from increased federal borrowing typically attract more foreign capital to the United States.

In CBO's projections, the crowding out of private investment occurs gradually, as interest rates and the funds available for private investment adjust in response to increased federal deficits. In the longer term, the net decline in national saving would tend to reduce the stock of capital—and thus GDP—below what it would have been without the increased federal borrowing. Moreover, the additional net inflows of capital from abroad would cause more profits and interest payments to flow overseas, leading to a greater decline in gross national product (GNP) than in GDP.[4]

Potential Output

Potential GDP is an estimate of the economy's production when labor and capital are supplied and employed at their maximum sustainable levels. In CBO's analysis, it is the agency's estimate of the long-term trend around which actual GDP fluctuates over business cycles. Moreover, growth of potential GDP is the key determinant of CBO's current forecast of the growth of actual GDP over the 11-year projection period, because actual output is currently very near its potential level and is also projected to be near its potential level at the end of the period.

CBO formulates its estimate of potential GDP using estimates of a number of inputs, including potential labor inputs, flows of capital services, and potential productivity. Fiscal policy influences the agency's projections of potential GDP because of the incentive and crowding out effects that changes in policy can have.

Potential output is projected to grow by an average of 1.9 percent per year from 2018 to 2028, faster than the 1.5 percent average annual growth of potential GDP since 2008 (see Figure 1-4 and Table 1-2). Even though that projected growth rate is higher than the rate in recent years, it is more than a percentage point lower than the 3.1 percent growth that potential GDP averaged annually between 1981 and 2007. More than three-quarters of that difference reflects slower projected 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.[5]

Provisions of the 2017 tax act contribute to a front-loading of potential GDP growth over the projection period. Growth in the supply of labor and the amount of investment, in particular, are boosted over the next few years in CBO's forecast, as reductions in effective marginal tax rates raise the desired amounts of those inputs.

In CBO's forecast, potential GDP growth is higher over the next four years than in later years of the projection period: Potential GDP grows by an average of 2.0 percent per year from 2018 to 2022 but by an average of only 1.8 percent per year from 2023 to 2028. Growth of potential GDP in the nonfarm business sector, which accounts for about 75 percent of economic activity and a disproportionately large share of overall economic growth, is projected to average about 2.3 percent per year from 2018 to 2022; it slows to about 2.1 percent per year from 2023 to 2028.

Potential Labor Inputs

In CBO's projections, the contributions of labor to potential GDP are built up from several components. The potential rates at which various groups of people are expected to participate in the labor force (that is, to work or, if unemployed, to seek work) constitute one component. Another is CBO's estimate of the natural rate of unemployment. And the last is the distribution of potential workers among different sectors of the economy and the potential number of hours that they could work per week.

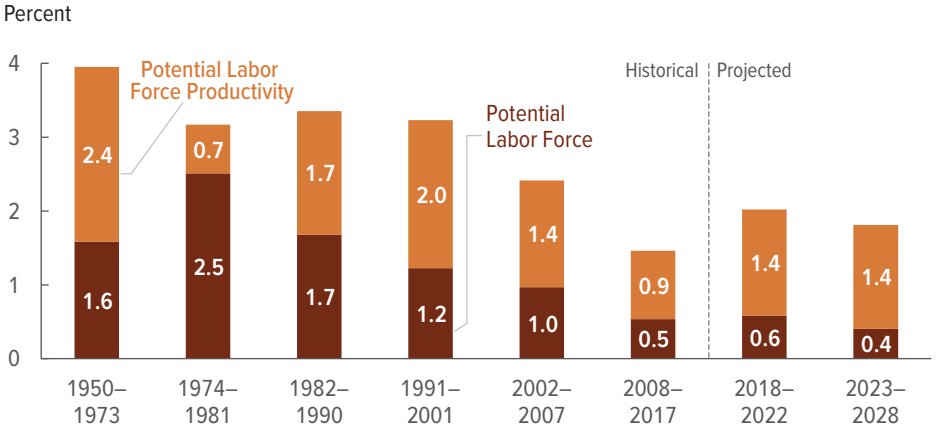
The Potential Labor Force. Growth of the potential labor force has been gradually slowing since the mid-1970s and is generally projected to continue to slow for some time to come. In addition to the demographic factors that are dampening growth in the labor force, long-term trends involving particular groups (such as a

4. GNP differs from GDP by including the various types of income that residents earn from working and investing abroad and excluding the income that nonresidents earn from working and investing in the United States.

5. After steadily rising for decades, participation of working-age females in the labor force peaked in the late 1990s. The participation rate of that group declined slightly in the wake of each of the last two recessions and started to rebound in 2016. CBO projects that it will essentially remain constant over the coming decade.

Figure 1-4.

Determinants of the Growth of Real Potential GDP



Growth in potential GDP, driven in large part by faster productivity growth, is projected to be stronger over the next 10 years than it has been since the recession that began in December 2007.

Source: Congressional Budget Office.

Real values are nominal values that have been adjusted to remove the effects of inflation. Potential GDP is CBO's estimate of the maximum sustainable output of the economy. Potential labor force productivity is the ratio of real potential GDP to the potential labor force, which is CBO's estimate of the size of the labor force arising from all sources except fluctuations in the overall demand for goods and services.

The bars show compound annual growth rates over the specified periods calculated using calendar year data. The sum of the determinants in each bar equals the growth of real potential GDP.

GDP = gross domestic product.

growing number of people with disabilities) are projected to push down the overall participation rate slightly.

Nevertheless, CBO anticipates that several provisions of the recent tax legislation will encourage more people to seek work than would have otherwise. Those incentives will slightly boost the size of the potential labor force. As the labor supply adjusts to that change in incentives, growth in the potential labor force in CBO's projections rises from its average rate of about 0.5 percent per year since 2008 to an average of about 0.6 percent over the 2018–2022 period. However, as some temporary provisions of the legislation expire—most notably the reductions in individual income tax rates, which, under current law, will expire at the end of calendar year 2025—the size of the potential labor force is reduced. As a result, growth in the potential labor force slows to 0.4 percent per year over the 2023–2028 period.

The Natural Rate of Unemployment. In CBO's projections, the natural rate of unemployment—the rate that occurs when workers are employed at maximum sustainable levels—gradually declines over the 2018–2028 period, falling from slightly more than 4.6 percent to just under that value. The natural rate's decline over the period reflects two shifts in the composition of the workforce. First, the average age of workers is increasing, and older workers tend to have lower unemployment rates. Second, workers are becoming more educated, on average, and more educated workers are less likely to be unemployed. CBO expects that the share of younger workers in the working-age population will continue to decline and that less-educated workers will continue to participate in the labor market at lower rates.

Potential Hours Worked. CBO concludes that the same provisions of the recent tax legislation that are projected to temporarily boost the size of the potential labor force will also encourage employees to seek more hours of work. (See Appendix B for further discussion.) Because of that increase in the average number of potential hours worked per employee, the number of potential hours worked in the overall economy grows in CBO's projections by about 0.6 percent per year over the 2018–2022 period—slightly more than the growth in the potential labor force (although rounding to the same percentage). That growth is up from the rate of about 0.5 percent that potential hours worked has averaged annually since 2008. However, the growth of potential hours worked decelerates to less than 0.4 percent per

Table 1-2.

Key Inputs in CBO's Projections of Real Potential GDP

Percent

	Average Annual Growth							Projected Average Annual Growth		
	1950–1973	1974–1981	1982–1990	1991–2001	2002–2007	2008–2017	Total, 1950–2017	2018–2022	2023–2028	Total, 2018–2028
Overall Economy										
Real Potential GDP	4.0	3.2	3.4	3.3	2.4	1.5	3.2	2.0	1.8	1.9
Potential Labor Force	1.6	2.5	1.7	1.2	1.0	0.5	1.4	0.6	0.4	0.5
Potential Labor Force Productivity[a]	2.4	0.7	1.7	2.0	1.4	0.9	1.7	1.4	1.4	1.4
Nonfarm Business Sector										
Real Potential Output	4.1	3.5	3.6	3.7	2.7	1.7	3.4	2.3	2.1	2.2
Potential Hours Worked	1.4	2.3	1.8	1.3	0.3	0.4	1.3	0.5	0.3	0.4
Capital Services	3.7	3.8	3.6	3.8	2.9	1.8	3.4	2.5	2.1	2.3
Potential Total Factor Productivity	1.9	0.9	1.2	1.5	1.6	0.7	1.4	1.0	1.2	1.1
Contributions to the Growth of Real Potential Output (Percentage points)										
Potential hours worked	1.0	1.6	1.2	0.9	0.2	0.3	0.9	0.3	0.2	0.3
Capital input	1.1	1.2	1.2	1.3	1.0	0.7	1.1	0.9	0.7	0.8
Potential total factor productivity	1.9	0.9	1.2	1.5	1.6	0.7	1.4	1.0	1.2	1.1
Total Contributions	4.0	3.7	3.6	3.6	2.7	1.7	3.4	2.3	2.1	2.2
Potential Labor Productivity[b]	2.7	1.2	1.8	2.3	2.4	1.2	2.1	1.8	1.8	1.8

Source: Congressional Budget Office.

Real values are nominal values that have been adjusted to remove the effects of inflation. 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.

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.

year in the latter part of the projection period when, at the end of calendar year 2025, the scheduled expiration of the temporary provisions of the 2017 tax act would raise individual tax rates. Potential hours worked will grow less rapidly in the nonfarm business sector than in the economy as a whole over the 11-year projection period, CBO projects.

Flows of Capital Services

In the nonfarm business sector, stronger investment is projected to boost annual growth of capital services from its average rate of 1.8 percent since 2008 to an average of 2.5 percent from 2018 to 2022. Following that burst of investment, growth in CBO's projections eases back to an average of 2.1 percent from 2023 to 2028.

Growth is particularly strong through 2022, as businesses respond to the pickup in the growth of demand for their output. Greater labor force participation stemming from lower marginal tax rates on wages is likely to boost investment as businesses endeavor to equip the larger workforce with capital. In addition, some provisions of the recent tax legislation—for example, lower tax rates for businesses and more favorable tax treatment of depreciation for equipment and some types of structures—will also encourage investment. (By contrast, other provisions of the tax legislation will tend to lower investment in residential housing and reduce the growth of capital services from the housing stock, but that negative effect is expected to be much smaller than the positive effect of tax changes on other types of investment.)

In subsequent years, growth of capital services is projected to slow because of several factors restraining investment. Slower growth of the labor supply contributes to the slower growth of capital services from 2023 to 2028 in CBO's projections. Investment is also slowed by the introduction of less favorable treatment for spending on research and development in 2022. More broadly, rising federal deficits are projected to crowd out investment throughout the next decade.

Since early 2017, the Administration and the Congress have made several changes to regulations and the regulatory environment that, in CBO's judgment, should modestly boost investment and therefore increase potential output. Those changes have affected the energy production and transmission sectors, Internet service providers, the financial industry, and health care markets, in particular. Some of the changes in regulation will reduce the cost of producing goods and providing services and thereby increase returns on investment, ultimately boosting investment and the capital stock.

Potential Total Factor Productivity

CBO expects growth in potential total factor productivity in the nonfarm business sector (that is, the average real output per unit of combined labor and capital services in that sector) to gradually increase over the next five years from the unusually low rate of around 0.7 percent per year in recent years to about 1.2 percent per year during the 2023–2028 period. That estimate largely reflects the agency's assessment that growth of total factor productivity tends to revert to long-term historical averages over time. A slight portion of the increase in productivity growth results from provisions of the recent tax law that are expected to encourage businesses to report as domestic production the output of intellectual property assets that were previously reported as production abroad.

Actual Output

In CBO's projections, the growth of real actual GDP (as distinct from real potential GDP) follows a marked cyclical path, rising notably this year, slowing during the next few years, and then rising to match the growth of real potential output, on average, in the last years of the projection period (see Figure 1-5). This year, spending by consumers and businesses accounts for most of the projected growth of real output, but federal spending also contributes a notable amount. Residential investment and spending by state and local governments provide positive contributions as well, but net exports subtract from real GDP. The slower growth of output in later years primarily reflects smaller contributions from business investment and federal spending.[6]

The cyclical pattern of the growth of actual output is reflected in the changes in the output gap—the difference between actual and potential GDP, expressed as a percentage of potential GDP—which is one measure of excess demand in the overall economy. In CBO's projections, that gap rises to 1.2 percent next year (that is, actual GDP exceeds potential GDP by 1.2 percent), which is notable because the output gap has exceeded 1.0 percent only three times in the past 45 years, most recently in 2000. The gap then falls steadily to –0.6 percent in 2026 (that is, actual GDP falls short of potential GDP by 0.6 percent), before it rises to its historical average of –0.5 percent in 2027 and 2028.

Consumer Spending

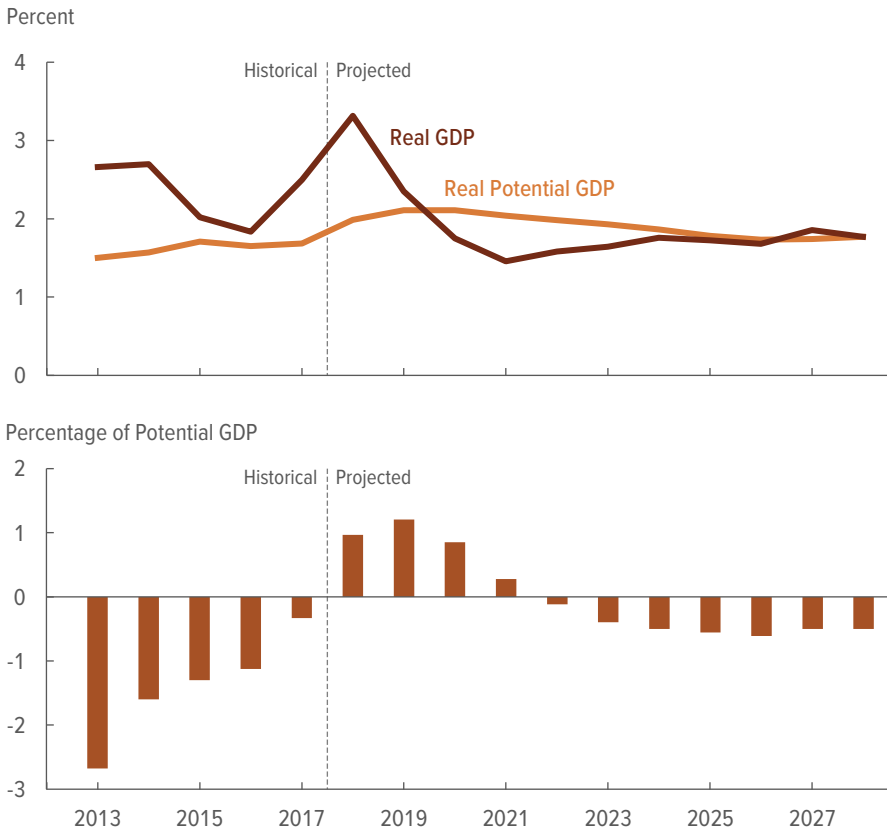
In CBO's projections, real consumer spending contributes 1.7 percentage points to the growth of real GDP in 2018 and 1.8 percentage points in 2019 (see Figure 1-6). Those contributions reflect projected growth in real consumer spending of 2.5 percent in 2018 and 2.7 percent in 2019, slightly slower than the 2.8 percent pace in 2017 (see Table 1-3 on page 20). The main factor underlying that forecast is the outlook for disposable (after-tax) personal income, but other factors also play a role.

Real disposable income is projected to grow at an average annual rate of 4.4 percent in 2018 and 2019, considerably faster than its average annual growth rate of 1.0 percent in 2016 and 2017. That growth in real disposable income is driven in part by the reduction in individual income tax payments stemming from the recent tax legislation. In addition, income growth is spurred by the tightening of labor markets, as employers raise wages to attract workers. In the next two years, demand for labor is boosted by the stimulative effects of recent changes in fiscal policy.

6. CBO calculates the contributions of the major components of GDP to the growth rate of real GDP by weighting their growth rates by their shares of nominal GDP. The sum of all the components' contributions, measured in percentage points, is approximately equal to the growth rate of real GDP.

Figure 1-5.

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



Over the next two years, **growth in real GDP** is expected to outpace **growth in real potential GDP,** . . .

. . . pushing GDP above potential GDP and raising the **output gap** to 1.2 percent in 2019. CBO projects a return of the gap to its historical average of roughly −0.5 percent by 2028.

Sources: Congressional Budget Office; Bureau of Economic Analysis.

Real values are nominal values that have been adjusted to remove the effects of inflation. Potential GDP is CBO's estimate of the maximum sustainable output of the economy. Growth of real GDP and of real potential GDP is measured from the fourth quarter of one calendar year to the fourth quarter of the next.

The output gap is the difference between historical or projected GDP and potential GDP, expressed as a percentage of potential GDP. A positive value indicates that GDP exceeds potential GDP; a negative value indicates that GDP falls short of potential GDP. Values for the output gap are for the fourth quarter of each year.

GDP = gross domestic product.

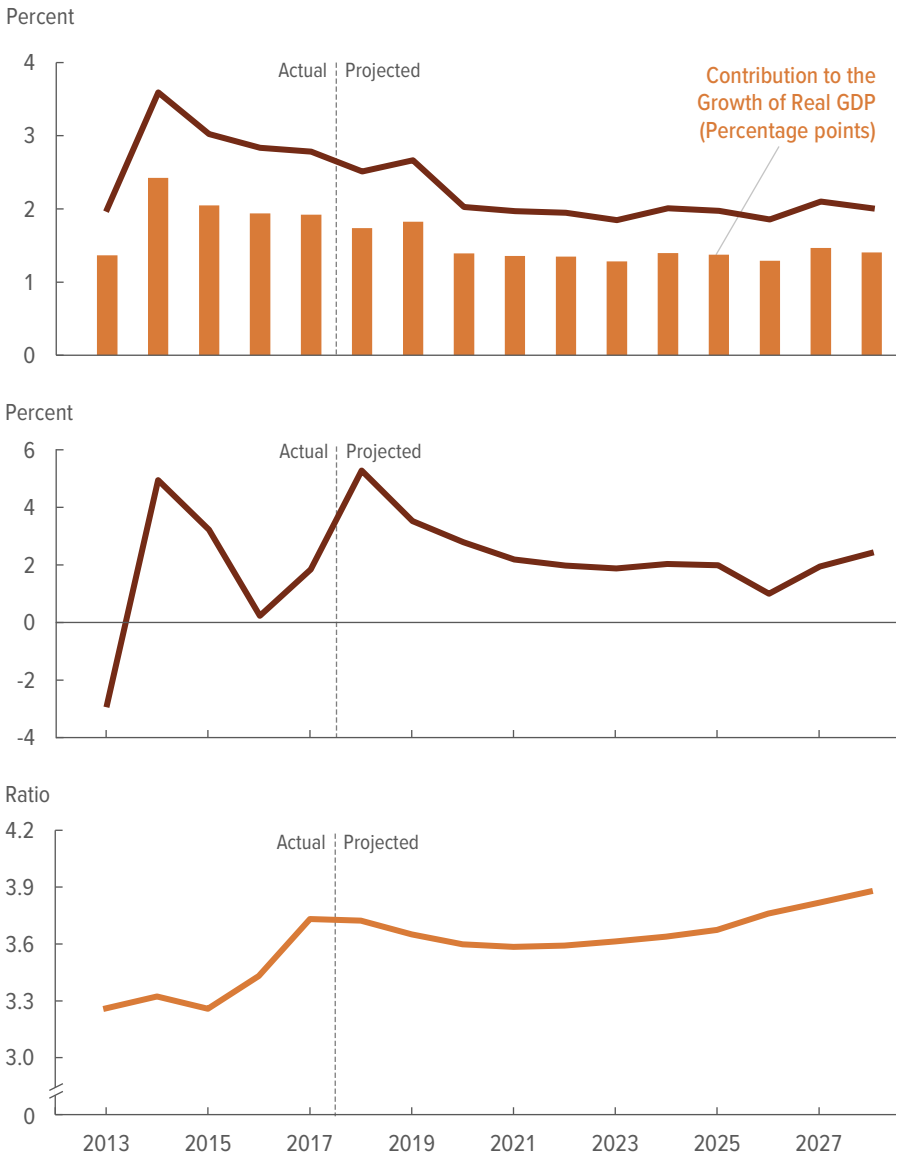
Other factors contribute to the projected growth of consumer spending in 2018 and 2019. The large gains in stock market wealth and more modest gains in housing wealth in 2017 should continue to support spending into early 2019. Continuing optimism about employment prospects will, in CBO's assessment, also boost spending. Meanwhile, healthy consumer credit indicators, such as low delinquencies and write-downs, will most likely encourage further expansion of consumer lending.

CBO expects real consumer spending to grow more slowly during the 2020–2028 period—at an average annual rate of 2.0 percent—largely because the agency expects disposable income to grow more slowly in those years. The projected reduction in the growth of disposable income stems from the waning effects of the cuts in individual tax rates (which lower tax payments directly) and from the slower growth of labor income that is expected to occur as economic growth slows in those years. In addition, the effects of past wealth gains will have run their course, further slowing growth in consumer spending.

In 2026, the growth of disposable income is projected to slow abruptly because, under current law, effective

Figure 1-6.

Real Personal Consumption Expenditures



CBO expects the **growth of real personal consumption expenditures** to slow modestly and contribute less to the growth of real GDP over the next few years than it did last year, . . .

. . . reflecting slower **growth of real disposable personal income** after 2018 . . .

. . . and slower gains in **households' wealth-to-income ratio** in coming years.

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

Real values are nominal values that have been adjusted to remove the effects of inflation. The bars in the top panel show the contribution of personal consumption expenditures to the growth rate of real GDP, measured from the fourth quarter of one calendar year to the fourth quarter of the next. Disposable personal income is the income that people receive minus the taxes and fees that they pay to governments. Growth of personal consumption expenditures and of disposable personal income is measured from the fourth quarter of one calendar year to the fourth quarter of the next.

Households' wealth-to-income ratio is the sum of households' equity holdings and real estate assets, divided by households' disposable personal income.

GDP = gross domestic product.

Table 1-3.

Projected Growth of Real GDP and Its Components

Percent

					Annual Average	
	Actual, 2017	2018	2019	2020	2021–2022	2023–2028
Real GDP	2.6	3.3	2.4	1.8	1.5	1.7
Components of Real GDP						
Consumer spending	2.8	2.5	2.7	2.0	2.0	2.0
Business investment	3.9	8.5	2.5	0.8	0.8	2.6
Business fixed investment	6.3	5.9	3.1	1.6	0.9	2.5
Residential investment	2.6	5.0	4.9	4.8	3.0	-0.2
Purchases by federal, state, and local governments	0.7	3.6	1.1	0.4	0.0	0.5
Federal	1.0	6.9	0.9	-0.5	-1.4	0.3
State and local	0.5	1.6	1.3	1.0	0.8	0.6
Exports	5.0	2.9	2.9	2.6	2.5	2.7
Imports	4.7	4.4	3.6	2.1	2.4	2.4
Memorandum:						
Net Exports (Change in billions of 2009 dollars)	-22.8	-63.1	-41.5	-3.6	-13.7	-10.0

Source: Congressional Budget Office.

Real values are nominal values that have been adjusted to remove the effects of inflation. Consumer spending consists of personal consumption expenditures. Business investment includes purchases of equipment, nonresidential structures, and intellectual property products, as well as the change in inventories. Residential investment includes 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.

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

GDP = gross domestic product.

personal income tax rates would rise above their previous levels as the temporary individual tax cuts expire. CBO expects that a significant portion of consumers (particularly those who expected the lower tax rates to be extended) would reduce their spending in response. As a result, the growth of consumer spending is also projected to slow that year although not by as much as the growth of disposable income.

Business Investment

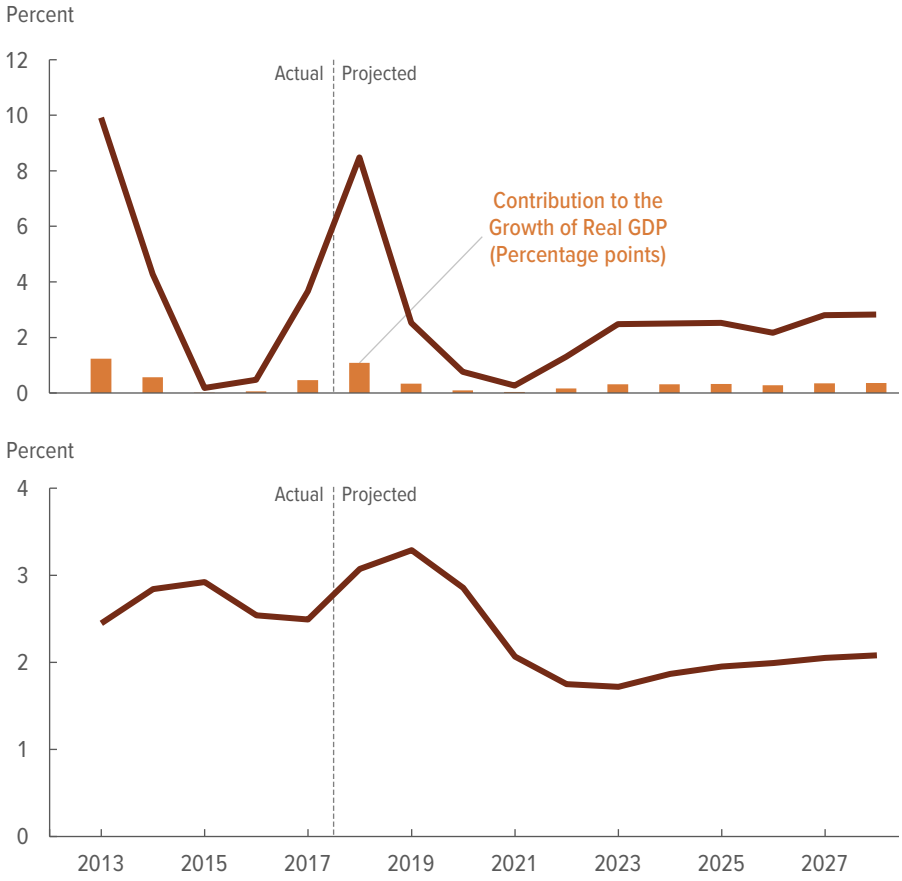
In CBO's forecast, real business investment adds a substantial 1.1 percentage points to the growth of real GDP in 2018 but only 0.3 percentage points in 2019 (see Figure 1-7). Real business investment grows by 8.5 percent in 2018, significantly more than it increased in 2017.

Robust growth of investment spending expected in 2018 reflects a number of factors—for example, the increased incentives to invest stemming from lower tax rates, the pickup in GDP growth that is expected to follow, greater investment in inventories, and the easing of regulations and slowdown in new regulatory activity that have occurred over the past year. In addition, investment in oil exploration and development is likely to increase significantly in 2018 because oil prices are rising; such investment is expected to decrease in 2019 when oil prices are projected to fall. With little need for businesses to expand capacity at an even more rapid rate and with oil-related investment slowing, growth in real business investment is projected to slow to 2.5 percent in 2019—a pace that is still faster than the growth rate of real GDP.

Reductions in tax rates and changes in other tax provisions that took effect in 2018 will raise the stock of capital that businesses desire to serve their customers: Such changes in tax policy affect the capital stock in two ways—they boost after-tax returns on capital over the decade, and they boost the supply of labor over the next few years. Together those incentives will prompt new investment as businesses seek to increase the capital

Figure 1-7.

Real Business Investment



In CBO's projections, the **growth in real business investment** rises substantially this year and then slows, . . .

. . . in part because slower **growth in the output of nonfarm businesses** causes them to need less additional capacity to meet demand for their goods and services.

Sources: Congressional Budget Office; Bureau of Economic Analysis.

Real values are nominal values that have been adjusted to remove the effects of inflation. Business investment includes purchases of equipment, nonresidential structures, and intellectual property products, as well as the change in inventories. Growth of business investment is measured from the fourth quarter of one calendar year to the fourth quarter of the next.

The bars in the top panel show the contribution of business investment to the growth rate of real GDP, measured from the fourth quarter of one calendar year to the fourth quarter of the next.

The demand for businesses' goods and services is represented by the annual average growth rate of the real output of the nonfarm business sector over the current and previous two years. The nonfarm business sector produces about three-quarters of the nation's output.

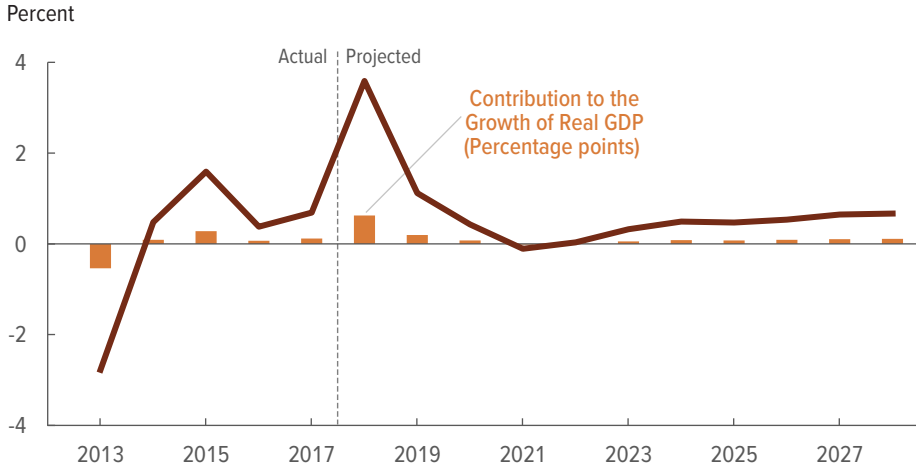
GDP = gross domestic product.

available to each worker and to equip new workers. In addition, in the near term, increased demand for goods and services in the economy will prompt new production, requiring further investment in capital.

Slowing GDP growth after 2019 is projected to erode the need for businesses to expand their capacity, inducing a sharp slowdown in the growth of real business investment during the 2020–2022 period. From 2023 to 2028, real business investment is estimated to grow at an average annual rate of 2.6 percent, still significantly faster than the growth rate of real GDP. That projected difference is attributable primarily to the expectation that prices for capital will increase more slowly than prices in the economy as a whole, continuing a trend that has made capital more affordable. Nominal business investment is expected to grow at roughly the same rate as nominal GDP during those years.

Figure 1-8.

Real Government Purchases



CBO projects **growth in real purchases by federal, state, and local governments** to be rapid this year because of recent changes in federal spending policies.

Sources: Congressional Budget Office; Bureau of Economic Analysis.

Real values are nominal values that have been adjusted to remove the effects of inflation. Government purchases are the purchases of goods and services by federal, state, and local governments that are included in GDP. Growth of government purchases is measured from the fourth quarter of one calendar year to the fourth quarter of the next.

The bars show the contribution of government purchases to the growth rate of real GDP, measured from the fourth quarter of one calendar year to the fourth quarter of the next.

The Bipartisan Budget Act of 2018 increased limits on discretionary funding for fiscal years 2018 and 2019, but it did not provide such funding. Because CBO completed its economic forecast before the enactment of the Consolidated Appropriations Act, 2018, its economic forecast incorporated a preliminary projection of discretionary spending. For most of the 2018–2028 period, that projection incorporated more discretionary spending than is included in CBO's baseline budget projections. Relative to that preliminary path, the lower path of discretionary spending would imply a smaller contribution of government purchases to growth in real GDP in the near term, particularly in 2019. In later years, the contribution would be roughly unchanged.

GDP = gross domestic product.

Government Purchases

Purchases of goods and services by federal, state, and local governments would, under current law, be a significant contributor to the growth of the economy this year (see Figure 1-8). In CBO's projections, they add 0.6 percentage points in 2018 and 0.2 percentage points in 2019 to the growth of real GDP. Real purchases by federal, state, and local governments expand by a robust 3.6 percent in 2018 and by 1.1 percent in 2019. In CBO's projections, real government purchases increase slightly from 2020 through 2023 and then grow at an average annual rate of 0.6 percent from 2024 to 2028.[7]

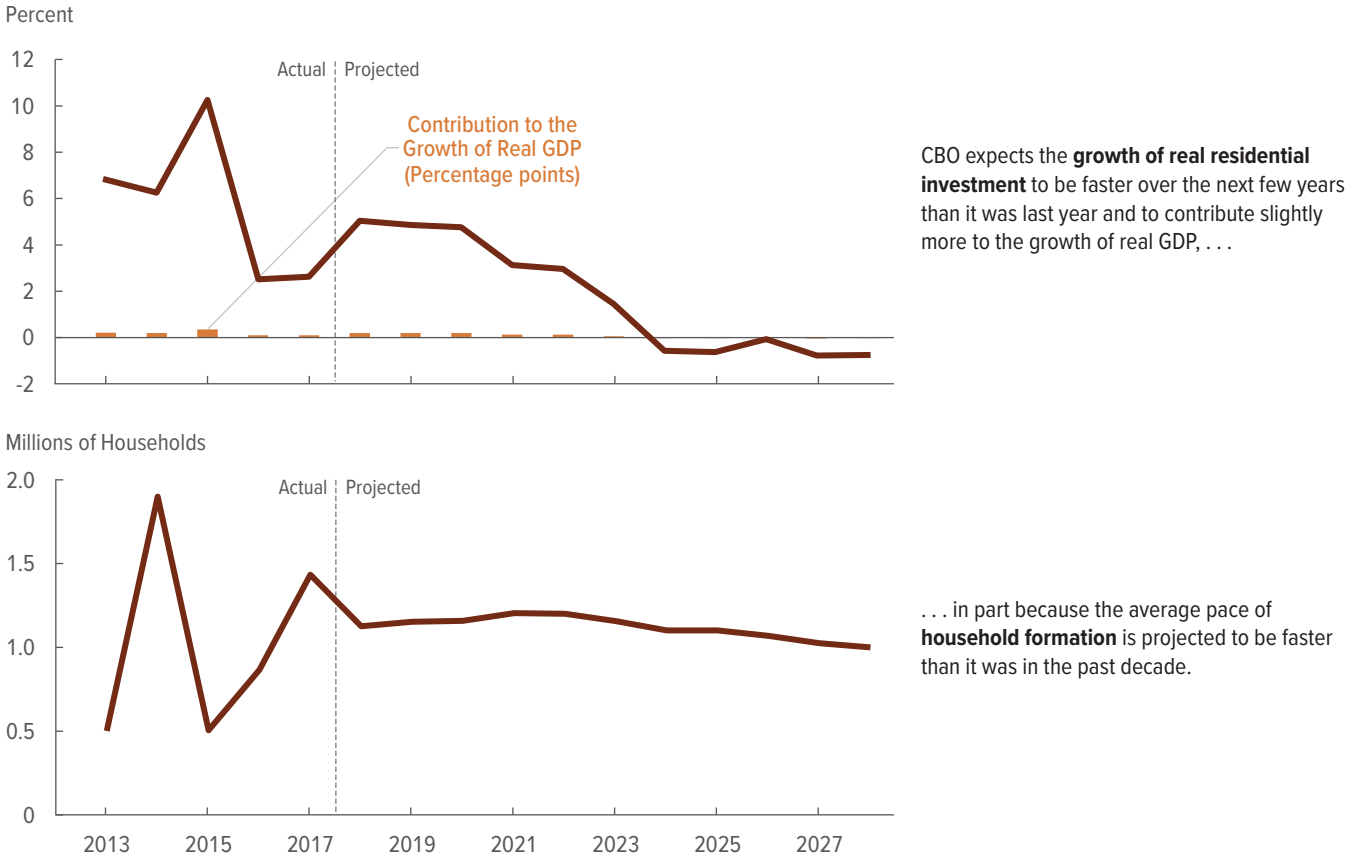
In CBO's forecast, real federal purchases of goods and services increase by 6.9 percent in 2018 and by 0.9 percent in 2019. In CBO's 11-year projections, real federal purchases fall by an average of almost 1 percent per year from 2020 to 2023 and grow modestly through the rest of the projection period, reflecting the existing caps on discretionary funding through fiscal year 2021 and the assumption that funding will grow at the rate of inflation thereafter.

State and local governments are expected to increase spending in response to economic expansion and the

7. The Bipartisan Budget Act of 2018 increased limits on discretionary funding for fiscal years 2018 and 2019, but it did not provide such funding. Because CBO completed its economic forecast before the enactment of the Consolidated Appropriations Act, 2018, its economic forecast incorporated a preliminary projection of discretionary spending. For most of the 2018–2028 period, that projection incorporated more discretionary spending than is included in CBO's baseline budget projections. Relative to that preliminary path, the lower path of discretionary spending would imply a smaller contribution of government purchases to growth in real GDP in the near term, particularly in 2019. In later years, the contribution would be roughly unchanged.

Figure 1-9.

Real Residential Investment



CBO expects the **growth of real residential investment** to be faster over the next few years than it was last year and to contribute slightly more to the growth of real GDP, . . .

. . . in part because the average pace of **household formation** is projected to be faster than it was in the past decade.

Sources: Congressional Budget Office; Bureau of Economic Analysis.

Real values are nominal values that have been adjusted to remove the effects of inflation. Residential investment includes the construction of single-family and multifamily structures, manufactured homes, and dormitories; spending on home improvements; and brokers' commissions and other ownership transfer costs. Growth of residential investment is measured from the fourth quarter of one calendar year to the fourth quarter of the next.

The bars in the top panel show the contribution of residential investment to the growth rate of real GDP, measured from the fourth quarter of one calendar year to the fourth quarter of the next.

Household formation is the change in the number of occupied housing units from the fourth quarter of one calendar year to the fourth quarter of the next.

GDP = gross domestic product.

resulting increases in the demand for government services and in state and local government revenues. Greater federal funding for emergency disaster assistance also is expected to modestly boost gross investment by state and local governments in the near term as they spend on reconstruction efforts related to last year's hurricanes and wildfires. In CBO's projections, the annual growth rate of real state and local purchases is 1.6 percent in 2018 and then declines—to 1.3 percent in 2019 and to 1.0 percent in 2020—before settling at 0.6 percent in 2024, roughly the rate of population growth.

Residential investment

CBO expects residential investment to contribute 0.2 percentage points to the growth of real GDP in each of the first three years of the projection period (see Figure 1-9). The growth of real residential investment is estimated to rise to 5.0 percent in 2018, slowing only slightly over the subsequent two years, to 4.8 percent in 2020. That outlook reflects continuing strength in household formation, favorable developments in the mortgage market, and recent tax changes.

An important factor underlying CBO's forecast is the expected pace of household formation, or the net change in the total number of occupied housing units. With the tightening labor market translating into higher employment and faster growth in compensation, CBO expects the rate of household formation over the next few years to remain close to the 1.2 million per year it averaged from 2014 to 2017. During those four years, household formation recovered from a period of unusually slow growth that lasted from 2006 to 2013 and contributed to the concurrent sharp decline in residential investment. The continuing growth in the number of households is expected to motivate builders to build more housing in order to bring the number of new homes being constructed further into alignment with the growth in households.

CBO forecasts that mortgage-lending standards will continue to ease during much of the projection period, further encouraging stronger investment in housing despite projected higher mortgage rates in the near term. Lending standards for mortgages had remained tighter for longer than those in other credit markets.

Recent changes in the tax code made by the 2017 tax act will hold down the growth of residential investment over the next few years, CBO estimates. A higher standard deduction for personal income taxes will reduce by more than 50 percent the number of households who find it advantageous to itemize their deductions. Households that do not itemize will not receive an explicit tax subsidy for homeownership. For homeowners who continue to itemize their deductions, the after-tax cost of owning a home will rise because of limitations on the amounts of property taxes and mortgage interest payments that can be deducted. In the longer term, residential investment will benefit when the tax changes discouraging homeownership end in 2026.

Because its cycle has lagged behind that of the economy as a whole, residential investment is expected to slow less markedly than other parts of the economy between 2020 and 2023. In the agency's projections, the rate of growth in real residential investment slows to 3.1 percent in 2021, to 3.0 percent in 2022, and to 1.5 percent in 2023. Thereafter, real spending on residential investment declines modestly as slower population growth curtails household formation.

Imports and Exports

In CBO's projections, real imports of goods and services increase rapidly in 2018 and 2019 but then rise at a more moderate pace from 2020 through 2028 (see Figure 1-10). Real exports of goods and services, by contrast, grow at a steady rate over the next 11 years. Real net exports—the difference between real exports and real imports—are projected to reduce growth in real GDP by 0.3 percentage points in 2018 and by 0.2 percentage points in 2019. That contribution becomes less negative in later years and is roughly zero in the last half of the projection period. That outlook reflects CBO's projections of the growth of domestic purchases of goods and services, foreign economic activity, and the exchange value of the dollar.

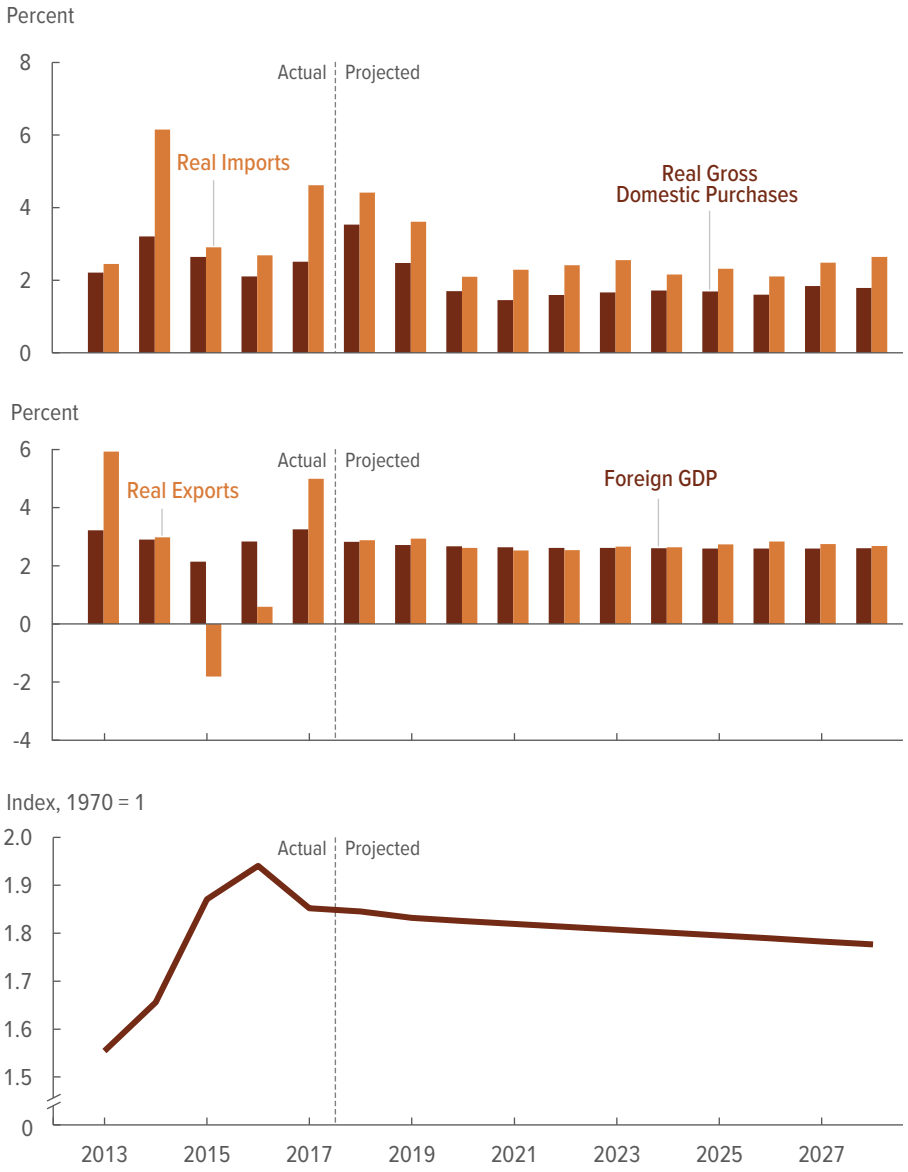
Real imports grow by 4.4 percent in 2018 and by 3.6 percent in 2019 in CBO's projections. Growth in domestic purchases of goods and services is projected to exceed growth in output during those two years, and the volume of imports is anticipated to help meet that demand. After 2019, real import growth slows with the deceleration of domestic purchases in CBO's forecast, although it continues to outpace those purchases, as it has in recent years.

After a strong year in 2017, real export growth is projected to fall to 2.9 percent in 2018 and 2019. Real exports are expected to grow at a similar pace from 2020 through 2028 in response to the steady growth of foreign economic activity and a slight reduction in the exchange value of the dollar, which would maintain growth in demand for U.S. exports.

The projected decline in the exchange value of the dollar modestly slows import growth and boosts export growth over the projection period, in the agency's estimation. The trade-weighted exchange value of the dollar fell by nearly 5 percent in 2017, reflecting strong economic growth among U.S. trading partners (particularly in the euro zone) and expectations that those countries would tighten their monetary policies. The value of the dollar is projected to remain stable over the next year and to decline slightly thereafter. That assessment reflects the expectation that an increase in demand for foreign assets caused by steady economic growth of the United States' major trading partners would roughly offset the increase in demand for dollar-denominated assets caused by rising

Figure 1-10.

Real Imports and Real Exports



Growth in real imports is expected to be rapid this year and next and to moderate in later years, reflecting the pace in **growth in real gross domestic purchases.**

CBO's forecast of **growth in real exports** reflects the agency's forecast of relatively stable **average real GDP growth of the United States' major trading partners** . . .

. . . and CBO's expectation that the **exchange value of the U.S. dollar** will decline slightly.

Sources: Congressional Budget Office; Bureau of Economic Analysis.

Real values are nominal values that have been adjusted to remove the effects of inflation. Gross domestic purchases are the sum of personal consumption expenditures, gross private domestic investment, and government consumption expenditures and gross investment. Growth is measured from the fourth quarter of one calendar year to the fourth quarter of the next.

The average growth rate of real GDP of the United States' major trading partners is calculated using an average of individual countries' rates of growth of real GDP, weighted by their shares of U.S. exports. The trading partners included in the average are Australia, Brazil, Canada, China, Hong Kong, India, Japan, Mexico, Singapore, South Korea, Taiwan, the United Kingdom, and the countries of the euro zone. Growth is measured from the fourth quarter of one calendar year to the fourth quarter of the next.

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' major trading partners. A higher value indicates a stronger dollar.

GDP = gross domestic product.

federal borrowing and rising interest rates in the United States.

Throughout the 2018–2028 period, nominal net exports are negative. Relative to GDP, that deficit shrinks after 2019. In CBO's projections, the trade deficit grows from 3.0 percent of GDP at the end of 2017 to 3.4 percent of GDP by the end of 2019. From the end of 2020 through the end of 2028, it decreases from 3.3 percent of GDP to 2.8 percent of GDP.

The Labor Market

CBO's projections of the labor market reflect its projections of actual output. With actual GDP greater than potential GDP in the near term in the agency's forecast, employment and participation in the labor market are above their maximum sustainable amounts and the unemployment rate is below the natural rate (see Figure 1-11). In turn, the positive employment gap leads to more rapid growth in hourly compensation. In subsequent years, employment—following that path of output—increases less rapidly, and the unemployment rate rises steadily until it slightly exceeds the natural rate. Because of that slower growth in employment, rates of hourly compensation rise more slowly, and real hourly compensation in the nonfarm business sector grows in line with that sector's labor productivity during the later years of the projection period. The labor force participation rate begins to fall in 2021 and returns to the underlying downward trend that is rooted in demographic patterns.

Employment

In CBO's forecast, nonfarm payroll employment increases by 211,000 jobs per month in 2018—compared with 181,000 jobs per month in 2017—reflecting the strong demand for labor arising from the growth in output. In subsequent years, however, the slowing growth of demand slows the growth of employment. Payroll employment expansion averages 62,000 jobs in 2020 but slows to an average of only 30,000 jobs per month between 2021 and 2023. After 2023, the pace of employment picks up, in step with the growth of real GDP, and reaches 66,000 jobs per month in 2028.

Labor Force Participation

The labor force participation rate has hovered around 62.8 percent since 2014. That nearly constant rate reflects a balance between demographic forces, which have been gradually pushing potential and actual participation down, and the ongoing economic recovery, which has been gradually pushing actual participation up. The same balance of forces is projected to keep the participation rate at an average of 62.8 percent through 2020. The long-term factors pushing the rate down are expected to be largely offset 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.

After 2020, demographic pressures predominate in CBO's projections, gradually pushing the actual and potential participation rates down to about 61 percent by 2028. By 2028, CBO projects the actual participation rate to settle at roughly 0.1 percentage point below the potential rate, which is the agency's estimate of the long-term relationship between the two rates.

Unemployment

Growth of the demand for goods and services in 2018 and 2019 lowers the unemployment rate in CBO's projections to 3.3 percent in 2019—0.8 percentage points below the 4.1 percent recorded in the fourth quarter of 2017 and about 1.3 percentage points below the agency's estimate of the natural rate. As growth in demand slows after 2019, the unemployment rate rises to 3.6 percent in 2020 and then to 4.6 percent—which is CBO's estimate of the natural rate for the entire projection period—in 2022. The unemployment rate increases to 4.8 percent in 2023 and remains there throughout most of the rest of the projection period: There is a slight uptick to 4.9 percent in 2026 as spending slows in the face of the increase in personal tax rates scheduled under current law. That unemployment rate is about one-quarter of a percentage point more than the natural rate, which is CBO's estimate of the long-term relationship between the two.

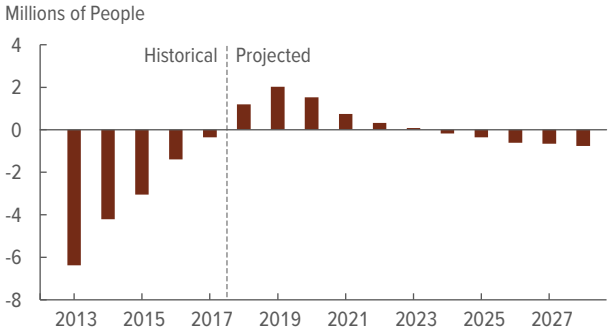
Hourly Compensation

The continued growth in demand for workers in the early years of the projection period is expected to boost the growth of hourly compensation. In a tight labor market, businesses must compete harder for scarce labor, bidding up wages to retain existing workers and attract new ones. Wage rates, as measured by the employment cost index (ECI) for workers in private industry, have been growing a little faster each year since 2011, and since 2014 there has been an increase in the pace of those gains that corresponds to a reduction of slack in the labor market.

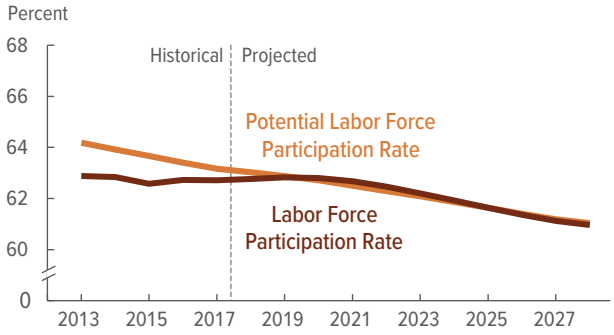
Figure 1-11.

The Labor Market

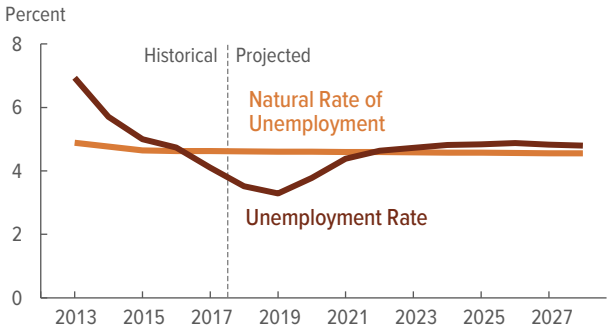
1 In CBO's projections for the near term, output growth boosts the estimated **employment gap,** . . .



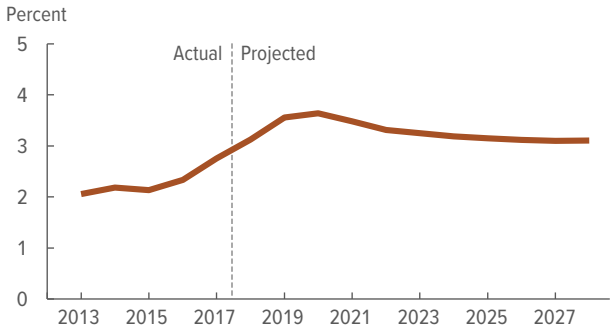
2 . . . pushing the **labor force participation rate** above CBO's estimate of the **potential rate** and . . .



3 . . . driving the **unemployment rate** below CBO's estimate of the **natural rate.**



4 The demand for labor puts upward pressure on **growth in wages.**



Sources: Congressional Budget Office; Bureau of Labor Statistics.

The employment gap is the difference between the number of employed people and the number who would be employed in the absence of fluctuations in the overall demand for goods and services.

The labor force participation rate is the percentage of people in the civilian noninstitutionalized population who are at least 16 years old and either working or seeking work. The potential labor force participation rate is the rate that CBO estimates to arise from all sources except fluctuations in the overall demand for goods and services.

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

Wages are measured by the employment cost index for wages and salaries of workers in private industry. Growth in wages is measured from the fourth quarter of one calendar year to the fourth quarter of the next.

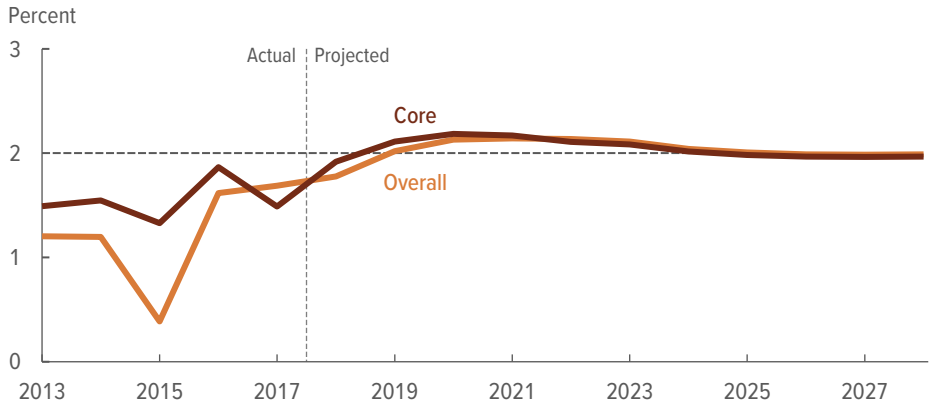
For the labor force participation and unemployment rates, data are fourth-quarter values.

The ECI for wages and salaries of workers in private industry is projected to grow by 3.1 percent in 2018, by 3.6 percent in 2019, and by 3.6 percent in 2020. Those rates are all appreciably higher than the 2.8 percent growth recorded in 2017. When benefits are included, the ECI for total compensation of workers in private industry is projected to grow by 3.5 percent, 3.7 percent, and 4.0 percent in those years, whereas it grew by only 2.6 percent in 2017. Other measures of labor compensation, including average hourly earnings for production and nonsupervisory workers in private industry, are likewise expected to grow more quickly than in recent years.

As the tightness in the labor market dissipates later in the projection period and the unemployment rate rises to a level just above the natural rate, growth rates of hourly

Figure 1-12.

Inflation



For several years, in CBO's projections, excess demand drives **inflation** above the Federal Reserve's target rate of 2 percent.

Sources: Congressional Budget Office; Bureau of Economic Analysis.

Excess demand exists when the demand for goods and services exceeds the amount that the economy can sustainably supply. The overall inflation rate is based on the price index for personal consumption expenditures; the core rate excludes prices for food and energy.

Inflation is measured from the fourth quarter of one calendar year to the fourth quarter of the next.

compensation are expected to ease. In the later years of the projection period, real hourly compensation grows with labor productivity. The growth of the ECI for wages and salaries of workers in private industry settles at an annual rate of 3.1 percent by 2026 in CBO's projections, and the broader measure of total compensation in private industry grows at an annual rate of about 3.5 percent.

Inflation

Inflation picks up in the next few years in CBO's forecast, as upward price pressure develops because of excess demand in the economy. The core price index for personal consumption expenditures (PCE, which excludes food and energy prices) rises by 1.9 percent in 2018 and by 2.1 percent in 2019—considerably more than the 1.5 percent it rose in 2017 (see Figure 1-12). The overall PCE index also increases more rapidly in coming years, reaching the Federal Reserve's target rate of 2.0 percent by early 2019. Between 2019 and 2023, the PCE price index grows by an average of 2.1 percent each year, and the consumer price index for all urban consumers (CPI-U) grows by an average of 2.5 percent annually.[8]

Inflation, as measured by both PCE price indexes, falls back to 2.0 percent in 2024 and remains at that rate for the rest of the projection period.

The temporary factors that held down inflation in recent years are expected to dissipate either completely or partially in the next few years. They include a one-time price reduction in telecommunication services; the strong dollar, which has depressed the growth of prices on imported goods; and the slow growth of Medicare's reimbursement rates, which has held down inflation in the costs of health care services as measured by the PCE price index. In addition, a tight labor market and excess domestic demand are expected to exert upward pressure on wages and prices.

In CBO's projections, that upward pressure on prices is largely offset by tighter monetary policy, supported by market participants' expectations that inflation will remain low and stable. The Federal Reserve is expected

8. The chained CPI-U, an alternative measure of price inflation faced by urban households, is projected to grow by an average of 2.2 percent per year between 2020 and 2023 and by 2.1 percent annually thereafter. The chained CPI-U tends to grow more slowly than the standard CPI-U because it uses a formula that better accounts for households' tendency to substitute among similar goods and services when relative prices change and because, unlike the CPI-U, it is little affected by statistical bias related to the sample sizes that the Bureau of Labor Statistics uses in computing each index. Historically, inflation as measured by the chained CPI-U has been 0.25 percentage points lower, on average, than inflation as measured by the CPI-U. CBO's projections reflect that average difference between the two measures.

to raise interest rates to prevent inflation from substantially exceeding its target. A variety of survey-based and market-based measures of long-run inflation expectations support the notion that people expect that the Federal Reserve will succeed. Because inflation expectations influence how prices and wages are set in markets for goods and services and in labor markets, expectations of low and stable inflation act like an anchor on inflation.

Monetary Policy and Interest Rates

CBO expects the Federal Reserve to respond to the increase in the output gap and in inflation over the next few years by continuing to raise the federal funds rate (see Figure 1-13). In CBO's forecast, the federal funds rate reaches 2.4 percent in the fourth quarter of 2018, rises to 3.4 percent by the end of 2019, and then peaks at 4.0 percent in 2021. After 2021, the Federal Reserve reduces the federal funds rate as the economy slows, and the rate reaches 3.0 percent by mid-2024. From mid-2025 through 2026, the Federal Reserve is projected to reduce the rate slightly in anticipation of the slower growth stemming from the expiration of the cuts in the personal income tax the following year.

In the agency's projections, interest rates on government debt are influenced not only by the increases in the output gap and in the rate of inflation over the next few years but by longer-term factors as well. Throughout the projection period, rising federal debt relative to GDP exerts upward pressure on short- and long-term interest rates. In addition, long-term interest rates are projected to rise gradually relative to short-term interest rates as the term premium (the premium paid to bondholders for the extra risk associated with holding longer-term bonds) moves up from its recent low levels. Various factors—investors' heightened concern about relatively weak global economic growth and the increased demand for long-term Treasury securities as a hedge against unexpected declines in inflation, for example—have pushed the term premium downward over the past few years. Those factors have begun to dissipate, and CBO expects that decline to contribute to the rise in the rate on 10-year Treasury notes over the next several years. In addition, CBO expects the ongoing reduction in the Federal Reserve's portfolio of long-term assets to contribute to the increase in the term premium over the next few years. Although in CBO's projections, the term premium rises throughout the 11-year period, it does so gradually and remains below its historical value.

In CBO's projections, the interest rate on 3-month Treasury bills rises from 1.2 percent in the fourth quarter of 2017 to 3.8 percent by early 2021. Meanwhile, the interest rate on 10-year Treasury notes increases from its average of 2.4 percent in the latter part of 2017 to 4.3 percent by the middle of 2021. From 2024 to 2028, the interest rate on 3-month Treasury bills averages 2.7 percent, and the rate on 10-year Treasury notes, 3.7 percent. In those years, the *real* interest rate on 10-year Treasury notes (that is, the rate after the effect of expected inflation, as measured by the CPI-U, has been removed) is 1.3 percent—well above the current real rate but more than 1 percentage point below the average real rate between 1990 and 2007. (The 1990–2007 period is useful for comparison because there were no severe economic downturns or financial crises during those years and because expectations at the time were that inflation would remain fairly stable.)

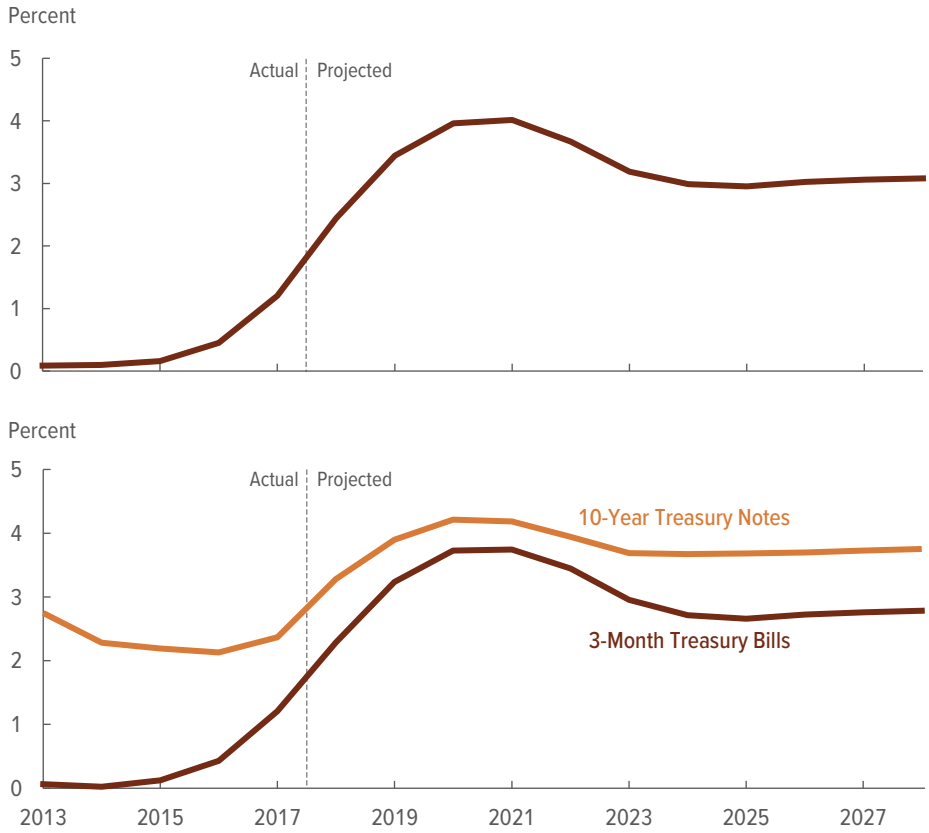
Average real interest rates on Treasury securities are projected to be lower over the projection period than they were between 1990 and 2007 for several reasons: slower growth in the labor force, slightly slower growth of productivity, an increase in the share of income going to high-income households (which tends to increase saving), investors' increased preference for Treasury securities over riskier assets, and greater net inflows of capital from abroad (measured as a percentage of GDP) than in that earlier period. Other factors are projected to drive real interest rates up, including a larger amount of federal debt relative to GDP, a larger number of older people who will be drawing down their savings, and a larger share of income going to capital. On balance, the factors pushing long-term rates below their previous averages outweigh the factors that put upward pressure on them.

Income

Projections of federal revenues depend on aggregate income—the total amount of income in the economy—and on the way it is distributed among various categories, such as labor income, domestic corporate profits, proprietors' income, and interest and dividend income. CBO therefore projects income in those categories over the next 11 years, estimating each category's share of GDP. The categories that affect revenues most strongly are labor income (especially wage and salary payments) and domestic corporate profits. Increases in U.S. borrowing from abroad imply that a greater share of domestically generated income will flow to foreign investors.

Figure 1-13.

Interest Rates



CBO expects the Federal Reserve to continue increasing the **federal funds rate** through 2021 to eliminate excess demand in the economy.

In CBO's projections, **interest rates on Treasury securities** also rise, influenced by increases in the federal funds rate and in federal borrowing.

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. Excess demand exists when the demand for goods and services exceeds the amount that the economy can sustainably supply.

Data are fourth-quarter values.

Labor Income

In CBO's projections, labor income grows fairly steadily as a share of GDP over the period (see Figure 1-14). Labor income measured as a share of GDP in 2018 is slightly above 57.2 percent, a little more than the 57.0 percent recorded for 2017. It continues to climb, in CBO's projections, reaching 58.6 percent in 2022, reflecting a tight labor market that improves workers' bargaining power, raises compensation per hour, and reduces the share of income that goes to domestic corporate profits. After 2022, when the unemployment rate exceeds CBO's estimate of the natural rate, the growth of hourly compensation slows. Nevertheless, labor income as a share of GDP continues to rise, albeit at a slower pace than before, reaching 59.2 percent in 2028.

Even though labor income as a share of GDP rises in CBO's projections over the next decade, it remains affected by factors that have notably depressed that share since 2000. 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 on capital more than returns on labor.

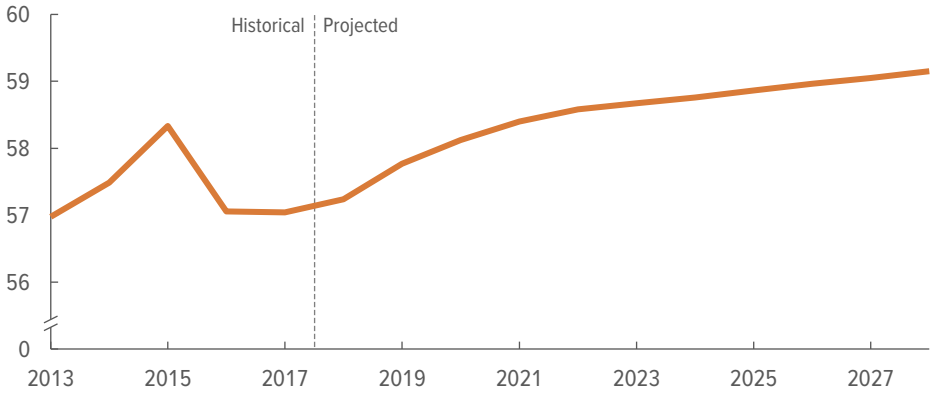
Domestic Corporate Profits

Domestic corporate profits, which equaled an estimated 9.0 percent of GDP in 2017, rise in CBO's projections to 9.8 percent of GDP in 2018. (Profits' share of GDP increases despite the slight rise in labor income's share in 2018 because other major components of national income, such as interest income, rental income,

Figure 1-14.

Labor Income

Percentage of GDP



Because of tighter labor markets in the near term, **labor income** is projected to increase as a share of GDP over the projection period.

Sources: Congressional Budget Office; Bureau of Economic Analysis.

Labor income is the sum of employees' compensation and CBO's estimate of proprietors' income that is attributable to labor.

Data are fourth-quarter values.

GDP = gross domestic product.

proprietors' income, and depreciation, fall as a share of GDP.) In subsequent years, domestic corporate profits' share of GDP is projected to fall, down to 8.0 percent by 2028. That decline occurs largely because labor compensation is expected to rise as a share of GDP but also because corporate interest payments are projected to increase as a result of higher interest rates.[9]

Domestic Income Earned by Foreign Investors

Over the next 11 years, U.S. national income (the income that accrues to U.S. residents as measured by GNP) is projected to grow at a slightly slower pace than income from U.S. domestic production (as measured by GDP). GNP is a better measure of the income available to U.S. residents because it includes net international income flows—the income that U.S. residents earn from working and investing abroad minus the income that nonresidents earn from working and investing in the United States. From 2018 to 2028, net international income is projected to fall from 0.9 percent of GDP to roughly 0.4 percent. As a result, in CBO's projections, GNP grows about 0.1 percentage point less per year than GDP grows over the 2018–2028 period.

Net international income is expected to fall over the next 11 years for two reasons. First, under current law, in CBO's projections, the amount of net borrowing from foreigners to finance domestic investment increases, as do federal budget deficits. For all but one of the past 35 years, the United States has been a net borrower on world capital markets and thus its net international lending (national saving minus domestic investment) has been *negative*, on average.[10] In CBO's forecast, net international lending declines from –2.5 percent of GDP in the 2015–2017 period to an average of –3.5 percent from 2018 to 2028. The second reason is that U.S. borrowing from abroad becomes more expensive as interest rates rise in the United States.

9. Under the 2017 tax act, new limits on the amount of interest payments that can be deducted mean that corporate borrowing no longer receives more favorable treatment than equity issuance. As a result, corporate borrowing and interest payments are expected to rise by less than they otherwise would have, and domestic corporate profits are projected to be larger than they otherwise would have been.

10. A country is a net borrower if it saves less than it invests. The difference reflects a net inflow of foreign investment. In the U.S. national income and product accounts, the balance is known as net lending to the rest of the world. Since 1983, U.S. net international lending has averaged –2.7 percent of GDP.

Uncertainty Surrounding the Economic Outlook

Economic projections are inherently uncertain, but CBO's current projections are particularly so because they incorporate several estimates of the effects of recent changes to fiscal policy, which are themselves very uncertain. For instance, the agency's estimates of the effects of those changes depend on estimates of how incentives, crowding out, and changes to economic activity affect business investment. (See Appendix B for more detail.)

The agency attempts to construct its 11-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. Nevertheless, output, inflation, or interest rates could still turn out to be higher or lower than they are in CBO's projections. The fundamental factors and long-term trends that CBO uses to frame its economic projections become increasingly uncertain over the longer term, but temporary fluctuations in economic activity contribute more to the uncertainty of the projections in the near term.

Uncertainties in CBO's Long-Term Projections

Some of the uncertainty about future output is associated with the longer-run effects of recent policy changes, but uncertainty also arises in long-run projections of size of the labor force, productivity, and national saving, regardless of any changes in policy. Uncertainty about all those factors contributes to the uncertainty surrounding long-term interest rates.

The long-term economic effects of the 2017 tax act are particularly uncertain. CBO's estimates of the responses of households and businesses to changes in incentives to work and invest are based on the agency's assessment of the effects of similar policies in the past, but none of those previous episodes is a perfect guide to the future. For example, many of the recent tax provisions that affect individuals and businesses are scheduled to change during the projection period. As a result, CBO had to estimate how individuals and businesses might react to the scheduled shifts in policy on the basis of historical evidence. The forecast for output growth could be understated if capital investment and the labor supply increase more than CBO anticipates in response to changes in the tax code. Conversely, output growth could be overstated if the incentive effects of the tax changes are smaller than the agency expects.

Another policy-related source of uncertainty in CBO's projections of output is the effect recent regulatory changes have on investment. For instance, deregulation could contribute to increases in total factor productivity by encouraging more entrepreneurial activity and innovation and by reducing the time that current workers spend on activities to document compliance with regulations. The regulatory changes could have more, or less, favorable implications for investment decisions, the labor supply, and productivity than CBO has built into its projections. Nevertheless, the effects are estimated to be modest relative to the size of the economy, and research on the relative importance of those factors or on the size of the changes is inconclusive.

Discrepancies between the actual values and CBO's projected values of a few key determinants of output could result in GDP growth that is faster or slower than the agency projected, for reasons unrelated to policy. If the labor force grew more quickly than anticipated—because, say, older workers chose to stay in the labor force longer than expected—the economy could grow more quickly than it does in CBO's projections. By contrast, if the growth rate of labor productivity does not rise above its average postrecession pace, as it does in CBO's projections, the growth of GDP might be weaker than the agency projected. That growth also could be weaker than projected if, for example, net flows of immigration were lower than expected, which would reduce the growth of the labor supply below the agency's current projections.

Real interest rates, which have a significant effect on government interest payments, are a major source of uncertainty over the longer term. Policy and nonpolicy factors contribute to that uncertainty. Global real interest rates have been unusually low, for reasons that are not fully understood, and the trajectories of those rates are equally uncertain. Many factors—population growth rates, global saving, the growth rate of productivity, and federal borrowing, to name a few—affect long-term interest rates, and CBO's projections of some or all of those factors could be too high or too low.

Uncertainties in CBO's Near-Term Projections

Over the near term, 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. Unanticipated responses to the recent changes in fiscal policy are another significant source of uncertainty in CBO's projections over the next few years. Changes to trade agreements or tariff policies on the part of the United States and its trading partners that impede trade could have significant adverse effects on aggregate economic activity, whereas the removal of trade barriers between the United States and its trading partners could improve aggregate economic conditions.

The agency's current forecast for the near-term growth of output may be too pessimistic. For example, businesses might respond to the projected 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 in household formation and in 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 contrast, CBO's forecast for the near-term growth of output 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. In addition, lower-than-expected growth among the United States' leading trading partners could lower export growth below CBO's forecast. Given such developments in aggregate demand, the unemployment rate could be higher and inflation weaker than CBO projects.

The inflation rate, which is important for budget estimates, also could be higher or lower than in CBO's projections because of factors other than the strength of demand in the economy. Inflationary pressures on consumer prices could be greater if import prices are higher than CBO projects. That could happen if, for example, synchronized growth around the world raised the prices of commodities or if changes were made to tariffs or trade arrangements. But inflation also could remain subdued for longer than the agency expects if some of the temporary factors that have held down inflation in recent years end up being more permanent than CBO anticipates (reflecting deeper structural shifts in certain sectors, such as health care and retail).

CBO projects a soft landing for the economy—in which the output gap closes through slower, but still positive, economic growth—but there is nevertheless a risk of recession. That risk does not stem from the duration of the current economic expansion, even though it has lasted more than eight years—longer than the average (about five years) of the previous 11 expansions since 1945 (see Figure 1-15). Instead, it arises from the large output gap that CBO anticipates in 2019. Such a gap would indicate that growth in demand was so robust that it strained the economy's productive capacity, raising the likelihood that unexpected vulnerabilities, such as higher inflation or unsustainable debt burdens, would develop. Although CBO and many other forecasters do not anticipate such problems to arise, they could develop within a year or two, making the economy more vulnerable as it slows.

Quantifying the Uncertainty in CBO's Projections

To roughly quantify the degree of uncertainty in its projections for the next five years, CBO analyzed its past forecasts of the growth rate of real GDP and of inflation.[11] On the basis of that analysis, CBO estimates that there is approximately a two-thirds chance that the average annual growth rate of real GDP will be between 0.8 percent and 3.5 percent over the next five years. That is, there is a two-thirds chance that real GDP in 2022 will be within roughly $1.3 trillion of the projected value of $19 trillion (in 2009 dollars; see Figure 1-16). Similarly, errors in CBO's past forecasts of 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 1.4 percent and 3.4 percent over the next five years.

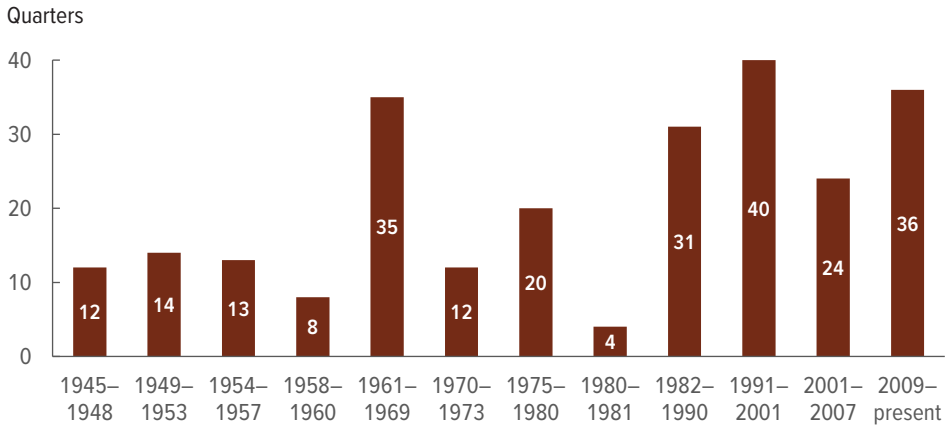
Comparisons With CBO's June 2017 Projections

CBO's current economic projections differ in a number of ways from those that it issued in June 2017

11. See Congressional Budget Office, *CBO's Economic Forecasting Record: 2017 Update* (October 2017), www.cbo.gov/publication/53090.

Figure 1-15.

Duration of Economic Expansions Since 1945



The current **economic expansion** has lasted nine years (36 quarters)—about four years longer than the average expansion since 1945.

Sources: Congressional Budget Office; National Bureau of Economic Research.

The duration of an economic expansion is the number of quarters from the trough of a business cycle to its peak. For each bar, the first year is the year of the trough and the second is the year of the peak. Not shown in this figure are periods of economic contraction—recessions—which extend from the peak of a business cycle to its trough.

GDP = gross domestic product.

(see Table 1-4 on page 36). The comparison is complicated by a variety of changes that have occurred since CBO issued its last projections—in policies, economic conditions, methodological approaches, and available economic data:

- On the policy side, reforms to the tax code that affect incentives to work and invest have changed the expected trajectory of the economy's potential output, and changes in federal spending and revenue policies are expected to increase demand in the economy in the near term.
- Underlying economic conditions have improved in some unexpected ways since June. For example, asset prices (particularly the value of corporate equities) have substantially increased, and the global economy has strengthened more than the agency projected at that time.
- Changes in CBO's methods, including an improved approach to projecting labor force participation rates, have resulted in somewhat larger projections of the potential labor supply.[12]
- New and revised data contributed to upward revisions to the current level and trajectory of GDP, but they also led the agency to significantly lower its estimates of labor's share of income and of the rate of price inflation in the early years of the projection period.

Revisions to Projections of Potential Output

CBO's projections of real potential output have been revised upward since last June as a consequence of data revisions and updates, improvements in analytical methods, and changes in policy. Updates to historical data resulted in upward revisions to estimated potential output in recent years and to the agency's 11-year projections of that measure. The effects of those data revisions were reinforced by improvements in analytical methods. First, CBO lowered its estimate of the natural rate of unemployment by about 0.1 percentage point throughout the projection period, reflecting the agency's reassessment of how demographic trends are affecting that rate. Second, the agency revised the data sources and methods that it uses to estimate potential employment and hours worked in different sectors of the economy. Both changes increased estimates of potential hours worked in recent years and thus raised CBO's estimate of potential GDP.

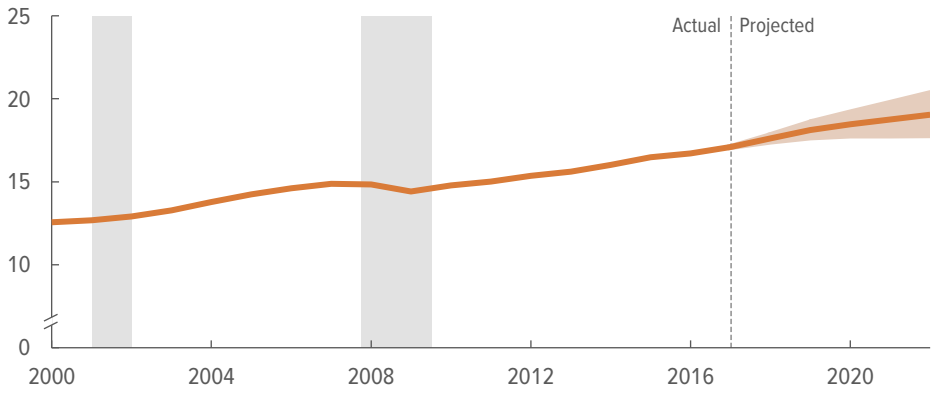
In addition, the recent tax legislation included provisions that increased incentives to work and invest, which

12. See Joshua Montes, *CBO's Projection of Labor Force Participation Rates*, Working Paper 2018-04 (Congressional Budget Office, March 2018), www.cbo.gov/publication/53616.

Figure 1-16.

The Uncertainty of CBO's Projections of Real GDP

Trillions of 2009 Dollars



In CBO's baseline projections, **real GDP** grows at an average annual rate of 2.2 percent over the 2018–2022 period—but there is a roughly two-thirds chance that the growth would be between 0.8 percent and 3.5 percent.

Sources: Congressional Budget Office; Bureau of Economic Analysis.

Real values are nominal values that have been adjusted to remove the effects of inflation. The shaded area around CBO's baseline projection of real GDP is one way to illustrate the uncertainty of that projection. The area is based on the errors in CBO's one-, two-, three-, four-, and five-year projections of the average annual growth rate of real GDP for calendar years 1976 through 2017.

The vertical bars indicate recessions, which extend from the peak of a business cycle to its trough.

GDP = gross domestic product.

more than offset the negative effects on investment from greater projected federal borrowing. Because several of those provisions that would encourage a larger supply of labor and a larger capital stock are scheduled to expire later in the projection period, the legislation increases the growth of potential GDP in CBO's projections through 2024 but slows that growth thereafter. For example, CBO has raised its projections of the potential labor force participation rate for the 2019–2024 period by an average of 0.3 percentage points but has raised the projection for 2027 by only 0.1 percentage point.

Taken together, those changes led CBO to revise its June 2017 projections of potential GDP as follows: The agency increased its estimate for 2017 by more than 0.7 percent and its projection for 2027 by more than 1.6 percent. Changes to data and methods account for about 1.1 percentage points of the increase in projected potential GDP in 2027, and the effects of the recent tax legislation account for about 0.5 percentage points. As a consequence of those revisions to the level of potential GDP, CBO's projection of the average annual growth rate of potential GDP over the 11-year period increased by about 0.1 percentage point, from 1.8 percent to 1.9 percent (see Figure 1-17 on page 38).

Revisions to Projections of Actual Output

CBO significantly boosted its projections of the growth of real GDP in 2018 and 2019, mostly because of the recent changes in fiscal policy. Some of the difference in near-term growth also reflects growth in the U.S. economy in the second half of 2017 that was appreciably stronger than expected. New and revised data caused the Bureau of Economic Analysis (BEA) to estimate that real GDP grew by 2.6 percent from the fourth quarter of 2016 to the fourth quarter of 2017, whereas last June, CBO estimated that growth over the period would be 2.2 percent. The growth of real GDP in CBO's current projections now increases to 3.3 percent in 2018 before falling back to 2.4 percent in 2019. In the projections published last June, the growth rate of real GDP fell to 2.0 percent in 2018 and to 1.5 percent in 2019.

Because CBO made larger upward revisions to its projections of actual GDP growth than it did to its projections of potential GDP growth, the agency increased its projections of the output gap through 2023. In the agency's June 2017 projections, real GDP grew somewhat faster than potential output through 2018 and slowed for two years before rising at the same rate as potential output. By contrast, in CBO's current projections, that pattern is

Table 1-4.

Comparison of CBO's Current and Previous Economic Projections for Calendar Years 2017 to 2027

				Annual Average		
	2017[a]	2018	2019	2017–2021	2022–2027	Total, 2017–2027
	Percentage Change From Fourth Quarter to Fourth Quarter					
Real GDP[b]						
April 2018	2.6	3.3	2.4	2.3	1.7	2.0
June 2017	2.2	2.0	1.5	1.8	1.9	1.8
Nominal GDP						
April 2018	4.5	5.2	4.5	4.3	3.9	4.1
June 2017	4.0	4.0	3.4	3.8	4.0	3.9
PCE Price Index						
April 2018	1.7	1.8	2.0	2.0	2.0	2.0
June 2017	1.8	2.0	2.0	2.0	2.0	2.0
Core PCE Price Index[c]						
April 2018	1.5	1.9	2.1	2.0	2.0	2.0
June 2017	1.8	2.0	2.0	1.9	2.0	2.0
Consumer Price Index[d]						
April 2018	2.1	2.0	2.3	2.3	2.4	2.4
June 2017	2.1	2.3	2.4	2.3	2.4	2.4
Core Consumer Price Index[c]						
April 2018	1.7	2.3	2.5	2.4	2.4	2.4
June 2017	2.1	2.3	2.3	2.3	2.4	2.3
GDP Price Index						
April 2018	1.9	1.8	2.1	2.0	2.1	2.1
June 2017	1.8	2.0	1.9	1.9	2.1	2.0
Employment Cost Index[e]						
April 2018	2.8	3.1	3.6	3.3	3.2	3.2
June 2017	3.1	3.3	3.4	3.2	3.1	3.2
Real Potential GDP						
April 2018	1.7	2.0	2.1	2.0	1.8	1.9
June 2017	1.6	1.7	1.8	1.7	1.9	1.8

Continued

considerably more pronounced, and the output gap does not decline to CBO's estimate of the historical average until 2024, four years later than in the previous projection. All told, for 2027, CBO's projection of real GDP is now 1.6 percent greater than the June 2017 projection.

Revisions to Projections of the Labor Market

CBO's projections of important labor market variables have been substantially revised since June. In the current projections, the 2017 tax act boosts potential output by increasing the potential supply of labor through increases in the potential labor force participation rate and in hours worked per worker. The potential labor force participation rate is higher by an average of 0.2 percentage points during the 2018–2028 period. Total potential hours worked, the result of increases in both the potential labor force participation rate and average weekly hours, are higher by an average of nearly 0.6 percent over that period.

With the strong growth of U.S. economic output in the second half of 2017, employment has been stronger and the unemployment rate lower than CBO projected in June. CBO projects that some of that additional momentum in the labor market will carry into the projection period and that the recent tax legislation will further boost employment, both by increasing the supply of labor and by raising overall aggregate demand. Over the next several years, the projected near-term stimulus to spending increases demand for workers, putting

Table 1-4. Continued

Comparison of CBO's Current and Previous Economic Projections for Calendar Years 2017 to 2027

				Annual Average		
	2017[a]	2018	2019	2017–2021	2022–2027	Total, 2017–2027
				Annual Average		
Unemployment Rate (Percent)						
April 2018	4.4	3.8	3.3	3.8	4.8	4.3
June 2017	4.4	4.2	4.4	4.5	4.9	4.8
Interest Rates (Percent)						
Three-month Treasury bills						
April 2018	0.9	1.9	2.9	2.6	2.9	2.8
June 2017	0.9	1.5	2.2	2.0	2.8	2.4
Ten-year Treasury notes						
April 2018	2.3	3.0	3.7	3.5	3.8	3.6
June 2017	2.4	2.8	3.2	3.1	3.7	3.4
Tax Bases (Percentage of GDP)						
Wages and salaries						
April 2018	43.1	43.2	43.5	43.5	44.2	43.9
June 2017	44.4	44.5	44.6	44.5	44.5	44.5
Domestic Corporate Profits[f]						
April 2018	8.9	9.5	9.6	9.1	8.1	8.6
June 2017	8.6	8.4	8.2	8.2	7.5	7.8

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

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

a. Data in this column for the April 2018 projection are actual values.

b. Real values are nominal values that have been adjusted to remove the effects of inflation.

c. Excludes prices for food and energy.

d. The consumer price index for all urban consumers.

e. The employment cost index for wages and salaries of workers in private industry.

f. Consists of domestic profits, adjusted to remove distortions in depreciation allowances caused by tax rules and to exclude the effect of inflation on the value of inventories.

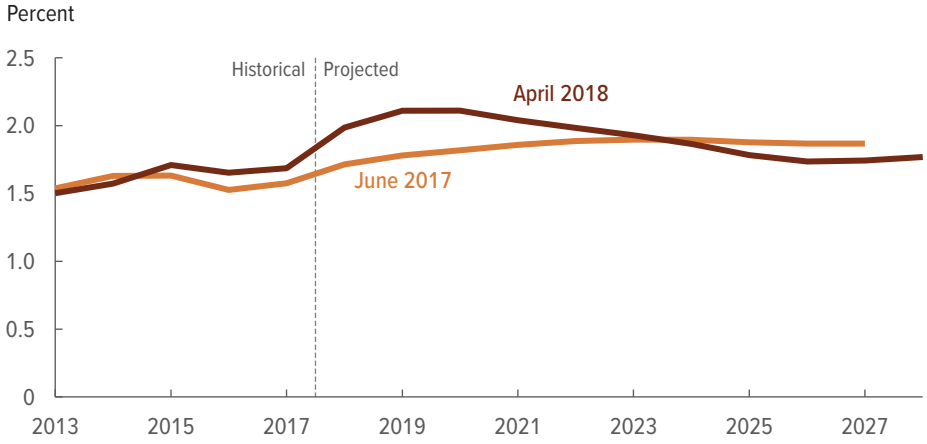
downward pressure on the unemployment rate and upward pressure on wages and salaries and on labor force participation.

Because the factors that increase the demand for labor outweigh the factors that increase the supply of labor, CBO projects that labor markets will be tighter in the near term than it did in June. As a consequence, the agency revised downward the average unemployment rate in its projections for the 2017–2021 period by 0.7 percentage points. The average growth of wages and salaries has been revised upward by 0.1 percentage point. And the average labor force participation rate has been revised upward by 0.2 percentage points. In addition, projected increases in nonfarm payroll employment have been boosted to about 210,000 jobs per month in 2018 and 180,000 jobs per month in 2019, up from 110,000 jobs and 30,000 jobs per month for those years, respectively, in the agency's June 2017 projections.

During the second half of the projection period, the revisions to labor market variables are smaller, as the slowing growth of economic activity restrains the demand for labor and eases the tightness of labor markets. In CBO's projections, the unemployment rate for 2022 to 2027 is about 0.2 percentage points lower, on average, than it was in June, in part because the natural rate of unemployment is lower. In addition, the rate of labor force participation is slightly higher, on average, as is the rate of growth of wages and salaries.

Figure 1-17.

Revisions to CBO's Projections of the Growth of Real Potential GDP



CBO's projections of **growth in real potential output** have been revised upward since last June as a consequence of data revisions and updates, improvements in analytical methods, and changes in fiscal policy.

Source: Congressional Budget Office.

Real values are nominal values that have been adjusted to remove the effects of inflation. Potential GDP is CBO's estimate of the maximum sustainable output of the economy. Growth is measured from the fourth quarter of one calendar year to the fourth quarter of the next.

GDP = gross domestic product.

Revisions to Projections of Inflation

CBO lowered its projection of inflation in 2018 because inflation was unexpectedly low last year. However, consistent with the larger output gap, CBO now expects greater inflationary pressure through 2024. In June, the agency projected that the rate of inflation would not rise above the Federal Reserve's target rate of 2 percent during the projection period. Inflation is now projected to exceed that target from 2019 to 2024.

Revisions to Projections of Interest Rates

CBO's upward revision to the output gap has also had implications for its projections of interest rates. With financial markets, demand for credit, and monetary policy all responding to stronger aggregate demand, CBO now expects short-term interest rates to be roughly three-quarters of a percentage point higher, on average, and long-term interest rates to be roughly a half percentage point higher, on average, from 2018 to 2021.

In later years, revisions to other factors have offsetting effects on interest rates. Interest rates have been revised upward for the later years of the projection period to reflect the projected increase in federal borrowing. Partially offsetting that effect on long-term interest rates is a revision to the agency's projection of the term premium, which CBO now expects to rise more gradually than previously anticipated, dampening long-term rates over the decade, on average. The net result is a long-term interest rate at the end of the projection period that is largely unchanged from the June forecast. Also, CBO expects the Federal Reserve to lower the federal funds rate beginning in 2025, offsetting the upward pressure on short-term rates from increased federal borrowing. On net, short-term interest rates projected for 2027 are roughly unchanged from those in the June forecast.

Revisions to Projections of Income

Changes to CBO's projections of income made since June have affected the agency's projections of revenues and of the budget. Those changes stem primarily from two sources: revisions to historical data and changes to the economic outlook resulting largely from recent tax and spending legislation.

In July 2017, BEA released updated national income and product accounts data, which revealed that labor income, including wages and salaries and proprietors' income, was much lower in 2017 than had previously been estimated. Those revisions also revealed that corporate profits and domestic corporate profits were much higher than BEA had previously estimated. On balance, those revisions alone would suggest that taxable income would be slightly lower than it was in the June 2017 projections. However, the recent legislation raised GDP and

increased the growth of labor compensation in CBO's current projections, boosting projected labor income and domestic corporate profits above the amounts that CBO anticipated in June.

CBO has also revised its projections of equity prices since June, in part because of unexpectedly strong growth in those prices during the second half of 2017, but also because of upward revisions to projected growth in economic activity. Consequently, the agency projects higher revenues from various taxes. For example, expected revenues from taxes on realized capital gains are higher throughout the projection period than CBO projected in June 2017, particularly in the early years.

Since June, the agency has lowered its projections of labor's share of income. The estimate of labor's share of income in recent years was significantly revised downward in the national accounts released in July 2017. The anticipated acceleration of compensation had not begun by late 2017, according to those data. Nonetheless, CBO continues to project that labor's share of income will rise as labor markets tighten. Moreover, the rise in that share is now expected to be steeper than projected in June because of the upward revision to the demand for labor in CBO's projections. Despite that steeper rise, labor's share of income at the end of the 11-year period is now lower than it was in the June forecast.

Comparisons With Other Economic Projections

The agency's projections of the growth of real GDP, the unemployment rate, and interest rates in 2018 and 2019 suggest a stronger economic outlook than does the *Blue Chip* consensus forecast. CBO's projections of real GDP growth and interest rates are generally near the upper end of the range of *Blue Chip* forecasts this year and next year, and the agency's projections of the unemployment rate are near the lower end of the range in both years (see Figure 1-18). By contrast, CBO's projections of inflation (as measured by the CPI-U) are close to the middle of the range of forecasts for both years.

CBO's projections suggest a stronger economy in the near term than do the forecasts produced by Federal Reserve officials and presented at the March 2018 meeting of the Federal Open Market Committee (see Figure 1-19).[13] The Federal Reserve reports three sets of forecasts: a median, a range, and a central tendency. The range reflects the highest and lowest forecasts of the members of the Board of Governors of the Federal Reserve System and the presidents of the Federal Reserve Banks. The central tendency reflects the range of estimates formed by removing the three highest and three lowest projections. CBO's projection of the growth of real GDP for 2018 is above both the central tendency and the range of Federal Reserve forecasts, whereas the forecast for 2019 is within both the range and the central tendency. CBO's projection of the unemployment rate for 2018 is below both the central tendency and the full range, and its projection of that rate for 2019 is at the bottom of the range. For consumer price inflation, CBO's projections are within the central tendency for both 2018 and 2019.

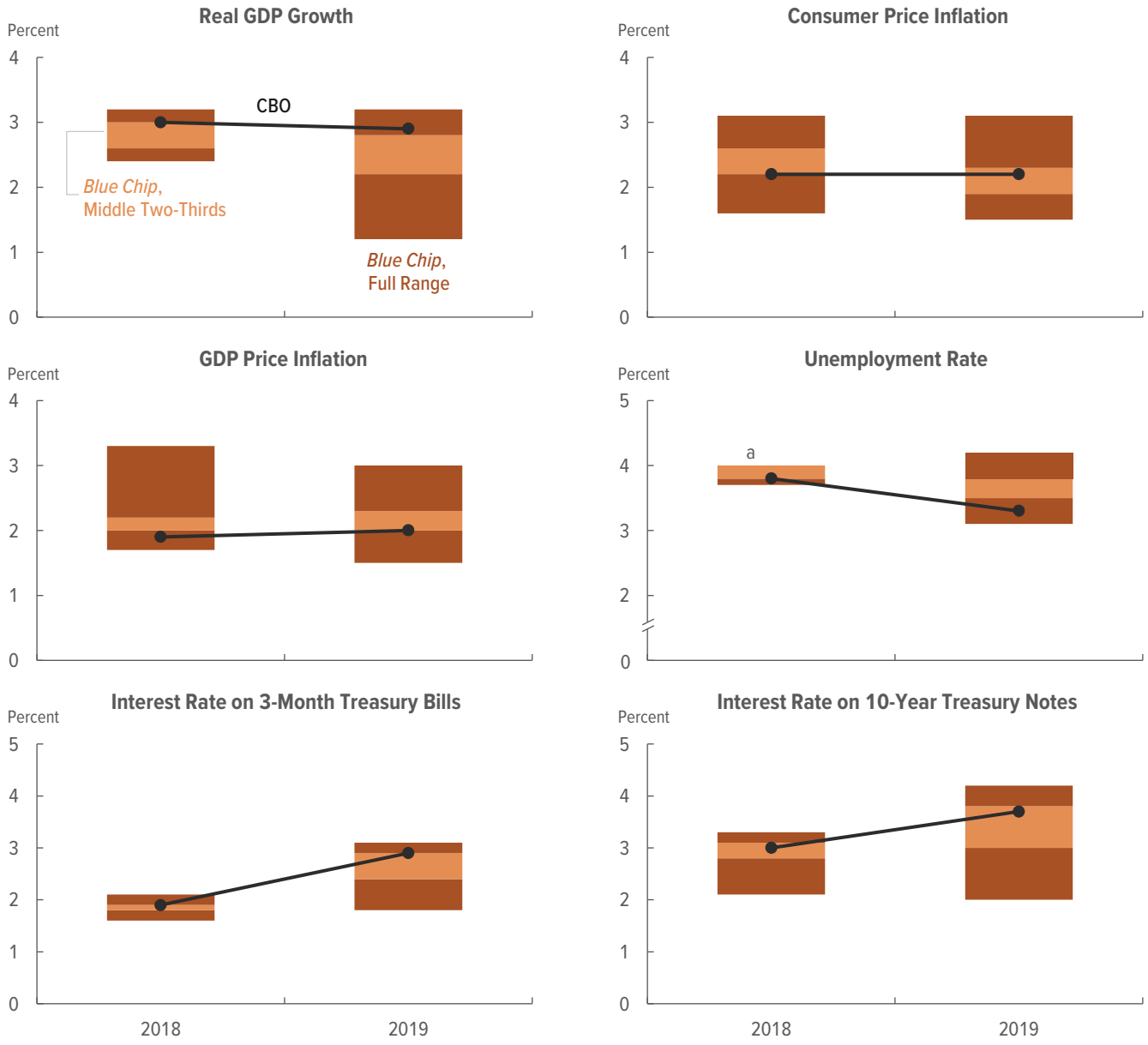
CBO's projections differ from those of other forecasters for a variety of reasons. For example, other forecasts may not yet include all of the economic effects of the federal tax and spending legislation enacted in late 2017 and early 2018, which boost economic growth and interest rates and lower the unemployment rate in CBO's projections. Also, other forecasts may incorporate expectations about future fiscal policies that differ from CBO's assumption that current law generally remains unchanged. Differences in the economic data available when the forecasts were prepared and differences in the economic and statistical models used also might account for the discrepancies. For example, outside forecasters may assume a stronger link between inflation and slack in the labor market than CBO does, which could explain why inflation is lower in CBO's forecasts than it is in other forecasts.

13. 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, March 2018" (March 21, 2018), https://go.usa.gov/xQx5j (PDF, 120 KB).

Figure 1-18.

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

CBO's projections suggest a stronger economy over the next two years than do many outside forecasts.



Sources: Congressional Budget Office; Wolters Kluwer, *Blue Chip Economic Indicators* (March 10, 2018).

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

Real values are nominal values that have been adjusted to remove the effects of inflation. Consumer price inflation is calculated using 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 the number of jobless people who are available for and seeking work, expressed as a percentage of the labor force. The unemployment rate and interest rates are calendar year averages.

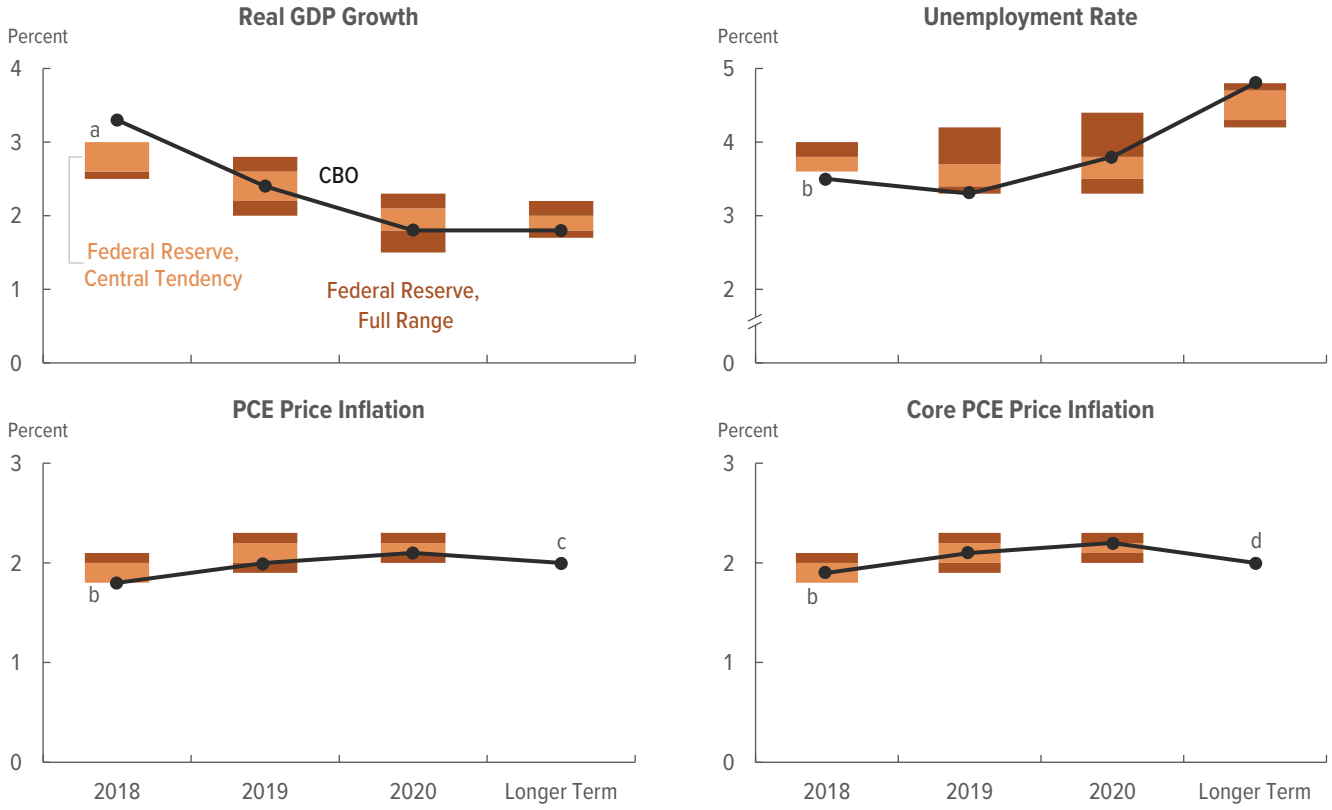
GDP = gross domestic product.

a. The upper ends of the full range and the middle two-thirds are equal.

Figure 1-19.

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

CBO's projections suggest a stronger economy this year than do the Federal Reserve's recent forecasts.



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, March 2018" (March 21, 2018), https://go.usa.gov/xQx5j (PDF, 120 KB).

The full range of forecasts from the Federal Reserve is based on the highest and lowest of the 15 projections by the Board of Governors and the president of each Federal Reserve Bank. The central tendency is the range formed by removing the 3 highest and 3 lowest projections—roughly speaking, the middle two-thirds of the full range.

For CBO, longer-term projections are values for 2028. 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 the number of jobless people who are available for and seeking work, 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 Federal Reserve does not indicate a range or central tendency for core PCE price inflation in the longer term.

CHAPTER

2

The Spending Outlook

Overview

Under current law, federal outlays in 2018 will total $4.1 trillion, the Congressional Budget Office estimates—$160 billion, or 4 percent, more than the amount spent in 2017. Spending is projected to grow at an average annual rate of 5.5 percent over the coming decade, reaching $7.0 trillion in 2028 (see Table 2-1). Social Security, Medicare, and net interest account for more than two-thirds of that increase.

Projected Spending in 2018 Differs From Spending in the Past

Federal outlays in 2018 will equal 20.6 percent of gross domestic product (GDP), CBO estimates, down slightly from 20.8 percent last year but above the 50-year average of 20.3 percent. That increase over the historical average is largely attributable to significant growth in mandatory spending (net of the offsetting receipts that are credited against such spending), which is expected to equal 12.7 percent of GDP in 2018, compared with its 9.8 percent average over the 1968–2017 period. As a share of GDP, the other major components of federal spending will fall below their 50-year averages: Discretionary spending is anticipated to equal 6.4 percent of GDP this year, compared with its 8.5 percent average over the past 50 years, and net outlays for interest are expected to equal 1.6 percent of GDP, compared with the 50-year average of 2.0 percent (see Figure 2-1).

About half of the projected growth in outlays in 2018 is attributable to discretionary spending, which is projected to rise by $80 billion, or 7 percent, from $1.2 trillion last year to nearly $1.3 trillion this year. The government's net interest costs are also anticipated to grow in 2018, increasing by $53 billion, or 20 percent, to $316 billion. CBO estimates that mandatory spending will remain close to last year's amount—$2.5 trillion—rising by $27 billion, or 1 percent. (For descriptions of those three major types of federal spending, see Box 2-1 on page 46.)

Shifts in the Timing of Payments Will Affect Spending

Spending for 2018 would be about $44 billion higher if not for a shift in the timing of certain payments because the first day of fiscal year 2018—October 1, 2017—was a Sunday. When the first day of a month falls on a weekend, certain monthly payments (mostly for mandatory benefit programs such as Medicare, Supplemental Security Income, and certain programs for veterans) normally made on that day are shifted to the preceding month; when that date is October 1, the shift moves payments to the preceding fiscal year. Accordingly, for those benefit programs, only 11 months of payments will be made in fiscal year 2018 rather than the usual 12.

Without that shift in the timing of payments, outlays this year would be 5 percent greater than in 2017 and measure 20.8 percent of GDP, CBO estimates—a slight uptick from the 20.7 percent of GDP they would have measured last year if a similar shift in the timing of payments was excluded. Additional timing shifts will occur later in the projection period: CBO estimates that $62 billion in outlays will shift from 2023 into 2022, $67 billion will shift from 2024 into 2023, and $89 billion will shift from 2029 into 2028.

Spending Is Projected to Rise Significantly Relative to GDP

In CBO's baseline projections, outlays continue to rise in relation to the size of the economy over the coming decade, reaching 23.3 percent of GDP in 2028 (adjusted to exclude the effects of timing shifts), an increase of 2.5 percentage points from the adjusted estimate for 2018.[1] Relative to GDP, mandatory spending and net interest costs are projected to rise significantly, whereas discretionary spending is projected to decline (see Figure 2-2 on page 47). Specifically:

- Mandatory spending is projected to increase by 2 percentage points (from 12.9 percent of GDP to 14.9 percent), primarily because the aging of the

1. The timing shift in 2028 boosts projected outlays for that year to $7.0 trillion, or 23.6 percent of GDP.

Table 2-1.

Outlays Projected in CBO's Baseline

	Actual, 2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total 2019–2023	Total 2019–2028
							In Billions of Dollars							
Mandatory														
Social Security	939	984	1,043	1,110	1,180	1,253	1,330	1,410	1,495	1,583	1,676	1,774	5,915	13,853
Medicare[a]	702	707	776	830	893	996	1,032	1,062	1,181	1,267	1,358	1,521	4,527	10,915
Medicaid	375	383	401	417	437	465	493	524	554	587	620	655	2,213	5,152
Other spending	756	724	758	776	808	857	854	851	891	920	928	981	4,053	8,624
Offsetting receipts	-253	-252	-260	-272	-286	-305	-317	-334	-361	-374	-393	-406	-1,439	-3,306
Subtotal	2,519	2,546	2,719	2,861	3,031	3,266	3,392	3,513	3,760	3,983	4,189	4,524	15,269	35,238
Discretionary														
Defense	590	622	669	651	655	671	679	688	710	727	745	769	3,325	6,964
Nondefense	610	658	693	689	693	708	727	748	771	794	817	839	3,511	7,480
Subtotal	1,200	1,280	1,362	1,340	1,348	1,380	1,406	1,436	1,481	1,522	1,562	1,608	6,836	14,445
Net Interest	263	316	390	485	570	643	702	739	774	817	864	915	2,789	6,897
Total	**3,982**	**4,142**	**4,470**	**4,685**	**4,949**	**5,288**	**5,500**	**5,688**	**6,015**	**6,322**	**6,615**	**7,046**	**24,893**	**56,580**
On-budget	3,180	3,288	3,556	3,706	3,901	4,168	4,303	4,414	4,658	4,883	5,084	5,416	19,634	44,088
Off-budget[b]	801	853	915	980	1,048	1,120	1,197	1,274	1,357	1,439	1,531	1,631	5,259	12,492
Memorandum:														
Outlays Adjusted to Exclude Timing Shifts														
Mandatory outlays	2,516	2,587	2,719	2,861	3,031	3,208	3,387	3,575	3,760	3,983	4,189	4,440	15,206	35,154
Total outlays	**3,978**	**4,186**	**4,470**	**4,685**	**4,949**	**5,226**	**5,495**	**5,755**	**6,015**	**6,322**	**6,615**	**6,957**	**24,826**	**56,490**
Gross Domestic Product	19,178	20,103	21,136	22,034	22,872	23,716	24,621	25,583	26,595	27,608	28,677	29,803	114,379	252,646
							As a Percentage of Gross Domestic Product							
Mandatory														
Social Security	4.9	4.9	4.9	5.0	5.2	5.3	5.4	5.5	5.6	5.7	5.8	6.0	5.2	5.5
Medicare[a]	3.7	3.5	3.7	3.8	3.9	4.2	4.2	4.2	4.4	4.6	4.7	5.1	4.0	4.3
Medicaid	2.0	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.1	2.1	2.2	2.2	1.9	2.0
Other spending	3.9	3.6	3.6	3.5	3.5	3.6	3.5	3.3	3.3	3.3	3.2	3.3	3.5	3.4
Offsetting receipts	-1.3	-1.3	-1.2	-1.2	-1.2	-1.3	-1.3	-1.3	-1.4	-1.4	-1.4	-1.4	-1.3	-1.3
Subtotal	13.1	12.7	12.9	13.0	13.3	13.8	13.8	13.7	14.1	14.4	14.6	15.2	13.3	13.9
Discretionary														
Defense	3.1	3.1	3.2	3.0	2.9	2.8	2.8	2.7	2.7	2.6	2.6	2.6	2.9	2.8
Nondefense	3.2	3.3	3.3	3.1	3.0	3.0	3.0	2.9	2.9	2.9	2.8	2.8	3.1	3.0
Subtotal	6.3	6.4	6.4	6.1	5.9	5.8	5.7	5.6	5.6	5.5	5.4	5.4	6.0	5.7
Net Interest	1.4	1.6	1.8	2.2	2.5	2.7	2.8	2.9	2.9	3.0	3.0	3.1	2.4	2.7
Total	**20.8**	**20.6**	**21.2**	**21.3**	**21.6**	**22.3**	**22.3**	**22.2**	**22.6**	**22.9**	**23.1**	**23.6**	**21.8**	**22.4**
On-budget	16.6	16.4	16.8	16.8	17.1	17.6	17.5	17.3	17.5	17.7	17.7	18.2	17.2	17.5
Off-budget[b]	4.2	4.2	4.3	4.4	4.6	4.7	4.9	5.0	5.1	5.2	5.3	5.5	4.6	4.9
Memorandum:														
Outlays Adjusted to Exclude Timing Shifts														
Mandatory outlays	13.1	12.9	12.9	13.0	13.3	13.5	13.8	14.0	14.1	14.4	14.6	14.9	13.3	13.9
Total outlays	**20.7**	**20.8**	**21.2**	**21.3**	**21.6**	**22.0**	**22.3**	**22.5**	**22.6**	**22.9**	**23.1**	**23.3**	**21.7**	**22.4**

Source: Congressional Budget Office.

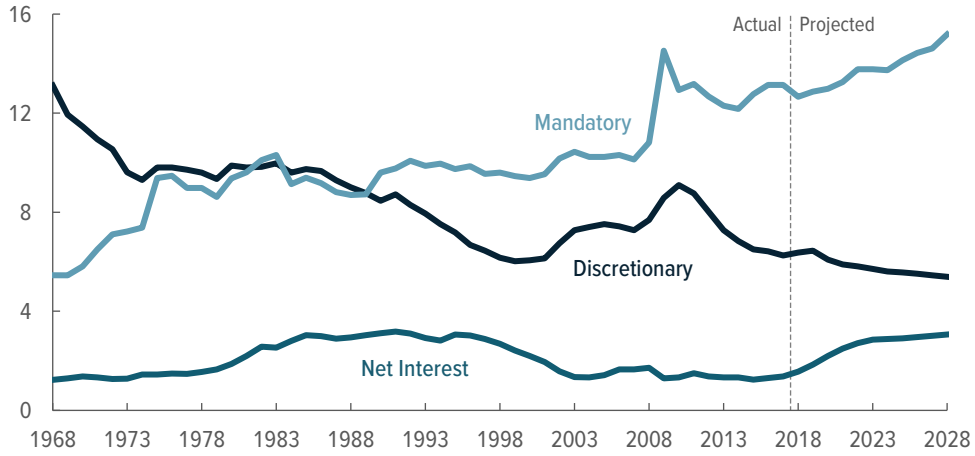
a. Gross spending, excluding the effects of Medicare premiums and other offsetting receipts.

b. Off-budget outlays stem from transactions related to the Social Security trust funds and the net cash flow of the Postal Service.

Figure 2-1.

Outlays, by Category

Percentage of Gross Domestic Product



Under current law, rising spending for Social Security and Medicare would boost mandatory outlays.

Total discretionary spending is projected to fall as a share of gross domestic product as outlays grow modestly in nominal terms.

At the same time, growing debt and higher interest rates are projected to push up net interest costs.

Source: Congressional Budget Office, using data from the Office of Management and Budget.

population and rising health care costs per beneficiary will increase spending for Social Security, Medicare, and other programs.

- As interest rates return to historically higher levels and federal debt continues to mount, net outlays for interest are projected to jump significantly, increasing by 1.5 percentage points and nearly doubling as a share of the economy (from 1.6 percent of GDP to 3.1 percent) by 2028.

- Discretionary spending is projected to fall by 1.0 percentage point as a share of GDP—from 6.4 percent to 5.4 percent. That decline reflects lower statutory limits on discretionary funding in 2020 and 2021 and the assumption (required by law) that discretionary funding will grow at the rate of inflation—which is slower than projected growth in GDP—beginning in 2022. Those projected decreases follow significant increases in discretionary funding provided for 2018 in the Consolidated Appropriations Act, 2018 (Public Law 115-141), and permitted for 2019 by the Bipartisan Budget Act of 2018 (P.L. 115-123).

Among mandatory programs, outlays for Social Security and for major health care programs are projected to rise relative to GDP; spending for all other mandatory programs is projected to decline relative to GDP. In particular (adjusted to exclude the effects of timing shifts):

- Outlays for the largest federal program, Social Security, are expected to rise from 4.9 percent of GDP in 2018 to 6.0 percent in 2028.

- Federal outlays for the major health care programs—Medicare, Medicaid, subsidies offered through the health insurance marketplaces established under the Affordable Care Act and related spending, and the Children's Health Insurance Program (CHIP)—are projected to grow from 5.3 percent of GDP in 2018 to 6.6 percent in 2028, mostly because of growth in Medicare spending.[2]

- Outlays for all other mandatory programs (net of offsetting receipts) are projected to decline from 2.7 percent of GDP in 2018 to 2.4 percent in 2028.

Mandatory Spending

Mandatory—or direct—spending consists of spending for some benefit programs and other payments to people, businesses, nonprofit institutions, and state and local governments. Mandatory spending is generally governed by statutory criteria and is not normally constrained by the annual appropriation process.[3] Certain types of payments that federal agencies receive from the public and from other government agencies are classified as offsetting

2. Spending for Medicare is presented net of premium payments and other offsetting receipts, unless otherwise noted.

3. Each year, some mandatory programs are modified by provisions in annual appropriation acts. Such changes may decrease or increase spending for the affected programs for one or more years.

Box 2-1.

Categories of Federal Spending

On the basis of its treatment in the budget process, federal spending can be divided into three broad categories: mandatory spending, discretionary spending, and net interest.

Mandatory spending consists primarily of spending for benefit programs, such as Social Security, Medicare, and Medicaid. The Congress largely determines funding for those programs by setting rules for eligibility, benefit formulas, and other parameters rather than by appropriating specific amounts each year. In making baseline projections, the Congressional Budget Office generally assumes that the existing laws and policies governing those programs will remain unchanged. Mandatory spending also includes offsetting receipts—fees and other charges that are recorded as negative budget authority and outlays. Offsetting receipts differ from revenues, in that revenues are collected in the exercise of the government's sovereign powers (income taxes, for example), whereas offsetting receipts are mostly collected from other government accounts or from members of the public for businesslike transactions (premiums for Medicare or royalties for the drilling of oil on public lands, for example).

Discretionary spending is controlled by annual appropriation acts in which policymakers specify how much money will be provided for certain government programs in specific years. Appropriations fund a broad array of government activities, including defense, law enforcement, and transportation. They also fund the national park system, disaster relief, and foreign aid. Some of the fees and charges triggered by appropriation acts are classified as offsetting collections and are credited against discretionary spending for the particular accounts affected.

CBO's baseline projections depict the path of spending for individual discretionary accounts as directed by the provisions of the Balanced Budget and Emergency Deficit Control Act of 1985 (Public Law 99-177). That act stated that current appropriations should be assumed to grow with inflation in the future.[1]

However, the baseline also incorporates the assumption that discretionary funding will not exceed caps imposed by the Budget Control Act of 2011 (P.L. 112-25) and modified by subsequent legislation.

Discretionary funding related to five types of activities is not constrained by the caps, and it is generally assumed to grow with inflation after 2018, in accordance with the rules governing CBO's baseline projections. Specifically, appropriations designated for overseas contingency operations and activities designated as emergency requirements are assumed to grow with inflation. Funding for the other three types of activities—which consist of certain efforts to reduce overpayments in benefit programs, programs designated by the 21st Century Cures Act (P.L. 114-225), and disaster relief—is not constrained by the caps on defense and nondefense funding but is subject to other annual limits.

In addition to outlays from appropriations subject to the caps, the baseline projections include discretionary spending for highway and airport infrastructure programs and public transit programs, all of which receive mandatory budget authority from authorizing legislation. Each year, however, appropriation acts control spending for those programs by limiting how much of that budget authority the Department of Transportation can obligate. For that reason, those obligation limitations are often treated as a measure of discretionary resources, and the resulting outlays are considered discretionary spending.

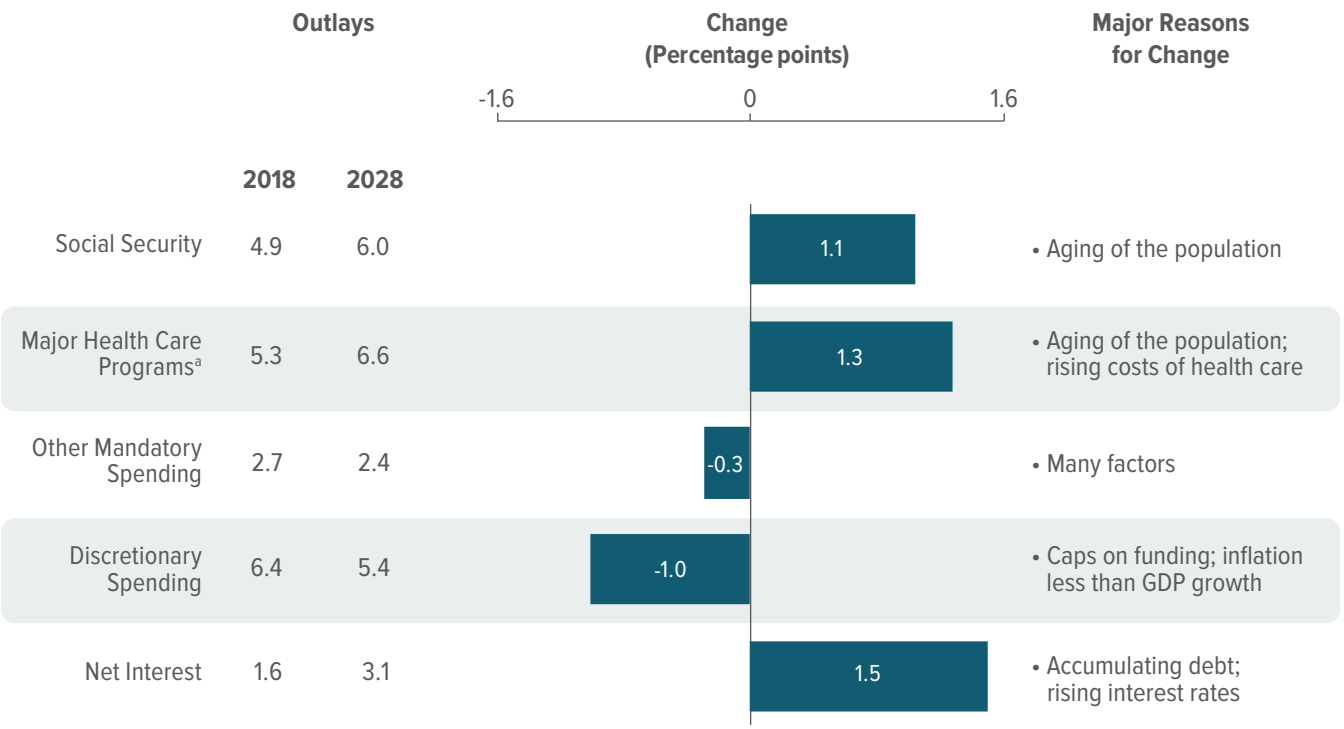
Net interest consists of interest paid on Treasury securities and other interest that the government pays (for example, interest paid on late refunds issued by the Internal Revenue Service) minus the amounts that it collects from various sources (for example, from states that pay the federal unemployment trust fund interest on advances they received when the balances of their state unemployment accounts were insufficient to pay benefits in a timely fashion). Net interest is determined by the size and composition of the government's debt and by market interest rates.

1. In CBO's baseline projections, discretionary funding related to federal personnel is inflated using the employment cost index for wages and salaries of workers in private industry; other discretionary funding is adjusted using the gross domestic product price index.

Figure 2-2.

Major Changes in Projected Outlays From 2018 to 2028

Percentage of Gross Domestic Product



Source: Congressional Budget Office.

GDP = gross domestic product.

Outlays as a percentage of GDP have been adjusted to exclude the effects of timing shifts.

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.

receipts and reduce mandatory spending. In 2018, mandatory spending (net of offsetting receipts) accounts for about 60 percent of total estimated spending.

The Balanced Budget and Emergency Deficit Control Act of 1985 (P.L. 99-177), referred to here as the Deficit Control Act, requires CBO's projections for most mandatory programs to incorporate the assumption that current laws continue unchanged.[4] Therefore, CBO's baseline projections for mandatory spending reflect the estimated effects of economic influences, caseload growth, and other factors on 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.

CBO's Baseline Projections of Mandatory Spending From 2018 to 2028

In 2017, mandatory spending totaled about $2.5 trillion, or 13.1 percent of GDP. CBO estimates that under current law, such spending will rise by about 1 percent in 2018, remaining at $2.5 trillion, or 12.7 percent of GDP (see Table 2-2). Most of that estimated increase is attributable to larger outlays for Social Security and the major health care programs and decreases in offsetting receipts from Fannie Mae and Freddie Mac, moderated by a decline in outlays for higher education. The rate of growth in mandatory spending is slowed by the shift

4. Section 257 of the Deficit Control Act also requires CBO to assume that certain mandatory programs will continue beyond their scheduled expiration and that entitlement programs, including Social Security and Medicare, will be fully funded and thus will be able to make all scheduled payments. Other rules that govern the construction of CBO's baseline have been developed by the agency in consultation with the House and Senate Committees on the Budget. For further details, see Congressional Budget Office, "How CBO Prepares Baseline Budget Projections" (February 2018), www.cbo.gov/publication/53532.

Table 2-2.

Mandatory Outlays Projected in CBO's Baseline

Billions of Dollars

	Actual, 2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total 2019–2023	Total 2019–2028
Social Security														
Old-Age and Survivors Insurance	796	840	895	956	1,019	1,085	1,155	1,226	1,303	1,382	1,465	1,557	5,109	12,043
Disability Insurance	143	144	148	154	161	168	176	184	192	201	211	216	806	1,810
Subtotal	939	984	1,043	1,110	1,180	1,253	1,330	1,410	1,495	1,583	1,676	1,774	5,915	13,853
Major Health Care Programs														
Medicare[a]	702	707	776	830	893	996	1,032	1,062	1,181	1,267	1,358	1,521	4,527	10,915
Medicaid	375	383	401	417	437	465	493	524	554	587	620	655	2,213	5,152
Health insurance subsidies and related spending[b]	48	58	60	61	67	74	76	78	81	83	87	91	338	757
Children's Health Insurance Program	16	16	16	14	13	13	13	14	14	15	15	16	69	143
Subtotal[a]	1,141	1,164	1,252	1,322	1,409	1,548	1,614	1,677	1,831	1,952	2,080	2,282	7,146	16,967
Income Security Programs														
Earned income, child, and other tax credits[c]	83	87	99	99	99	100	99	100	101	102	88	88	496	975
Supplemental Nutrition Assistance Program	70	69	66	65	65	65	65	65	66	67	69	70	326	664
Supplemental Security Income	55	51	57	58	60	67	64	60	68	70	72	81	306	658
Unemployment compensation	31	30	27	30	36	43	47	50	52	55	57	59	183	456
Family support and foster care[d]	31	32	32	32	33	33	33	34	34	34	34	34	163	333
Child nutrition	23	24	26	27	28	29	30	31	33	34	36	37	139	311
Subtotal	294	294	307	311	320	336	338	341	354	363	356	370	1,613	3,397
Federal Civilian and Military Retirement														
Civilian[e]	101	102	105	109	113	118	122	126	131	135	139	143	568	1,242
Military	58	54	61	63	66	73	70	66	73	75	77	85	332	708
Other	4	3	3	4	5	6	7	8	4	10	7	7	25	61
Subtotal	163	160	169	177	184	197	198	200	207	220	223	236	925	2,011
Veterans' Programs														
Income security[f]	86	83	94	99	103	115	111	105	119	123	127	144	522	1,140
Other[g]	19	17	17	16	17	18	18	18	20	20	21	23	87	190
Subtotal	105	100	112	115	120	134	129	124	138	143	148	167	609	1,330
Other Programs														
Agriculture	13	17	14	13	15	15	15	15	15	15	15	15	71	145
Deposit Insurance	-12	-14	-9	-8	-7	-8	-8	-8	-8	-8	-9	-8	-39	-79
MERHCF	10	10	11	11	12	12	13	14	14	15	16	17	59	135
Fannie Mae and Freddie Mac[h]	0	0	3	2	*	2	2	2	2	2	2	2	8	19
Higher education	42	-4	3	7	8	8	7	6	6	6	6	6	33	63
Other	77	87	73	74	76	73	70	66	67	67	67	70	366	704
Subtotal	130	97	94	98	104	103	99	95	96	97	98	102	498	986

Continued

Table 2-2. Continued

Mandatory Outlays Projected in CBO's Baseline

Billions of Dollars

	Actual, 2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total 2019–2023	Total 2019–2028
Offsetting Receipts														
Medicare[i]	-111	-124	-135	-145	-155	-168	-180	-194	-208	-225	-242	-261	-782	-1,912
Federal share of federal employees' retirement														
Social Security	-17	-17	-18	-18	-19	-20	-20	-21	-22	-22	-23	-24	-96	-208
Military retirement	-18	-19	-21	-21	-21	-22	-22	-23	-24	-24	-25	-25	-107	-228
Civil service retirement and other	-35	-37	-38	-39	-40	-41	-42	-43	-45	-46	-47	-48	-200	-429
Subtotal	-71	-72	-76	-78	-80	-83	-85	-88	-90	-92	-95	-97	-403	-865
Receipts related to natural resources	-9	-11	-11	-11	-11	-12	-11	-12	-13	-13	-13	-13	-56	-119
MERHCF	-7	-8	-8	-8	-9	-9	-10	-10	-11	-11	-12	-12	-43	-99
Fannie Mae and Freddie Mac[h]	-29	-6	0	0	0	0	0	0	0	0	0	0	0	0
Other	-27	-31	-30	-30	-31	-33	-31	-31	-39	-33	-31	-23	-154	-311
Subtotal	-253	-252	-260	-272	-286	-305	-317	-334	-361	-374	-393	-406	-1,439	-3,306
Total Mandatory Outlays	**2,519**	**2,546**	**2,719**	**2,861**	**3,031**	**3,266**	**3,392**	**3,513**	**3,760**	**3,983**	**4,189**	**4,524**	**15,269**	**35,238**
Memorandum:														
Mandatory Spending Excluding the Effects of Offsetting Receipts	2,772	2,799	2,979	3,132	3,317	3,570	3,709	3,847	4,121	4,357	4,582	4,930	16,707	38,544
Spending for Medicare Net of Offsetting Receipts	591	583	641	685	738	828	852	868	973	1,042	1,116	1,260	3,744	9,003
Spending for Major Health Care Programs Net of Offsetting Receipts[j]	1,030	1,040	1,118	1,177	1,254	1,380	1,434	1,484	1,622	1,726	1,838	2,021	6,364	15,055
Mandatory Spending Excluding the Effects of Timing Shifts, Net of Offsetting Receipts	**2,516**	**2,587**	**2,719**	**2,861**	**3,031**	**3,208**	**3,387**	**3,575**	**3,760**	**3,983**	**4,189**	**4,440**	**15,206**	**35,154**

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 (preliminary estimate).

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 therefore are not shown in this table.)

h. Cash payments from Fannie Mae and Freddie Mac to the Treasury are recorded as offsetting receipts in 2017 and 2018. Beginning in 2019, 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.

in the timing of certain payments from fiscal year 2018 to fiscal year 2017.[5] Without that timing shift, mandatory spending would increase in 2018 by an additional $40 billion (or 2.8 percent), to $2.6 trillion, or 12.9 percent of GDP. (In the discussion of mandatory spending that follows, all numbers have been adjusted to exclude the effects of timing shifts.)

From 2018 to 2028, outlays for mandatory programs are projected to rise by an average of about 6 percent per year, reaching $4.4 trillion in 2028. As a share of GDP, mandatory spending is projected to increase slightly through 2020—to 13.0 percent.[6] Then, it rises steadily to 14.9 percent in 2028. By comparison, mandatory spending averaged 12.8 percent of GDP over the past 10 years and 9.8 percent over the past 50 years.

Much of the projected growth in mandatory spending over the coming decade is attributable to two factors. First, the number of people age 65 or older in the population has been growing significantly—more than doubling over the past 50 years and expected to rise by more than one-third by 2028. In CBO's baseline projections, spending for people age 65 or older in several large mandatory programs—Social Security, Medicare, Medicaid, and military and federal civilian retirement programs—increases from 38 percent of all federal noninterest spending in 2018 to 45 percent in 2028.

Second, health care costs (adjusted to account for the aging of the population) are projected to grow faster than the economy over the long term. Growth in health care spending has slowed in recent years, but the reasons for that slowdown are not clear. In CBO's projections, spending per enrollee in federal health care programs grows more rapidly over the coming decade than it has in recent years, but it does not return to the higher rates of growth that were experienced before the slowdown.

The effects on federal spending of those two long-term trends are already apparent over the 10-year horizon—especially for Social Security and Medicare—and will grow in size beyond the baseline period.

Social Security. Social Security, the largest federal spending program, provides cash benefits to the elderly, to people with disabilities, and to the dependents and survivors of people covered by the program. Last year, Social Security outlays totaled $939 billion, or 4.9 percent of GDP. Under current law, outlays for Social Security are projected to rise by $45 billion in 2018, or about 5 percent. That growth rate is higher than it has been in recent years, largely because Social Security beneficiaries received a cost-of-living adjustment (COLA) of 2.0 percent in January 2018, the largest since 2012. Growth in the number of beneficiaries is also anticipated to tick up from 1.5 percent last year to 1.9 percent in 2018.

Over the 2019–2028 period, outlays for Social Security are projected to grow at an average rate of about 6 percent per year, reaching $1.8 trillion—or 6.0 percent of GDP—by 2028. That growth reflects increases in the number of beneficiaries and in the amount of the average benefit. In CBO's projections, the number of beneficiaries grows by about 2.3 percent each year, from an average of 62.3 million beneficiaries in 2018 to 78.0 million in 2028, and average benefits grow by about 3.7 percent each year, mainly because of annual COLAs, which are projected to average 2.4 percent.

Medicare, Medicaid, and Other Major Health Care Programs. In 2017, net federal outlays for Medicare, Medicaid, and other major programs related to health care accounted for 41 percent of mandatory spending (net of offsetting receipts) and totaled $1.0 trillion, or 5.4 percent of GDP. In CBO's baseline projections (excluding the effects of shifts in the timing of certain payments), that spending increases by $35 billion, or 3.4 percent, in 2018; from 2019 to 2028, it increases at an average rate of about 6 percent per year, reaching $2.0 trillion, or 6.6 percent of GDP, by the end of that period.

Medicare. Outlays for Medicare, a program that provides subsidized medical insurance to the elderly and to some people with disabilities, account for about half of the projected increase in outlays for major health care programs in 2018 and about two-thirds of the growth in such outlays through 2028. CBO estimates that Medicare spending (net of offsetting receipts—mostly in the form of premiums paid by beneficiaries—and adjusted to exclude the effects of timing shifts) will grow

5. A timing shift with effects of a similar magnitude occurred from 2017 into 2016; the net effect of the two timing shifts on mandatory spending in 2017 was small, increasing outlays by $3 billion.

6. Mandatory spending as a share of GDP is projected to grow more slowly in the near term largely because GDP is projected to grow faster in 2019 and 2020 than later in the projection period. The growth in nominal mandatory spending is slightly slower in the first two years than later in the projection period.

by 3 percent in 2018, much more slowly than in most recent years. That slower growth is attributable to higher receipts from premiums.[7] Enrollment is projected to increase by 2.7 percent in 2018, a rate just slightly higher than the 2.6 percent rate of increase recorded last year.

Over the 2019–2028 period, Medicare outlays are projected to increase by an average of 7 percent per year, driven by the rising per-beneficiary costs of medical care. Cost growth accounts for nearly 5 percentage points of that increase, and growing enrollment accounts for the rest. By 2028, projected net outlays for Medicare grow to $1.2 trillion.

Medicaid. Spending for Medicaid, a joint federal and state program that funds medical care for certain low-income, elderly, and disabled people, is estimated to increase by 2 percent, or $9 billion, in 2018. That rate of growth is one of the slowest since 2012, when provisions in the American Recovery and Reinvestment Act of 2009 (P.L. 111-5) that increased the federal government's share of Medicaid spending expired and federal spending on the program fell. Flattening growth in enrollment (which had picked up considerably after Medicaid eligibility was expanded by the Affordable Care Act) and slow growth in per capita costs largely explain the smaller increase in spending in 2018 compared with earlier years. After 2018, outlays for the program are projected to grow at an average rate of about 5.5 percent per year (about 1 percent because of increasing enrollment and nearly 5 percent because of increasing per capita costs), closer to historical growth levels.

Health Insurance Subsidies and Related Spending. Outlays for health insurance subsidies and related spending are estimated to increase by $10 billion, or 21 percent, in 2018.[8] That jump mostly stems from an average increase of 34 percent in premiums for the second-lowest-cost "silver" plan in health insurance marketplaces established under the Affordable Care Act. (Those premiums are the benchmark for determining subsidies for plans obtained through the marketplaces.) Over the 2019–2028 period, the average growth in spending is projected to lessen considerably, to just under 5 percent per year, as per-beneficiary spending rises with the costs of providing medical care. CBO estimates that, under current law, outlays for health insurance subsidies and related spending would rise by about 60 percent over the projection period, increasing from $58 billion in 2018 to $91 billion by 2028.

Children's Health Insurance Program. CHIP is a program financed jointly by states and the federal government that provides health insurance coverage to children in families whose income, although modest, is too high for them to qualify for Medicaid. CBO estimates that outlays for CHIP will be about $500 million lower in 2018 than in 2017, primarily because of unusually high spending at the end of last year: Some states drew down additional funds for the program in 2017, probably in anticipation of the scheduled expiration of its authorization at the end of that year. (Funding for the program has since been reauthorized through 2027.)[9] Federal spending for CHIP is projected to decline through 2021 because the average federal matching rate for the program is scheduled to decrease from 93 percent in 2018 to 70 percent in 2021 and subsequent years. After 2021, spending on the program is projected to grow by about 3 percent per year, principally because of increasing costs per enrollee.

7. The jump in receipts from premiums stems largely from increases in how much many beneficiaries will actually pay for their premium for Medicare Part B, which covers physicians' services and other outpatient care. The basic Part B premium is the same in 2018 as it was in 2017 ($134 per month). However, about two-thirds of Part B enrollees did not pay the full $134 in 2017 because of a "hold-harmless" provision, which limits the increase in a beneficiary's payment for the Part B premium to the increase in that beneficiary's Social Security benefit. (Most Medicare enrollees have their Part B premium withheld from their monthly Social Security benefit.) With an increase in Social Security benefits in 2018, many Medicare beneficiaries will pay more or all of the full Part B premium; in fact, most of the total increase in Social Security benefits for those beneficiaries will go toward Part B premiums. CBO estimates that about half of the beneficiaries who paid less than the full premium in 2017 will again have their payments held down by the hold-harmless provision in 2018—that is, all of the increase in their Social Security benefits will go toward the Part B premium. The remaining beneficiaries are seeing some increase in take-home Social Security benefits even after they pay the full $134.

8. These subsidies lower the cost of health insurance purchased through marketplaces by people who meet income and other criteria for eligibility. The related spending consists of outlays for risk adjustment and reinsurance, and grants to states for establishing health insurance marketplaces.

9. The Congress extended CHIP's authorization through 2023 in the HEALTHY KIDS Act of 2017 (P.L. 115-120) and further extended it through 2027 in the Bipartisan Budget Act of 2018 (P.L. 115-123).

Income Security. Mandatory spending related to income security includes outlays for certain refundable tax credits, the Supplemental Nutrition Assistance Program (SNAP), Supplemental Security Income (SSI), unemployment compensation, and certain programs that support children and families. Excluding the effects of a shift in the timing of $4 billion in SSI payments, projected spending in this category rises by 1.5 percent, from $294 billion in 2017 to $298 billion in 2018 (or 1.5 percent of GDP). Over the 2019–2028 period, total mandatory spending for income security is projected to grow by an average of 2 percent per year, which is slower than GDP is projected to grow. As a result, by 2028, such outlays are projected to shrink to 1.2 percent of GDP.

Earned Income, Child, and Other Tax Credits. Refundable tax credits reduce a filer's overall income tax liability; if the credit exceeds the filer's income tax liability, the government pays all or some portion of that excess to the taxpayer.[10] Those payments are categorized as outlays.

Over the 2018–2028 period, projected outlays for refundable tax credits vary significantly. The refundable amounts of the credits are projected to jump from $87 billion in 2018 to $99 billion in 2019, mostly because Public Law 115-97, referred to here as the 2017 tax act, expands the child tax credit (see Appendix B). In addition, the 2017 tax act temporarily reduces tax liabilities, thereby increasing outlays for the refundable portion of certain tax credits.

After remaining close to $100 billion a year for much of the coming decade, projected outlays for the tax credits fall to $88 billion in 2027, after many provisions in the 2017 tax act will have expired under current law, decreasing the amount of the child tax credit and increasing tax liabilities for most people. (However, those outlays are lower than they would have been prior to the 2017 tax act because one provision of the act that lowers outlays—a change in the measure of inflation used to adjust tax parameters, including tax brackets—does not expire under current law.)

Supplemental Nutrition Assistance Program. SNAP provides benefits to help people in low-income households purchase food. CBO expects that outlays for SNAP will decrease slightly in 2018 because of continued declines in participation since the recent (post-recession) peak in 2013.

In CBO's projections, participation rates continue to decline through 2028 until they return to rates seen just before the 2007–2009 recession. However, because decreased outlays from lower participation are expected to be offset by projected increases in the cost of food (which SNAP benefits are linked to), projected outlays for the program remain roughly constant from 2020 through 2024. In 2025, projected spending on the program begins to rise as the decline in participation moderates but the price of food continues to grow. By 2028, CBO projects, outlays for SNAP, under current law, would equal the amount spent in 2017—$70 billion.

Supplemental Security Income. SSI provides cash benefits to people with low income who are elderly or disabled. CBO estimates that spending for SSI will fall by about $3 billion in 2018 because of the shift in the timing of $4 billion in payments from 2018 to 2017. Without that timing shift, outlays would rise by about $1 billion in 2018. In CBO's baseline projections, outlays for the program grow by 3 percent per year on average. Projected COLAs account for much of that growth. By 2028, without changes to current law, projected spending for SSI reaches $81 billion, or $75 billion if the effects of timing shifts are excluded.

Unemployment Compensation. The federal-state unemployment compensation program provides benefits to people who lose their jobs through no fault of their own, are actively seeking work, and meet other criteria established by the laws in their states. CBO expects spending on the program to decline by $1 billion in 2018 as a result of lower unemployment—the effects of which are partly offset by expected wage growth over the projection period, which increases average unemployment benefits. In CBO's projections, the unemployment rate continues to drop in 2019, then rises through 2027. Outlays for unemployment compensation follow that pattern: Such spending declines through 2019, then increases through 2028, reaching $59 billion—nearly double the $30 billion in outlays estimated for the current year.

Family Support, Foster Care, and Child Nutrition Programs. Spending for programs that support children and families, such as the Temporary Assistance for Needy

10. For more information, see Congressional Budget Office, *Refundable Tax Credits* (January 2013), www.cbo.gov/publication/43767.

Families (TANF) program and school lunch programs, grows in CBO's baseline by about 2 percent per year, on average. Funding for some programs, including TANF, is capped, whereas funding for other programs, including school lunch programs, is projected to grow with inflation and participation. In CBO's projections, outlays for all such programs increase from $56 billion in 2018 to $72 billion in 2028.

Civilian and Military Retirement. Retirement and survivors' benefits for most federal civilian employees (along with benefits provided through several smaller retirement programs for employees of various government agencies and for retired railroad workers) are estimated to cost $105 billion in 2018, the same amount as in 2017. Under current law, such outlays would grow by nearly 4 percent annually over the projection period, CBO estimates, reaching $151 billion in 2028. The projected growth in federal civil service retirement benefits is attributable primarily to COLAs for retirees and to increases in federal salaries, which boost benefits for people entering retirement.

The federal government also provides annuities to retired military personnel and their survivors. Outlays for those annuities totaled $58 billion in 2017; in 2018, they are projected to dip to $54 billion, but that estimate rises to $59 billion if the effects of timing shifts are removed. Most of the projected annual growth in those outlays over the 2019–2028 period results from COLAs and increases in military basic pay. Excluding the effects of shifts in the timing of payments of some annuities, outlays for military retirement benefits are projected to grow by an average of 3 percent per year, reaching $79 billion in 2028.

Veterans' Programs. Mandatory spending for veterans' benefits includes disability compensation, readjustment benefits, pensions, insurance, housing assistance, and burial benefits. Excluding the effects of shifts in the timing of certain payments, outlays for those benefits totaled $104 billion (of which roughly 80 percent represented disability compensation) in 2017 and are estimated to rise to $107 billion in 2018. That total does not include most federal spending for veterans' health care, which is funded through discretionary appropriations. CBO projects that under current law, mandatory spending for veterans' benefits would grow at an average rate of about 4 percent per year over the next decade, reaching $156 billion in 2028 (excluding shifts in the timing of some payments).

Other Mandatory Programs. The remainder of mandatory spending encompasses a number of other activities, including agricultural programs, net outlays for deposit insurance, health care benefits for retirees of the uniformed services and their dependents and surviving spouses, cash transfers to and from Fannie Mae and Freddie Mac, and loans and other programs related to higher education. Together, those outlays totaled $130 billion last year but are estimated to drop to $97 billion in 2018. That decrease is primarily driven by revisions to the estimated subsidy costs of outstanding loans recorded by the Department of Education.[11] In 2017, such revisions boosted outlays by $39 billion, whereas in 2018, CBO estimates, they will reduce outlays by $9 billion. The $48 billion decrease in outlays over the two years is partially offset by an estimated increase of $11 billion in mandatory outlays related to hurricane relief efforts in 2018. Altogether, over the 2018–2028 period, spending on these other mandatory programs is projected to increase by a total of about $5 billion, or about 5 percent.

Offsetting Receipts. Offsetting receipts are funds collected by federal agencies from other government accounts or from the public in businesslike or market-oriented transactions that are recorded as negative outlays (that is, as credits against direct spending). Such receipts include Medicare beneficiaries' premiums, intragovernmental payments made by federal agencies for their employees' retirement benefits, royalties and other charges for the production of oil and natural gas on federal lands, proceeds from sales of timber harvested and minerals extracted from federal lands, payments to the Treasury by Fannie Mae and Freddie Mac (for 2017

11. CBO calculates the subsidy costs for student loans following the procedures specified in the Federal Credit Reform Act of 1990 (FCRA). Under FCRA, the discounted present value of expected income from federal student loans issued during the 2018–2028 period is projected to exceed the discounted present value of the government's costs. (A present value is a single number that expresses a flow of current and future income or payments in terms of an equivalent lump sum received or paid at a specific time; the present value depends on the rate of interest—known as the discount rate—that is used to translate future cash flows into current dollars.) Credit programs that produce net income rather than net outlays are said to have negative subsidy rates, which result in negative outlays. The original subsidy calculation for a set of loans or loan guarantees may be increased or decreased in subsequent years by a credit subsidy reestimate that reflects an updated assessment of the cash flows associated with the outstanding loans or loan guarantees.

and 2018 only), and various fees paid by users of public property and services.[12]

CBO estimates that offsetting receipts will dip slightly this year, from $253 billion in 2017 to $252 billion in 2018. That decline is the result of two factors with countervailing effects. First, CBO estimates that remittances to the Treasury from Fannie Mae and Freddie Mac will decrease by $23 billion. About two-thirds of that reduction is from write-downs the entities took on their tax-deferred assets in response to the 2017 tax act; in addition, the Federal Housing Finance Agency and the Treasury Department recently directed the entities to increase their capital reserves, which means they will remit less in order to meet that goal. Second, other offsetting receipts are estimated to be about $22 billion higher in 2018 than in 2017, largely as a result of a $13 billion increase in receipts of Medicare beneficiaries' premiums.

After 2018, offsetting receipts are projected to grow by an average of about 5 percent per year, from $260 billion in 2019 to $406 billion in 2028. Growth in receipts of Medicare premiums, which is projected to average almost 8 percent per year, accounts for nearly 90 percent of that increase.

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 of programs created before and after the Balanced Budget Act of 1997 (P.L. 105-33). All direct spending programs that predate that act and have current-year outlays greater than $50 million are assumed to continue in CBO's baseline projections. Whether programs established after 1997 are assumed to continue is determined on a program-by-program basis, in consultation with the House and Senate Budget Committees.

CBO's baseline projections therefore incorporate the assumption that the following programs whose authorization expires within the current projection period will continue: SNAP, TANF, the Child Care Entitlement to States, rehabilitation services, child nutrition programs, some transporation programs, the Trade Adjustment Assistance program for workers, family preservation and support programs, CHIP, and most farm subsidy programs. In addition, the Deficit Control Act directs CBO to assume that a COLA for veterans' compensation will be granted each year. In CBO's projections, the assumption that expiring programs and veterans' COLAs will continue accounts for about $1.1 trillion in outlays between 2019 and 2028, most of which are for SNAP and TANF (see Table 2-3 on page 56). That amount represents about 3 percent of all mandatory spending.

Discretionary Spending

An array of federal activities is funded or controlled through annual appropriations. Such discretionary spending, which CBO estimates will account for about 30 percent of total outlays in 2018, includes most spending on national defense, elementary and secondary education, housing assistance, international affairs, and the administration of justice, as well as outlays for transportation and other programs.

How Caps on Discretionary Funding Affect CBO's Projections

Most discretionary funding is limited by caps on annual discretionary appropriations that were originally specified in the Budget Control Act of 2011 (P.L. 112-25) and modified by subsequent legislation. Under current law, separate caps exist for defense and nondefense spending through 2021. If the total amount of discretionary funding provided in appropriation acts for a given year exceeds the cap for either category, the President must sequester—or cancel—a sufficient amount of new budget authority (following procedures specified in the Budget Control Act) to eliminate the breach.[13]

12. 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 the 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, by contrast, considers Fannie Mae and Freddie Mac to be outside the federal government for budgetary purposes and records cash transactions between them and the Treasury as federal outlays or receipts. As a result, in its baseline projections, CBO treats only the current fiscal year in the same manner as the Administration in order to provide its best estimate of the amount that the Treasury ultimately will report as the federal deficit for 2018. Similarly, to match the Administration's historical budget totals, CBO also uses the Administration's treatment for past years.

13. The authority to determine whether a sequestration is required (and, if so, exactly how to make the necessary cuts in budget authority) rests with the Administration's Office of Management and Budget.

CBO's projections for discretionary funding incorporate those limits and are formulated following principles and rules that are largely set in law. In accordance with section 257 of the Deficit Control Act, CBO starts projections for individual accounts with the most recent appropriation and applies the appropriate inflation rate to project funding for future years.[14] After account-level projections of discretionary funding are made, the total amount of budget authority is adjusted to comply with the caps on discretionary funding through 2021. (CBO does not adjust each account because, although the total amount of spending is constrained by the caps, individual accounts themselves are not.) Projections for years after 2021 reflect the assumption that discretionary funding keeps pace with inflation.

In addition, some or all of the discretionary funding related to five types of activities is not constrained by the caps (instead, for most of those activities, the caps are adjusted to accommodate such funding, up to certain limits) and is generally assumed to grow with inflation after 2018.[15] Specifically, appropriations designated for overseas contingency operations (OCO) and activities designated as emergency requirements are assumed to grow with inflation.[16] For two other activities—certain efforts to reduce overpayments in benefit programs, and disaster relief—the extent to which the caps can be adjusted is subject to annual constraints, as specified in law. Finally, programs designated by the 21st Century Cures Act (P.L. 114-225) are not subject to the caps, but their total funding is subject to specified annual limits.

The recently enacted Bipartisan Budget Act of 2018 (P.L. 115-123) increased, by $143 billion and $152 billion, respectively, limits on discretionary funding that otherwise would have been in place for 2018 and 2019 under the Budget Control Act (as modified).[17] As a result, overall limits on discretionary budget authority total $1,208 billion in 2018, rise to $1,244 billion (a 3 percent increase) in 2019, and then fall to an estimated $1,118 billion (a 10 percent reduction) in 2020, when limits return to the lower levels set by the Budget Control Act (see Table 2-4 on page 58). They then rise to $1,145 billion (a 2 percent increase) in 2021, CBO estimates, the last year the caps are in place under current law.

All told, discretionary budget authority in CBO's baseline projections follows a pattern similar to that of the caps through 2021 and then increases gradually, to account for inflation, through 2028. Outlays that arise from that budget authority generally follow the same trend but more gradually, because of the delay between when funding is provided and when it is spent. Outlays can occur over short periods (to pay salaries, for example) or longer ones (for example, to pay for long-term research or construction). Therefore, discretionary outlays estimated for each year represent a mix of spending stemming not only from new budget authority but also from prior appropriations. Increases in outlays are particularly likely to lag behind increases in budget authority when the latter are large or occur well after the beginning of a fiscal year.

CBO's Baseline Projections of Discretionary Spending in 2018

If no more appropriations are enacted for 2018, discretionary funding will total $1,422 billion this year, CBO estimates, including $197 billion for activities that permit adjustments to the funding caps.[18] The remaining amount—$1,225 billion—is $17 billion more than the overall limit on discretionary funding for 2018; that excess occurs because certain provisions in the Consolidated Appropriations Act, 2018, are estimated to reduce net funding for mandatory programs by $17 billion. When appropriation acts include changes that reduce mandatory funding, the savings are credited against the discretionary funding provided by those acts

14. In CBO's baseline projections, discretionary funding related to federal personnel is inflated using the employment cost index for wages and salaries of workers in private industry; other discretionary funding is adjusted using the gross domestic product price index.

15. Spending for certain transportation programs is controlled by obligation limitations, which also are not constrained by the caps on discretionary funding and are assumed to grow with inflation.

16. Overseas contingency operations refer to certain military and diplomatic activities in Afghanistan and elsewhere, but some designated OCO funding has not been directly related to those activities. Funding that is categorized as an emergency requirement is funding designated in statute pursuant to section 251(b)(2)(A)(i) of the Deficit Control Act.

17. For more information about the discretionary caps, see Congressional Budget Office, *Final Sequestration Report for Fiscal Year 2018* (April 2018), www.cbo.gov/publication/53696.

18. The $1,422 billion total includes CBO's estimates of some components of discretionary funding—for example, market-driven fees that are credited as offsets to discretionary appropriations. However, the bulk of discretionary funding consists of specified appropriations.

Table 2-3.

Costs for Mandatory Programs That Continue Beyond Their Current Expiration Date in CBO's Baseline

Billions of Dollars

												Total	
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2019–2023	2019–2028
Supplemental Nutrition Assistance Program													
Budget authority	0	66	65	65	65	65	65	66	67	69	70	326	664
Outlays	0	63	65	65	65	65	65	66	67	69	70	323	661
Temporary Assistance for Needy Families													
Budget authority	0	17	17	17	17	17	17	17	17	17	17	87	173
Outlays	0	13	16	16	17	17	17	17	17	17	17	79	165
Veterans' Compensation COLAs													
Budget authority	0	3	6	8	11	13	16	19	22	25	28	41	150
Outlays	0	3	5	8	11	13	15	19	22	25	30	41	150
Commodity Credit Corporation[a]													
Budget authority	0	*	2	9	10	10	10	11	11	11	11	30	85
Outlays	0	*	1	9	9	9	10	10	11	11	11	28	82
Child Care Entitlements to States													
Budget authority	0	3	3	3	3	3	3	3	3	3	3	15	29
Outlays	0	2	3	3	3	3	3	3	3	3	3	14	28
Rehabilitation Services													
Budget authority	0	0	0	0	0	4	4	4	4	4	4	4	25
Outlays	0	0	0	0	0	2	4	4	4	4	4	2	22
Child Nutrition[b]													
Budget authority	0	1	1	1	1	1	1	1	1	1	1	4	10
Outlays	0	1	1	1	1	1	1	1	1	1	1	4	9
Ground Transportation Programs Not Subject to Annual Obligation Limitations													
Budget authority	0	0	0	1	1	1	1	1	1	1	1	2	6
Outlays	0	0	0	*	*	1	1	1	1	1	1	1	5

Continued

in judging their compliance with the caps. (Once in law, however, any such savings are incorporated into CBO's baseline projections for mandatory spending.)

Altogether, discretionary budget authority in 2018 exceeds last year's funding by $202 billion, or nearly 17 percent.[19] Of that increase, $139 billion reflects larger appropriations provided by the Consolidated Appropriations Act, 2018, subject to the limits set in the Bipartisan Budget Act of 2018. The remainder consists of funding for activities not constrained by the caps, which is $63 billion (or 47 percent) greater than last year. That increase primarily reflects historically large amounts of funding designated as an emergency requirement, partially offset by lower funding for OCO. All

19. Much of the analysis in this report was prepared before the enactment of the Consolidated Appropriations Act, 2018 (P.L. 115-141), on March 23, 2018. CBO incorporated the effects of that law into its budget projections in aggregate but could not incorporate the account-level detail of the 2018 discretionary funding that the law provided. Instead, CBO calculated, on an annualized basis, the amount of funding provided for specific discretionary activities in 2018 under the most recent continuing resolution, Subdivision 3 of Division B of the Bipartisan Budget Act of 2018 (P.L. 115-123). CBO then adjusted amounts of defense and nondefense funding, in aggregate, separately for funding constrained by the caps and other funding (mostly for OCO), by amounts necessary to bring them in line with the increased funding provided for 2018 by the Consolidated Appropriations Act, 2018. As a result, subsequent account-level estimates of outlays for discretionary programs could differ from the projections in this report.

Table 2-3. Continued

Costs for Mandatory Programs That Continue Beyond Their Current Expiration Date in CBO's Baseline

Billions of Dollars

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total 2019–2023	Total 2019–2028
Trade Adjustment Assistance for Workers[c]													
Budget authority	0	0	0	0	0	*	*	*	*	1	1	*	3
Outlays	0	0	0	0	0	*	*	*	*	*	1	*	2
Promoting Safe and Stable Families													
Budget authority	0	0	0	0	*	*	*	*	*	*	*	1	2
Outlays	0	0	0	0	*	*	*	*	*	*	*	*	2
Ground Transportation Programs Controlled by Obligation Limitations[d]													
Budget authority	0	0	0	50	50	50	50	50	50	50	50	151	403
Outlays	0	0	0	0	0	0	0	0	0	0	0	0	0
Air Transportation Programs Controlled by Obligation Limitations[d]													
Budget authority	0	3	3	3	3	3	3	3	3	3	3	17	34
Outlays	0	0	0	0	0	0	0	0	0	0	0	0	0
Children's Health Insurance Program													
Budget authority	0	0	0	0	0	0	0	0	0	0	15	0	15
Outlays	0	0	0	0	0	0	0	0	0	0	0	0	0
Natural Resources													
Budget authority	0	0	0	0	0	0	0	0	0	0	0	0	0
Outlays	0	0	*	*	*	0	0	0	0	0	0	*	*
Total													
Budget authority	**0**	**94**	**97**	**158**	**161**	**168**	**172**	**176**	**181**	**186**	**206**	**678**	**1,599**
Outlays	**0**	**82**	**91**	**102**	**106**	**111**	**116**	**122**	**127**	**131**	**139**	**492**	**1,126**

Source: Congressional Budget Office.

COLAs = cost-of-living adjustments; * = between -$500 million and $500 million.

a. Agricultural commodity price and income supports and conservation under the Agricultural Act of 2014 generally expire after 2018. Although permanent price support authority under the Agricultural Adjustment Act of 1938 and the Agricultural Act of 1949 would then become effective, CBO adheres to the rule in section 257(b)(2)(ii) of the Deficit Control Act that indicates that the baseline should assume that the provisions of the Agricultural Act of 2014 remain in effect.

b. Includes the Summer Food Service program and states' administrative expenses.

c. Does not include the cost of extending Reemployment Trade Adjustment Assistance.

d. Authorizing legislation for those programs provides contract authority, which is counted as mandatory budget authority. However, because the programs' spending is subject to obligation limitations specified in annual appropriation acts, outlays are considered discretionary.

told, CBO estimates that discretionary outlays will total $1,280 billion in 2018 (6.4 percent of GDP), $80 billion (or nearly 7 percent) more than in 2017.

Defense Spending. CBO estimates that defense funding in 2018 will total $701 billion—$67 billion (or almost 11 percent) more than in 2017. That rise reflects a $78 billion increase in funding subject to the limit on defense appropriations and a net $11 billion reduction in funding for OCO and other activities that are not constrained by that limit. Outlays for defense programs are expected to rise by $32 billion (or 5 percent) in 2018 to a total of $622 billion (or 3.1 percent of GDP).

Nondefense Spending. Funding for nondefense activities in 2018 will total $721 billion, by CBO's

Table 2-4.

Discretionary Spending Projected in CBO's Baseline

Billions of Dollars

	Actual, 2017[a]	2018[a]	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total 2019–2023	Total 2019–2028
Budget Authority														
Defense	634	701	719	651	666	683	699	717	734	752	771	789	3,419	7,182
Nondefense	586	721	724	671	687	704	721	739	757	775	794	814	3,507	7,385
Total	**1,220**	**1,422**	**1,443**	**1,322**	**1,353**	**1,386**	**1,420**	**1,455**	**1,491**	**1,527**	**1,565**	**1,603**	**6,925**	**14,567**
Outlays														
Defense	590	622	669	651	655	671	679	688	710	727	745	769	3,325	6,964
Nondefense	610	658	693	689	693	708	727	748	771	794	817	839	3,511	7,480
Total	**1,200**	**1,280**	**1,362**	**1,340**	**1,348**	**1,380**	**1,406**	**1,436**	**1,481**	**1,522**	**1,562**	**1,608**	**6,836**	**14,445**
Memorandum:														
Caps in the Budget Control Act (As Amended), Including Automatic Reductions to the Caps														
Defense	551	629	647	576	590	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Nondefense	519	579	597	542	555	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total	**1,070**	**1,208**	**1,244**	**1,118**	**1,145**	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Adjustments to the Caps[b]														
Defense	83	72	73	75	76	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Nondefense	51	125	127	129	132	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total	**134**	**197**	**200**	**204**	**209**	n.a.	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.

Nondefense discretionary outlays are usually greater 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 2017 and for 2018 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. In the baseline, those changes (which reduced mandatory budget authority in both years) appear in their normal mandatory accounts.

b. Some or all of the discretionary funding related to five types of activities is not constrained by the caps; for most of those activities, the caps are adjusted to accommodate such funding, up to certain limits. Specifically, appropriations designated for overseas contingency operations and activities designated as emergency requirements are assumed to grow with inflation after 2018. For two other activities—certain efforts to reduce overpayments in benefit programs, and disaster relief—the extent to which the caps can be adjusted is subject to annual constraints, as specified in law. Finally, programs designated by the 21st Century Cures Act are not subject to the caps, but their total funding is subject to specified annual limits.

estimation—$135 billion (or 23 percent) more than last year.[20] That amount is $142 billion more than the statutory limit on nondefense funding for this year:

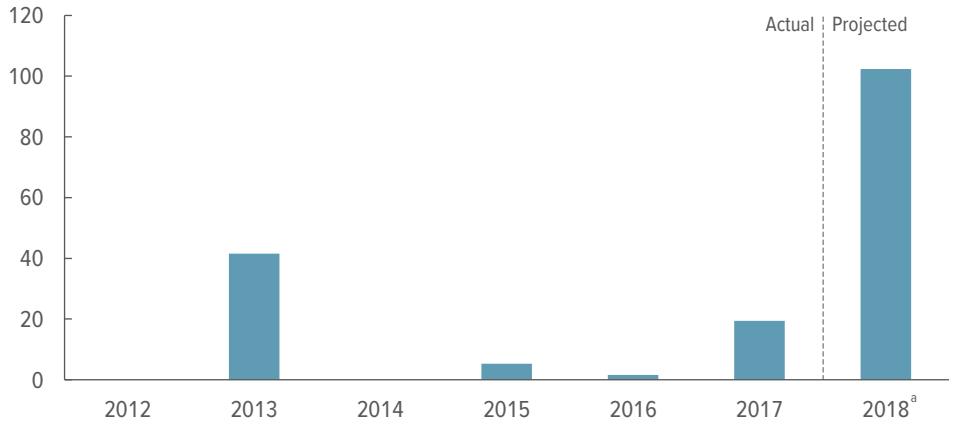
- Most of that added funding—nearly $125 billion—is not constrained by the limit, including $102 billion designated as an emergency requirement related to hurricanes Harvey, Irma, and Maria and wildfires

20. In addition, transportation-related obligation limitations enacted for 2018 total $59 billion.

Figure 2-3.

Discretionary Nondefense Funding for Emergency Requirements

Billions of Dollars



Funding for emergency requirements in 2018—mainly related to hurricanes and wildfires—is about nine times greater than the average annual amount over the six years since the Budget Control Act of 2011 was enacted.

Source: Congressional Budget Office.

a. The amount of funding shown for 2018 does not include almost $18 billion in additional budget authority from changes to mandatory programs that also were designated as emergency requirements.

in western states.[21] (By comparison, from 2012 through 2017, nondefense funding designated as an emergency requirement averaged about $11 billion annually; see Figure 2-3.) Appropriations for other activities that are not subject to the overall limit on nondefense funding total $22 billion and consist of $12 billion for OCO, slightly more than $7 billion for disaster relief, and $3 billion (in total) for program-integrity and health programs designated by the 21st Century Cures Act.

- The remaining $17 billion in excess of the 2018 cap reflects larger gross appropriations that are offset by estimated reductions in budget authority for mandatory programs stemming from changes that were included in the Consolidated Appropriations Act, 2018.

Altogether, CBO estimates that nondefense outlays will total $658 billion this year (3.3 percent of GDP), $48 billion, or almost 8 percent, more than in 2017.

CBO's Baseline Projections of Discretionary Spending From 2019 to 2028

Total discretionary outlays in CBO's baseline projections increase by 6.4 percent in 2019, dip by 1.6 percent in 2020, remain about the same in 2021 and grow thereafter, to $1,608 billion, or 5.4 percent of GDP, in 2028. By comparison, the lowest percentage of GDP for discretionary spending over the past 50 years was 6.0 percent in 1999, and the average over that time has been 8.5 percent (see Figure 2-4).

Budget Authority in 2019. Caps on discretionary budget authority will be $36 billion higher in 2019 than in 2018, reflecting an $18 billion increase to both the defense and nondefense limits. Projected increases in defense funding for 2019 total $18 billion. Projected increases in nondefense funding are smaller, totaling $3 billion.

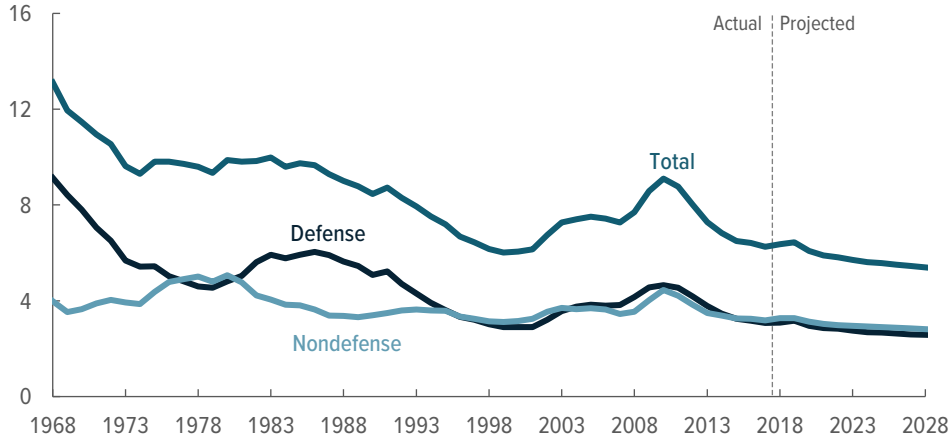
The projected increase in nondefense funding consists of $2 billion for funding not constrained by the caps and $1 billion for funding constrained by the caps. In accordance with rules set in law, the former increase reflects the assumption that the historically large amount

21. Total emergency funding in 2018 was more than $102 billion; that amount does not include almost $18 billion in additional budget authority from changes to *mandatory* programs that also were designated as emergency requirements. The largest of the changes was the cancellation of $16 billion of the outstanding debt owed to the Treasury by the National Flood Insurance Fund. Because those changes in mandatory programs were designated as emergency requirements, they did not affect the amount of discretionary funding allowed under the caps. CBO's baseline projections for mandatory programs include the anticipated effects of the changes.

Figure 2-4.

Discretionary Outlays, by Category

Percentage of Gross Domestic Product



CBO's projections of discretionary spending incorporate budgetary caps through 2021 and the assumption that discretionary budget authority grows with inflation thereafter.

Discretionary budget authority is projected to decline by 8 percent in 2020 because of scheduled reductions to the caps.

Source: Congressional Budget Office, using data from the Office of Management and Budget.

of emergency funding for 2018 grows with inflation. The latter increase reflects the net effects of an $18 billion increase in the nondefense limits and the fact that the Consolidated Appropriations Act, 2018, includes $17 billion in offsets to discretionary budget authority in 2018. Those offsets stem from estimated reductions in mandatory budget authority, which are typically included in appropriation acts that provide nondefense funding and allow discretionary funding to exceed the cap.[22] No such changes to mandatory programs have been enacted for 2019.

Budget Authority in 2020 and Subsequent Years. In 2020, discretionary limits fall by an estimated $126 billion, resulting in a $121 billion (or 8 percent) net reduction in overall budget authority. (That change includes a $4 billion projected increase in funding not constrained by the caps.) In total, defense and nondefense funding fall, respectively, by $68 billion (or almost 10 percent) and $52 billion (or 7 percent). In the baseline projections, discretionary budget authority after 2020 rises by 2.4 percent a year, on average, reflecting both the rate of increase in the caps in 2021 pursuant to the Budget Control Act and the assumption that such budget authority will grow with inflation beginning in 2022.

Alternative Assumptions About Discretionary Funding

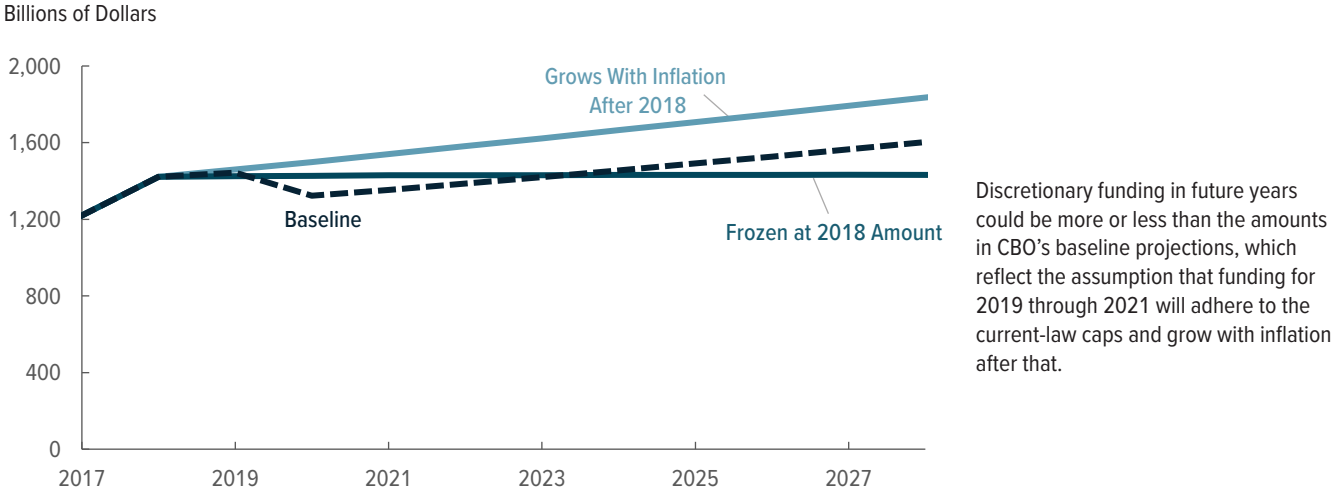
If the policies governing discretionary funding differed from those underlying the baseline projections, discretionary outlays could differ greatly from the amounts projected in CBO's baseline. To illustrate such potential differences, CBO estimated the budgetary consequences of three alternative paths for discretionary funding. (Those estimates are provided in Chapter 4.) The first alternative reflects different assumptions about future funding for emergency requirements. In the two other scenarios, funding for discretionary programs in future years increases at rates different from those CBO is required to use in its baseline projections (see Figure 2-5).

Emergency Spending. CBO projected spending assuming that nondefense funding designated as emergency requirements would remain in line with the average amount of such funding over the 2012–2017 period—$11 billion (with adjustments to reflect growth at the rate of inflation)—rather than the historically large amount provided for 2018. Under that scenario, holding all other projections unchanged from CBO's baseline, discretionary outlays over the 2019–2028 period would total $577 billion (or 4 percent) less

22. Since 2012, such offsets to discretionary budget authority have averaged about $18 billion per year, thus allowing discretionary funding in each year to exceed the statutory limits by about that amount.

Figure 2-5.

Discretionary Budget Authority Projected in CBO's Baseline and Under Two Alternative Scenarios



Source: Congressional Budget Office.

than the amounts projected in the baseline. In 2028, discretionary outlays would equal 5.1 percent of GDP—significantly less than the 6.4 percent estimated for 2018.

Other Discretionary Spending. For the first of the two other alternative scenarios, CBO assumed that most discretionary funding constrained by the caps would grow at the rate of inflation after 2018, rather than being adjusted to accord with the caps for 2019 and the lower limits that will otherwise apply to funding for 2020 and 2021 under the Budget Control Act (as modified).[23] If that occurred, discretionary funding over the 2019–2028 period would grow, on average, by 2.6 percent a year. As a result, outlays would rise at a slightly faster rate (7 percent) in 2019 than in the baseline and would grow by 5 percent (rather than fall) in 2020. They would increase steadily thereafter, by an average of 3 percent per year through 2028. In that scenario, outlays would surpass CBO's baseline projections by $1.7 trillion (or nearly 12 percent) over the 2019–2028 period. In 2028, discretionary spending would equal 6.2 percent of GDP—slightly less than the percentage estimated for 2018 in CBO's baseline.

The second other scenario reflects the assumption that most discretionary budget authority, transportation-related obligation limitations, and funding for activities that are not constrained by the caps would be kept at the nominal 2018 amounts for the entire projection period.[24] (Such scenarios are sometimes called freezes in regular appropriations.) In that case, total discretionary spending would dip below the amount in CBO's baseline in 2019, exceed baseline amounts between 2020 and 2023, and again drop below the baseline (by increasing sums) between 2024 and 2028. Over the 2019–2028 period, discretionary outlays would be $175 billion (or about 1 percent) less than projected in the baseline and would fall to 4.9 percent of GDP in 2028—well below the percentage estimated for 2018 in CBO's baseline.

Net Interest

In the budget, net interest primarily encompasses the government's interest payments on federal debt, offset by income that the government receives from interest on loans. Outlays for net interest are dominated by the interest paid to holders of the debt that the Department of the Treasury issues to the public. The Treasury also pays interest on debt issued to trust funds and other government accounts, but such payments are

23. This scenario would not affect spending for activities that are not constrained by discretionary spending limits under the Budget Control Act, including transportation programs controlled by obligation limitations.

24. Some items, such as offsetting collections and payments made by the Treasury on behalf of the Department of Defense's TRICARE for Life program, would not be held constant.

intragovernmental transactions that have no effect on the budget deficit. (For more information about federal debt, see Chapter 4.) Other federal accounts also pay and receive interest for various reasons.[25]

CBO estimates that outlays for net interest will increase from $263 billion in 2017 to $316 billion (or 1.6 percent of GDP) in 2018 and then nearly triple by 2028, climbing to $915 billion. As a result, under current law, outlays for net interest are projected to reach 3.1 percent of GDP in 2028—almost double what they are now.

Although several factors affect the federal government's net interest costs—such as the rate of inflation for Treasury inflation-protected securities and the maturity structure of outstanding securities (for example, longer-term securities generally yield higher interest)—its primary drivers are the amount of debt held by the public and interest rates on Treasury securities.

The increase in federal borrowing projected in the baseline is a significant factor affecting the projected growth in net interest costs. Debt held by the public is projected to rise by 83 percent (in nominal terms) over the next 11 years, increasing from $15.7 trillion at the end of 2018 to $28.7 trillion in 2028.

The projected large increase in interest costs over the next decade is also affected significantly by the increase in interest rates underlying CBO's baseline projections. Those rates rise quickly over the next several years before falling during the second half of the forecast. The rate paid on 3-month Treasury bills is anticipated to increase from an average of 1.6 percent in 2018 to 3.8 percent in 2021 before falling back to 2.8 percent in 2024, about where it is projected to remain through 2028. Similarly, the interest rate on 10-year Treasury notes is projected to rise from its current rate of 2.9 percent to 4.2 percent in 2021 and then decline to 3.7 percent in 2024, where it is projected to remain through 2028. (For a more detailed discussion of CBO's forecast for interest rates, see the section on "Monetary Policy and Interest Rates" in Chapter 1.)

25. See Congressional Budget Office, *Federal Debt and Interest Costs* (December 2010), www.cbo.gov/publication/21960.

Uncertainty Surrounding the Spending Outlook

Budget projections are inherently uncertain, and even if no changes were made to current law, actual outcomes would undoubtedly differ in some ways from CBO's projections. The agency attempts to construct its spending projections so that they fall in the middle of the distribution of possible outcomes. Hence, actual spending could turn out to be higher or lower than CBO projects.

In 2017, CBO examined the accuracy of its past projections, specifically focusing on the second year (often called the budget year, which usually begins about six months after the projections are released) and the sixth year of the projection period. In both cases, although the agency's spending projections were generally close to actual amounts, they were too high, on average.[26] From 1984 to 2016, the mean absolute error—that is, the average of all errors without regard for whether they were positive or negative—was 2.3 percent for CBO's budget-year projections and 5.9 percent for the sixth-year projections. Percentage errors of those sizes would equal $103 billion in 2019 and $322 billion in 2023. CBO continually examines errors in its past projections, reviews data on spending patterns for federal programs, and consults with outside experts on those programs in order to improve its estimating methodology.

26. Those comparisons reflect adjustments to exclude the effects of legislation enacted after the projections were prepared. See Congressional Budget Office, *An Evaluation of CBO's Past Outlay Projections* (November 2017), www.cbo.gov/publication/53328.

CHAPTER

3

The Revenue Outlook

Overview

The Congressional Budget Office projects that, if current laws generally remain unchanged, total revenues will rise by less than 1 percent in 2018, to just over $3.3 trillion. Revenues are expected to decline as a percentage of gross domestic product (GDP)—from 17.3 percent in 2017 to 16.6 percent in 2018—below the average of 17.4 percent of GDP recorded over the past 50 years (see Figure 3-1). In CBO's baseline projections, after a further slight decline in 2019, revenues rise markedly as a share of the economy, growing to 18.5 percent of GDP by 2028. Revenues over the past 50 years have been as high as 20.0 percent of GDP (in 2000) and as low as 14.6 percent (in 2009 and 2010).

What Key Factors Explain Changes in Revenues Over Time?

The decline in revenues as a percentage of GDP in 2018, and to a lesser extent in 2019, results from the enactment in late December 2017 of Public Law 115–97, referred to here as the 2017 tax act. That law made many significant changes to the individual and corporate income tax systems. Those changes, on net, lowered taxes owed by most individuals and businesses beginning in calendar year 2018. Most of the provisions that directly affect the individual income tax are scheduled to expire at the end of 2025. (For additional details on the major provisions of that legislation, see Appendix B.)

After 2019, revenues are projected to rise steadily through 2025, reaching 17.5 percent of GDP in 2025. In CBO's baseline, receipts then rise sharply following the scheduled expiration of many temporary provisions of the 2017 tax act at the end of calendar year 2025. As a share of GDP, they are projected to reach 18.1 percent in 2026, and 18.5 percent in 2027 and 2028.

The growth in revenues over the next decade reflects the following movements among sources of revenues:

- *Individual income tax receipts* are projected to rise sharply between 2025 and 2027, following the expiration of temporary provisions enacted in the 2017 tax act. In addition to those expirations, other factors would cause receipts to grow throughout the next decade, primarily the following: Wages are projected to grow faster than GDP; real bracket creep (which occurs when incomes rise faster than inflation) is projected to cause income to be taxed at higher rates, boosting taxes relative to income; and distributions from tax-deferred retirement accounts are expected to rise.

- *Corporate income tax receipts* are projected to rise as a percentage of GDP after 2018 for two reasons. First, changes in tax rules that are scheduled to occur over the next decade would gradually boost receipts. Second, CBO expects that the factors responsible for recent unexplained weakness in corporate tax collections will gradually dissipate. An anticipated decline in domestic economic profits relative to the size of the economy would partially offset those factors.

- *Receipts from all other sources* are projected to remain relatively stable over the next decade. Revenues from payroll taxes are projected to edge up slightly as a share of the economy and receipts from excise taxes to decline slightly.

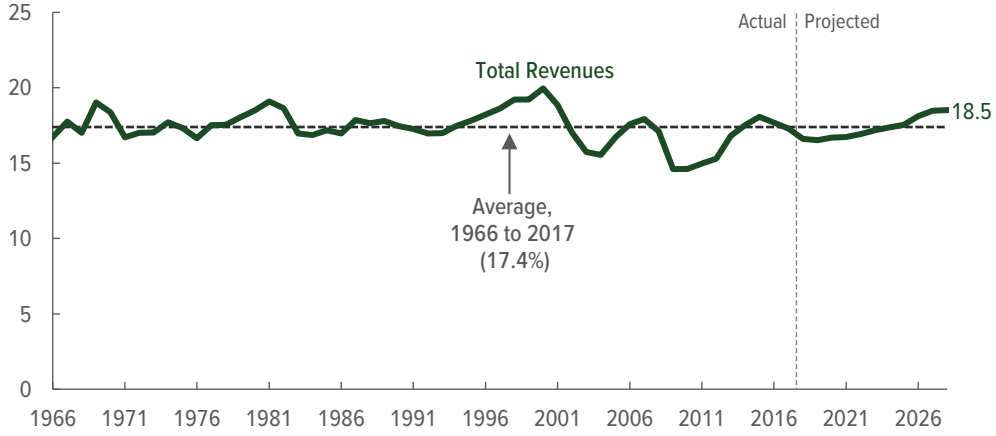
How Have CBO's Projections Changed Since June 2017?

CBO's revenue projections for the 2019–2028 period are lower than those the agency released in June 2017. At that time, CBO published revenue projections for the 2017–2027 period; the projections in this report cover the 2018–2028 period. For the overlapping years—2018 through 2027—the current projections are below the previous ones by $1.0 trillion (or about 2 percent). That reduction stems from legislative changes, including those from the enactment of the 2017 tax act, as well as from technical revisions. Those downward revisions are partly offset by changes to the agency's economic forecast, primarily to projections of GDP and the types of income

Figure 3-1.

Total Revenues

Percentage of Gross Domestic Product



Under current law, total revenues are projected to rise as a share of GDP over the next decade, largely because of increases in individual income taxes.

Source: Congressional Budget Office.

GDP = gross domestic product.

that comprise GDP, such as wages and salaries, corporate profits, and proprietors' income. (For more information on changes to the revenue projections since June 2017, see Appendix A.)

How Much Revenue Is Forgone Because of Tax Expenditures?

The tax rules that form the basis of CBO's projections include an array of exclusions, deductions, preferential rates, and credits that reduce revenues for any given level of tax rates, in both the individual 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.

Tax expenditures have a major impact on the federal budget. CBO estimates that in fiscal year 2017, the more than 200 tax expenditures in the income tax system totaled almost $1.7 trillion in forgone individual income tax, payroll tax, and corporate income tax revenues. That amount equaled 8.9 percent of GDP—more than half of all federal revenues received in that year. CBO estimates the magnitude of tax expenditures on the basis of the estimates prepared by the staff of the Joint Committee on Taxation (JCT), which has not yet released estimates incorporating the effects of the 2017 tax act and subsequent legislation.[1] Those changes in law will generally reduce the magnitude of tax expenditures beginning in 2018.

How Uncertain Are CBO's Revenue Projections?

CBO's revenue projections since 1982 have, on average, been too high—more so for projections spanning six years than for those spanning two—owing mostly to the difficulty of predicting when economic downturns will occur. However, their overall accuracy has been similar to the accuracy of projections by other agencies.

The Evolving Composition of Revenues

Federal revenues come from various sources: individual income taxes; payroll taxes, which are dedicated to certain social insurance programs; corporate income taxes; excise taxes; earnings of the Federal Reserve System,

1. To arrive at an aggregate estimate of all tax expenditures in 2017, CBO began with the separate estimates of the individual and corporate income tax expenditures produced by the staff of the Joint Committee on Taxation. To those, CBO added the payroll tax effects of provisions that reduce the payroll tax base. Finally, because a simple total of the estimates for specific tax expenditures does not account for the interactions among them if they are considered together, CBO estimated the size of those interactions and included them to estimate the total budgetary impact of tax expenditures.

which are remitted to the Treasury; customs duties; estate and gift taxes; and miscellaneous fees and fines. Individual income taxes constitute the largest source of federal revenues, having contributed, on average, about 46 percent of total revenues (equal to 8.0 percent of GDP) over the past 50 years. Payroll taxes—mainly for Social Security and Medicare Part A (the Hospital Insurance program)—are the second-largest source of revenues, averaging 33 percent of total revenues (equal to 5.8 percent of GDP) over the same period. Corporate income taxes constituted 11 percent of revenues (or 2.0 percent of GDP) over the past 50 years, and all other sources combined contributed about 9 percent of revenues (or 1.7 percent of GDP).

Although that broad picture has remained roughly the same over the past several decades, the details have varied.

- Receipts from individual income taxes have fluctuated significantly over the past five decades, ranging from 42 percent to 50 percent of total revenues (and from 6.1 percent to 9.9 percent of GDP) between 1966 and 2017. Those fluctuations are attributable to changes in the economy and changes in law over that period but show no consistent trend over time (see Figure 3-2).

- Receipts from payroll taxes rose as a share of revenues from the 1960s through the 1980s—largely because of an expansion of payroll taxes to finance the Medicare program (which was established in 1965) and because of legislated increases in tax rates for Social Security and in the amount of income to which those taxes applied. Those receipts accounted for about 37 percent of total revenues (and about 6.5 percent of GDP) by the late 1980s. Since 2001, payroll tax receipts have fallen slightly relative to the size of the economy, averaging 6.0 percent of GDP. That period includes two years, 2011 and 2012, when receipts fell because certain payroll tax rates were cut.

- Revenues from corporate income taxes declined as a share of total revenues and GDP from the 1960s to the mid-1980s, mainly because profits declined relative to the size of the economy. Those revenues have fluctuated widely since then, the result both of changes in the economy and changes in law, with no consistent trend.

- Revenues from the remaining sources, particularly excise taxes, have slowly fallen relative to total revenues and GDP. However, that downward trend has reversed in the past several years because of the increase in remittances from the Federal Reserve.

If current law generally remained in effect—an assumption underlying CBO's baseline—individual income taxes would generate a growing share of revenues over the next decade, CBO projects. By 2026, they would account for more than half of total revenues, and by 2028 they would reach 9.8 percent of GDP, well above the average of 8.0 percent over the past 50 years. Receipts from payroll taxes are projected to remain relatively stable over the next decade. They would decline slightly relative to GDP, from 6.1 percent in 2017 to 5.8 percent in 2019, before rising gradually to 6.0 percent by 2028. Corporate income taxes would make a slightly smaller contribution than they have made on average for the past 50 years, supplying about 8.6 percent of total revenues and averaging about 1.5 percent of GDP over the 2018–2028 period. Taken together, the remaining sources of revenue are projected to average about 1.2 percent of GDP from 2018 through 2028.

Individual Income Taxes

In 2017, receipts from individual income taxes totaled nearly $1.6 trillion, or 8.3 percent of GDP. Under current law, individual income taxes will rise by 3 percent, to over $1.6 trillion in 2018, CBO estimates. That percentage increase would be smaller than the 5 percent increase expected for GDP, and individual income tax receipts would edge down to 8.2 percent of GDP.

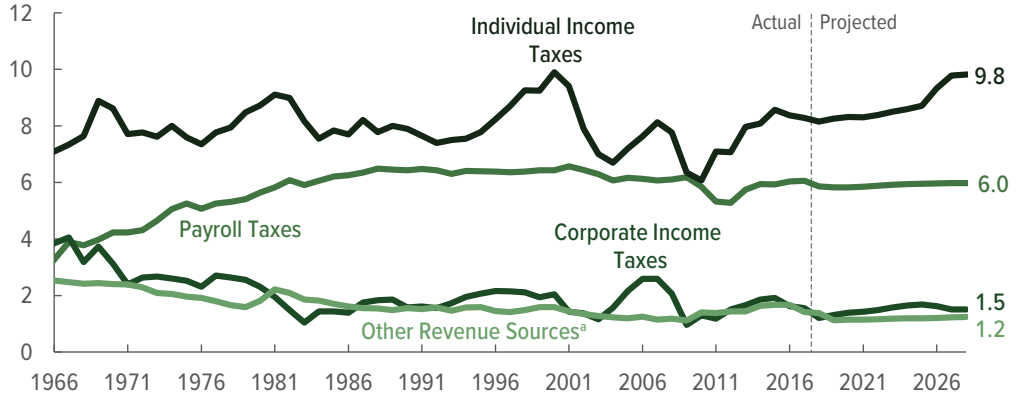
The projected decline in individual income tax receipts as a share of the economy results from changes in tax law that take effect beginning in 2018. CBO estimates that the effect of the changes, including those stemming from enactment of the 2017 tax law, will reduce individual income tax receipts relative to GDP by 0.4 percentage points in 2018. Those changes are partially offset by other factors. The most significant factor boosting receipts in 2018 in CBO's baseline is the expectation of strong growth in realizations of capital gains following rising values in the stock market over the past year; that growth is expected to boost receipts relative to GDP by 0.2 percentage points.

If current laws remained unchanged, CBO projects that individual income tax receipts would rise by

Figure 3-2.

Revenues, by Major Source

Percentage of Gross Domestic Product



Individual income taxes account for nearly all of the projected growth in receipts over the next decade. Those receipts rise sharply following the expiration of temporary tax provisions at the end of 2025 and also rise steadily throughout the decade because of other factors.

Source: Congressional Budget Office.

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

1.7 percentage points as a share of the economy over the next decade, reaching 9.8 percent of GDP by 2028, which would be the highest percentage since 2000 and well above the 50-year average of 8.0 percent (see Table 3-1).

In CBO's baseline, receipts climb in 2019 and beyond, in part as a result of projected growth in taxable personal income. (That measure of income includes wages, salaries, dividends, interest, rental income, and proprietors' income—each of which is defined by the Bureau of Economic Analysis for use in its national income and product accounts.) According to CBO's projections, taxable personal income would grow at a rate of 4.4 percent per year over the next decade, largely as a result of growth in wages and salaries. That income growth is faster than the expected growth in nominal GDP and would boost receipts relative to GDP by 0.3 percentage points.

Moreover, receipts from individual income taxes are projected to rise even faster than taxable personal income—boosting receipts relative to GDP by an additional 1.4 percentage points from 2018 to 2028. More than half of that projected increase results from the expiration of provisions included in the 2017 tax law that temporarily lower receipts relative to taxable personal income. The remainder results from real bracket creep, rising taxable distributions from retirement accounts, and other factors.

Expiration of Temporary Tax Provisions

The most significant factor pushing up taxes relative to income is the scheduled expiration, after tax year 2025, of nearly all the individual income tax law changes made by the 2017 tax law. Those expirations would cause tax liabilities to rise in calendar year 2026, boosting receipts in subsequent fiscal years. In addition, rules that allow accelerated depreciation deductions for certain business investments are scheduled to phase out between 2022 and 2027. That expiration would not affect corporations alone; it would also affect non-corporate businesses, whose owners' income is subject to the individual income tax. Altogether, CBO projects that the expiration of those tax provisions would boost individual income tax receipts relative to GDP by 0.7 percentage points over the next decade. (For further details about the new tax law, see Appendix B. For estimates of the effect on the budget of extending those and other temporary tax provisions, see Chapter 4.)

Real Bracket Creep and Related Factors

The next most significant factor increasing taxes relative to income arises from the way certain parameters of the tax system are scheduled to change over time in relation to growth in income (which reflects the effects of both real economic activity and inflation). The most

Table 3-1.

Revenues Projected in CBO's Baseline

	Actual, 2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total 2019–2023	Total 2019–2028
							In Billions of Dollars							
Individual Income Taxes	1,587	1,639	1,744	1,833	1,900	1,990	2,092	2,199	2,316	2,574	2,804	2,924	9,558	22,376
Payroll Taxes	1,162	1,178	1,231	1,284	1,337	1,395	1,456	1,519	1,583	1,646	1,712	1,780	6,704	14,944
Corporate Income Taxes	297	243	276	307	327	353	388	421	447	449	431	448	1,651	3,847
Other														
Excise taxes	84	102	88	106	109	113	117	119	121	123	126	129	532	1,149
Federal Reserve remittances	81	66	44	39	45	52	61	68	74	80	82	88	240	632
Customs duties	35	38	41	43	46	47	49	51	52	54	56	58	227	499
Estate and gift taxes	23	26	19	19	20	21	21	23	24	25	37	40	100	249
Miscellaneous fees and fines	48	47	46	45	44	42	44	46	47	49	51	52	221	466
Subtotal	270	278	238	253	263	275	291	306	318	332	352	368	1,320	2,995
Total	**3,316**	**3,338**	**3,490**	**3,678**	**3,827**	**4,012**	**4,228**	**4,444**	**4,663**	**5,002**	**5,299**	**5,520**	**19,234**	**44,162**
On-budget	2,466	2,477	2,590	2,736	2,845	2,990	3,164	3,338	3,513	3,807	4,058	4,230	14,327	33,273
Off-budget[a]	851	860	899	941	981	1,022	1,063	1,106	1,150	1,194	1,241	1,290	4,907	10,889
Memorandum:														
Gross Domestic Product	19,178	20,103	21,136	22,034	22,872	23,716	24,621	25,583	26,595	27,608	28,677	29,803	114,379	252,646
							As a Percentage of Gross Domestic Product							
Individual Income Taxes	8.3	8.2	8.3	8.3	8.3	8.4	8.5	8.6	8.7	9.3	9.8	9.8	8.4	8.9
Payroll Taxes	6.1	5.9	5.8	5.8	5.8	5.9	5.9	5.9	6.0	6.0	6.0	6.0	5.9	5.9
Corporate Income Taxes	1.5	1.2	1.3	1.4	1.4	1.5	1.6	1.6	1.7	1.6	1.5	1.5	1.4	1.5
Other														
Excise taxes	0.4	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.5	0.5
Federal Reserve remittances	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.2
Customs duties	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Estate and gift taxes	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Miscellaneous fees and fines	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Subtotal	1.4	1.4	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Total	**17.3**	**16.6**	**16.5**	**16.7**	**16.7**	**16.9**	**17.2**	**17.4**	**17.5**	**18.1**	**18.5**	**18.5**	**16.8**	**17.5**
On-budget	12.9	12.3	12.3	12.4	12.4	12.6	12.9	13.0	13.2	13.8	14.2	14.2	12.5	13.2
Off-budget[a]	4.4	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3

Source: Congressional Budget Office.

a. Receipts from Social Security payroll taxes.

important component of that effect, real bracket creep, occurs because the income tax brackets are indexed only to inflation. If income grows faster than inflation, as generally occurs when the economy is growing, more income is pushed into higher tax brackets. In addition to the income thresholds for tax brackets, many other parameters of the tax system are indexed only to inflation, including the amounts of the standard deduction and of certain tax credits, such as the earned income tax credit. Still other parameters of the tax system, including the amount of the child tax credit, are fixed in nominal dollars and are not adjusted for inflation. Together, those factors cause projected revenues measured as a percentage of GDP to rise in CBO's baseline by 0.5 percentage points from 2018 to 2028. (Beginning in 2018, the measure of inflation used to index many parameters of the tax system changed to an alternative measure that grows more slowly. Consequently, for a given level of inflation in the economy, the effect of real bracket creep and related factors will tend to be slightly greater than in prior years.)

Retirement Income

As the population ages, taxable distributions from tax-deferred retirement accounts 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, including individual retirement accounts, 401(k) plans, and traditional defined benefit pension plans. Under current law, CBO projects, those growing taxable distributions would boost revenues relative to GDP by 0.2 percentage points over the next decade.

Other Factors

CBO anticipates that over the next decade, other factors would have smaller, roughly offsetting effects on individual income tax revenues. Realizations of capital gains have been relatively high recently, and CBO anticipates they will slowly return to levels consistent with their historical average share of GDP (after accounting for differences in applicable tax rates). That anticipated decline in those realizations relative to the size of the economy—most of which occurs in CBO's baseline over the 2020–2028 period—would reduce individual income taxes relative to GDP by about 0.2 percentage points.

Other factors would boost receipts relative to GDP. In CBO's baseline projections, earnings from wages and salaries are expected to increase faster for higher-income people than for others during the next decade—as has been the case for the past several decades. That faster growth in earnings for higher-income people would push a larger share of income into higher tax brackets and boost estimated individual income tax revenues relative to GDP by about 0.1 percentage point; that increase would be partially offset by a projected decrease in payroll tax receipts, as explained in the section about payroll taxes.[2]

Finally, recent receipts of individual income taxes have been slightly lower than can be explained by current economic data. CBO expects that weakness to gradually dissipate over the next several years, boosting receipts by about 0.1 percentage points as a share of GDP. Both the relationship of taxable income to other economic indicators and total taxes as a percentage of taxable income can fluctuate significantly from year to year, sometimes leading to temporarily higher or lower receipts. Over time—taking into account current tax law and long-term trends in income components and demographics—the relationship of taxable income to the economy and the ratio of taxes to income tend to return to more typical levels.

Payroll Taxes

Receipts from payroll taxes, which fund social insurance programs, totaled about $1.2 trillion in 2017, or 6.1 percent of GDP. Under current law, CBO projects those receipts would fall to 5.8 percent of GDP by 2019 before slowly rising to 6.0 percent of GDP by 2025. The decline from 2017 to 2019 is caused in part by the expectation that wages and salaries will continue to grow faster for higher-earning taxpayers than for other taxpayers, which will push an increasing share of such earnings above the maximum amount per taxpayer that is subject to Social Security taxes (that amount, which is indexed to growth in average earnings for all workers, is $128,400 in 2018). This trend is expected to slow after 2019 as the demand for labor weakens. (Historically, the share of wages and salaries accruing to higher earners has risen in tight labor markets.) The yearly growth in payroll taxes as a percentage of GDP from 2019 to 2028 is consistent with growth in wages as a share of GDP over this period.

Sources of Payroll Tax Receipts

The two largest sources of payroll taxes are those that are dedicated to Social Security and Part A of Medicare. Much smaller amounts come from unemployment insurance taxes (most of which are imposed by states but produce amounts that are classified as federal revenues); employers' and employees' contributions to the Railroad Retirement system; and other contributions to federal retirement programs, mainly those made by federal employees (see Table 3-2). The premiums that Medicare enrollees pay for Part B (the Medical Insurance program) and Part D (prescription drug benefits) are voluntary payments and thus are not counted as tax revenues; rather, they are considered offsets to spending and appear on the spending side of the budget as offsetting receipts.

Social Security and Medicare payroll taxes are calculated as a percentage of a worker's earnings. Almost all workers are in jobs covered by Social Security, and the associated tax is usually 12.4 percent of earnings, with the employer and employee each paying half. It applies only up to a certain amount of a worker's annual earnings (the taxable

2. CBO projects the shares of overall taxable income accruing to taxpayers at different points in the income distribution will remain mostly unchanged over the next decade despite the rising share of earnings going to higher-income taxpayers. In addition to wages and salaries, taxable income includes income from Social Security benefits and pensions, which are more broadly distributed, as well as income from investments and business activity, which tend to accrue to higher-income taxpayers.

Table 3-2.

Payroll Tax Revenues Projected in CBO's Baseline

Billions of Dollars

	Actual, 2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total 2019–2023	Total 2019–2028
Social Security	851	860	899	941	981	1,022	1,063	1,106	1,150	1,194	1,241	1,290	4,907	10,889
Medicare	256	263	279	295	309	322	335	349	364	380	396	413	1,540	3,442
Unemployment Insurance	46	44	42	37	35	39	45	50	54	57	59	61	198	479
Railroad Retirement	5	6	6	6	6	6	6	6	7	7	7	7	30	64
Other Retirement[a]	4	5	5	5	6	6	7	7	8	8	9	10	29	71
Total	**1,162**	**1,178**	**1,231**	**1,284**	**1,337**	**1,395**	**1,456**	**1,519**	**1,583**	**1,646**	**1,712**	**1,780**	**6,704**	**14,944**

Source: Congressional Budget Office.

a. Consists largely of federal employee contributions to the Federal Employees Retirement System and the Civil Service Retirement System.

maximum). The Medicare tax applies to all earnings (with no taxable maximum) and is levied at a rate of 2.9 percent; the employer and employee each pay half of that amount. An additional Medicare tax of 0.9 percent is levied on the amount of an individual's earnings over $200,000 (or $250,000 for married couples filing a joint income tax return), bringing the total Medicare tax on such earnings to 3.8 percent.

Projected Receipts

Wages and salaries, the main tax bases for payroll taxes, are projected to rise as a share of GDP over the next decade. As a result, after an initial decline, payroll taxes in CBO's baseline rise as a share of GDP in every year from 2019 to 2028. The decline from 2017 to 2019 occurs in part because the share of earnings above the taxable maximum amount for Social Security taxes is projected to rise from 18 percent in 2017 to 20 percent in 2019. After 2019, however, that share is estimated to remain at 20 percent through 2028.[3]

In addition, receipts from unemployment insurance taxes are projected to decline slightly relative to wages and salaries and GDP between 2017 and 2021. Those receipts grew rapidly from 2010 through 2012, as states raised their tax rates and expanded their tax bases to replenish unemployment insurance trust funds that had been depleted because of high unemployment. Unemployment insurance receipts have fallen in each year since 2012, and CBO expects the pattern of decline to continue in the near future, although many states will need to increase revenues in the future in order to maintain historic ratios of trust fund balances relative to wages and salaries.

Corporate Income Taxes

In 2017, receipts from corporate income taxes totaled $297 billion, or 1.5 percent of GDP. CBO expects corporate tax receipts to fall by $54 billion in 2018, to 1.2 percent of GDP, largely because of the enactment of the 2017 tax act. That law made significant changes to the corporate income tax system beginning in 2018, including reducing the corporate tax rate for most businesses from 35 percent to 21 percent. (For more details on the provisions of that legislation, see Appendix B.) After 2018, those receipts begin to rise in CBO's baseline projections, reaching 1.7 percent of GDP in 2025, and then decline to 1.5 percent in 2027. That pattern reflects several offsetting factors, including the changing effects of the 2017 tax act over time and an expected decline in profits relative to GDP.

Receipts in 2018

CBO expects corporations' income tax payments, net of refunds, to decline by $54 billion in 2018, to $243 billion. That decline would occur despite projected increases in domestic economic profits and GDP. Because revenues from corporate income taxes are

3. Because of the progressive rate structure of the income tax, the increase in the share of earnings above the Social Security taxable maximum is projected to produce an increase in individual income tax receipts that will more than offset the decrease in payroll tax receipts.

projected to fall even as GDP rises, those revenues are projected to decline relative to GDP.

The projected decline in corporate income tax receipts relative to domestic economic profits results from changes made by the 2017 tax act. The largest part of the projected revenue decline stems from the corporate tax rate reduction itself. In addition, the prospective reduction in the corporate tax rate in January 2018 provided an opportunity for some firms to accelerate expenses, such as employees' compensation, into the 2017 tax year in order to claim deductions at the 35 percent rate in effect for that year, thus lowering their tax liabilities in fiscal year 2018. Furthermore, the 2017 tax act allows businesses to fully expense (immediately deduct from their taxable income) equipment they purchased and put into service beginning in the fourth quarter of calendar year 2017. The ability to deduct the full value of such investments will also lower taxable income in fiscal year 2018. The lower taxes resulting from those provisions are partly offset by new revenues stemming from a onetime tax on previously untaxed foreign profits, expected to be paid from 2018 through 2026.

Receipts After 2018

In CBO's baseline, receipts from corporate income taxes begin to increase in 2019, rising as a share of GDP by 0.3 percentage points by 2028. Two factors cause receipts to rise as a share of GDP relative to 2018: Corporate tax receipts, which have been lower than can be explained by currently available data on business activity, are projected to recover; and the provisions allowing businesses to fully expense certain investments are scheduled to phase out under current law between 2022 and 2027. In CBO's projections, those increases are partially offset over the next decade by other factors: an expected decline in domestic economic profits relative to GDP, and the net effects of other provisions of the 2017 tax act that are projected to further reduce receipts after 2018.

Temporary Weakness in 2017 and 2018 Collections. Corporate tax collections in 2017 and early 2018 were weaker than can be explained by currently available data on business activity. 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 over the next several years. Recovery from this temporary decline in receipts would increase projected tax revenues as a share of GDP by about 0.4 percentage points from 2019 to 2028.

Phaseout of Full-Expensing Provisions. For more than a decade, temporary but repeatedly extended provisions have allowed businesses to immediately deduct from their taxable income a higher fraction of their expenses for investment in equipment than would have been allowed after those provisions expired. For tax years 2013 through 2017, companies were allowed to immediately deduct 50 percent of such investments. The rules enacted in the 2017 tax act allow businesses to fully expense equipment purchased and put into service beginning in the fourth quarter of calendar year 2017 through the end of 2022, after which the share of investments that business may immediately expense falls to 80 percent in 2023, 60 percent in 2024, 40 percent in 2025, and 20 percent in 2026. At that point, those "bonus depreciation" provisions are scheduled to expire. In CBO's baseline, the phaseout causes the associated deductions to decline relative to the size of the economy, boosting taxable income and raising corporate tax receipts as a share of GDP by 0.2 percentage points.

Decline in Domestic Economic Profits Relative to GDP. CBO projects that domestic economic profits will decline relative to GDP over the next decade. They are expected to decline in part because of rising labor costs and rising interest payments on businesses' debt over the next several years. By itself, the anticipated decline in profits causes projected corporate income tax revenues in CBO's baseline to fall relative to GDP by about 0.2 percentage points over the next decade.

Other Provisions of the 2017 Tax Act. In addition to provisions allowing for full expensing of investment, the 2017 tax act included a number of other provisions that will affect corporate taxes over time. Following the initial decline in receipts the law causes in 2018, those provisions are projected to further reduce receipts relative to GDP by an additional 0.1 percentage points, on net.

Two provisions of the new tax law are projected to reduce receipts from corporate income taxes between 2018 and 2028. First, businesses are required to pay a new onetime tax on previously untaxed foreign profits. Corporations must pay the tax regardless of whether they actually repatriate the earnings to the United States—a requirement often called deemed repatriation. Prior to the 2017 tax act, those profits were not subject to U.S.

taxation until they were brought back to the United States. Taxes on those earnings, which are based on the value of those profits at the end of a corporation's 2017 tax year and unrelated to future business activity, must now be paid in installments over the next eight years. Because the required installments are not equal in size, the effect of those receipts on CBO's baseline varies over the period. Those payments are projected to boost receipts to varying degrees during the years 2018 through 2026, but not in subsequent years.

Second, the full effect of the 2017 tax act's reduction in the corporate tax rate phases in over two fiscal years. That provision was effective in January 2018, so it generally covers only three-quarters of fiscal year 2018, which began in October 2017. Furthermore, the tax years for some corporations do not align with the calendar year. Those corporations will face a blended tax rate, prorated between 35 percent and 21 percent, for one year as they transition to the new lower tax rate. Both of those factors limit the effect of the rate cut on revenues in fiscal year 2018 compared with subsequent years and contribute to a further decline in corporate tax revenues as a share of GDP between 2018 and subsequent years.

Partly offsetting those factors are provisions that seek to expand the domestic corporate tax base and limit allowable deductions, thereby boosting receipts over the next decade. For example, beginning in tax year 2018, companies will generally no longer be able to generate a current year refund by deducting their net operating loss from prior tax liabilities and instead will only be permitted to deduct those losses from income in future years. In addition, the value of those "carryforwards" is reduced under the 2017 tax act, lowering the amount corporations can deduct from taxable income. As a result of those changes, CBO projects revenues to increase gradually over time. Additionally, beginning in 2022, corporations will be required to capitalize and amortize certain expenditures for research and experimentation as they are incurred over a five-year period, rather than immediately deducting them. In CBO's baseline, that change further boosts corporate receipts in 2022 and beyond.

Smaller Sources of Revenues

The remaining sources of federal revenues are excise taxes, remittances from the Federal Reserve to the Treasury, customs duties, estate and gift taxes, and miscellaneous fees and fines. Revenues from those sources totaled $270 billion in 2017, or 1.4 percent of GDP (see Table 3-3). Under current law, CBO projects that those receipts would decline to 1.1 percent of GDP by 2019 and gradually rise to over 1.2 percent of GDP by 2028.

Among the smaller sources of revenues, the changes from 2018 to 2028 result mostly from changes in the amounts received in remittances from the Federal Reserve and from estate and gift taxes.

Excise Taxes

Unlike taxes on income, excise taxes are levied on the production or purchase of a particular type of good or service. Excise taxes are projected to rise from $102 billion in 2018 to $129 billion in 2028. From 2018 to 2019, projected receipts fall significantly because the annual fee on health insurance providers is suspended in 2019. After the decline in 2019, excise taxes are projected to increase each year but still to slightly decrease as a share of GDP, from 0.5 percent in 2018 to 0.4 percent in 2028, primarily because prices are projected to increase at a faster rate than the excise tax base. In addition, taxes on gasoline and tobacco would continue to decline over the 10-year period. In CBO's baseline projections, over 90 percent of excise tax receipts come from taxes related to highways, tobacco and alcohol, aviation, and health care.

Highway Taxes. About 40 percent of excise tax receipts currently come from highway taxes—primarily taxes on the consumption of gasoline, diesel fuel, and blends of those fuels with ethanol, as well as on the retail sale of trucks. Annual receipts from highway taxes, which are largely dedicated to the Highway Trust Fund, are projected to decrease slightly over the 10-year period, averaging an annual decline of 0.1 percent but remaining close to $40 billion a year.

CBO's projection of a slight decline in highway revenues is the net effect of falling receipts from taxes on gasoline and rising receipts from taxes on diesel fuel and trucks. Gasoline consumption is expected to decline because improvements in vehicles' fuel economy (spurred by increases in the government's fuel-economy standards) is expected to more than offset the increase in the number of miles people drive. Miles driven largely reflects projected population growth. Increased fuel economy will likewise reduce the consumption of diesel fuel per mile driven over the 10-year period. However, from 2018 through 2021, the decrease in diesel consumption from fuel economy is projected to be offset by the increase in

Table 3-3.

Smaller Sources of Revenues Projected in CBO's Baseline

Billions of Dollars

	Actual, 2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total 2019–2023	Total 2019–2028
Excise Taxes														
Highway	35	39	40	41	40	40	40	40	40	39	39	39	202	399
Health Care	4	18	3	21	22	25	29	31	32	34	36	39	99	272
Aviation	15	16	17	17	18	19	19	20	20	21	22	22	90	196
Tobacco	14	14	13	13	13	12	12	12	12	11	11	11	64	121
Alcohol	10	9	9	10	11	11	11	12	12	12	12	12	52	112
Other	5	6	5	5	5	5	5	5	5	5	5	5	25	50
Subtotal	84	102	88	106	109	113	117	119	121	123	126	129	532	1,149
Federal Reserve Remittances	81	66	44	39	45	52	61	68	74	80	82	88	240	632
Customs Duties	35	38	41	43	46	47	49	51	52	54	56	58	227	499
Estate and Gift Taxes	23	26	19	19	20	21	21	23	24	25	37	40	100	249
Miscellaneous Fees and Fines														
Universal Service Fund fees	10	10	11	11	11	12	12	12	12	12	12	12	57	116
Other fees and fines	38	37	36	34	33	30	32	34	35	37	39	40	165	350
Subtotal	48	47	46	45	44	42	44	46	47	49	51	52	221	466
Total	**270**	**278**	**238**	**253**	**263**	**275**	**291**	**306**	**318**	**332**	**352**	**368**	**1,320**	**2,995**

Source: Congressional Budget Office.

This table shows all projected sources of revenues other than individual and corporate income taxes and social insurance taxes.

total miles driven by diesel-powered trucks as the economy expands. After 2021, consumption is expected to decline as fuel economy continues to improve.

Under current law, most of the federal excise taxes used to fund highway programs are scheduled to expire 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 (P.L. 99–177) requires that CBO's baseline incorporate the assumption that expiring excise taxes dedicated to trust funds (including most of the highway taxes) will be extended.

Health Care Taxes. CBO projects receipts from health care taxes to grow from $18 billion in 2018 to $39 billion in 2028. The largest of those taxes is the excise tax imposed on many health insurers under the Affordable Care Act. The law specifies the total amount of the tax to be assessed in 2018 and the formula used to compute that amount in subsequent years. That total is then divided among insurers according to their share of total premiums. In 2018, revenues are projected to total $14 billion. Recent legislation suspended the tax for 2019, but receipts are projected to rise steadily thereafter, reaching $24 billion by 2028.

Other health care taxes that were also instituted by the Affordable Care Act include an annual fee imposed on manufacturers and importers of brand-name drugs, a tax on manufacturers and importers of certain medical devices, and a tax on certain health insurance plans with high premiums. The tax on manufacturers of brand-name drugs is projected to raise $3 billion each year from 2019 to 2028. A moratorium on the medical devices tax was extended in recent legislation and so will not generate revenue until calendar year 2020. In 2028, CBO estimates that it will raise about $4 billion in revenues. Recent legislation also delayed the implementation of the excise tax on high-cost employment-based health plans until 2022. Revenues from that tax are projected to total $7 billion in 2028 under current law.

Tobacco and Alcohol Taxes. CBO projects that taxes on tobacco products will generate $14 billion in revenues in 2018. That amount is projected to decrease by roughly 2 percent a year over the next decade, as tobacco consumption continues to decline. Receipts from taxes on alcoholic beverages are expected to total $9 billion in 2018. Projected revenues over the 2018–2020 period are lower because of the effects of the 2017 tax act, which lowered taxes on most types of alcohol. Beginning in 2022, receipts would grow at about 2 percent per year to reach $12 billion by 2028.

Aviation Taxes. In CBO's baseline, receipts from taxes on airline tickets, aviation fuels, and various aviation-related transactions increase from $16 billion in 2018 to $22 billion in 2028, yielding an average annual rate of growth of about 3 percent. That growth is close to the projected increase of GDP over the period. The largest component of aviation excise taxes (a tax on airline tickets) is levied not on the number of units transacted (as gasoline taxes are, for example) but as a percentage of the dollar value of transactions. As a result, receipts increase as both real (inflation-adjusted) economic activity and prices increase. Under current law, aviation taxes are scheduled to expire in 2019. In the same manner as highway taxes described above, CBO's baseline incorporates the assumption that these expiring taxes will be extended because they are dedicated to a trust fund.

Other Excise Taxes. Other excise taxes are projected to generate a total of about $6 billion in revenues in 2018 and $55 billion in revenues from 2018 to 2028. They include two new excise taxes established by the 2017 tax act: an excise tax on the investment income of private colleges and universities and a tax on executive compensation of tax-exempt organizations. The category also consists of other taxes dedicated to trust funds, including the Federal Aid in Wildlife Restoration trust fund (taxes on firearms and bows and arrows), the Oil Spill Liability Trust Fund, and the Patient-Centered Outcomes Research Trust Fund.

Remittances From the Federal Reserve System

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 revenue. The largest component of such income is what the Federal Reserve earns as interest on its holdings of securities. CBO projects the Federal Reserve's remittances in 2018 to be $66 billion (or 0.3 percent of GDP). That amount was boosted by $2 billion, CBO estimates, by the Federal Reserve's transfer of its surplus account to the Treasury as required by the Bipartisan Budget Act of 2018 (P.L. 115–123). Subsequently, CBO projects that remittances will decrease over the 2018–2020 period because of the Federal Reserve's rising interest expenses and a reduction in the amount of assets that it holds. CBO also projects an increase in interest rates on Treasury securities over the projection period, which will increase earnings for the Federal Reserve—but only gradually—as it purchases new securities that earn higher yields. (See Chapter 1 for a discussion of CBO's forecasts of monetary policy and interest rates in the coming decade.) Overall, remittances in CBO's baseline range between 0.2 percent and 0.3 percent of GDP over the 2019–2028 period, which is close to the Federal Reserve's average remittance of 0.2 percent of GDP from 2000 through 2009, before the central bank dramatically boosted its asset holdings in response to the 2008 financial crisis.

Customs Duties, Estate and Gift Taxes, and Miscellaneous Fees and Fines

Receipts from all other sources are projected to remain relatively stable over the next decade, together remaining near 0.5 percent of GDP between 2018 and 2028.

Customs Duties. The duties, which are assessed on certain imports, have totaled 0.2 percent of GDP in recent years, amounting to $35 billion in 2017. CBO projects that, under current law, those receipts would continue at that level relative to GDP throughout the next decade.[4]

Estate and Gift Taxes. In 2017, revenue from the estate and gift taxes totaled $23 billion, or just above 0.1 percent of GDP. As a result of a provision in the 2017 tax act that temporarily doubles the estate and gift tax exemption amount, taxes from that source are projected to drop in 2019 to less than 0.1 percent of GDP before rising again to just above 0.1 percent in 2027 and 2028.

Miscellaneous Fees and Fines. Receipts from other fees and fines totaled $48 billion (0.2 percent of GDP) in 2017. Under current law, those fees and fines would

4. CBO's baseline for customs duties was completed before the implementation of new tariffs on steel and aluminum and does not incorporate any effects of those policies.

continue to average 0.2 percent of GDP from 2018 through 2028, CBO projects.

Tax Expenditures

Many exclusions, deductions, preferential rates, and credits in the individual income tax, payroll tax, and corporate income tax systems cause revenues to be much lower than they would otherwise be for any underlying structure of tax rates. Many of those provisions are called tax expenditures because they are similar to government spending programs, in that they supply financial assistance for particular activities or to certain entities or groups of people.

Like conventional federal spending, tax expenditures contribute to the federal budget deficit. They also influence people's choices about working, saving, and investing, and they affect the distribution of income. The Congressional Budget Act of 1974 (P.L. 93–344) 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."[5] That law requires the federal budget to list tax expenditures, and every year JCT and the Treasury's Office of Tax Analysis each publish estimates of individual and corporate income tax expenditures.[6]

Tax expenditures are more similar to the largest benefit programs than they are to discretionary spending programs: Tax expenditures 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.

Magnitude of Tax Expenditures

Tax expenditures have a major impact on the federal budget. CBO estimates that in fiscal year 2017, before the 2017 tax act and subsequent legislation took effect, the more than 200 tax expenditures in the individual and corporate income tax systems totaled almost $1.7 trillion—or 8.9 percent of GDP—if their effects on payroll taxes as well as on income taxes are included.[7] That amount equaled more than half of all federal revenues received in 2017 and exceeded spending on Social Security, defense, or Medicare (see Figure 3-3).

Tax expenditures are likely to be smaller beginning in 2018 as a result of the 2017 tax act—but estimates of their magnitude are not yet available. CBO projects those amounts on the basis of estimates prepared by JCT, and JCT's estimates incorporating the effects of the 2017 tax act and subsequent legislation have not yet been released.

A simple total of the estimates for specific tax expenditures does not account for the interactions among them if they are considered together. For instance, the total tax expenditure for all itemized deductions would be smaller than the sum of the separate tax expenditures for each deduction: That is because all taxpayers would claim the standard deduction if there were no itemized deductions—but if only one or a few deductions were removed, many taxpayers would still choose to itemize. However, the progressive structure of the tax brackets ensures that the opposite would be the case with income

5. Sec. 3(3) of the Congressional Budget and Impoundment Control Act of 1974 (codified at 2 U.S.C. §622(3) (2006)).

6. For this analysis, CBO follows JCT's definition of tax expenditures as deviations from a "normal" income tax structure. For the individual income tax, that structure incorporates existing regular tax rates, the standard deduction, personal exemptions, and deductions of business expenses. For the corporate income tax, that structure includes the top statutory tax rate, defines income on an accrual basis, and allows for cost recovery according to a specified depreciation system. For more information, see Joint Committee on Taxation, *Estimates of Federal Tax Expenditures for Fiscal Years 2016–2020,* JCX-3–17 (January 2017), https://go.usa.gov/xQ3gn. Unlike JCT, CBO includes estimates of the largest payroll tax expenditures. As defined by CBO, a normal payroll tax structure includes the existing payroll tax rates as applied to a broad definition of compensation—which consists of cash wages and fringe benefits. The Treasury's definition of tax expenditures is broadly similar to JCT's. See Office of Management and Budget, *Budget of the U.S. Government, Fiscal Year 2019: Analytical Perspectives* (February 2018), pp. 153–194, https://go.usa.gov/xQ3gV (PDF, 4.2 MB).

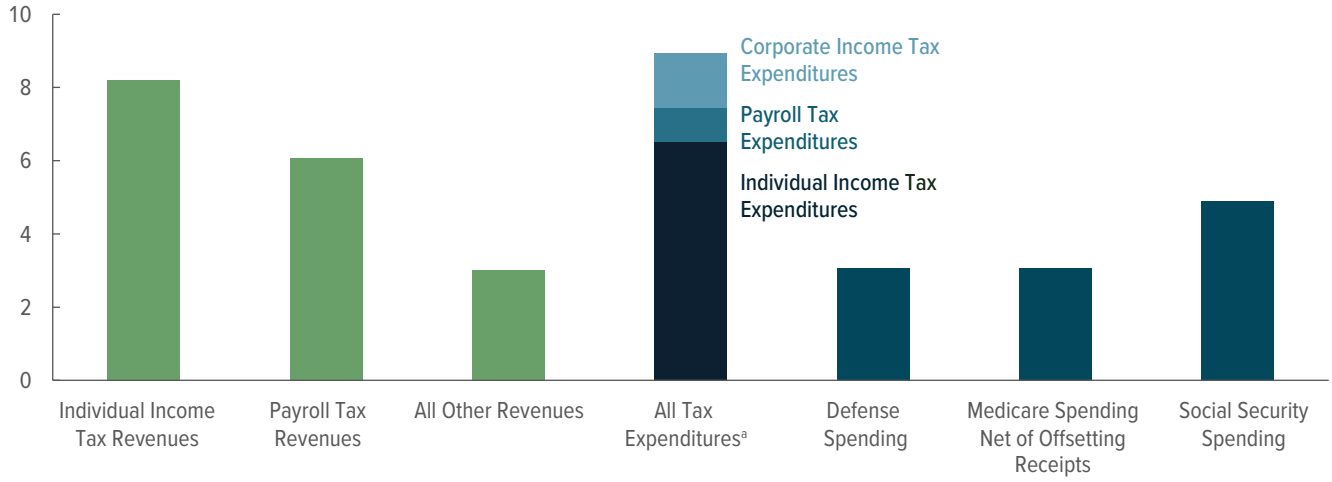
7. Most estimates of tax expenditures include only their effects on individual and corporate income taxes. However, tax expenditures can also reduce the amount of income subject to payroll taxes. JCT has previously estimated the effect on payroll taxes of the provision that excludes employers' contributions for health insurance premiums from their workers' taxable income. See Joint Committee on Taxation, *Background Materials for Senate Committee on Finance Roundtable on Health Care Financing*, JCX-27–09 (May 2009), https://go.usa.gov/xQaa9. Tax expenditures that reduce the tax base for payroll taxes will eventually decrease spending for Social Security by reducing the earnings base on which Social Security benefits are calculated.

Figure 3-3.

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

Tax expenditures, estimated to have been $1.7 trillion in 2017, cause revenues to be lower than they would be otherwise and, like spending programs, contribute to the federal deficit.

Percentage of Gross Domestic Product



Source: Congressional Budget Office, using estimates by the staff of the Joint Committee on Taxation. Estimates incorporating the effects of the 2017 tax act have not yet been released. Those changes in law will generally reduce the magnitude of tax expenditures beginning in 2018.

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.

exclusions; that is, the tax expenditure for all exclusions considered together would be greater than the sum of the separate tax expenditures for each exclusion. In 2017, those and other factors were approximately offsetting, so the total amount of tax expenditures roughly equaled the sum of all of the individual tax expenditures.

Nonetheless, the total amount of tax expenditures does not represent the increase in revenues that would occur if all 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 the preferential tax rates on realizations of capital gains were eliminated, 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.

The Largest Tax Expenditures in 2017

CBO estimates that the 10 largest tax expenditures accounted for almost three-quarters of the total budgetary effects of all tax expenditures in fiscal year 2017, totaling 6.1 percent of GDP.[8] Those 10 tax expenditures fell into four categories: exclusions from taxable income, itemized deductions, preferential tax rates, and tax credits.

Exclusions From Taxable Income. Exclusions of certain types of income from taxation account for the greatest share of total tax expenditures. The largest items in that category are employers' contributions to their employees' health care, health insurance premiums, and premiums for long-term-care insurance; contributions to

8. CBO combined the components of certain tax expenditures that JCT reported separately, such as tax expenditures for different types of charitable contributions.

and earnings of pension funds (minus pension benefits that are included in taxable income); and profits earned abroad, which certain corporations may exclude from their taxable income until those profits are returned to the United States.[9]

- The exclusion of employers' health insurance contributions is the single largest tax expenditure in the tax code; including effects on payroll taxes, that exclusion is estimated to have equaled 1.5 percent of GDP in 2017.
- The exclusion of pension plan contributions and earnings has the next largest impact, resulting in tax expenditures that are estimated to have totaled 1.2 percent of GDP last year, including effects on payroll taxes.[10]
- Tax expenditures for the deferral of corporate profits earned abroad are estimated to have equaled 0.6 percent of GDP in 2017.

Itemized Deductions. Itemized deductions for certain types of payments allow taxpayers to further reduce their taxable income.

- Tax expenditures for deductions for state and local taxes (on nonbusiness income, sales, real estate, and personal property) are estimated to have equaled 0.5 percent of GDP in 2017.
- Tax expenditures for interest paid on mortgages for owner-occupied residences are estimated to have been 0.3 percent of GDP last year.
- Tax expenditures for charitable contributions are also estimated to have equaled 0.3 percent of GDP in 2017.

Preferential Tax Rates and Tax Credits. Under the individual income tax, preferential tax rates apply to some forms of income, including dividends and long-term capital gains.[11] Tax credits also reduce eligible taxpayers' tax liability. Nonrefundable tax credits cannot reduce a taxpayer's income tax liability to less than zero, whereas refundable tax credits may result in direct payments to taxpayers who do not owe any income taxes.

- Tax expenditures for the preferential tax rates on dividends and long-term capital gains are estimated to have totaled 0.7 percent of GDP in 2017.[12]
- The Affordable Care Act provides a refundable tax credit, called the premium tax credit, to help low- and moderate-income people purchase health insurance through exchanges. Tax expenditures for those credits are estimated to have totaled 0.3 percent of GDP in 2017.
- The tax expenditure for the earned income tax credit is estimated to have been 0.4 percent of GDP last year.
- The tax expenditure for the child tax credit was also estimated to have been 0.3 percent of GDP in 2017.

Effect of the 2017 Tax Act on Tax Expenditures

The 2017 tax act made many changes that affect the magnitude of tax expenditures, though in many cases those changes are temporary. Some of those changes modify the rules for eligibility or the amount of tax expenditures. But the 2017 tax act also contained changes to other provisions in the tax code with indirect consequences for the total amount of tax expenditures. Neither JCT nor the Treasury Department has estimated tax expenditures under the new law, so a comprehensive

9. JCT previously also considered the exclusion for Medicare benefits (net of premiums paid) to be a tax expenditure but no longer does so. For a more detailed explanation, see Joint Committee on Taxation, *Estimates of Federal Tax Expenditures for Fiscal Years 2015–2019,* JCX-141R-15 (December 2015), p. 20, https://go.usa.gov/xQ3gT.

10. That total includes amounts from defined benefit and defined contribution plans offered by employers; it does not include amounts from self-directed individual retirement arrangements or from Keogh plans that cover partners and sole proprietors, although contributions to and earnings accrued in those plans are also excluded from taxable income until withdrawal.

11. Not all analysts agree that lower tax rates on investment income constitute tax expenditures. Although such tax preferences are tax expenditures relative to a pure income tax, which is the benchmark used by JCT and the Treasury Department in calculating tax expenditures, they are not tax expenditures relative to a pure consumption tax because investment income generally is excluded from taxation under a consumption tax.

12. Taxpayers with income over certain thresholds—$200,000 for single filers and $250,000 for married couples filing joint returns—face a surtax equal to 3.8 percent of their investment income (including capital gains and dividend income, as well as interest income and some passive business income). That surtax reduces the preferential treatment of dividends and capital gains. JCT treats the surtax as a negative tax expenditure—that is, as a deviation from the tax system that increases rather than decreases taxes—and it is not included in the figures presented here.

evaluation of the size of tax expenditures is not possible at this time. CBO expects that, on balance, the changes made by the tax act will reduce tax expenditures. But even with those reductions, tax expenditures will continue to have a substantial impact on the federal budget.

Ways in Which Tax Expenditures Will Be Reduced. The 2017 tax act directly limited some of the largest tax expenditures for calendar years 2018 through 2025, broadening the tax base. For example, a new limit was placed on the itemized deduction for state and local taxes (including income, sales, and property taxes), and the limit on the amount of debt for owner-occupied housing for which the mortgage interest is deductible was lowered.

Some changes made by the 2017 act will indirectly reduce tax expenditures. The act almost doubled the standard deduction, which will significantly curtail tax expenditures for itemized deductions. That change will reduce the value of claiming itemized deductions relative to claiming the standard deduction for all taxpayers. In many cases, the reduction will cause taxpayers to switch from itemizing their deductions to claiming the standard deduction. CBO expects that the larger standard deduction, in conjunction with the limits on itemized deductions, will reduce the number of taxpayers who itemize deductions by more than half.

Furthermore, by lowering both individual and corporate statutory tax rates, the act will reduce the size of most tax expenditures. That effect occurs because tax expenditures are measured as the revenue loss from special exclusions and deductions and preferential rates, and the revenue loss generally falls as the statutory rates fall. (Tax expenditures for tax credits, however, are largely unchanged by rate structure.)

Ways in Which Tax Expenditures Will Be Increased. The 2017 tax act expanded other tax expenditures. For example, for the years 2018 through 2025, the nonrefundable child credit is doubled, the refundable portion of the child tax credit is increased, and a smaller credit is broadened to cover dependents who were not previously eligible for the credit.[13] And the act also allows for a more generous capital recovery, which will increase the tax expenditures for depreciation of property.

Economic Effects of Tax Expenditures

Tax expenditures are generally designed to further societal goals. For example, the tax expenditures for health insurance costs, pension contributions, and mortgage interest payments may help promote a healthier population, adequate financial resources for retirement and greater national saving, and stable communities of homeowners. However, tax expenditures have a broad range of effects that do not always further societal goals.

First, tax expenditures may lead to an inefficient allocation of economic resources. They do so by subsidizing activity—such as buying a home—that might have taken place without the tax incentives and by encouraging more consumption of the goods and services that receive preferential treatment. For example, the tax expenditures mentioned above may prompt people to be less cost-conscious in their use of health care services than they would be in the absence of the tax expenditure for health insurance costs; to reallocate existing savings from accounts that are not tax-preferred to retirement accounts, rather than add to their savings; and to purchase more expensive homes, investing too much in housing and too little elsewhere relative to what they would do if all investments were treated equally.

Second, by providing benefits related to specific activities, entities, or groups of people, tax expenditures increase the size and scope of federal involvement in the economy. Indeed, adding tax expenditures to conventional federal outlays makes the federal government appear notably larger relative to GDP.

Third, tax expenditures reduce the amount of revenue that is collected for any given set of statutory tax rates—and thereby require higher rates to collect a chosen amount of revenue. All else being equal, those higher tax rates lessen people's incentives to work and save, and therefore decrease output and income.

At the same time, some tax expenditures more directly affect output and income. For example, the preferential rate on capital gains and dividends raises the after-tax return on some forms of saving, which tends to increase saving and boost future output. As another example, the increase in take-home pay arising from the earned income tax credit appears to encourage work effort by some people.

13. For some taxpayers, the tax reduction provided by those larger tax credits will be more than offset by the temporary repeal of personal exemptions, which will raise taxable income. However, personal exemptions, along with the standard deduction and tax rates on ordinary income, are not considered tax expenditures.

Fourth, tax expenditures have mixed effects on the societal goal of limiting the complexity of the tax code. On the one hand, most tax expenditures, such as itemized deductions and tax credits, require that taxpayers keep additional records and make additional calculations, increasing the complexity of the tax code. On the other hand, some exclusions from taxable income simplify the tax code by eliminating recordkeeping requirements and the need for certain calculations. For example, in the absence of the exclusion for capital gains on assets transferred at death, taxpayers would need to calculate the appreciation in the value of their assets since the original purchase—a calculation that would require records of the purchase of assets acquired by deceased benefactors, perhaps many decades earlier.

Fifth, tax expenditures affect the distribution of the tax burden in ways that may not always be recognized, both among people at different income levels and among people who have similar income but differ in other ways.

Uncertainty Surrounding the Revenue Outlook

Revenue projections are inherently uncertain, and even if no changes were made to current law, actual outcomes would undoubtedly differ in some ways from CBO's projections. The agency attempts to construct its 11-year revenue projections so that they fall in the middle of the distribution of possible outcomes. Hence, actual revenues could turn out to be higher or lower than CBO projects.

In analyzing its previous baseline projections of revenues since 1982, CBO found that projected revenues for the second year (which is often called the budget year and usually began about six months after the projections were released) and the sixth year were too high, on average, mainly because of the difficulty of predicting when economic downturns would occur. The overall accuracy of CBO's revenue projections has been similar to that of the projections of other government agencies. Since 1982, the mean absolute error—that is, the average of all errors without regard for whether they were positive or negative—has been 5.0 percent for CBO's budget-year projections and 10.0 percent for the sixth-year projections.[14] Percentage errors of those amounts would equal about $175 billion in 2019 and $425 billion in 2023.

14. Those errors include CBO's projections that were prepared from 1982 through the most recent fiscal years for which actual receipts are available for each projection horizon: 2016 for the budget-year projections and 2012 for the sixth-year projections. For a more detailed analysis, see Congressional Budget Office, *CBO's Revenue Forecasting Record* (November 2015), www.cbo.gov/publication/50831. That analysis encompassed actual results through fiscal year 2013.

CHAPTER

4

The Outlook for Deficits and Debt

Overview

Federal budget deficits are set to increase rapidly this year and over the next four years, the Congressional Budget Office projects, and then to remain largely stable relative to the size of the economy—but at a very high level by historical standards—over the rest of the projection period (see Figure 4-1). Those deficits would result in rising federal debt. Moreover, CBO's baseline projections reflect a number of significant changes to tax and spending policies that are scheduled to take effect under current law. If those changes did not occur, deficits and debt would be substantially larger.

Rising Deficits

As required by statute, when constructing its baseline projections, CBO incorporates the assumption that current laws governing taxes and spending will generally remain unchanged in future years.[1] Under that assumption, in CBO's baseline, federal deficits average $1.2 trillion per year and total $12.4 trillion over the 2019–2028 period. As a percentage of gross domestic product (GDP), the deficit increases from 3.5 percent in 2017 to 5.4 percent in 2022 (see Table 4-1). Thereafter, the deficit fluctuates between 4.6 percent and 5.2 percent of GDP from 2023 through 2028. Over the past 50 years, the annual deficit has averaged 2.9 percent of GDP.

That pattern of deficits is expected to occur mainly because, under current law, revenues and outlays would grow at different rates. Revenues would be roughly flat as a percentage of GDP over the next several years before rising steadily in the second half of the period. In contrast, outlays would increase in most years through 2028.

1. 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.

Growing Debt

The large deficits over the next 10 years would cause debt held by the public to rise steadily. Relative to the nation's output, debt held by the public is projected to increase from 76.5 percent of GDP in 2017 to 96.2 percent at the end of 2028 (see Table 4-2 on page 82). At that point, federal debt would be higher as a percentage of GDP than at any point since just after World War II—and heading still higher.

Outcomes If Certain Changes Scheduled in Law Did Not Occur

In CBO's baseline projections, deficits in the latter half of the decade, though quite large, are not trending upward relative to the size of the economy. That pattern occurs in large part because CBO's projections reflect the assumption that substantial tax increases and spending cuts will take place as scheduled under current law.

If those changes did not occur and current policies were continued instead, much larger deficits and much greater debt would result: The deficit would grow to 7.1 percent of GDP by 2028 and would average 6.3 percent of GDP from 2023 to 2028, CBO estimates, compared with 4.9 percent in the baseline. With cumulative deficits of $15.0 trillion over the projection period, debt held by the public under that alternative fiscal scenario would reach 105 percent of GDP by the end of 2028, an amount that has been exceeded only one time in the nation's history. Moreover, the pressures that are projected to contribute to that rise would accelerate and drive up debt even more in subsequent decades.

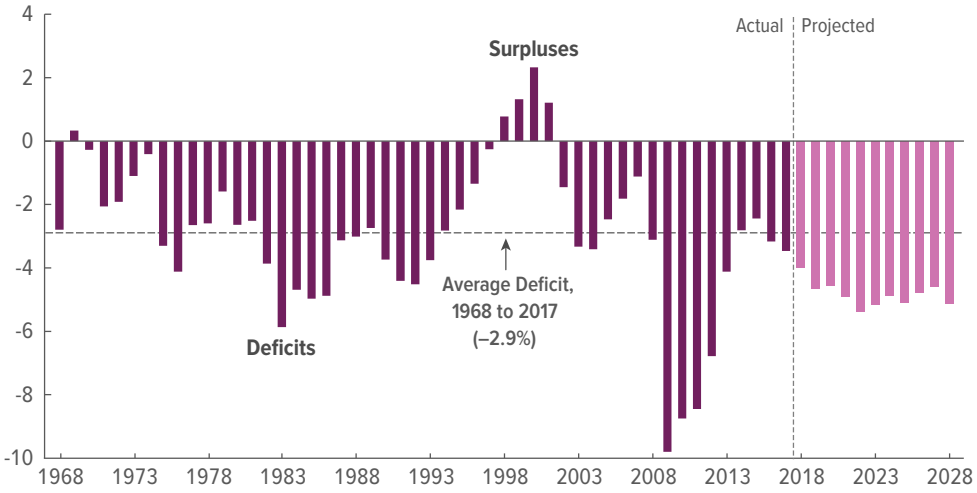
Deficits

Under the assumption that current laws governing taxes and spending generally remain in place, the amount by which the government's outlays exceed its revenues would nearly double in nominal terms over the next several years, rising from $665 billion in 2017 to $1.3 trillion in 2022. The budget deficit would increase more slowly thereafter—to a total of $1.5 trillion in 2028.

Figure 4-1.

Total Deficits or Surpluses

Percentage of Gross Domestic Product



Deficits as a percentage of gross domestic product are projected to increase over the next few years and then largely stabilize. They exceed their 50-year average throughout the 2018–2028 period.

Source: Congressional Budget Office.

The Deficit in 2018

CBO estimates that, under current law, the budget deficit in 2018 will be $804 billion, $139 billion more than the shortfall last year. That increase would be even larger if not for shifts in the timing of certain payments. The 2018 deficit will be reduced by $44 billion because certain payments that would ordinarily have been made on October 1, 2017 (the first day of fiscal year 2018), were instead made in fiscal year 2017 because October 1 fell on a weekend.[2] For 2017, the net effect of those timing shifts and of similar shifts in spending from fiscal year 2017 into fiscal year 2016 was to increase outlays by $3 billion. If not for those shifts, the estimated deficit in 2018 would have been $186 billion more than last year's shortfall, climbing from $662 billion in 2017 to $848 billion this year.

CBO projects that, under current law, revenues—which rose by 1.5 percent in 2017—will increase by only 0.6 percent (or $21 billion) this year, to $3.3 trillion. The main reason for the smaller increase is the effect of Public Law 115-97 (referred to here as the 2017 tax act), which, on net, will reduce revenues by an estimated $144 billion (or 0.7 percent of GDP) in 2018.

Outlays (adjusted to exclude the effects of the timing shifts)—which rose by 4.4 percent in 2017—will increase by 5.2 percent (or $208 billion) this year, to $4.2 trillion, CBO estimates. All three major components of spending contribute to that increase:

- Net outlays for interest are anticipated to jump from $263 billion in 2017 to $316 billion in 2018, an increase of 20 percent (or $53 billion). Higher interest rates this year account for most of that change.
- Discretionary outlays are expected to rise by 7 percent (or $84 billion) this year, significantly faster than the 2 percent increase in 2017 and the fastest rate of increase since 2010. The rapid growth projected for discretionary outlays stems primarily from recently enacted legislation.
- Mandatory spending is expected to increase by almost 3 percent (or $71 billion) in 2018, to $2.6 trillion. That rate of growth, which occurs for many different reasons, is roughly half the rate of increase recorded for such outlays in 2017.

2. October 1 will fall on a weekend again in 2022, 2023, and 2028. 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 will noticeably boost spending and the deficit in fiscal years 2022 and 2028; the timing shifts will reduce federal spending and deficits in fiscal year 2024.

Table 4-1.

CBO's Baseline Budget Projections, by Category

	Actual, 2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total 2019–2023	Total 2019–2028
							In Billions of Dollars							
Revenues														
Individual income taxes	1,587	1,639	1,744	1,833	1,900	1,990	2,092	2,199	2,316	2,574	2,804	2,924	9,558	22,376
Payroll taxes	1,162	1,178	1,231	1,284	1,337	1,395	1,456	1,519	1,583	1,646	1,712	1,780	6,704	14,944
Corporate income taxes	297	243	276	307	327	353	388	421	447	449	431	448	1,651	3,847
Other	270	278	238	253	263	275	291	306	318	332	352	368	1,320	2,995
Total	**3,316**	**3,338**	**3,490**	**3,678**	**3,827**	**4,012**	**4,228**	**4,444**	**4,663**	**5,002**	**5,299**	**5,520**	**19,234**	**44,162**
On-budget	2,466	2,477	2,590	2,736	2,845	2,990	3,164	3,338	3,513	3,807	4,058	4,230	14,327	33,273
Off-budget[a]	851	860	899	941	981	1,022	1,063	1,106	1,150	1,194	1,241	1,290	4,907	10,889
Outlays														
Mandatory	2,519	2,546	2,719	2,861	3,031	3,266	3,392	3,513	3,760	3,983	4,189	4,524	15,269	35,238
Discretionary	1,200	1,280	1,362	1,340	1,348	1,380	1,406	1,436	1,481	1,522	1,562	1,608	6,836	14,445
Net interest	263	316	390	485	570	643	702	739	774	817	864	915	2,789	6,897
Total	**3,982**	**4,142**	**4,470**	**4,685**	**4,949**	**5,288**	**5,500**	**5,688**	**6,015**	**6,322**	**6,615**	**7,046**	**24,893**	**56,580**
On-budget	3,180	3,288	3,556	3,706	3,901	4,168	4,303	4,414	4,658	4,883	5,084	5,416	19,634	44,088
Off-budget[a]	801	853	915	980	1,048	1,120	1,197	1,274	1,357	1,439	1,531	1,631	5,259	12,492
Deficit (-) or Surplus	**-665**	**-804**	**-981**	**-1,008**	**-1,123**	**-1,276**	**-1,273**	**-1,244**	**-1,352**	**-1,320**	**-1,316**	**-1,526**	**-5,660**	**-12,418**
On-budget	-715	-811	-965	-969	-1,056	-1,178	-1,139	-1,076	-1,144	-1,076	-1,026	-1,186	-5,307	-10,815
Off-budget[a]	49	7	-16	-38	-67	-98	-134	-168	-208	-245	-290	-340	-352	-1,603
Debt Held by the Public	14,665	15,688	16,762	17,827	18,998	20,319	21,638	22,932	24,338	25,715	27,087	28,671	n.a.	n.a.
Memorandum:														
Gross Domestic Product	19,178	20,103	21,136	22,034	22,872	23,716	24,621	25,583	26,595	27,608	28,677	29,803	114,379	252,646
							As a Percentage of Gross Domestic Product							
Revenues														
Individual income taxes	8.3	8.2	8.3	8.3	8.3	8.4	8.5	8.6	8.7	9.3	9.8	9.8	8.4	8.9
Payroll taxes	6.1	5.9	5.8	5.8	5.8	5.9	5.9	5.9	6.0	6.0	6.0	6.0	5.9	5.9
Corporate income taxes	1.5	1.2	1.3	1.4	1.4	1.5	1.6	1.6	1.7	1.6	1.5	1.5	1.4	1.5
Other	1.4	1.4	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Total	**17.3**	**16.6**	**16.5**	**16.7**	**16.7**	**16.9**	**17.2**	**17.4**	**17.5**	**18.1**	**18.5**	**18.5**	**16.8**	**17.5**
On-budget	12.9	12.3	12.3	12.4	12.4	12.6	12.9	13.0	13.2	13.8	14.2	14.2	12.5	13.2
Off-budget[a]	4.4	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
Outlays														
Mandatory	13.1	12.7	12.9	13.0	13.3	13.8	13.8	13.7	14.1	14.4	14.6	15.2	13.3	13.9
Discretionary	6.3	6.4	6.4	6.1	5.9	5.8	5.7	5.6	5.6	5.5	5.4	5.4	6.0	5.7
Net interest	1.4	1.6	1.8	2.2	2.5	2.7	2.8	2.9	2.9	3.0	3.0	3.1	2.4	2.7
Total	**20.8**	**20.6**	**21.2**	**21.3**	**21.6**	**22.3**	**22.3**	**22.2**	**22.6**	**22.9**	**23.1**	**23.6**	**21.8**	**22.4**
On-budget	16.6	16.4	16.8	16.8	17.1	17.6	17.5	17.3	17.5	17.7	17.7	18.2	17.2	17.5
Off-budget[a]	4.2	4.2	4.3	4.4	4.6	4.7	4.9	5.0	5.1	5.2	5.3	5.5	4.6	4.9
Deficit (-) or Surplus	**-3.5**	**-4.0**	**-4.6**	**-4.6**	**-4.9**	**-5.4**	**-5.2**	**-4.9**	**-5.1**	**-4.8**	**-4.6**	**-5.1**	**-4.9**	**-4.9**
On-budget	-3.7	-4.0	-4.6	-4.4	-4.6	-5.0	-4.6	-4.2	-4.3	-3.9	-3.6	-4.0	-4.6	-4.3
Off-budget[a]	0.3	*	-0.1	-0.2	-0.3	-0.4	-0.5	-0.7	-0.8	-0.9	-1.0	-1.1	-0.3	-0.6
Debt Held by the Public	76.5	78.0	79.3	80.9	83.1	85.7	87.9	89.6	91.5	93.1	94.5	96.2	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.

Table 4-2.

Key Projections in CBO's Baseline

Percentage of Gross Domestic Product

			Projected Annual Average	
	2018	2019	2020–2023	2024–2028
Revenues				
Individual income taxes	8.2	8.3	8.4	9.3
Payroll taxes	5.9	5.8	5.9	6.0
Corporate income taxes	1.2	1.3	1.5	1.6
Other	1.4	1.1	1.2	1.2
Total Revenues	**16.6**	**16.5**	**16.9**	**18.0**
Outlays				
Mandatory				
Social Security	4.9	4.9	5.2	5.7
Major health care programs[a]	5.2	5.3	5.6	6.3
Other	2.6	2.6	2.6	2.4
Subtotal	12.7	12.9	13.5	14.4
Discretionary	6.4	6.4	5.9	5.5
Net interest	1.6	1.8	2.6	3.0
Total Outlays	**20.6**	**21.2**	**21.9**	**22.9**
Deficit	**-4.0**	**-4.6**	**-5.0**	**-4.9**
Debt Held by the Public at the End of the Period	**78.0**	**79.3**	**87.9**	**96.2**
Memorandum:				
Social Security				
Revenues[b]	4.4	4.4	4.5	4.6
Outlays[c]	4.9	4.9	5.2	5.7
Contribution to the Federal Deficit[d]	-0.4	-0.5	-0.7	-1.2
Medicare				
Revenues[b]	1.4	1.4	1.5	1.5
Outlays[c]	3.5	3.7	4.0	4.6
Offsetting receipts	-0.6	-0.6	-0.7	-0.8
Contribution to the Federal Deficit[d]	-1.5	-1.6	-1.9	-2.3
Gross Domestic Product at the End of the Period (Trillions of dollars)	20.1	21.1	24.6	29.8

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.

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 on behalf of its employees. Those payments are intragovernmental 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 intragovernmental offsetting receipts stemming from the employer's share of payroll taxes paid to the Social Security trust funds by federal agencies on behalf of their employees.

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 intragovernmental transactions, interest earned on balances, or outlays related to administration of the program.

Table 4-3.

CBO's Baseline Outlay and Deficit Projections Adjusted to Exclude the Effects of Timing Shifts

	Actual, 2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
						In Billions of Dollars						
Payments That Are Shifted in CBO's Baseline[a]	3	-44	0	0	0	62	5	-67	0	0	0	89
Outlays Adjusted for Timing Shifts												
Mandatory	2,516	2,587	2,719	2,861	3,031	3,208	3,387	3,575	3,760	3,983	4,189	4,440
Discretionary	1,200	1,284	1,362	1,340	1,348	1,375	1,406	1,441	1,481	1,522	1,562	1,602
Net interest	263	316	390	485	570	643	702	739	774	817	864	915
Total	**3,978**	**4,186**	**4,470**	**4,685**	**4,949**	**5,226**	**5,495**	**5,755**	**6,015**	**6,322**	**6,615**	**6,957**
Deficit Adjusted to Exclude Timing Shifts	**-662**	**-848**	**-981**	**-1,008**	**-1,123**	**-1,214**	**-1,267**	**-1,311**	**-1,352**	**-1,320**	**-1,316**	**-1,437**
						As a Percentage of Gross Domestic Product						
Outlays Adjusted for Timing Shifts												
Mandatory	13.1	12.9	12.9	13.0	13.3	13.5	13.8	14.0	14.1	14.4	14.6	14.9
Discretionary	6.3	6.4	6.4	6.1	5.9	5.8	5.7	5.6	5.6	5.5	5.4	5.4
Net interest	1.4	1.6	1.8	2.2	2.5	2.7	2.8	2.9	2.9	3.0	3.0	3.1
Total	**20.7**	**20.8**	**21.2**	**21.3**	**21.6**	**22.0**	**22.3**	**22.5**	**22.6**	**22.9**	**23.1**	**23.3**
Deficit Adjusted to Exclude Timing Shifts	**-3.5**	**-4.2**	**-4.6**	**-4.6**	**-4.9**	**-5.1**	**-5.1**	**-5.1**	**-5.1**	**-4.8**	**-4.6**	**-4.8**
Memorandum:												
Baseline Deficit												
In billions of dollars	-665	-804	-981	-1,008	-1,123	-1,276	-1,273	-1,244	-1,352	-1,320	-1,316	-1,526
As a percentage of GDP	-3.5	-4.0	-4.6	-4.6	-4.9	-5.4	-5.2	-4.9	-5.1	-4.8	-4.6	-5.1

Source: Congressional Budget Office.

a. When October 1 falls on a weekend, certain payments that are due on that date are made at the end of September and thus are recorded in the previous fiscal year. Those shifts primarily affect mandatory spending and, to a much lesser degree, discretionary spending. Net interest outlays are not affected.

With adjustments to exclude the effects of timing shifts, this year's deficit is projected to total 4.2 percent of GDP, well above last year's level of 3.5 percent (see Table 4-3). Because the rate of growth of revenues is significantly less than the rate at which the agency expects GDP to increase, revenues are estimated to drop as a percentage of GDP in 2018, from 17.3 percent in 2017 to 16.6 percent. That drop explains nearly all of the increase in the deficit relative to the economy, as CBO's projection of outlays (adjusted to exclude shifts in timing) increases by only 0.1 percent of GDP.

Deficits From 2019 to 2028

In CBO's baseline projections, the budget deficit (adjusted to exclude shifts in timing) continues increasing after 2018, rising to 5.1 percent in 2022, a level exceeded only five times in the past 50 years. Although the growth in revenues accelerates after this year, increasing at an average annual rate of 4.7 percent through 2022, outlays rise faster, at an average annual rate of 5.7 percent (see Figure 4-2).

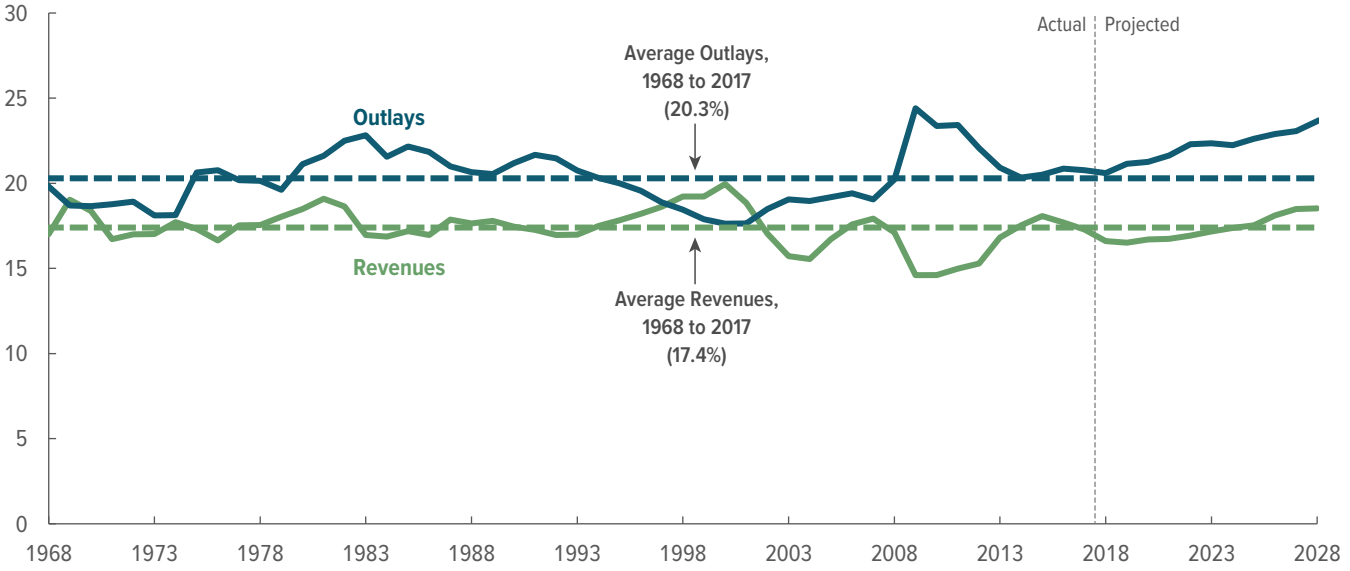
Between 2022 and 2025, in CBO's baseline, deficits remain at 5.1 percent before dipping at the end of the period, primarily because projected revenues increase more rapidly as many provisions of the 2017 tax act expire. Outlays increase more slowly after 2022, mostly because the rate of increase in net interest outlays slows.

Growth of Revenues. Revenues are expected to grow modestly relative to GDP over the first half of the projection period, rising from 16.6 percent in 2018 to 16.9 percent in 2022. Receipts from corporate income taxes are projected to grow from 1.2 percent to 1.5 percent of GDP over that period, largely because recently observed weakness in corporate tax receipts—beyond that which can be explained by currently available data on business activity—is expected to gradually dissipate.

Figure 4-2.

Total Revenues and Outlays

Percentage of Gross Domestic Product



Source: Congressional Budget Office.

Individual income tax receipts are projected to rise from 8.2 percent of GDP in 2018 to 8.4 percent in 2022. The most significant source of that increase is continued economic growth, which will cause people's income, in the aggregate, to rise faster than the rate of inflation.

CBO projects that if current laws generally remained unchanged, revenues would grow more quickly toward the end of the projection period, increasing from 16.9 percent of GDP in 2022 to 18.5 percent in 2027 and 2028. An increase in receipts from individual income taxes, from 8.4 percent of GDP in 2022 to 9.8 percent in 2028, explains much of that growth. Most of the increase in individual income taxes results from the scheduled expiration, after tax year 2025, of nearly all the provisions of the 2017 tax law that affect individual income taxes. Those expirations will cause tax liabilities to rise in calendar year 2026, boosting receipts in 2027 and 2028.

Growth of Outlays. Total outlays are projected to rise over the projection period, boosted by increased spending for net interest costs and large benefit programs (see Figure 4-3). In the baseline, outlays (adjusted to exclude shifts in timing) rise from 20.8 percent of GDP in 2018 to 23.3 percent in 2028. The projected rate of increase after 2022, an annual average of 4.9 percent, is 0.8 percentage points slower than CBO projects for the years between 2018 and 2022.

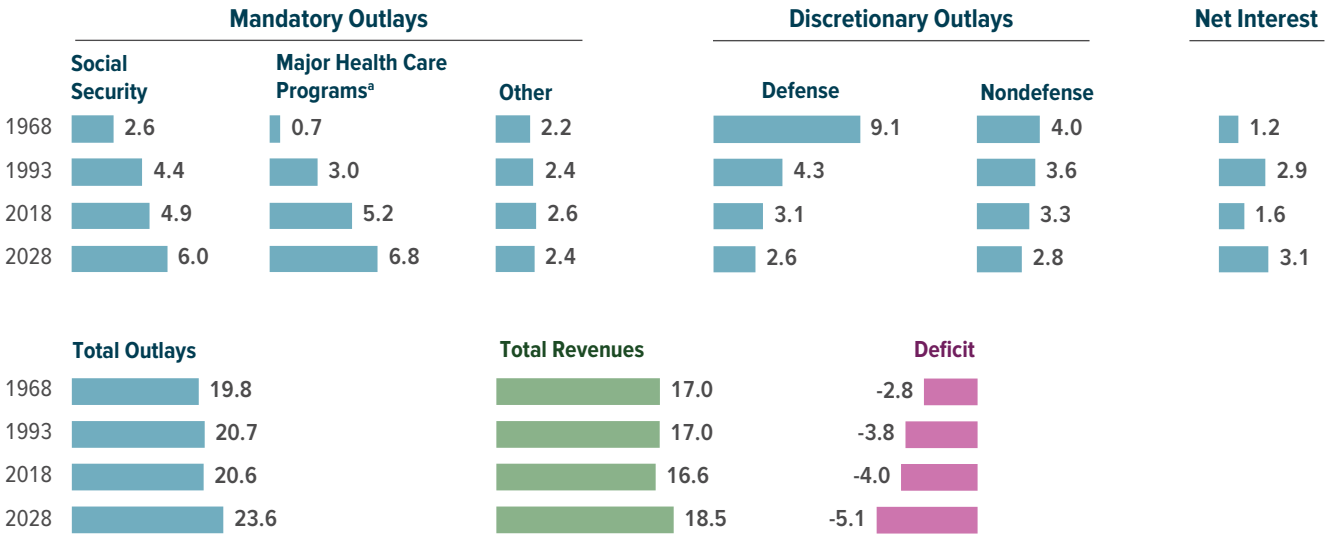
Net interest outlays grow about three times faster, on average, from 2018 to 2022 than they do later in the projection period, accounting for most of the dip in the projected rate of growth in total outlays during the latter part of the 10-year period. That slower rate of increase in later years occurs primarily because interest rates under CBO's economic forecast fall slightly over the second half of the projection period after rising during the first half. Nevertheless, net interest outlays in CBO's baseline reach 3.1 percent of GDP in 2028, nearly double the 1.6 percent projected for 2018.

Mandatory outlays are projected to increase steadily over the coming decade, rising by about 5.5 percent a year, on average, in both halves of the projection period. By 2028, spending for mandatory programs (adjusted to exclude timing shifts) would total 14.9 percent of GDP, up from 12.9 percent in 2018. By comparison, mandatory outlays have exceeded 14.0 percent of GDP only once since 1962 (the earliest year for which such data have been reported).

Figure 4-3.

Outlays 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.

Growth in spending for Social Security and Medicare (adjusted to exclude the effects of timing shifts) accounts for roughly three-quarters of the increase in mandatory spending over the 10-year period. The aging of the population and rising health care costs are key drivers of that spending:

- 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 about one-third, boosting the number of people receiving Social Security and Medicare benefits (see Figure 4-4).

- Health care costs per beneficiary are projected to grow faster than the economy over the long term, contributing to growth in spending for Medicare and Medicaid in particular.

CBO projects that, under current law, discretionary spending would fall in dollar terms in 2020 as the statutory caps on discretionary funding drop after 2019. Discretionary spending is projected to increase at an annual average rate of 2.6 percent over the second half of the projection period—reflecting the assumption that funding will grow with inflation once those caps expire after 2021.[3] Because that rate of growth is slower than the growth rate projected for the economy, such outlays continue falling in CBO's baseline as a percentage of GDP. In 2028, discretionary spending is projected to total 5.4 percent of GDP, about 1 percentage point below CBO's estimate of such outlays in 2018.

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.[4] The Treasury borrows money from the public by selling securities in the capital markets; that debt is purchased by various buyers in the United

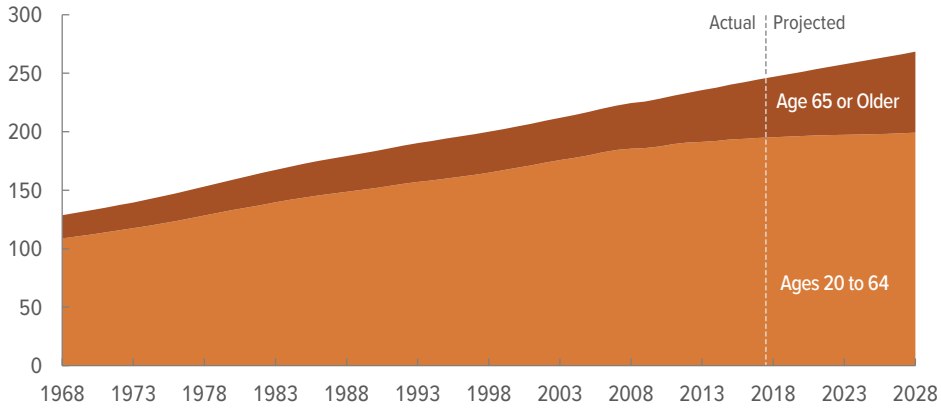
3. In CBO's baseline projections, discretionary funding related to federal personnel is inflated using the employment cost index for wages and salaries of workers in private industry; other discretionary funding is adjusted using the gross domestic product price index.

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

Figure 4-4.

Population, by Age Group

Millions of People



Enrollment in Social Security and Medicare is expected to rise as the number of people age 65 or older grows.

Source: Congressional Budget Office.

States, by private investors overseas, and by the central banks of other countries. Of the $14.7 trillion in federal debt held by the public at the end of 2017, 57 percent ($8.3 trillion) was held by domestic investors and 43 percent ($6.3 trillion) was held by foreign investors.[5] 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 $14.0 trillion from the end of 2017 through 2028, boosting debt held by the public to 96 percent of GDP by the end of the projection period (see Table 4-4). That amount of debt relative to the size of the economy would be the greatest since 1946 and more than double the 50-year average of 41 percent (see Summary Figure 2 on page 5).

Consequences of Growing Debt. Such high and rising debt would have significant negative consequences, both for the economy and for the federal budget, including these:

- When interest rates returned to more typical, higher levels, federal spending on interest payments would increase substantially.
- Because federal borrowing reduces national saving over time, the nation's capital stock ultimately would be smaller, and productivity and total wages would be lower than would be the case if the debt was smaller.[6]
- Lawmakers would have less flexibility than otherwise to use tax and spending policies to respond to unexpected challenges.
- The likelihood of a fiscal crisis in the United States would increase. Specifically, the risk would rise of investors' becoming unwilling to finance the government's borrowing unless they were

5. The largest domestic holders of public Treasury debt are the Federal Reserve (20 percent) and mutual funds (11 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.

6. National saving is total saving by all sectors of the economy: personal saving, business saving (corporate after-tax profits not paid as dividends), and government saving (budget surpluses). National saving represents all income not consumed, publicly or privately, during a given period.

   The nation's capital stock consists of land and the stock of products set aside to support future production and consumption, including business inventories and fixed capital (residential and nonresidential structures, producers' durable equipment, and intellectual property products, such as software).

Table 4-4.

Federal Debt Projected in CBO's Baseline

Billions of Dollars

	Actual, 2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Debt Held by the Public at the Beginning of the Year	14,168	14,665	15,688	16,762	17,827	18,998	20,319	21,638	22,932	24,338	25,715	27,087
Changes in Debt Held by the Public												
Deficit	665	804	981	1,008	1,123	1,276	1,273	1,244	1,352	1,320	1,316	1,526
Other means of financing	-168	218	94	58	48	45	46	50	54	56	57	58
Total	498	1,022	1,074	1,065	1,171	1,321	1,319	1,294	1,406	1,376	1,373	1,584
Debt Held by the Public at the End of the Year												
In billions of dollars	**14,665**	**15,688**	**16,762**	**17,827**	**18,998**	**20,319**	**21,638**	**22,932**	**24,338**	**25,715**	**27,087**	**28,671**
As a percentage of GDP	**76.5**	**78.0**	**79.3**	**80.9**	**83.1**	**85.7**	**87.9**	**89.6**	**91.5**	**93.1**	**94.5**	**96.2**
Memorandum:												
Debt Held by the Public Minus Financial Assets[a]												
In billions of dollars	13,198	14,002	14,983	15,990	17,113	18,389	19,662	20,906	22,258	23,578	24,894	26,420
As a percentage of GDP	68.8	69.7	70.9	72.6	74.8	77.5	79.9	81.7	83.7	85.4	86.8	88.6
Gross Federal Debt[b]	20,206	21,375	22,546	23,675	24,877	26,179	27,468	28,730	30,042	31,367	32,542	33,851
Debt Subject to Limit[c]	20,209	21,378	22,550	23,680	24,883	26,185	27,475	28,738	30,050	31,376	32,552	33,861
Average Interest Rate on Debt Held by the Public (Percent)	2.0	2.3	2.6	3.0	3.3	3.5	3.5	3.5	3.5	3.4	3.4	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 various 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 in that it excludes most debt issued by agencies other than the Treasury and the Federal Financing Bank and includes certain other adjustments that are excluded from gross debt. That limit was most recently set at $20.5 trillion but has been suspended through March 1, 2019. On March 2, 2019, the debt limit will be raised to its previous level plus the amount of federal borrowing that occurred while the limit was suspended.

compensated with very high interest rates. If that occurred, interest rates on federal debt would rise suddenly and sharply relative to rates of return on other assets.

How Debt Is Related to Deficits. 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 cash balances, 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).[7]

For two main reasons, CBO projects that the increase in debt held by the public will exceed the $804 billion deficit in 2018 by $218 billion. First, CBO expects the Treasury to borrow an additional $140 billion in order to increase its cash balance in 2018. That balance was

7. Present value is a single number that expresses a flow of revenues or outlays over time in terms of an equivalent lump sum received or paid at a specific time.

unusually small at the end of 2017 and the beginning of 2018 as a result of debt-ceiling constraints.

Second, the government's need for cash to finance new student loans and other credit programs will boost the debt by roughly $80 billion in 2018. The subsidy costs for those credit programs are part of the projected deficit for each year from 2019 to 2028, but the cash outlays needed to finance those programs each year are greater than the net subsidy costs, which are calculated on a present-value basis. (For more information on CBO's treatment of credit programs, see the section titled "Other Mandatory Programs" in Chapter 2.) As a result, CBO estimates that the government will need to borrow between $45 billion and $94 billion more per year during that period than the budget deficits would suggest.

Other Measures of Debt

Three other measures are sometimes used in reference to federal debt:

- *Debt held by the public minus financial assets* subtracts from debt held by the public the value of the government's financial assets, such as student loans. That measure provides a more comprehensive picture of the government's financial condition and its overall effect on credit markets than does debt held by the public. Calculating that measure is not straightforward, however, because neither the financial assets that are included nor the methods for evaluating them are well-defined. Under CBO's baseline assumptions, that measure is about 10 percent smaller than debt alone but varies roughly in line with it.

- *Gross federal debt* consists of debt held by the public and debt held by 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 $13.0 trillion between the end of 2018 and the end of 2028, and debt held by government accounts falls by $0.5 trillion, reflecting declines in the balances of many trust funds.[8] As a result, gross federal debt is projected to rise by $12.5 trillion over that period and to total $33.9 trillion at the end of 2028. About 15 percent 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 in that it excludes most debt issued by agencies other than the Treasury and the Federal Financing Bank and includes certain other adjustments that are excluded from gross debt.[9] Currently, there is no statutory limit on the issuance of new federal debt because the Bipartisan Budget Act of 2018 (P.L. 115-123) suspended the debt ceiling from February 9, 2018, through March 1, 2019. 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 $20.5 trillion on March 2, 2019. In CBO's baseline projections, the amount of outstanding debt subject to limit increases from $21.4 trillion at the end of 2018 to $33.9 trillion at the end of 2028. (For the purpose of those projections, CBO assumes that increases in the statutory ceiling will occur as necessary.)

Alternative Assumptions About Fiscal Policy

CBO's baseline budget projections—which are constructed in accordance with provisions of law—are intended to show what would happen to federal spending, revenues, and deficits if current laws generally remained unchanged. 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 budgetary projections of some alternative assumptions about future policies (see Table 4-5 on page 90). The discussion below focuses on how those policy actions would directly affect revenues and outlays. (Those estimates do not incorporate any economic effects of changes in fiscal policies relative to current law.) Such changes also would

8. 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 a trust fund has been exhausted, even though there is no legal authority to make such payments.

9. The Federal Financing Bank, a government corporation under the general supervision of the Treasury Department, assists federal agencies in managing their borrowing and lending programs. It can issue up to $15 billion of its own debt securities, and that amount does not count against the debt limit.

influence the costs of servicing the federal debt (shown separately in the table).

Emergency Spending

Recently, lawmakers provided $102 billion in nondefense discretionary funding designated as emergency requirements related to Hurricanes Irma, Harvey, and Maria and wildfires in western states.[10] Such funding is not constrained by the caps and, following the rules governing CBO's baseline projections, is assumed to be provided each year, with adjustments for inflation. But those amounts are very large by historical standards. If, instead, lawmakers chose to provide $11 billion—the average annual amount of such funding declared an emergency requirement from 2012 through 2017—each year after 2018, with adjustments for inflation, discretionary outlays would be $577 billion lower between 2019 and 2028 than in CBO's baseline.

Other Discretionary Spending

Policymakers could vary discretionary funding in many ways from the amounts projected in the baseline. For example: If, after 2018, appropriations were to grow each year through 2028 at the same rate as inflation, rather than being constrained by the caps, discretionary spending during that period would be $1.7 trillion higher than it is in CBO's baseline. All told, discretionary outlays under that scenario would fall from 6.4 percent of GDP in fiscal year 2018 to 6.1 percent in 2028. By comparison, in the baseline such spending is projected to end up at 5.4 percent of GDP in 2028.

If, by contrast, lawmakers kept appropriations for 2019 through 2028 at the nominal 2018 amount, total discretionary outlays would be $0.2 trillion lower over that period than in the baseline. Under that scenario (sometimes called a freeze in regular appropriations), total discretionary spending would dip below the amount in CBO's baseline in 2019, exceed baseline amounts between 2020 and 2023, and then again drop below the baseline (by increasing amounts) between 2024 and 2028. That pattern reflects certain assumptions incorporated in CBO's baseline—specifically, that the caps on most new discretionary funding will fall sharply in 2020 (as scheduled under current law) and that such funding will increase with inflation after those caps expire in 2021. In 2028, discretionary outlays under that scenario would decline to 4.9 percent of GDP in 2028.

Revenues

A number of tax provisions have recently expired or are scheduled to expire over the next decade. They include many provisions of the 2017 tax act, most of which expire at the end of 2025 (see Appendix B). The expiring provisions affect major elements of the individual income tax, including provisions that specify tax rates and brackets, the amount of deductions that are allowed, the size and refundability of the child tax credit, and the reach of the alternative minimum tax.[11] In addition, the act's expansion of the estate and gift tax exemption expires at the end of 2025. According to estimates by the staff of the Joint Committee on Taxation (JCT), if those and certain other expiring elements of the 2017 tax act were extended, deficits would be larger than those in CBO's baseline, on net, by $650 billion over the 2019–2028 period (excluding added debt-service costs); most of those effects would occur in 2027 and 2028.

The 2017 tax act also temporarily expanded the ability of businesses to immediately deduct the cost of their investments. That bonus depreciation was expanded to 100 percent of the cost of such investments through 2022; it then phases down over the 2023–2026 period. Extending expensing at 100 percent, thus averting the phasedown, would increase deficits by $122 billion (excluding added debt-service costs) over the 2019–2028 period.

Deficits also would increase if delays in implementing certain taxes established by the Affordable Care Act were extended or made permanent. The Extension of Continuing Appropriations Act, 2018 (P.L. 115-120), temporarily suspended or delayed the medical device excise tax, the excise tax on high-cost employment-based health care coverage, and the annual fee on health insurance providers. Permanently repealing those taxes would reduce revenues by a total of $324 billion over the 2019–2028 period, JCT estimates.

10. Lawmakers have also provided $6 billion in defense funding that was declared an emergency requirement for 2018 and an additional $7 billion in funding designated as disaster funding (as defined in the Budget Control Act of 2011). Both types of funding have been extrapolated in CBO's baseline, although the disaster funding is subject to constraints in future years.

11. 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.

Table 4-5.

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

Billions of Dollars

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total 2019–2023	Total 2019–2028
Policy Alternatives That Affect Discretionary Outlays													
Provide Emergency Nondefense Funding at the Average Historical Amount[a]													
Decrease in the deficit[b]	0	14	30	40	49	58	66	73	79	81	86	192	577
Debt service	0	*	1	2	4	6	8	10	13	16	20	14	82
Increase Discretionary Appropriations at the Rate of Inflation After 2018[c]													
Increase (-) in the deficit[b]	0	-9	-104	-153	-176	-189	-200	-207	-213	-220	-225	-631	-1,696
Debt service	0	*	-2	-7	-14	-21	-27	-33	-40	-48	-59	-44	-252
Freeze Discretionary Appropriations at the 2018 Amount[d]													
Increase (-) or decrease in the deficit[b]	0	10	-56	-68	-52	-27	1	36	72	109	149	-193	175
Debt service	0	*	-1	-3	-6	-7	-7	-7	-5	-2	3	-16	-34
Policy Alternatives That Affect the Tax Code[e]													
Extend Certain Expiring Revenue Provisions													
Extend Certain Provisions of the 2017 Tax Act[f]	0	*	-3	-4	-4	-5	-5	-11	-103	-248	-266	-16	-650
Extend Expensing of Equipment and Property at a Rate of 100 Percent[g]	0	0	0	0	0	-6	-14	-21	-26	-29	-25	-6	-122
Repeal Certain Postponed or Suspended Health Taxes[h]	0	0	-15	-16	-24	-32	-37	-41	-47	-53	-60	-86	-324
Extend Other Expiring Revenue Provisions[i]	-1	-4	-5	-5	-6	-8	-9	-10	-11	-12	-13	-28	-85
Total increase (-) in the deficit[b]	-1	-5	-22	-25	-34	-51	-66	-84	-187	-343	-364	-137	-1,180
Debt service	*	*	-1	-2	-3	-4	-6	-9	-13	-22	-37	-9	-96

Continued

The Bipartisan Budget Act of 2018 extended a number of expiring tax provisions through December 31, 2017. If roughly 30 of those provisions, plus a number of trade programs that are scheduled to expire between 2020 and 2026, were permanently extended, JCT and CBO estimate that revenues would be lower by a total of $85 billion over the 2019–2028 period.

In total, if all of those tax provisions were permanently extended, CBO and JCT estimate, revenues would be lower by a total of $1.2 trillion over the 2019–2028 period.

An Alternative Fiscal Scenario

If a combination of those changes to current law was made so as to maintain major policies that are currently in place and also to provide more typical levels of funding for emergencies, far larger deficits and much greater debt would result than are shown in CBO's current baseline. Relative to the baseline projections for the 2019–2028 period, deficits would be larger by a total of $2.6 trillion (including debt-service costs), causing cumulative deficits of nearly $15 trillion over that period if the following policy decisions were made:

- More than 50 expiring revenue provisions were extended, including the individual income tax provisions of the 2017 tax act.
- Delays in implementing certain taxes established by the Affordable Care Act were extended or made permanent.

Table 4-5. Continued

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

Billions of Dollars

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total 2019–2023	Total 2019–2028
Policy Alternatives That Affect Spending and Revenues													
Changes in Deficits From the Alternative Fiscal Scenario[j]													
Increase (-) in the deficit[b]	-1	*	-96	-138	-160	-182	-200	-218	-321	-481	-503	-576	-2,300
Debt service	*	*	-2	-6	-12	-19	-25	-31	-40	-54	-77	-39	-267
Memorandum:													
Alternative Fiscal Scenario													
Revenues	3,336	3,485	3,656	3,802	3,978	4,177	4,379	4,579	4,802	4,973	5,173	19,097	43,003
Outlays	4,142	4,465	4,761	5,069	5,427	5,650	5,847	6,181	6,484	6,824	7,279	25,372	57,987
Deficit in CBO's April 2018 Baseline	-804	-981	-1,008	-1,123	-1,276	-1,273	-1,244	-1,352	-1,320	-1,316	-1,526	-5,660	-12,418

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

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

a. For this alternative, CBO does not extrapolate the $102 billion in budget authority for nondefense discretionary programs related to Hurricanes Harvey, Irma, and Maria and wildfires in western states that was designated as an emergency requirement. Rather, the alternative incorporates the assumption that such funding will fall to $11 billion in 2019—the average annual amount of nondefense discretionary funding declared an emergency requirement from 2012 through 2017—and will grow at the rate of inflation from that 2019 level.

b. Excludes debt service.

c. 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 2018 amount. 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.

d. This option reflects the assumption that appropriations would generally be frozen at the 2018 level through 2028.

e. The estimates are mainly from the staff of the Joint Committee on Taxation and are preliminary. The estimates include some effects on outlays for refundable tax credits. The option includes the effects of extending several expiring trade provisions that affect customs duties.

f. This alternative incorporates the assumption that lawmakers will permanently extend many provisions of Public Law 115-97 (called the 2017 tax act in this report). Most significantly, this alternative includes extension of the provisions that lower individual income tax rates, expand the income tax base, expand the child credit, reduce the amount of income subject to the alternative minimum tax, and increase the estate and gift tax exemption. It does not incorporate the assumption that the expensing of equipment and property is extended; the effects of that alternative are shown separately.

g. This alternative would extend the provisions that allow businesses with large amounts of investment to expense (immediately deduct from their taxable income) the cost of their investment in equipment and certain other property. Under current law, the portion that can be expensed is 100 percent through 2022, 80 percent in 2023, 60 percent in 2024, 40 percent in 2025, and 20 percent in 2026, after which the provisions expire. The option would extend the 100 percent allowance permanently beyond 2022.

h. This alternative 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 Extension of Continuing Appropriations Act, 2018. 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.

i. This alternative would extend about 30 tax provisions that generally expired on December 31, 2017, and were extended by the Bipartisan Budget Act of 2018. It also includes the extension of a number of trade provisions scheduled to expire between 2020 and 2026 that affect customs duties. It does not include an extension of the expensing provisions or a repeal of certain health-related provisions; those effects are shown separately.

j. The alternative fiscal scenario incorporates all of the policy alternatives in this table except the one labeled "Freeze Discretionary Appropriations at the 2018 Amount."

- The caps on discretionary appropriations did not take effect and appropriations instead grew each year from their 2018 amount at the rate of inflation.

- Lawmakers provided $11 billion in appropriations designated as an emergency requirement for nondefense discretionary programs each year between 2019 and 2028 (with adjustments for inflation), rather than the roughly $100 billion a year projected in the baseline.

Under that scenario, revenues from 2019 through 2028 would average 17.0 percent of GDP, almost 0.5 percentage points below their 50-year average, and outlays would average 23.0 percent, roughly 3 percentage points above their 50-year average. Deficits would average nearly 6 percent of GDP through 2028, a full percentage point higher than under CBO's baseline. Debt held by the public would reach about 105 percent of GDP by the end of 2028—the largest share since 1946—and would rise even more sharply in subsequent decades.

APPENDIX

A

Changes in CBO's Baseline Projections Since June 2017

Overview

The Congressional Budget Office anticipates that in the absence of further legislation affecting spending and revenues, the budget deficit for fiscal year 2018 will total $804 billion. That amount is $242 billion larger than the $563 billion deficit that CBO projected in June 2017, when the agency published its previous baseline (see Table A-1).[1] CBO now projects that the cumulative deficit for the 2018–2027 period would be about $1.6 trillion larger than shown in its June projections—$11.7 trillion rather than $10.1 trillion—if current laws generally remained the same. All told, in CBO's new projections, revenues over that period are about 2 percent less, and outlays are about 1 percent more, than the agency projected last June.

The differences between CBO's current projections and those it published in June consist of three types of changes:

- Legislative changes, which result from the enactment of new laws and generally reflect the budgetary effects reported in CBO's cost estimates at the time the new laws were enacted;
- Economic changes, which stem from the agency's updated economic forecast (and include the effects of macroeconomic feedback associated with legislative changes); and
- Technical changes, which are updates to projections for reasons other than legislative or economic changes.

The increase in the projected deficit for 2018 stems primarily from laws enacted since the June baseline; CBO estimates that the effects of those laws will boost this year's deficit by $271 billion. That increase is slightly offset by changes related to CBO's updated economic forecast and by technical revisions to projections, which together reduce the estimated deficit for 2018 by $29 billion.

Legislative changes—which are estimated to reduce revenues and increase outlays—led CBO to increase its projection of the cumulative deficit over the 2018–2027 period by $2.7 trillion. Those changes were offset in part by the effects of revisions to CBO's economic forecast, which led to $1.0 trillion in reductions to projected deficits, almost entirely because of increased projections of revenues. (About half of that revenue increase stems from macroeconomic feedback related to Public Law 115-97, referred to here as the 2017 tax act.) Technical updates to the agency's projections of revenues and outlays largely offset one another, decreasing the 10-year total deficit by $57 billion.

Legislative Changes

The largest changes since June 2017 in CBO's projections of the deficit—both for the current year and for the 2018–2027 period—stem from recently enacted legislation, most notably, the 2017 tax act. Other new laws with significant budgetary effects include the Bipartisan Budget Act of 2018 (P.L. 115-123) and the Consolidated Appropriations Act, 2018 (P.L. 115-141). (For a more detailed discussion of the effects of the 2017 tax act, see Appendix B.) In total, legislative changes reduce projected revenues over the 2018–2027 period by $1.7 trillion (or 4 percent) and increase projected outlays by $1.0 trillion (or 2 percent).

Legislative Changes in Revenues

As a result of legislative changes, CBO has reduced its projections of revenues by $163 billion for 2018 and by $1.7 trillion for the 2018–2027 period. Almost all of that decrease stems from the 2017 tax act. The revisions

1. See Congressional Budget Office, *An Update to the Budget and Economic Outlook: 2017 to 2027 (*June 2017), www.cbo.gov/publication/52801.

Table A-1.

Changes in CBO's Baseline Projections of the Deficit Since June 2017

Billions of Dollars

											Total	
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2018–2022	2018–2027
Deficit in CBO's June 2017 Baseline	-563	-689	-775	-879	-1,027	-1,057	-1,083	-1,225	-1,352	-1,463	-3,933	-10,112
Legislative Changes												
Changes in Revenues												
Individual income taxes	-65	-162	-169	-166	-159	-148	-150	-151	-41	43	-722	-1,169
Corporate income taxes	-94	-96	-80	-57	-32	-7	10	14	-9	-58	-359	-409
Payroll taxes	*	*	*	1	3	6	8	7	6	6	3	36
Other	-3	-27	-16	-17	-15	-14	-15	-16	-16	-9	-78	-148
Total Change in Revenues	-163	-285	-265	-239	-203	-163	-148	-146	-60	-18	-1,156	-1,690
Changes in Outlays												
Mandatory outlays												
Medicaid	2	-4	-12	-21	-25	-27	-29	-31	-33	-34	-60	-213
Health insurance subsidies and related spending	-1	-5	-11	-21	-25	-26	-27	-29	-30	-32	-62	-206
Refundable tax credits	-11	13	13	12	12	13	12	11	25	-5	39	95
Children's Health Insurance Program	3	10	9	7	7	8	8	9	9	10	35	79
Other	17	9	6	6	6	5	9	10	-13	-28	43	27
Subtotal, mandatory	10	22	5	-17	-25	-28	-26	-30	-42	-89	-5	-219
Discretionary outlays												
Defense	40	56	13	-2	-8	-12	-15	-15	-16	-16	99	26
Nondefense	54	83	71	50	51	56	60	67	74	78	309	644
Subtotal, discretionary	94	139	84	47	44	44	46	52	58	62	408	669
Debt service	3	13	30	45	57	64	68	74	79	82	148	515
Total Change in Outlays	108	174	120	75	75	79	88	96	95	55	552	965
Increase in the Deficit From Legislative Changes	**-271**	**-459**	**-385**	**-315**	**-278**	**-243**	**-236**	**-241**	**-155**	**-74**	**-1,708**	**-2,656**
Economic Changes												
Changes in Revenues												
Individual income taxes	-16	28	69	71	61	48	45	49	55	58	213	468
Corporate income taxes	45	73	66	57	48	40	37	37	37	37	288	476
Payroll taxes	-22	-8	7	13	12	14	14	18	21	24	2	92
Other	-3	-4	-3	5	8	10	11	10	8	10	2	51
Total Change in Revenues	4	88	138	146	129	113	106	114	121	129	505	1,088
Changes in Outlays												
Mandatory outlays												
Social Security	-3	-5	-5	-5	-5	-5	-5	-5	-6	-5	-22	-47
Unemployment compensation	-2	-7	-10	-8	-3	-2	-1	-1	*	*	-30	-34
Medicare	-1	-2	-3	-2	-2	-3	-3	-4	-5	-5	-11	-30
Other	-2	-5	-6	-5	-4	-4	-3	-3	-3	-3	-23	-38
Subtotal, mandatory	-8	-19	-24	-20	-14	-13	-12	-13	-13	-13	-86	-150
Discretionary outlays	*	2	1	2	2	2	2	3	3	3	7	21
Net interest outlays												
Debt service	*	-1	-5	-9	-13	-15	-17	-20	-24	-29	-29	-134
Effect of rates and inflation	7	21	41	58	68	62	40	22	11	6	195	336
Subtotal, net interest	7	20	36	49	55	47	23	2	-13	-24	166	201
Total Change in Outlays	-1	2	13	31	44	36	13	-8	-23	-33	88	73
Decrease in the Deficit From Economic Changes	**5**	**86**	**125**	**116**	**85**	**77**	**92**	**121**	**144**	**163**	**417**	**1,015**

Continued

Table A-1. Continued

Changes in CBO's Baseline Projections of the Deficit Since June 2017

Billions of Dollars

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	Total 2018–2022	Total 2018–2027
Technical Changes												
Changes in Revenues												
Individual income taxes	-3	45	*	-41	-48	-55	-49	-51	-29	-10	-46	-241
Corporate income taxes	-32	-45	-59	-56	-53	-40	-31	-20	-7	9	-244	-333
Payroll taxes	5	5	7	8	13	15	25	28	32	35	38	172
Other	-5	-6	2	-2	-4	-4	-3	-4	-4	-4	-15	-33
Total Change in Revenues	-35	*	-49	-91	-92	-83	-59	-48	-8	30	-267	-435
Changes in Outlays												
Mandatory outlays												
Medicare	-1	-6	-12	-16	-21	-21	-32	-30	-29	-19	-57	-186
Medicaid	-28	-25	-22	-18	-13	-10	-7	-4	-3	-2	-106	-132
Health insurance subsidies and related spending	-2	-5	-8	2	9	9	8	8	9	13	-3	44
Other	10	-6	-7	-4	*	*	*	-2	-13	-3	-7	-27
Subtotal, mandatory	-21	-43	-48	-35	-25	-23	-31	-28	-36	-11	-172	-301
Discretionary outlays	-36	-34	-23	-7	-5	-4	-4	-4	-4	-4	-105	-125
Net interest outlays												
Debt service	-2	-3	-4	-4	-3	-1	*	1	*	-1	-16	-17
Other	*	-1	*	-1	-4	-6	-6	-8	-10	-12	-6	-49
Subtotal, net interest	-1	-4	-5	-5	-6	-7	-6	-8	-10	-14	-21	-65
Total Change in Outlays	-59	-81	-76	-47	-36	-34	-41	-40	-50	-28	-299	-492
Increase (-) or Decrease in the Deficit From Technical Changes	**24**	**81**	**26**	**-44**	**-56**	**-49**	**-17**	**-8**	**42**	**58**	**32**	**57**
All Changes												
Increase (-) or Decrease in the Deficit	**-242**	**-292**	**-233**	**-243**	**-249**	**-215**	**-161**	**-128**	**31**	**147**	**-1,259**	**-1,584**
Deficit in CBO's April 2018 Baseline	-804	-981	-1,008	-1,123	-1,276	-1,273	-1,244	-1,352	-1,320	-1,316	-5,191	-11,696
Memorandum:												
Changes in Revenues	-194	-197	-176	-185	-166	-134	-101	-80	54	141	-918	-1,037
Changes in Outlays	48	95	57	59	83	82	60	48	22	-6	341	547

Source: Congressional Budget Office.

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

to the baseline associated with that law—that is, the changes CBO categorizes as legislative—reflect the estimate of the revenue effects of the 2017 tax act that was produced by the staff of the Joint Committee on Taxation (JCT) on December 18, 2017.[2] That estimate indicates a revenue decrease of $1,647 billion over the 2018–2027 period.[3] The estimate does not include the law's estimated effects on the economy, nor does it reflect revisions that CBO has made to its baseline to incorporate more recent information about the budgetary effects of the tax law. Those two sets of changes relating to the 2017 tax act are included in the estimates described below in the sections titled "Economic Changes" and "Technical Changes."

CBO also revised its revenue baseline to incorporate the effects of P.L. 115-120 and the Bipartisan Budget Act of 2018, the two pieces of legislation with the next largest effects on revenues after the 2017 tax act.[4] P.L. 115-120 delayed or suspended several health-related taxes or fees, reducing revenues by $29 billion over the 2018–2022 period and raising revenues by $4 billion over the 2023–2027 period, for a net revenue reduction of $25 billion over the 2018–2027 period. The Bipartisan Budget Act retroactively extended 33 tax provisions (often called tax extenders) that had expired at the end of 2016, as well as a number of other tax-related provisions, through 2017. Those changes reduced revenues by $15 billion over the 2018–2020 period and increased revenues by $6 billion over the 2021–2027 period, for a net reduction of $9 billion over the 2018–2027 period.

Individual Income Taxes. Most of the legislative changes to CBO's projections of revenues come from changes to individual income taxes. CBO reduced its projection of revenues from those taxes by $65 billion for 2018 and by $1.2 trillion for the 2018–2027 period. Most of that reduction stems from provisions of the 2017 tax act that temporarily reduce individual income tax rates, nearly double the standard deduction, and increase the income levels at which the individual alternative minimum tax takes effect.[5] Those changes are offset in part by provisions that raise revenues from individual income taxes, including a repeal of personal exemptions and modifications to itemized deductions.

Corporate Income Taxes. CBO also reduced its projection of corporate tax revenues—by $94 billion in 2018 and by $409 billion over the 2018–2027 period—to reflect legislative changes. Most of that reduction is attributable to the 2017 tax act, which modified the corporate income tax system in many important ways. That act set the tax rate at 21 percent (a change from the previous rate structure, which had a top rate of 35 percent), temporarily allowed the immediate deduction of the cost of capital investments, limited or eliminated certain deductions, changed the way the United States taxes the foreign income of U.S. corporations, instituted a onetime tax on previously untaxed foreign profits, and reduced incentives to shift profits abroad, among other changes.

Other Revenues. In addition, the 2017 tax act modified laws affecting estate and gift taxes, temporarily doubling the amount of the estate and gift tax exemption and thereby reducing the projection of revenues from those sources by $1 billion in 2018 and by $75 billion over the 2018–2027 period. Legislative changes led CBO to reduce its projection of revenues from excise taxes by $4 billion in 2018 and by $24 billion over the 2018–2027 period. Those reductions stem primarily from provisions of P.L. 115-120 that extended a moratorium on the medical device excise tax, delayed the implementation of the excise tax on high-cost employment-based health insurance coverage, and suspended an annual fee imposed on health insurance providers.

Legislative Changes in Outlays

Since June, CBO has boosted its estimate of outlays in 2018 by $108 billion—primarily for discretionary spending—as a result of recently enacted legislation. The agency has also increased projected outlays for the 2018–2027 period by $1.0 trillion (or 2 percent), mainly as a

2. See Joint Committee on Taxation, *Estimated Budget Effects of the Conference Agreement for H.R.1, the "Tax Cuts and Jobs Act,"* JCX-67-17 (December 2017), https://go.usa.gov/xQcZu.

3. The revenue decrease was estimated to be partially offset by a $193 billion net reduction in outlays that stemmed mostly from the elimination, beginning in 2019, of the penalty for not having health insurance, also known as the individual mandate.

4. P.L. 115-120 is a law making further continuing appropriations for the fiscal year ending September 30, 2018, and for other purposes.

5. 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.

result of increased spending for nondefense discretionary programs and higher costs for debt service because of the increases in deficits that would stem from new laws.

Discretionary Outlays. Changes to discretionary programs from legislation enacted since June led CBO to raise its projection of outlays by $94 billion for 2018 and by a cumulative total of $669 billion for 2018 through 2027.[6] Over that 10-year period, CBO's projections of nondefense and defense outlays are $644 billion and $26 billion higher, respectively, for legislative reasons.

A significant portion of the increases in the near term stems from the Consolidated Appropriations Act, 2018, which provided appropriations for 2018 for activities constrained by caps on discretionary funding; those appropriations exceed, by $160 billion, the funding projected in CBO's June baseline.[7] In addition, the Bipartisan Budget Act specified new caps for 2019 that exceed the previous caps for that year by a total of $152 billion. As a result of those two changes, CBO's projections over the 2018–2027 period include an increase of $306 billion in defense and nondefense discretionary outlays from funding that is constrained by the caps. Those projections incorporate the assumptions that funding will be in line with the higher caps set for 2019, will then (consistent with CBO's June projections) return to the significantly lower limits previously set for 2020 and 2021 by the Budget Control Act (as amended), and will grow with inflation thereafter.

In addition, CBO's projections of discretionary outlays over the 2018–2027 period are $364 billion higher than they were in June 2017 because of net increases in funding, provided by multiple laws, for five types of activities that are not constrained by the caps. In total, funding not constrained by the caps in 2018 amounts to $197 billion—$76 billion more than projected in June. Most of that sum is extrapolated over the entire projection period because, as specified by law, funding for activities designated as emergency requirements or overseas contingency operations (OCO)—which totals $186 billion this year—is assumed to grow with inflation.[8] Funding for the other three activities—certain efforts to reduce overpayments in benefit programs, programs designated by the 21st Century Cures Act (P.L. 114-255), and disaster relief—is projected in CBO's baseline subject to certain statutory constraints.

The $76 billion increase since June in discretionary funding for 2018 not limited by the caps results from the following changes:

- An additional $98 billion in supplemental appropriations for nondefense activities designated as emergency requirements (related to the hurricanes and wildfires that occurred in 2017); that increased funding was provided by two laws—the Additional Supplemental Appropriations for Disaster Relief Requirements Act, 2017 (P.L. 115-72), and Subdivision 1 of Division B of the Bipartisan Budget Act of 2018.[9] That $98 billion is the difference between the enacted amount, for 2018, of nondefense funding designated as an emergency requirement ($102 billion) and the amount of such funding

6. Discretionary spending is controlled by annual appropriation acts that specify the amounts that are to be provided for a broad array of government activities, such as defense, law enforcement, and transportation.

7. Caps on discretionary appropriations were originally set by the Budget Control Act of 2011 (P.L. 112-25), as amended. The Bipartisan Budget Act of 2018 increased the caps on discretionary funding in 2018 by a total of $143 billion. The Consolidated Appropriations Act, 2018, provided even more funding because it included provisions that were estimated to reduce net funding for *mandatory* programs by $17 billion. Those savings were credited against the discretionary funding provided by that act in judging whether the total amount of new budget authority adhered to the caps specified for 2018, thus allowing discretionary funding in 2018 to exceed the statutory limit for that year by $17 billion.

8. Overseas contingency operations refer to certain military and diplomatic activities in Afghanistan and elsewhere, but historically, some funding designated by the Congress for OCO has not been directly related to those activities. Funding that is categorized as an emergency requirement is designated in statute pursuant to section 251(b)(2)(A)(i) of the Balanced Budget and Emergency Deficit Control Act of 1985 (P.L. 99-177).

9. The Additional Supplemental Appropriations for Disaster Relief Requirements Act, 2017, also included changes to *mandatory* programs that, by CBO's estimate, increase mandatory budget authority for 2018 by $18 billion. The largest of those changes was the cancellation of $16 billion of the debt owed to the Treasury by the National Flood Insurance Fund, which effectively increased the amount of funding available to the Federal Emergency Management Agency for the National Flood Insurance Program. CBO's estimates of legislative changes to mandatory outlays reflect the incremental effects of those provisions.

projected for 2018 in CBO's June 2017 baseline ($4 billion).[10]

- An additional $6 billion in defense funding that was designated as an emergency requirement; that sum was provided by two laws—the Department of Defense Missile Defeat and Defense Enhancements Appropriations Act, 2018 (Division B of P.L. 115-96), and Subdivision 1 of Division B of the Bipartisan Budget Act of 2018.

- A $28 billion reduction in funding for OCO ($19 billion less for defense and $9 billion less for nondefense) under the Consolidated Appropriations Act, 2018.

Mandatory Outlays. CBO reduced its estimates of mandatory outlays by $219 billion (0.6 percent) for the 2018–2027 period because of legislation enacted since June 2017.[11] The largest reduction for the 10-year period was attributable to a provision of the 2017 tax act that eliminated the penalty related to the individual health insurance mandate, beginning in 2019. CBO and JCT estimated that enacting that provision would reduce outlays by $297 billion over the 2018–2027 period because fewer people would enroll in health insurance subsidized by the federal government when there was no penalty for not having insurance.[12]

Medicaid. CBO estimated that recently enacted legislation would reduce projected outlays for Medicaid by $213 billion (4 percent) over the 2018–2027 period. The repeal of the individual mandate penalty established under the Affordable Care Act (ACA) was responsible for most of that reduction by lowering projected enrollment in Medicaid. In CBO's estimation, the penalty for not having insurance encouraged more people to enroll in Medicaid than would otherwise have been the case. For example, some people applied for coverage in the marketplaces as a result of the penalty and turned out to be eligible for Medicaid, and some Medicaid-eligible adults and children would have had to pay a penalty if they did not obtain insurance. As a result, CBO expects that fewer people will enroll in Medicaid when the penalty is eliminated, beginning in 2019.

In addition, the extension of funding for the Children's Health Insurance Program (CHIP) from 2018 through 2027 is estimated to generate savings to Medicaid because CBO had expected that, in the absence of extended funding for CHIP, states would switch some children who had been enrolled in CHIP to Medicaid.

Health Insurance Subsidies and Related Spending. CBO reduced projected outlays for health insurance subsidies and related spending by $206 billion (or 23 percent) for the 2018–2027 period as a result of recently enacted legislation. The elimination of the penalty related to the individual health insurance mandate accounts for most of the net reduction in outlays. As a consequence of that elimination, fewer people are expected to enroll in coverage through the marketplaces established under the ACA—which will reduce subsidies provided by the federal government for that coverage—because some people would have chosen to be covered by insurance to avoid paying the penalty and because some people are expected to forgo insurance in response to the resulting higher premiums.

The remaining decline in outlays attributable to legislative changes mostly results from the extension of CHIP funding from 2018 through 2027. Because some people who will gain coverage through CHIP would otherwise have received subsidies for coverage purchased through the marketplaces, the extension of CHIP reduces such outlays.

Refundable Tax Credits. The 2017 tax act had a number of effects on outlays for the refundable portion of certain tax credits, specifically the earned income tax credit, the child tax credit, and the American Opportunity Tax Credit. The largest of those effects stems from a temporary expansion of the child tax credit: On its own, that provision would increase outlays by $181 billion over the 2018–2027 period, according to estimates by JCT. In addition, the increased standard deduction and lower tax brackets enacted by the new law will increase refundable

10. The June 2017 projection did not reflect the $15 billion in supplemental nondefense funding designated as an emergency requirement that was provided late in 2017. As a result, CBO's current estimate of legislative increases to outlays is larger than it would be if that 2017 funding had been taken into account in projecting 2018 spending.

11. Mandatory spending is governed by statutory criteria and is not normally controlled by the annual appropriation process.

12. All told, the agencies estimated that repealing the penalty would reduce federal budget deficits by $314 billion between 2018 and 2027. That sum is composed of estimated reductions in outlays of $297 billion and increases in revenues of $17 billion over that period.

outlays for all three tax credits by tending to reduce individuals' tax liabilities.

However, those effects are offset by reductions in outlays stemming from other provisions of the new law, most notably the repeal of deductions for personal exemptions (which increases tax liabilities) and the use of an alternative inflation measure (which affects the phase-in and phaseout ranges and maximum credit amounts for the earned income tax credit and the child tax credit). All told, the 2017 tax act will increase outlays for refundable tax credits by $95 billion over the 2018–2027 period, according to estimates by JCT.[13]

Children's Health Insurance Program. The 2017 tax act and the Bipartisan Budget Act of 2018 extended funding for CHIP from 2018 through 2027. Before enactment of those laws, funding for CHIP was to have expired at the end of 2017. The reauthorization increased CBO's projection of outlays for CHIP by $79 billion over the 2018–2027 period.[14]

Other Mandatory Programs. Smaller legislative changes—both increases and decreases—in CBO's estimates for a number of other programs led CBO to increase its projections of mandatory outlays by $27 billion, on net, over the 2018–2027 period.

Debt Service. Excluding the cost of debt service, the changes that CBO made to its projections of revenues and outlays because of legislation enacted since June increased the agency's projection of the cumulative deficit for the 2018–2027 period by $2.1 trillion. The resulting growth in the estimate of federal borrowing led CBO to raise its cumulative projection of outlays for interest on federal debt by $515 billion for the 10-year period.

13. In addition, the Disaster Tax Relief and Airport and Airway Extension Act of 2017 (P.L. 115-63) and the Bipartisan Budget Act of 2018 provided relief for some taxpayers affected by Hurricanes Harvey, Irma, and Maria and by the California wildfires. According to estimates by JCT, enactment of those two laws will increase outlays for refundable tax credits by $0.2 billion over the 2018–2027 period.

14. Following the rules that underlie the construction of CBO's baseline, prior to the enactment of the two new laws, CHIP was assumed to continue in CBO's baseline through 2027 with funding of $5.7 billion a year.

Economic Changes

CBO's current budget projections reflect updates to economic measures since the June 2017 baseline was completed and incorporate the macroeconomic effects of recently enacted legislation. The current economic forecast updates the agency's projections of gross domestic product (GDP), income, the unemployment rate, interest rates, inflation, and other factors that affect federal spending and revenues. In total, compared with the June 2017 baseline projections, the updated economic forecast led the agency to decrease its estimate of the deficit by $5 billion for 2018 and by $1.0 trillion for the 2018–2027 period. The largest factor in the cumulative 10-year change is an increase in projected revenues, offset by a small increase in projected outlays. About half of the economic changes stem from the macroeconomic effects of the 2017 tax act (see Appendix B).

Economic Changes in Revenues

Revisions to CBO's economic forecast caused the agency to increase its projections of revenues by $4 billion for 2018 and by $1.1 trillion for the 2018–2027 period. More than half of those changes were driven by the macroeconomic effects of recently enacted legislation—specifically, the 2017 tax act, the Bipartisan Budget Act of 2018, and P.L. 115-120. Updated data for key measures from the national income and product accounts (NIPAs) also led to economic revisions. (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.)

Corporate Income Taxes. The largest differences in the revenue projections that arise from changes in the economic forecast concern corporate income tax receipts. Those changes boosted CBO's projections of corporate income tax receipts by $476 billion (or about 12 percent) over the 2018–2027 period. That increase is attributable to updated projections of domestic economic profits, which are now anticipated to be 13 percent higher over the coming decade than CBO forecast previously.

Individual Income Taxes. Changes in the economic forecast since CBO's June 2017 baseline led the agency to reduce its projection of revenues from individual income taxes by $16 billion for 2018 but to increase the projection for each subsequent year, for a net increase from economic factors of $468 billion (or 2 percent) over the 2018–2027 period. The decline for 2018 stems

from a downward revision to estimates of wages and salaries in that year. The increase for subsequent years primarily results from an increase in projections of wages and salaries and proprietors' income; that upward revision to income growth stems in part from the estimated macroeconomic effects of recent legislation. CBO also increased its projection of receipts from capital gains realizations over the 2018–2027 period because of an upward revision to projections of equity prices that resulted, in part, from stronger-than-expected gains in the stock market during the second half of 2017.

Other Revenues. Revisions to the forecast for wages and salaries—downward in 2018 and upward thereafter—led CBO to make similar changes to its projections of revenues from payroll taxes. For economic reasons, they were reduced by $22 billion for 2018 and by $8 billion for 2019 but were increased by $92 billion for the 2018–2027 period. In addition, the stronger-than-expected growth in stock market prices led CBO to increase its projections of revenues from estate and gift taxes over the 2018–2027 period (by $22 billion, or 8 percent).

Economic factors also led CBO to revise its 10-year projections of customs duties (by $14 billion, or 3 percent) and of receipts from other sources (by $15 billion). The increases in projected revenues from those sources reflect the effects of more imports and faster GDP growth, among other factors.

Economic Changes in Outlays

As a result of the updated economic forecast, CBO lowered its estimate of outlays for the current year by $1 billion. For the 2018–2027 period, economic updates led CBO to increase its projection of outlays by $73 billion (or 0.1 percent) because of changes that largely offset one another: Specifically, a decrease in mandatory outlays ($150 billion) was more than offset by increases in discretionary spending ($21 billion) and net interest costs ($201 billion).

Mandatory Outlays. CBO decreased its projections of mandatory spending by $8 billion for 2018 and by $150 billion for the 2018–2027 period for economic reasons. The largest economic changes to mandatory spending involved CBO's projections for Social Security, unemployment compensation, and Medicare.

Social Security. Primarily because of lower projections of average wages through 2020, CBO reduced projected outlays for Social Security over the 2018–2027 period by $47 billion (or 0.4 percent).

Unemployment Compensation. Economic factors, primarily changes to the unemployment rate, reduced projected outlays for unemployment compensation by $34 billion over the 2018–2027 period. CBO revised its forecast of the unemployment rate downward by an average of 1.0 percentage point per year for 2019 through 2021 and by an average of about 0.2 percentage points per year for 2022 through 2027.

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) over a 10-year period. CBO now anticipates slightly smaller updates in the near term than it did in June—a change that decreases Medicare outlays in CBO's baseline projections for the 2018–2027 period by $30 billion (or 0.4 percent).

Other Mandatory Programs. As a result of CBO's revised economic forecast, the agency updated its projections for a number of other mandatory programs; in total, those changes reduced projected outlays by $38 billion over the 2018–2027 period, the net result of both upward and downward adjustments to estimates. The largest reductions include those for the Supplemental Nutrition Assistance Program ($16 billion, mostly because of lower projections of food prices), the refundable portion of certain tax credits ($14 billion, largely because of higher projections of wages, since higher wages tend to decrease outlays for those credits), and Medicaid ($6 billion, mainly because of lower projections of unemployment). In the other direction, higher projections for interest rates in the near term increased the projected subsidy costs for student loans by $7 billion. Smaller adjustments for other mandatory programs further reduced projected outlays by $10 billion, on net, over the 10-year period.

Discretionary Outlays. Changes to projections for the measures of inflation that CBO is required to use in developing its baseline drive the economic changes for discretionary spending. In CBO's baseline, discretionary

funding related to federal personnel is inflated using the employment cost index for wages and salaries; most other discretionary funding is adjusted using the GDP price index. Changes to CBO's economic forecast increased discretionary outlays in the baseline by $21 billion over the 2018–2027 period.

Net Interest. Since June, CBO has revised its projections of net interest costs because of changes in the agency's forecasts for interest rates and inflation.[15] It also has made new projections of government borrowing (debt service) as a result of economic changes to projected deficits. Together, those revisions led CBO to increase its baseline projection of net interest spending by $201 billion for the 2018–2027 period for economic reasons.

CBO has increased its projections of rates on Treasury securities relative to those underlying the June 2017 baseline. Both short- and long-term interest rates are projected to be higher through 2023—by roughly 0.7 percentage points and 0.4 percentage points, on average, respectively—than CBO projected in June. Primarily as a result of the higher rates, CBO increased its projection of net interest outlays by $336 billion over the 2018–2027 period.

In the opposite direction, CBO reduced its projection of net interest outlays by $134 billion over that period to account for debt-service effects. That reduction reflects the net effect of updates to projections of revenues and outlays that are attributable to CBO's economic forecast, which led the agency to lower its projection of the total deficit for the 2018–2027 period by $880 billion (not including the effects of debt service).

Technical Changes

Technical changes—that is, revisions other than the legislative and economic changes discussed above—also affect CBO's baseline projections for revenues and outlays. Such changes caused CBO to reduce its estimate of the 2018 deficit by $24 billion and its estimate of the deficit over the 2018–2027 period by $57 billion. That 10-year change results from partially offsetting changes in revenues and outlays.

15. To account for inflation, the Treasury Department adjusts the principal of its inflation-protected securities each month using the consumer price index for all urban consumers; those adjustments are recorded as interest outlays.

Technical Changes in Revenues

Overall, CBO reduced its revenue projections by $435 billion (or 1 percent) for the 2018–2027 period to incorporate various technical adjustments. Many of those adjustments reflect information that has become available in recent months about the 2017 tax act. For example, CBO reduced its projections of 2018 individual income tax receipts in light of new withholding tables that the Internal Revenue Service issued in January. CBO has also made technical changes that adjusted its projections of the timing of tax liabilities and payments in light of the 2017 tax act.

Corporate Income Taxes. The biggest technical revisions to projected revenues affect corporate income taxes. On net, CBO's technical revisions reduce projections of those revenues by $333 billion over the 2018–2027 period.

The largest of those technical changes include updates to the way changes made by the 2017 tax act are projected to affect tax liabilities. In particular, CBO made adjustments to account for the interactions among several provisions to better reflect how they relate in an environment of stronger economic growth. Those provisions include modifications of the deductions from income for the costs of capital investments, interest costs, and net operating losses. CBO also updated its projection for the portion of net income that is received by corporations with taxable income (versus those with net losses). On net, those adjustments result in lower projected receipts over the next decade, in part because CBO expects businesses to claim more deductions from income during that period. (Some of those larger deductions would be offset by correspondingly lower deductions in future years.)

CBO made another technical change to corporate tax receipts to account for the fact that collections from that source were lower in 2017 than CBO had projected, even though corporate profits were larger than expected. Consequently, in 2017, the average tax rate on corporate income—taxes as a percentage of income—was lower than previously projected, leading CBO to reduce its projections of the average corporate tax rate and revenues over the 2018–2022 period.

Altogether, technical revisions resulted in reductions to projected corporate tax receipts in each year through 2026. By 2027, upward technical adjustments—in

particular, the update to estimates of the portion of net income received by corporations with taxable income—outweigh the other factors to produce an upward technical adjustment of $9 billion for that year.

Individual Income Taxes. CBO also revised its projection for individual income taxes for technical reasons, reducing receipts from that source by $3 billion in 2018, increasing receipts by $46 billion over the 2019–2020 period, and reducing receipts by $284 billion over the 2021–2027 period, for a net reduction of $241 billion over the 2018–2027 period. That pattern is the result of a number of offsetting technical changes, with upward revisions dominating in the near term and downward revisions dominating in later years.

One factor boosting receipts over the next several years is that CBO no longer expects the previously unexplained weakness in individual income tax receipts to persist for several years before dissipating. Recent revisions to historical economic data, primarily for wages and salaries, have led CBO to revise projections to be more in line with a longer-term historical relationship.

In its projections, CBO also adjusted the speed at which taxes withheld from workers' paychecks are expected to be reduced as a result of the 2017 tax act. The Internal Revenue Service issued new withholding tables in January, sooner than was anticipated when the law was enacted. As a result, CBO now expects tax withholding to be lower during fiscal year 2018; that effect will be offset by higher tax payments (or smaller refunds) when taxpayers file their tax returns next spring, in fiscal year 2019.

Other technical changes decreased CBO's projection of individual income tax receipts over the 2018–2027 period. CBO updated its modeling to adjust 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.

Another technical change decreasing individual income tax receipts over the 2018–2027 period comes from CBO's altered expectation about withdrawal rates from individual retirement accounts and defined contribution pension plans. Those rates have declined since 2012, and CBO now expects them to remain low throughout the projection period instead of reverting to 2012 levels. In combination, those two sources of downward technical adjustments dominate the other technical changes, beginning in 2021.

Payroll Taxes. As a result of technical revisions, CBO has raised its projections of payroll tax revenues by $172 billion over the 2018–2027 period. With a smaller share of wages and salaries being 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 $128,400). The positive effect on payroll tax receipts is about 75 percent as large as the resulting negative effect on individual income tax receipts.

Other Revenues. In addition, technical revisions led CBO to reduce its projection of revenues from other sources by $33 billion, on net, over the 2018–2027 period. Most of that change reflects a smaller expected amount of penalties that would be collected from employers that do not offer health insurance to their employees. Partially offsetting that reduction are technical changes that CBO made to increase its projection for excise taxes over the 2018–2027 period as a result of larger-than-projected receipts in 2017 from gasoline and diesel taxes, as well as from certain aviation taxes. The strength in those sources of excise tax receipts is expected to continue.

Technical Changes in Outlays

Largely because of technical updates to spending estimates for various discretionary programs, CBO lowered its estimate of outlays in 2018 by $59 billion. For the 2018–2027 period, projected outlays are lower by $492 billion for technical reasons, mostly because of reductions in estimates of mandatory spending.

Discretionary Outlays. CBO's estimates of discretionary outlays in 2018 are $36 billion lower because of technical updates. The delayed enactment of 2018 appropriations, more than five months after the beginning of the fiscal year, accounts for much of that near-term reduction. Projected outlays over the 2018–2027 period are also lower, by $125 billion (or 1 percent), reflecting a general expectation that agencies are likely to obligate and spend increased funding for 2018 and 2019 at

slower rates than those reflected in CBO's June 2017 baseline.

Mandatory Outlays. Technical changes have reduced the amount of mandatory spending estimated for the current year by $21 billion. For the 2018–2027 period, such revisions have decreased the total projection of mandatory outlays by $301 billion (or 1 percent).

Medicare. Technical revisions caused CBO to decrease its projection of Medicare outlays by $186 billion (or 2 percent) over the 2018–2027 period, mostly because spending for the fastest-growing components of Medicare was lower last year than CBO anticipated in its June baseline. The main factors responsible for the reduction are lower projections of spending for Part D (prescription drugs) and higher projections of offsetting receipts (premiums paid by beneficiaries). Actual spending in 2017 for Part D was lower than CBO projected in June; in response, CBO revised downward its projections of spending for the next decade. In addition, CBO increased its estimates of premium income so that reserve balances in the Medicare trust funds are projected to match the historical target of about two months' worth of spending.

Medicaid. CBO reduced its 10-year projection of spending for Medicaid by $132 billion (or 3 percent) because of technical revisions since June 2017. That reduction stems largely from lower-than-anticipated per capita costs in 2017 for people made eligible for Medicaid under the ACA and lower projections of cost growth for those enrollees.

Health Insurance Subsidies and Related Spending. Technical revisions caused estimates of spending for subsidies for coverage purchased through the marketplaces established under the ACA and related spending to be $44 billion higher, on net, over the 2018–2027 period than in CBO's June baseline. A significant factor contributing to the increase is that the current baseline projections reflect that the entitlement for subsidies for cost-sharing reductions (CSRs) is being funded through higher premiums and larger premium tax credit subsidies rather than through a direct appropriation.[16] Those estimates are preliminary, and CBO will provide further details about them and their implications for future cost estimates in an upcoming report.

Other Mandatory Programs. Technical updates led CBO to increase its projections of outlays for other mandatory programs by $10 billion for 2018 but to reduce those projections by $27 billion for the 10-year period.

The largest changes for 2018 include increases in projected outlays for the refundable portion of the earned income and child tax credits ($11 billion) and for the National Flood Insurance Program ($5 billion). Projected outlays for the refundable tax credits were revised upward to reflect changed expectations about when those refunds will be paid; that increase is offset by reductions in later years of the projection period. The increase in projected outlays for flood insurance stems from a larger number of claims, as a result of the three major hurricanes that affected the United States in August 2017. Because those storms occurred near the end of the fiscal year, much of the related spending will be recorded in 2018. Smaller adjustments to projections for other mandatory programs, on net, decreased estimated outlays in 2018 by about $6 billion.

The largest of the changes for the 2018–2027 period was a $32 billion increase in projections of offsetting receipts (negative outlays) for certain payments related to military retirement. (Such receipts are intragovernmental and have no net effect on the deficit.) In the other direction, CBO boosted its projections of outlays for Social Security by $19 billion (or 0.1 percent) because of updated data on benefit amounts and caseloads. CBO also increased projected outlays for student loans by $10 billion (or 23 percent), mainly because of a larger number of projected defaults and decreased collections on those defaulted loans, in addition to higher costs for loans made to borrowers who enroll in an income-driven repayment plan. On net, smaller adjustments that encompass a number of other mandatory programs further reduced projected outlays by $25 billion.

16. The ACA requires insurers to offer CSRs to eligible people who purchase silver plans through the marketplaces and requires the federal government to reimburse insurers for those costs. CSRs take the form of reduced deductibles, copayments, and other means of cost sharing. Section 257 of the Balanced Budget and Emergency Deficit Control Act of 1985, which specifies rules for constructing the baseline, requires CBO to assume full funding of such entitlement authority. In its June 2017 baseline, CBO assumed that CSRs would continue to be funded via a direct appropriation. The Administration subsequently stopped making the reimbursement payments in October 2017.

Net Interest. Technical changes led CBO to decrease its projections of net interest outlays by $1 billion for 2018 and by $65 billion for the 2018–2027 period.

Most of that reduction, $49 billion over the 2018–2027 period, arises from changes in CBO's approach to estimating net interest outlays—mainly changes in the mix of securities that the Treasury is expected to issue to finance future deficits. Consistent with recent announcements by the Treasury about its plans for funding, CBO has increased estimates of the share of those securities that will be Treasury bills (which have maturities of less than 1 year) and decreased estimates of the share that will be Treasury notes (which have maturities of 2 to 10 years). Those changes reduce outlays in the baseline because interest rates on short-term securities are projected to be lower than those on longer-term securities.

In all, technical changes to CBO's baseline for revenues and outlays have slightly reduced projected deficits. That decrease, combined with reductions in estimates of borrowing to finance the government's credit programs, results in projected debt-service costs that subtract another $17 billion from net interest outlays in CBO's baseline over the 2018–2027 period.

APPENDIX

B

The Effects of the 2017 Tax Act on CBO's Economic and Budget Projections

Overview

In December 2017, Public Law 115-97, referred to here as the 2017 tax act, was enacted. The act made important changes to the tax system that apply to both businesses and individuals. Consequently, the Congressional Budget Office had to estimate its effects when preparing its new baseline projections, which incorporate the assumption that current laws affecting taxes and spending generally do not change. In those projections for the 2018–2028 period, the act's changes boost economic output and increase budget deficits, on net.

What Are the Act's Major Provisions?

The 2017 tax act changes corporate and individual tax rates and includes various provisions that affect how businesses and individuals calculate their taxable income. Among other things, the act lowers the top corporate income tax rate to 21 percent. It changes the way that the foreign income of U.S. corporations is taxed, and it reduces some incentives for corporations to shift profits outside the United States. For the next eight years, the act lowers individual income tax rates and broadens the total amount of income subject to that tax. Also for the next eight years, it increases the tax exemptions for property transferred at death and for certain gifts. Starting next year, it eliminates the penalty for not having health insurance—a penalty imposed under a provision of the Affordable Care Act generally called the individual mandate. And it changes the measure of inflation that is used to adjust certain tax parameters.

What Are the Act's Projected Economic Effects?

In CBO's assessment, the 2017 tax act changes businesses' and individuals' incentives in various ways. On net, those changes are expected to encourage saving, investment, and work.

CBO projects that the act's effects on the U.S. economy over the 2018–2028 period will include higher levels of investment, employment, and gross domestic product (GDP). For example, in CBO's projections, the act boosts average annual real GDP by 0.7 percent over the 2018–2028 period. Analysis of the act's economic effects is complicated by its mix of permanent and temporary provisions; of particular note is that it lowers the corporate income tax rate permanently but individual income tax rates only through 2025. As a result, the projected economic effects vary over the 11-year period; the largest effects on the economy occur during the period's middle years.

CBO's projections of the act's economic effects are based partly on projections of the act's effects on potential GDP—the economy's maximum sustainable level of production. In the agency's projections, the act increases the level of potential GDP by boosting investment and labor. By lowering the corporate income tax rate, the act gives businesses incentives to increase investment, and by lowering individual income tax rates through 2025, it gives people incentives to increase their participation in the labor force and their hours worked, expanding the potential labor supply and employment. Other provisions of the tax act, including a limit on deductions for state and local taxes and for mortgage interest, will push down residential investment, but the overall effect on investment is positive. One result of the act will dampen those positive effects on potential output: It will increase federal deficits and therefore increase federal borrowing and interest rates, crowding out some private investment.

In CBO's projections, the act initially boosts real GDP (that is, GDP adjusted to remove the effects of inflation) in relation to real potential GDP, influencing other economic variables, such as inflation and interest rates. GDP is pushed up in relation to potential GDP because the act increases overall demand for goods and services (by raising households' and businesses' after-tax income). The heightened economic activity subsequently generates more demand for labor and consequently higher wages. In response, the labor force participation rate (which is the percentage of people in the civilian noninstitutionalized population who are at least 16 years old and either

working or seeking work) rises, as do the number of hours worked, and the unemployment rate goes down. The largest positive effects occur during the 2018–2023 period. After income tax rates rise as scheduled at the close of 2025, the growth of overall demand is dampened in relation to the growth of potential output.

Among the effects of the initially stronger output growth are slightly higher inflation and an increase in the exchange value of the dollar. Furthermore, CBO expects the Federal Reserve to respond to the stronger labor market and increases in inflationary pressure by pushing short-term interest rates higher over the next few years. Long-term interest rates are also expected to rise.

Just as the tax act is projected to boost real GDP, it is expected to increase income for labor and business over the 2018–2028 period. The act will also affect the relationship between GDP and gross national product (GNP). GNP differs from GDP by including the income that U.S. residents earn from abroad and excluding the income that nonresidents earn from domestic sources; it is therefore a better measure of the income available to U.S. residents. Because the act reduces the amount of net foreign income earned by U.S. residents in CBO's projections, it increases GNP less than it increases GDP.

What Are the Act's Projected Budgetary Effects?
To construct its baseline budget projections, CBO incorporated the effects of the tax act, taking into account economic feedback—that is, the ways in which the act is likely to affect the economy and in turn affect the budget. Doing so raised the 11-year projection of the cumulative primary deficit (that is, the deficit excluding the costs of servicing the debt) by $1.3 trillion and raised projected debt-service costs by roughly $600 billion. The act therefore increases the total projected deficit over the 2018–2028 period by about $1.9 trillion.

Before taking economic feedback into account, CBO estimated that the tax act would increase the primary deficit by $1.8 trillion and debt-service costs by roughly $450 billion. The feedback is estimated to lower the cumulative primary deficit by about $550 billion, mostly because the act is projected to increase taxable income and thus push tax revenues up. And that feedback raises projected debt-service costs, because even though the reduction in primary deficits means that less borrowing is necessary, the act is expected to result in higher interest rates on debt, which are projected to more than offset the effects on debt-service costs of the smaller debt. On net, economic feedback from the act raises debt-service costs in CBO's projections by about $100 billion.

What Uncertainty Surrounds CBO's Estimates?
CBO's estimates of the economic and budgetary effects of the 2017 tax act are subject to a good deal of uncertainty. The agency is uncertain about various issues—for example, the way the act will be implemented by the Treasury; how households and businesses will rearrange their finances in the face of the act; and how households, businesses, and foreign investors will respond to changes in incentives to work, save, and invest in the United States. That uncertainty implies that the actual outcomes may differ substantially from the projected ones.

The Major Provisions of the Act

The 2017 tax act makes important changes to the tax system that apply to both businesses and individuals. They include changes to corporate and individual tax rates and a variety of provisions that affect how businesses and individuals calculate their taxable income. The changes have important effects on incentives to save, invest, and work.

Together, CBO estimates, the act's provisions reduce, on net, the user cost of capital, which is the gross pretax return on investment that provides the required return to investors after covering taxes and depreciation. That required return can be thought of as the return that investors would have received if they had used their funds to make another, equally risky investment. Therefore, all things being equal, as the user cost of capital falls, investment rises, and vice versa. In addition, the smaller user cost of capital implies lower effective marginal tax rates on capital income.[1] By CBO's

1. The effective marginal tax rate on capital income is the share of the return on an additional investment made in a particular year that will be paid in taxes over the life of that investment. Unlike statutory tax rates, effective marginal tax rates account for the tax treatment of depreciation and various other features of the tax code. For descriptions of CBO's method of estimating the effective marginal tax rate on capital income, see Congressional Budget Office, *Taxing Capital Income: Effective Marginal Tax Rates Under 2014 Law and Selected Policy Options* (December 2014), Appendix A, www.cbo.gov/publication/49817, and *Computing Effective Tax Rates on Capital Income* (December 2006), www.cbo.gov/publication/18259. For a description of the relationship between the effective marginal tax rate and the user cost of capital, see page 30 of the December 2014 report, in which the user cost of capital is found by summing the real before-tax rate of return required to cover certain costs (ρ) and the rate of depreciation (δ).

Table B-1.

Projections of Effective Marginal Federal Tax Rates

Percent

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
						Labor Income					
Rate Under Prior Law	29.4	29.5	29.7	29.8	30.0	30.1	30.2	30.4	30.5	30.6	30.7
Rate Under the 2017 Tax Act	27.2	27.4	27.6	27.7	27.9	28.1	28.2	28.5	30.6	30.7	30.8
Difference (Percentage points)	**-2.2**	**-2.2**	**-2.2**	**-2.1**	**-2.1**	**-2.0**	**-1.9**	**-1.9**	*	**0.1**	**0.1**
						Capital Income					
Rate Under Prior Law	16.5	16.8	17.9	17.9	17.9	17.9	17.9	17.9	17.9	18.0	18.0
Rate Under the 2017 Tax Act	14.7	14.7	14.6	14.5	15.4	15.7	16.1	16.5	16.0	16.5	16.5
Difference (Percentage points)	**-1.8**	**-2.1**	**-3.3**	**-3.4**	**-2.5**	**-2.2**	**-1.9**	**-1.4**	**-1.9**	**-1.5**	**-1.5**

Source: Congressional Budget Office.

The effective marginal tax rate on labor income is the share of an additional dollar of such income that is unavailable to a worker because it is paid in federal individual income taxes and payroll taxes or offset by reductions in benefits from government programs, averaged among workers with weights proportional to their labor income.

The effective marginal tax rate on capital income is the share of the return on an additional investment made in a particular year that will be paid in taxes over the life of that investment. The before- and after-tax rates of return used to calculate that effective tax rate are weighted averages of the rates for every combination of asset type, industry, form of organization, and source of financing; the weights used are the asset values of each combination. All of those rates of return incorporate estimated values for interest rates on corporate debt, rates of inflation, and returns paid by C corporations on equity that are consistent with recent trends and with CBO's economic forecast. Specifically, CBO has incorporated a nominal interest rate on debt for corporate securities of 5.8 percent; a rate of inflation, measured by the price index for urban consumers, of 2.4 percent; and a real return on equity of 5.2 percent.

* = between zero and 0.05 percentage points.

estimate, the act reduces the effective marginal tax rate on capital income, averaged over all types of investment, by between 1.4 percentage points and 3.4 percentage points from 2018 to 2028 (see Table B-1). That in turn stimulates personal saving.

In addition, CBO estimates that the act reduces, on net, the effective marginal tax rate on labor income by 2.2 percentage points in 2018 and by slightly smaller amounts through 2025, thereby encouraging work.[2] Beginning in 2026, the act is projected to boost the rate, as temporary measures that lower it expire and provisions that push it up continue.

Changing the Corporate Income Tax Rate

Before the act was passed, businesses subject to the corporate income tax faced a graduated rate structure. The statutory tax rates were 15 percent, 25 percent, 34 percent, and 35 percent, depending on the business's income. The act replaces that structure with a single rate of 21 percent, beginning in 2018. That change lowers, on average, the tax rate paid by businesses subject to the corporate income tax. The change also contributes to the reduction of the effective marginal tax rate on capital income.

The corporate income tax distorts domestic economic incentives, affecting the decisions made by corporations and investors.[3] In addition, variation among the corporate tax systems of different countries distorts decisions about where to locate international investment.

2. The effective marginal tax rate on labor income is the share of an additional dollar of such income that is unavailable to a worker because it is paid in federal individual income taxes and payroll taxes or offset by reductions in benefits from government programs. That rate, like the effective marginal tax rate on capital income, differs from statutory tax rates by taking into account different features of the tax code (for example, the gradual reduction in the value of the earned income tax credit as income rises). For more information on how changes in after-tax wages distort incentives to work, see Robert McClelland and Shannon Mok, *A Review of Recent Research on Labor Supply Elasticities*, Working Paper 2012-12 (Congressional Budget Office, October 2012), www.cbo.gov/publication/43675.

3. For more information on how the corporate income tax distorts economic incentives, see Congressional Budget Office, *Corporate Income Tax Rates: International Comparisons* (November 2005), pp. 1–9, www.cbo.gov/publication/17501.

Reducing the corporate income tax rate in the United States reduces those distortions in several important ways. First, it reduces the pretax return required to induce businesses to invest. That reduces the user cost of capital and should therefore increase investment. Second, it makes debt financing less advantageous in relation to equity financing—because businesses may deduct the interest on debt from their taxable income, and the value of that deduction becomes smaller when tax rates are lower. Third, the reduction in corporate income taxes increases U.S. and foreign investors' incentives to invest and to locate activities in the United States rather than abroad.[4] Fourth, it reduces the incentive to shift income from the United States to lower-tax countries.

Changing International Taxes

The act changes how the United States taxes the foreign income of U.S. corporations. It also imposes a onetime tax on previously untaxed foreign profits. And it adds measures to discourage profit shifting, a practice in which multinational corporations lower their tax liabilities by shifting reported taxable income from affiliates in countries with higher corporate tax rates to affiliates in countries with lower ones.

Changing the Taxation of Foreign Income. There are two broad ways in which a country may tax the foreign income earned by a domestic corporation. Under a pure worldwide system, any foreign income is taxed immediately by the corporation's home country. Under a pure territorial system, the corporation's home country does not tax foreign income at all.[5]

Under prior law, the United States had a system that more closely resembled worldwide taxation. However, only some types of foreign income—generally those that the government regarded as being passive (such as interest income) or highly mobile—were taxed as the income was earned. Taxes on many types of foreign income earned by a U.S. corporation's foreign subsidiary were deferred until the income was repatriated—that is, distributed to the U.S. parent company. Earnings were considered repatriated if, for example, they were paid out to shareholders as dividends, used to buy back shares, or used to fund an investment in physical capital in the United States.

The 2017 tax act replaces that approach with a system that may more closely resemble territorial taxation. Dividends that a U.S. parent company receives from its foreign subsidiaries will now be exempt from U.S. taxation. However, foreign income that the government regards as passive or highly mobile will still be taxed as the income is earned.

Because the repatriation of foreign earnings triggered tax liability under prior law, some corporations behaved as though they were constrained in how they could use foreign earnings. The new dividend exemption will eliminate that constraint. As a result, corporations will probably repatriate a larger share of their foreign earnings by reducing the amount that they reinvest in foreign economies.

However, the dividend exemption is anticipated to encourage some further profit shifting, because corporations that shift profits from the United States to lower-tax countries can now repatriate them without paying taxes. That increase in profit shifting will reduce the amount of income subject to U.S. taxes.

Onetime Tax on Previously Untaxed Foreign Profits. The tax act also addresses the treatment of undistributed foreign earnings that accumulated before the taxation of foreign income was changed (see Box B-1). It imposes a tax on those undistributed foreign earnings, with separate rates for cash assets (15.5 percent) and noncash assets (8 percent). Corporations must pay the tax regardless of whether they actually repatriate the earnings to the United States—a requirement often called "deemed repatriation"—and have the option of spreading the payment of the tax over eight years. The tax should have only a limited effect on the decisions that corporations make, because it applies only to their existing stock of foreign earnings.

Measures to Reduce Profit Shifting. The act contains several provisions to reduce corporations' incentive to shift profits out of the United States. Two

4. For more information about those incentives, see Congressional Budget Office, *Taxing Capital Income: Effective Marginal Tax Rates Under 2014 Law and Selected Policy Options* (December 2014), www.cbo.gov/publication/49817. For more information about location decisions, see Congressional Budget Office, *International Comparisons of Corporate Income Tax Rates* (March 2017), www.cbo.gov/publication/52419.

5. For a more detailed description of both approaches, see Congressional Budget Office, *Options for Taxing U.S. Multinational Corporations* (January 2013), www.cbo.gov/publication/43764.

Box B-1.

Repatriation of Undistributed Foreign Earnings

Before the 2017 tax act was enacted, a multinational corporation (MNC) could defer paying taxes on foreign earnings until they were distributed to the MNC's parent company in the United States. Earnings were considered distributed if, for example, they were paid out to shareholders as dividends, used to buy back shares, or used to fund an investment in physical capital in the United States. To avoid the tax cost, MNCs left large amounts of earnings in their foreign subsidiaries—a total of $2.6 trillion as of 2015, according to the staff of the Joint Committee on Taxation.[1]

The 2017 tax act mandates "deemed repatriation" for those accumulated foreign earnings, which means that MNCs will pay U.S. taxes on the earnings even if they are not distributed to the United States. The act thus eliminates the tax disincentive to distribute those earnings. As a result, MNCs are expected to end up deploying the earnings in their domestic operations more often.

The Congressional Budget Office projects that deemed repatriation will have some effects on MNCs' financial decisions. Before the change in law, some MNCs, to avoid paying the tax cost of using foreign earnings to fund investments and payments to shareholders, used borrowed funds for those purposes, in CBO's judgment. Because MNCs can no longer avoid the tax cost, CBO projects that some will reduce their borrowing. Also, some of the previously undistributed earnings can be paid to shareholders through share repurchases and larger dividends.

On the whole, however, CBO projects that the economic effects of deemed repatriation will be small. The MNCs that refrained from distributing their foreign earnings tended to be established corporations in the high-tech sector that faced low costs in funding domestic activities and probably did not forgo worthy investments as a result of keeping their earnings undistributed. Furthermore, even though the term "repatriation" suggests that the undistributed funds will return to the United States from abroad, they are often already invested in dollar-denominated fixed-income securities issued by U.S. borrowers. The funds are outside the United States only in the sense of being owned by a foreign subsidiary of a U.S. corporation. In fact, MNCs have held a substantial fraction of their undistributed funds as long-term Treasury securities, CBO estimates. Finally, over the past decade, MNCs have paid large amounts of cash to their shareholders through share repurchases even as they have kept earnings undistributed, so it is unlikely that the foreign earnings represent pent-up dividends or investments waiting to happen.

In CBO's projections, the effects of deemed repatriation on MNCs' financial decisions lead to a small decrease in the corporate spread, which is the difference between corporate and U.S. government interest rates. Corporations are expected to reduce their holdings of U.S. government debt and reduce their borrowing. As they reduce holdings of federal debt, interest rates for it will rise; meanwhile, as they borrow less, interest rates for corporate debt will fall. The resulting decrease in the corporate spread should support additional corporate investment but put some upward pressure on the interest rates of Treasury notes.

1. Thomas A. Barthold, Joint Committee on Taxation, letter to the Honorable Kevin Brady, Chairman, House Ways and Means Committee, and the Honorable Richard Neal (August 31, 2016), https://go.usa.gov/xQrVY.

provisions—which impose a tax on global intangible low-tax income (GILTI) and create a deduction for foreign-derived intangible income (FDII)—reduce corporations' incentive to locate high-return assets (which are often intangible assets, such as intellectual property, or IP) in low-tax countries. The provisions reduce that incentive by applying special treatment to profits that exceed a specified return on tangible assets (such as equipment and structures).[6]

In addition to reducing profit shifting through the location of intangible assets, the GILTI and FDII provisions affect corporations' decisions about where to locate tangible assets. By locating more tangible assets abroad, a corporation is able to reduce the amount of foreign income that is categorized as GILTI. Similarly, by locating fewer tangible assets in the United States, a

6. The GILTI provision imposes a tax on foreign income that exceeds a 10 percent return on foreign tangible assets if a multinational corporation's average foreign tax rate is below a certain threshold. The FDII deduction applies to U.S. profits that exceed a 10 percent return on U.S. tangible assets. The deduction is proportional to the share of U.S. income that is derived from foreign sales.

corporation can increase the amount of U.S. income that can be deducted as FDII. Together, the provisions may increase corporations' incentive to locate tangible assets abroad. (Like profit shifting, such decisions change the locations of reported profits—but they are not classified as profit shifting, because they involve actual economic activity rather than simply reporting.)

Another provision, the base erosion and antiabuse tax (BEAT), limits the ability of both U.S. and foreign multinational corporations to use related-party transactions to shift profits from the United States to lower-tax countries. (Related-party transactions are transactions between the affiliates of a multinational corporation.) BEAT imposes a minimum tax on relatively large multinational corporations, which must pay the larger of two amounts: their regular tax liability, and a tax at a specified rate (generally 10 percent) on a broader measure of U.S. taxable income that is adjusted for related-party transactions.

Changing the Taxation of Domestic Business Activity

The 2017 tax act makes numerous changes to tax provisions that affect both corporate and noncorporate businesses. Those changes limit or eliminate some tax preferences and thus increase the tax base (that is, the total amount of income subject to tax); provide incentives for certain types of investments by allowing businesses to deduct the costs more rapidly; and create a new deduction for certain owners of pass-through businesses (which are businesses whose profits are taxed not directly through the corporate income tax but when their owners pay income tax on their share of profits).[7] On net, those changes reduce the effective marginal tax rate on capital income paid by corporate and noncorporate businesses.

Base Expansion. The act expands the business income tax base in a number of ways. One is a new limit on net interest deductions; another modifies the treatment of losses.

Interest Limit. Under prior law, a business could generally deduct its interest expense when calculating its taxable income. For businesses whose gross receipts are greater than $25 million, the act limits the deduction of interest expense to an amount equal to a business's interest income plus 30 percent of its adjusted taxable income. The measure of adjusted taxable income used for that determination excludes interest income and expense. It also excludes deductions for depreciation and similar costs through 2021 but then includes them. Business interest that is not deducted because it exceeds the limit may be carried forward—that is, potentially claimed in a future year. Special rules apply to pass-through businesses.

Limiting the deductibility of interest creates an incentive to reduce existing debt and reduces the incentive to issue new debt, particularly for companies that already have substantial amounts of debt. Limiting interest deductions may also increase multinational corporations' incentive to borrow through affiliates that are not in the United States instead of through affiliates that are. That would increase profits reported by affiliates that are in the United States. In addition, the change in the definition of adjusted taxable income in 2022 lowers businesses' capacity to deduct interest, encouraging larger investment and depreciation deductions before 2022.

Limits on the Use of Net Operating Losses. Under prior law, a net operating loss could be deducted from taxable income up to 2 years in the past and up to 20 years in the future. For losses occurring after 2017, the act restricts the deduction to future income (for most industries), and it restricts the deduction to 80 percent of taxable income. In addition, the 20-year limit is repealed.

For the owners of pass-through businesses, trade or business losses can be used to offset current-year income from other sources. The act limits that current-year deduction to $500,000 annually for joint returns and $250,000 for single returns. Any excess loss can be deducted as a net operating loss in the future.

Overall, those provisions treat losses less generously than prior law did. Restricting the deduction of losses to future income will mean that companies will no longer be able to use losses in a way that creates a current-year refund. That change may especially hurt corporations without many liquid assets. In addition, the changes reduce corporations' incentive to claim various deductions that can result in losses.

Deductions for Capital Investments. When a business invests in a tangible asset, it generally deducts the cost

7. For more information, see "Key Methods That CBO Used to Estimate the Macroeconomic Effects of the 2017 Tax Act" (supplemental material for *The Budget and Economic Outlook: 2018 to 2028*, April 2018), https://go.usa.gov/xQcZD.

of the investment over time until it has deducted the full purchase price of the asset. For each type of asset, tax law and regulations prescribe a depreciation schedule that determines the amount to be deducted each year. Under certain circumstances, however, the cost of the asset can be fully "expensed"—that is, fully deducted in the year it is placed in service. The 2017 tax act expands those circumstances for many types of tangible assets but restricts them for certain intangible ones—specifically, research and development (R&D) and software development. It increases the base amount of tangible equipment that can be expensed under section 179 of the tax code to $1 million, and it increases the base amount of investment at which that expensing begins to phase out to $2.5 million. The act also temporarily increases the percentage of the investment in new tangible equipment that businesses can expense from 50 percent of the acquisition cost to 100 percent; between 2023 and 2027, that "bonus depreciation" will be phased down to zero in 20-percentage-point increments.[8] In contrast, investment in R&D and software development must now be deducted in equal proportions over five years if the costs are incurred in 2022 or later; in the past, that investment could be expensed.

The speed with which businesses can deduct their capital spending affects the pretax rate of return needed to induce a new investment; it thus affects the user cost of capital as well. Expensing reduces the user cost of capital by allowing businesses to deduct the cost of investment from their taxable income more quickly. The expansion of expensing for tangible assets should result in more investment in the qualifying types of assets. However, those types were already treated more favorably than nonqualifying types of tangible assets (mostly buildings), and the expansion of expensing will widen that disparity. The result will be some distortion in favor of the qualifying types. Requiring R&D and software development costs to be deducted over five years rather than immediately will increase the cost of capital and thus reduce those types of investment.

Deduction for Certain Owners of Pass-Through Businesses. The profits of pass-through businesses are allocated to their owners, added to their taxable income, and often taxed through the individual income tax. The rate at which those profits are taxed consequently depends on which tax bracket the owner is in. Through 2025, individual income tax rates are generally lower under the 2017 tax act than they would have been under prior law, but not by nearly as much as the corporate income tax rate. However, the act also provides a temporary new deduction to many owners of pass-through businesses through 2025. The deduction is equal to 20 percent of qualified business income, which includes the reasonable compensation of owners for services rendered to the business. Eligibility for the deduction depends on both the owner's income and the nature of the business. The deduction phases out with income for owners of personal-service businesses (such as law firms, medical practices, and consulting firms). For other owners, the deduction may be limited by the wages that the business pays and the property that it owns.

Because it has the same effect as a reduction in the tax rate, the deduction for pass-through businesses lowers the cost of capital for qualifying companies and reduces the disparity between the tax treatments of debt- and equity-financed investment. It also reduces the disparity between the treatments of capital income earned by corporations and of capital income earned by pass-through businesses. However, it may result in different tax rates for different sources of labor income. That difference could occur because the deduction gives owners of pass-through businesses an incentive to underreport their reasonable compensation—a tactic that has been used successfully to avoid self-employment taxes in the past and that is not available to wage earners. In addition, the deduction's different treatment of different industries could further affect economic decisions.

Changing Individual Income Taxes

The 2017 tax act changes individual income taxes, lowering statutory tax rates but also broadening the tax base through various provisions. On net, the act reduces marginal tax rates: Provisions that reduce statutory rates and expand the standard deduction push marginal rates down, an effect only partly offset by provisions that limit itemized deductions and eliminate personal exemptions.

Most of the provisions involving individual income taxes expire at the end of 2025. The temporary nature of those provisions will affect the behavior of some taxpayers; they will try to earn more during the years when rates are lower or to delay deductible expenses—whose value rises as rates increase—until after 2025. Many other

8. The bonus depreciation percentage was 50 percent in 2017; under prior law, it was scheduled to be 40 percent in 2018, 30 percent in 2019, and zero thereafter.

taxpayers will not change their behavior as a result of the provisions' temporary nature. That might occur because they cannot change the timing of their taxable income, because they expect policymakers to permanently extend the provisions, or because they are unaware of the expiration dates.

Temporary Reduction in Individual Income Tax Rates. Under prior law, taxable ordinary income earned by most individuals was subject to the following seven statutory rates: 10 percent, 15 percent, 25 percent, 28 percent, 33 percent, 35 percent, and 39.6 percent.[9] Different rates applied to different brackets of people's taxable ordinary income. The 2017 tax act retains the seven-rate structure but reduces most of the rates; the new rates are 10 percent, 12 percent, 22 percent, 24 percent, 32 percent, 35 percent, and 37 percent. The act also expands the width of the brackets, increasing the number of taxpayers subject to lower rates.

The lower tax rates are projected to increase the supply of labor.[10] Because they will increase after-tax returns on investment, they are also anticipated to boost investment by pass-through businesses, which are taxed through the individual income tax.[11]

Temporary Reduction in the Amount of Income Subject to the Alternative Minimum Tax. Some taxpayers are subject to the alternative minimum tax (AMT), which was intended to impose taxes on higher-income people who use tax preferences to greatly reduce or even eliminate their liability under the regular income tax. The AMT allows fewer exemptions, deductions, and tax credits than the regular income tax does, and taxpayers are required to pay the AMT if it is higher than their regular tax liability. The 2017 tax act temporarily increases the income levels at which the AMT takes effect. As a result, less income is subject to the AMT.

The changes to the AMT have effects similar to those resulting from the reductions in statutory rates. However, the effect on the labor supply is likely to be smaller, because higher-income people, most of whom are already working full time, are less likely to increase their supply of labor than the population as a whole is.

Temporary Changes to the Standard Deduction and Itemized Deductions. When preparing their income tax returns, taxpayers may either take the standard deduction, which is a flat dollar amount, or itemize—that is, deduct certain expenses, such as state and local taxes, mortgage interest, charitable contributions, and some medical expenses. Taxpayers benefit from itemizing when the value of their deductions exceeds the standard deduction. Under prior law, however, the total amount of most itemized deductions was generally reduced by 3 percent of the amount by which a taxpayer's adjusted gross income exceeded a specified threshold.[12] Other restrictions applied to specific itemized deductions.

The 2017 tax act nearly doubles the size of the standard deduction and repeals the overall limit on itemized deductions, but it also eliminates many small itemized deductions and reduces the amounts that can be claimed for two widely used deductions. First, deductions for state and local taxes—the sum of property taxes and either income or sales taxes—may not exceed $10,000. Second, taxpayers may deduct the interest on no more than $750,000 of home mortgage debt, a reduction from $1.1 million under prior law.

The combination of the higher standard deduction and the restrictions on the two widely used deductions has a number of effects:

- The number of taxpayers itemizing deductions is expected to fall from 49 million in 2017 to 18 million in 2018.
- After-tax income changes for many taxpayers. The increase in the standard deduction causes after-tax income to rise for most taxpayers who did not previously itemize deductions. After-tax income also rises for some higher-income taxpayers, because the effect of restricting the two widely used deductions is offset by the repeal of the limit on total itemized

9. Taxable ordinary income is all income subject to the individual income tax (other than most long-term capital gains and dividends) minus adjustments, exemptions, and deductions.

10. For more information, see "Key Methods That CBO Used to Estimate the Macroeconomic Effects of the 2017 Tax Act" (supplemental material for *The Budget and Economic Outlook: 2018 to 2028*, April 2018), https://go.usa.gov/xQcZD.

11. For discussion of that kind of taxation, see Congressional Budget Office, *Taxing Businesses Through the Individual Income Tax* (December 2012), www.cbo.gov/publication/43750.

12. Adjusted gross income includes income from all sources not specifically excluded by the tax code, minus certain deductions.

deductions. However, after-tax income falls for some homeowners and residents of states and localities with high taxes.

- The restrictions affect the mix of investment. By applying caps to state and local property tax deductions and by limiting the amount of deductible mortgage interest, the act reduces the incentive to buy a house, or to invest in housing in other ways, in relation to the incentive to make other kinds of investment.

Temporary Repeal of Personal Exemptions and Expansion of the Child Tax Credit. Under prior law, taxpayers could generally claim a personal exemption for themselves and each dependent. That exemption reduced their tax burden. In addition, taxpayers with income below specified thresholds were eligible for a tax credit of up to $1,000 for each qualifying child under the age of 17.[13] That credit was partially refundable (meaning that eligible people received money back from the government if the value of the credit was greater than the amount of taxes that they owed).

The act repeals the personal exemption but doubles the size of the maximum child tax credit for most eligible taxpayers; in addition, eligibility for the credit is extended to include more higher-income taxpayers. The maximum refundable portion is increased to $1,400. Taxpayers can also claim a new $500 nonrefundable tax credit for each dependent who is not a qualifying child.

The effects of those provisions vary among groups of taxpayers. After-tax income is projected to decline for most taxpayers, including those without dependents who will no longer benefit from the personal exemption and many other taxpayers for whom the expanded credits do not compensate for the loss of the personal exemption. For many lower-income taxpayers with children, however, after-tax income will increase. That effect occurs because many people with low income do not pay income taxes and will therefore not be affected by the elimination of the personal exemption but will still benefit from the expanded refundable credit if they have children.

13. For more information about the child tax credit, see Congressional Budget Office, *Refundable Tax Credits* (January 2013), www.cbo.gov/publication/43767.

Changing the Estate and Gift Taxes

The value of property transferred at death and of certain gifts made during a person's lifetime is subject to the federal estate and gift taxes.[14] However, such transfers up to a certain cumulative dollar amount are exempt from taxation. The 2017 tax act doubles the amount between 2018 and 2025.

That increase gives people a greater incentive to hold assets and transfer them at death. In addition, the expiration of the increase at the end of 2025 is likely to induce people to make gifts before 2026.

Eliminating the Penalty for Not Having Health Insurance

The Affordable Care Act includes a provision, generally called the individual mandate, that requires most people to have health insurance meeting specified standards and that imposes a penalty on those who do not comply (unless they have an exemption). Under prior law, the size of the penalty was the greater of two quantities: a fixed amount specified in law, or a specified fraction of a household's income. The tax act reduces the size of the penalty to zero, starting in 2019.

Because the size of the penalty increased with household income, it acted as a tax on income. In addition, it encouraged some people to buy subsidized insurance through the marketplaces established under the Affordable Care Act; the result was that they faced higher marginal tax rates, because those subsidies shrink as income rises. Both of those effects discouraged work, so the elimination of the penalty is projected to increase the labor supply slightly.[15]

In addition, eliminating the penalty is expected to make insurance premiums in the nongroup market, where insurance is purchased individually, higher than they would otherwise have been. Insurers are required to provide coverage to any applicant, and they cannot vary premiums to reflect enrollees' health status or to limit

14. For more information about those taxes, see Congressional Budget Office, *Federal Estate and Gift Taxes* (December 2009), www.cbo.gov/publication/41851.

15. For further discussion of those effects, 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.

coverage of preexisting medical conditions. Those features are most attractive to applicants with relatively high expected costs for health care, so eliminating the penalty will tend to reduce insurance coverage less among older and less healthy people than among younger and healthier people, boosting premiums.[16]

Requiring an Alternative Inflation Measure to Adjust Tax Provisions

Many parameters of the tax system are adjusted for inflation, including the individual income tax brackets. Those adjustments prevent a general increase in prices from increasing taxes. Under prior law, most of those adjustments were based on changes in the consumer price index for urban consumers (CPI-U), which is a measure of inflation calculated by the Bureau of Labor Statistics (BLS). Beginning in 2018, the measure used for adjusting most parameters of the tax system will be changed to the chained CPI-U. Whereas the CPI-U measures inflation in the price of a fixed "basket" of goods, the chained CPI-U allows for adjustments in spending patterns by consumers; also, unlike the CPI-U, it is little affected by statistical bias related to the sample sizes BLS uses in computing each index. For both reasons, the chained CPI-U grows more slowly than the CPI-U does.[17] In CBO's projections, the former grows more slowly than the latter by 0.25 percentage points per year, on average.

The change in the measure of inflation will increase revenues because it will accelerate a phenomenon called real bracket creep, in which income is pushed into higher and higher tax brackets because it is rising faster than inflation. Real bracket creep results in individuals' facing higher marginal tax rates, so it reduces the incentive to work. Unlike many of the tax act's changes to the individual income tax, this change is permanent, and the resulting increase in revenues will grow over time.

In 2026, the temporary provisions of the act that push down marginal tax rates will have expired. Because the change in the measure of inflation pushes up marginal rates, the effective marginal rate on labor income will be higher, beginning in that year, than it would have been under prior law, CBO estimates.

How the Act Affects the Economic Outlook

In CBO's projections, the effect of the 2017 tax act is to boost the average amount of real GDP by 0.7 percent over the 2018–2028 period (see Table B-2). Real GDP is boosted by 0.3 percent in 2018 and by 0.6 percent in 2019, and the effect peaks at 1.0 percent in 2022. In later years, the effect is smaller, and by 2028 it has fallen to an increase of 0.5 percent. That pattern arises because the act's effects on real GDP growth are positive initially and then negative.

Like real GDP, real potential GDP is higher in every year of the 11-year period because of the tax act. But through 2022, the increase in real GDP is greater than the increase in real potential GDP (see Figure B-1). The result is that the positive output gap—the amount by which real GDP exceeds real potential GDP—is larger than it would have been otherwise. (Even without the act, real GDP would have been greater than real potential GDP in CBO's baseline projections.)

That larger output gap through 2022 puts some upward pressure on prices. Inflation (as measured by the price index for personal consumption expenditures) is projected to be slightly higher than it would have been otherwise over the first several years of the period and then to be unchanged.

In CBO's projections, the larger output gap and greater inflationary pressure prompt the Federal Reserve to respond by pushing interest rates higher over the next few years than they would have been without the tax act. The rate for 3-month Treasury bills is higher by 0.5 percentage points by 2022, and the rate for 10-year Treasury notes is 0.2 percentage points to 0.3 percentage points higher during the 2018–2022 period. Those higher interest rates and the end of the act's cuts in personal income taxes in 2025 slow the growth of real GDP, reducing the pressure on prices and interest rates. However, as a result of greater federal borrowing and certain provisions of the tax act that affect portfolio decisions, interest rates on 10-year notes are still slightly higher by 2028 than they would have been otherwise.

The projected gains in output generate increases in income for the employees and owners of the businesses

16. For more discussion, see Congressional Budget Office, *Repealing the Individual Health Insurance Mandate: An Updated Estimate* (November 2017), www.cbo.gov/publication/53300.

17. For more information, see the testimony of Jeffrey Kling, Associate Director for Economic Analysis, Congressional Budget Office, before the Subcommittee on Social Security of the House Committee on Ways and Means, *Using the Chained CPI to Index Social Security, Other Federal Programs, and the Tax Code for Inflation* (April 18, 2013), www.cbo.gov/publication/44083.

Table B-2.

Economic Effects of the 2017 Tax Act

												Average		
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2018–2022	2023–2028	2018–2028
Output (Percent)														
Real GDP	0.3	0.6	0.8	0.9	1.0	0.9	0.9	0.9	0.6	0.6	0.5	0.7	0.7	0.7
Real potential GDP	0.2	0.4	0.6	0.8	0.9	0.9	0.9	0.9	0.7	0.6	0.5	0.6	0.8	0.7
Nominal GDP	0.4	0.8	0.9	1.1	1.2	1.2	1.2	1.1	0.9	0.8	0.8	0.9	1.0	0.9
Real GNP	0.1	0.4	0.5	0.5	0.6	0.6	0.6	0.6	0.3	0.2	0.1	0.4	0.4	0.4
Contribution of Components to Real GDP (Percentage points)														
Private consumption	0.4	0.6	0.6	0.6	0.8	0.9	0.8	0.7	0.5	0.4	0.3	0.6	0.6	0.6
Private nonresidential fixed investment	0.2	0.4	0.5	0.5	0.4	0.3	0.3	0.3	0.2	0.1	0.1	0.4	0.2	0.3
Private residential investment	*	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	*	*	*	-0.1	-0.1	-0.1
Government consumption and investment	**	**	0.1	0.1	0.1	0.1	0.1	0.1	0.1	**	**	**	0.1	0.1
Net exports	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	**	**	0.1	-0.2	*	-0.1
Exports	-0.2	-0.1	-0.1	-0.1	*	*	*	**	**	**	**	-0.1	**	*
Imports[a]	-0.1	-0.2	-0.2	-0.1	-0.1	-0.2	-0.1	-0.1	*	**	**	-0.2	-0.1	-0.1
Potential Labor and Productivity (Percent)														
Potential labor force	0.1	0.3	0.4	0.4	0.5	0.5	0.5	0.4	0.3	0.2	0.2	0.3	0.4	0.3
Potential average labor hours	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.1	*	0.3	0.2	0.2
Potential total labor hours	0.2	0.5	0.7	0.8	0.8	0.8	0.8	0.7	0.5	0.3	0.1	0.6	0.5	0.6
Potential labor productivity	*	-0.1	*	**	0.1	0.1	0.1	0.2	0.3	0.3	0.3	*	0.2	0.1
Employment and Unemployment														
Total nonfarm employment (Percent)†	0.2	0.5	0.6	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.5	0.6	0.6
Unemployment rate (Percentage points)	*	-0.1	-0.1	-0.1	-0.1	*	*	**	**	**	**	-0.1	**	*
PCE Price Level (Percent)	**	**	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1
Interest Rates (Percentage points)														
Federal funds rate	0.1	0.2	0.4	0.4	0.5	0.3	**	*	*	*	**	0.3	0.1	0.2
Three-month Treasury bills	0.2	0.2	0.4	0.4	0.5	0.3	0.1	*	*	*	**	0.3	0.1	0.2
Ten-year Treasury notes	0.3	0.2	0.2	0.2	0.2	0.1	**	**	**	**	**	0.2	**	0.1
International Measures														
Net international lending as a percentage of GDP (Percentage points)	-0.4	-0.4	-0.4	-0.4	-0.5	-0.5	-0.4	-0.3	-0.2	-0.2	-0.2	-0.4	-0.3	-0.4
Net international income as a percentage of GDP (Percentage points)	-0.1	-0.2	-0.3	-0.3	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.4	-0.3	-0.3	-0.3
Export-weighted exchange rate (Percent)[b]	1.8	1.7	1.9	1.9	1.8	1.7	1.6	1.6	1.6	1.5	1.5	1.8	1.6	1.7
Memorandum:														
Real GDP Growth (Percentage points)	0.3	0.3	0.2	0.1	0.1	*	*	-0.1	-0.2	-0.1	-0.1	0.2	-0.1	**
PCE Price Inflation (Percentage points)	**	**	**	**	**	**	**	**	**	*	*	**	**	**

Source: Congressional Budget Office.

Real values are nominal values that have been adjusted to remove the effects of inflation.

GDP = gross domestic product; GNP = gross national product; PCE = personal consumption expenditures; * = between -0.05 percent or percentage points and zero; ** = between zero and 0.05 percent or percentage points.

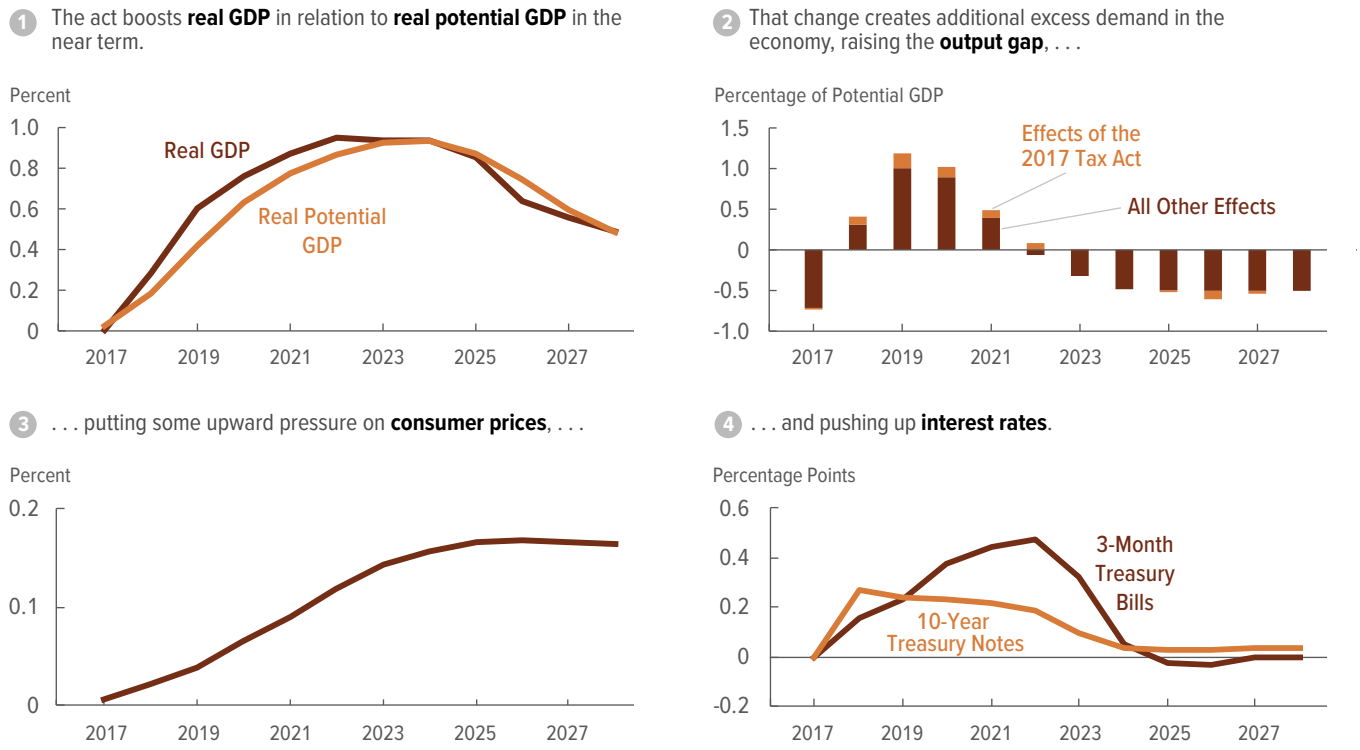
a. A negative value indicates an increase in imports.

b. A higher value indicates an increase in the exchange value of the dollar.

[†Values corrected on April 17, 2018]

Figure B-1.

Economic Effects of the 2017 Tax Act at a Glance



Source: Congressional Budget Office.

Real values are nominal values that have been adjusted to remove the effects of inflation. Potential GDP is CBO's estimate of the maximum sustainable output of the economy. Excess demand exists when the demand for goods and services exceeds the amount that the economy can sustainably supply. The output gap is the difference between GDP and CBO's estimate of potential GDP and is expressed as a percentage of potential GDP. Consumer prices are measured by the price index for personal consumption expenditures.

GDP = gross domestic product.

that produce the output. So employees' total compensation rises in CBO's projections, as do their wages and salaries. (Total compensation includes not only wages and salaries but also bonuses, stock options, benefits, and the employer's share of payroll taxes for social insurance programs.) Corporate profits and business income also increase.

Other organizations have also estimated the economic effects of the 2017 tax act (see Box B-2). The forecasts vary, but most show increases in the level of real GDP over the first few years and a more moderate increase by 2027.

Effects on Potential Output

Various provisions of the 2017 tax act directly affect the productive potential of the U.S. economy. They do so by promoting increases in investment and the potential labor supply. The act is also projected to raise measured total factor productivity, which is the average real output per unit of combined labor and capital services. On net, the act is projected to raise the level of potential output throughout the 2018–2028 period. The effect on potential output peaks at 0.9 percent in the middle years of the period and declines to 0.5 percent in 2028. In CBO's projections, the act's contribution to real GDP at the end of the period results from an increase in the amount of potential output.

Private Investment. Increases in investment boost potential output by increasing the stock of capital goods—structures, equipment, intangible assets, and inventories—that are used to produce output. The act affects private investment through three channels:

Box B-2.

Comparison With Other Organizations' Estimates

Various organizations other than the Congressional Budget Office have estimated the economic effects of the 2017 tax act. In general, the organizations expect the act to increase the level of real gross domestic product (GDP) throughout the periods that they examine. Many of the forecasts follow a pattern similar to the one followed by CBO's projections: increasing positive effects on real GDP over the first several years, then a moderation, and then a more muted effect by 2027.

In the organizations' projections for the 2018–2022 period, the act's expected average effect on real GDP ranges from 0.3 percent to 1.3 percent; CBO's projection is 0.7 percent. For the 2023–2027 period, the average effect ranges from 0.3 percent to 2.9 percent; CBO's projection is 0.8 percent. In 2027, the projected effect ranges from −0.1 percent to 2.9 percent; CBO's projection is 0.6 percent.

CBO limited its comparison to forecasts that broadly examined the final version of the tax act. Other forecasts examined earlier versions of the act or only parts of it, so CBO did not include them in the comparison.

Assorted Estimates of the Effects of the 2017 Tax Act on the Level of Real GDP

Percent

	First Five Years					Tenth Year	Average		
	2018	2019	2020	2021	2022	2027	2018–2022	2023–2027	2018–2027
Moody's Analytics	0.4	0.6	0.2	0.1	0.0	0.4	0.3	0.3	0.3
Macroeconomic Advisers	0.1	0.3	0.5	0.6	0.6	0.2	0.4	0.5	0.5
Tax Policy Center[a]	0.8	0.7	0.5	0.5	0.5	*	0.6	0.3	0.5
International Monetary Fund	0.3	0.9	1.2	1.2	1.0	-0.1	0.9	0.3	0.6
Joint Committee on Taxation	–	–	–	–	–	0.1 to 0.2	0.9	0.6	0.7
Congressional Budget Office	**0.3**	**0.6**	**0.8**	**0.9**	**1.0**	**0.6**	**0.7**	**0.8**	**0.7**
Goldman Sachs	0.3	0.6	0.7	0.7	0.7	0.7	0.6	0.7	0.7
Tax Foundation	0.4	0.9	1.3	1.8	2.2	2.9	1.3	2.9	2.1
Penn Wharton Budget Model	–	–	–	–	–	0.6 to 1.1	–	–	–
Barclays	0.5	–	–	–	–	–	–	–	–

Sources: Congressional Budget Office and the organizations listed above.

Real values are nominal values that have been adjusted to remove the effects of inflation.

GDP = gross domestic product; – = not available; * = between -0.05 percent and zero.

a. Values are for fiscal years.

changes in incentives, crowding out (which occurs when larger federal deficits reduce the resources available for private investment), and changes in economic activity.[18]

Some of the changes to investment are financed by domestic investors and some are financed by foreign investors, resulting in changes to international investment flows.

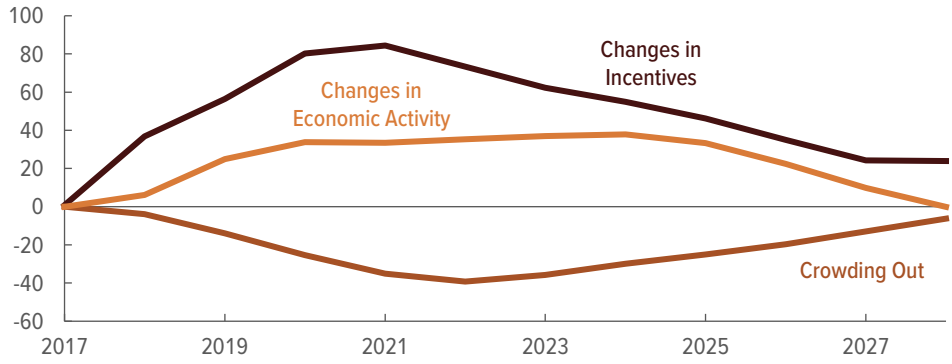
In CBO's projections, total business fixed investment—which consists of investment in nonresidential structures, equipment, and IP products—is higher in every year from 2018 through 2028 than it would otherwise have been. It is boosted by changes in incentives and

18. CBO estimated the act's effects on investment in 32 types of equipment, 23 types of nonresidential structures, 3 types of IP products, 3 types of residential capital, and inventories. For more information, see "Key Methods That CBO Used to Estimate the Macroeconomic Effects of the 2017 Tax Act" (supplemental material for *The Budget and Economic Outlook: 2018 to 2028*, April 2018), https://go.usa.gov/xQcZD.

Figure B-2.

Effects of the 2017 Tax Act on Business Fixed Investment

Billions of Dollars



Business fixed investment is greater through 2028 because the positive effects of changes in incentives and economic activity offset the negative effects of crowding out.

Source: Congressional Budget Office.

Business fixed investment is businesses' purchases of equipment, nonresidential structures, and intellectual property products. The changes in incentives consist of changes in the user cost of capital, which is the gross pretax return on investment that provides the required return to investors after covering taxes and depreciation, and changes in the benefits of locating business establishments in the United States. Changes in economic activity consist of changes in demand for goods and services and changes in the supply of labor. Crowding out occurs when larger federal deficits reduce the resources available for private investment.

stronger economic activity but dampened by crowding out from increased federal borrowing (see Figure B-2).[19] By contrast, residential investment is lower in every year from 2018 through 2028 than it would otherwise have been. Incentives to undertake residential investment are reduced through 2025 by limits on the deductibility of property taxes and mortgage interest, as well as by fewer households' itemizing deductions. Residential investment is reduced throughout the entire period by crowding out.

Changes in Incentives. The tax act affects investment in the United States by changing incentives to invest, including the user cost of capital and thus the minimum return that an investment must achieve to be profitable. The act reduces the user cost of capital in various ways. Some provisions do so by reducing statutory tax rates. Extending bonus depreciation also reduces the user cost of capital. However, the act increases the user cost of capital for owner-occupied housing from 2018 through 2025 and for research and development beginning in 2022.

The act specifies several significant changes in 2026 that affect the user cost of capital for pass-through businesses and for homeowners. As a result, their response to the tax act depends partly on their expectations of future tax policy. In CBO's projections, 20 percent of investment is made by businesses and households that expect provisions scheduled to end in 2026 actually to do so, and 80 percent of investment activity is consistent with the provisions' being extended.[20] (The act also includes some less significant changes in fiscal policy over the 11-year period, and CBO incorporated the projection that all businesses and households behave as if they expect those changes to occur.)

The tax act affects the user cost of capital in different ways for the three kinds of fixed business investment and for residential investment (see Figure B-3).

- Investment in equipment is projected to benefit the most from changes in the user cost of capital because of lower statutory tax rates and the extension of 100 percent bonus depreciation through 2022. The allowed amount of bonus depreciation declines over the following several years, and by 2027, the increase

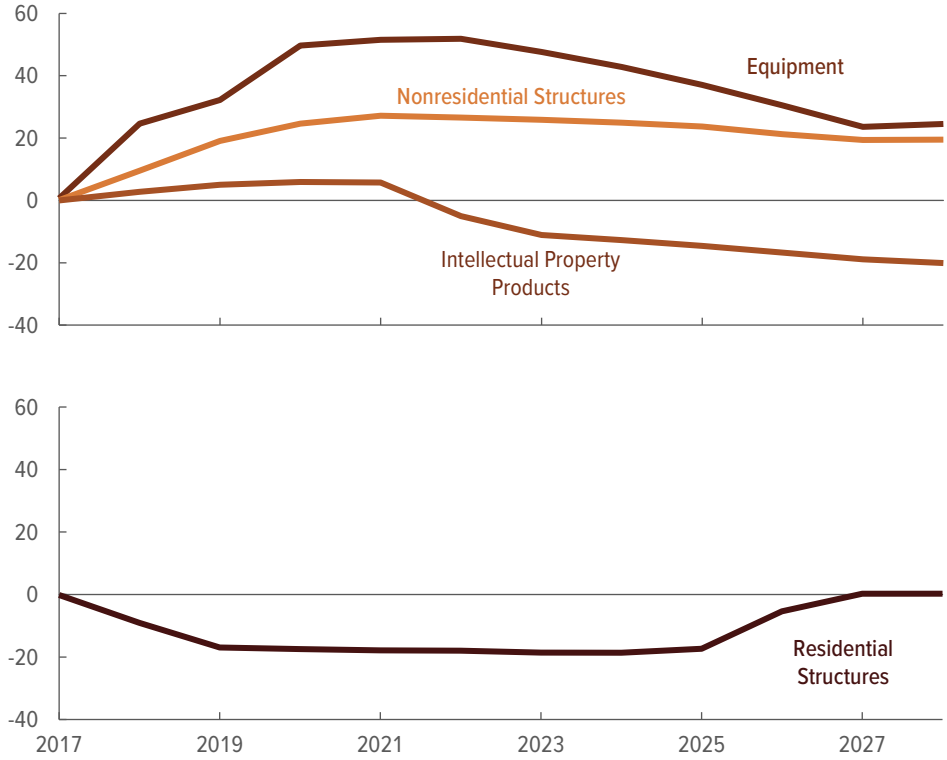
19. The incentives and crowding out that affect business fixed investment also affect investment in inventories.

20. Those projections of expectations are based on historical responses to extensions of major tax provisions. For more information, see "Key Methods That CBO Used to Estimate the Macroeconomic Effects of the 2017 Tax Act" (supplemental material for *The Budget and Economic Outlook: 2018 to 2028*, April 2018), https://go.usa.gov/xQcZD.

Figure B-3.

Effects of the 2017 Tax Act on Investment Through Changes in Incentives

Billions of Dollars



The act's changes in the tax treatment of depreciation eventually reduce the effects of incentives on investment in equipment and intellectual property products.

Limits on the tax deductibility of payments for property taxes and mortgage interest, along with a drop in the number of households that take itemized deductions, reduce spending on residential structures through 2025.

Source: Congressional Budget Office.

The changes in incentives consist of changes in the user cost of capital, which is the gross pretax return on investment that provides the required return to investors after covering taxes and depreciation, and changes in the benefits of locating business establishments in the United States.

in investment that is due to changes in the user cost of capital stems almost entirely from the reduction in the corporate tax rate.

- Investment in nonresidential structures also benefits from lower statutory tax rates. In addition, certain types of structures with relatively short tax lives, such as oil derricks, benefit from bonus depreciation. But by 2027, as with the previous category, the increase in investment that is due to changes in the user cost of capital stems almost entirely from the reduction in the corporate tax rate.

- Investment in IP products is boosted by changes in the user cost of capital through 2021. However, in contrast to its treatment of equipment, the tax act makes depreciation less generous for R&D and for software development beginning in 2022. Consequently, starting in that year, investment in IP products is lower than it would otherwise have been.

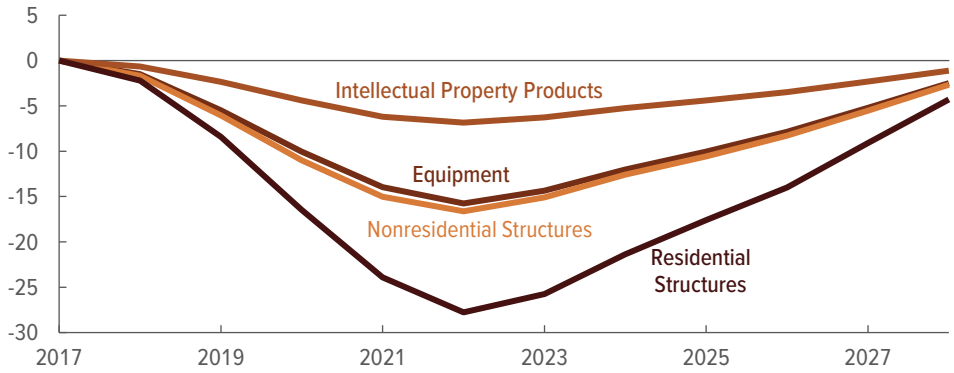
- The bulk of residential investment is in owner-occupied housing. The tax act increases the user cost of capital for homeowners from 2018 to 2025 by limiting the deductibility of property taxes and mortgage interest and by reducing the number of households that itemize. That increase outweighs a reduction in the user cost of capital for the people or pass-through businesses that own most rental housing and that will benefit from lower individual tax rates during that period. Beginning in 2026, the act has little impact on the user cost of residential capital.

The tax act also increases incentives to invest in the United States by encouraging firms to locate their establishments here. The primary means of encouragement is the reduction in the statutory corporate tax rate in the

Figure B-4.

Effects of the 2017 Tax Act on Investment Through Crowding Out

Billions of Dollars



The reduction of investment resulting from crowding out is greatest in 2022, when the effects of the act on the federal deficit are the largest.

Source: Congressional Budget Office.

Crowding out occurs when larger federal deficits reduce the resources available for private investment.

United States. However, that effect is partly offset by other changes. For example, the GILTI and FDII provisions may increase the incentive to locate tangible assets outside the United States.

Furthermore, although the increased incentives to locate establishments in the United States will boost total investment, that effect is muted by the amount of labor available, in CBO's estimation. In other words, barring a change in the amount of labor supplied in the United States, business location decisions are projected to have only a limited effect on investment. That is because the additional labor used by an establishment locating in the United States is no longer available to other establishments. So the increased investment by the new establishment is partly offset by reduced investment by existing establishments.

Crowding Out. CBO estimates that greater federal borrowing ultimately reduces private investment. When the government borrows, it borrows from people and businesses whose savings would otherwise be financing private investment. Although an increase in government borrowing strengthens the incentive to save, the resulting rise in saving is not as large as the increase in government borrowing; national saving, or the amount of domestic resources available for private investment, therefore falls. However, private investment falls less than national saving does in response to government deficits, because the higher interest rates that are likely to result from increased federal borrowing tend to attract more foreign capital to the United States. In CBO's assessment, the crowding out of private investment occurs gradually, as interest rates and the funds available for private investment adjust in response to increased federal deficits.

The reduction in private investment resulting from crowding out occurs primarily because of higher interest rates, so the effects on different categories of investment depend on how sensitive they are to interest rates. In general, interest rates constitute a larger share of the user cost of capital for types of capital that depreciate slowly, so changes in interest rates have a larger effect on investment in those types of capital. For example, a 1 percent rise in mortgage rates would have a larger impact on residential investment than a 1 percent rise in corporate bond rates would have on businesses' purchases of computers. Consequently, investment in residential and nonresidential structures bears a disproportionate share of the impact of larger deficits. The act's crowding-out effects vary not only by type of investment but also as time passes; the strongest effects occur in 2022, when the act's effects on the deficit are largest (see Figure B-4).

Changes in Economic Activity. When demand for their output increases, businesses invest in capital to meet that additional demand; the expanded investment then increases the potential output of the economy, because a larger capital stock increases the businesses' ability to produce output. The impact on investment is greatest during the period in which demand is accelerating. Once businesses have invested enough to meet the additional

demand, the only further stimulus to investment is the need to gradually replace the additional capital.

In CBO's projections, the tax act increases demand primarily by increasing households' demand for goods and services over the next few years, widening the output gap. Consequently, firms engage in investment to meet that demand beyond what they would do in response to changing tax incentives. The act's effect on investment through that channel is positive during the period when the output gap is growing more rapidly than it would have in the absence of the act and negative when it is growing less rapidly.

The act is also projected to expand investment through another change in economic activity: increasing the labor supply. Businesses must purchase additional capital for the new workers to use. However, because firms adjust their stocks of capital more slowly than they adjust the number of their employees, the response of investment to changes in the labor supply is gradual.

How the Increase in Investment Is Financed. The projected increase in U.S. investment would be financed by private domestic and foreign saving. In CBO's projections, the private domestic saving rate initially rises in response to the higher after-tax rates of return on U.S. investment resulting from the tax act. In addition, because the act boosts U.S. economic output, national income rises, and total private domestic saving grows. (However, some portion of the increased private domestic saving is used to finance increased federal borrowing, reducing the amount of saving available for private investment.) Earnings subject to deemed repatriation are expected to be used primarily to reduce corporate debt and thus to contribute only slightly to financing the increase in private investment (see Box B-1 on page 109). Meanwhile, increases in the rate of return on investment in the United States in relation to the rate in other countries will attract additional inflows of foreign saving. CBO estimates, therefore, that a substantial portion of the increase in private investment will be financed through those inflows.

Potential Labor Supply. In CBO's projections, the 2017 tax act also boosts potential output by increasing the potential supply of labor through increases in the potential labor force participation rate and in hours worked per worker. The potential labor force participation rate is higher by an annual average of 0.2 percentage points during the 2018–2028 period; the peak effect is 0.3 percentage points in 2023 and 2024.

Total potential hours worked, the result of increases in both the potential labor force participation rate and average weekly hours, rise by an annual average of nearly 0.6 percent. The peak increase in potential hours worked—more than 0.8 percent—occurs in 2023; by 2028, the effect has dwindled to about 0.1 percent. CBO estimates that more than half of the projected effects on the overall potential labor supply result from increases in the potential labor force participation rate. The remainder result from increases in average weekly hours.[21]

Those effects occur because the tax act changes incentives to work, particularly by lowering statutory individual income tax rates and by making other changes that lower marginal tax rates through 2025.[22] In the following years, however, most of the relevant provisions that lower tax rates expire, and marginal rates will be higher than under prior law, primarily because of the new measure of inflation that the act specifies for adjusting various parameters of the tax system. As a result, the act reduces incentives to work in those years. An exception is the act's elimination of the penalty for not having health insurance. That elimination is permanent, so its effect on the potential labor supply—slightly increasing it, in part because the size of the penalty increased as household income increased, causing it to act as a tax on income—is projected to be permanent.

CBO expects that it will take time for people to respond to provisions in the act. The agency's estimates therefore account for the time that it takes for people to understand the act's effects and to make adjustments in how much they work. For example, the estimates reflect the speed with which people are expected to increase their supply of labor in response to lower tax rates in the early years of the 11-year period and to decrease that supply after provisions expire later on.

21. Even if that estimate of the relative shares were different, the estimated change in total potential hours worked would not change, and therefore the estimate of potential output would not either.

22. For more information, see "Key Methods That CBO Used to Estimate the Macroeconomic Effects of the 2017 Tax Act" (supplemental material for *The Budget and Economic Outlook: 2018 to 2028*, April 2018), https://go.usa.gov/xQcZD.

Also, as with expectations about capital costs, CBO incorporated the projection that 20 percent of people anticipate the scheduled expiration of many of the bill's provisions in 2025. Those people respond by supplying more labor in the years when tax rates are scheduled to be temporarily low. They also begin reducing their supply of labor even before the rates are scheduled to increase, because such adjustment is costly. People who are projected to be surprised by the act's change in tax rates have more muted responses to the lower rates before 2025 and also a more muted response to the increase afterward. Taken together, over the 11-year period, CBO's projections of the average labor response to the tax act are not much affected by the agency's projections of people's different expectations.

Potential Productivity. Over the first few years of the 2018–2028 period, CBO projects, the 2017 tax act will not have much net effect on potential labor productivity, which is defined as real potential output per potential hour of labor (see Table B-2 on page 115). If the contribution of capital to output rises more than the contribution of potential hours of labor, potential labor productivity rises. At first, the act is projected to boost hours and capital by similar amounts, so the effect on potential labor productivity is small. But in later years, the contribution of capital to output has increased more than the contribution of potential hours, and by 2027, potential labor productivity is increased by 0.3 percent. Because the increase in the level of potential labor productivity is roughly unchanged between 2027 and 2028, it has little effect on potential output growth by the end of the 11-year period.

The act is also projected to raise potential output slightly by discouraging profit-shifting strategies that historically have suppressed measured total factor productivity. The act is expected to encourage firms to claim as domestic production the services of IP that were previously claimed as production abroad (see Box B-3 on page 124). In CBO's estimation, even though the firms made that claim, those services have been and continue to be generated by IP assets that are included in estimates of the domestic capital stock. As a result, the shift in the reported location of services associated with that IP will result in an increase in measured domestic output even though there is no corresponding increase in measured domestic inputs of labor or capital. Another way of looking at the shift is that more reported production is being generated by the same measured amount of labor and capital. That is the definition of an increase in total factor productivity. CBO has therefore adjusted its projections of potential total factor productivity by only a slight amount each year to account for the anticipated increase in output that is not matched by an increase in inputs.

Effects on Actual Output

In CBO's projections, the 2017 tax act boosts the demand for goods and services, accelerating the growth of actual output in relation to the growth of potential output over the first half of the 2018–2028 period. As a result, the output gap is 0.1 percentage point larger between 2018 and 2022 than it would have been otherwise, on average. Heightened overall demand is projected to increase consumer spending, increase employment further above CBO's estimate of its potential level, reduce net exports (that is, exports minus imports), and slightly increase inflation. However, because most provisions of the act that relate to individual income taxes expire and thus subtract from overall demand after 2025, the output gap is 0.1 percentage point smaller in 2026 and slightly smaller in 2027 than it would have been otherwise.

Consumer Spending. The effect of the act on real GDP over the next few years derives largely from its impact on consumer spending. The act reduces individual income tax revenues, increasing households' disposable income and thereby their spending. The changes to individual income taxes include temporary changes to tax rates, the standard deduction, the personal exemption, the child tax credit, itemized deductions, and the alternative minimum tax.

Higher- and lower-income households adjust their spending differently, on average, in response to such increases in disposable income. CBO accounted for those differences by assessing the distribution of tax cuts among income groups.[23] In CBO's assessment, lower-income households spend a larger share of the additional income in such cases than higher-income households do.

CBO's estimate of the overall effect on consumer spending also incorporates the agency's assessment of the act's

23. For more information, see "Key Methods That CBO Used to Estimate the Macroeconomic Effects of the 2017 Tax Act" (supplemental material for *The Budget and Economic Outlook: 2018 to 2028*, April 2018), https://go.usa.gov/xQcZD.

impact on equity and housing wealth. In CBO's projections, lower corporate taxes contribute to the boost in consumer spending by increasing the after-tax earnings of businesses, thereby raising the equity wealth of businesses' shareholders. Countering that effect are the act's changes related to the standard deduction for individuals and to the treatment of state and local taxes and mortgage interest deductions, which are expected to make house prices lower than they would be otherwise. CBO does not expect the provisions that govern repatriation of businesses' foreign earnings to affect consumer spending significantly (see Box B-1 on page 109).

Furthermore, CBO's estimate of the act's impact on consumer spending accounts for the elimination of the penalty for not having health insurance. That change means that people will be less likely to obtain coverage, decreasing subsidies and affecting consumer spending.

Analysis of the act's effect on consumer spending is complicated by the fact that most of the changes to individual income taxes are scheduled to end after 2025. What people expect about expirations matters; a change in disposable income that they consider transitory is likely to affect their spending less than one that they expect to last longer. In CBO's projections, about 80 percent of consumer spending is undertaken by people who believe that the individual income tax cuts will be extended beyond 2025, and the remainder is undertaken by people who believe that they will end as scheduled. (Those specifications are analogous to what CBO used for expectations of fiscal policies affecting decisions to work and invest.) But CBO's estimate of the overall change in consumer spending in the next few years would not change very much if the agency used different specifications, because the expectations in this case relate to relatively distant events.

In later years, the end of most provisions related to individual income taxes slows the growth of consumer spending. In CBO's projections, those changes subtract from disposable income and overall demand in 2026 and 2027.

Net Exports. In the near term, the act is projected to boost real imports, reduce real exports, and therefore lower real net exports. In CBO's projections, imports rise in the near term because the act raises the domestic demand for goods and services. For example, the capital investment stimulated by the act will raise demand for imported capital goods (such as computers and machine tools) and for imported materials (such as steel and aluminum). Furthermore, when the domestic economy is operating above its potential, as it is in CBO's projections, additional increases to production are costly and difficult, making the propensity to import goods and services particularly strong. And higher domestic demand can push exports down as firms concentrate on satisfying that demand.

In addition, CBO expects the act to moderately increase the exchange value of the dollar in 2018 (see Table B-2 on page 115).[24] Increased demand for U.S. assets, which results mainly from the increase in the rate of return on those assets, strengthens the dollar in CBO's projections. That stronger dollar causes export prices to rise and import prices to decline. Consequently, real exports decrease, real imports increase, and real net exports fall.

CBO expects the act's initial effects on real net exports to begin to dissipate after 2019. One reason is that the act's effect on the exchange value of the dollar is projected to gradually decline after 2020. In addition, the expiration of the cuts in individual income taxes dampens consumer spending and thus imports. By 2026, CBO expects the act's effect on real net exports to disappear.

The Labor Market. Over the next few years, the wider output gap, and the resulting increase in demand for labor and upward pressure on wages, are projected to raise employment and hours worked further above CBO's estimate of their potential levels. The agency expects the tax act to initially lower the unemployment rate by a small amount, slightly widening the gap between that rate and the natural rate of unemployment over the 2018–2022 period. (The natural rate of unemployment is the rate of unemployment that results from all sources except fluctuations in overall demand.) The unemployment rate is projected to be, on average, 0.1 percentage point lower—and the labor force participation rate and total hours worked to be, respectively, 0.2 percentage points and 0.7 percent higher—than they would have been otherwise between 2018 and 2022.

24. 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.

Box B-3.

The Effects of Profit Shifting on Economic Statistics

The profit-shifting strategies used by multinational corporations (MNCs) affect many economic indicators. All of the strategies distort data about U.S. taxable income by inflating reported foreign income while reducing reported domestic income. But the strategies alter other statistics in different ways.

Although the 2017 tax act includes a number of provisions that discourage profit shifting, it may encourage some profit shifting by exempting foreign dividends from U.S. taxation. On net, the Congressional Budget Office projects, the changes in tax law will reduce profit shifting by roughly $65 billion per year, on average, over the next 11 years. Most of that projected reduction can be attributed to less use of the debt allocation and intellectual property (IP) transfer strategies discussed below.[1]

Locating MNCs' Debt in High-Tax Countries. By allocating a greater share of debt, and the associated deduction for interest payments, to high-tax countries, an MNC can reduce the amount of taxable income reported in those high-tax countries.[2] In CBO's projections, the reduction in profit shifting through decisions about debt location accounts for about half of the $65 billion total reduction in profit shifting resulting from the tax act.

When a U.S. affiliate of an MNC borrows from a foreign bank on behalf of the entire MNC (thus allocating debt to the United States), that loan shows up in U.S. international investment position accounts as an increase in foreign-owned U.S. assets. The result is a reduction in the United States' net international investment position.

Locating debt in the United States can alter net international lending—which is national saving minus domestic investment—if that debt is borrowed from foreign investors. Net international lending is also equal to the sum of net international income (which is the difference between the income earned by U.S. residents from foreign sources and the income earned by foreign individuals from U.S. sources) and net exports (which are exports minus imports). The reason that locating debt in the United States affects net international lending is that the reduction in the U.S. net international investment position leads to a reduction in net international income. Because there is no corresponding change in net exports, net international lending declines, along with gross national product. But because reported production is unaffected, gross domestic product (GDP) is unchanged.

The act's reduction in the U.S. corporate tax rate, combined with the new rules governing the deduction of interest, will reduce some use of this strategy. Before the act was enacted, a relatively high statutory tax rate made the United States an attractive location for debt. But now, because the United States is unlikely to continue to be the highest-taxed jurisdiction for many MNCs, some will move their debt to affiliates in countries with a higher corporate tax rate.

Transferring Intellectual Property. When an MNC moves its IP from an affiliate in a high-tax country to an affiliate in a low-tax country, that MNC can report less of its taxable income in the high-tax country and more in the low-tax country. CBO projects that the tax act's reductions in profit shifting through the transfer of IP will account for roughly one-third of the total projected reduction in profit shifting over the next 11 years.

Profit shifting through the international transfer of IP distorts real U.S. product statistics (that is, statistics adjusted to remove the effects of inflation) and real GDP. Royalties and other revenues derived from IP are counted in the national income and product accounts—official U.S. accounts that track the amount and composition of GDP, the prices of its components, and the way in which the costs of production are distributed as income—as real production of IP services. When IP assets are transferred from the United States to another country, the real services derived from those assets are attributed not to the United States but to the other country, so real net exports and real GDP are reduced. However, unlike locating debt in high-tax countries, transferring IP has no effect on net international lending, because any reductions to net exports associated with IP transfers are matched by an additional dollar of net international income.

1. MNCs use many strategies to shift profits to low-tax countries. For purposes of simplification, CBO has categorized all of them into the three types described here.

2. The same incentive exists for a variety of other costs that benefit an MNC, such as costs for headquarters. CBO focuses on debt both because it is the mechanism that this strategy usually employs and because the choice of where to locate debt has economic effects that are similar to those resulting from the use of the other mechanisms.

Continued

Box B-3. Continued

The Effects of Profit Shifting on Economic Statistics

CBO estimates that the reduction in the U.S. corporate tax rate, combined with the new rules governing the treatment of income from high-return investments (much of which is derived from IP), will reduce corporations' incentives to shift profits by transferring IP outside the United States. However, that effect is expected to be modest. IP is especially easy to relocate, so MNCs are typically able to locate it in whichever affiliates face the lowest tax rate on the income that it generates. Because tax havens outside the United States will continue to have relatively low tax rates, CBO projects that most IP currently located there will remain there. For newly created or future IP, the changes resulting from the tax act and the fixed costs of transferring IP to foreign affiliates will probably deter some small amount of profit shifting.

Setting Transfer Prices. MNCs can reduce their U.S. taxes by strategically setting transfer prices—the prices that affiliates of the same MNC charge each other across national boundaries.[3] To minimize profits earned in high-tax countries, MNCs can systematically overstate the prices that affiliates in high-tax countries pay for imports from foreign affiliates and understate the prices that affiliates in high-tax countries charge for exports to foreign affiliates.[4] CBO projects that reduced profit shifting through that strategy will account for only a small portion of the projected $65 billion annual reduction in profit shifting.

That strategy tends to distort reported economic statistics about trade prices: In CBO's view, the official U.S. export price indexes are lower than they would have been otherwise, and import price indexes are higher. Those inaccuracies distort overall U.S. price indexes that use trade prices as an input, such as the GDP deflator.

By distorting economic statistics about trade prices, the strategic setting of transfer prices also affects the national income and product accounts. The strategy leads nominal exports to be understated and nominal imports to be overstated, thereby reducing official measures of net exports and nominal GDP.

Strategically setting transfer prices alters the *composition* of net international lending. But like transfers of IP, the strategy has no effect on the total *amount* of net international lending, because each dollar that the strategy removes from net exports is offset by a dollar of foreign profit added to net international income. And because transfer prices do not affect total national income, gross national product (the sum of domestic income and net international income) is likewise unchanged.

3. Technically, transferring IP to affiliates in low-tax countries can also be categorized as strategically setting transfer prices. However, profit shifting through IP transfers and profit shifting through setting the transfer prices of tangible assets distort statistics in different ways.

4. MNCs are required to set transfer prices similar to the prices that would be paid for goods and services in market-based transactions. However, for some traded goods and services, it is difficult to find comparable market prices. For those transactions, MNCs have more leeway to strategically set transfer prices to minimize tax liability.

And nonfarm employment is projected to be, on average, about 0.6 percent higher over the 11-year period, representing about 0.9 million jobs (see Table B-2 on page 115).*

Inflation. CBO expects the 2017 tax act to have a positive but small effect on consumer price inflation over the next few years. That expectation results from CBO's estimates that the act will only slightly widen the gap between the actual and natural rates of unemployment and that the link between general price inflation and labor market conditions has been weak in recent years. In addition, the act is expected to slow growth in the prices of imported goods, slightly dampening the inflationary pressure from labor markets, particularly in the near term. Finally, expectations of inflation, which have been low and relatively stable since the late 1990s, are expected to remain close to the Federal Reserve's long-run goal in the coming years, as consumers and businesses expect the central bank to successfully adjust monetary policy to prevent inflation from deviating excessively from its target.[25]

As a result, core PCE inflation—that is, inflation for personal consumption expenditures, excluding prices for

25. For more information, see "Key Methods That CBO Used to Estimate the Macroeconomic Effects of the 2017 Tax Act" (supplemental material for *The Budget and Economic Outlook: 2018 to 2028*, April 2018), https://go.usa.gov/xQcZD.

[*Values corrected on April 17, 2018]

food and energy—is expected to be very slightly higher each year between 2018 and 2025. The total PCE price index is expected to rise slightly more quickly than that, as is the consumer price index; both are projected to be higher by 0.1 percent through 2023, on average, than they would have been in the absence of the act and to be higher by 0.2 percent in 2028.

Effects on Interest Rates

In response to the projected widening of the output gap and the greater inflationary pressure, CBO expects the Federal Reserve to raise short-term interest rates more rapidly over the next few years than it would have if the 2017 tax act had not been enacted. As a result, the federal funds rate (the interest rate that financial institutions charge each other for overnight loans of their monetary reserves) is projected to be 0.5 percentage points higher in 2022 than it otherwise would have been. The faster increase in interest rates is expected, in turn, to restrain the boost in output by dampening consumption and investment spending, thereby limiting the increase in demand for labor and keeping inflation close to the central bank's long-term goal. CBO's projections include a slight and temporary reduction in short-term interest rates by the Federal Reserve in response to the end of most of the act's individual income tax provisions after 2025, but there is no net effect on short-term rates by the end of the 11-year period.

The effects on long-term interest rates follow a similar pattern. However, because long-term rates are partly determined by the average of expected short-term rates, the effect on long-term rates is larger initially but more muted overall.

CBO's projections of interest rates over the 11-year period are also based on the agency's projections of a number of factors that affect the interest rates of U.S. Treasury securities over the longer run. On net, those factors are projected to result in rates of longer-term Treasury notes that are somewhat higher as a result of the tax act, even as rates of shorter-term Treasury securities are roughly unaffected. In CBO's projections, factors that increase the interest rates of Treasury securities over the period include the increase in federal borrowing and the increase in the after-tax rate of return on capital. Additional factors that increase the rates of longer-term Treasury securities include the reduction in companies' holdings of such securities following deemed repatriation of foreign holdings and an increase in the premium incorporated in the rates of such securities. The tax act increases that premium in CBO's projections because with greater upward pressure on inflation, longer-term Treasury securities become less valuable as a hedge against unexpectedly low inflation. The main factor that decreases the interest rates of Treasury securities over the period is the increase in net foreign investment.[26]

Effects on Income

The economic effects of the tax act include not just greater GDP but also higher overall income. Domestic income that derives from the production of goods and services—for labor, employees' compensation and their wages and salaries; for businesses, corporate profits and proprietors' income—is projected to rise with GDP. Flows of net international income also change, reflecting the tax act's effects. And businesses see changes in income in addition to those associated with production, which will affect taxable business income.

Employees' Compensation and Wages and Salaries. Employees' total compensation in the economy behaves in a pattern similar to that projected for total GDP. Over the 2018–2028 period, the act is projected to increase such compensation by an annual average of 0.9 percent; the peak effect is 1.0 percent in 2023. Average total wages and salaries follow a similar pattern—gaining 0.9 percent, on average, and peaking at an increase of about 1.1 percent in 2023.

Corporate Profits and Proprietors' Income. In CBO's projections, domestic corporate profits increase over the 11-year period, becoming 7.1 percent larger in 2028 than they would have been without the 2017 tax act. The increase occurs partly because of greater total GDP and partly because of lower net interest payments by corporations. That second effect happens for two reasons. First, corporations are expected to reduce their debt and interest payments in response to the act's less favorable treatment of interest costs. Second, corporations are estimated to have held debt in the United States to finance domestic investment while they had substantial holdings of foreign profits. As those profits are repatriated, the corporations are expected to reduce their debt and interest payments (see Box B-1 on page 109).

26. For more information, see "Key Methods That CBO Used to Estimate the Macroeconomic Effects of the 2017 Tax Act" (supplemental material for *The Budget and Economic Outlook: 2018 to 2028*, April 2018), https://go.usa.gov/xQcZD.

In addition, the change in the deductibility of net operating losses alters taxable corporate income. The act limits the deductibility of those losses, so corporate income rises. But they may be deducted from future income, so the act largely alters when taxable corporate income will be reported rather than permanently increasing it.

In CBO's projections, nonfarm proprietors' income rises by 1.2 percent over the 2018–2022 period before falling back to a 0.3 percent gain by 2028, roughly following the pattern projected for overall economic activity. Over the 2018–2028 period, the increase averages 0.9 percent.

Profit Shifting and Foreign Income. The act includes changes to the treatment of international income that will affect how multinational corporations shift their profits among affiliates in order to lower their tax liabilities. Three of the most widely used profit-shifting strategies are locating debt in affiliates in countries with high corporate income tax rates, transferring intellectual property, and strategically setting transfer prices (the prices that affiliates charge each other across national boundaries; see Box B-3 on page 124). Such profit shifting distorts the national income and product accounts—official U.S. accounts that track the amount and composition of GDP, the prices of its components, and the way in which the costs of production are distributed as income. Profit shifting also lowers taxable corporate income in the United States—by roughly $300 billion each year, recent estimates from the economic literature suggest.[27] CBO attributes most of that amount to decisions about the location of debt and transfers of IP.

In CBO's projections, the provisions of the tax act reduce profit shifting and the resulting statistical distortions, on net. That change in the reported location of profits is expected to result in an increase in taxable income even though there is no direct increase in measured income from domestic inputs of labor or capital. All told, the reduction in profit shifting raises income reported in the United States by roughly $65 billion each year, on average, in CBO's projections over the 11-year period. Changes in the location of debt and transfers of IP account for most of that reduction in total profit shifting.

Effects on Gross National Product. The 2017 tax act is expected to affect GDP and GNP differently. It raises the projected level of real GDP by an annual average of 0.7 percent over the 11-year period, an increase of about $710 per person (in 2018 dollars). Real GNP, by contrast, increases by 0.4 percent, on average, or about $470 per person.[28] The act is expected to increase GNP less than it increases GDP because it shrinks U.S. net international income (see Table B-2 on page 115).

There are two reasons for that decline in net income flows to the United States. First, the increase in foreign investment in the United States that is associated with greater private investment and increased government borrowing generates a fall in net international lending, which is national saving minus domestic investment.[29] In CBO's projections, the act decreases net international lending over the next 11 years by an average of 0.4 percent of GDP (see Figure B-5). The additional income generated by the foreign investment in the United States accrues to foreign investors.

The second reason is that the act alters the rates of return earned on international assets. As the after-tax profitability of U.S. investments rises because of the tax act, foreign investors earn a higher return on their U.S. assets. In addition, the reported rate of return that U.S. investments earn abroad will decline after 2023 as the act

27. That estimate was informed by CBO's calculations and by Fatih Guvenen and others, *Offshore Profit Shifting and Domestic Productivity Measurement*, Working Paper 23324 (National Bureau of Economic Research, April 2017), www.nber.org/papers/w23324; Kimberly A. Clausing, "The Effect of Profit Shifting on the Corporate Tax Base in the United States and Beyond," *National Tax Journal*, vol. 69, no. 4 (December 2016), pp. 905–934, http://dx.doi.org/10.17310/ntj.2016.4.09; Kimberly A. Clausing, *The Effect of Profit Shifting on the Corporate Tax Base in the United States and Beyond* (available at SSRN, November 2015, updated June 2016), pp. 905–934, http://dx.doi.org/10.2139/ssrn.2685442; and Gabriel Zucman, "Taxing Across Borders: Tracking Personal Wealth and Corporate Profits," *Journal of Economic Perspectives*, vol. 28, no. 4 (Fall 2014), pp. 121–148, http://dx.doi.org/10.1257/jep.28.4.121. For a discussion of profit shifting and taxable income, see Congressional Budget Office, *An Analysis of Corporate Inversions* (September 2017), www.cbo.gov/publication/53093.

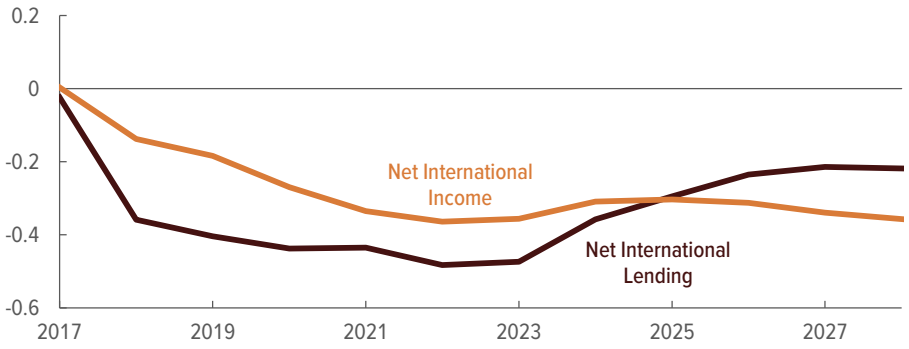
28. The peak effects for the per-person amounts occur in 2024, at $900 for real GDP per person and $640 for real GNP per person; by 2028 the amounts are $550 for real GDP per person and $250 for real GNP per person.

29. In the national income and product accounts, net international lending is called "net lending to the rest of the world." Over most of the past 40 years, it has been negative, indicating that the United States is a net borrower. CBO projects that net lending will remain negative from 2018 through 2028.

Figure B-5.

Effects of the 2017 Tax Act on Net Foreign Transactions

Percentage of Gross Domestic Product



Growth in the federal deficit and in investment increase borrowing from foreigners, which reduces net international income.

Source: Congressional Budget Office.

Net international income is the difference between the income earned by U.S. residents from foreign sources and the income earned by foreign individuals from U.S. sources. Net international lending is a measure that summarizes a country's transactions with the rest of the world; it consists of net exports, net international income, and net transfers.

discourages U.S. companies from shifting their taxable income from the United States to affiliates in foreign countries. By altering the relative rates of return on international assets through those changes, the act reduces net international income and shrinks the difference between GDP and GNP.

How the Act Affects the Budget Outlook

The 2017 tax act had significant effects on CBO's budgetary projections for the 2018–2028 period. The agency took two steps to incorporate those effects into the projections. First, CBO estimated the act's direct effects, which are the effects on the budget that do not take into account any changes to the aggregate economy. For example, this step incorporated the ways in which the act's reduction in tax rates will diminish federal revenues through its effects on taxpayers' behavior. Second, CBO considered macroeconomic feedback—that is, the ways in which the act will affect the budget by changing the overall economy (such as by increasing wages, profits, and interest rates). Incorporating both kinds of effects boosts the projected primary deficit by a cumulative $1.272 trillion over the course of the 11-year period. After debt service too is incorporated, the projected deficit is higher by $1.854 trillion (see Table B-3).

Before incorporating macroeconomic feedback, CBO estimates that the tax act would increase the primary deficit by a cumulative $1.843 trillion over the 11-year period—increasing it through 2026 and decreasing it thereafter.[30] Those deficit increases would increase debt-service costs in every year and by growing amounts that total $471 billion over the period.

Those increases would be partially offset by macroeconomic feedback. In CBO's projections, macroeconomic feedback reduces the primary deficit by a cumulative $571 billion over the 2018–2028 period. That reduction mainly results from the act's boost to taxable income, which increases revenues. The effects on the primary deficit, like those on taxable income, are largest in the early years, peaking in 2019 and then getting smaller. Macroeconomic feedback also raises debt-service costs through two partly offsetting effects: The reduction in the primary deficit lowers federal borrowing and thus debt-service costs, but the act also leads to higher interest rates and thus increases the cost of federal borrowing.

30. Those direct effects on the primary deficit primarily reflect the cost estimate produced by the staff of the Joint Committee on Taxation. See Joint Committee on Taxation, *Estimated Budget Effects of the Conference Agreement for H.R. 1, the "Tax Cuts And Jobs Act,"* JCX-67-17 (December 18, 2017), https://go.usa.gov/xQczr (PDF, 37 KB). However, in contrast to the cost estimate, the estimates reported in this appendix extend through 2028 and include debt-service costs. The direct effects shown in Table B-3 also reflect a number of technical revisions. The sources of those revisions include information about the implementation of the tax act learned in recent months.

Table B-3.

Contributions of the 2017 Tax Act to CBO's Baseline Budget Projections

Billions of Dollars

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total 2018–2022	Total 2018–2028
Effects Without Macroeconomic Feedback[a]													
Effects on the Primary Deficit[b]	194	281	307	304	263	218	183	164	36	-60	-46	1,349	1,843
Effects on Debt-Service Costs	3	8	17	29	39	48	55	63	68	70	71	97	471
Effects on the Deficit[c]	**197**	**289**	**325**	**333**	**302**	**266**	**238**	**227**	**104**	**10**	**25**	**1,445**	**2,314**
Effects of Macroeconomic Feedback[a]													
Effects on the Primary Deficit[b]	-33	-67	-65	-58	-55	-49	-47	-49	-48	-50	-51	-278	-571
Effects on Debt-Service Costs	0	5	12	18	23	27	23	13	3	-4	-11	59	110
Effects on the Deficit[c]	**-33**	**-61**	**-53**	**-41**	**-31**	**-22**	**-24**	**-36**	**-44**	**-54**	**-62**	**-219**	**-461**
Total Contributions to Baseline Projections													
Effects on the Primary Deficit[b]	160	214	243	246	208	169	136	115	-12	-110	-97	1,071	1,272
Effects on Debt-Service Costs	3	14	29	47	63	74	78	76	71	66	60	156	582
Effects on the Deficit[c]	**164**	**228**	**272**	**292**	**271**	**243**	**214**	**191**	**59**	**-43**	**-37**	**1,226**	**1,854**

Source: Congressional Budget Office.

a. Macroeconomic feedback refers to the ways in which the act would affect the budget by changing the economy.

b. The primary deficit is the deficit excluding debt-service costs.

c. Positive numbers indicate an increase in the deficit; negative numbers indicate a decrease in the deficit.

On net, macroeconomic feedback from the act raises projected debt-service costs by $110 billion over the next 11 years.

Uncertainty Surrounding CBO's Estimates

CBO's estimates of the economic and budgetary effects of the 2017 tax act are subject to significant uncertainty. The agency is particularly uncertain about how the act will be implemented; what policies state governments and foreign countries might change in response to the act; what expectations people have about future fiscal policy; how businesses will rearrange their finances in the face of the act; how households, businesses, and foreign investors will respond to changes in incentives to work, save, and invest in the United States; and how changes in economic activity will affect labor and capital income.

Implementation

How the Treasury ultimately implements the tax act will partly determine how businesses and households respond to the various provisions. For example, CBO's projections of the new deduction for owners of pass-through businesses incorporate the expectation that the Treasury will be able to enforce the limits that the act places on the types of income that are eligible for the deduction.

States' and Foreign Countries' Responses

If state governments and foreign countries change their own fiscal policies in unanticipated ways in response to the tax act, those changes will have implications for the act's economic and budgetary effects. For example, many state governments could choose not to incorporate some of the act's provisions—such as those involving personal deductions and bonus depreciation—in their own tax systems. That step would significantly affect how households and firms chose to adapt to the changes. Foreign governments might reduce their corporate tax rates or adjust their tax rules in unanticipated ways in response to the changes in U.S. tax law. In particular, if foreign governments significantly lowered their tax rates on corporate income, that would dampen net inflows of foreign capital. In addition, foreign governments are expected to challenge several of the new tax rules with the World Trade Organization. If those challenges are broadly successful, the United States could be subject to retaliatory tariffs unless the tax provisions were changed.

People's Expectations

In CBO's projections, 20 percent of households and businesses expect fiscal policy to change over the 2018–2028 period as the tax act specifies; others are surprised by those changes. Such expectations can have important effects on how households and businesses respond to the act. For example, if more people expect the reduction in individual income tax rates to be temporary, as the act specifies, more may shift their supply of labor from later years into the years before rates are scheduled to go up. If that happened, the timing of CBO's projections would change, but the average effect over the 11-year period would not be strongly affected.

Profit Shifting by Multinational Corporations

The effect of the tax act's international provisions on profit shifting by multinational corporations is particularly uncertain. One source of uncertainty is the provisions' complexity, which makes it difficult to predict how and when corporations might respond to them. CBO is also uncertain about how foreign governments might change their tax rules in response to the act. For instance, those governments might lower their own corporate income tax rates to better compete for international investment; that change would dampen the act's expected effect on profit shifting. And CBO is uncertain about whether the provisions will be deemed compliant with international rules.

Decisions to Work, Save, and Invest

Many economic effects of the new legislation stem from its effects on individuals' decisions to work and save and on businesses' decisions to invest. CBO's estimates of those effects reflect the agency's assessment of how changes in individual and corporate tax rates affect the supply of labor and the user cost of capital, as well as its assessment of how changes in individuals' disposable income and wealth affect consumer spending. CBO tries to produce assessments that lie in the middle of the distribution of possible outcomes. But if fewer people than CBO expects respond to lower marginal tax rates by participating in the labor force, for example, the boost in potential GDP will likewise be smaller than CBO projects. Another example involves the expected response of international investors to the reduction in U.S. corporate tax rates. If they increase investment more than CBO expects, capital stock will increase more and the effects on actual and potential output will be larger.

Some effects may differ from CBO's assessments because those effects may depend on economic conditions in a way that the agency has not incorporated. For example, CBO has not accounted for the extent to which the act's limits on the deductibility of net operating losses could discourage investment more during periods of economic weakness than in periods of economic strength. (The effect of those limits is uncertain for other reasons as well. For example, they could dampen the positive incentives to invest that result from other provisions in the tax act, a possibility that CBO has not accounted for in its projections.)

Changes in Economic Activity

CBO projects that the tax act will increase labor income and capital income, boosting demand for goods and services over the next several years. But demand may respond more or less to those changes in income than CBO estimates. Moreover, the changes in economic activity resulting from the act may have smaller or larger effects on businesses than CBO estimates. For example, if businesses increase investment more than expected in response to increases in economic activity, labor productivity and wages will rise faster than they do in CBO's projections.

APPENDIX

C

Trust Funds

Overview

The federal government uses several accounting mechanisms to link earmarked receipts (that is, money designated for a specific purpose) with corresponding expenditures. Those mechanisms include trust funds (such as Social Security's trust funds), special funds (such as the fund that the Department of Defense uses to finance its health care program for military retirees), and revolving funds (such as the Federal Employees Group Life Insurance fund). When the receipts designated for those funds exceed the amounts needed for expenditures, the funds are credited with nonmarketable debt instruments known as Government Account Series (GAS) securities, which are issued by the Treasury. At the end of fiscal year 2017, there was $5.5 trillion in such securities outstanding, 90 percent of which was held by trust funds.[1]

The federal budget has numerous trust funds, although most of the money credited to such funds goes to fewer than a dozen of them. By far the largest trust funds are Social Security's Old-Age and Survivors Insurance (OASI) Trust Fund, the funds dedicated to the government's retirement programs for its military and civilian personnel, and Medicare's Hospital Insurance (HI) Trust Fund (see Table C-1).

How Trust Funds Work

Ordinarily, when a trust fund receives cash that is not needed immediately to pay benefits or cover other expenses financed from the fund, the Treasury issues GAS securities in that amount to the fund and then uses the extra income to reduce the amount of new federal borrowing that is necessary to finance governmental activities. In other words, the government borrows less from the public than it would without that extra net income. The reverse happens when revenues for a trust fund fall short of expenses.

The balance of a trust fund at any given time is a measure of the historical relationship between the related program's receipts and expenditures. That balance (in the form of GAS securities) is an asset for the individual program, such as Social Security, but a liability for the rest of the government. The resources to redeem a trust fund's securities—and thereby pay for benefits or other spending—in some future year must be generated through taxes, income from other governmental sources, or borrowing from the public in that year. Trust funds have an important legal meaning in that their balances are a measure of the amounts that the government has the legal authority to spend for certain purposes under current law, but they have little relevance in an economic or budgetary sense unless the limits of that authority are reached.[2]

To assess how all federal activities, taken together, affect the economy and financial markets, it is useful to include the cash receipts and expenditures of trust funds in the budget totals, along with the receipts and expenditures of other federal programs. Therefore, the Congressional Budget Office, the Office of Management and Budget, and other fiscal analysts generally focus on the total deficit in that unified budget, which includes the transactions of trust funds.

1. Debt issued in the form of GAS securities is included in a measure of federal debt called gross debt. Because such debt is intragovernmental in nature, however, it is not included in the measure of debt held by the public. (For a discussion of different measures of federal debt, see Chapter 4.)

2. For example, if the Disability Insurance Trust Fund's balance declined to zero and current revenues were insufficient to cover benefits specified in law, the Social Security Administration would no longer be permitted to pay full benefits when they were due. For additional discussion, see William R. Morton, *Social Security: What Would Happen If the Trust Funds Ran Out?* Report for Congress RL33514 (Congressional Research Service, September 12, 2017).

Table C-1.

Trust Fund Balances Projected in CBO's Baseline

Billions of Dollars

	Actual, 2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Social Security												
Old-Age and Survivors Insurance	2,820	2,802	2,789	2,764	2,714	2,634	2,521	2,375	2,191	1,972	1,711	1,398
Disability Insurance[a]	70	94	91	77	62	46	27	6	0	0	0	0
Subtotal	2,890	2,895	2,880	2,841	2,776	2,680	2,549	2,381	2,191	1,972	1,711	1,398
Medicare												
Hospital Insurance (Part A)[a]	198	202	198	190	174	136	98	63	3	0	0	0
Supplementary Medical Insurance (Part B)	71	92	89	81	83	75	79	100	106	118	127	116
Subtotal	268	294	286	270	257	211	178	164	109	118	127	116
Military Retirement	661	737	822	911	1,006	1,100	1,206	1,323	1,439	1,561	1,578	1,589
Civilian Retirement[b]	925	938	951	962	974	985	995	1,005	1,015	1,025	1,034	1,043
Unemployment Insurance	61	70	83	89	87	81	77	74	74	74	73	72
Highway and Mass Transit[a]	52	44	31	16	1	0	0	0	0	0	0	0
Airport and Airway	13	14	16	17	18	20	21	23	25	27	30	33
Railroad Retirement (Treasury holdings)[c]	2	2	2	2	2	2	2	2	2	2	2	2
Other[d]	110	115	118	123	125	127	129	132	135	140	144	149
Total Trust Fund Balance	**4,983**	**5,110**	**5,189**	**5,233**	**5,246**	**5,206**	**5,157**	**5,104**	**4,990**	**4,918**	**4,700**	**4,402**
Memorandum:												
Railroad Retirement (Non-Treasury holdings)[c]	25	25	24	23	22	21	21	20	20	19	19	19

Source: Congressional Budget Office.

These balances are for the end of the fiscal year and include securities invested in Treasury holdings.

a. In keeping with the rules in section 257 of the Balanced Budget and Emergency Deficit Control Act of 1985, CBO's baseline incorporates the assumption that scheduled payments will continue to be made in full after the trust fund has been exhausted, although there is no legal authority to make such payments. Because how those payments were continued would depend on future legislation, CBO shows zero rather than a cumulative negative balance in the trust fund after the exhaustion date.

b. Includes Civil Service Retirement, Foreign Service Retirement, and several smaller retirement trust funds.

c. The Railroad Retirement and Survivors' Improvement Act of 2001 established the National Railroad Retirement Investment Trust, which is allowed to invest in non-Treasury securities such as stocks and corporate bonds.

d. Consists primarily of trust funds for federal employees' health and life insurance, Superfund, and various insurance programs for veterans.

Projected Trust Fund Balances and Effects on the Budget

According to CBO's current baseline projections, the balances held by federal trust funds will increase by $123 billion in fiscal year 2018.[3] Under current law, income credited to the trust funds is also projected to exceed outlays in each year from 2019 through 2021. However, each year thereafter, spending from the trust funds is projected to exceed income by an increasing amount. All told, CBO projects a cumulative net trust fund deficit of $1.2 trillion over the 2019–2028 period (see Table C-2).[4]

3. Some spending from trust funds is governed by annual appropriations (for example, for administrative activities); most notably, outlays from the Highway Trust Fund are primarily controlled by limitations on obligations that are set in appropriation acts. When CBO produced its estimates of trust fund spending and balances, most federal agencies were operating under a continuing resolution that held appropriations for 2018 at 2017 levels. For its baseline projections, CBO incorporated the assumption that future funding will be equal to those amounts, adjusted annually for inflation. The Consolidated Appropriations Act, 2018 (Public Law 115-141), was enacted on March 23, 2018, but there was insufficient time to incorporate the final appropriations into the estimates of trust fund balances.

4. The estimated decline in trust fund balances is substantially larger than in previous years: As the 10-year baseline period advances, years showing a surplus (in the near term) are replaced with years showing a deficit (at the end of the decade).

Table C-2.

Trust Fund Deficits or Surpluses Projected in CBO's Baseline

Billions of Dollars

	Actual, 2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total 2019–2023	Total 2019–2028
Social Security														
Old-Age and Survivors Insurance	24	-19	-13	-25	-51	-79	-113	-146	-184	-219	-261	-313	-280	-1,404
Disability Insurance[a]	24	24	-3	-13	-15	-16	-19	-21	-23	-26	-28	-27	-67	-192
Subtotal	47	6	-16	-38	-66	-96	-131	-168	-208	-245	-289	-340	-347	-1,596
Medicare														
Hospital Insurance (Part A)[a]	6	5	-5	-8	-15	-38	-38	-35	-60	-71	-78	-114	-104	-461
Supplementary Medical Insurance (Part B)	7	21	-3	-8	3	-8	4	21	6	12	9	-11	-12	24
Subtotal	13	26	-8	-16	-13	-46	-33	-14	-54	-59	-68	-125	-116	-437
Military Retirement	70	76	85	89	95	95	105	117	116	123	17	11	469	852
Civilian Retirement[b]	18	13	13	12	11	11	11	10	10	10	9	9	57	105
Unemployment Insurance	7	10	13	6	-2	-6	-4	-2	-1	*	-1	-1	7	2
Highway and Mass Transit[a]	-12	-9	-13	-14	-16	-17	-19	-20	-21	-23	-24	-25	-79	-192
Airport and Airway	*	1	2	1	1	1	2	2	2	2	3	3	7	18
Other[c]	3	2	2	2	3	4	4	5	5	5	5	5	15	39
Total Trust Fund Deficit (-) or Surplus	**146**	**123**	**78**	**42**	**13**	**-55**	**-66**	**-70**	**-152**	**-188**	**-349**	**-463**	**12**	**-1,208**
Intragovernmental Transfers to Trust Funds[d]	729	752	733	761	810	855	907	951	961	1,036	983	1,031	4,066	9,028
Net Budgetary Impact of Trust Fund Programs	**-583**	**-629**	**-655**	**-719**	**-797**	**-909**	**-972**	**-1,021**	**-1,113**	**-1,223**	**-1,331**	**-1,494**	**-4,054**	**-10,236**

Source: Congressional Budget Office.

Negative numbers indicate that the trust fund transactions add to total budget deficits.

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

a. CBO projects that the balance of this trust fund will be exhausted during the 2018–2028 period. However, in keeping with the rules in section 257 of the Balanced Budget and Emergency Deficit Control Act of 1985, CBO's baseline incorporates the assumption that scheduled payments will continue to be made in full after the trust fund has been exhausted, although there is no legal authority to make such payments. How those payments were continued would depend on future legislation.

b. Includes Civil Service Retirement, Foreign Service Retirement, and several smaller retirement trust funds.

c. Consists primarily of trust funds for railroad workers' retirement, federal employees' health and life insurance, Superfund, and various insurance programs for veterans.

d. Includes interest paid to trust funds, payments from the Treasury's general fund to the Supplementary Medical Insurance Trust Fund, the government's share of payments for federal employees' retirement, lump-sum payments to the Civil Service and Military Retirement Trust Funds, taxes on Social Security benefits, and smaller miscellaneous payments.

Some of the trust funds' income is in the form of intragovernmental transfers. Such transfers include interest credited to the trust funds, payments from general funds to cover most of the costs of payments for outpatient medical services (including payments to physicians) and prescription drugs under Parts B and D of Medicare, and the government's share of payments for federal employees' retirement programs. Such transfers shift resources from one category of the budget to another, but they do not directly change the total deficit or the government's borrowing needs. Intragovernmental transfers are projected to total $752 billion in 2018 and to exceed $1.0 trillion in 2028. Excluding those transfers and counting only income from sources outside the government (such as payroll taxes and Medicare premiums), CBO estimates that the trust fund programs will add $629 billion to the federal deficit in 2018. They are projected to add to deficits throughout the 2019–2028 period, by amounts that grow from $655 billion in 2019 to $1.5 trillion in 2028.

Without legislative action to address shortfalls, balances in three trust funds are projected to be exhausted during that period: the Highway Trust Fund (in fiscal year

2022), Social Security's Disability Insurance (DI) Trust Fund (in fiscal year 2025), and Medicare's HI trust fund (in fiscal year 2026).

Social Security's Trust Funds

Social Security provides benefits to retired workers, their families, and some survivors of deceased workers through the OASI program; it also provides benefits to some people with disabilities and their families through the DI program. Those benefits are financed mainly through payroll taxes that are collected on workers' earnings at a rate of 12.4 percent—6.2 percent of which is paid by the worker and 6.2 percent by the employer. Since January 2000, 10.6 percentage points of the payroll tax have been credited to the OASI trust fund and 1.8 percentage points to the DI trust fund. The Bipartisan Budget Act of 2015 (Public Law 114-74) temporarily increased the share allocated to the DI trust fund to 2.37 percentage points for calendar years 2016 through 2018. In those years, 10.03 percentage points of the payroll tax have been credited to the OASI trust fund.

Old-Age and Survivors Insurance

The OASI trust fund, which held $2.8 trillion in GAS securities at the end of 2017, is by far the largest of all federal trust funds. CBO projects that the fund's annual income, excluding interest on those securities, will increase from $738 billion last year to $743 billion in 2018. Under current law, noninterest income received by the fund would increase over the remainder of the period, growing to $1.2 trillion by 2028, CBO estimates (see Table C-3).[5] Expenditures from the fund are projected to be $843 billion in 2018—exceeding noninterest income by $101 billion—and to grow faster than noninterest income each year over that period, rising to $1.6 trillion in 2028.

With expenditures growing by an average of about 6 percent a year and noninterest income (mostly from payroll taxes) increasing by an average of about 5 percent a year, the annual cash flows of the OASI program, excluding interest credited to the trust fund, would add to federal deficits in every year of the coming decade by amounts reaching $363 billion in 2028, CBO estimates. Even with interest receipts included, the OASI trust fund is projected to record deficits that will reach $313 billion in 2028. According to CBO's most recent long-term projections, the balance of the OASI trust fund will be exhausted in calendar year 2031.[6]

Disability Insurance

The DI trust fund is much smaller than the OASI fund; its balance at the end of 2017 was $70 billion. In CBO's current baseline, the annual income of the DI fund, excluding interest, declines from $169 billion in 2018 to $145 billion in 2019, when the temporary increase in the payroll tax allocation expires at the end of that calendar year. The fund's income is projected to grow gradually beginning in 2021 and to reach $193 billion in 2028 (see Table C-3). As with the OASI fund, annual expenditures from the DI fund are projected to increase steadily over the next decade, but at a slower rate—about 4 percent—rising from $147 billion in 2018 to $220 billion in 2028. Under current law, annual noninterest income credited to the DI fund will exceed expenditures in 2018 because of the payroll tax reallocation, but the DI trust fund is projected to add to the federal deficit each year thereafter, CBO estimates. Even with interest receipts included, the trust fund is projected to run an annual deficit starting in 2019 (see Figure C-1).

Under current law, the balance of the DI fund is expected to be exhausted in 2025.[7] If the outlays were limited thereafter to income credited to the trust fund, then during the remainder of fiscal year 2025 they would be 12 percent below the amounts scheduled under current law, CBO estimates.

Trust Funds for Federal Employees' Retirement Programs

After Social Security, the largest trust fund balances at the end of 2017 were held by the Military Retirement Trust Fund ($661 billion) and by various civilian

5. Although the federal government is an employer, it does not pay taxes. Instead, to cover the employer's share of the Social Security payroll tax for federal workers, it makes an intragovernmental transfer from the general fund of the Treasury to the OASI and DI trust funds. That transfer is included in the income line in Table C-3.

6. See Congressional Budget Office, *The 2017 Long-Term Budget Outlook* (March 2017), www.cbo.gov/publication/52480.

7. In *The 2017 Long-Term Budget Outlook*, CBO projected that the DI trust fund would be exhausted in 2023; see www.cbo.gov/publication/52480. Recent data have shown that DI caseloads are smaller than anticipated and tax revenues collected by the fund are greater than anticipated. Therefore, CBO has revised its projection of deficits in the fund, resulting in a later exhaustion date.

Table C-3.

Balances Projected in CBO's Baseline for the OASI, DI, and HI Trust Funds

Billions of Dollars

	Actual, 2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total 2019–2023	Total 2019–2028
OASI Trust Fund														
Beginning-of-Year Balance	2,797	2,820	2,802	2,789	2,764	2,714	2,634	2,521	2,375	2,191	1,972	1,711	n.a.	n.a.
Income (Excluding interest)	738	743	808	858	896	934	973	1,014	1,055	1,104	1,151	1,199	4,469	9,992
Expenditures	-799	-843	-898	-959	-1,022	-1,089	-1,158	-1,230	-1,307	-1,386	-1,470	-1,562	-5,127	-12,082
Noninterest Deficit	-61	-101	-90	-101	-126	-155	-185	-217	-252	-282	-318	-363	-658	-2,090
Interest Received	85	82	78	76	76	75	73	70	68	63	57	50	378	686
Total Deficit (-) or Surplus	24	-19	-13	-25	-51	-79	-113	-146	-184	-219	-261	-313	-280	-1,404
End-of-Year Balance	**2,820**	**2,802**	**2,789**	**2,764**	**2,714**	**2,634**	**2,521**	**2,375**	**2,191**	**1,972**	**1,711**	**1,398**	**n.a.**	**n.a.**
DI Trust Fund[a]														
Beginning-of-Year Balance	46	70	94	91	77	62	46	27	6	0	0	0	n.a.	n.a.
Income (Excluding interest)	168	169	145	141	147	153	159	165	172	179	186	193	745	1,641
Expenditures	-146	-147	-151	-157	-164	-171	-179	-187	-195	-205	-214	-220	-822	-1,844
Noninterest Deficit (-) or Surplus	22	22	-6	-16	-17	-18	-20	-22	-23	-26	-28	-27	-77	-203
Interest Received	2	2	3	3	2	2	1	*	0	0	0	0	11	11
Total Deficit (-) or Surplus	24	24	-3	-13	-15	-16	-19	-21	-23	-26	-28	-27	-67	-192
End-of-Year Balance	**70**	**94**	**91**	**77**	**62**	**46**	**27**	**6**	**0**	**0**	**0**	**0**	**n.a.**	**n.a.**
HI Trust Fund[a]														
Beginning-of-Year Balance	192	198	202	198	190	174	136	98	63	3	0	0	n.a.	n.a.
Income (Excluding interest)	305	302	319	337	354	370	386	404	423	445	469	491	1,766	3,997
Expenditures	-299	-305	-331	-352	-376	-414	-429	-442	-484	-515	-547	-605	-1,902	-4,496
Noninterest Deficit (-) or Surplus	5	-3	-12	-15	-22	-44	-43	-38	-62	-71	-78	-114	-136	-499
Interest Received	7	8	7	7	7	6	5	3	2	0	0	0	32	37
Total Deficit (-) or Surplus	6	5	-5	-8	-15	-38	-38	-35	-60	-71	-78	-114	-104	-461
End-of-Year Balance	**198**	**202**	**198**	**190**	**174**	**136**	**98**	**63**	**3**	**0**	**0**	**0**	**n.a.**	**n.a.**

Source: Congressional Budget Office.

Balances shown are invested in Government Account Series securities issued by the Treasury.

* = between zero and $500 million.

DI = Disability Insurance; HI = Hospital Insurance; OASI = Old-Age and Survivors Insurance; n.a. = not applicable.

a. In keeping with the rules in section 257 of the Balanced Budget and Emergency Deficit Control Act of 1985, CBO's baseline incorporates the assumption that scheduled payments will continue to be made in full after the trust fund has been exhausted, although there is no legal authority to make such payments. Because how those payments were continued would depend on future legislation, CBO shows zero rather than a cumulative negative balance in the trust fund after the exhaustion date. For the same reason, this table shows zero interest received rather than an interest payment, which implicitly reflects the assumption that future legislation would not require the funds to pay financing costs.

employee retirement funds (a total of $925 billion).[8] Those accounts are primarily funded through transfers from federal agencies, payroll deductions from workers, and supplemental payments from the Treasury. Unlike Social Security's and Medicare's trust funds, those retirement funds are projected to run surpluses throughout the coming decade. Those annual surpluses grow from a combined total of $97 billion in 2019 to $132 billion in 2026 and then decline to $20 billion in 2028. More than 90 percent of the cumulative growth in the funds' balances over the 10-year period is attributable to the Military Retirement Trust Fund (see Table C-1 on page 132).

In CBO's current baseline, the balance of the Military Retirement Trust Fund increases rapidly over the coming

8. Those civilian retirement funds include the Civil Service Retirement Trust Fund, the Foreign Service Retirement Trust Fund, and several smaller retirement funds.

decade, reaching nearly $1.6 trillion in 2028. That fund's rapid growth, particularly through 2026, is because of additional payments the Treasury is expected to make in those years to increase the size of the fund to better align with projected liabilities. By contrast, balances in the civilian retirement funds are projected to grow gradually, increasing by about 1 percent annually over the next decade and totaling roughly $1.0 trillion at the end of 2028.

Medicare's Trust Funds

Payments to hospitals and for other services covered by Medicare are made from two trust funds. The HI trust fund is used to make payments to hospitals and providers of postacute–care services under Part A of the Medicare program, and the Supplementary Medical Insurance (SMI) Trust Fund is used to make payments for outpatient services (including physicians' services) and prescription drugs under Parts B and D of Medicare.[9]

Hospital Insurance Trust Fund

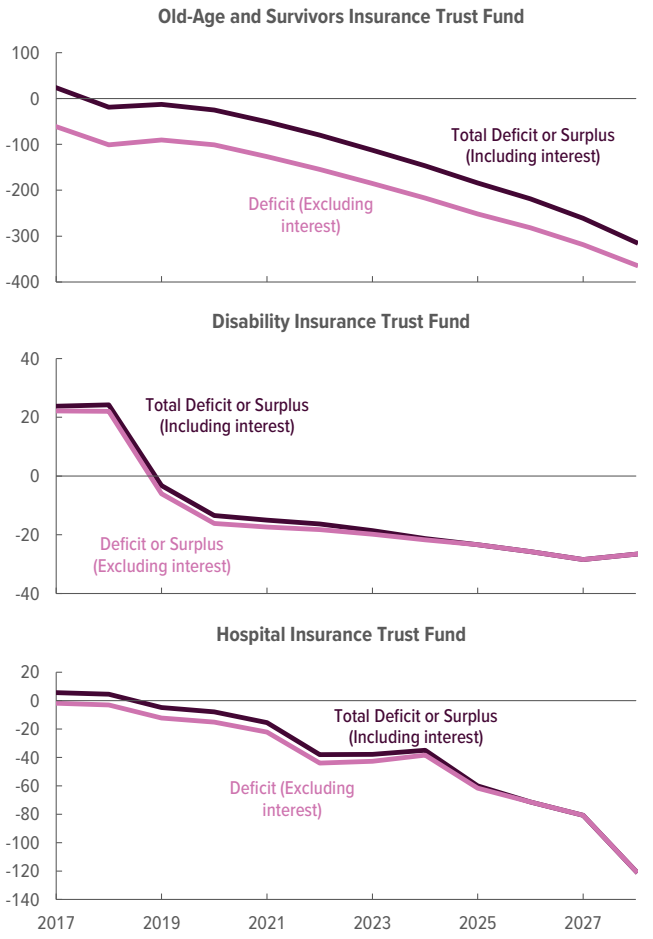
The HI fund, which had a balance of $198 billion at the end of 2017, is the larger of the two Medicare trust funds. The fund's income is derived largely from the Medicare payroll tax (2.9 percent of workers' earnings, divided equally between the worker and the employer). In 2017, those taxes accounted for 86 percent of the $297 billion in noninterest income credited to the HI trust fund. An additional 8 percent came from part of the income taxes on Social Security benefits collected from beneficiaries with relatively high income. The remaining 6 percent of noninterest income credited to the HI trust fund consisted of premiums paid by beneficiaries; amounts recovered from overpayments to providers; fines, penalties, and other amounts collected by the Health Care Fraud and Abuse Control program; and other transfers and appropriations. In addition, the trust fund is credited with interest on its balances; that interest amounted to $7 billion in 2017.

The fund's noninterest income is projected to increase from $302 billion in 2018 to $491 billion in 2028—an average annual increase of about 5 percent. But annual expenditures from the HI fund are projected to grow more rapidly—at an average annual rate of 7 percent—rising from $305 billion in 2018 to $605 billion in 2028. If current laws governing the program remained in place and full benefits continued to be paid, expenditures would outstrip noninterest income in all years through 2028, CBO estimates. That would produce annual deficits that were relatively small in the first half of the period but then rose to $62 billion in 2025, the year before the trust fund's exhaustion. Even including

Figure C-1.

Annual Deficits or Surpluses Projected in CBO's Baseline for the OASI, DI, and HI Trust Funds

Billions of Dollars



Source: Congressional Budget Office.

DI = Disability Insurance; HI = Hospital Insurance; OASI = Old-Age and Survivors Insurance.

9. Part C of Medicare (known as Medicare Advantage) specifies the rules under which private health care plans can assume responsibility for, and be compensated for, providing benefits covered under Parts A, B, and D.

interest receipts, the trust fund is projected to run deficits in all years during the baseline period after 2018 (see Table C-3 on page 135 and Figure C-1 on page 136).

Under current law, the balance of the HI fund would be exhausted in 2026. If the outlays were limited thereafter to income credited to the fund, then during the remainder of 2026 they would be 14 percent below the amounts scheduled under current law, CBO estimates.

Supplementary Medical Insurance Trust Fund

The SMI trust fund contains two separate accounts: One pays for physicians' services and other health care provided on an outpatient basis under Part B of Medicare (Medical Insurance), and another pays for prescription drug benefits under Part D.

Unlike the HI trust fund, most of the income credited to the SMI fund (other than interest) does not come from a specified set of revenues collected from the public. Rather, most of the income to that fund comes in the form of transfers from the general fund of the Treasury, which are automatically adjusted to cover the differences between the program's spending and specified revenues. (In 2017, for example, $307 billion was transferred from the general fund to the SMI fund, accounting for about three-quarters of its income.) Thus, the balance in the SMI fund cannot be exhausted.

The funding mechanisms used for the two accounts differ slightly:

- The Part B portion of the SMI fund is financed primarily through transfers from the general fund of the Treasury and through monthly premium payments from Medicare beneficiaries. The basic monthly premium for the SMI program is set to cover approximately 25 percent of the program's spending (with adjustments to maintain a contingency reserve to cover unexpected spikes in spending). Beneficiaries with relatively high income pay a larger premium. The amount that will be transferred from the general fund equals about three times the amount expected to be collected from basic premiums minus the amount collected from the income-related premiums and fees from drug manufacturers.
- The Part D portion of the SMI fund is financed mainly through transfers from the general fund, monthly premium payments from beneficiaries, and transfers from states (which are based on the number of people in a state who would have received prescription drug coverage under Medicaid in the absence of Part D). The basic monthly premium for Part D is set to cover 25.5 percent of the program's estimated spending if all participants paid it. But low-income people who receive subsidies available under Part D are not required to pay Part D premiums, and most other beneficiaries pay their premiums directly to their Part D plan. As a result, receipts are projected to cover less than 25.5 percent of the government's costs even though higher-income participants in Part D pay the government an income-related premium. The amount transferred from the general fund is set to cover total expected spending for benefits and administrative costs net of the amounts transferred from states and collected from basic and income-related premiums.

At the end of 2017, the SMI fund held $71 billion in GAS securities. Those holdings are projected to total $116 billion in 2028.

Highway Trust Fund

The Highway Trust Fund comprises two accounts: the highway account, which funds construction of highways and highway safety programs, and the transit account, which funds mass transit programs. Revenues credited to the Highway Trust Fund are derived primarily from excise taxes on gasoline and certain other motor fuels.[10] Almost all spending from the fund is controlled by limitations on obligations set in appropriation acts.

Since 2008, the fund's spending has exceeded its revenues by a total of $103 billion. As a result, lawmakers have authorized a series of transfers to the Highway Trust Fund to avoid delaying payments to state and local governments. Most recently, in December 2015, the Fixing America's Surface Transportation Act (also called the FAST Act, P.L. 114-94) transferred $70 billion to the Highway Trust Fund, mostly from the general fund

10. The other revenues credited to the Highway Trust Fund come from excise taxes on trucks and trailers, on truck tires, and on the use of certain kinds of vehicles.

of the Treasury, as the fund's balance neared exhaustion. Including that amount, those transfers have totaled almost $144 billion.

Spending from the fund is projected to total $55 billion in 2018, whereas revenues and interest credited to the fund are expected to total $42 billion. The FAST Act extended the taxes that are credited to the trust fund through 2022. In CBO's baseline, which reflects the assumption that those expiring taxes are extended beyond that date and that obligations from the fund increase at the rate of inflation, the transit account becomes exhausted in 2021, whereas the highway account is able to meet all obligations through 2021 but becomes exhausted in 2022.[11]

11. In keeping with the rules in section 257 of the Balanced Budget and Emergency Deficit Control Act of 1985, CBO's baseline incorporates the assumption that payments to fulfill the programs' obligations will continue to be made in full after the trust fund has been exhausted.

APPENDIX

D

CBO's Economic Projections for 2018 to 2028

The tables in this appendix expand on the information in Chapter 1 by showing the Congressional Budget Office's economic projections for each year from 2018 to 2028 (by calendar year in Table D-1 and by fiscal year in Table D-2). CBO's projections for 2018 to 2022 reflect the economy's strong initial momentum at near-full employment as well as significant fiscal stimulus in those years. They also reflect a modest increase in the growth of potential output—the economy's maximum sustainable level of production. The projections for 2023 to 2028 are primarily based on underlying trends for those years 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. For 2025 and 2026, however, CBO projects a modest temporary slowdown in the growth of actual output that results from fiscal policy under current law.

Table D-1.

CBO's Economic Projections, by Calendar Year

	Actual, 2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
						Percentage Change From Year to Year						
Gross Domestic Product												
Real[a]	2.3	3.0	2.9	2.0	1.5	1.5	1.6	1.7	1.8	1.7	1.8	1.8
Nominal	4.1	5.0	4.9	4.1	3.7	3.7	3.8	3.9	3.9	3.8	3.9	3.9
Inflation												
PCE price index	1.7	1.8	1.9	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0
Core PCE price index[b]	1.5	1.8	2.0	2.2	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0
Consumer price index[c]	2.1	2.2	2.2	2.4	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4
Core consumer price index[b]	1.8	2.1	2.4	2.6	2.6	2.5	2.4	2.4	2.4	2.3	2.3	2.4
GDP price index	1.8	1.9	2.0	2.1	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1
Employment Cost Index[d]	2.6	2.9	3.4	3.6	3.6	3.4	3.3	3.2	3.2	3.1	3.1	3.1
						Calendar Year Average						
Unemployment Rate (Percent)	4.4	3.8	3.3	3.6	4.1	4.6	4.7	4.8	4.8	4.9	4.8	4.8
Payroll Employment (Monthly change, in thousands)[e]	181	211	182	62	21	28	41	53	62	56	65	66
Interest Rates (Percent)												
Three-month Treasury bills	0.9	1.9	2.9	3.6	3.8	3.6	3.1	2.8	2.7	2.7	2.7	2.8
Ten-year Treasury notes	2.3	3.0	3.7	4.1	4.2	4.0	3.8	3.7	3.7	3.7	3.7	3.7
Tax Bases (Percentage of GDP)												
Wages and salaries	43.1	43.2	43.5	43.9	44.0	44.1	44.1	44.2	44.2	44.3	44.3	44.4
Domestic economic profits	8.9	9.5	9.6	9.0	8.6	8.2	8.1	8.0	8.0	8.0	8.0	8.0
Tax Bases (Billions of dollars)												
Wages and salaries	8,351	8,795	9,304	9,759	10,160	10,559	10,973	11,408	11,867	12,337	12,837	13,361
Domestic corporate profits[f]	1,732	1,931	2,045	2,004	1,975	1,970	2,006	2,078	2,161	2,233	2,325	2,410
Nominal GDP (Billions of dollars)	19,391	20,362	21,369	22,247	23,079	23,937	24,857	25,832	26,849	27,866	28,957	30,087

Source: Congressional Budget Office.

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

a. Real values are nominal values that have been 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 change in payroll employment from the fourth quarter of one calendar year to the fourth quarter of the next, divided by 12 (the average monthly amount).

f. Consists of domestic profits, adjusted to remove distortions in depreciation allowances caused by tax rules and to exclude the effect of inflation on the value of inventories.

Table D-2.

CBO's Economic Projections, by Fiscal Year

	Actual, 2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
						Percentage Change From Year to Year						
Gross Domestic Product												
Real[a]	2.1	2.8	3.1	2.1	1.6	1.5	1.6	1.7	1.8	1.7	1.8	1.8
Nominal	3.8	4.8	5.1	4.2	3.8	3.7	3.8	3.9	4.0	3.8	3.9	3.9
Inflation												
PCE price index	1.7	1.8	1.9	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0
Core PCE price index[b]	1.6	1.7	2.0	2.2	2.2	2.1	2.1	2.1	2.0	2.0	2.0	2.0
Consumer price index[c]	2.1	2.2	2.1	2.4	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4
Core consumer price index[b]	2.0	2.0	2.3	2.6	2.6	2.6	2.4	2.4	2.4	2.3	2.3	2.4
GDP price index	1.7	1.9	2.0	2.1	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1
Employment Cost Index[d]	2.5	2.8	3.3	3.6	3.6	3.4	3.3	3.2	3.2	3.1	3.1	3.1
						Fiscal Year Average						
Unemployment Rate (Percent)	4.5	3.9	3.3	3.5	4.0	4.5	4.7	4.8	4.8	4.9	4.9	4.8
Payroll Employment (Monthly change, in thousands)[e]	181	199	206	88	24	25	38	50	60	56	64	66
Interest Rates (Percent)												
Three-month Treasury bills	0.7	1.6	2.7	3.5	3.8	3.7	3.3	2.8	2.7	2.7	2.7	2.8
Ten-year Treasury notes	2.3	2.8	3.5	4.0	4.2	4.1	3.8	3.7	3.7	3.7	3.7	3.7
Tax Bases (Percentage of GDP)												
Wages and salaries	43.1	43.1	43.4	43.8	44.0	44.1	44.1	44.2	44.2	44.3	44.3	44.4
Domestic economic profits	9.0	9.4	9.7	9.1	8.7	8.3	8.1	8.0	8.1	8.0	8.0	8.0
Tax Bases (Billions of dollars)												
Wages and salaries	8,257	8,663	9,179	9,653	10,061	10,457	10,868	11,297	11,751	12,218	12,709	13,228
Domestic corporate profits[f]	1,719	1,899	2,047	2,012	1,983	1,966	1,993	2,058	2,142	2,213	2,301	2,390
Nominal GDP (Billions of dollars)	19,178	20,103	21,136	22,034	22,872	23,716	24,621	25,583	26,595	27,608	28,677	29,803

Source: Congressional Budget Office.

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

a. Real values are nominal values that have been 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 change in payroll employment from the fourth quarter of one calendar year to the fourth quarter of the next, divided by 12 (the average monthly amount).

f. Consists of domestic profits, adjusted to remove distortions in depreciation allowances caused by tax rules and to exclude the effect of inflation on the value of inventories.

APPENDIX

E

Historical Budget Data

This appendix provides historical data on federal revenues, outlays, and the deficit or surplus—in forms consistent with the projections in Chapters 2, 3, and 4—for fiscal years 1968 to 2017. The data, which come from the Office of Management and Budget, are shown both in nominal dollars and as a percentage of gross domestic product. Some of the numbers have been revised since January 2016, when these tables were last published on CBO's website (www.cbo.gov/publication/51129).

Federal revenues, outlays, the deficit or surplus, and debt held by the public are shown in Table E-1. Revenues, outlays, and the deficit or surplus have both on-budget and off-budget components. Social Security's receipts and outlays were placed off-budget by the Balanced Budget and Emergency Deficit Control Act of 1985 (Public Law 99-177). For the sake of consistency, Table E-1 shows the budgetary components of Social Security as off-budget before that year. The Postal Service was classified as off-budget by the Omnibus Budget Reconciliation Act of 1989 (P.L. 101-239).

The major sources of federal revenues (including off-budget revenues) are presented in Table E-2. Payroll taxes include payments by employers and employees for Social Security, Medicare, Railroad Retirement, and unemployment insurance, as well as pension contributions by federal workers. Excise taxes are levied on certain products and services, such as gasoline, alcoholic beverages, and air travel. Estate and gift taxes are levied on assets when they are transferred. Miscellaneous receipts consist of earnings of the Federal Reserve System and income from numerous fees and charges.

Total outlays for major categories of spending (including off-budget outlays) appear in Table E-3. Spending controlled by the appropriation process is classified as discretionary. Spending governed by laws other than appropriation acts, such as laws that set eligibility requirements for certain programs, is considered mandatory. Offsetting receipts include the government's contributions to retirement programs for its employees, as well as fees, charges (such as Medicare premiums), and receipts from the use of federally controlled land and offshore territory. Net interest consists mostly of the government's interest payments on federal debt offset by its interest income.

Table E-4 divides discretionary spending into its defense and nondefense components. Table E-5 shows mandatory outlays for the three largest benefit programs—Social Security, Medicare, and Medicaid—and for other categories of mandatory spending. Income security programs generally provide benefits to recipients with limited income and assets; those programs include unemployment compensation, Supplemental Security Income, and the Supplemental Nutrition Assistance Program. Other federal retirement and disability programs provide benefits to federal civilian employees, members of the military, and veterans. The category "Other Mandatory Programs" includes the activities of the Commodity Credit Corporation, the Medicare-Eligible Retiree Health Care Fund, the subsidy costs of federal student loan programs, and the Children's Health Insurance Program.

Table E-1.

Revenues, Outlays, Deficits, Surpluses, and Debt Held by the Public Since 1968

			Deficit (-) or Surplus				
	Revenues	Outlays	On-Budget	Social Security	Postal Service	Total	Debt Held by the Public[a]
				In Billions of Dollars			
1968	153.0	178.1	-27.7	2.6	n.a.	-25.2	289.5
1969	186.9	183.6	-0.5	3.7	n.a.	3.2	278.1
1970	192.8	195.6	-8.7	5.9	n.a.	-2.8	283.2
1971	187.1	210.2	-26.1	3.0	n.a.	-23.0	303.0
1972	207.3	230.7	-26.1	3.1	-0.4	-23.4	322.4
1973	230.8	245.7	-15.2	0.5	-0.2	-14.9	340.9
1974	263.2	269.4	-7.2	1.8	-0.8	-6.1	343.7
1975	279.1	332.3	-54.1	2.0	-1.1	-53.2	394.7
1976	298.1	371.8	-69.4	-3.2	-1.1	-73.7	477.4
1977	355.6	409.2	-49.9	-3.9	0.2	-53.7	549.1
1978	399.6	458.7	-55.4	-4.3	0.5	-59.2	607.1
1979	463.3	504.0	-39.6	-2.0	0.9	-40.7	640.3
1980	517.1	590.9	-73.1	-1.1	0.4	-73.8	711.9
1981	599.3	678.2	-73.9	-5.0	-0.1	-79.0	789.4
1982	617.8	745.7	-120.6	-7.9	0.6	-128.0	924.6
1983	600.6	808.4	-207.7	0.2	-0.3	-207.8	1,137.3
1984	666.4	851.8	-185.3	0.3	-0.4	-185.4	1,307.0
1985	734.0	946.3	-221.5	9.4	-0.1	-212.3	1,507.3
1986	769.2	990.4	-237.9	16.7	*	-221.2	1,740.6
1987	854.3	1,004.0	-168.4	19.6	-0.9	-149.7	1,889.8
1988	909.2	1,064.4	-192.3	38.8	-1.7	-155.2	2,051.6
1989	991.1	1,143.7	-205.4	52.4	0.3	-152.6	2,190.7
1990	1,032.0	1,253.0	-277.6	58.2	-1.6	-221.0	2,411.6
1991	1,055.0	1,324.2	-321.4	53.5	-1.3	-269.2	2,689.0
1992	1,091.2	1,381.5	-340.4	50.7	-0.7	-290.3	2,999.7
1993	1,154.3	1,409.4	-300.4	46.8	-1.4	-255.1	3,248.4
1994	1,258.6	1,461.8	-258.8	56.8	-1.1	-203.2	3,433.1
1995	1,351.8	1,515.7	-226.4	60.4	2.0	-164.0	3,604.4
1996	1,453.1	1,560.5	-174.0	66.4	0.2	-107.4	3,734.1
1997	1,579.2	1,601.1	-103.2	81.3	*	-21.9	3,772.3
1998	1,721.7	1,652.5	-29.9	99.4	-0.2	69.3	3,721.1
1999	1,827.5	1,701.8	1.9	124.7	-1.0	125.6	3,632.4
2000	2,025.2	1,789.0	86.4	151.8	-2.0	236.2	3,409.8
2001	1,991.1	1,862.8	-32.4	163.0	-2.3	128.2	3,319.6
2002	1,853.1	2,010.9	-317.4	159.0	0.7	-157.8	3,540.4
2003	1,782.3	2,159.9	-538.4	155.6	5.2	-377.6	3,913.4
2004	1,880.1	2,292.8	-568.0	151.1	4.1	-412.7	4,295.5
2005	2,153.6	2,472.0	-493.6	173.5	1.8	-318.3	4,592.2
2006	2,406.9	2,655.1	-434.5	185.2	1.1	-248.2	4,829.0
2007	2,568.0	2,728.7	-342.2	186.5	-5.1	-160.7	5,035.1
2008	2,524.0	2,982.5	-641.8	185.7	-2.4	-458.6	5,803.1
2009	2,105.0	3,517.7	-1,549.7	137.3	-0.3	-1,412.7	7,544.7
2010	2,162.7	3,457.1	-1,371.4	81.7	-4.7	-1,294.4	9,018.9
2011	2,303.5	3,603.1	-1,366.8	68.0	-0.8	-1,299.6	10,128.2
2012	2,450.0	3,536.9	-1,148.9	64.6	-2.7	-1,087.0	11,281.1
2013	2,775.1	3,454.6	-719.0	37.6	1.9	-679.5	11,982.7
2014	3,021.5	3,506.1	-514.1	27.0	2.5	-484.6	12,779.9
2015	3,249.9	3,688.4	-465.8	25.6	1.7	-438.5	13,116.7
2016	3,268.0	3,852.6	-620.2	34.1	1.4	-584.7	14,167.6
2017	3,316.2	3,981.6	-714.8	47.1	2.3	-665.4	14,665.5

Continued

Table E-1. Continued

Revenues, Outlays, Deficits, Surpluses, and Debt Held by the Public Since 1968

			Deficit (-) or Surplus				
	Revenues	Outlays	On-Budget	Social Security	Postal Service	Total	Debt Held by the Public[a]
			As a Percentage of Gross Domestic Product				
1968	17.0	19.8	-3.1	0.3	n.a.	-2.8	32.2
1969	19.0	18.7	-0.1	0.4	n.a.	0.3	28.3
1970	18.4	18.6	-0.8	0.6	n.a.	-0.3	27.0
1971	16.7	18.8	-2.3	0.3	n.a.	-2.1	27.1
1972	17.0	18.9	-2.1	0.3	**	-1.9	26.4
1973	17.0	18.1	-1.1	**	**	-1.1	25.1
1974	17.7	18.1	-0.5	0.1	-0.1	-0.4	23.1
1975	17.3	20.6	-3.4	0.1	-0.1	-3.3	24.5
1976	16.6	20.8	-3.9	-0.2	-0.1	-4.1	26.7
1977	17.5	20.2	-2.5	-0.2	**	-2.6	27.1
1978	17.5	20.1	-2.4	-0.2	**	-2.6	26.6
1979	18.0	19.6	-1.5	-0.1	**	-1.6	24.9
1980	18.5	21.1	-2.6	**	**	-2.6	25.5
1981	19.1	21.6	-2.4	-0.2	**	-2.5	25.2
1982	18.6	22.5	-3.6	-0.2	**	-3.9	27.9
1983	17.0	22.8	-5.9	**	**	-5.9	32.1
1984	16.9	21.5	-4.7	**	**	-4.7	33.1
1985	17.2	22.2	-5.2	0.2	**	-5.0	35.3
1986	17.0	21.8	-5.2	0.4	**	-4.9	38.4
1987	17.9	21.0	-3.5	0.4	**	-3.1	39.5
1988	17.6	20.6	-3.7	0.8	**	-3.0	39.8
1989	17.8	20.5	-3.7	0.9	**	-2.7	39.3
1990	17.4	21.2	-4.7	1.0	**	-3.7	40.8
1991	17.3	21.7	-5.3	0.9	**	-4.4	44.0
1992	17.0	21.5	-5.3	0.8	**	-4.5	46.6
1993	17.0	20.7	-4.4	0.7	**	-3.8	47.8
1994	17.5	20.3	-3.6	0.8	**	-2.8	47.7
1995	17.8	20.0	-3.0	0.8	**	-2.2	47.5
1996	18.2	19.6	-2.2	0.8	**	-1.3	46.8
1997	18.6	18.9	-1.2	1.0	**	-0.3	44.5
1998	19.2	18.5	-0.3	1.1	**	0.8	41.6
1999	19.2	17.9	**	1.3	**	1.3	38.2
2000	20.0	17.6	0.9	1.5	**	2.3	33.6
2001	18.8	17.6	-0.3	1.5	**	1.2	31.4
2002	17.0	18.5	-2.9	1.5	**	-1.5	32.6
2003	15.7	19.1	-4.8	1.4	**	-3.3	34.5
2004	15.6	19.0	-4.7	1.3	**	-3.4	35.5
2005	16.7	19.2	-3.8	1.3	**	-2.5	35.6
2006	17.6	19.4	-3.2	1.4	**	-1.8	35.3
2007	17.9	19.1	-2.4	1.3	**	-1.1	35.2
2008	17.1	20.2	-4.4	1.3	**	-3.1	39.3
2009	14.6	24.4	-10.8	1.0	**	-9.8	52.3
2010	14.6	23.4	-9.3	0.6	**	-8.7	60.9
2011	15.0	23.4	-8.9	0.4	**	-8.5	65.9
2012	15.3	22.1	-7.2	0.4	**	-6.8	70.4
2013	16.8	20.9	-4.4	0.2	**	-4.1	72.6
2014	17.5	20.3	-3.0	0.2	**	-2.8	74.1
2015	18.1	20.5	-2.6	0.1	**	-2.4	72.9
2016	17.7	20.9	-3.4	0.2	**	-3.2	76.7
2017	17.3	20.8	-3.7	0.2	**	-3.5	76.5

Source: Office of Management and Budget.

n.a. = not applicable (the Postal Service was not an independent agency until 1972); * = between -$50 million and $50 million; ** = between -0.05 percent and 0.05 percent.

a. End of year.

Table E-2.

Revenues, by Major Source, Since 1968

	Individual Income Taxes	Payroll Taxes	Corporate Income Taxes	Excise Taxes	Estate and Gift Taxes	Customs Duties	Miscellaneous Receipts	Total
				In Billions of Dollars				
1968	68.7	33.9	28.7	14.1	3.1	2.0	2.5	153.0
1969	87.2	39.0	36.7	15.2	3.5	2.3	2.9	186.9
1970	90.4	44.4	32.8	15.7	3.6	2.4	3.4	192.8
1971	86.2	47.3	26.8	16.6	3.7	2.6	3.9	187.1
1972	94.7	52.6	32.2	15.5	5.4	3.3	3.6	207.3
1973	103.2	63.1	36.2	16.3	4.9	3.2	3.9	230.8
1974	119.0	75.1	38.6	16.8	5.0	3.3	5.4	263.2
1975	122.4	84.5	40.6	16.6	4.6	3.7	6.7	279.1
1976	131.6	90.8	41.4	17.0	5.2	4.1	8.0	298.1
1977	157.6	106.5	54.9	17.5	7.3	5.2	6.5	355.6
1978	181.0	121.0	60.0	18.4	5.3	6.6	7.4	399.6
1979	217.8	138.9	65.7	18.7	5.4	7.4	9.3	463.3
1980	244.1	157.8	64.6	24.3	6.4	7.2	12.7	517.1
1981	285.9	182.7	61.1	40.8	6.8	8.1	13.8	599.3
1982	297.7	201.5	49.2	36.3	8.0	8.9	16.2	617.8
1983	288.9	209.0	37.0	35.3	6.1	8.7	15.6	600.6
1984	298.4	239.4	56.9	37.4	6.0	11.4	17.0	666.4
1985	334.5	265.2	61.3	36.0	6.4	12.1	18.5	734.0
1986	349.0	283.9	63.1	32.9	7.0	13.3	19.9	769.2
1987	392.6	303.3	83.9	32.5	7.5	15.1	19.5	854.3
1988	401.2	334.3	94.5	35.2	7.6	16.2	20.2	909.2
1989	445.7	359.4	103.3	34.4	8.7	16.3	23.2	991.1
1990	466.9	380.0	93.5	35.3	11.5	16.7	28.0	1,032.0
1991	467.8	396.0	98.1	42.4	11.1	15.9	23.6	1,055.0
1992	476.0	413.7	100.3	45.6	11.1	17.4	27.2	1,091.2
1993	509.7	428.3	117.5	48.1	12.6	18.8	19.4	1,154.3
1994	543.1	461.5	140.4	55.2	15.2	20.1	23.1	1,258.6
1995	590.2	484.5	157.0	57.5	14.8	19.3	28.5	1,351.8
1996	656.4	509.4	171.8	54.0	17.2	18.7	25.5	1,453.1
1997	737.5	539.4	182.3	56.9	19.8	17.9	25.4	1,579.2
1998	828.6	571.8	188.7	57.7	24.1	18.3	32.6	1,721.7
1999	879.5	611.8	184.7	70.4	27.8	18.3	34.9	1,827.5
2000	1,004.5	652.9	207.3	68.9	29.0	19.9	42.8	2,025.2
2001	994.3	694.0	151.1	66.2	28.4	19.4	37.7	1,991.1
2002	858.3	700.8	148.0	67.0	26.5	18.6	33.9	1,853.1
2003	793.7	713.0	131.8	67.5	22.0	19.9	34.5	1,782.3
2004	809.0	733.4	189.4	69.9	24.8	21.1	32.6	1,880.1
2005	927.2	794.1	278.3	73.1	24.8	23.4	32.7	2,153.6
2006	1,043.9	837.8	353.9	74.0	27.9	24.8	44.6	2,406.9
2007	1,163.5	869.6	370.2	65.1	26.0	26.0	47.5	2,568.0
2008	1,145.7	900.2	304.3	67.3	28.8	27.6	50.0	2,524.0
2009	915.3	890.9	138.2	62.5	23.5	22.5	52.1	2,105.0
2010	898.5	864.8	191.4	66.9	18.9	25.3	96.8	2,162.7
2011	1,091.5	818.8	181.1	72.4	7.4	29.5	102.8	2,303.5
2012	1,132.2	845.3	242.3	79.1	14.0	30.3	106.8	2,450.0
2013	1,316.4	947.8	273.5	84.0	18.9	31.8	102.6	2,775.1
2014	1,394.6	1,023.5	320.7	93.4	19.3	33.9	136.1	3,021.5
2015	1,540.8	1,065.3	343.8	98.3	19.2	35.0	147.5	3,249.9
2016	1,546.1	1,115.1	299.6	95.0	21.4	34.8	156.0	3,268.0
2017	1,587.1	1,161.9	297.0	83.8	22.8	34.6	129.0	3,316.2

Continued

Table E-2. Continued

Revenues, by Major Source, Since 1968

	Individual Income Taxes	Payroll Taxes	Corporate Income Taxes	Excise Taxes	Estate and Gift Taxes	Customs Duties	Miscellaneous Receipts	Total
				As a Percentage of Gross Domestic Product				
1968	7.6	3.8	3.2	1.6	0.3	0.2	0.3	17.0
1969	8.9	4.0	3.7	1.5	0.4	0.2	0.3	19.0
1970	8.6	4.2	3.1	1.5	0.3	0.2	0.3	18.4
1971	7.7	4.2	2.4	1.5	0.3	0.2	0.3	16.7
1972	7.8	4.3	2.6	1.3	0.4	0.3	0.3	17.0
1973	7.6	4.7	2.7	1.2	0.4	0.2	0.3	17.0
1974	8.0	5.1	2.6	1.1	0.3	0.2	0.4	17.7
1975	7.6	5.2	2.5	1.0	0.3	0.2	0.4	17.3
1976	7.4	5.1	2.3	0.9	0.3	0.2	0.4	16.6
1977	7.8	5.2	2.7	0.9	0.4	0.3	0.3	17.5
1978	7.9	5.3	2.6	0.8	0.2	0.3	0.3	17.5
1979	8.5	5.4	2.6	0.7	0.2	0.3	0.4	18.0
1980	8.7	5.6	2.3	0.9	0.2	0.3	0.5	18.5
1981	9.1	5.8	1.9	1.3	0.2	0.3	0.4	19.1
1982	9.0	6.1	1.5	1.1	0.2	0.3	0.5	18.6
1983	8.2	5.9	1.0	1.0	0.2	0.2	0.4	17.0
1984	7.5	6.1	1.4	0.9	0.2	0.3	0.4	16.9
1985	7.8	6.2	1.4	0.8	0.2	0.3	0.4	17.2
1986	7.7	6.3	1.4	0.7	0.2	0.3	0.4	17.0
1987	8.2	6.3	1.8	0.7	0.2	0.3	0.4	17.9
1988	7.8	6.5	1.8	0.7	0.1	0.3	0.4	17.6
1989	8.0	6.5	1.9	0.6	0.2	0.3	0.4	17.8
1990	7.9	6.4	1.6	0.6	0.2	0.3	0.5	17.4
1991	7.7	6.5	1.6	0.7	0.2	0.3	0.4	17.3
1992	7.4	6.4	1.6	0.7	0.2	0.3	0.4	17.0
1993	7.5	6.3	1.7	0.7	0.2	0.3	0.3	17.0
1994	7.5	6.4	2.0	0.8	0.2	0.3	0.3	17.5
1995	7.8	6.4	2.1	0.8	0.2	0.3	0.4	17.8
1996	8.2	6.4	2.2	0.7	0.2	0.2	0.3	18.2
1997	8.7	6.4	2.1	0.7	0.2	0.2	0.3	18.6
1998	9.3	6.4	2.1	0.6	0.3	0.2	0.4	19.2
1999	9.2	6.4	1.9	0.7	0.3	0.2	0.4	19.2
2000	9.9	6.4	2.0	0.7	0.3	0.2	0.4	20.0
2001	9.4	6.6	1.4	0.6	0.3	0.2	0.4	18.8
2002	7.9	6.4	1.4	0.6	0.2	0.2	0.3	17.0
2003	7.0	6.3	1.2	0.6	0.2	0.2	0.3	15.7
2004	6.7	6.1	1.6	0.6	0.2	0.2	0.3	15.6
2005	7.2	6.2	2.2	0.6	0.2	0.2	0.3	16.7
2006	7.6	6.1	2.6	0.5	0.2	0.2	0.3	17.6
2007	8.1	6.1	2.6	0.5	0.2	0.2	0.3	17.9
2008	7.8	6.1	2.1	0.5	0.2	0.2	0.3	17.1
2009	6.3	6.2	1.0	0.4	0.2	0.2	0.4	14.6
2010	6.1	5.8	1.3	0.5	0.1	0.2	0.7	14.6
2011	7.1	5.3	1.2	0.5	*	0.2	0.7	15.0
2012	7.1	5.3	1.5	0.5	0.1	0.2	0.7	15.3
2013	8.0	5.7	1.7	0.5	0.1	0.2	0.6	16.8
2014	8.1	5.9	1.9	0.5	0.1	0.2	0.8	17.5
2015	8.6	5.9	1.9	0.5	0.1	0.2	0.8	18.1
2016	8.4	6.0	1.6	0.5	0.1	0.2	0.8	17.7
2017	8.3	6.1	1.5	0.4	0.1	0.2	0.7	17.3

Source: Office of Management and Budget.

* = between zero and 0.05 percent.

Table E-3.

Outlays, by Major Category, Since 1968

		Mandatory			
	Discretionary	Programmatic Outlays[a]	Offsetting Receipts	Net Interest	Total
			In Billions of Dollars		
1968	118.0	59.7	-10.6	11.1	178.1
1969	117.3	64.6	-11.0	12.7	183.6
1970	120.3	72.5	-11.5	14.4	195.6
1971	122.5	86.9	-14.1	14.8	210.2
1972	128.5	100.8	-14.1	15.5	230.7
1973	130.4	116.0	-18.0	17.3	245.7
1974	138.2	130.9	-21.2	21.4	269.4
1975	158.0	169.4	-18.3	23.2	332.3
1976	175.6	189.1	-19.6	26.7	371.8
1977	197.1	203.7	-21.5	29.9	409.2
1978	218.7	227.4	-22.8	35.5	458.7
1979	240.0	247.0	-25.6	42.6	504.0
1980	276.3	291.2	-29.2	52.5	590.9
1981	307.9	339.4	-37.9	68.8	678.2
1982	326.0	370.8	-36.0	85.0	745.7
1983	353.3	410.6	-45.3	89.8	808.4
1984	379.4	405.5	-44.2	111.1	851.8
1985	415.8	448.2	-47.1	129.5	946.3
1986	438.5	461.7	-45.9	136.0	990.4
1987	444.2	474.2	-52.9	138.6	1,004.0
1988	464.4	505.0	-56.8	151.8	1,064.4
1989	488.8	546.1	-60.1	169.0	1,143.7
1990	500.6	625.6	-57.5	184.3	1,253.0
1991	533.3	702.0	-105.5	194.4	1,324.2
1992	533.8	717.7	-69.3	199.3	1,381.5
1993	539.8	736.8	-65.9	198.7	1,409.4
1994	541.3	786.0	-68.5	202.9	1,461.8
1995	544.8	817.5	-78.7	232.1	1,515.7
1996	532.7	857.7	-71.0	241.1	1,560.5
1997	547.0	895.5	-85.4	244.0	1,601.1
1998	552.0	942.9	-83.5	241.1	1,652.5
1999	572.1	979.5	-79.5	229.8	1,701.8
2000	614.6	1,032.5	-81.1	222.9	1,789.0
2001	649.0	1,097.0	-89.3	206.2	1,862.8
2002	734.0	1,196.4	-90.4	170.9	2,010.9
2003	824.3	1,283.5	-101.0	153.1	2,159.9
2004	895.1	1,346.4	-108.9	160.2	2,292.8
2005	968.5	1,448.1	-128.7	184.0	2,472.0
2006	1,016.6	1,556.1	-144.3	226.6	2,655.1
2007	1,041.6	1,627.9	-177.9	237.1	2,728.7
2008	1,134.9	1,780.3	-185.4	252.8	2,982.5
2009	1,237.5	2,287.8	-194.6	186.9	3,517.7
2010	1,347.2	2,110.2	-196.5	196.2	3,457.1
2011	1,347.1	2,234.8	-208.9	230.0	3,603.1
2012	1,286.1	2,258.7	-228.3	220.4	3,536.9
2013	1,202.1	2,336.3	-304.7	220.9	3,454.6
2014	1,178.7	2,375.8	-277.3	229.0	3,506.1
2015	1,168.7	2,554.9	-258.4	223.2	3,688.4
2016	1,185.2	2,664.9	-237.6	240.0	3,852.6
2017	1,200.2	2,771.8	-253.0	262.6	3,981.6

Continued

Table E-3. Continued

Outlays, by Major Category, Since 1968

		Mandatory			
	Discretionary	Programmatic Outlays[a]	Offsetting Receipts	Net Interest	Total
			As a Percentage of Gross Domestic Product		
1968	13.1	6.6	-1.2	1.2	19.8
1969	11.9	6.6	-1.1	1.3	18.7
1970	11.5	6.9	-1.1	1.4	18.6
1971	10.9	7.8	-1.3	1.3	18.8
1972	10.5	8.3	-1.2	1.3	18.9
1973	9.6	8.6	-1.3	1.3	18.1
1974	9.3	8.8	-1.4	1.4	18.1
1975	9.8	10.5	-1.1	1.4	20.6
1976	9.8	10.6	-1.1	1.5	20.8
1977	9.7	10.0	-1.1	1.5	20.2
1978	9.6	10.0	-1.0	1.6	20.1
1979	9.3	9.6	-1.0	1.7	19.6
1980	9.9	10.4	-1.0	1.9	21.1
1981	9.8	10.8	-1.2	2.2	21.6
1982	9.8	11.2	-1.1	2.6	22.5
1983	10.0	11.6	-1.3	2.5	22.8
1984	9.6	10.3	-1.1	2.8	21.5
1985	9.7	10.5	-1.1	3.0	22.2
1986	9.7	10.2	-1.0	3.0	21.8
1987	9.3	9.9	-1.1	2.9	21.0
1988	9.0	9.8	-1.1	2.9	20.6
1989	8.8	9.8	-1.1	3.0	20.5
1990	8.5	10.6	-1.0	3.1	21.2
1991	8.7	11.5	-1.7	3.2	21.7
1992	8.3	11.2	-1.1	3.1	21.5
1993	7.9	10.8	-1.0	2.9	20.7
1994	7.5	10.9	-1.0	2.8	20.3
1995	7.2	10.8	-1.0	3.1	20.0
1996	6.7	10.8	-0.9	3.0	19.6
1997	6.4	10.6	-1.0	2.9	18.9
1998	6.2	10.5	-0.9	2.7	18.5
1999	6.0	10.3	-0.8	2.4	17.9
2000	6.1	10.2	-0.8	2.2	17.6
2001	6.1	10.4	-0.8	2.0	17.6
2002	6.7	11.0	-0.8	1.6	18.5
2003	7.3	11.3	-0.9	1.4	19.1
2004	7.4	11.1	-0.9	1.3	19.0
2005	7.5	11.2	-1.0	1.4	19.2
2006	7.4	11.4	-1.1	1.7	19.4
2007	7.3	11.4	-1.2	1.7	19.1
2008	7.7	12.1	-1.3	1.7	20.2
2009	8.6	15.9	-1.3	1.3	24.4
2010	9.1	14.3	-1.3	1.3	23.4
2011	8.8	14.5	-1.4	1.5	23.4
2012	8.0	14.1	-1.4	1.4	22.1
2013	7.3	14.1	-1.8	1.3	20.9
2014	6.8	13.8	-1.6	1.3	20.3
2015	6.5	14.2	-1.4	1.2	20.5
2016	6.4	14.4	-1.3	1.3	20.9
2017	6.3	14.5	-1.3	1.4	20.8

Source: Office of Management and Budget.

a. Excludes offsetting receipts.

Table E-4.

Discretionary Outlays Since 1968

	Defense	Nondefense	Total
		In Billions of Dollars	
1968	82.2	35.8	118.0
1969	82.7	34.6	117.3
1970	81.9	38.3	120.3
1971	79.0	43.5	122.5
1972	79.3	49.2	128.5
1973	77.1	53.3	130.4
1974	80.7	57.5	138.2
1975	87.6	70.4	158.0
1976	89.9	85.7	175.6
1977	97.5	99.6	197.1
1978	104.6	114.1	218.7
1979	116.8	123.2	240.0
1980	134.6	141.7	276.3
1981	158.0	149.9	307.9
1982	185.9	140.0	326.0
1983	209.9	143.4	353.3
1984	228.0	151.4	379.4
1985	253.1	162.7	415.8
1986	273.8	164.7	438.5
1987	282.5	161.6	444.2
1988	290.9	173.5	464.4
1989	304.0	184.8	488.8
1990	300.1	200.4	500.6
1991	319.7	213.6	533.3
1992	302.6	231.2	533.8
1993	292.4	247.3	539.8
1994	282.3	259.1	541.3
1995	273.6	271.2	544.8
1996	266.0	266.8	532.7
1997	271.7	275.4	547.0
1998	270.3	281.7	552.0
1999	275.5	296.7	572.1
2000	295.0	319.7	614.6
2001	306.1	343.0	649.0
2002	349.0	385.0	734.0
2003	404.9	419.4	824.3
2004	454.1	441.0	895.1
2005	493.6	474.9	968.5
2006	520.0	496.7	1,016.6
2007	547.9	493.7	1,041.6
2008	612.4	522.5	1,134.9
2009	656.7	580.8	1,237.5
2010	688.9	658.3	1,347.2
2011	699.4	647.7	1,347.1
2012	670.5	615.6	1,286.1
2013	625.8	576.4	1,202.1
2014	596.4	582.2	1,178.7
2015	583.4	585.3	1,168.7
2016	584.8	600.4	1,185.2
2017	590.2	610.0	1,200.2

Continued

Table E-4. Continued

Discretionary Outlays Since 1968

	Defense	Nondefense	Total
		As a Percentage of Gross Domestic Product	
1968	9.1	4.0	13.1
1969	8.4	3.5	11.9
1970	7.8	3.7	11.5
1971	7.1	3.9	10.9
1972	6.5	4.0	10.5
1973	5.7	3.9	9.6
1974	5.4	3.9	9.3
1975	5.4	4.4	9.8
1976	5.0	4.8	9.8
1977	4.8	4.9	9.7
1978	4.6	5.0	9.6
1979	4.5	4.8	9.3
1980	4.8	5.1	9.9
1981	5.0	4.8	9.8
1982	5.6	4.2	9.8
1983	5.9	4.1	10.0
1984	5.8	3.8	9.6
1985	5.9	3.8	9.7
1986	6.0	3.6	9.7
1987	5.9	3.4	9.3
1988	5.6	3.4	9.0
1989	5.5	3.3	8.8
1990	5.1	3.4	8.5
1991	5.2	3.5	8.7
1992	4.7	3.6	8.3
1993	4.3	3.6	7.9
1994	3.9	3.6	7.5
1995	3.6	3.6	7.2
1996	3.3	3.3	6.7
1997	3.2	3.2	6.4
1998	3.0	3.1	6.2
1999	2.9	3.1	6.0
2000	2.9	3.1	6.1
2001	2.9	3.2	6.1
2002	3.2	3.5	6.7
2003	3.6	3.7	7.3
2004	3.8	3.6	7.4
2005	3.8	3.7	7.5
2006	3.8	3.6	7.4
2007	3.8	3.4	7.3
2008	4.2	3.5	7.7
2009	4.6	4.0	8.6
2010	4.7	4.4	9.1
2011	4.5	4.2	8.8
2012	4.2	3.8	8.0
2013	3.8	3.5	7.3
2014	3.5	3.4	6.8
2015	3.2	3.3	6.5
2016	3.2	3.3	6.4
2017	3.1	3.2	6.3

Source: Office of Management and Budget.

Table E-5.

Mandatory Outlays Since 1968

	Social Security	Medicare[a]	Medicaid	Income Security[b]	Other Federal Retirement and Disability	Other Mandatory Programs	Offsetting Receipts	Total	Memorandum: Major Health Care Programs (Net)[c]
					In Billions of Dollars				
1968	23.3	5.1	1.8	5.9	11.4	12.2	-10.6	49.1	6.2
1969	26.7	6.3	2.3	6.5	12.6	10.3	-11.0	53.6	7.7
1970	29.6	6.8	2.7	8.2	14.3	10.9	-11.5	61.0	8.6
1971	35.1	7.5	3.4	13.4	17.0	10.5	-14.1	72.8	9.6
1972	39.4	8.4	4.6	16.4	19.2	12.9	-14.1	86.7	11.6
1973	48.2	9.0	4.6	14.5	22.3	17.4	-18.0	98.0	12.2
1974	55.0	10.7	5.8	17.4	25.2	16.7	-21.2	109.7	14.8
1975	63.6	14.1	6.8	28.9	32.2	23.8	-18.3	151.1	19.1
1976	72.7	16.9	8.6	37.6	34.6	18.7	-19.6	169.5	23.6
1977	83.7	20.8	9.9	34.6	36.2	18.6	-21.5	182.2	28.5
1978	92.4	24.3	10.7	32.1	38.8	29.0	-22.8	204.6	32.5
1979	102.6	28.2	12.4	32.2	43.0	28.6	-25.6	221.4	37.9
1980	117.1	34.0	14.0	44.3	48.3	33.6	-29.2	262.1	45.0
1981	137.9	41.3	16.8	49.9	54.9	38.6	-37.9	301.6	54.8
1982	153.9	49.2	17.4	53.2	58.9	38.2	-36.0	334.8	62.7
1983	168.5	55.5	19.0	64.0	61.9	41.7	-45.3	365.2	70.2
1984	176.1	61.1	20.1	51.7	63.5	33.0	-44.2	361.3	76.1
1985	186.4	69.7	22.7	52.3	62.0	55.1	-47.1	401.1	86.7
1986	196.5	74.2	25.0	54.2	64.2	47.6	-45.9	415.8	93.4
1987	205.1	79.9	27.4	55.0	67.4	39.4	-52.9	421.2	100.8
1988	216.8	85.7	30.5	57.3	71.9	42.8	-56.8	448.2	107.4
1989	230.4	93.2	34.6	63.1	75.3	49.5	-60.1	485.9	117.3
1990	246.5	107.0	41.1	68.7	76.4	85.8	-57.5	568.1	136.9
1991	266.8	114.2	52.5	86.9	82.7	98.9	-105.5	596.5	154.6
1992	285.2	129.4	67.8	110.8	86.0	38.6	-69.3	648.4	184.0
1993	302.0	143.2	75.8	117.1	88.6	10.1	-65.9	670.9	203.7
1994	316.9	159.6	82.0	116.1	93.7	17.6	-68.5	717.5	223.9
1995	333.3	177.1	89.1	116.6	96.5	4.9	-78.7	738.8	246.0
1996	347.1	191.3	92.0	121.6	97.3	8.4	-71.0	786.7	263.3
1997	362.3	207.9	95.6	122.5	102.3	5.0	-85.4	810.1	283.0
1998	376.1	211.0	101.2	122.1	106.3	26.1	-83.5	859.3	291.5
1999	387.0	209.3	108.0	129.0	110.0	36.1	-79.5	900.0	296.3
2000	406.0	216.0	117.9	133.9	114.9	43.7	-81.1	951.4	313.3
2001	429.4	237.9	129.4	143.1	116.1	41.2	-89.3	1,007.6	347.1
2002	452.1	253.7	147.5	180.3	123.9	38.9	-90.4	1,106.0	378.9
2003	470.5	274.2	160.7	196.2	131.8	50.2	-101.0	1,182.5	410.8
2004	491.5	297.0	176.2	190.6	135.5	55.5	-108.9	1,237.5	445.7
2005	518.7	335.1	181.7	196.9	150.1	65.6	-128.7	1,319.4	481.2
2006	543.9	376.8	180.6	200.0	151.4	103.3	-144.3	1,411.8	511.0
2007	581.4	436.1	190.6	203.1	160.8	55.8	-177.9	1,450.0	567.4
2008	612.1	456.0	201.4	260.7	173.4	76.7	-185.4	1,594.9	594.1
2009	677.7	499.9	250.9	350.2	187.3	321.8	-194.6	2,093.2	683.6
2010	700.8	520.5	272.8	437.3	196.7	-17.8	-196.5	1,913.7	727.1
2011	724.9	559.6	275.0	404.0	215.2	56.1	-208.9	2,026.0	763.5
2012	767.7	551.2	250.5	353.6	211.5	124.2	-228.3	2,030.5	725.8
2013	807.8	585.2	265.4	339.5	232.9	105.5	-304.7	2,031.6	767.6
2014	844.9	599.8	301.5	310.9	244.3	74.5	-277.3	2,098.5	831.0
2015	881.9	634.1	349.8	301.0	253.9	134.2	-258.4	2,296.5	936.5
2016	910.3	692.5	368.3	303.8	270.3	119.8	-237.6	2,427.3	1,012.6
2017	939.2	702.3	374.7	293.3	267.6	194.8	-253.0	2,518.8	1,030.4

Continued

Table E-5. Continued

Mandatory Outlays Since 1968

	Social Security	Medicare[a]	Medicaid	Income Security[b]	Other Federal Retirement and Disability	Other Mandatory Programs	Offsetting Receipts	Total	Memorandum: Major Health Care Programs (Net)[c]
					As a Percentage of Gross Domestic Product				
1968	2.6	0.6	0.2	0.7	1.3	1.4	-1.2	5.5	0.7
1969	2.7	0.6	0.2	0.7	1.3	1.0	-1.1	5.5	0.8
1970	2.8	0.6	0.3	0.8	1.4	1.0	-1.1	5.8	0.8
1971	3.1	0.7	0.3	1.2	1.5	0.9	-1.3	6.5	0.9
1972	3.2	0.7	0.4	1.3	1.6	1.1	-1.2	7.1	1.0
1973	3.6	0.7	0.3	1.1	1.6	1.3	-1.3	7.2	0.9
1974	3.7	0.7	0.4	1.2	1.7	1.1	-1.4	7.4	1.0
1975	3.9	0.9	0.4	1.8	2.0	1.5	-1.1	9.4	1.2
1976	4.1	0.9	0.5	2.1	1.9	1.0	-1.1	9.5	1.3
1977	4.1	1.0	0.5	1.7	1.8	0.9	-1.1	9.0	1.4
1978	4.1	1.1	0.5	1.4	1.7	1.3	-1.0	9.0	1.4
1979	4.0	1.1	0.5	1.3	1.7	1.1	-1.0	8.6	1.5
1980	4.2	1.2	0.5	1.6	1.7	1.2	-1.0	9.4	1.6
1981	4.4	1.3	0.5	1.6	1.8	1.2	-1.2	9.6	1.7
1982	4.6	1.5	0.5	1.6	1.8	1.2	-1.1	10.1	1.9
1983	4.8	1.6	0.5	1.8	1.7	1.2	-1.3	10.3	2.0
1984	4.5	1.5	0.5	1.3	1.6	0.8	-1.1	9.1	1.9
1985	4.4	1.6	0.5	1.2	1.5	1.3	-1.1	9.4	2.0
1986	4.3	1.6	0.6	1.2	1.4	1.0	-1.0	9.2	2.1
1987	4.3	1.7	0.6	1.2	1.4	0.8	-1.1	8.8	2.1
1988	4.2	1.7	0.6	1.1	1.4	0.8	-1.1	8.7	2.1
1989	4.1	1.7	0.6	1.1	1.4	0.9	-1.1	8.7	2.1
1990	4.2	1.8	0.7	1.2	1.3	1.5	-1.0	9.6	2.3
1991	4.4	1.9	0.9	1.4	1.4	1.6	-1.7	9.8	2.5
1992	4.4	2.0	1.1	1.7	1.3	0.6	-1.1	10.1	2.9
1993	4.4	2.1	1.1	1.7	1.3	0.1	-1.0	9.9	3.0
1994	4.4	2.2	1.1	1.6	1.3	0.2	-1.0	10.0	3.1
1995	4.4	2.3	1.2	1.5	1.3	0.1	-1.0	9.7	3.2
1996	4.3	2.4	1.2	1.5	1.2	0.1	-0.9	9.9	3.3
1997	4.3	2.5	1.1	1.4	1.2	0.1	-1.0	9.5	3.3
1998	4.2	2.4	1.1	1.4	1.2	0.3	-0.9	9.6	3.3
1999	4.1	2.2	1.1	1.4	1.2	0.4	-0.8	9.5	3.1
2000	4.0	2.1	1.2	1.3	1.1	0.4	-0.8	9.4	3.1
2001	4.1	2.3	1.2	1.4	1.1	0.4	-0.8	9.5	3.3
2002	4.2	2.3	1.4	1.7	1.1	0.4	-0.8	10.2	3.5
2003	4.2	2.4	1.4	1.7	1.2	0.4	-0.9	10.4	3.6
2004	4.1	2.5	1.5	1.6	1.1	0.5	-0.9	10.2	3.7
2005	4.0	2.6	1.4	1.5	1.2	0.5	-1.0	10.2	3.7
2006	4.0	2.8	1.3	1.5	1.1	0.8	-1.1	10.3	3.7
2007	4.1	3.0	1.3	1.4	1.1	0.4	-1.2	10.1	4.0
2008	4.1	3.1	1.4	1.8	1.2	0.5	-1.3	10.8	4.0
2009	4.7	3.5	1.7	2.4	1.3	2.2	-1.3	14.5	4.7
2010	4.7	3.5	1.8	3.0	1.3	-0.1	-1.3	12.9	4.9
2011	4.7	3.6	1.8	2.6	1.4	0.4	-1.4	13.2	5.0
2012	4.8	3.4	1.6	2.2	1.3	0.8	-1.4	12.7	4.5
2013	4.9	3.5	1.6	2.1	1.4	0.6	-1.8	12.3	4.6
2014	4.9	3.5	1.7	1.8	1.4	0.4	-1.6	12.2	4.8
2015	4.9	3.5	1.9	1.7	1.4	0.7	-1.4	12.8	5.2
2016	4.9	3.7	2.0	1.6	1.5	0.6	-1.3	13.1	5.5
2017	4.9	3.7	2.0	1.5	1.4	1.0	-1.3	13.1	5.4

Source: Office of Management and Budget.

a. Excludes offsetting receipts.

b. Includes unemployment compensation, Supplemental Security Income, the refundable portion of the earned income and child tax credits, the Supplemental Nutrition Assistance Program, family support, child nutrition, and foster care.

c. 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.

List of Tables and Figures

Tables

Figures

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 were Katharine Abraham, Alan Auerbach, David Autor, Olivier Blanchard, Markus Brunnermeier, Mary Daly, Steven Davis, Kathryn Dominguez, Robert Hall, Jan Hatzius, Donald Kohn, Nellie Liang, Gregory Mankiw, Emi Nakamura, Jonathan Parker, Adam Posen, James Poterba, Valerie Ramey, Brian Sack, Robert Shimer, James Stock, Justin Wolfers, and Mark Zandi. Robert Wescott attended the panel's meeting as a guest. Although CBO's outside advisers provided considerable assistance, they are not responsible for the contents of this report.

The following pages list the CBO staff members who contributed to this report by preparing the economic, revenue, and spending projections; analyzing the recent tax legislation; writing the report; reviewing, editing, fact-checking, and publishing it; compiling the supplemental materials posted along with it on CBO's website (www.cbo.gov/publication/53651); and providing other support.

Keith Hall
Director
April 2018

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, John Kitchen, and Kim Kowalewski.

Y. Gloria Chen	Inflation, house prices
Devrim Demirel	Fiscal policy
Michael Falkenheim	Financial markets
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
Joshua Montes (formerly of CBO)	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, model and data management
Adam Staveski	Housing, research assistance
Christopher Williams	Consumer spending, incomes

Revenue Projections

The revenue projections were prepared by the Tax Analysis Division, supervised by John McClelland, Mark Booth (formerly of CBO), Edward Harris, and Janet Holtzblatt. In addition, the staff of the Joint Committee on Taxation provided 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
Bilal Habib	Wage distribution, refundable tax credits
Peter Huether	Excise taxes
Shannon Mok	Estate and gift taxes
Cecilia Pastrone	Excise taxes
Kevin Perese	Tax modeling
Molly Saunders-Scott	International taxation, business taxation
Kurt Seibert	Payroll taxes, depreciation, tax modeling
Joshua Shakin	Individual income taxes
Jennifer Shand	Corporate 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, Leo Lex, Sam Papenfuss, Christina Hawley Anthony, Tom Bradley, Kim Cawley, Chad Chirico, Sheila Dacey, Sarah Jennings, and Adam Wilson of the Budget Analysis Division, as well as by Jessica Banthin, Alexandra Minicozzi, and David Weaver of the Health, Retirement, and Long-Term Analysis Division and Sebastien Gay 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
Logan Smith	Veterans' compensation and pensions, other benefits for disabled veterans

Health

Susan Yeh Beyer	Health insurance coverage
Alice Burns	Medicaid, health insurance coverage
Julia Christensen	Food and Drug Administration, prescription drugs
Jacob Fabian	Workplace safety programs
Kate Fritzsche	Health insurance marketplaces, other programs
Philippa Haven	Medicare, Public Health Service
Lori Housman	Medicare, Federal Employees Health Benefits program
Emily King	Health Resources and Services Administration, mental health, other programs
Jamease Kowalczyk	Medicare
Sarah Masi	Health insurance marketplaces, other programs
Kevin McNellis	Health insurance marketplaces, other programs
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
Lara Robillard	Medicare
Sarah Sajewski	Medicare
Robert Stewart	Medicaid, Children's Health Insurance Program, Indian Health Service
Ellen Werble	Prescription drugs, Public Health Service
Colin Yee	Medicare
Rebecca Yip	Medicare, prescription drugs, Public Health Service
Chris Zogby	Health insurance coverage
Income Security and Education	
Tia Caldwell	Child Care and Development Block Grant, refugee assistance
Meredith Decker	Unemployment insurance, training programs, Administration on Aging, Smithsonian Institution, arts and humanities
Elizabeth Cove Delisle	Housing assistance
Kathleen FitzGerald	Supplemental Nutrition Assistance Program and other nutrition programs
Jennifer Gray	Social Services Block Grant, 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
Justin Latus	Supplemental Security Income
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

Natural and Physical Resources

Tiffany Arthur	Agriculture
Megan Carroll	Energy, air and water transportation
Michael Falkenheim	Federal Deposit Insurance Corporation
Mark Grabowicz	Administration of justice, Postal Service
Kathleen Gramp	Energy, Outer Continental Shelf receipts, spectrum auction receipts, Orderly Liquidation Fund
Wendy Kiska	Federal Deposit Insurance Corporation
Jeff LaFave	Conservation and land management, other natural resources, Federal Housing Administration and other housing credit programs
James Langley	Agriculture
Jeffrey Perry	Fannie Mae and Freddie Mac, Federal Housing Administration
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, Federal Emergency Management Agency, Bureau of Indian Affairs, administration of justice
Mitchell Remy	Fannie Mae and Freddie Mac, Federal Housing Administration
Janani Shankaran	Recreational resources, judicial branch, science and space exploration
Jon Sperl	Pollution control and abatement
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)
Meredith Decker	Other interest, debt limit
Avi Lerner	Interest on the public debt, automatic budget enforcement and sequestration, Troubled Asset Relief Program
Amber Marcellino	Federal civilian retirement
George McArdle	Appropriation bills (Military Construction and Veterans Affairs; State and Foreign Operations)

Other Areas and Functions (Continued)

Dan Ready	Various federal retirement programs, national income and product accounts, federal pay, historical data
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; Transportation and Housing and Urban Development)
J'nell Blanco Suchy	Appropriation bills (Interior and Environment; Homeland Security), authorization bills
Patrice Watson	Database system administrator

Analysis of the Effects of the 2017 Tax Act

The analysis of the economic and budgetary effects of Public Law 115-97, the 2017 tax act, was prepared by the Macroeconomic Analysis Division and the Tax Analysis Division. That work was supervised by Jeffrey Werling and John McClelland. The analysis was prepared by Robert Arnold, Paul Burnham, Dorian Carloni, Devrim Demirel, Michael Falkenheim, Daniel Fried, Edward Harris, Janet Holtzblatt, John Kitchen, Mark Lasky, Sarah Masi, Shannon Mok, Joshua Montes (formerly of CBO), Cecilia Pastrone, Molly Saunders-Scott, Kurt Seibert, John Seliski, Robert Shackleton, Joshua Shakin, Jennifer Shand, and Naveen Singhal. In addition, the staff of the Joint Committee on Taxation provided valuable assistance.

Writing

Barry Blom wrote the summary. Christopher Williams and Kim Kowalewski wrote Chapter 1, with assistance from John Seliski. Amber Marcellino wrote Chapter 2, with assistance from Megan Carroll, Avi Lerner, and Dan Ready. Nathaniel Frentz, Cecilia Pastrone, Kurt Seibert, Joshua Shakin, and Jennifer Shand wrote Chapter 3. Barry Blom wrote Chapter 4. Amber Marcellino wrote Appendix A, with assistance from Megan Carroll and Nathaniel Frentz. John Kitchen and Molly Saunders-Scott wrote Appendix B, with assistance from Devrim Demirel, Daniel Fried, and Mark Lasky. Avi Lerner wrote Appendix C. Claire Sleigh compiled Appendix D, and Dan Ready compiled Appendix E.

Reviewing, Editing, Fact-Checking, and Publishing

Wendy Edelberg, Mark Hadley, 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 communications team, supervised by Deborah Kilroe.

Christine Bogusz, Christine Browne, Christian Howlett, Kate Kelly, Loretta Lettner, Bo Peery, Benjamin Plotinsky, and Elizabeth Schwinn edited the report; Casey Labrack and Jorge Salazar prepared it for publication; and Robert Dean, Annette Kalicki, Adam Russell, and Simone Thomas published it on CBO's website. Aaron Betz, Tia Caldwell, Y. Gloria Chen, Kent Christensen, Meredith Decker, Jacob Fabian, Daniel Fried, Ann Futrell, Edward Gamber, Peter Huether, Mark Lasky, David Newman, Cecilia Pastrone, Dan Ready, Robert Reese, Robert Shackleton, Claire Sleigh, Adam Staveski, and Adam Wilson fact-checked the report. Lara Robillard coordinated the preparation of tables of baseline projections. Peter Huether, Dan Ready, Claire Sleigh, and Adam Staveski compiled data and supplemental information. Casey Labrack and Simone Thomas coordinated the presentation of those materials.