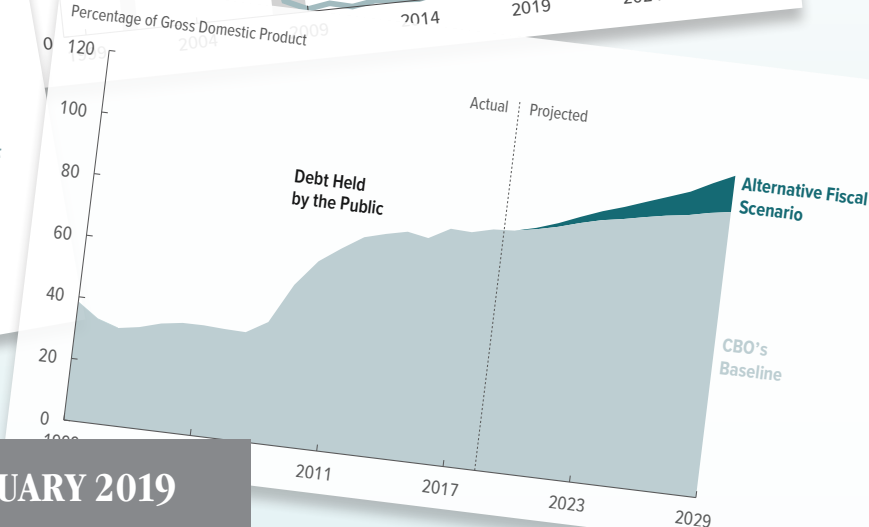
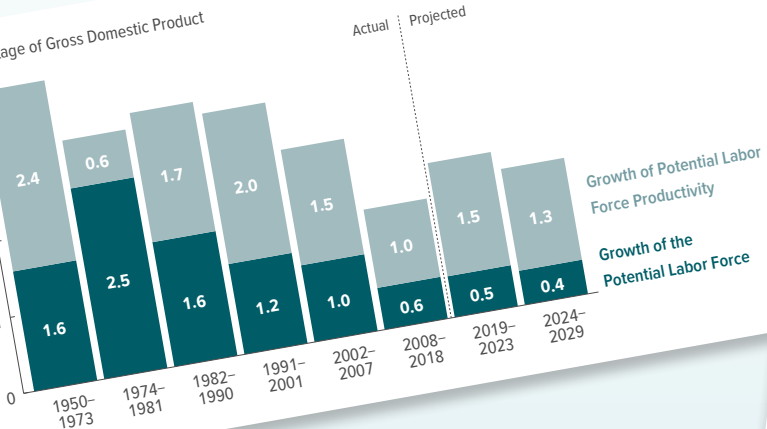
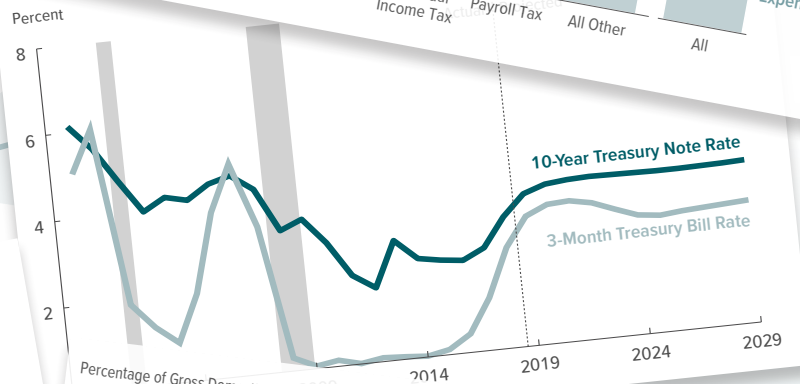
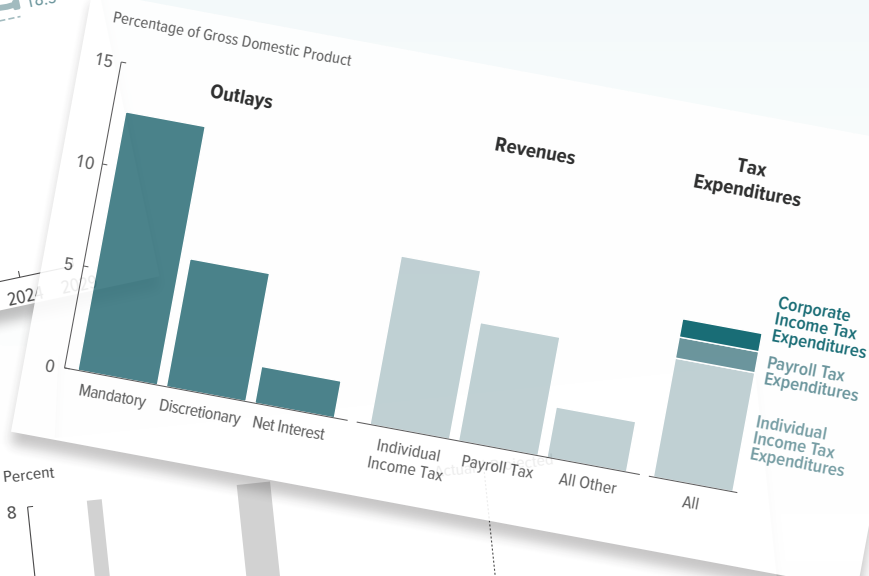
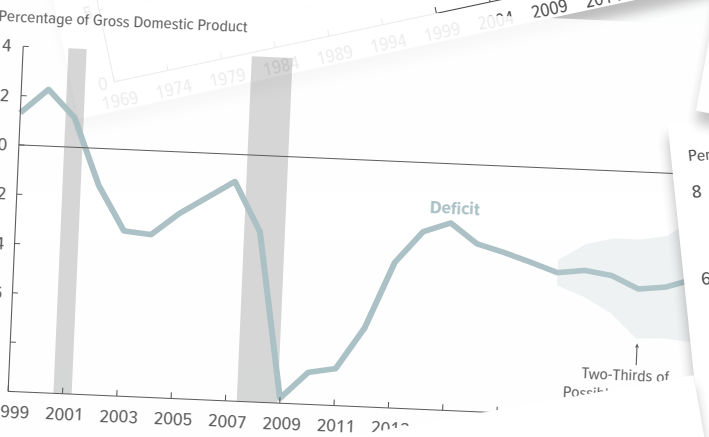
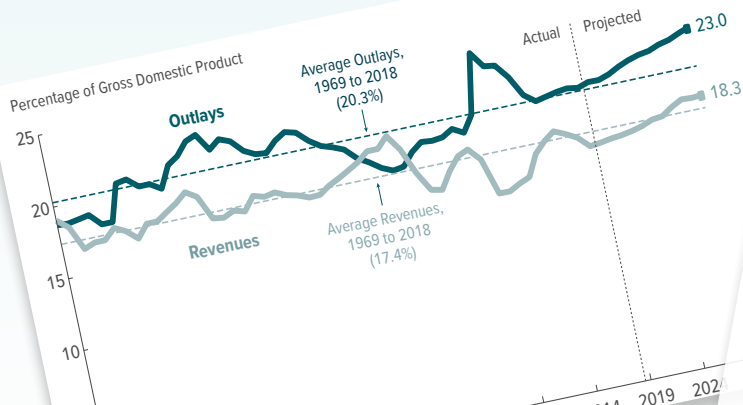


CBO

The Budget and Economic Outlook: 2019 to 2029



At a Glance

The Congressional Budget Office regularly publishes reports presenting projections that indicate what federal deficits, debt, revenues, and spending—and the economic path underlying them—would be for the current year and for the next 10 years if existing laws governing taxes and spending generally remained unchanged. This report is the latest in that series.

- **Deficits.** In CBO’s projections, the federal budget deficit is about \$900 billion in 2019 and exceeds \$1 trillion each year beginning in 2022. Over the coming decade, deficits (after adjustments to exclude shifts in the timing of certain payments) fluctuate between 4.1 percent and 4.7 percent of gross domestic product (GDP), well above the average over the past 50 years (see Chapter 1). CBO’s projection of the deficit for 2019 is now \$75 billion less—and its projection of the cumulative deficit over the 2019–2028 period, \$1.2 trillion less—than it was in spring 2018. That reduction in projected deficits results primarily from legislative changes—most notably, a decrease in emergency spending (see Appendix A).
- **Debt.** Because of persistently large deficits, federal debt held by the public is projected to grow steadily, reaching 93 percent of GDP in 2029 (its highest level since just after World War II) and about 150 percent of GDP in 2049—far higher than it has ever been (see Chapter 1). Moreover, if lawmakers amended current laws to maintain certain policies now in place, even larger increases in debt would ensue (see Chapter 5).
- **Revenues.** In CBO’s projections, federal revenues rise from 16.5 percent of GDP in 2019 to 17.4 percent in 2025 and then grow more rapidly, reaching 18.3 percent of GDP near the end of the decade. The projected growth in revenues after 2025 is largely attributable to the scheduled expiration of nearly all of the individual income tax provisions of the 2017 tax act (see Chapter 4).
- **Spending.** Federal outlays (adjusted to exclude shifts in the timing of certain payments) are projected to climb from 20.8 percent of GDP in 2019 to 23.0 percent in 2029. The aging of the population and the rising cost of health care contribute significantly to the growth in spending for major benefit programs, such as Social Security and Medicare. And rising debt and higher interest rates drive up the federal government’s net interest costs. Growth in outlays is curtailed by statutory limits on discretionary funding in place for the next few years (see Chapter 3).
- **The Economy.** Real GDP is projected to grow by 2.3 percent in 2019—down from 3.1 percent in 2018—as the effects of the 2017 tax act on the growth of business investment wane and federal purchases, as projected under current law, decline sharply in the fourth quarter of 2019. Nevertheless, output is projected to grow slightly faster than its maximum sustainable level this year, continuing to boost the demand for labor and to push down the unemployment rate. After 2019, annual economic growth is projected to slow further—to an average of 1.7 percent through 2023, which is below CBO’s projection of potential growth for that period. From 2024 to 2029, economic growth and potential growth are projected to average 1.8 percent per year—less than their long-term historical averages, primarily because the labor force is expected to grow more slowly than it has in the past (see Chapter 2).



Contents

	Visual Summary	1
1	Deficits and Debt	5
	Overview	5
	Deficits	5
	BOX 1-1. SPENDING FOR PEOPLE AGE 65 OR OLDER	12
	Debt	14
	Uncertainty in Budget Projections	17
	The Long-Term Outlook for the Budget	20
2	The Economic Outlook	21
	Overview	21
	Fiscal and Trade Policies	24
	BOX 2-1. THE EFFECTS OF RECENT CHANGES IN TRADE POLICY	26
	The Economic Outlook for 2019 to 2023	28
	The Economic Outlook for 2024 to 2029	43
	Projections of Income for 2019 to 2029	47
	BOX 2-2. CBO'S ESTIMATE AND PROJECTION OF POTENTIAL TOTAL FACTOR PRODUCTIVITY IN THE NONFARM BUSINESS SECTOR	48
	Some Uncertainties in the Economic Outlook	51
	Comparison With CBO's August 2018 Economic Projections	54
Comparison With Other Economic Projections	55	
3	The Spending Outlook	61
	Overview	61
	Mandatory Spending	63
	BOX 3-1. CATEGORIES OF FEDERAL OUTLAYS	64
	Discretionary Spending	75
	Net Interest	85
	Uncertainty Surrounding the Spending Outlook	85
4	The Revenue Outlook	87
	Overview	87
	The Evolving Composition of Revenues	88
	Individual Income Taxes	90
	Payroll Taxes	93
	Corporate Income Taxes	94
	Smaller Sources of Revenues	95
	Tax Expenditures	98
	Uncertainty Surrounding the Revenue Outlook	103

5	Estimated Budgetary Outcomes Under Alternative Assumptions About Fiscal Policy	105
	Overview	105
	Discretionary Spending	105
	Revenues	106
	An Alternative Fiscal Scenario	108
A	Changes in CBO’s Baseline Projections	111
	Overview	111
	Legislative Changes	111
	Economic Changes	113
	Technical Changes	117
B	How Changes in Economic Conditions Might Affect the Federal Budget	121
	Overview	121
	Background	121
	Changes in Productivity Growth and Labor Force Growth	124
	Changes in Interest Rates and Inflation	127
C	The Automatic Stabilizers in the Federal Budget	131
	Overview	131
	Estimates of the Automatic Stabilizers Over the Next Decade	131
	Budget Deficits Without Automatic Stabilizers	136
D	Trust Funds	139
	Overview	139
	Social Security’s Trust Funds	142
	Trust Funds for Federal Employees’ Retirement Programs	143
	Medicare’s Trust Funds	144
	Highway Trust Fund	145
E	CBO’s Economic Projections for 2019 to 2029	147
F	Historical Budget Data	149
	List of Tables and Figures	161
	About This Document	165

Notes

The projections in this report do not incorporate the effects of the partial shutdown of the federal government that started on December 22, 2018, and ended on January 25, 2019.

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

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

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

As referred to in this report, the Affordable Care Act comprises the Patient Protection and Affordable Care Act (Public Law 111-148), the health care provisions of the Health Care and Education Reconciliation Act of 2010 (P.L. 111-152), and the effects of subsequent judicial decisions, statutory changes, and administrative actions. This spring, CBO will publish a report about subsidies for health insurance coverage that the Affordable Care Act extends to people under age 65.

Supplemental data for this analysis are available on CBO's website (www.cbo.gov/publication/54918), as are a glossary of common budgetary and economic terms (www.cbo.gov/publication/42904), a description of how CBO prepares its baseline budget projections (www.cbo.gov/publication/53532), a description of how CBO prepares its economic forecast (www.cbo.gov/publication/53537), and previous editions of this report (<https://go.usa.gov/xQrzS>).



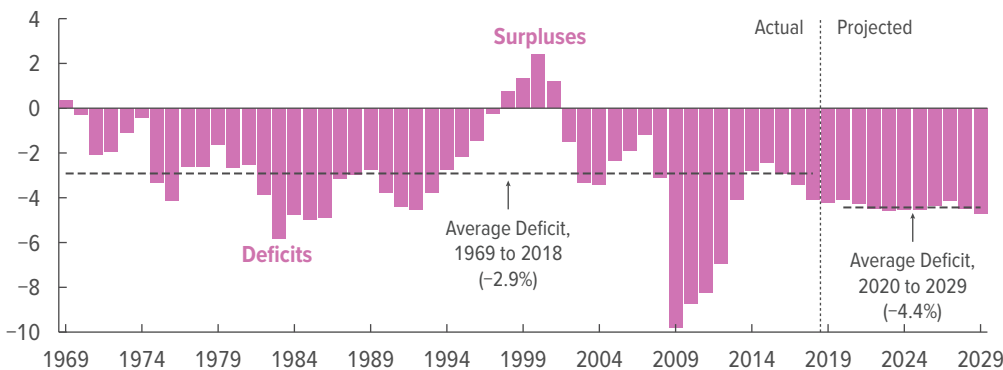
Visual Summary

In this report, the Congressional Budget Office provides projections of the federal budget and the U.S. economy under current law for this year and the following decade. The deficits projected in this update are smaller than those in the projections that CBO published last spring, primarily because funding for emergencies is now projected to be lower. The agency's economic forecast has changed little since it was last updated in August 2018.

Deficits

CBO projects a 2019 deficit of about \$900 billion, or 4.2 percent of gross domestic product (GDP). The projected shortfall (adjusted to exclude the effects of shifts in the timing of certain payments) rises to 4.7 percent of GDP in 2029.

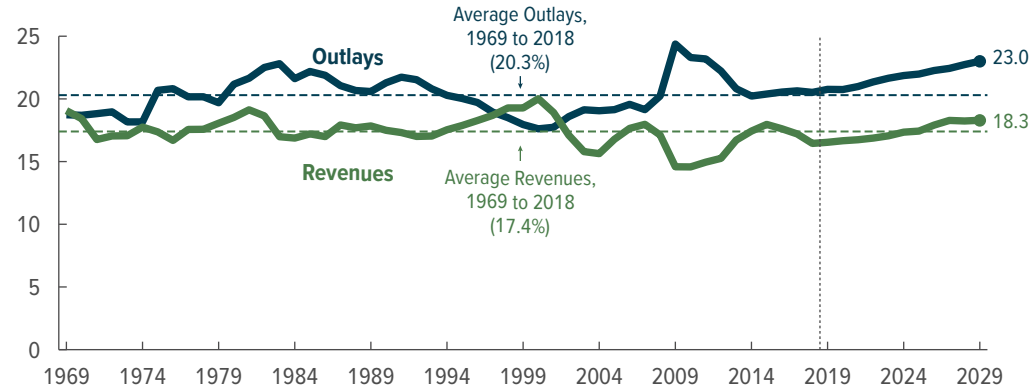
Percentage of Gross Domestic Product



See Figure 1-1

Over the 2020–2029 period, deficits are projected to average 4.4 percent of GDP, totaling \$11.6 trillion. Such deficits would be significantly larger than the 2.9 percent of GDP that deficits averaged over the past 50 years.

Percentage of Gross Domestic Product

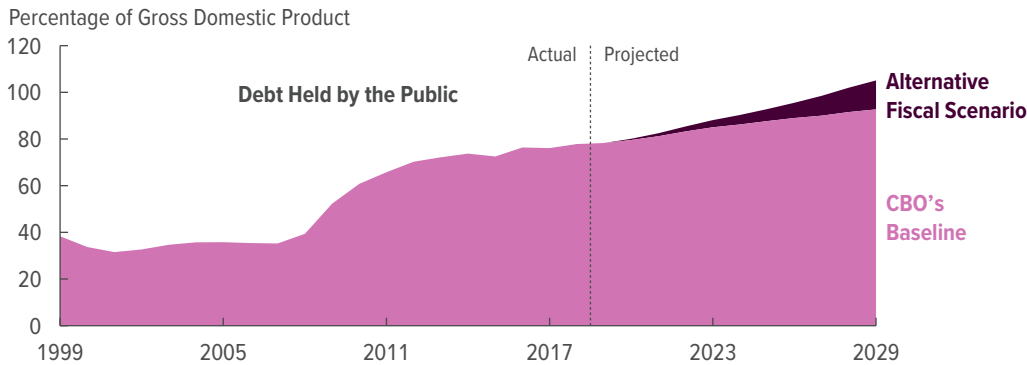


See Figure 1-2

Revenues and outlays are both projected to rise in relation to GDP, but the gap between them is projected to persist, resulting in large deficits and rising debt.

Debt

Federal debt held by the public is projected to reach \$16.6 trillion at the end of 2019. Relative to the size of the economy, that amount—at 78 percent of GDP—would be nearly twice its average over the past 50 years. By 2029, debt is estimated to reach \$28.7 trillion, or 93 percent of GDP—a higher level than at any time since just after World War II. It would continue to grow after 2029, reaching about 150 percent of GDP by 2049.

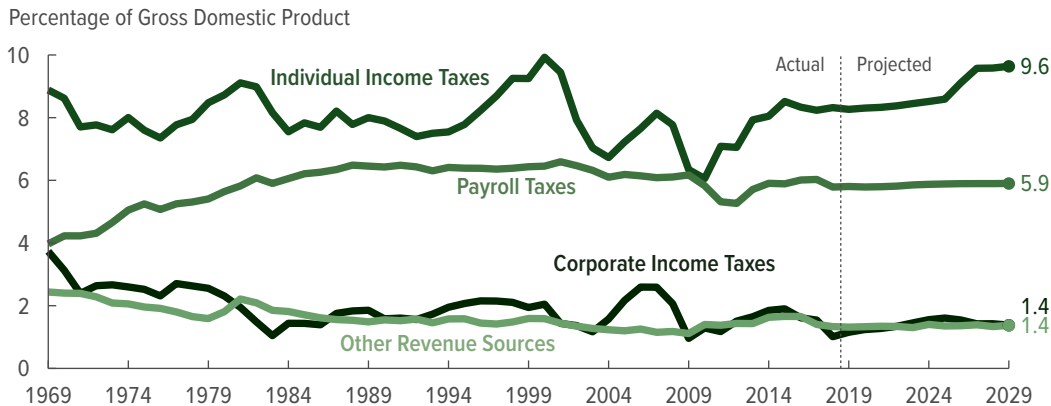


In addition to its projections of outcomes under current law, CBO analyzed an alternative fiscal scenario in which substantial tax increases and discretionary spending cuts would not take place as scheduled; instead, major policies that are currently in place would be maintained. Under that scenario, federal debt would rise to 105 percent of GDP in 2029.

See Figure 5-3

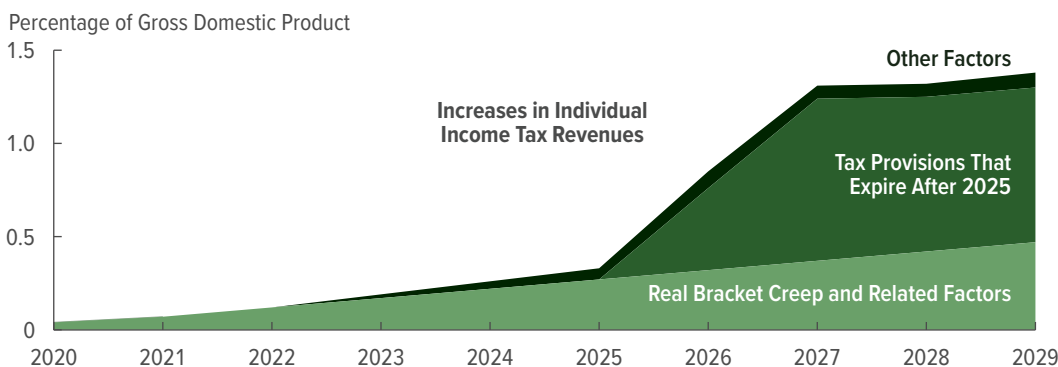
Revenues

In CBO's baseline projections, revenues total \$3.5 trillion in 2019, or 16.5 percent of GDP, and rise to 18.3 percent of GDP in 2029. Over the past 50 years, revenues averaged 17.4 percent of GDP.



Total revenues as a share of GDP are projected to rise, largely because of increases in individual income taxes.

See Figure 4-2

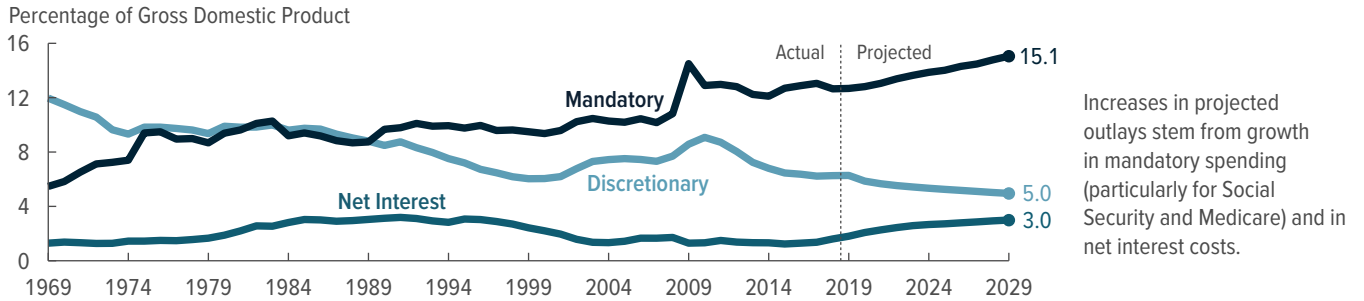


Individual income taxes as a share of GDP are projected to rise by a total of 1.4 percentage points over the next decade. The biggest contribution to that increase is the expiration of certain provisions of the 2017 tax act at the end of 2025.

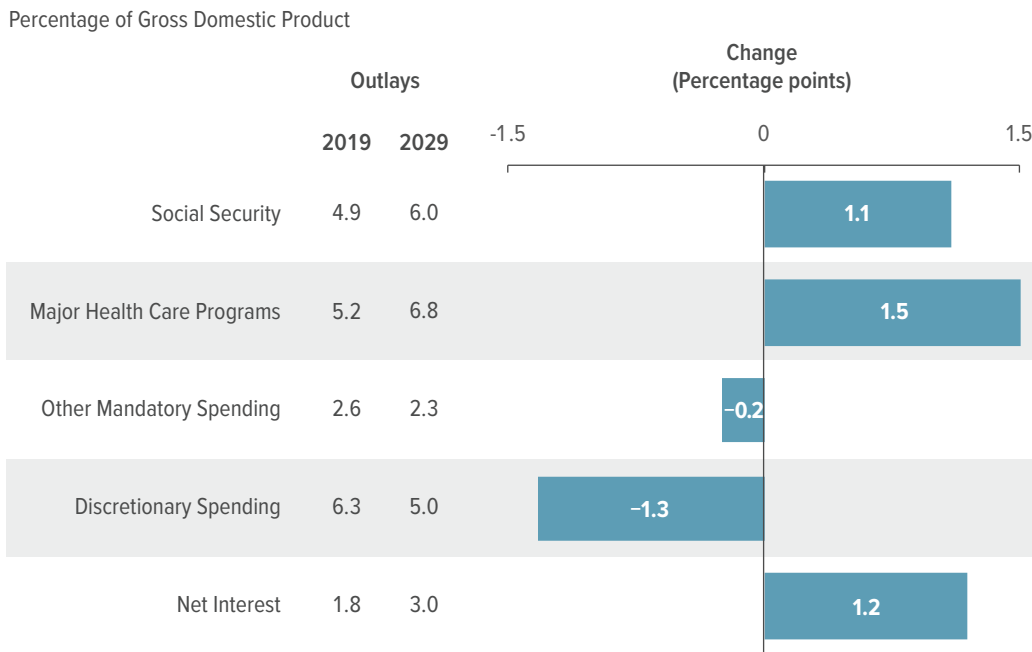
See Figure 4-3

Spending

In 2019, outlays in CBO’s baseline projections total \$4.4 trillion, or 20.8 percent of GDP. They rise to 23.0 percent of GDP in 2029 (after an adjustment to exclude the effects of certain timing shifts). Over the past 50 years, outlays averaged 20.3 percent of GDP.



See Figure 3-1

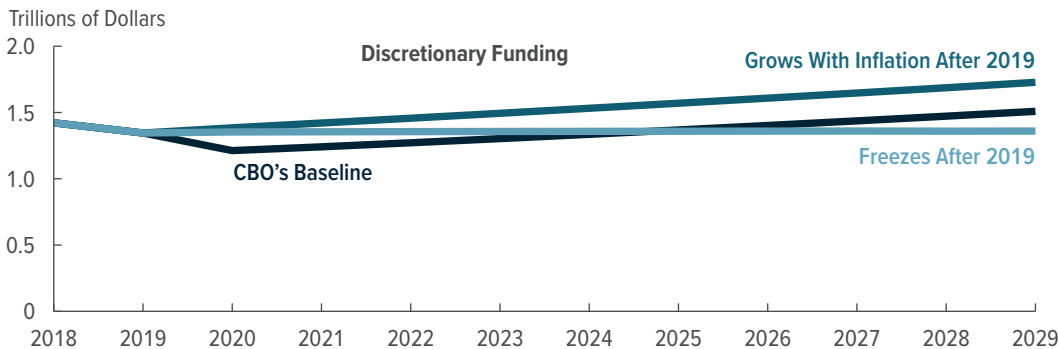


The aging of the population and rising cost of health care drive the increase in outlays for programs that provide benefits to the elderly.

Outlays for discretionary programs fall relative to GDP because of caps on funding and because rates of inflation, which are used to project future funding, are lower than the rate of nominal GDP growth.

Net interest costs rise sharply because of accumulating debt and rising interest rates.

See Figure 3-2

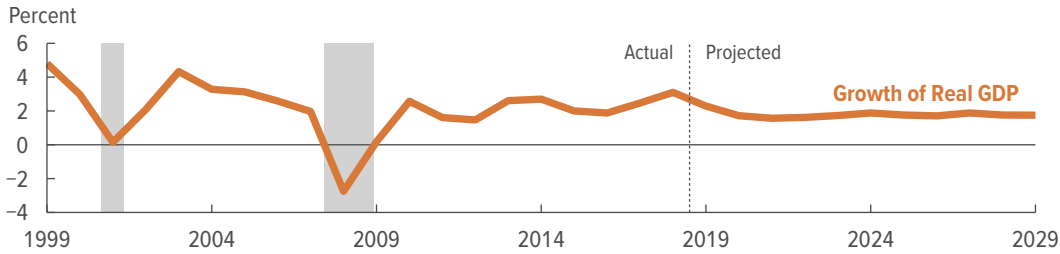


Discretionary funding in future years could differ from the amounts in CBO’s baseline projections, which reflect the assumption that funding will adhere to the current-law caps through 2021. In later years, funding is projected to grow with inflation.

See Figure 5-1

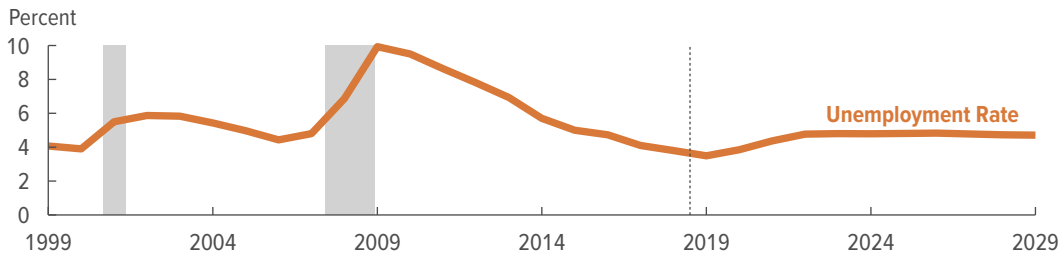
The Economy

In CBO’s economic forecast, which underlies its budget projections, the economy expands more slowly over the next decade than it did in 2018, averaging annual growth of 1.7 percent over the 2020–2029 period. The slowdown begins in 2019 as the positive effects of recent tax legislation on business investment are expected to wane and federal purchases under current law are projected to drop sharply starting in the fourth quarter of the year. Over the longer term, growth is below its historical average, primarily because the labor force is expected to grow more slowly than it has in the past.



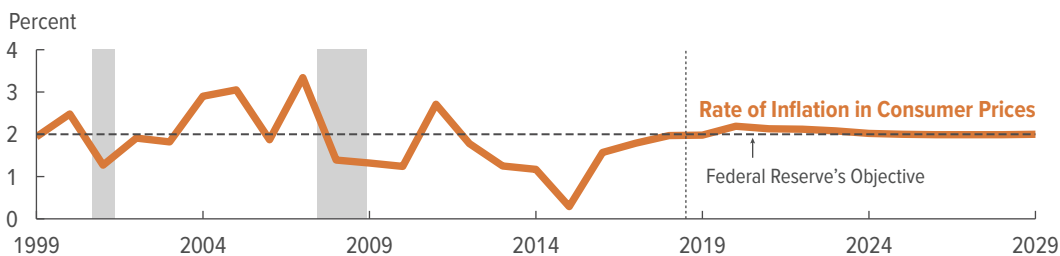
After growing by an estimated 3.1 percent in 2018, real GDP is projected to grow by 2.3 percent this year and more slowly thereafter—reflecting slower growth in business fixed investment after 2018 and in consumer spending after 2019.

See Figure 2-1



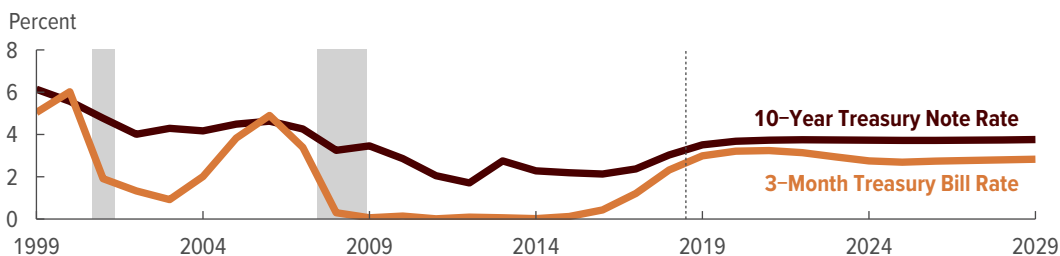
CBO expects the unemployment rate to continue to fall this year, putting upward pressure on wages. The rate begins rising next year because of the slower projected growth of real GDP.

See Figure 2-1



Stronger demand for goods, services, and labor is expected to push the rate of inflation in consumer prices slightly above the Federal Reserve’s objective of 2 percent over the next few years.

See Figure 2-1



Interest rates are projected to continue to rise over the next two years as the Federal Reserve raises the federal funds rate to slow the growth of overall demand and reduce the associated inflationary pressures.

See Figure 2-1

Deficits and Debt

Overview

Under the assumption that current laws governing taxes and spending will generally remain unchanged in future years, federal budget deficits are set to remain at a very high level by historical standards throughout the next decade, the Congressional Budget Office projects (see Figure 1-1). As a result of those deficits, federal debt would rise each year through 2029.¹

Large Deficits

Federal deficits in CBO's baseline average \$1.2 trillion per year and total \$11.6 trillion over the 2020–2029 period (see Table 1-1). Those deficits would average 4.4 percent of gross domestic product (GDP). Other than the period immediately after World War II, the only other time the average deficit has been so large over so many years was after the 2007–2009 recession. Over the past 50 years, the annual deficit has averaged 2.9 percent of GDP.

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, that debt is projected to increase from 78 percent of GDP in 2018 to 93 percent at the end of 2029. 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.

Uncertainty of Budgetary Outcomes

Considerable uncertainty surrounds CBO's budget projections, which depend on the agency's economic projections and many other factors. Developments that vary from what CBO projects could lead to budgetary outcomes that are very different from the baseline. That

uncertainty tends to increase in later years of the projection period because changes in the economy, demographics, and a variety of other factors are more difficult to anticipate over longer time horizons.

Moreover, outcomes will depend on future legislative action, which could increase or decrease budget deficits. For example, CBO's baseline projections reflect a number of significant changes to tax and spending policies that are scheduled to take effect under current law, but which could be modified by future legislation. If the scheduled changes did not occur and current policies were continued instead, much larger deficits and greater debt would result: By 2029, the deficit would exceed CBO's baseline estimate by 2.3 percentage points of GDP; and debt held by the public would rise to 105 percent of GDP. (For more information on CBO's alternative fiscal scenario and other alternatives to CBO's baseline projections, see Chapter 5.)

Long-Term Budgetary Pressures

Beyond 2029, if current laws remained generally unchanged, deficits would continue to grow over the following 20 years, driving debt to its highest levels in the nation's history. Those large budget deficits would arise because outlays—particularly for Social Security, Medicare, and interest on the debt—would grow steadily under current law, and revenues would not keep pace with those outlays.

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 rise from \$779 billion in 2018 to about \$1.2 trillion a year in 2025, 2026, and 2027. The budget deficit would increase to \$1.4 trillion in 2028 and 2029, CBO projects.

The Deficit in 2019

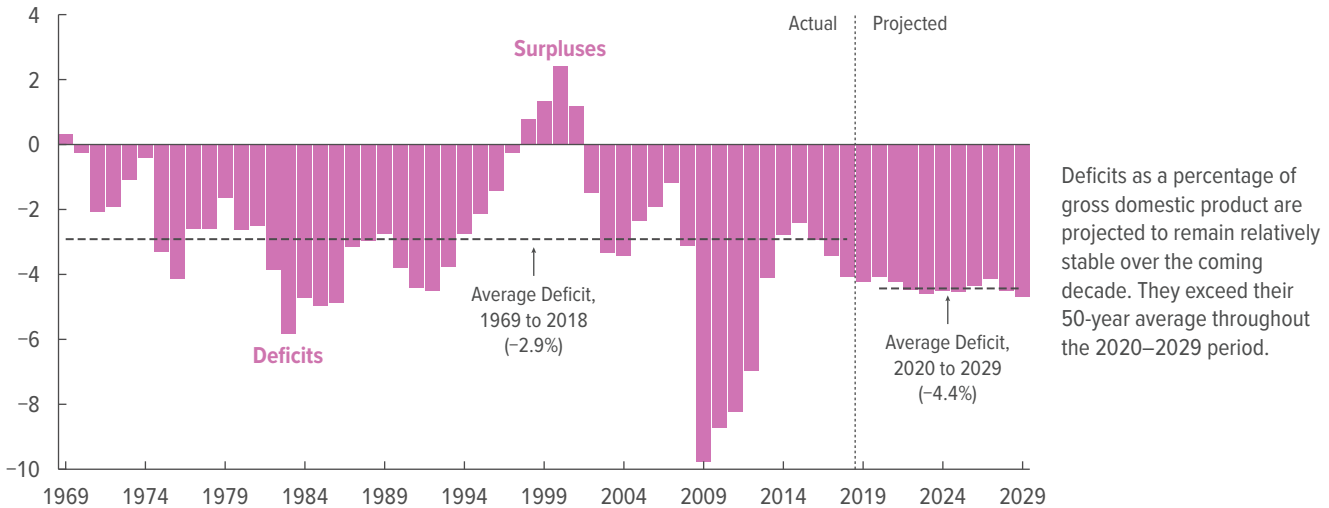
In CBO's baseline projections, the budget deficit in 2019 is \$897 billion, \$118 billion more than the shortfall last

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.

Figure 1-1.

Total Deficits and Surpluses

Percentage of Gross Domestic Product



Source: Congressional Budget Office.

When October 1 (the first day of the fiscal year) falls on a weekend, certain payments that would have ordinarily been made on that day are instead made at the end of September and thus are shifted into the previous fiscal year. All projections presented here have been adjusted to exclude the effects of those timing shifts. Historical amounts have been adjusted as far back as the available data will allow.

year.² That increase would be smaller if not for a shift in the timing of certain payments. The 2018 deficit was 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.³ If not for that shift, last year's shortfall would have been \$823 billion and the projected increase in the deficit in 2019 would have been \$74 billion (see Table 1-2).

2. Some agencies experienced a lapse in appropriations when authorities contained in the Continuing Appropriations Act, 2019—as extended by Public Law 115-298—expired on December 22, 2018. For those agencies, CBO's current baseline projections incorporate the amount of fiscal year 2019 funding that was provided before that expiration, annualized (that is, as if it was provided for the entirety of the fiscal year).
3. 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 years 2024 and 2029.

Following the enactment of the 2017 tax act (Public Law 115-97), revenues grew by less than 1 percent in 2018. CBO projects that, under current law, revenues will rise faster than GDP this year, increasing by nearly 6 percent (or \$186 billion), to \$3.5 trillion.

Outlays, which rose by 4 percent in 2018, are projected to increase by more than 6 percent (or \$260 billion) this year, to \$4.4 trillion. (The 2018 amount and the projections below reflect adjustments to exclude the effects of the timing shift.) All three major components of spending contribute to that increase:

- Net outlays for interest are anticipated to jump from \$325 billion in 2018 to \$383 billion in 2019, an increase of 18 percent (or \$59 billion). Higher interest rates this year, and, to a lesser extent, more federal debt, account for most of that change.
- Mandatory spending is expected to increase by about 5 percent (or \$135 billion) in 2019, to \$2.7 trillion. The reasons for that projected rate of growth include robust growth in spending for Social Security, which will increase by 6 percent in 2019, CBO estimates.

Table 1-1.

CBO's Baseline Budget Projections, by Category

	Actual, 2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total	
													2020– 2024	2020– 2029
In Billions of Dollars														
Revenues														
Individual income taxes	1,684	1,756	1,837	1,910	1,992	2,085	2,184	2,290	2,521	2,752	2,861	2,989	10,007	23,420
Payroll taxes	1,171	1,233	1,280	1,330	1,383	1,444	1,506	1,568	1,631	1,694	1,761	1,830	6,943	15,426
Corporate income taxes	205	245	274	292	319	358	399	428	427	409	426	428	1,642	3,760
Other	270	280	294	308	318	321	360	361	377	400	399	426	1,602	3,564
Total	3,329	3,515	3,686	3,841	4,012	4,208	4,448	4,647	4,956	5,254	5,446	5,672	20,195	46,170
On-budget	2,474	2,613	2,745	2,862	2,997	3,153	3,350	3,506	3,770	4,023	4,168	4,345	15,108	34,921
Off-budget ^a	855	902	940	978	1,015	1,055	1,098	1,141	1,185	1,231	1,278	1,327	5,087	11,249
Outlays														
Mandatory	2,520	2,695	2,834	2,995	3,240	3,371	3,493	3,737	3,957	4,161	4,500	4,584	15,933	36,872
Discretionary	1,263	1,334	1,295	1,299	1,319	1,338	1,362	1,399	1,431	1,465	1,505	1,530	6,614	13,943
Net interest	325	383	460	521	581	637	684	724	772	821	876	928	2,882	7,003
Total	4,108	4,412	4,589	4,814	5,140	5,347	5,539	5,859	6,160	6,446	6,881	7,042	25,430	57,818
On-budget	3,259	3,506	3,619	3,778	4,031	4,159	4,273	4,510	4,731	4,929	5,265	5,328	19,860	44,623
Off-budget ^a	849	906	970	1,036	1,109	1,187	1,266	1,349	1,428	1,518	1,616	1,714	5,569	13,195
Deficit (-) or Surplus	-779	-897	-903	-974	-1,128	-1,139	-1,091	-1,212	-1,204	-1,192	-1,435	-1,370	-5,235	-11,648
On-budget	-785	-893	-874	-915	-1,033	-1,007	-923	-1,005	-961	-905	-1,097	-982	-4,752	-9,703
Off-budget ^a	6	-4	-29	-58	-94	-132	-169	-208	-243	-287	-338	-387	-483	-1,945
Debt Held by the Public	15,751	16,636	17,601	18,626	19,795	20,976	22,112	23,372	24,625	25,866	27,338	28,739	n.a.	n.a.
Memorandum:														
Gross Domestic Product	20,236	21,252	22,120	22,939	23,778	24,672	25,642	26,656	27,667	28,738	29,862	31,006	119,151	263,080
As a Percentage of Gross Domestic Product														
Revenues														
Individual income taxes	8.3	8.3	8.3	8.3	8.4	8.4	8.5	8.6	9.1	9.6	9.6	9.6	8.4	8.9
Payroll taxes	5.8	5.8	5.8	5.8	5.8	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.8	5.9
Corporate income taxes	1.0	1.2	1.2	1.3	1.3	1.5	1.6	1.6	1.5	1.4	1.4	1.4	1.4	1.4
Other	1.3	1.3	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.4	1.3	1.4	1.3	1.4
Total	16.4	16.5	16.7	16.7	16.9	17.1	17.3	17.4	17.9	18.3	18.2	18.3	16.9	17.5
On-budget	12.2	12.3	12.4	12.5	12.6	12.8	13.1	13.2	13.6	14.0	14.0	14.0	12.7	13.3
Off-budget ^a	4.2	4.2	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	12.5	12.7	12.8	13.1	13.6	13.7	13.6	14.0	14.3	14.5	15.1	14.8	13.4	14.0
Discretionary	6.2	6.3	5.9	5.7	5.5	5.4	5.3	5.2	5.2	5.1	5.0	4.9	5.6	5.3
Net interest	1.6	1.8	2.1	2.3	2.4	2.6	2.7	2.7	2.8	2.9	2.9	3.0	2.4	2.7
Total	20.3	20.8	20.7	21.0	21.6	21.7	21.6	22.0	22.3	22.4	23.0	22.7	21.3	22.0
On-budget	16.1	16.5	16.4	16.5	17.0	16.9	16.7	16.9	17.1	17.2	17.6	17.2	16.7	17.0
Off-budget ^a	4.2	4.3	4.4	4.5	4.7	4.8	4.9	5.1	5.2	5.3	5.4	5.5	4.7	5.0
Deficit (-) or Surplus	-3.8	-4.2	-4.1	-4.2	-4.7	-4.6	-4.3	-4.5	-4.4	-4.1	-4.8	-4.4	-4.4	-4.4
On-budget	-3.9	-4.2	-4.0	-4.0	-4.3	-4.1	-3.6	-3.8	-3.5	-3.2	-3.7	-3.2	-4.0	-3.7
Off-budget ^a	*	*	-0.1	-0.3	-0.4	-0.5	-0.7	-0.8	-0.9	-1.0	-1.1	-1.2	-0.4	-0.7
Debt Held by the Public	77.8	78.3	79.6	81.2	83.2	85.0	86.2	87.7	89.0	90.0	91.5	92.7	n.a.	n.a.

Source: Congressional Budget Office.

n.a. = not applicable; * = between -0.05 percent 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 1-2.

CBO's Baseline Projections of Outlays and Deficits, Adjusted to Exclude the Effects of Timing Shifts

	Actual, 2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
In Billions of Dollars												
Payments That Are Shifted in CBO's Baseline ^a	-44	0	0	0	62	5	-67	0	0	0	91	-91
Outlays Adjusted for Timing Shifts												
Mandatory	2,560	2,695	2,834	2,995	3,183	3,366	3,555	3,737	3,957	4,161	4,415	4,669
Discretionary	1,267	1,334	1,295	1,299	1,314	1,338	1,367	1,399	1,431	1,465	1,499	1,535
Net interest	325	383	460	521	581	637	684	724	772	821	876	928
Total	4,152	4,412	4,589	4,814	5,078	5,342	5,606	5,859	6,160	6,446	6,790	7,133
Deficit Adjusted for Timing Shifts	-823	-897	-903	-974	-1,066	-1,134	-1,158	-1,212	-1,204	-1,192	-1,344	-1,460
As a Percentage of Gross Domestic Product												
Outlays Adjusted for Timing Shifts												
Mandatory	12.6	12.7	12.8	13.1	13.4	13.6	13.9	14.0	14.3	14.5	14.8	15.1
Discretionary	6.3	6.3	5.9	5.7	5.5	5.4	5.3	5.2	5.2	5.1	5.0	5.0
Net interest	1.6	1.8	2.1	2.3	2.4	2.6	2.7	2.7	2.8	2.9	2.9	3.0
Total	20.5	20.8	20.7	21.0	21.4	21.7	21.9	22.0	22.3	22.4	22.7	23.0
Deficit Adjusted for Timing Shifts	-4.1	-4.2	-4.1	-4.2	-4.5	-4.6	-4.5	-4.5	-4.4	-4.1	-4.5	-4.7
Memorandum:												
Baseline Deficit												
In billions of dollars	-779	-897	-903	-974	-1,128	-1,139	-1,091	-1,212	-1,204	-1,192	-1,435	-1,370
As a percentage of gross domestic product	-3.8	-4.2	-4.1	-4.2	-4.7	-4.6	-4.3	-4.5	-4.4	-4.1	-4.8	-4.4

Source: Congressional Budget Office.

a. When October 1 (the first day of the fiscal year) falls on a weekend, certain payments that would have ordinarily been made on that day are instead made at the end of September and thus are shifted into the previous fiscal year. Those shifts primarily affect mandatory outlays; discretionary outlays are also affected, but to a much lesser degree. Net interest outlays are not affected.

- Discretionary outlays are also projected to rise, by 5 percent (or \$67 billion) this year, about the same rate of increase as last year; such outlays increased by less than 2 percent in both 2016 and 2017. The growth in discretionary outlays that occurred in 2018, and that is projected to occur in 2019, stems primarily from legislation enacted last year that raised the statutory caps on discretionary funding for those two years and from the subsequent increases in appropriations.

This year's deficit is projected to total 4.2 percent of GDP, only slightly above last year's level of 4.1 percent (after adjustments to exclude the effects of the 2018 timing shift). Revenues are expected to reach 16.5 percent of GDP in 2019, slightly above their level in 2018—but outlays are estimated to rise more as a percentage of GDP, from 20.5 percent in 2018 to 20.8 percent in 2019.

Deficits From 2020 to 2029

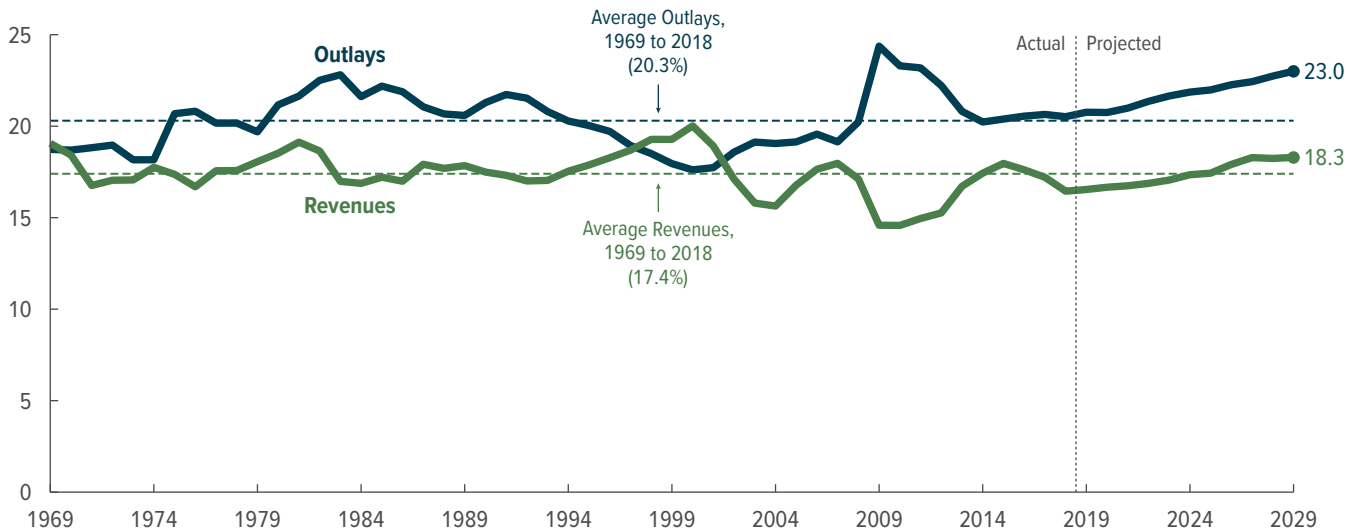
In CBO's baseline projections, the budget deficit (adjusted to exclude shifts in timing) remains near its 2019 level over the following two years before rising to 4.5 percent of GDP in 2022, after which it remains largely unchanged for the next several years. Both revenues and outlays increase at similar rates on average over that period.

Between 2025 and 2027 in CBO's baseline, deficits fall from 4.5 percent of GDP to 4.1 percent, primarily because projected revenues increase more rapidly as a number of provisions of the 2017 tax act expire. After 2027, growth in revenues slows while outlays increase steadily (see Figure 1-2). As a result, the deficit rises over the final two years of the projection period, reaching 4.7 percent of GDP (adjusted to exclude shifts in timing) in 2029. That percentage has been exceeded in only eight years since 1946; four of those years followed the 2007–2009 recession.

Figure 1-2.

Total Revenues and Outlays

Percentage of Gross Domestic Product



Source: Congressional Budget Office.

When October 1 (the first day of the fiscal year) falls on a weekend, certain payments that would have ordinarily been made on that day are instead made at the end of September and thus are shifted into the previous fiscal year. All projections presented here have been adjusted to exclude the effects of those timing shifts. Historical amounts have been adjusted as far back as the available data will allow.

Deficits in CBO's baseline average 4.4 percent of GDP between 2020 and 2029, a period in which the unemployment rate is projected to remain below 5 percent. Until recently, deficits higher than 4 percent of GDP have been unprecedented in times of low unemployment. In the past 50 fiscal years, the unemployment rate has been below 6 percent in 27 years. During those years, the deficit averaged 1.5 percent of GDP (see Figure 1-3). In the 12 years that the unemployment rate was below 5 percent, deficits averaged 0.7 percent of GDP.

Growth of Revenues. Revenues are projected to grow from 16.5 percent of GDP in 2019 to 17.4 percent in 2025. Receipts from corporate income taxes are projected to grow from 1.2 percent to 1.6 percent of GDP over that period for two reasons. First, changes in tax rules that are scheduled to occur over the next decade would gradually boost receipts, on net. Second, weakness observed in corporate tax receipts over the past several years—beyond that which can be explained by currently available data on business activity—is expected to gradually dissipate. Individual income tax receipts are projected to rise from 8.3 percent of GDP in 2019 to

8.6 percent in 2025. The most significant source of that increase is continued economic growth, causing people's income, in the aggregate, to rise faster than the rate of inflation.

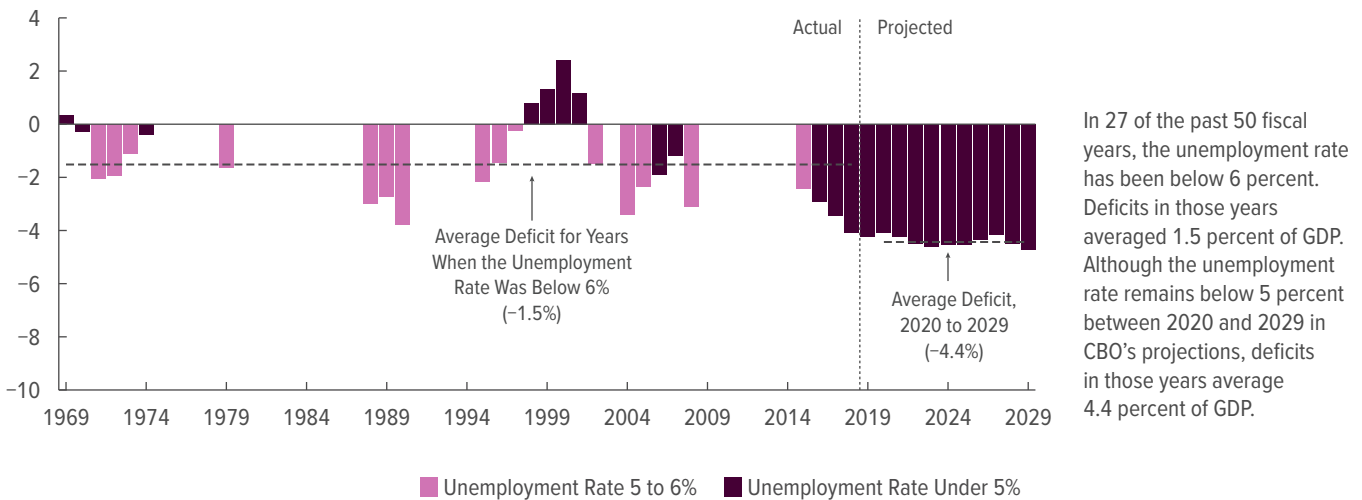
CBO projects that if current laws generally remained unchanged, revenues would grow more quickly toward the end of the projection period, increasing from 17.4 percent of GDP in 2025 to 18.3 percent in 2027 and remaining near that amount through 2029. Receipts from individual income taxes drive that growth, rising from 8.6 percent of GDP in 2025 to 9.6 percent in 2029. 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 act that affect individual income taxes. Those expirations would cause tax liabilities to rise in calendar year 2026, boosting receipts in 2026 and 2027. (For a more detailed discussion of CBO's revenue projections, see Chapter 4.)

Growth of Outlays. Total outlays are projected to rise over the coming decade, boosted by greater spending for interest costs and large benefit programs (see Figure 1-4).

Figure 1-3.

Baseline Deficits Compared With Deficits and Surpluses When the Unemployment Rate Has Been Relatively Low

Percentage of Gross Domestic Product



Source: Congressional Budget Office.

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

When October 1 (the first day of the fiscal year) falls on a weekend, certain payments that would have ordinarily been made on that day are instead made at the end of September and thus are shifted into the previous fiscal year. All projections presented here have been adjusted to exclude the effects of those timing shifts. Historical amounts have been adjusted as far back as the available data will allow.

GDP = gross domestic product.

In the baseline, outlays (adjusted to exclude shifts in timing) rise from 20.8 percent of GDP in 2019 to 23.0 percent in 2029. Growth in outlays averages 5 percent a year between 2020 and 2029. Most of that growth stems from higher interest costs and increased spending for benefits for older people, which is concentrated in a few mandatory programs but also involves discretionary spending (see Box 1-1).

Net Interest. CBO estimates that, under current law, outlays for net interest will increase substantially, particularly over the next five years. In CBO's projections, interest rates rise rapidly over the next two years, and net interest outlays increase at an average annual rate of 14 percent between 2019 and 2023, more than double the average rate of increase projected for 2024 to 2029. The slower rate of increase in later years occurs primarily because interest rates under CBO's economic forecast are relatively flat over the second half of the projection

period. (For a more detailed discussion of CBO's economic projections, see Chapter 2.) Nevertheless, as federal debt continues to rise, net interest outlays in CBO's baseline increase from 2.7 percent of GDP in 2024 to 3.0 percent in 2029, well above the 1.8 percent projected for 2019.

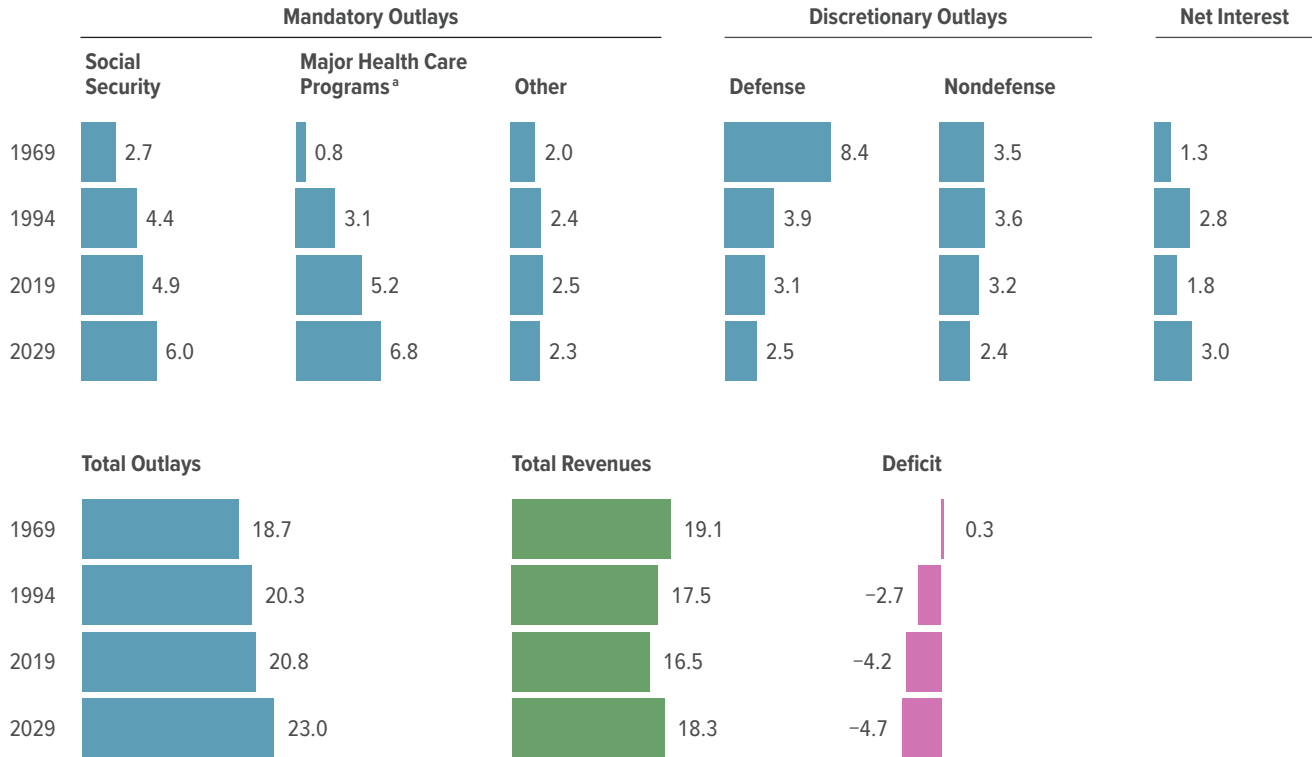
Mandatory Spending. Outlays for mandatory programs are projected to increase steadily over the coming decade, rising by 6 percent a year, on average. By 2029, those outlays (adjusted to exclude timing shifts) would total 15.1 percent of GDP, up from 12.7 percent in 2019. By comparison, the only other time mandatory outlays have exceeded 14.0 percent of GDP since 1962 was in 2009, during the most recent recession, when they totaled 14.5 percent.

Growth in spending for Social Security and Medicare (adjusted to exclude the effects of timing shifts) accounts

Figure 1-4.

CBO’s Baseline Projections of Outlays and Revenues, Compared With Actual Values 25 and 50 Years Ago

Percentage of Gross Domestic Product



Source: Congressional Budget Office.

In 2028, October 1 (the first day of fiscal year 2029) falls on a weekend, so certain payments that are due on that date will instead be made in September, thus boosting outlays in fiscal year 2028 and reducing them in 2029. Such shifts affect projections of outlays for the major health care programs, other mandatory outlays, defense discretionary outlays, total outlays, and the deficit. A similar shift boosted outlays in those categories in 1994. The data presented here have been adjusted to exclude the effects of those timing shifts.

a. Consists of outlays 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.

for about 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 growth in 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 (see Figure 1-5 on page 14). As a result, spending for people age 65 or older in several large mandatory programs—particularly Social Security and Medicare—increases notably in CBO’s baseline.

- 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.

In keeping with the rules established by the Deficit Control Act, 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 depending on when those programs were established. That act also requires that CBO’s baseline incorporate the assumption that scheduled payments from federal trust funds will continue to be made in full after a trust

Box 1-1.

Spending for People Age 65 or Older

As the U.S. population has aged, federal spending for people age 65 or older has grown significantly. In 2005, for example, spending directly allocable to the elderly accounted for about 35 percent of federal noninterest outlays.¹ That share rose to 40 percent in 2018, the Congressional Budget Office estimates, when total noninterest spending was about \$3.8 trillion.

Over the next decade, as members of the baby-boom generation age and as life expectancy increases, the number of people age 65 or older is expected to continue to rise—by about one-third, from 16 percent of the population in 2018 to 20 percent in 2029. As a result, federal spending for older people is anticipated to grow in the future, taking up a greater share of federal resources. In CBO’s baseline projections and under the assumption that discretionary spending on the elderly remains the same share of discretionary spending that it was in 2018, total spending dedicated to older Americans

rises to 50 percent of noninterest spending in 2029 (see figure). Outlays for that population would amount to 10.1 percent of gross domestic product (GDP) in 2029, compared with 6.0 percent in 2005.

Mandatory Spending for People Age 65 or Older

Almost all of the spending for people age 65 or older in the federal budget is for mandatory programs—that is, spending that is generally governed by statutory criteria and is not normally constrained by the annual appropriation process. Mandatory spending for the elderly amounted to roughly \$1.5 trillion in fiscal year 2018, CBO estimates, about 85 percent of which was for Social Security and Medicare.

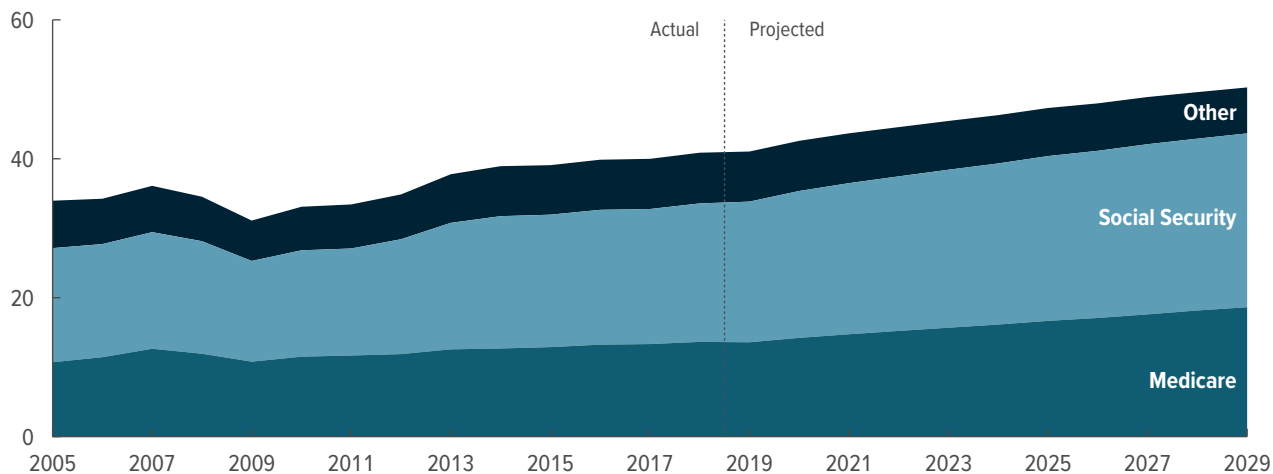
Mandatory spending that is directly allocable to the elderly has increased substantially both in dollar terms and as a share of the nation’s GDP since 2005, and it is projected to continue to increase over the next decade. As a share of GDP, mandatory spending for people age 65 or older grew from 5.8 percent in 2005 to 7.5 percent in 2018. Under current law, that share would grow to 9.8 percent in 2029, CBO projects.

Social Security and Medicare. Spending for Social Security and Medicare drives much of the growth in mandatory

1. For this calculation and others, CBO included spending on the elderly from Medicare, Social Security, and other programs for which such spending was projected to exceed \$5 billion in any year between 2019 and 2029. A relatively small amount of spending on the elderly occurred in programs below that threshold. All calculations reflect adjustments to eliminate the effects of shifts in the timing of certain payments.

Outlays for People Age 65 or Older as a Share of Total Noninterest Outlays

Percentage of Federal Noninterest Outlays



Source: Congressional Budget Office.

The figure includes outlays for Medicare, Social Security, basic military health care and pension benefits, additional health care and cash benefits available to veterans age 65 or older, health and pension benefits provided to federal civilian retirees, the Supplemental Nutrition Assistance Program, Medicaid, Supplemental Security Income, and various forms of housing assistance.

Continued

Box 1-1.

Continued

Spending for People Age 65 or Older

spending on the elderly. CBO projects that, under current law, spending for older Americans in those programs alone would increase from \$1.3 trillion in 2018 to \$2.7 trillion in 2029, accounting for over nine-tenths of the total increase in outlays for the elderly over that period. Factors driving that increase include the aging population and rising health care costs per person, in part because CBO projects that spending per enrollee in federal health care programs will grow more rapidly over the coming decade than it has in recent years.

Other Mandatory Programs. Mandatory spending for programs other than Medicare and Social Security is also expected to contribute to increases in spending on the elderly. Spending on older Americans in those other federal programs amounted to roughly \$225 billion in 2018 and, under current law, would grow to roughly \$340 billion by 2029, CBO projects. The bulk of those outlays—about \$160 billion in 2018—was deferred compensation in the form of pension and health benefits for retired military and civilian employees of the federal government as well as veterans’ disability compensation and pensions. Most of the remainder of that spending provided government services; about \$50 billion in 2018 was for Medicaid benefits. Medicaid provides benefits to low-income people of all ages, but roughly 15 percent of federal spending for that program goes to nursing-home care and other services for people who are age 65 or older, CBO estimates.

The growing size of the elderly population contributes to the projected increase in outlays for some programs, such as Medicaid. Spending growth for certain other programs is driven by the aging of a specific subpopulation—spending on Vietnam-era veterans, for example, has risen as more of those veterans age past 65. Growth in spending on the elderly in health-related programs, such as the military’s TRICARE for Life program, is driven by the per-person growth in medical costs as well as by growth in the elderly population.

Discretionary Spending for People Age 65 or Older

Discretionary spending for people age 65 or older, which is controlled by the Congress through annual appropriation acts, is much less than mandatory spending for people of those ages. In the discretionary programs that spent the most on people in that category, outlays for the elderly amounted to roughly \$50 billion in fiscal year 2018, about 4 percent of total discretionary spending. That amount was only about 4 percent of total spending for people age 65 or older. The discretionary

programs that provide the most benefits for the elderly include certain veterans’ health care benefits and housing support for people with low income (regardless of their age). If such spending remained the same as a share of total discretionary spending through 2029, it would fall slightly relative to GDP under CBO’s baseline projections.

Other Considerations

Federal spending for older Americans affects the nonelderly as well. The government’s need to collect taxes and borrow money is directly affected by the amount it spends on the elderly. Yet federal spending on the elderly also provides benefits to other Americans. For example, such spending reduces the support that younger generations of people would otherwise provide to elderly friends and relatives. In addition, the expectation of future benefits from Social Security, Medicare, and other programs reduces the need for today’s nonelderly to privately save for their future living expenses and health needs. To the extent that the relevant programs remain in place, younger generations will also benefit from those programs when they themselves are elderly.

A focus on *federal* spending overstates the fraction of all government spending that is directed to the elderly. Federal spending is heavily focused on the health and pension needs of the elderly and, by comparison, relatively little federal spending is directly targeted to the young. In contrast, state and local governments invest heavily in young people through, for example, the provision of free K–12 education, on which those governments spent roughly \$600 billion in 2018. State governments also spent roughly \$250 billion on Medicaid in 2018, most of which served people who were not elderly.

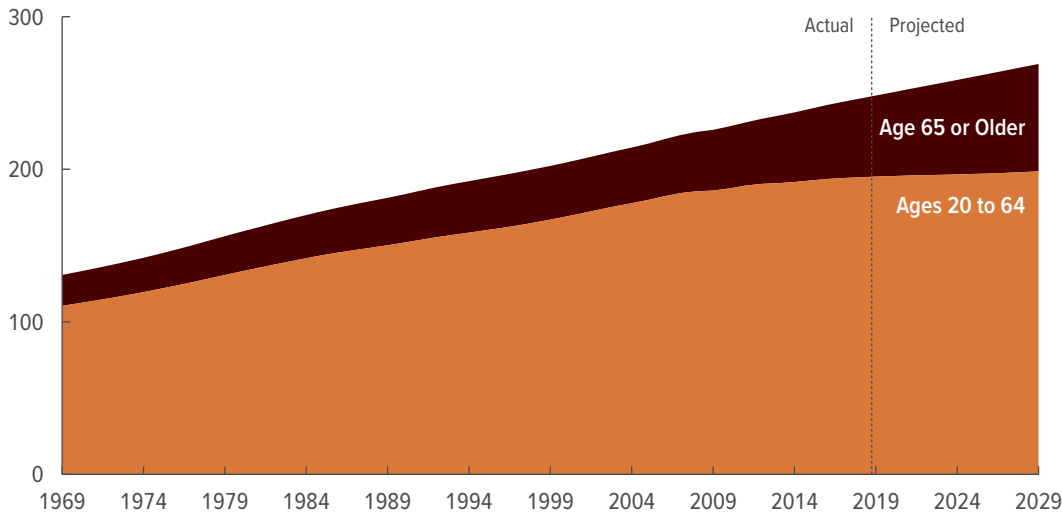
In addition to spending that can be directly attributed to particular age groups, the federal government spends money for some purposes that do not depend on beneficiaries’ age. For instance, spending for national defense, infrastructure, and research and development benefits all Americans regardless of their age. Such outlays totaled more than \$1 trillion in 2018. Whether general spending is allocated to the elderly based on their proportion of the population or on their share of market income, about one-sixth of such spending can be attributed to people age 65 or older.²

2. For more information, see Congressional Budget Office, *The Distribution of Federal Spending and Taxes in 2006* (November 2013), p. 23, www.cbo.gov/publication/44698.

Figure 1-5.

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.

fund has been exhausted, although there is no legal authority to make such payments. (For a more detailed discussion of those rules, see Chapter 3.)

Discretionary Spending. CBO projects that, under current law, discretionary outlays would fall in dollar terms in 2020 as the statutory caps on discretionary funding drop after 2019. Discretionary outlays are projected to increase at an average annual rate of 2 percent over the remainder of the projection period, reflecting the assumption that funding will grow with inflation once those caps expire after 2021.⁴ 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 2029, discretionary outlays (adjusted to exclude shifts in timing) are projected to total 5.0 percent of GDP, more than 1 percentage point below CBO's estimate of such outlays in 2019 and lower than at any point in the past 50 years.

4. 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.

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.⁵ The Treasury borrows money from the public by selling securities in the capital markets; that debt is purchased by various buyers in the United States, by private investors overseas, and by the central banks of other countries. Of the \$15.8 trillion in federal debt held by the public at the end of 2018, 60 percent was held by domestic investors and 40 percent was held by foreign investors. The largest U.S. holders of Treasury debt as of June 30, 2018 (the most recently available data), are individual households (17 percent), the Federal Reserve (15 percent), and mutual funds (12 percent); investors in China and Japan have the largest foreign holdings of Treasury securities, together accounting for 14 percent of U.S. public debt (see Figure 1-6).⁶

Although federal debt held by the public is a common measure of federal debt, other measures are sometimes

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

6. For additional information, see Congressional Budget Office, *Federal Debt and Interest Costs* (December 2010), Chapter 1, www.cbo.gov/publication/21960.

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 \$13.0 trillion from the end of 2018 through 2029, boosting debt held by the public to almost \$29 trillion, or 93 percent of GDP, by the end of the projection period (see Table 1-3). That amount of debt relative to the size of the economy would be the greatest since 1947 and would be more than double the 50-year average of 42 percent.

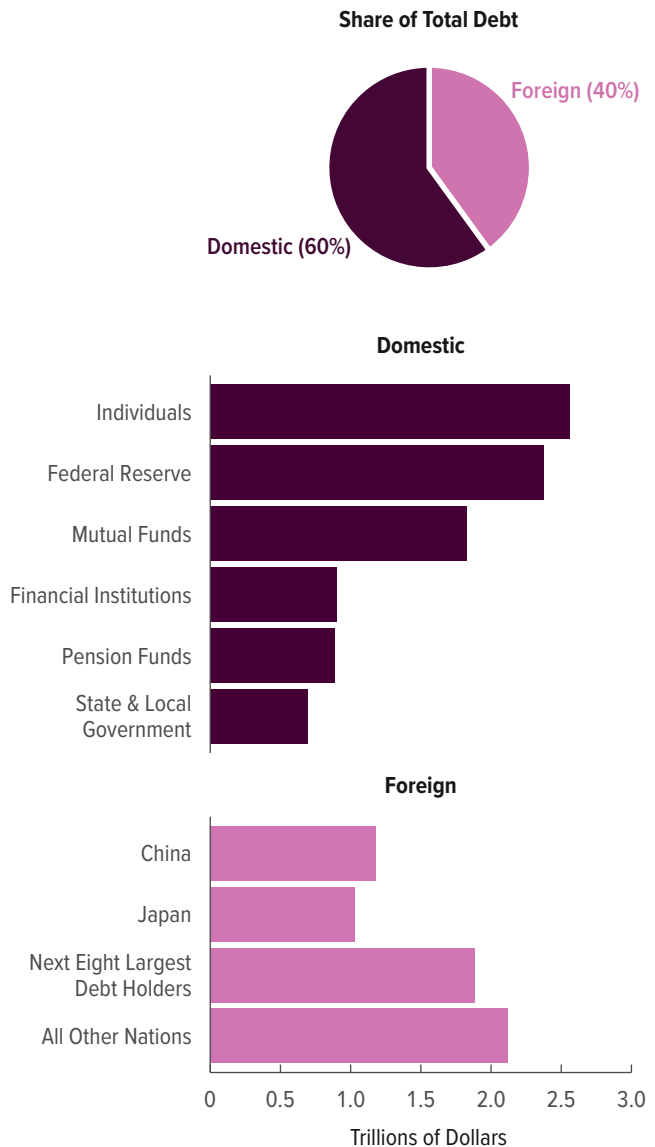
Consequences of Growing Debt. Such high and rising debt would have significant negative consequences, both for the economy and for the federal budget, including these:

- As interest rates continue to rise toward more typical 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;⁷
- Lawmakers would have less flexibility than otherwise to use tax and spending policies to respond to unexpected challenges; and
- The likelihood of a fiscal crisis in the United States would increase. Specifically, the risk would rise of investors’ being unwilling to finance the government’s borrowing unless they were 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.

7. 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).

Figure 1-6.

Domestic and Foreign Holders of Treasury Debt, 2018



Sources: Congressional Budget Office; Department of the Treasury.

Relationship Between Debt and 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. The cumulative deficit is projected to total \$11.6 trillion over the 2020–2029 period. However, several other factors—collectively labeled “other means of financing” and not directly included in budget

Table 1-3.

CBO's Baseline Projections of Federal Debt

Billions of Dollars

	Actual, 2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Debt Held by the Public at the Beginning of the Year	14,667	15,751	16,636	17,601	18,626	19,795	20,976	22,112	23,372	24,625	25,866	27,338
Changes in Debt Held by the Public												
Deficit	779	897	903	974	1,128	1,139	1,091	1,212	1,204	1,192	1,435	1,370
Other means of financing	305	-12	62	51	42	42	45	47	49	49	37	32
Total	1,084	885	965	1,024	1,169	1,181	1,136	1,260	1,253	1,241	1,472	1,401
Debt Held by the Public at the End of the Year												
In billions of dollars	15,751	16,636	17,601	18,626	19,795	20,976	22,112	23,372	24,625	25,866	27,338	28,739
As a percentage of GDP	77.8	78.3	79.6	81.2	83.2	85.0	86.2	87.7	89.0	90.0	91.5	92.7
Memorandum:												
Debt Held by the Public Minus Financial Assets ^a												
In billions of dollars	13,976	14,874	15,777	16,751	17,878	19,017	20,108	21,321	22,525	23,717	25,152	26,522
As a percentage of GDP	69.1	70.0	71.3	73.0	75.2	77.1	78.4	80.0	81.4	82.5	84.2	85.5
Gross Federal Debt ^b	21,461	22,465	23,522	24,598	25,759	26,922	28,020	29,175	30,331	31,351	32,558	33,657
Debt Subject to Limit ^c	21,475	22,480	23,538	24,615	25,777	26,941	28,040	29,196	30,353	31,374	32,581	33,681
Average Interest Rate on Debt Held by the Public (Percent)	2.4	2.6	2.9	3.1	3.2	3.3	3.4	3.4	3.4	3.4	3.5	3.5

Source: Congressional Budget Office.

GDP = gross domestic product.

- Debt held by the public minus the value of outstanding student loans and other credit transactions, cash balances, and various financial instruments.
- Federal debt held by the public plus Treasury securities held by federal trust funds and other government accounts.
- 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.

totals—also affect the government's need to borrow from the public. Those factors include the cash flows associated with federal credit programs such as student loans (because only the subsidy costs of those programs are reflected in the budget deficit), as well as changes in the government's cash balances. As a result of that additional borrowing, CBO projects, the increase in debt held by the public would exceed the cumulative deficit by about \$450 billion.

Specifically, the government's need for cash to finance new student loans and other credit programs would, on net, boost debt by about \$385 billion over the projection

period, CBO estimates. The subsidy costs for those credit programs are included in the projected deficit for each year from 2020 to 2029. However, the cash outlays needed to finance those programs each year—for example, the outlays needed to lend students the sums they will gradually repay—are greater than the net subsidy costs. (For more information on CBO's treatment of credit programs, see the section titled "Other Mandatory Programs" in Chapter 3.) As a result, CBO estimates, the government would need to borrow between \$26 billion and \$44 billion more per year during that period than the budget deficits would suggest.

In addition, CBO estimates that the Treasury will boost its cash balances by about \$70 billion between 2020 and 2029. All told, CBO projects that cumulative borrowing would total about \$12.1 trillion over the period.

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 clearly 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, while debt held by the public increases by \$12.1 trillion between the end of 2019 and the end of 2029, debt held by government accounts falls by \$0.9 trillion, reflecting declines in the balances of many trust funds.⁸ (For a more detailed discussion about those trust funds, see Appendix D.) As a result, gross federal debt is projected to rise by \$11.2 trillion over that period and to total \$33.7 trillion at the end of 2029. 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, 2019.¹⁰ In CBO's baseline projections, the amount of outstanding debt subject to limit increases from \$22.5 trillion at the end of 2019 to \$33.7 trillion at the end of 2029. (For the purpose of those projections, CBO assumes that increases in the statutory ceiling will occur as necessary.)

Uncertainty in Budget Projections

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

CBO's projections of outlays and revenues and therefore of deficits and debt depend in part on the agency's economic projections for the coming decade, which include forecasts for such variables as interest rates, inflation, and the growth in productivity. Discrepancies between those forecasts and actual economic outcomes can cause significant differences between baseline budget projections and budgetary outcomes. (For further discussion of how some key economic projections affect budget projections, see Appendix B.) The potential for such discrepancies in

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.

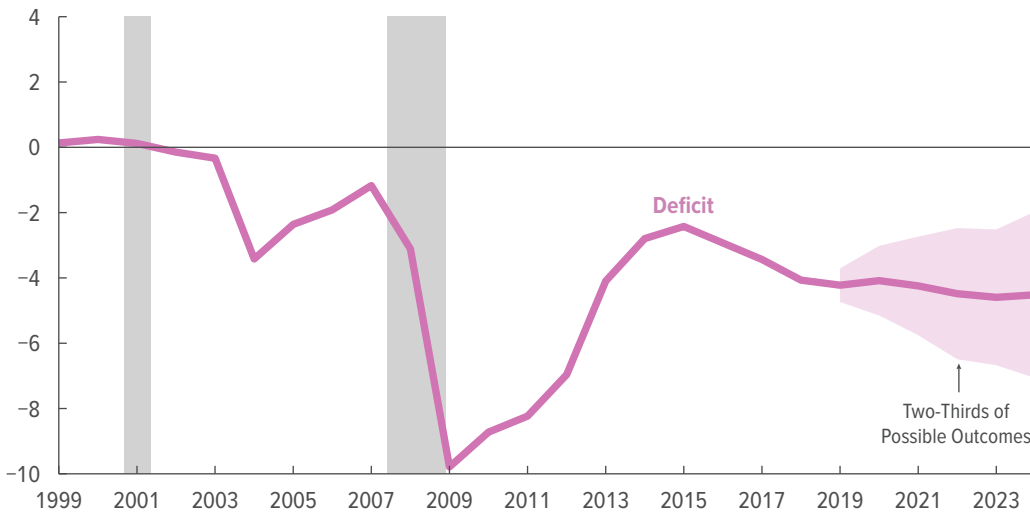
9. The Federal Financing Bank, a government corporation under the general supervision of the Treasury, assists federal agencies in managing their borrowing and lending programs. It can issue up to \$15 billion of its own debt securities, and that amount does not count against the debt limit.

10. If the current suspension is not extended and a higher debt limit is not specified in law before March 2, 2019, the Treasury will have no room to borrow under standard borrowing procedures beginning on that date. To avoid a breach in the debt ceiling, the Treasury would begin employing so-called extraordinary measures to allow continued borrowing for a few months.

Figure 1-7.

The Uncertainty of CBO's Baseline Projections of the Budget Deficit

Percentage of Gross Domestic Product



CBO estimates that there is a roughly two-thirds chance that by 2024, the deficit as a share of gross domestic product would be 2.6 percentage points smaller or larger than the agency projects.

Source: Congressional Budget Office.

The shaded area around CBO's baseline deficit projection, which encompasses two-thirds of possible outcomes, is based on the errors in CBO's one-, two-, three-, four-, five-, and six-year projections of the deficit for fiscal years 1984 through 2017.

Actual outcomes will be affected by legislation enacted in future years. The effects of future legislation are not reflected in this figure.

other inputs into the baseline also contributes to uncertainty about CBO's projections.

Historical experience gives some indication of the magnitude of the uncertainty of these projections. The average absolute error of CBO's deficit projection for the second year of its baseline (often referred to as the budget year) was 1.0 percent of GDP between 1985 and 2017. (That calculation excludes the effects of legislation enacted after CBO completed its projections.) If CBO's deficit projection for 2020 had an error equal to that average absolute error, the deficit would be larger or smaller than the agency estimates by about \$220 billion. The sixth-year projections of deficits are, as expected, less accurate than the budget-year projections. For CBO's sixth-year projections made for the years 1989 to 2017, the average absolute error was 2.0 percent of GDP. An equivalent error in the current deficit projection of \$1.2 trillion (adjusted to exclude timing shifts) for 2024 would cause the deficit in that year to be larger or smaller than what the agency projects by \$510 billion.

To help illustrate the uncertainty surrounding CBO's baseline projections, Figure 1-7 displays a range of likely

outcomes for the deficit through 2024, assuming that current law does not change. In CBO's baseline, the deficit equals 4.1 percent of GDP in 2020 and 4.5 percent in 2024. Based on the analysis of its past projections, CBO estimates that there is approximately a two-thirds chance that the deficit under current law would be between 3.0 percent and 5.2 percent of GDP in 2020. For 2024, the range is larger: CBO estimates that there is approximately a two-thirds chance that the deficit would be between 2.0 percent and 7.1 percent of GDP.

For CBO's debt projections, estimates of the sixth year of a baseline have been much less accurate than budget-year estimates. Between 1985 and 2017, the average absolute error in budget-year projections of debt held by the public was 1.8 percent of GDP, but the average absolute error in sixth-year projections was 7.4 percent of GDP. That larger error occurs because errors in the projections of debt tend to compound over time, thereby increasing the uncertainty surrounding those projections. For example, in CBO's baseline, federal debt is projected to equal 86 percent of GDP in 2024. Based on the analysis of its past projections, CBO estimates that there is approximately a two-thirds chance that federal debt under

Table 1-4.

Key Projections in CBO's Extended Baseline

Percentage of Gross Domestic Product

	2019	2020	Projected Annual Average			
			2021–2024	2025–2029	2030–2039	2040–2049
Revenues						
Individual income taxes	8.3	8.3	8.4	9.3	9.9	10.5
Payroll taxes	5.8	5.8	5.8	5.9	5.9	5.8
Corporate income taxes	1.2	1.2	1.4	1.5	1.3	1.3
Other	1.3	1.3	1.3	1.4	1.5	1.7
Total Revenues	16.5	16.7	17.0	18.0	18.6	19.3
Outlays						
Mandatory						
Social Security	4.9	5.0	5.3	5.8	6.2	6.3
Major health care programs ^a	5.2	5.3	5.7	6.4	7.6	8.9
Other	2.6	2.6	2.5	2.4	2.2	2.1
Subtotal	12.7	12.8	13.5	14.5	16.0	17.3
Discretionary	6.3	5.9	5.5	5.1	5.0	5.0
Net interest	1.8	2.1	2.5	2.9	3.6	5.2
Total Outlays	20.8	20.7	21.5	22.5	24.6	27.5
Deficit	-4.2	-4.1	-4.5	-4.5	-6.0	-8.2
Debt Held by the Public at the End of the Period	78	80	86	93	114*	147*
Memorandum:						
Social Security						
Revenues ^b	4.4	4.4	4.5	4.5	4.5	4.4
Outlays ^c	4.9	5.0	5.3	5.8	6.2	6.3
Contribution to the Federal Deficit ^d	-0.5	-0.6	-0.8	-1.3	-1.7	-1.9
Medicare						
Revenues ^b	1.4	1.4	1.5	1.5	1.5	1.5
Outlays ^c	3.6	3.7	4.1	4.8	5.9	7.0
Offsetting receipts	-0.6	-0.7	-0.7	-0.9	-1.1	-1.3
Contribution to the Federal Deficit ^d	-1.6	-1.6	-1.9	-2.4	-3.3	-4.2
Gross Domestic Product at the End of the Period (Trillions of dollars)	21.3	22.1	25.6	31.0	45.8*	67.5*

Source: Congressional Budget Office.

The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2029 and then extending most of the concepts underlying those baseline projections for the rest of the long-term period (in this case, through 2049).

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

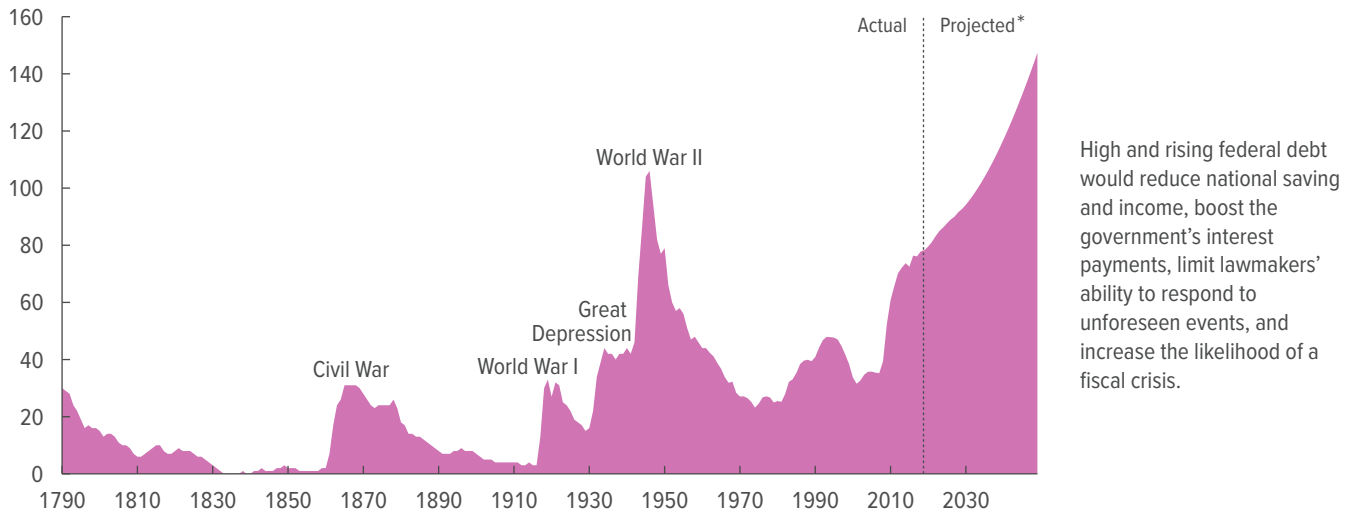
- Consists of outlays for Medicare (net of premiums and other offsetting receipts), Medicaid, and the Children's Health Insurance Program, as well as outlays to subsidize health insurance purchased through the marketplaces established under the Affordable Care Act and related spending.
- Includes payroll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

[*Values corrected on March 6, 2019]

Figure 1-8.

Federal Debt Held by the Public

Percentage of Gross Domestic Product



Source: Congressional Budget Office.

The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2029 and then extending most of the concepts underlying those baseline projections for the rest of the long-term period (in this case, through 2049).

current law would be between 76 percent and 96 percent of GDP in that year.

The Long-Term Outlook for the Budget

Beyond the coming decade, the fiscal outlook is significantly more challenging. In CBO's most recent long-term projections, which extend through 2049, budget deficits rise steadily. Those long-term projections follow CBO's 10-year baseline projections for the coming decade and then extend the baseline concept for subsequent years (see Table 1-4).¹¹ Although long-term budget

projections are highly uncertain, the aging of the population and growth in per capita spending on health care would almost certainly boost federal outlays significantly relative to GDP after 2029 if current laws generally remained in effect. Federal revenues also would continue to increase relative to GDP under current law, but they would not keep pace with outlays. As a result, CBO estimates that public debt would reach 147 percent of GDP by 2049 (taking into account the effects on the economy of the rising debt), higher than any percentage previously recorded in the United States (see Figure 1-8).*

Moreover, debt is on track to grow even larger after 2049. To avoid the negative consequences of large and growing federal debt and to put debt on a sustainable path, lawmakers will have to make significant changes to tax and spending policies—increasing revenues more than they would under current law, reducing spending for large benefit programs below the projected amounts, or adopting some combination of those approaches.

11. The long-term projections reported here incorporate the current baseline for the first 10 years of the projection period. For subsequent periods, CBO has not fully updated its projections from the most recent long-term budget outlook (See Congressional Budget Office, *The 2018 Long-Term Budget Outlook* (June 2018), www.cbo.gov/publication/53919). However, the agency has updated its long-term economic projections on an interim basis and applied them to estimates for net interest. For other components of the budget, CBO adopted the simplified approach that it has regularly used between full updates—in this case, by incorporating the growth rates for such components from the extended baseline in its 2018 long-term budget outlook. Details on the long-term economic and budgetary projections presented here are included with the

supplemental data for this report, available online at www.cbo.gov/publication/54918. CBO expects to publish the next long-term budget outlook in the spring of 2019.

[*Values corrected on March 6, 2019]

The Economic Outlook

Overview

If current laws governing federal taxes and spending generally remained in place, the economy would continue to expand over the next decade but at a slower pace than it did in 2018, the Congressional Budget Office projects. In particular, CBO estimates that recent changes to tax policy and federal spending boosted growth in 2018 by more than they are expected to boost growth in the coming years. The agency's current economic forecast, which underlies its baseline budget projections, includes projections of real (inflation-adjusted) gross domestic product (GDP; also referred to as output or actual output), inflation, interest rates, and other key variables for the years from 2019 to 2029. Considerable uncertainty stemming from both policy and non-policy-related forces surrounds those projections.

Projections for 2019 to 2023

CBO's projections for the next five years show the economy experiencing a muted cycle, in which real GDP and employment initially exceed and then return to their respective maximum sustainable levels through slower but still positive economic growth. Over that period, interest rates are expected to rise above their current levels, helping to bring economic activity to its sustainable level and restrain inflationary pressure.

Output. Real GDP is projected to grow by 2.3 percent in 2019 and by an average of 1.7 percent per year from 2020 through 2023 (see Figure 2-1). Most of the growth of output in CBO's forecast over the next few years is driven by consumer spending and, to a lesser extent, business and residential investment and exports. Compared with the robust pace of output growth in 2018—3.1 percent, the fastest annual growth since 2005—output growth is projected to slow in 2019. That projected slowdown largely results from an anticipated slowdown in the growth of business fixed investment, as the positive effects of recent tax legislation on investment growth begin to wane, and from a sharp reduction in federal purchases starting in the fourth quarter of 2019 that would occur under current law. From 2020 to

2023, in CBO's projections, slower growth of consumer spending causes output growth to slow further. Recent changes in trade policy, on net, are expected to have a small, negative effect on real output in the next few years.

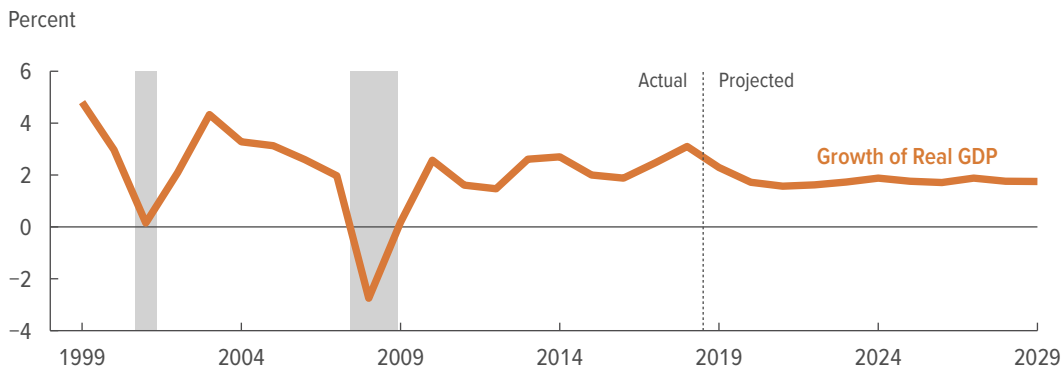
Output Gap. By CBO's estimate, real GDP began to exceed its potential level in early 2018 for the first time since 2007. (Potential GDP is an estimate of the maximum sustainable output of the economy.) Because the growth of real GDP is expected to outpace the growth of its potential in 2019, the output gap—the difference between actual and potential GDP, expressed as a percentage of potential GDP—is expected to widen further this year. A positive output gap indicates that the demand for goods and services temporarily exceeds the economy's maximum sustainable capacity to supply them, which leads to heightened demand for labor as well as upward pressure on inflation and interest rates. In CBO's projections, real GDP grows more slowly than potential GDP after 2019; as a result, the output gap starts to narrow and turns negative by 2022.

Labor Market. As growth in the demand for goods and services continues to increase the demand for labor, the labor market is expected to strengthen further in 2019, and employment is expected to remain above its maximum sustainable level in the next few years. In CBO's projections, the unemployment rate falls to 3.5 percent in the second half of 2019, its lowest point since the 1960s, before rising steadily between 2020 and 2023 as output growth slows during those years. The labor force participation rate stays stable in the next year or so before falling in line with its long-run trend.

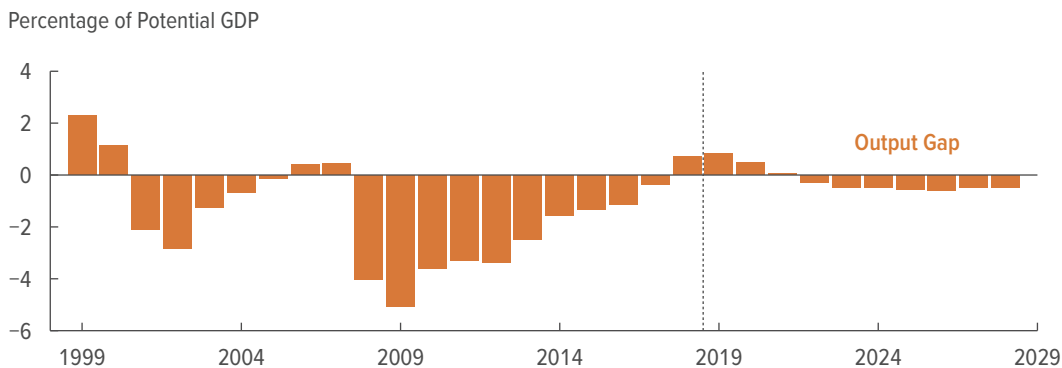
Inflation and Interest Rates. Strong product and labor markets are projected to put upward pressure on interest rates and price and wage inflation. The recent increase in tariffs is also expected to slightly boost the price level. The rate of inflation, as measured by the price index for personal consumption expenditures (PCE), is projected to modestly exceed the Federal Reserve's long-run goal

Figure 2-1.

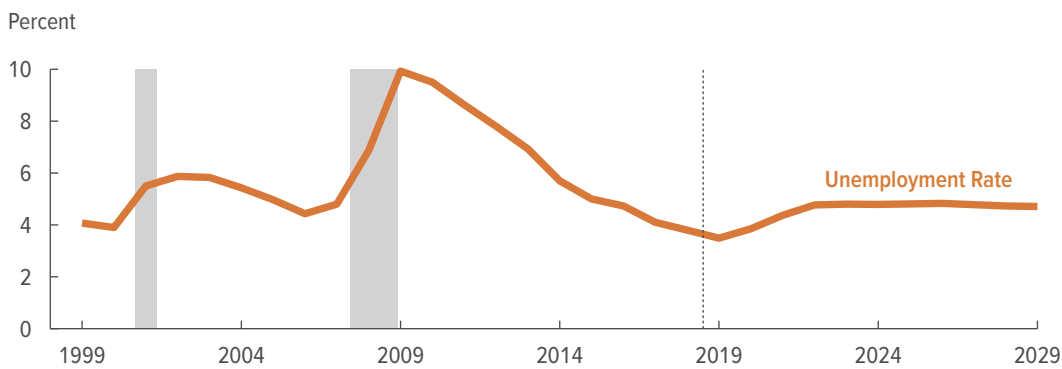
CBO's Economic Forecast in Brief



In CBO's forecast, growth of real GDP, bolstered by consumer spending, is 2.3 percent this year.



This year's growth builds on last year's strong demand for goods and services, pushing GDP further above potential GDP and widening the output gap.



The heightened demand for goods and services increases the demand for labor, lowering the unemployment rate this year.

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 changes in prices. Real GDP growth is measured from the fourth quarter of one calendar year to the fourth quarter of the next.

Potential GDP is CBO's estimate of the maximum sustainable output of the economy. The output gap is the difference between 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.

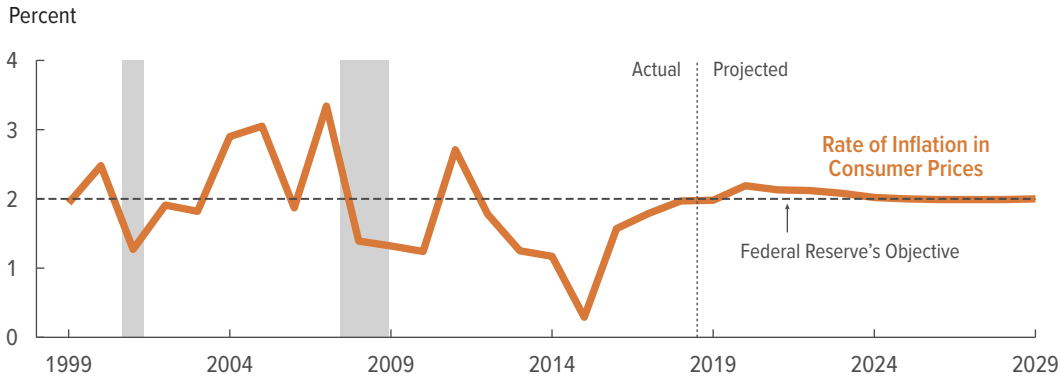
The unemployment rate is the number of jobless people who are available for and actively seeking work, expressed as a percentage of the labor force. For the unemployment rate, data are fourth-quarter values.

Continued

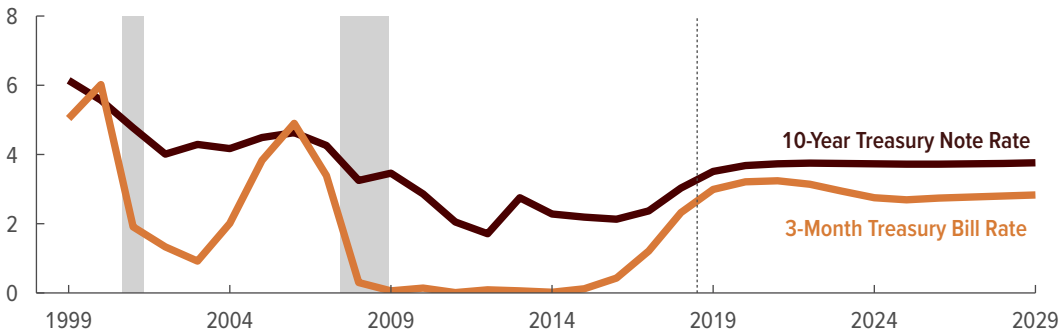
Figure 2-1.

Continued

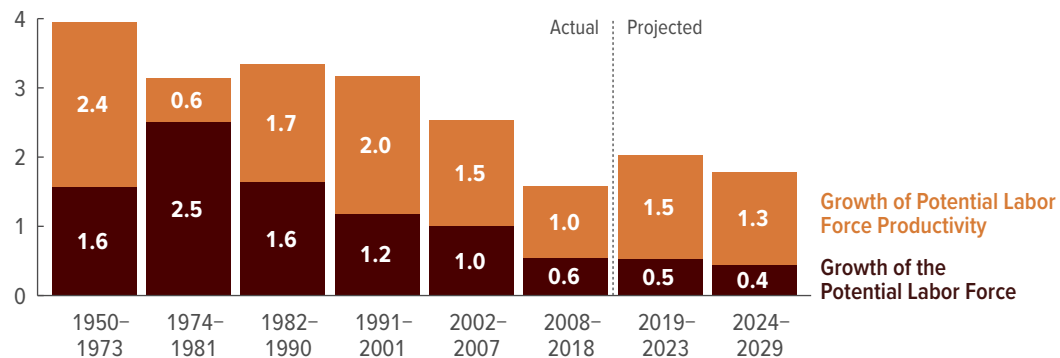
CBO's Economic Forecast in Brief



Strong demand for goods, services, and labor this year pushes the rate of inflation in consumer prices slightly above the Federal Reserve's objective of 2 percent over the next few years.



Interest rates continue to rise over the next few years, in part because the Federal Reserve is projected to raise the federal funds rate to slow the growth of overall demand and reduce the associated inflationary pressures.



In the coming decade, the growth of real potential GDP (the sum of the growth of the potential labor force and the growth of potential labor force productivity) is projected to be faster than it has been since 2008 but slower than it was in previous periods.

Inflation in consumer prices is based on the price index for personal consumption expenditures and is measured from the fourth quarter of one calendar year to the fourth quarter of the next.

The federal funds rate is the interest rate that financial institutions charge each other for overnight loans of their monetary reserves. The data for interest rates are fourth-quarter values.

The potential labor force 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. Potential labor force productivity is the ratio of real potential GDP to the potential labor force. The bars show compound annual growth rates over the specified periods calculated using calendar year data.

Values for 2018, with the exception of the unemployment rate and interest rates, are CBO's estimates.

GDP = gross domestic product.

of 2 percent over the next few years. CBO expects the Federal Reserve to continue to raise the target range for the federal funds rate (the interest rate that financial institutions charge each other for overnight loans of their monetary reserves) in 2019. In CBO's projections, the rising federal funds rate helps to push up other interest rates in the economy, which, in turn, helps prevent inflation from rising much above 2 percent for any extended time period.

Projections for 2024 to 2029

CBO's projections of GDP, unemployment, inflation, and interest rates for 2024 through 2029 are based mainly on the agency's projections of the underlying trends in the factors that determine those key variables. In particular, over the long term, real GDP tends to grow at the same rate as potential GDP, which is determined by factors such as the size of the labor force, the average number of labor hours per worker, capital investment, and productivity. In analyzing those factors, CBO takes into account the effects of federal tax and spending policies—as well as trade and other public policies—embodied in current law. In some cases, policies might be projected not only to affect potential output but also to influence the overall demand for goods and services, causing the gap between actual output and potential output to change.

From 2024 to 2029, real GDP is projected to grow by about 1.8 percent each year. That growth is close to but slightly slower than potential output growth, on average, during that period. The small difference in growth between actual and potential output arises because of a slight, temporary slowdown in the growth of actual output from 2025 to 2026, when some of the major provisions of the 2017 tax act (Public Law 115-97, originally called the Tax Cuts and Jobs Act) are scheduled to expire.

In CBO's projections, potential output over the 2019–2029 period grows more quickly than it has grown since the 2007–2009 recession, mainly because the agency projects the rate of growth in the productivity of the labor force to accelerate to nearly its average over the past 25 years. Nevertheless, the growth of potential output is projected to be slower than its long-term historical average because the working-age population and hence the labor force are expected to grow more slowly than they did in the past.

Uncertainty

Many developments, such as unexpected changes in international conditions, business confidence, or underlying productivity growth, could make economic outcomes differ significantly from CBO's projections. Recent and prospective changes in U.S. trade policy and possible further retaliatory actions by key U.S. trading partners add to that uncertainty. Moreover, recession risks may rise over the next few years from various imbalances and vulnerabilities in the economy associated with the current, relatively long period of expansion. Because of that uncertainty, the agency constructs its projections so that they represent the average of a distribution of possible outcomes.

Comparison With CBO's Previous Projections and Other Economic Projections

Although CBO's current economic forecast does not differ significantly from the forecast that the agency published in August 2018, it nevertheless incorporates many changes that reflect new data and methodological improvements. For example, CBO revised its projections of several factors that determine potential output. But because the revisions to those factors, on net, offset one another, the resulting changes to real GDP and real potential GDP in 2028 (the last year of the previous projection period) are slight.

The economic projections in CBO's latest forecast do not differ significantly from those of other forecasters. In particular, they are generally similar to most of the forecasts by the private-sector economists who contributed to the January 2019 *Blue Chip Economic Indicators*. The agency's projections are also similar to the latest forecasts by Federal Reserve officials for 2019, but they are somewhat weaker for the 2020–2021 period and the long term.

Fiscal and Trade Policies

CBO's economic projections reflect federal fiscal and trade policies under current law. Fiscal policy affects the economy not only through government spending on goods and services, which contributes directly to GDP growth, but also through the federal tax code and federal transfer programs (such as Social Security and Medicare), which affect both the demand and the supply side of the economy. Changes to trade policy—such as the recent increases in tariffs on certain imported goods—can also affect economic activity by influencing domestic prices, trade flows, and real output and income. (See Box 2-1 for discussion of the effects of recent changes in trade policy.) In addition, fiscal policy and tariffs (which are a form of

tax) both have important implications for federal deficits and debt, which in turn are key determinants in CBO's projections of national saving and borrowing from abroad.

Fiscal Policy

Three pieces of legislation enacted in the past fiscal year significantly affected fiscal policy and the economic outlook.¹ The first, the 2017 tax act, permanently lowered the top corporate income tax rate to 21 percent and changed the way that businesses' foreign income is taxed. The act also lowered individual income tax rates and broadened the base of income subject to tax through 2025. In addition, it included provisions that affect the way businesses and individuals calculate their taxable income. The two other pieces of legislation affected spending. The Bipartisan Budget Act of 2018 (P.L. 115-123) increased the caps on discretionary funding for 2018 and 2019 and provided substantial funding for emergency assistance. The Consolidated Appropriations Act, 2018 (P.L. 115-141), provided total appropriations for discretionary accounts near the level of the newly increased caps. Taken together, the three pieces of legislation generated a substantial fiscal stimulus, which supported strong economic growth in 2018 and is expected to continue to facilitate output growth in the first three quarters of 2019.²

The fiscal stimulus created by the large increase in federal funding during 2018 and part of 2019 is projected to diminish significantly by the end of 2019 as the statutory limits on discretionary funding significantly constrain such spending through fiscal year 2021. Discretionary outlays are projected to fall by \$38 billion in fiscal

year 2020 and increase by only \$4 billion in fiscal year 2021 under current law. Such a decline in discretionary outlays relative to their fiscal year 2019 levels would dampen economic growth while reducing the federal budget deficit in the near term, CBO estimates. Less federal borrowing would ultimately boost the resources available for private activities, particularly private investment, in later years.

As noted in its April 2018 report, CBO estimates that the 2017 tax act will continue to have appreciable effects on the U.S. economy over the next decade.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 potential output over the projection period. In addition, higher disposable (after-tax) income for households will, in CBO's estimate, boost the demand for goods and services, raising actual GDP further above its potential and generating some inflationary pressure during the first half of the projection period. In the meantime, those positive effects on economic growth will be partly offset by the larger deficits created by the tax act. In later years, as many temporary provisions of the 2017 tax act are scheduled to phase out or expire, growth of actual GDP falls below the growth of potential output in CBO's projections, but the law's total effect on the levels of investment, employment, and output remains positive toward the end of the projection period. That occurs because the positive effect on incentives from the provisions that were still in place at the end of the period would more than offset the negative effect of greater federal debt.

Trade Policy

In 2018, the United States imposed new tariffs on 12 percent of goods imported into the country.⁴ Some of those new tariffs apply broadly to imports from nearly all U.S. trading partners, including the tariffs on washing machines, solar panels, and steel and aluminum products (see Table 2-1 on page 28). Other new tariffs affect

1. For details on CBO's estimates of the effects of those fiscal policy changes on the U.S. economy for the 2018–2028 period, see Congressional Budget Office, *The Budget and Economic Outlook: 2018 to 2028* (April 2018), www.cbo.gov/publication/53651.
2. CBO's economic projections were completed before the partial shutdown of the federal government, which started on December 22, 2018, and ended on January 25, 2019. CBO estimates that the reduction in compensation, federal purchases, and private economic activity from the partial shutdown lowered real GDP in the fourth quarter of 2018 by 0.1 percent and will lower real GDP in the first quarter of 2019 by 0.2 percent. Most of that lost output is expected to be recovered in subsequent quarters, and the shutdown's effects are not expected to alter the level of real GDP in the longer run. For a discussion of those estimates, see Congressional Budget Office, *The Effects of the Partial Shutdown Ending in January 2019* (January 2019), www.cbo.gov/publication/54937.

3. See Congressional Budget Office, *The Budget and Economic Outlook: 2018 to 2028* (April 2018), Appendix B, www.cbo.gov/publication/53651; and "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>.
4. The values and shares of trade affected are measured relative to their 2017 values.

Box 2-1.**The Effects of Recent Changes in Trade Policy**

In 2018, the United States and its trading partners imposed new trade barriers. The United States imposed new tariffs on 12 percent of goods imported into the country.¹ In response to those new tariffs, U.S. trading partners imposed tariffs on 9 percent of all goods exported by the United States. On net, the Congressional Budget Office estimates that those new trade barriers will reduce U.S. real (inflation-adjusted) gross domestic product (GDP) by about 0.1 percent, on average, through 2029. Those changes in trade policy increase policy uncertainty among investors, which may further reduce U.S. output. (CBO's baseline analysis reflects the assumption that all newly implemented changes to trade policy, both domestic and foreign, are permanent and that scheduled changes to trade policy—such as the additional increase of the tariff rate from 10 percent to 25 percent on certain Chinese imports scheduled for March 2019—do not take effect.)² CBO's estimates of the economic effects of those new trade barriers are subject to considerable uncertainty, particularly over the longer run.

Short-Run Effects

CBO projects that the recent changes in trade policy in the United States and its trading-partner countries will reduce the level of U.S. real GDP by about 0.1 percent by 2022. Tariffs are taxes levied on imported goods and therefore raise prices on imports in the same way that a sales tax raises the price consumers and businesses pay for goods and services. Tariffs reduce domestic GDP mostly by raising the prices paid by U.S. consumers and businesses, which reduces the purchasing power of domestic consumers and increases the cost of business investment. Also contributing to that reduction in U.S. output is a decline in U.S. exports resulting from new tariffs imposed by the United States and its trading partners. Partially offsetting those negative effects is an increase in output from the replacement of imports with domestically produced goods and services.

In the short run, CBO projects that the newly implemented tariffs will raise the prices paid by U.S. consumers and businesses directly by making imported goods more expensive and, indirectly, by making the goods and services produced with imported goods more costly. The magnitude of those price changes—and therefore the extent of the negative impact on domestic output—depends on how much of the increase in costs is absorbed by foreign producers and how much of those costs is passed along to domestic consumers and businesses. In CBO's assessment, foreign producers will absorb more of the tariffs' costs in the near term as they initially try to maintain market share, but domestic consumers and businesses will bear more of the costs over time. Moreover, import tariffs can increase prices if domestic producers raise the prices they charge for domestic goods that compete with the imports subject to new tariffs.

In CBO's assessment, the inflationary effects of the newly implemented tariffs on domestic prices will be dampened over time as imports are diverted to countries whose goods are not subject to tariffs. In addition, increases in domestic prices are expected to be partially offset by a decline in the prices of U.S. tradable goods that are subject to retaliatory tariffs from U.S. trading partners. CBO estimates that U.S. producers will lower the price of those tradable goods to keep the total cost of exports competitive. To the degree that U.S. producers cannot charge different prices to foreign and domestic buyers, prices for some U.S. goods will decline as the result of tariffs.

CBO estimates that, on net, new tariffs will increase the price index for personal consumption expenditures by 0.1 percent and the price index for private investment by 0.5 percent by 2022. Like other price increases that result from taxes, those higher prices will reduce consumer spending by diminishing the purchasing power of consumer income and will reduce investment by making capital goods more expensive. Consequently, CBO estimates that by 2022, changes in trade policy will reduce real consumption by 0.1 percent and real private investment by 0.3 percent.

1. The values and shares of trade affected are measured relative to their 2017 values.

2. Although those changes are scheduled, the Administration has significant discretion to adjust tariff policy without legislative action.

Continued

Box 2-1.

Continued

The Effects of Recent Changes in Trade Policy

In addition to reducing consumption and investment, tariffs are also projected to lower U.S. economic output in the short run by reducing real U.S. exports. Import tariffs imposed by the United States make U.S. exports less competitive in foreign markets by raising the exchange value of the dollar and increasing the cost of inputs to domestic production of exports (particularly when tariffs are imposed on intermediate inputs). In addition, retaliatory tariffs imposed by U.S. trading partners reduce demand for U.S. exports by increasing the price of those exports relative to goods sourced from other countries. Tariffs levied by the United States on foreign goods may also reduce output growth among U.S. trading partners, in turn reducing their demand for U.S. exports. That decline in exports would be moderated by trade diversion; some U.S. exports that were previously sold to countries that have imposed new tariffs would get diverted to other trading partners. As a result, CBO projects that changes in trade policy both in the United States and abroad will reduce real U.S. exports by 0.5 percent by 2022.

Partially offsetting those negative effects on U.S. output, tariffs also encourage businesses to relocate some of their production activities from foreign countries to the United States. Tariffs imposed by the United States make it more costly for U.S. businesses and consumers to purchase imported goods and increase the demand for domestic goods. In response to those tariffs, U.S. production rises as some businesses choose to relocate their production to the United States. In the meantime, tariffs on intermediate goods encourage some domestic companies to relocate their production abroad where those intermediate goods are less expensive. On net, CBO estimates that U.S. output will rise slightly as a result of relocation.

Long-Run Effects

The long-term effects of the new tariffs on the U.S. economy are also expected to lower real GDP, although the magnitude of those effects is more uncertain than CBO's estimates of their short-run effects. On net, the recent trade policy changes lead to lower real private investment and, in turn, potential output, in CBO's projections. Although the increase in the price of imported capital goods leads to a reduction in investment, that

effect is partially offset because the increase in tariff revenues reduces government deficits, boosting the resources available for private investment. The magnitude of those long-run investment effects is uncertain because it is difficult to project how tariff changes will affect long-run investment by companies that rely on complex global supply chains. Nevertheless, CBO projects that tariffs will reduce the level of potential output by 0.1 percent in 2029.

Higher import tariffs can also lower total factor productivity in the United States. One reason import tariffs reduce U.S. productivity is that they might allow lower-productivity firms to remain in business in domestic industries whose products compete with imports from foreign countries. In addition, higher import tariffs may discourage economies of scale and scope and decrease the variety and quality of products available to consumers and businesses, which, in turn, reduce the productivity of businesses in the United States. Because the effect of tariffs on long-run productivity is difficult to estimate, however, CBO has not incorporated any adjustments to productivity resulting from tariffs in its baseline projections.

Uncertainty About Trade Policy

The recent changes in trade policy have increased uncertainty about future trade policy changes in a way that might further reduce U.S. output. Recent changes to trade policy may signal a fundamental shift in global trade policy and an increased risk of erosion of the rules-based global trading system that would significantly increase the risks associated with investment in the United States and abroad. If investors lose confidence in stable international trade and economic relationships, then that increased uncertainty may delay investments or discourage them entirely, leading to less economic activity both in the United States and abroad. The slower economic growth of U.S. trading partners resulting from that uncertainty could also spill over into the U.S. economy through a decrease in demand for U.S. exports. CBO has not incorporated any adjustments to its economic forecast as a result of that increase in trade policy uncertainty but is closely monitoring data for signs of such an effect.

Table 2-1.

U.S. Imports Affected by Tariffs Recently Imposed by the United States

Billions of Dollars

Category of Goods	Value of Imports Affected by Tariffs							Share of Category Affected by Tariffs (Percent)
	2017 Trade Value	Tariff on Solar Panels	Tariff on Washing Machines	Tariff on Steel	Tariff on Aluminum	Tariffs on Chinese Goods	All Recent Tariffs	
Food, Feed, and Beverages	138	0	0	0	0	5	5	3.6
Industrial Supplies and Materials	507	0	0	24	17	34	75	14.7
Capital Goods, Except Automotive	641	6	*	5	*	116	128	19.9
Automotive Vehicles, Parts, and Engines	359	1	0	0	0	19	19	5.4
Consumer Goods	602	0	2	0	*	55	57	9.5
Other Goods	95	0	0	0	0	*	*	**
Total	2,342	7	2	29	17	229	284	12.1
Affected Imports' Share of Total Imports (Percent)	n.a.	0.3	0.1	1.2	0.7	9.8	12.1	n.a.

Source: Congressional Budget Office, using information from the Census Bureau and the Office of the U.S. Trade Representative.

n.a. = not applicable; * = between zero and \$500 million; ** = between zero and 0.05 percent.

only imports from China, covering about half of U.S. imports from China and targeting mostly intermediate goods and capital goods.

In response to those new tariffs, U.S. trading partners retaliated with their own tariffs on 9 percent of all goods exported by the United States, primarily industrial supplies and materials as well as agricultural products (see Table 2-2).

On net, CBO estimates that those new trade barriers will reduce the level of U.S. real GDP by roughly 0.1 percent, on average, through 2029, although that estimate is subject to considerable uncertainty. CBO's analysis incorporates the assumption that the trade policy in effect as of December 4, 2018, will continue permanently without scheduled or unscheduled changes.⁵ In CBO's projections, U.S. tariffs reduce U.S. economic activity primarily by reducing the purchasing power of U.S. consumers' income as a result of higher prices and by making capital goods more expensive. In the meantime, retaliatory tariffs by U.S. trading partners reduce U.S. exports.

5. CBO completed its current economic projections on December 4, 2018.

The Economic Outlook for 2019 to 2023

CBO expects real GDP to grow by 2.3 percent in 2019 and by an average of 1.7 percent per year from 2020 through 2023 (see Table 2-3). Most of the growth of output in CBO's forecast over the next few years is driven by consumer spending and, to a lesser extent, by business and residential investment and exports (see Figure 2-2 on page 31). Demand from state and local governments also adds to the growth of output between 2019 and 2023, whereas real purchases by the federal government projected under current law subtract from that growth every year until 2023.

Even though the projected 2.3 percent growth in real GDP in 2019 is slower than the 3.1 percent real GDP growth in 2018, it is nonetheless faster than the expected growth in potential GDP. As a result, in CBO's projections, the output gap continues to widen until late 2019. (The output gap turned positive in early 2018.) Heightened demand for goods and services leads to a further increase in the demand for labor, causing the unemployment rate to fall further below its natural rate during most of 2019. (The natural rate of unemployment is the rate arising from all sources other than fluctuations in the overall demand for goods and services, including normal job turnover and the structural

Table 2-2.

U.S. Exports Affected by Tariffs Recently Imposed by Other Countries

Billions of Dollars

Category of Goods	2017 Trade Value	Value of Exports Affected by Tariffs			Share of Category Affected by Tariffs (Percent)
		Tariffs Imposed by China	Tariffs Imposed by Rest of World	All Recent Tariffs	
Food, Feed, and Beverages	133	20	8	28	20.9
Industrial Supplies and Materials	465	35	12	47	10.1
Capital Goods, Except Automotive	533	24	1	25	4.7
Automotive Vehicles, Parts, and Engines	158	22	*	23	14.4
Consumer Goods	198	5	7	12	5.9
Other Goods	60	*	0	*	**
Total	1,546	105	29	134	8.7
Affected Exports' Share of Total Exports (Percent)	n.a.	6.8	1.8	8.7	n.a.

Source: Congressional Budget Office, using information from the Census Bureau and the Office of the U.S. Trade Representative.

n.a. = not applicable; * = between zero and \$500 million; ** = between zero and 0.05 percent.

mismatch between the skills that jobs require and those that job seekers possess.)

Strong demand for goods, services, and labor is expected to put upward pressure on price and wage inflation, as well as interest rates, in 2019. Higher inflation and interest rates, along with slower growth in federal purchases, in turn restrain output growth in later years. As the growth of actual output slows more markedly starting in 2020, in CBO's projections, the positive output gap gradually narrows and turns negative by 2022.

CBO's projections of the economy over the next few years reflect both anticipated fluctuations in the components of final demand (such as consumption and investment) and projected changes in supply-side factors (such as growth in productivity and the supply of labor), as well as the interactions between them.⁶ Supply-side factors, which underlie the agency's estimate of potential GDP, influence short-term economic growth primarily through their effect on the output gap and, in turn, on inflation and interest rates; however, they can also

affect demand-side components directly.⁷ For example, when domestic output temporarily exceeds its long-run potential, an increased fraction of domestic demand may need to be satisfied through imports rather than through domestic production. Also, limited available domestic capacity for production could restrain the growth in exports.

Actual Output

CBO expects the growth of real GDP to slow in 2019 as some of the factors underlying the robust output growth in 2018 wane, although other factors will carry into 2019 (see Table 2-4 on page 32). On the one hand, healthy growth in real household disposable income (reflecting, among other things, rising labor and capital income in the strong economy and falling energy prices) is expected to support solid growth in consumer spending in 2019. On the other hand, growth in business fixed investment, which contributed almost one-third of the GDP growth in 2018, is expected to slow markedly this year as the effects of the 2017 tax act on investment

6. 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.

7. Not only can supply-side factors influence the components of demand, but demand-side factors can directly influence supply-side factors as well. For example, strong demand for goods and services encourages businesses to invest more to meet that demand, and greater investment boosts the capital stock and hence the economy's long-run capacity to produce.

Table 2-3.

CBO's Economic Projections for Calendar Years 2019 to 2029

	Estimated, 2018 ^a	2019	2020	2021	Annual Average	
					2022– 2023	2024– 2029
Percentage Change From Fourth Quarter to Fourth Quarter						
Gross Domestic Product						
Real ^b	3.1	2.3	1.7	1.6	1.7	1.8
Nominal	5.4	4.3	3.8	3.6	3.8	3.9
Inflation						
PCE price index	2.0	2.0	2.2	2.1	2.1	2.0
Core PCE price index ^c	1.9	2.2	2.2	2.1	2.1	2.0
Consumer price index ^d	2.2 ^e	2.2	2.6	2.5	2.5	2.3
Core consumer price index ^c	2.2 ^e	2.6	2.7	2.6	2.4	2.3
GDP price index	2.2	2.0	2.0	2.0	2.1	2.1
Employment Cost Index ^f	3.3	3.5	3.7	3.5	3.3	3.1
Fourth-Quarter Level (Percent)						
Unemployment Rate	3.8 ^e	3.5	3.9	4.4	4.8 ^g	4.7 ^h
Percentage Change From Year to Year						
Gross Domestic Product						
Real ^b	2.9	2.7	1.9	1.6	1.6	1.8
Nominal	5.2	4.8	3.9	3.7	3.7	3.9
Inflation						
PCE price index	2.1	1.9	2.2	2.2	2.1	2.0
Core PCE price index ^c	1.9	2.0	2.2	2.2	2.1	2.0
Consumer price index ^d	2.4 ^e	2.1	2.6	2.6	2.5	2.3
Core consumer price index ^c	2.1 ^e	2.4	2.6	2.6	2.4	2.3
GDP price index	2.2	2.1	2.0	2.0	2.1	2.1
Employment Cost Index ^e	3.0	3.4	3.6	3.6	3.3	3.1
Annual Average						
Unemployment Rate (Percent)	3.9 ^e	3.5	3.7	4.2	4.7	4.8
Payroll Employment (Monthly change, in thousands) ^j	213 ^e	148	68	21	33	61
Interest Rates (Percent)						
Three-month Treasury bills	1.9 ^e	2.8	3.2	3.2	3.1	2.8
Ten-year Treasury notes	2.9 ^e	3.4	3.6	3.7	3.7	3.7
Tax Bases (Percentage of GDP)						
Wages and salaries	43.1	43.1	43.4	43.6	43.7	43.8
Domestic corporate profits ^j	8.7	8.9	8.4	8.1	7.9	7.9

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

Economic projections for each year from 2019 to 2029 appear in Appendix E.

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

a. Values for 2018 do not reflect the values for GDP and related series that the Bureau of Economic Analysis has released since early December 2018.

b. Real values are nominal values that have been adjusted to remove the effects of changes in prices.

c. Excludes prices for food and energy.

d. The consumer price index for all urban consumers.

e. Actual value for 2018.

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

g. Value for the fourth quarter of 2023.

h. Value for the fourth quarter of 2029.

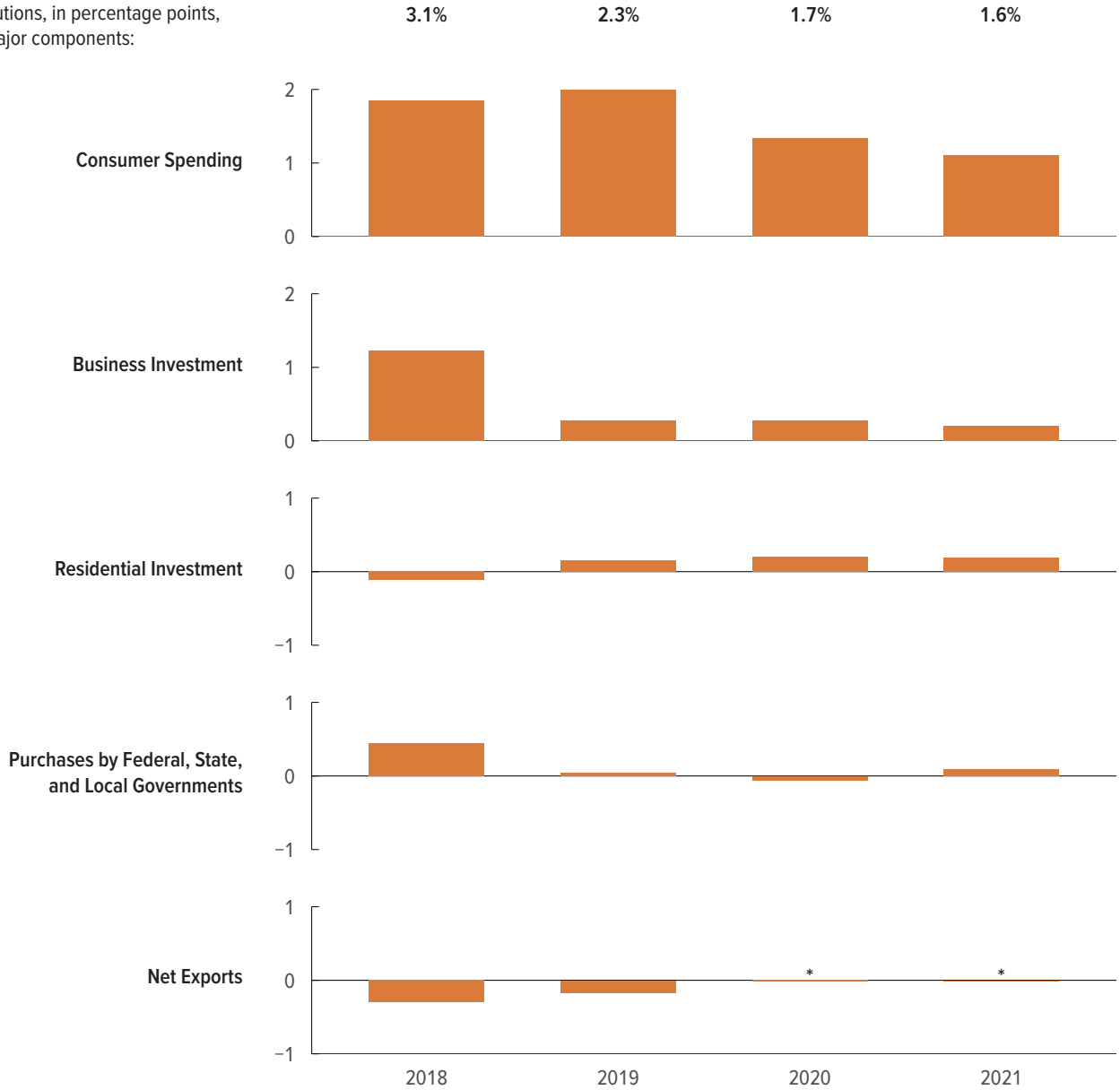
i. The average monthly change, calculated by dividing the change in payroll employment from the fourth quarter of one calendar year to the fourth quarter of the next by 12.

j. Consists of domestic profits, adjusted to remove distortions in depreciation allowances caused by tax rules and to exclude the effects of changes in prices on the value of inventories.

Figure 2-2.

Projected Contributions to the Growth of Real GDP

The growth of real GDP is the sum of contributions, in percentage points, of its major components:



Sources: Congressional Budget Office; Bureau of Economic Analysis.

Real values are nominal values that have been adjusted to remove the effects of changes in prices. 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.

Growth rates are measured from the fourth quarter of one calendar year to the fourth quarter of the next. CBO calculated the contributions by weighting the components’ growth rates by their shares of nominal GDP.

Values for 2018 are CBO’s estimates.

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

Table 2-4.

Projected Growth in Real GDP and Its Components

Percent

	Estimated, 2018	2019	2020	2021	Annual Average	
					2022– 2023	2024– 2029
Real GDP	3.1	2.3	1.7	1.6	1.7	1.8
Components of Real GDP						
Consumer spending	2.7	2.9	1.9	1.6	2.0	2.0
Business investment	9.2	2.0	2.0	1.5	1.4	2.9
Business fixed investment	6.8	3.2	2.4	1.7	1.4	2.9
Residential investment	-2.7	3.9	5.0	4.7	3.0	-0.1
Purchases by federal, state, and local governments	2.5	0.2	-0.3	0.5	0.4	0.5
Federal	4.3	-1.5	-2.4	0.0	-0.3	0.4
State and local	1.5	1.2	0.9	0.8	0.8	0.5
Exports	2.2	2.7	3.4	3.4	3.2	3.1
Imports	3.8	3.3	2.9	2.8	2.9	2.8
Memorandum:						
Net Exports (Change in billions of 2012 dollars)	-71.5	-47.2	-14.7	-12.4	-22.0	-24.0

Source: Congressional Budget Office.

Real values are nominal values that have been adjusted to remove the effects of changes in prices. 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.

moderate, growth in the demand for goods and services slows, and energy prices fall. Also, under current law, federal purchases are projected to fall sharply in the fourth quarter of 2019, subtracting from GDP growth this year.

Output growth is projected to slow more substantially after 2019. In CBO's projections, both consumer spending and business investment continue to grow, but at rates that are lower than their respective growth rates in the long run. Purchases by state and local governments also add slightly to GDP growth. By contrast, federal government purchases, on average, are projected to continue to subtract from GDP growth in those years.

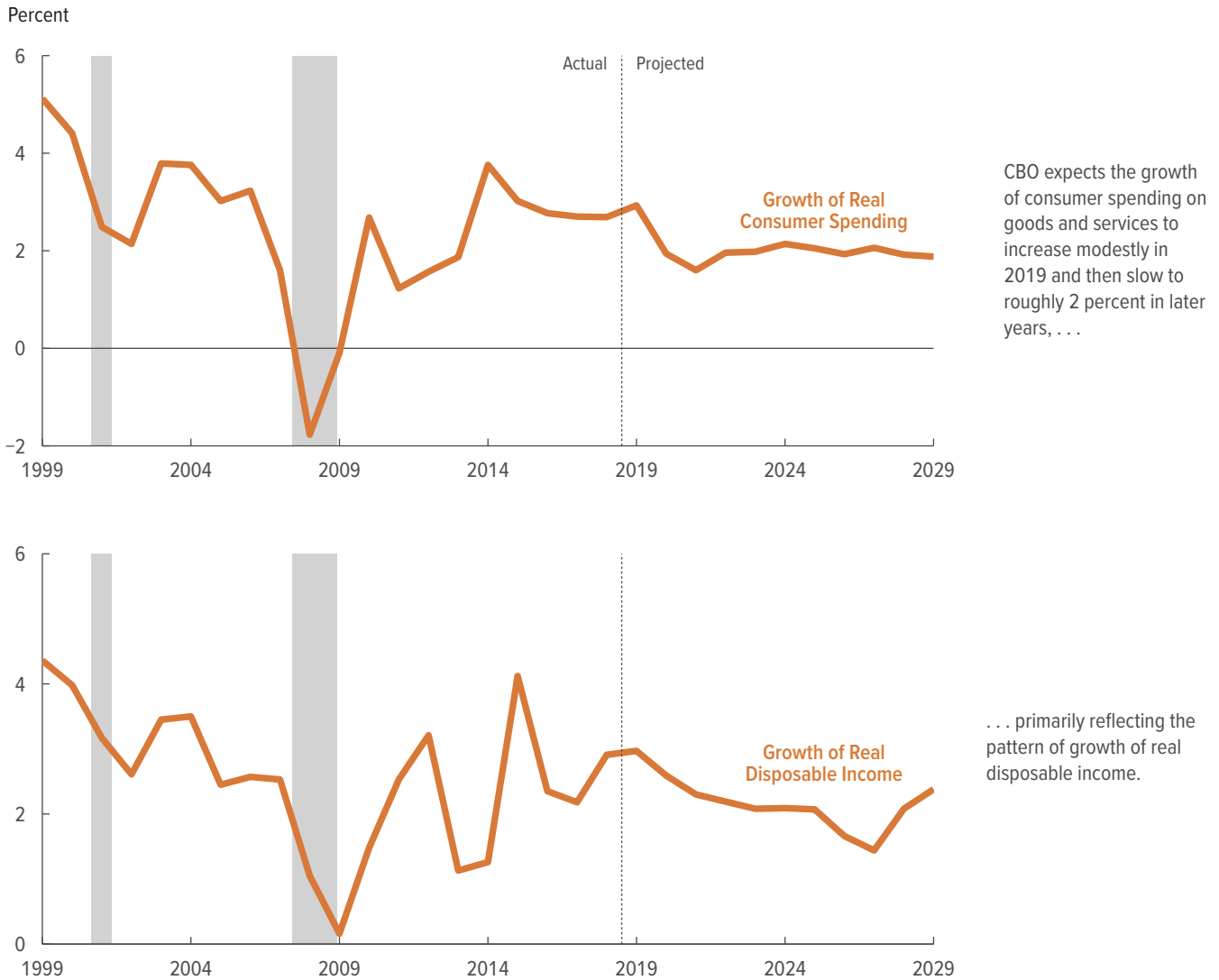
Consumer Spending. CBO expects solid growth in consumer spending on goods and services to be the primary contributor to the growth of GDP in 2019. In the agency's projections, real consumer spending on goods and services grows by 2.9 percent in 2019 (up slightly from

2.7 percent in 2018), contributing 2 percentage points to the 2.3 percent growth rate of real GDP this year (see Figure 2-3). That growth in consumer spending stems mainly from healthy growth in real household disposable income, which is expected to grow at roughly the same pace in 2019 as in 2018 before slowing in subsequent years. In CBO's projections, annual growth in consumer spending slows to an average of 1.9 percent between 2020 and 2023, as growth in income slows and households gradually respond to higher interest rates.

Several factors support the agency's projection of solid growth in real household disposable income and consumer spending in 2019. The most important factor is employee compensation, which is expected to grow at a slightly faster pace in 2019 than it grew in recent years. In addition, a number of factors that supported consumer spending growth in 2018 are expected to carry into 2019. For example, many households are expected to adjust gradually to the smaller personal tax liabilities resulting

Figure 2-3.

Consumer Spending and Income



Sources: Congressional Budget Office; Bureau of Economic Analysis.

Real values are nominal values that have been adjusted to remove the effects of changes in prices. Consumer spending consists of personal consumption expenditures. Disposable income is the income that people receive minus the taxes and fees that they pay to governments. Growth of consumer spending is measured from the fourth quarter of one calendar year to the fourth quarter of the next. The growth of disposable income is an annual average rate measured over two years, from the fourth quarter of one year to the fourth quarter two years later (the year indicated by the horizontal axis).

Values for 2018 are CBO's estimates.

from the changes made by the 2017 tax act; therefore, the increases in after-tax income in 2018 will continue to translate into more consumer spending in 2019. Gasoline prices, which fell considerably in late 2018, are expected to fall further during 2019, restraining overall inflation and boosting the purchasing power of household income this year. Finally, although interest rates are expected to

rise further, CBO expects that overall financial conditions, including indicators of consumers' creditworthiness and banks' willingness to lend, will still broadly support the growth of consumer spending in 2019.

CBO expects the growth of consumer spending to slow markedly after 2019. Whereas compensation gains are

anticipated to continue to boost household income over those years, other sources of support for consumption growth are expected to fade. For one, the effect of the 2017 tax act on consumption growth is projected to wane as households complete the upward adjustment to their spending made possible by the increase in after-tax incomes. For another, price inflation will restrain the growth of real household income as gasoline prices stop falling and new tariffs on imported goods lead to slightly higher overall consumer prices. Moreover, with higher interest rates, the expansion in consumer credit is expected to moderate in 2020 and beyond.

Business Investment. In CBO's projections, growth in business fixed investment slows markedly after 2018—from 6.8 percent in 2018 to 3.2 percent in 2019 and to an average of 1.7 percent per year between 2020 and 2023—as most of the effect of the factors boosting growth in 2018 wanes (see Figure 2-4). Those factors, which include increased incentives for investment under the 2017 tax act, the accelerated growth of output stemming in part from the tax act and the legislated increases in federal outlays, greater incentives for oil exploration and development created by higher oil prices, and the easing of existing regulations coupled with a slowdown in new regulatory activity, are estimated to have caused real business fixed investment to grow at a 6.8 percent rate in 2018. Although provisions in the tax act also increase incentives in 2019 through 2021, they do so by less each year than they did in 2018 and thus lead to less growth in investment. In addition, GDP growth slows in those years as the fiscal stimulus provided by federal spending diminishes and a decline in oil prices slows investment in oil drilling. The only major factor that stimulated growth of investment in 2018 and will continue to do so over the next four years is stronger productivity growth, in CBO's projections.⁸

Residential Investment. CBO anticipates that, after declining in 2018, real residential investment will grow faster than overall GDP over the next few years (see Figure 2-5). In the agency's projections, real residential investment grows by 3.9 percent in 2019 (after declining by 2.7 percent in 2018) and by an average of 4.5 percent per year from 2020 to 2022 before slowing in 2023 and later years. The decline in residential investment in

2018 was attributable in part to the 2017 tax act, which included provisions that reduced the incentives to own homes, as well as to higher mortgage rates. The anticipated pickup in growth from 2019 through 2022, by contrast, mainly reflects continued strength in household formation as well as some further easing of mortgage lending standards.

Government Purchases. If current laws governing federal taxes and spending generally remained in place, total real purchases of goods and services by federal, state, and local governments would increase by only 0.2 percent in 2019—down substantially from 2.5 percent in 2018—and contract by 0.3 percent in 2020, CBO estimates (see Figure 2-6 on page 37). Those estimates reflect a sharp decrease in federal purchases starting in fiscal year 2020 that is only partially offset by an increase in state and local purchases. Specifically, in CBO's projections, real purchases by the federal government fall by 1.5 percent in 2019 (on a fourth-quarter-to-fourth-quarter basis) and by 2.4 percent in 2020, incorporating the assumption that the statutory caps on funding for discretionary programs through fiscal year 2021 would bind and hold the growth of federal consumption and investment spending to a rate below that of inflation. By contrast, real purchases by state and local governments are projected to increase at an average annual rate of 1.1 percent in those years as both demand for their services and the tax revenue that funds those services rise. In CBO's baseline projections, total real government purchases grow modestly from 2021 through 2023, at an average annual rate of 0.4 percent, as federal discretionary funding begins to grow at the rate of inflation and as state and local governments continue to slowly hire more employees.

Net Exports. Continuing their downward trend since 2014, real net exports are projected to decline further this year—as real imports grow faster than real exports—before stabilizing over the following years. In CBO's projections, growth of real imports slows in 2019 as the growth of domestic purchases slows (see Figure 2-7 on page 38). Growth of real exports in 2019 also remains weak relative to their historical growth rates, reflecting in part the strength of the exchange value of the U.S. dollar, which makes U.S. exports less competitive in foreign markets.⁹ The exchange value of the dollar, which

8. See Mark Lasky, *CBO's Model for Forecasting Business Investment*, Working Paper 2018-09 (Congressional Budget Office, December 2018), www.cbo.gov/publication/54871.

9. CBO's measure of the exchange value of the dollar is an export-weighted average of the exchange rates between the dollar and the currencies of leading U.S. trading partners.

Figure 2-4.

Business Fixed Investment and the Price of Oil



CBO expects growth of real business fixed investment to gradually slow over the next few years, . . .

. . . in part because slower growth in the price of oil reduces the incentive to invest in new oil wells.

Sources: Congressional Budget Office; Bureau of Economic Analysis; Energy Information Administration.

Real values are nominal values that have been adjusted to remove the effects of changes in prices. Business fixed investment consists of businesses’ purchases of equipment, nonresidential structures, and intellectual property products. Growth of business fixed investment is measured from the fourth quarter of one calendar year to the fourth quarter of the next.

The price of oil is the current market price of a barrel of West Texas Intermediate crude oil. The growth of the price of oil is an annual average rate measured over two years, from the fourth quarter of one year to the fourth quarter two years later (the year indicated by the horizontal axis).

Value for growth of real business fixed investment in 2018 is CBO’s estimate.

rose substantially during 2018, is expected to remain relatively high in 2019 and fall only gradually over the following years. Moreover, new tariffs imposed by the United States and its trading partners in 2018 are expected to reduce the growth of both real imports and real exports in the near term (see Box 2-1 on page 26).

Potential Output and the Output Gap

In the agency’s projections, potential output—a measure of the economy’s fundamental capacity to supply goods and services—grows by an average of 2.0 percent per year from 2019 to 2023, roughly 0.5 percentage points more than it has grown annually, on average, from 2008

Figure 2-5.

Residential Investment and Household Formation



CBO expects that real residential investment will grow faster over the next few years, . . .

. . . primarily reflecting the continued strength in household formation.

Sources: Congressional Budget Office; Bureau of Economic Analysis; Census Bureau.

Real values are nominal values that have been adjusted to remove the effects of changes in prices. 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.

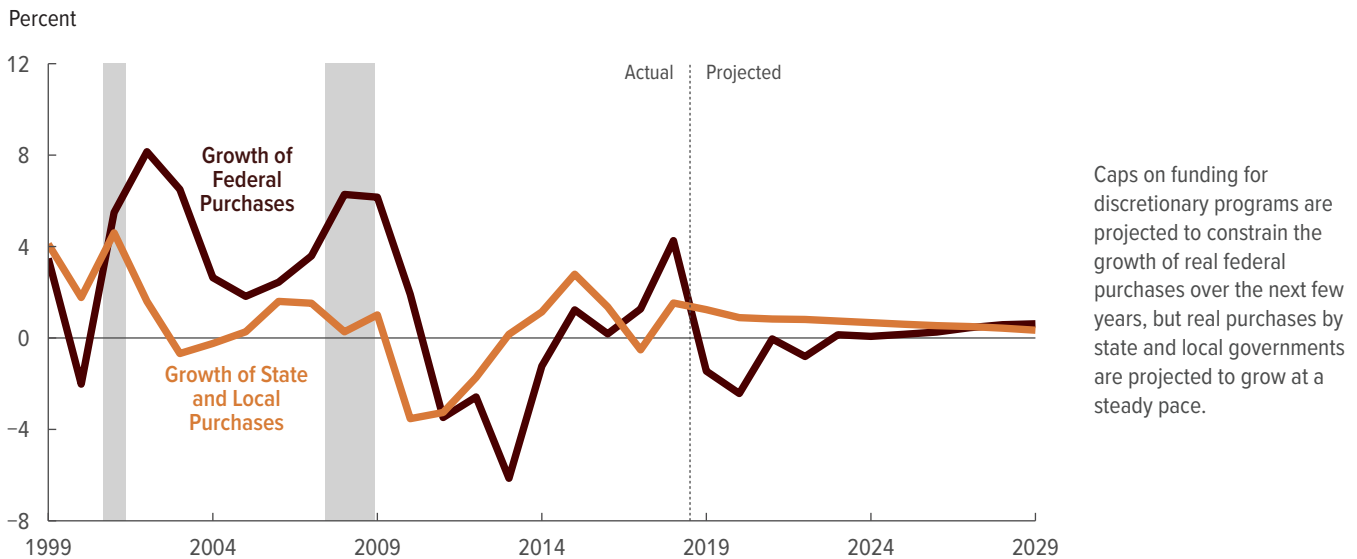
Household formation is the change in the number of occupied housing units from the fourth quarter of one calendar year to the fourth quarter of the next.

Values for 2018 are CBO's estimates.

to 2018 (see Figure 2-8 on page 39). Although the growth of potential output is determined primarily by long-run forces (such as trends in population growth, the labor force participation rate, and productivity), the acceleration of that growth in 2018 and over the next

few years in CBO's forecast is also driven by the 2017 tax act. According to the agency's estimates, the tax act increases incentives for investment (and therefore labor productivity) and labor supply and thus increases the economy's underlying productive capacity.

Figure 2-6.

Government Purchases

Sources: Congressional Budget Office; Bureau of Economic Analysis.

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

Values for 2018 are CBO's estimates.

CBO's forecasts of the growth of actual and potential GDP imply that, in the next few years, the demand for goods and services will exceed the economy's long-run capacity to supply them. In the agency's projections, the output gap widens from zero in early 2018 to a cyclical peak of 0.9 percent of potential GDP by the second half of 2019. At the same time, in part as a result of the 2017 tax act, the pace of growth in potential output accelerates, slowing the increase in the output gap, mitigating the inflationary pressure associated with that gap, and facilitating growth in actual output. Still, starting in 2020, slower growth in consumer spending and business investment, as well as declines in federal outlays projected under current law, slow actual GDP growth in relation to the growth of potential GDP, steadily narrowing and ultimately eliminating the output gap by 2022.

The Labor Market

The labor market strengthened considerably in 2018. The primary measure that CBO uses to assess the strength of the labor market—the employment gap, or the difference between employment and potential

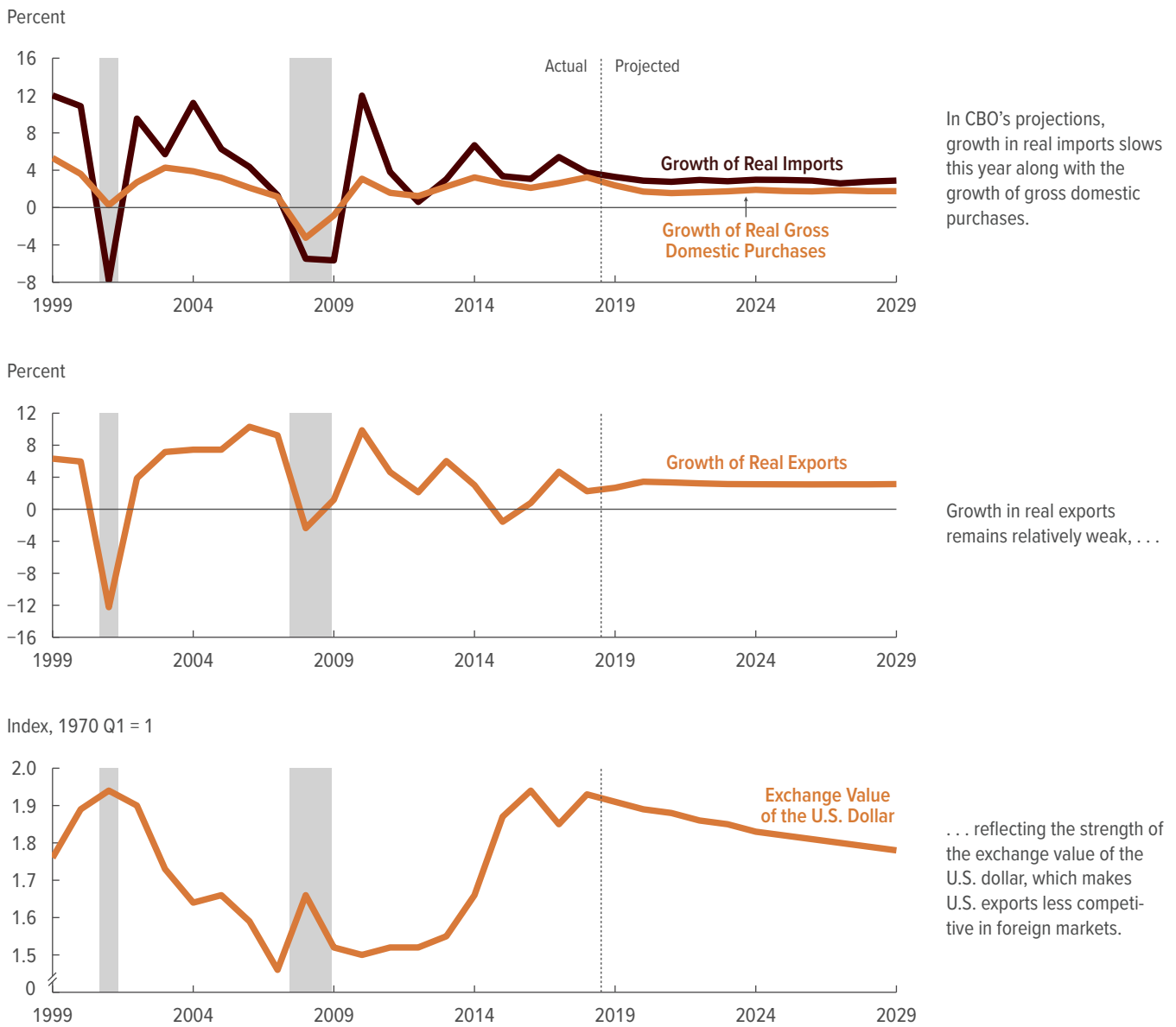
employment—indicated that the overall labor market has reached and exceeded its potential since early 2018.¹⁰ That strengthening of the labor market is also reflected in a further drop in the unemployment rate (which has been below its estimated natural rate since early 2017) and the continued stability of the labor force participation rate (which is approaching but remains slightly below its potential level). The potential labor force participation rate is itself trending down in the long run because of demographic pressures.

As the growing demand for goods and services continues to increase the demand for labor, the labor market continues to expand, in CBO's projections. In 2019, employment rises further above its potential level, the

10. Potential employment is CBO's estimate of the maximum sustainable level of employment in the long run. It equals the number of people who would be employed if the unemployment rate equaled its natural rate and if the labor force participation rate—that is, the percentage of people in the civilian, noninstitutionalized population who are at least 16 years old and are either working or seeking work—equaled its potential rate.

Figure 2-7.

Imports, Exports, and the Exchange Value of the U.S. Dollar



In CBO's projections, growth in real imports slows this year along with the growth of gross domestic purchases.

Growth in real exports remains relatively weak, . . .

. . . reflecting the strength of the exchange value of the U.S. dollar, which makes U.S. exports less competitive in foreign markets.

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

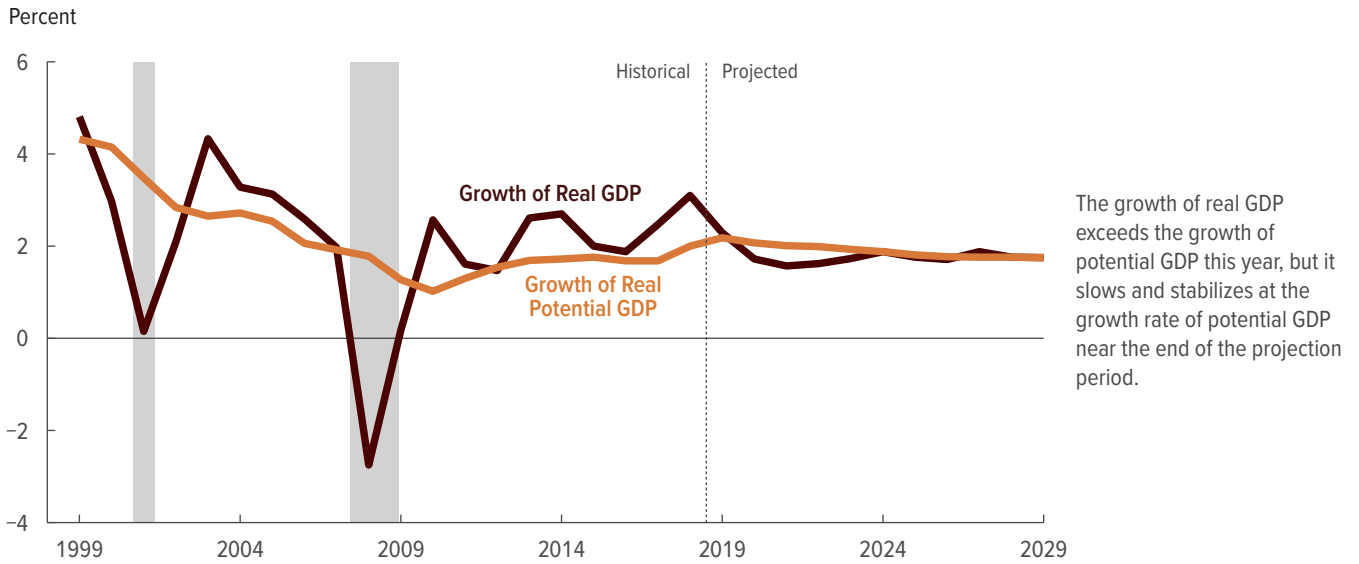
Real values are nominal values that have been adjusted to remove the effects of changes in prices. Gross domestic purchases are the sum of personal consumption expenditures, gross private domestic investment, and government consumption expenditures and gross investment. Growth is measured from the fourth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

The 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—Australia, Brazil, Canada, China, Hong Kong, India, Japan, Mexico, Singapore, South Korea, Taiwan, the United Kingdom, and the countries of the euro zone. A higher value indicates a stronger dollar.

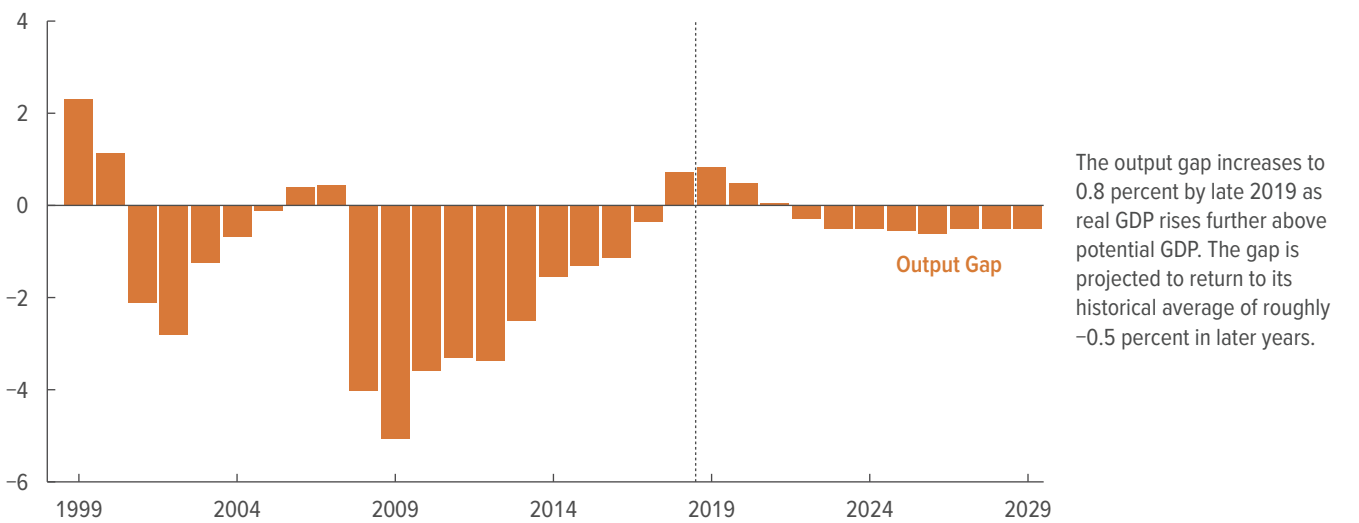
Values for 2018 are CBO's estimates.

Figure 2-8.

The Relationship Between GDP and Potential GDP



Percentage of Potential GDP



Sources: Congressional Budget Office; Bureau of Economic Analysis.

Real values are nominal values that have been adjusted to remove the effects of changes in prices. 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.

Values for 2018 are CBO’s estimates.

GDP = gross domestic product.

unemployment rate falls further below the natural rate, and the gap between the actual and potential rates of labor force participation closes by the end of the year (see Figure 2-9). Meanwhile, growing demand for labor and competition for workers are also expected to boost the growth of wages and salaries and other forms of labor compensation over the next few years, which, in turn, will slow growth in the demand for labor. From 2020 to 2023, in CBO's projections, employment growth slows sharply as labor compensation rises and output growth slows. Nevertheless, employment remains higher than its potential level until 2023.

Employment. In CBO's projections, some of the momentum of strong employment growth in 2018 carries into 2019. Nonfarm payroll employment is projected to grow by an average of 148,000 jobs per month in 2019, which represents a decline from 213,000 jobs per month in 2018 but is still a healthy pace of job growth at this stage of the business cycle. From 2020 to 2023, growth in employment is expected to slow sharply, averaging just 39,000 jobs per month, reflecting an anticipated rise in the unemployment rate resulting from slower economic growth during those years and slower growth in the labor force because of the continued retirement of baby boomers (people born between 1946 and 1964).

Despite the expected slowdown in growth, CBO's employment projections imply that employment remains above its long-run potential level over the next few years. In CBO's projections, the employment gap—the difference between employment and potential employment—peaks at roughly 2 million people in late 2019 and then falls but remains positive until 2023. Employment as a percentage of the population also peaks in 2019, at about 60.6 percent, before falling back to 59.2 percent by 2023.

Unemployment. In CBO's projections, the unemployment rate falls from 3.8 percent in the fourth quarter of 2018 to 3.5 percent by the end of 2019, about 1.1 percentage points below the agency's estimate of the natural rate of unemployment. That decline in the unemployment rate reflects a continued increase in the demand for labor, which reduces the number of unemployed workers in the labor force this year. Meanwhile, the demand for labor and the resulting upward pressure on compensation also encourages people to remain in the labor force or rejoin it, making the labor force larger and

thus moderating the decline in the unemployment rate. As economic growth slows more substantially after 2019, the unemployment rate rises, reaching and surpassing its natural rate of 4.6 percent by 2023.

Even though the unemployment rate, at 3.8 percent in late 2018, is at its lowest point since the 1960s, the cyclical strength of the current labor market—and the amount of inflationary pressure it implies—is less pronounced than the unemployment rate alone suggests, in part because the natural rate of unemployment has declined over time. In CBO's estimate, the natural rate of unemployment has fallen from more than 6.0 percent in the early 1980s to 4.6 percent now. That decline has occurred because the workforce has shifted toward older workers, who tend to have lower unemployment rates, and away from less-educated workers, who tend to have higher unemployment rates.

Labor Force Participation. The labor force participation rate, which has hovered around 62.8 percent since 2014, remains close to that rate during the next two years, in CBO's projections. The stability of the labor force participation rate in recent years reflects the balancing of two opposing forces: sustained economic growth, which continues to encourage additional workers to enter and existing workers to stay in the labor force, and long-run shifts in demographics (particularly the aging of the population), which have led to a downward trend in the potential labor force participation rate. (In CBO's estimate, the potential labor force participation rate has fallen from 64.0 percent in 2014 to 63.0 percent in 2018.) Because the actual rate of labor force participation has been stable while the potential rate has continued to fall, the gap between the two rates has narrowed steadily in recent years. As the overall demand in the economy remains relatively strong in 2019, that gap is expected to close this year and then turn slightly positive in subsequent years.

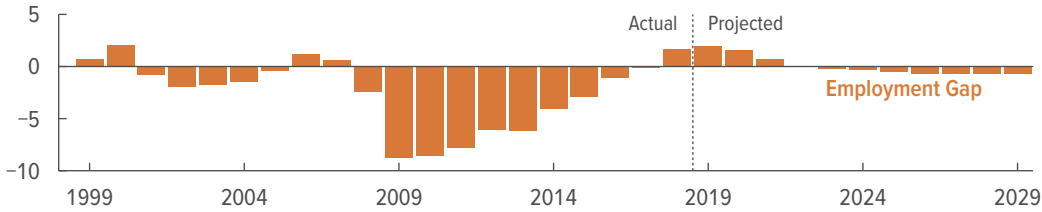
However, downward pressure from the demographic shifts is expected to dominate starting in 2020 as economic growth slows more markedly after 2019. In CBO's projections, the labor force participation rate falls from 62.8 percent in 2019 to 62.2 percent by 2023, in line with its potential rate, which falls from 63.0 percent to 62.1 percent during that period.

Labor Compensation. After several years of prolonged weakness, wage growth accelerated notably in 2018.

Figure 2-9.

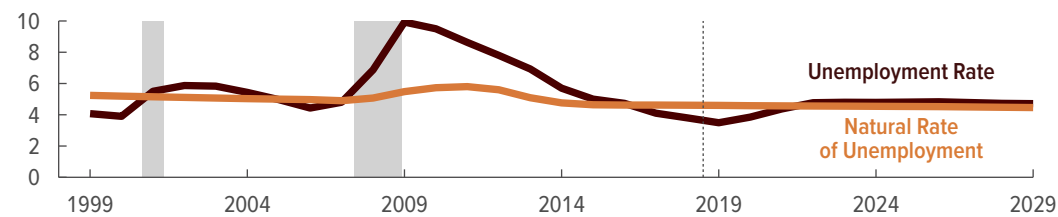
The Labor Market

Millions of People



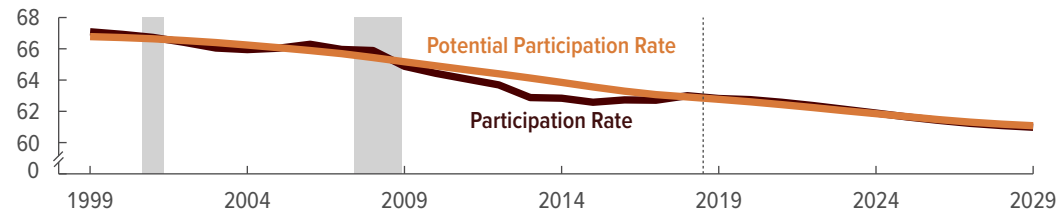
In 2019, strong demand for labor pushes employment further above its maximum sustainable amount, increasing the employment gap.

Percent



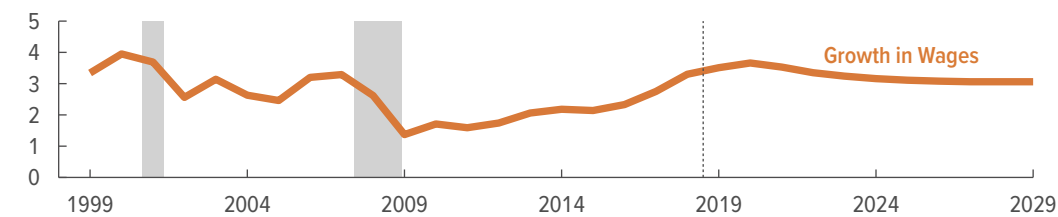
That demand lowers the unemployment rate further below CBO's estimate of the natural rate . . .

Percent



. . . and pushes the labor force participation rate above CBO's estimate of its potential rate.

Percent



In addition, that strong demand for labor puts upward pressure on wages over the next few years.

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 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.

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.

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.

Value for wage growth in 2018 is CBO's estimate.

Over the next few years, labor compensation is expected to rise further as employment remains at elevated levels and firms must compete for a relatively small pool of unemployed or underemployed workers. In CBO's projections, annual growth of the employment cost index for wages and salaries of workers in private industry averages 3.5 percent between 2019 and 2023, slightly more rapid than its 3.3 percent pace in 2018 and considerably more rapid than the 2.0 percent average from 2009 to 2017. Other measures of compensation, such as the average hourly earnings of production and nonsupervisory workers in private industries, also grow more rapidly than in recent years. (CBO's projections of labor compensation also reflect its projections of productivity and inflation.) The faster pace of wage growth is expected to restrain the demand for labor, which, in turn, will slow the pace of wage growth in later years.

Inflation

After averaging only 1.3 percent from 2012 through 2017, the annual growth rate of the price index for personal consumption expenditures (PCE)—the measure that the Federal Reserve uses to set its long-run inflation objective—increased in 2018, reaching the Federal Reserve's objective of 2 percent (see Figure 2-10). The core PCE price index, which excludes food and energy prices because they tend to be volatile, also nearly reached an annual growth rate of 2 percent. Consistently rapid growth in housing-service prices and more rapid growth in medical-service prices accounted for a large fraction of the recent increase in core inflation.

By CBO's estimate, newly imposed tariffs have had a tangible but limited effect on U.S. consumer price inflation so far. Newly imposed tariffs on certain imported consumer goods, such as washing machines, have led directly to large price increases for those products. Newly imposed tariffs on certain imported intermediate goods, such as steel and aluminum, also affected consumer prices, according to CBO's estimate. (Tariffs on imported intermediate goods increase the cost of producing consumer goods, and businesses tend to pass some of that higher cost onto consumers.) However, because the value of the consumer goods subject to tariffs is small relative to the total value of U.S. imports and because businesses can absorb some of those higher input costs, the effect of the tariffs on domestic inflation has been limited so far.

Over the next few years, growing demand for goods and services is expected to continue to put upward pressure

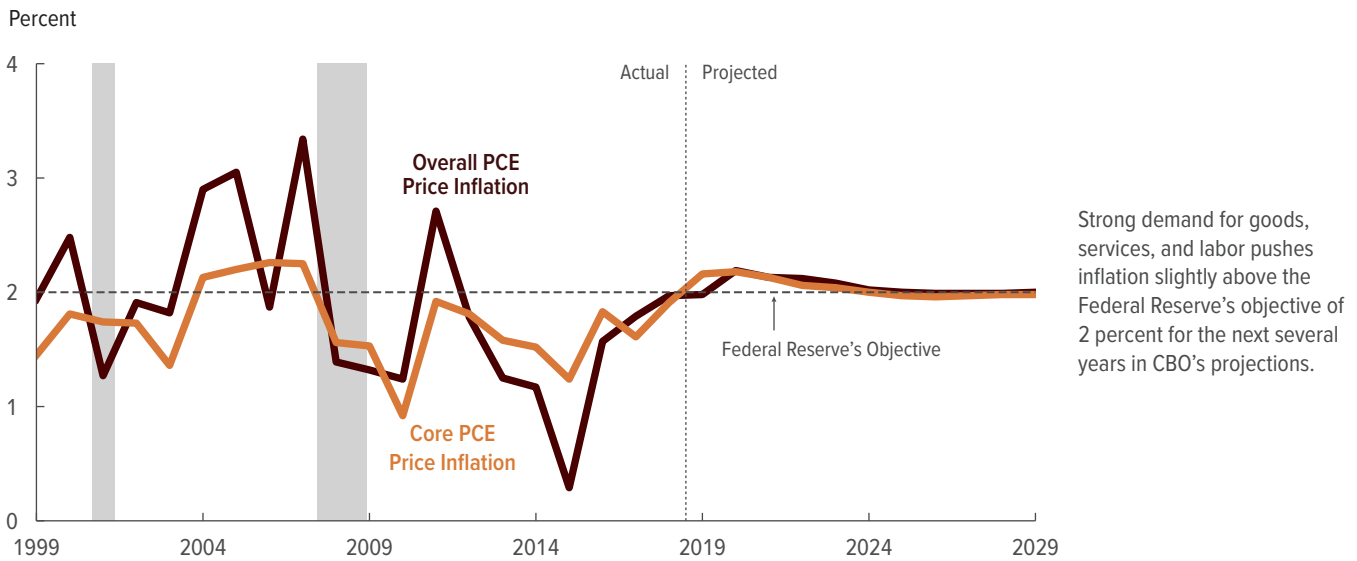
on inflation. Tariffs are expected to add slightly to that upward pressure, particularly in 2019 and 2020. CBO estimates that, on net, tariffs will increase the core PCE price index by 0.1 percent by the end of 2020 (see Box 2-1 on page 26). Their effect on prices is expected to be somewhat drawn out as businesses respond to recently imposed tariffs gradually, in part because of the current uncertainty about trade policy.

Meanwhile, the Federal Reserve is expected to further tighten monetary policy and, aided by market participants' stable expectations of future inflation, prevent inflation from substantially exceeding its long-run objective. In CBO's projections, growth in the core PCE price index rises to 2.2 percent per year in both 2019 and 2020. The core consumer price index for urban households (CPI-U), which historically tends to grow faster than the PCE price index, rises by 2.6 percent in 2019 and by 2.7 percent in 2020. In CBO's forecast, as interest rates rise and demand in the economy fades, inflation slows after 2020. By 2023, core PCE inflation falls back to 2.0 percent, and core CPI-U inflation declines to 2.4 percent.

Interest Rates

CBO expects the Federal Reserve to continue to raise the range for the federal funds rate (the interest rate that financial institutions charge each other for overnight loans of their monetary reserves) through the end of 2019 in response to the widening output gap and increasing inflationary pressures in the economy. In CBO's projections, the federal funds rate rises from 2.2 percent in late 2018 to 3.4 percent by the beginning of 2020, where it remains through 2022 (see Figure 2-11). The agency expects the Federal Reserve to then begin reducing the federal funds rate in 2023 as the output gap becomes more negative and inflationary pressures dissipate. The federal funds rate is expected to fall to 3.1 percent by the end of 2023.

The interest rates on 3-month Treasury bills and 10-year Treasury notes are also expected to be higher over the next few years. In CBO's projections, the interest rate on 3-month Treasury bills rises from 2.4 percent in the fourth quarter of 2018 to 3.1 percent in 2022. Similarly, the interest rate on 10-year Treasury notes rises from 3.0 percent in the fourth quarter of 2018 to 3.8 percent in 2022. Long-term rates remain roughly unchanged from 2022 to 2023, and short-term rates fall slightly after 2022 as the positive output gap disappears and the

Figure 2-10.**Inflation**

Sources: Congressional Budget Office; Bureau of Economic Analysis.

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

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

Values for 2018 are CBO's estimates.

PCE = personal consumption expenditures.

associated inflationary pressures dissipate. The interest rate on 3-month Treasury bills is projected to fall to 2.9 percent, and the interest rate on 10-year Treasury notes to 3.7 percent, by the end of 2023.

CBO's projections of long-term interest rates over the next few years reflect three primary factors. First, they incorporate the anticipated movements of short-term interest rates. Second, CBO expects the term premium (the premium paid to bondholders for the extra risk associated with holding longer-term bonds) to increase over the next few years as well. Various factors that pushed the term premium to historically low levels in recent years—such as investors' heightened concern about relatively weak global growth—are expected to gradually dissipate. Finally, CBO expects the ongoing reduction in the Federal Reserve's portfolio of long-term assets to provide a slight boost to long-term interest rates. Despite that boost, however, CBO expects the difference between long-term and short-term rates to narrow—often referred to as a flattening of the yield curve—through

2020. The agency expects the yield curve to then steepen slightly between 2021 and 2023.

The Economic Outlook for 2024 to 2029

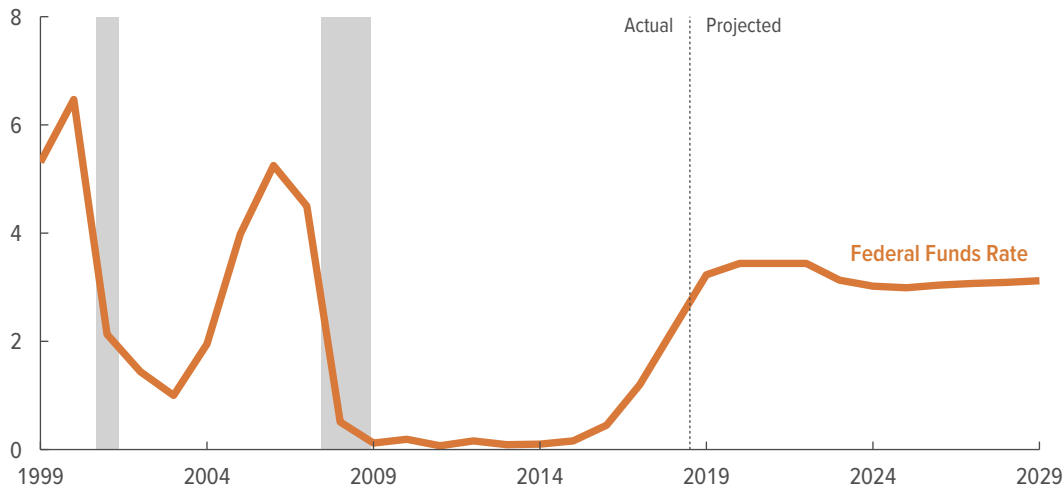
CBO's projections of the economy for 2024 through 2029 are based mainly on its projections of underlying trends in key variables, such as the size of the labor force, the average number of labor hours per worker, capital investment, and productivity.¹¹ In addition, CBO considers the effects on those variables of federal tax and spending policies—as well as trade and other public policies—embodied in current law. In some cases, policies might be projected not only to affect potential output but also to influence aggregate demand for goods and services, causing the gap between actual output and potential output to change. For example, the expiration of the temporary provisions in the 2017 tax act—including the expiration of most of the provisions affecting

11. 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.

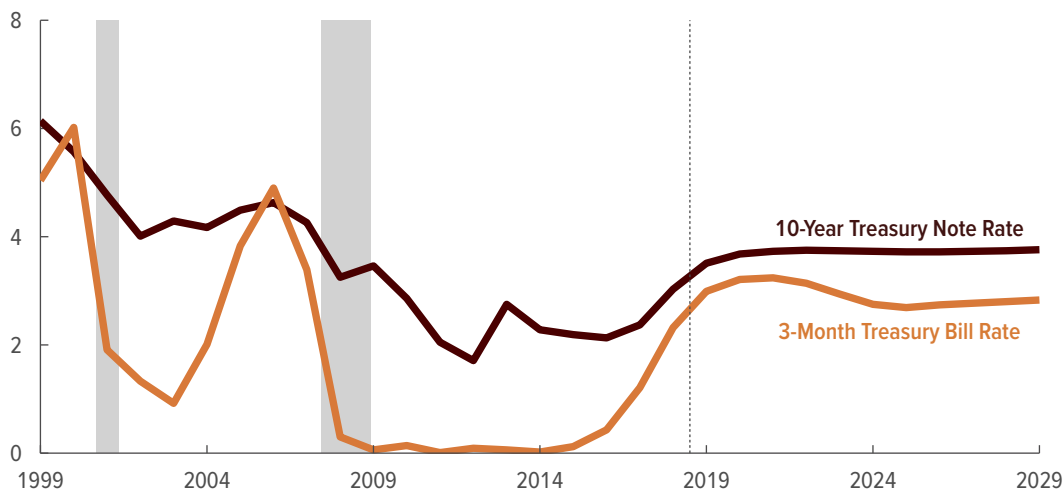
Figure 2-11.

Interest Rates

Percent



CBO expects the Federal Reserve to continue to increase the federal funds rate through the end of 2019 in response to the widening output gap and mounting inflationary pressures.



The increases in the federal funds rate and a rising term premium contribute to higher interest rates on Treasury securities.

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.

The term premium is the amount paid to bondholders for the extra risk associated with holding longer-term bonds.

Data are fourth-quarter values.

individual income taxes at the end of 2025 and the phaseout of bonus depreciation by the end of 2026—is projected to slow real GDP growth and to lower real GDP in relation to its potential in those years.

Potential Output and Actual Output

In CBO’s projections, potential output grows at an average rate of 1.8 percent per year over the

2024–2029 period, driven by average annual growth of about 0.5 percent in the potential labor force and of about 1.3 percent in potential labor force productivity (see Table 2-5). Compared with growth of potential output of more than 2.0 percent per year from 2019 to 2023, the annual rate of 1.8 percent in later years represents a slowdown of nearly one-quarter of a percentage point. About one-third of that slowdown results from

Table 2-5.

Key Inputs in CBO's Projections of Real Potential GDP

Percent

	Average Annual Growth						Total, 1950– 2018	Projected Average Annual Growth		
	1950– 1973	1974– 1981	1982– 1990	1991– 2001	2002– 2007	2008– 2018		2019– 2023	2024– 2029	2019– 2029
	Overall Economy									
Real Potential GDP	4.0	3.2	3.4	3.2	2.5	1.6	3.2	2.0	1.8	1.9
Potential Labor Force	1.6	2.5	1.6	1.2	1.0	0.5	1.4	0.5	0.5	0.5
Potential Labor Force Productivity ^a	2.4	0.6	1.7	2.0	1.5	1.0	1.7	1.5	1.3	1.4
	Nonfarm Business Sector									
Real Potential Output	4.1	3.5	3.6	3.6	2.8	1.8	3.4	2.4	2.1	2.2
Potential Hours Worked	1.4	2.3	1.8	1.2	0.4	0.5	1.3	0.6	0.3	0.4
Capital Services	3.7	3.8	3.5	3.8	2.9	2.4	3.4	2.6	2.1	2.3
Potential Total Factor Productivity	1.9	0.9	1.3	1.5	1.6	0.6	1.4	1.1	1.1	1.1
Contributions to the Growth of Real Potential Output (Percentage points)										
Potential hours worked	1.0	1.6	1.2	0.8	0.2	0.3	0.9	0.4	0.2	0.3
Capital input	1.2	0.9	1.1	1.3	0.9	0.8	1.1	0.9	0.7	0.8
Potential total factor productivity	1.9	0.9	1.3	1.5	1.6	0.6	1.4	1.1	1.1	1.1
Total Contributions	4.0	3.5	3.6	3.6	2.8	1.8	3.4	2.4	2.1	2.2
Potential Labor Productivity ^b	2.7	1.2	1.8	2.3	2.4	1.3	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 changes in prices. 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.

slower growth of the potential labor force; the remaining two-thirds results from slower growth in potential labor force productivity.¹²

12. Potential labor force productivity, defined as potential output per member of the potential labor force, is a broad measure of the productive efficiency of the overall economy. It can increase when one or more of the sectors in the economy (such as government or the nonfarm business sector) produce output more efficiently—perhaps because of a boost in business fixed investment or because of a technological advance—or when production in the economy shifts away from less efficient sectors toward more efficient sectors.

The slowdown in growth is expected to be slightly more pronounced in the nonfarm business sector, which produces roughly three-quarters of GDP. Annual growth of that sector's potential output slows by about a quarter of a percentage point, in CBO's projections, from nearly 2.4 percent over the 2019–2023 period to about 2.1 percent over the 2024–2029 period. The contribution of potential hours worked falls from 0.4 percentage points per year, on average, in the first half of the 11-year projection period to 0.2 percentage points in the second half. The contribution of capital services drops from an average of 0.9 percentage points per year to 0.7 percentage points; by itself, that reduction would lead to slower growth in labor force productivity. The slowdown

in the growth of potential hours and in the growth of capital services reflects underlying long-run trends—such as the aging of the population and other demographic shifts—as well as the expiration of temporary tax provisions under current law. (Recent changes in trade policy are expected to have a small, negative effect on potential output in the long run, although the uncertainty surrounding that assessment is considerable. See Box 2-1 on page 26 for more details.)

In contrast to the slower projected growth of hours and capital services, the annual growth of potential total factor productivity (the average real output per unit of combined labor and capital services, excluding the effects of business cycles) in the nonfarm business sector accelerates, in CBO's forecast, from slightly less than 1.1 percent in the first half of the projection period to just over 1.1 percent in the second half, somewhat offsetting the slowdown in the growth of other factor inputs. That increase plays a key role in keeping growth in potential aggregate output substantially faster than the 1.6 percent average annual growth that is estimated to have occurred since 2007, when the last recession began (see Box 2-2).

Typically, in CBO's forecasts, the growth of actual output and the growth of potential output converge in the second half of the 11-year period, and the level of actual output stays about 0.5 percent below that of potential output, which is consistent with the long-term relationship between the two measures.¹³ In the agency's current forecast, however, that convergence is interrupted because the expiration of the temporary provisions of the 2017 tax act is projected not only to affect the growth of potential output by reducing the supply of labor but also to result in a temporary slowdown in the growth of aggregate demand. As a consequence, in the current forecast, the gap between actual output and potential output temporarily widens and becomes more negative before returning to its long-run average (-0.5 percent of potential output) in the final years of the projection period. Correspondingly, the average growth rate of actual output during the 2024–2029 period is close to but slightly slower than that projected for potential output in those

years—both averaging about 1.8 percent per year in CBO's current projections.

The Labor Market

CBO expects the natural rate of unemployment to decline slowly over time, from 4.6 percent in 2019 to under 4.5 percent by 2029. That slow decline reflects a shift in the composition of the workforce toward older workers, who tend to have lower rates of unemployment (when they participate in the labor force), and away from less-educated workers, who tend to have higher ones.

In CBO's projections, the unemployment rate stops rising by 2023, and the difference between the unemployment rate and the natural rate settles at the long-term gap of about one-quarter of a percentage point.¹⁴ As the natural rate of unemployment declines slowly over time, the unemployment rate also falls between 2024 and 2029, except in 2026 when the unemployment rate rises slightly. That temporary increase occurs because the slowdown in the growth of overall demand for goods and services caused by the expiration of certain provisions of the 2017 tax act also slows the growth in the demand for labor. CBO expects the unemployment rate to be 4.7 percent in 2029, slightly below its level of 4.8 percent in 2024.

CBO expects the labor force participation rate to follow its long-term trend and fall to about 61 percent by 2029, roughly 1 percentage point below the agency's projection for 2024. CBO attributes most of the decline from 2024 to 2029 to ongoing demographic changes—in particular, to the aging of the population (because older people tend to participate less in the labor force than younger people do).¹⁵

Growth in employment and wages is projected to moderate during the 2024–2029 period. In particular, nonfarm payroll employment increases by an average of 60,000 jobs per month during those years, in CBO's forecast. Employment as a percentage of the civilian, noninstitutionalized population falls from 59.0 percent in 2024 to 58.1 percent in 2029, primarily reflecting the

13. See Congressional Budget Office, *Why CBO Projects That Actual Output Will Be Below Potential Output on Average* (February 2015), www.cbo.gov/publication/49890. Actual output is below potential output in the latter part of the projection period, on average, so that inputs to the budget projections (such as incomes and interest rates) are consistent with historical averages.

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

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

decline in the potential labor force participation rate. Real compensation per hour in the nonfarm business sector, a measure of labor costs that is a useful gauge of longer-term trends, grows at an average annual rate of 1.8 percent from 2024 to 2029—the same rate at which labor force productivity in that sector grows, in the agency’s projections, reflecting the close historical relationship between the two measures.

Inflation

In CBO’s forecast, the overall and the core PCE price indexes increase by an average of 2.0 percent per year between 2024 and 2029, which is the Federal Reserve’s long-run objective for inflation. Inflation in the overall and core CPI-U measures averages 2.3 percent growth annually in those years. Those projections reflect the historical difference between the growth rates of the PCE price index and the CPI-U.

Interest Rates

Over the 2024–2029 period, the interest rate on 3-month Treasury bills averages 2.8 percent, in CBO’s projections, and the rate on 10-year Treasury notes averages 3.7 percent. The federal funds rate averages 3.1 percent. In CBO’s projections, interest rates decline slightly in 2024 and 2025. The expected decline in 2024 primarily reflects a continued response to the slowdown in growth (and decreasing inflationary pressure) during the previous three years, whereas the expected decline in 2025 primarily reflects anticipated changes in monetary policy. Specifically, CBO expects the Federal Reserve to reduce the federal funds rate in 2025 to counteract the drag on economic growth stemming from the expiration of the individual income tax cuts. After 2025, interest rates begin to rise, as rising federal debt in relation to GDP exerts upward pressure on short- and long-term interest rates and as the term premium continues to increase.

Projections of Income for 2019 to 2029

Economic activity and federal tax revenues depend not only on the amount of total income in the economy but also on how that income is divided among labor income, domestic profits, proprietors’ income, interest and dividend income, and other categories. CBO projects various categories of income by estimating their shares of GDP. Most important for projecting federal revenues is the share of income accruing to labor, which includes highly taxed components, such as wages and salaries. (Labor’s share also includes less highly taxed forms of

compensation, such as employer-paid benefits and a fraction of proprietors’ income, although those components account for a smaller portion of total labor income than wages and salaries.) Moreover, because domestic profits are also taxed at relatively high rates, their share of GDP is important for projecting federal revenues as well.

Labor income as a share of GDP fell sharply from 2008 to 2014 but has since partially rebounded. CBO expects that rebound to continue in the coming years (see Figure 2-12 on page 50). Reflecting the effects of strong labor markets on employment and compensation, CBO’s projection includes an increase in labor’s share of GDP from 57.3 percent in 2018 to 58.8 percent in 2029. In particular, wages and salaries are expected to grow more quickly than other kinds of income throughout the 11-year projection period, and their share of total income rises from 43.1 percent of GDP in 2018 to 43.9 percent in 2029 in CBO’s projections.

Longer-term factors have depressed the share of income accruing to labor, however, and CBO expects those factors to continue to have an influence. Since the early 2000s, labor’s share of GDP has generally fallen, remaining below the range in which it had stayed over many previous business cycles. Research has identified a range of possible contributing factors behind that decline and has grappled with whether the decline in labor’s share will persist into future years. One such factor is globalization, which has increased businesses’ incentives to move the production of labor-intensive goods and services to countries with labor costs that are lower than those in the United States.¹⁶ Another factor is technological change, which may have increased returns to capital more than it has increased returns to labor.¹⁷ For example, technological change may have increased the importance of so-called intangible capital, such as

16. See, for example, Michael W.L. Elsby, Bart Hobijn, and Aysegül Sahin, “The Decline of the U.S. Labor Share,” *Brookings Papers on Economic Activity*, vol. 44, no. 2 (Fall 2013), pp. 1–63, <https://brook.gs/2VCVbyx>.

17. In particular, some economists have focused on the role of information technology in lowering the cost of capital goods, which may have induced firms to shift away from the use of labor and toward capital. See, for example, Loukas Karabarbounis and Brent Neiman, “The Global Decline of the Labor Share,” *Quarterly Journal of Economics*, vol. 129, no.1 (February 2014), pp. 61–103, <https://tinyurl.com/y9uj2yv5>.

Box 2-2.

CBO's Estimate and Projection of Potential Total Factor Productivity in the Nonfarm Business Sector

As calculated by the Congressional Budget Office, growth of total factor productivity (TFP) in the nonfarm business sector is the portion of the growth of output that remains after accounting for the contribution of hours of labor and services provided by the stock of capital. The index therefore reflects the effects on output of all economic developments other than the growth of hours and capital services, including changes in the utilization of capital and the intensity of labor effort, changes in education and skills in the labor force, spillovers from investments in private and public capital, and technological progress, all of which can be affected by a variety of public policies and regulations. Crucially, it also reflects any errors in the measurement of inputs or outputs, including the measurement of improvements in the quality of goods and services counted in gross domestic product. Because all the factors influencing the growth of TFP are difficult to measure and can vary considerably over time, TFP growth is less well understood than other elements of economic growth and more difficult to project with confidence or accuracy.

To identify and project underlying trends in TFP growth, CBO develops an estimate of potential TFP that adjusts for business-cycle effects (such as changes in the utilization of capital and the intensity of labor effort) and other short-term fluctuations. The agency then draws on a variety of methods to project potential TFP into the future.

Historically, TFP growth is quite variable from quarter to quarter. Over longer periods, however, years of comparatively steady TFP growth tend to be followed by rather abrupt transitions to years with steady but substantially different growth. For example, estimated trend growth in TFP remained relatively strong in the 1950s and 1960s, slowed considerably from the early 1970s to the mid-1990s, and resurged in the late 1990s and early 2000s. Around 2005, a few years before the recession and financial crisis that began in 2007, TFP growth again slowed in many industries and throughout the international economy. In CBO's estimate, TFP growth in the domestic nonfarm business sector was only about one-third as rapid during the 2006–2017 period as it had been from 1996 to 2005.

The agency has devoted substantial effort to understanding the causes of that slowdown and has continued to examine a variety

of methods for projecting TFP into the future.¹ CBO's current view on the set of possible factors contributing to the slowdown in TFP growth since 2005 can be summarized as follows:

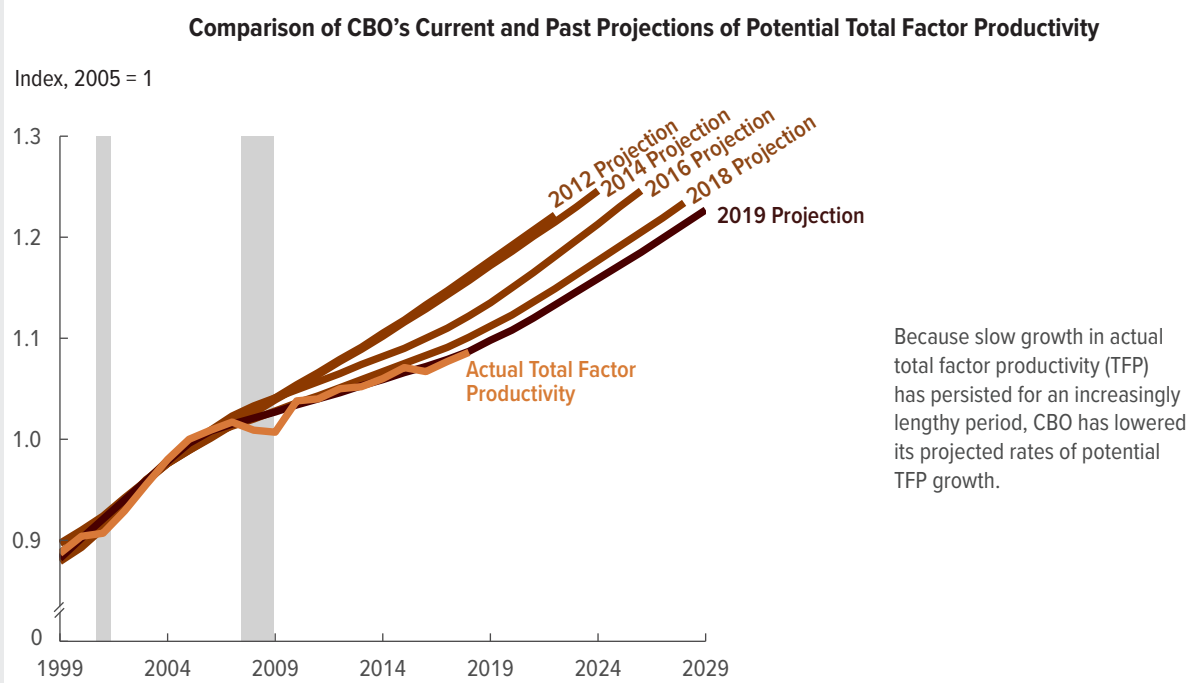
- **Measurement Issues:** Even though mismeasurement of economic phenomena is widespread and persistent, measurement issues do not appear to have been substantially worse since 2005 than they were in the past and probably account for at most a small portion of the slowdown.
- **Slower Growth of Aggregate Output:** The slower growth of the labor force and of aggregate demand in the aftermath of the recession resulted in relatively modest demand for capital investment, slow turnover of capital stock, and slow introduction of new technologies in new plants and equipment. Nevertheless, there is little evidence of a backlog of technology that exists but is not raising output and productivity through its effect on capital stock, which suggests that slower economic growth did not feed back strongly into TFP growth.
- **Demographic Effects:** Highly skilled and well-educated baby boomers are retiring, and the educational attainment of younger cohorts only modestly exceeds that of their predecessors—two demographic effects that could be restraining TFP growth. Higher-skilled workers tend to continue working longer than their predecessors, however, and younger cohorts made especially strong gains in educational attainment during the recession and the ensuing slow recovery. Both developments have tended to improve the average skill level of the aggregate labor force. As a consequence, growth of the estimated quality of the aggregate labor force since 2005 has been only moderately slower than growth over the preceding 25 years, and that slowdown has played at most a minor role in the overall slowdown in TFP growth.
- **Structural Issues:** Declining dynamism in many industries, possibly exacerbated by increasing regulatory constraints, could be contributing to slower growth in TFP. Regulatory restrictions on homebuilding in denser, high-productivity urban regions could also be slowing TFP growth. Such

1. For further discussion of CBO's method of estimating and projecting TFP, as well as more detailed discussion of the recent slowdown in TFP growth, see Robert Shackleton, *Estimating and Projecting Potential Output Using CBO's Forecasting Growth Model*, Working Paper 2018-03 (Congressional Budget Office, February 2018), Appendix C, www.cbo.gov/publication/53558.

Box 2-2.

Continued

CBO's Estimate and Projection of Potential Total Factor Productivity in the Nonfarm Business Sector



Source: Congressional Budget Office.

Total factor productivity is the average real output per unit of combined labor and capital services. Real values are nominal values that have been adjusted to remove the effects of changes in prices. Actual TFP is indexed to 1 in 2005.

problems have been developing slowly over time, however, and are difficult to associate with an abrupt slowdown in TFP growth around 2005.

- Long-Term Innovation:** Some researchers believe that long-term innovation may be slowing as well and that the economy is “running out of ideas.” The costs of research and innovation are increasing, they argue, and the resulting new ideas are not as economically significant as past innovations. Again, no evidence exists of an abrupt change around 2005 connected to such developments. Moreover, other, more optimistic researchers conclude that the pools of potential innovators and the potential market for innovative products are now global, that research tools have greatly improved and communication of innovations has become much more rapid, and that major advances in technology can continue to be expected in the future, though they may diffuse through industry rather slowly.

With slow growth in actual TFP persisting for an increasingly lengthy period, CBO has gradually lowered its projected rates of potential TFP growth (see the figure). Because extensive

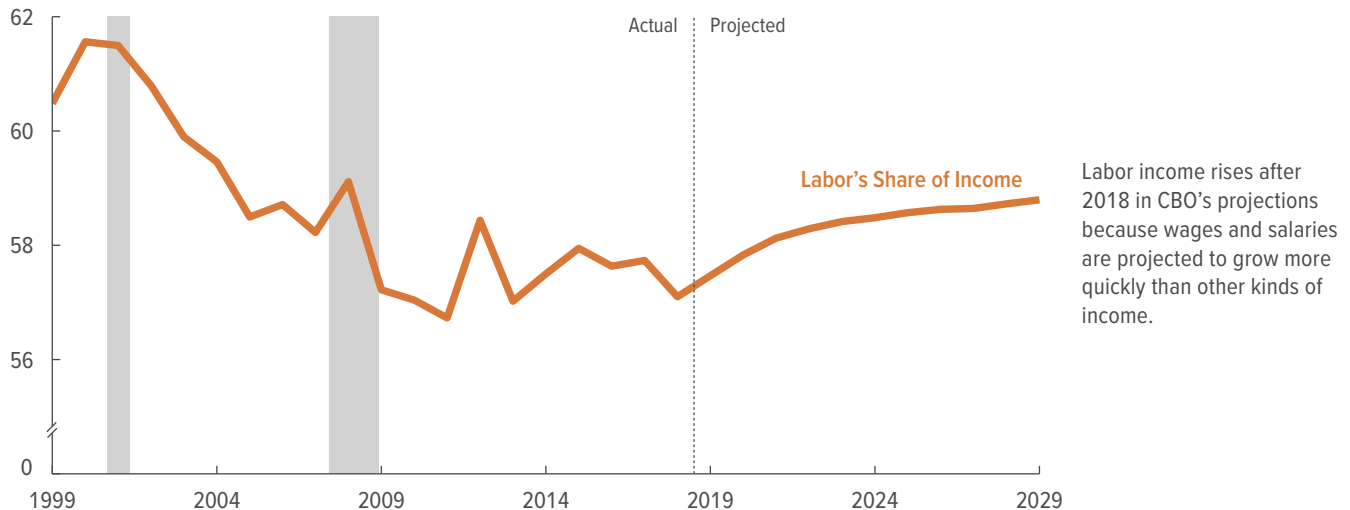
research has failed to uncover a strong, compelling explanation either for the slowdown or for its persistence and therefore yields little guidance for projections, CBO has examined a variety of methods for projecting potential TFP on the basis of past experience. As a general rule, all those methods produce large errors when trend growth rates suddenly shift, and they would have produced comparatively poor projections over the past decade because of the slowdown in TFP growth. Nevertheless, CBO has concluded that, over the past several decades, projections would have been most accurate if the projected growth of potential TFP had gradually converged over several years from the most recent estimated trend to a rate consistent with the average trend over the preceding 25 years, with twice as much weight placed on recent trend rates as on trend rates 25 years in the past.

In keeping with that conclusion, the agency currently projects potential TFP growth to gradually increase from its recent low rate of about 0.6 percent per year to a more rapid rate that is more consistent with such long-term trends—somewhat more than 1.1 percent. CBO will revise that assessment as necessary as new data become available.

Figure 2-12.

Labor Income

Percentage of Gross Domestic Product



Labor income rises after 2018 in CBO's projections because wages and salaries are projected to grow more quickly than other kinds of income.

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.

Value for 2018 is CBO's estimate.

advertising and brand equity.¹⁸ Intangible capital can give rise to “factorless income,” which is typically associated with large and highly productive firms that are able to boost profits more than wages.¹⁹

18. For a discussion about determining the value of intangible assets, see Congressional Budget Office, *How Taxes Affect the Incentive to Invest in New Intangible Assets* (November 2018), www.cbo.gov/publication/54648.

19. Many industries have seen rapid growth of a few highly productive firms; see David Autor and others, *The Fall of the Labor Share and the Rise of Superstar Firms*, Working Paper 23396 (National Bureau of Economic Research, May 2017), www.nber.org/papers/w23396. One interpretation of the rise of superstar firms is that it reflects the success of technological leaders or of firms with other organizational advantages in increasingly competitive markets; see, for example, John Van Reenen, “Increasing Differences Between Firms: Market Power and the Macro-Economy” (paper presented at the 2018 Economic Policy Symposium, Jackson Hole, Wyo., August 31, 2018), <https://tinyurl.com/yazt3bm4>. That interpretation contrasts with those of other observers who argue that those dominant firms may have contributed to a decline in labor's share by restraining competition in product and labor markets, which would operate to boost prices and restrain wages; see, for example, Jan De Loecker and Jan Eeckhout, *The Rise of Market Power and the*

Although the relative importance and persistence of those factors remain unclear, some of the factors that have depressed labor's share are expected to persist. As a result, CBO does not expect labor's share of GDP to reach its 1980–2000 average of nearly 60 percent.

Finally, in CBO's projections, the share of domestic corporate profits falls from 8.7 percent of GDP in 2018 to an average of 8.1 percent over the 2019–2029 period. That decline mostly reflects the rise in wages and salaries, but it also reflects an increase in corporate interest payments that results from rising interest rates.

Macroeconomic Implications, Working Paper 23687 (National Bureau of Economic Research, August 2017), www.nber.org/papers/w23687. Although some national- and industry-level analyses are consistent with that hypothesis, other studies find increased competition at the local level, where most wages are set; see Kevin Rinz, *Labor Market Concentration, Earnings Inequality, and Earnings Mobility*, Working Paper 2018-10 (Center for Administrative Records Research and Applications, Census Bureau, October 2018), <https://go.usa.gov/xE4w4>. Because the explanation for the decline in labor's share remains under debate, CBO does not tie its projection to any single factor.

Some Uncertainties in the Economic Outlook

Significant uncertainty surrounds CBO's economic forecast, which the agency constructed to be the average of the distribution of possible outcomes given the federal policies embodied in current law. Even if no significant changes were made to those policies, economic outcomes would undoubtedly differ from CBO's projections both in the near term and later in the projection period, for various reasons. Recently implemented changes to trade policies, and proposals calling for further changes, also compound the uncertainty in the current economic outlook.

Uncertainties for 2019 to 2023

Many developments—such as unforeseen changes in the labor market, business confidence, the housing market, and international conditions—could cause economic growth and other variables to differ considerably from what CBO has projected. On the one hand, the agency's current forecast of employment and output for the 2019–2023 period may be too pessimistic. For example, firms might respond to the expected increase in overall demand for goods and services with more robust hiring than CBO anticipates. If so, the unemployment rate could fall more sharply and inflationary pressures could rise more quickly than CBO projects. In addition, the 2017 tax act significantly altered the incentives to work and invest, but it is still too early to know how households and businesses are responding to those changes in incentives. If consumer spending and capital investment increased more than CBO projects, GDP growth would be correspondingly higher.

On the other hand, CBO's forecast for 2019 through 2023 may be too optimistic. For example, if the increased tightness of labor markets does not lead to increases in wages and benefits, household income and consumer spending could grow more slowly than CBO anticipates. Further declines in U.S. equity markets, if persistent, could also significantly reduce household wealth, consumer spending, and business investment. Moreover, an unexpected worsening in international political or economic conditions, such as a more severe slowdown in China's economy—which could be exacerbated by drawn-out trade disputes with the United States—or a breakdown in the Brexit negotiation, could likewise weaken the U.S. economy by disrupting the international financial system, interfering with international trade, and reducing business and consumer confidence.

In addition, recent increases in tariffs on certain imported goods materially altered the stance of U.S. trade policy, creating further uncertainty about the current economic outlook. Because tariff increases in developed economies are rare in recent history, existing empirical research provides limited guidance about how businesses and consumers in the United States and its trading-partner countries might respond. If businesses were less able to absorb the cost increases and therefore had to pass more of them onto consumers, then domestic inflation would be higher and the negative effect of those new tariffs on trade and GDP growth would be more substantial than CBO currently projects. Moreover, the rise in uncertainty stemming from possible additional changes in trade policy may weaken business confidence, causing businesses to postpone or reduce investment and adding to the negative effect of existing tariff increases on GDP growth. (See Box 2-1 on page 26 for more discussion of the uncertainty stemming from recent trade policy changes.)

In CBO's baseline projections, over the next few years, the economy experiences a muted cycle, in which the output gap initially widens and then narrows through slower but still positive economic growth. Although a recession is not the agency's baseline projection, a risk of recession nonetheless exists. The current economic expansion is the second longest in the post–World War II period (see Figure 2-13). Recent surveys indicate that private-sector forecasters see the likelihood of a recession occurring over the next few years as significant.²⁰

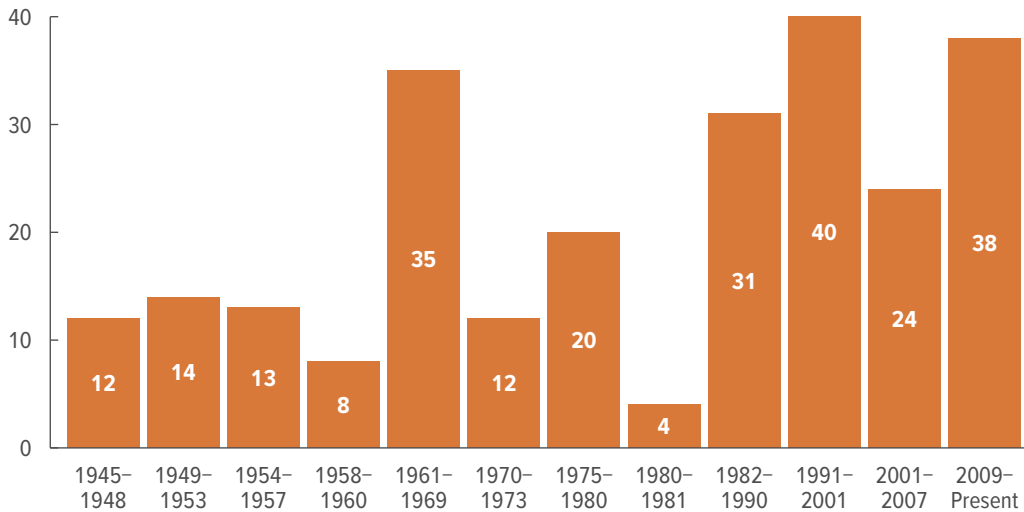
In CBO's view, economic expansions do not end simply because of their long duration; however, as an expansion lengthens, the economy may become more vulnerable to the prospect of a recession because various risk factors can develop and compound over time. Historically, such risk factors (broadly defined) have included unintended adverse effects of economic policies; economic and financial imbalances that must be resolved; and external shocks, such as adverse international events or sudden, large increases in oil prices. Currently, some of those risk

20. The *Blue Chip Indicators* (January 2019) reported a “consensus” survey result for the probability of a recession in 2019 at 25 percent and the probability of a recession in 2020 at 37 percent. A National Association of Business Economics (NABE) survey published in October 2018 found that 56 percent of participants anticipate that the next recession will begin in 2020, and about one-third of respondents believe the next recession will begin in 2021 or later.

Figure 2-13.

Duration of Economic Expansions Since 1945

Quarters



The current economic expansion has lasted more than nine years (38 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.

factors exist or could develop in the next few years. For example, on the policy front, the ongoing tightening of monetary policy, the projected decline in federal discretionary spending in fiscal year 2020 under current law, and the recent and prospective changes to trade policy all contribute to the risk that GDP growth could be significantly slower than that in CBO's baseline projections. Meanwhile, high and volatile valuations of financial assets, large federal budget deficits and debt, large U.S. current account deficits and international investment position imbalances, and corporate debt positions that could be more difficult to finance as interest rates increase are a few examples of economic and financial imbalances that could lead to a recession over the next decade. Finally, although external shocks are by definition impossible to identify in advance, the economy could be more vulnerable to such shocks in periods when it is growing more slowly.

CBO's current baseline projections incorporate the agency's consideration of the risks and effects of possible recessions in both the near and the long term. In particular, in CBO's assessment, there is a significant chance that output growth will be slower in the near term

than the agency currently projects, and that assessment includes a moderate probability of a recession over the next few years. Meanwhile, there is also a significant chance that output growth will be faster than CBO currently projects. As a result, the agency has constructed its baseline projection of economic growth in the near term to reflect the average of those possible outcomes.

In addition, CBO's projection of a persistent, negative output gap by 2023 reflects the agency's consideration of the average effect of recessions from a historical perspective. That is, CBO projects that output will be, on average, half a percent below its potential level, roughly consistent with the average gap over the complete business cycles (measured from trough to trough) that occurred in the half century from 1961 to 2009.

Uncertainties for 2024 to 2029

Recent and prospective policy changes, as well as non-policy-related factors, add to the uncertainty in the economic outlook for the later years in CBO's projection period. The scheduled expiration of key provisions of the 2017 tax act is one source of such uncertainty. Individuals and businesses could respond more (or less)

to those changes than CBO anticipates, resulting in lower (or higher) economic growth in the later years of the projection period than the agency forecasts. In addition to fiscal policy changes, recent shifts by the Administration and the Congress toward deregulation and a looser regulatory environment are expected to boost investment in the near term, which in turn would boost potential output in the long term. For instance, a shift toward deregulation in the energy sector has resulted in the approval of pipeline applications that had been pending and increased access to oil and gas exploration in the Gulf of Mexico. Similarly, lawmakers eliminated the prohibition against drilling for oil and gas in the Arctic National Wildlife Refuge. If the effects of deregulation are greater (or lesser) than CBO expects, however, then economic growth could be stronger (or weaker) than the agency projects.

Economic growth in the later years of the projection period could also be faster or slower than CBO projects for reasons unrelated to policy. If, for example, the labor force grew more quickly than expected—say, because older workers chose to stay in the labor force longer than anticipated—the economy could grow more quickly than it does in CBO’s projections. By contrast, if the growth of labor productivity did not rise above its average pace since the end of the 2007–2009 recession, as it does in CBO’s projections, the growth of GDP might be weaker than the agency projects. Further, substantial uncertainty exists about the growth of overall total factor productivity and the related prospects for long-run growth (see Box 2-2 on page 48).

Another source of uncertainty is the way income inequality affects economic growth, an issue on which economists have found mixed theoretical and empirical results.²¹ Some studies conclude that income inequal-

ity leads to faster growth, others suggest that it slows growth, and still others find that it does not affect growth. Moreover, cause and effect may be reversed: Economic growth could be directly increasing or decreasing income inequality. When a study concludes that a clear relationship exists between inequality and growth, that conclusion usually depends on factors specific to the time and place being studied. Economists continue to examine the issue, and CBO will update its analysis if research yields a more definitive conclusion. In the meantime, CBO’s projections include effects of income inequality only implicitly—that is, to whatever extent past changes in inequality have affected economic growth.

Quantifying the Uncertainty in CBO’s Projections

To quantify the degree of uncertainty in its projections for the next five years, CBO analyzed its past forecasts of the growth of real GDP and inflation.²² On the basis of that analysis, CBO estimates that—if the nature of the agency’s future forecast errors is similar to that of its previous forecast errors—there is approximately a two-thirds chance that the average annual growth rate of real GDP will be between 0.6 percent and 3.2 percent over the next five years (see Figure 2-14). Similarly, errors in CBO’s past forecasts of inflation (as measured by the CPI-U) suggest that there is roughly a two-thirds chance that the average annual rate of inflation will fall between 1.9 percent and 3.0 percent over the next five years.²³ The estimated range of real GDP reflects some of the inherent uncertainty about CBO’s estimates of real potential GDP, as errors in CBO’s longer-horizon forecasts tend to reflect the agency’s past underestimation (for example, during the late 1990s) or overestimation (for example, during the early 2010s) of potential output growth.

21. See, for example, Pedro C. Neves, Óscar Afonso, and Sandra T. Silva, “A Meta-Analytic Reassessment of the Effects of Inequality on Growth,” *World Development*, vol. 78 (February 2016), pp. 386–400, <https://tinyurl.com/y6umscxv>; Jonathan Ostry, Andrew Berg, and Charalambos Tsangarides, *Redistribution, Inequality, and Growth* (International Monetary Fund, 2014), <https://tinyurl.com/h2r2p2w> (PDF, 1.34 MB); Stephen Knowles, “Inequality and Economic Growth: The Empirical Relationship Reconsidered in the Light of Comparable Data,” *Journal of Development Studies*, vol. 41, no.1 (September 2005), pp. 135–159, <https://tinyurl.com/y89k6zs8>; and Mark D. Partridge, “Is Inequality Harmful for Growth? Comment,” *American Economic Review*, vol. 87, no. 5 (December 1997), pp. 1019–1032, www.jstor.org/stable/2951339.

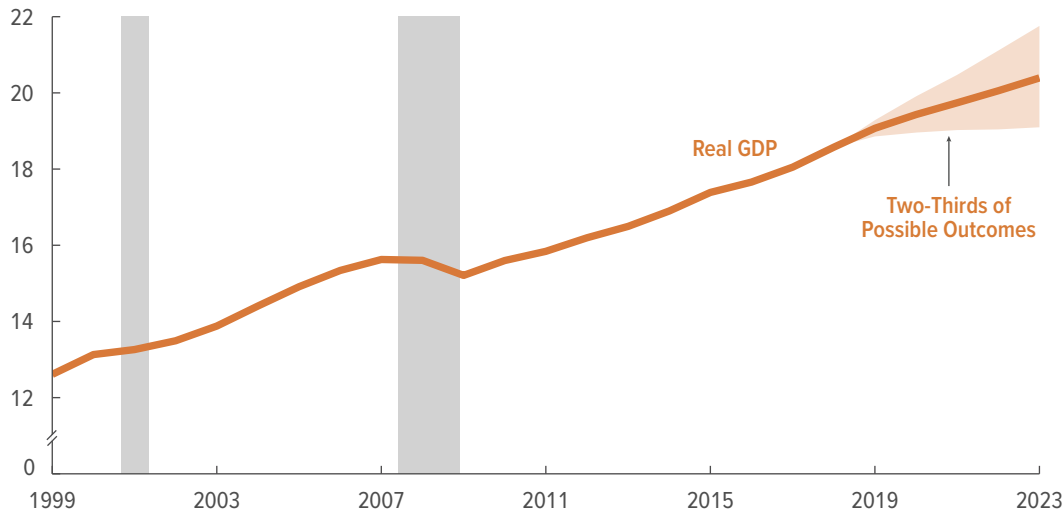
22. See Congressional Budget Office, *CBO’s Economic Forecasting Record: 2017 Update* (October 2017), www.cbo.gov/publication/53090.

23. The root mean square error of CBO’s five-year projections of the average annual growth rate of real GDP since 1976 is 1.3 percentage points. The root mean square error of CBO’s five-year projections of the average annual rate of inflation since 1983 is 0.6 percentage points. For more on the inherent uncertainty underlying economic forecasts, see Congressional Budget Office, *CBO’s Economic Forecasting Record: 2017 Update* (October 2017), www.cbo.gov/publication/53090.

Figure 2-14.

The Uncertainty of CBO's Projections of Output

Trillions of 2012 Dollars



In CBO's baseline projections, real GDP grows at an average annual rate of 1.9 percent over the 2019–2023 period, but there is a roughly two-thirds chance that the growth will be between 0.6 percent and 3.2 percent.

Sources: Congressional Budget Office; Bureau of Economic Analysis.

Real values are nominal values that have been adjusted to remove the effects of changes in prices.

The shaded area around CBO's baseline projection of real GDP, which encompasses two-thirds of possible outcomes, 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 value of real GDP for 2018 is CBO's estimate.

GDP = gross domestic product.

Comparison With CBO's August 2018 Economic Projections

CBO's current economic projections are broadly similar to those in its previous set of projections published in August 2018, although they differ in some aspects (see Table 2-6).²⁴ In particular, CBO's projection of potential output growth is slightly more rapid for the 2018–2028 period than it was in the August projection; the difference is driven by somewhat more rapid growth in the potential labor force from 2026 to 2028. For the nonfarm business sector, CBO raised its projection of the growth in potential labor hours, in part because of the upward revision to the growth of the potential labor force. In addition, the agency raised its projection of the growth in capital services and lowered its projection of the growth in potential total factor productivity in the nonfarm business sector. Those two revisions reflect

changes to the contributions to GDP growth in historical data reported in the comprehensive revisions to the national income and product accounts (NIPAs) released by the Bureau of Economic Analysis during the summer of 2018, and they largely offset each other.²⁵

CBO's current projection of the size of the potential labor force is, on average, slightly smaller between 2019 and 2025 and slightly larger between 2026 and 2028 than the agency projected in August. That change results from a reevaluation of the potential labor force participation rate and a small downward revision to the projected size of the population. Specifically, CBO now expects the civilian, noninstitutionalized population in 2028 to be 0.1 percent (or 250,000 people) smaller than projected in August. That revision arises primarily because the

24. See Congressional Budget Office, *An Update to the Economic Outlook: 2018 to 2028* (August 2018), www.cbo.gov/publication/54318.

25. See Pamela A. Kelly, Stephanie H. McCulla, and David B. Wasshausen, *Improved Estimates of the National Income and Product Accounts: Results of the 2018 Comprehensive Update* (Bureau of Economic Analysis, September 2018), <https://go.usa.gov/xE4H8> (PDF, 630 KB).

agency has slightly raised its projection of mortality rates and reduced its projection of net immigration to better reflect historical trends and immigration policy.

Compared with CBO's August estimates, the agency's current estimates of the potential and actual labor force participation rates are slightly lower than previously estimated from 2019 to 2024 but slightly higher from 2025 to 2028. Those changes reflect the agency's reassessment of recent trends in the participation rates of different demographic groups that partly offset each other. Specifically, CBO lowered its estimate of the historical and projected potential participation rate for younger workers (ages 16 to 24) because their participation rate has declined substantially since the 2007–2009 recession and has failed to recover meaningfully in recent years. That development suggests that the factors that have pushed down their participation rates since the last recession are more structural and less cyclical than previously estimated. In contrast, the agency raised its estimate of the historical and projected potential participation rate for prime-age workers (ages 25 to 54) because the participation rate of that group has rebounded more strongly in the past year than previously expected. That development suggests that its decline after the last recession was driven more by cyclical factors and less by structural factors than previously estimated. In addition, because younger workers tend to have higher rates of unemployment, reducing their share in the potential labor force leads to a reduction in the economywide natural rate of unemployment.

CBO's current projection of the unemployment rate is higher during the 2019–2023 period but slightly lower during the 2024–2028 period. The upward revision in the near term largely reflects the agency's assessment that recent trends in hiring, layoffs, and retirement that had put downward pressure on the unemployment rate will not last as long as CBO estimated earlier. For the 2024–2028 period, in contrast, the downward revision occurred because the agency lowered its estimate of the natural rate of unemployment after reassessing the effects of the composition of the potential labor force.

Other changes made to CBO's forecast since August 2018 are similarly modest. For example, the agency revised downward its projection of long-term interest rates slightly—by about a quarter of a percentage point—over the next few years based on its reassessment of the cyclical sensitivity of those rates. (CBO's projection of short-term interest rates is unchanged since

August.) Changes to CBO's forecast of inflation are also slight. Although newly imposed tariffs put upward pressure on inflation in the near term, other factors, including falling gasoline prices, offset that pressure.

CBO's projection of total national income is roughly unchanged for the 2018–2028 period, but its projections of certain components of national income have changed. Some of those changes result from changes to historical data revealed by the revisions to the NIPAs. For example, CBO's projections of proprietors' income and personal interest income are higher on average over the 2018–2028 period than they were in August, whereas the projection of domestic corporate profits is lower. Other changes to the components of national income result from revised projections of other economic variables. For example, wages and salaries are projected to grow more slowly during the 2018–2028 period largely because CBO expects that employment will be slightly lower than it was in the agency's August projections.

Comparison With Other Economic Projections

CBO's projections of the economy in the next two years are generally similar to the consensus view of the private-sector economists whose forecasts were published in the January 2019 *Blue Chip Economic Indicators* (see Figure 2-15 on page 58). In particular, CBO's projections of real GDP growth and the unemployment rate are within the middle two-thirds of the ranges of *Blue Chip* forecasts for both 2019 and 2020. Even though the agency's projections of consumer price inflation and interest rates for both 2019 and 2020 are somewhat higher than the consensus view of the private-sector economists, they are within the full ranges (and mostly within the middle two-thirds of the full ranges) of *Blue Chip* forecasts.

Compared with the forecasts made by Federal Reserve officials and reported at the December 2018 meeting of the Federal Open Market Committee, CBO's projections suggest a similar economic outlook for 2019, a slightly weaker outlook for 2020, and a weaker outlook for 2021 and the longer term (see Figure 2-16 on page 59).²⁶

26. See Board of Governors of the Federal Reserve System, "Economic Projections of Federal Reserve Board Members and Federal Reserve Bank Presidents Under Their Individual Assessments of Projected Appropriate Monetary Policy, December 2018" (press release, December 19, 2018), <https://go.usa.gov/xEjlkz> (PDF, 109 KB).

Table 2-6.

Comparison of CBO's Current and Previous Economic Projections for Calendar Years 2018 to 2028

	2018 ^a	2019	2020	Annual Average		Total, 2018–2028
				2018–2022	2023–2028	
Percentage Change From Fourth Quarter to Fourth Quarter						
Real GDP ^b						
January 2019	3.1	2.3	1.7	2.1	1.8	1.9
August 2018	3.1	2.4	1.7	2.1	1.7	1.9
Nominal GDP						
January 2019	5.4	4.3	3.8	4.2	3.9	4.0
August 2018	5.1	4.7	3.9	4.2	3.9	4.0
PCE Price Index						
January 2019	2.0	2.0	2.2	2.1	2.0	2.0
August 2018	2.2	2.0	2.1	2.1	2.0	2.0
Core PCE Price Index ^c						
January 2019	1.9	2.2	2.2	2.1	2.0	2.0
August 2018	2.1	2.1	2.2	2.1	2.0	2.0
Consumer Price Index ^d						
January 2019	2.2 ^e	2.2	2.6	2.5	2.4	2.4
August 2018	2.5	2.3	2.5	2.5	2.4	2.4
Core Consumer Price Index ^c						
January 2019	2.2 ^e	2.6	2.7	2.5	2.3	2.4
August 2018	2.3	2.6	2.7	2.5	2.4	2.4
GDP Price Index						
January 2019	2.2	2.0	2.0	2.1	2.1	2.1
August 2018	2.0	2.2	2.2	2.1	2.1	2.1
Employment Cost Index ^f						
January 2019	3.3	3.5	3.7	3.5	3.1	3.3
August 2018	3.4	3.6	3.6	3.5	3.1	3.3
Real Potential GDP ^b						
January 2019	2.0	2.2	2.1	2.0	1.8	1.9
August 2018	2.0	2.1	2.1	2.0	1.8	1.9

Continued

The Federal Reserve reports three sets of forecasts: a median, a range, and a central tendency. The range is based on the highest and lowest forecasts made by the members of the Board of Governors of the Federal Reserve System and the presidents of the Federal Reserve Banks; the central tendency is the range formed by removing the three highest and three lowest projections. For 2019, CBO's projections of real GDP growth, unemployment, and inflation are within the central tendency of the forecasts by Federal Reserve officials, whereas the agency's projections of interest rates are above the central tendency. For 2020, 2021, and the longer term, the agency's projections of the economy are, on balance, generally weaker than Federal Reserve officials' projections.

At least part of the discrepancy between CBO's and other forecasters' projections is probably attributable to differences in the economic data available when the forecasts were completed. For example, forecasts by Federal Reserve officials were published on December 19, 2018, a couple of weeks after CBO completed its economic projections. Federal Reserve officials notably lowered their projected interest rates in relation to their previously published forecasts. In addition, discrepancies between CBO's and other forecasters' projections may be attributable to differences in the economic and statistical models used to prepare them. Moreover, other forecasters may assume that certain changes in federal policies will occur, whereas CBO's projections are based on current law.

Table 2-6.

Continued

Comparison of CBO's Current and Previous Economic Projections for Calendar Years 2018 to 2028

	2018 ^a	2019	2020	Annual Average		Total, 2018–2028
				2018–2022	2023–2028	
Annual Average						
Unemployment Rate (Percent)						
January 2019	3.9 ^e	3.5	3.7	4.0	4.8	4.4
August 2018	3.8	3.4	3.6	3.9	4.8	4.4
Interest Rates (Percent)						
Three-month Treasury bills						
January 2019	1.9 ^e	2.8	3.2	2.9	2.8	2.8
August 2018	1.9	2.8	3.1	2.9	2.8	2.8
Ten-year Treasury notes						
January 2019	2.9 ^e	3.4	3.6	3.5	3.7	3.6
August 2018	3.0	3.6	3.9	3.7	3.7	3.7
Tax Bases (Percentage of GDP)						
Wages and salaries						
January 2019	43.1	43.1	43.4	43.4	43.8	43.6
August 2018	43.1	43.4	43.7	43.6	44.1	43.9
Domestic corporate profits ^g						
January 2019	8.7	8.9	8.4	8.4	7.9	8.1
August 2018	9.5	9.6	9.1	9.1	8.3	8.7

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

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

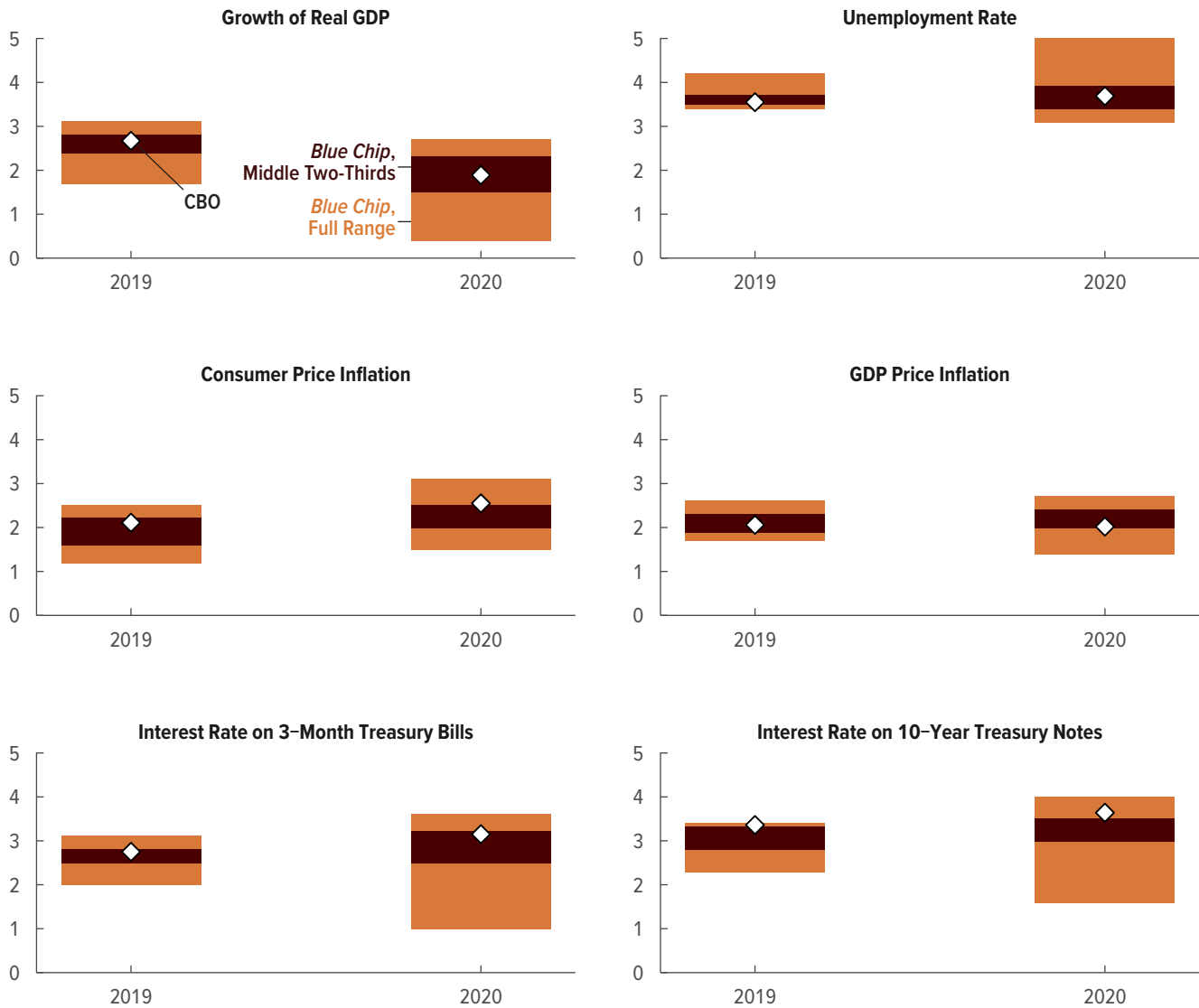
- a. Values for 2018 do not reflect the values for GDP and related series released by the Bureau of Economic Analysis since early December 2018.
- b. Real values are nominal values that have been adjusted to remove the effects of changes in prices.
- c. Excludes prices for food and energy.
- d. The consumer price index for all urban consumers.
- e. Actual value for 2018.
- f. The employment cost index for wages and salaries of workers in private industry.
- g. 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.

Figure 2-15.

Comparison of CBO’s Economic Projections With the *Blue Chip* Survey

CBO’s forecasts for the next two years are broadly similar to those in the *Blue Chip* survey.

Percent



Sources: Congressional Budget Office; Wolters Kluwer, *Blue Chip Economic Indicators*, vol. 44, no. 1 (January 10, 2019).

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 changes in prices. 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.

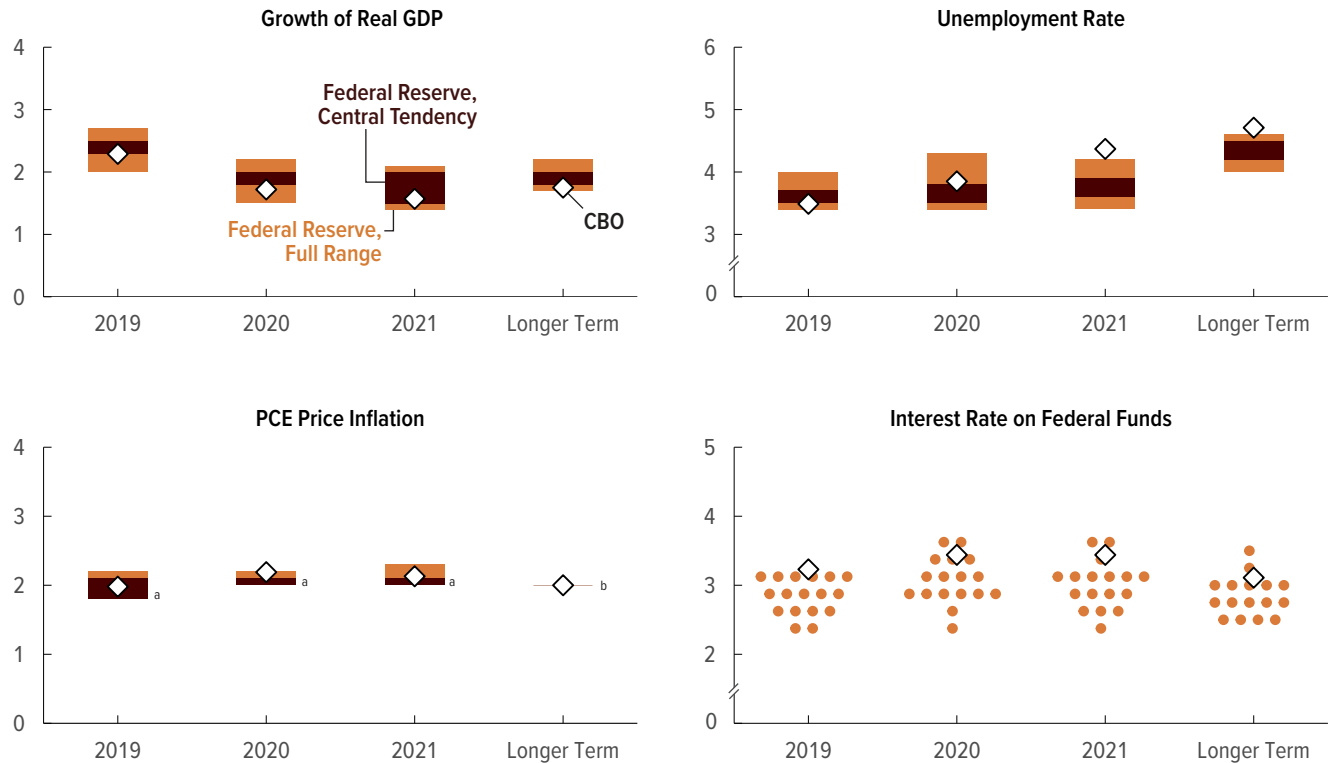
GDP = gross domestic product.

Figure 2-16.

Comparison of CBO’s Economic Projections With Projections Made by Federal Reserve Officials

CBO’s projections generally have slightly slower GDP growth and higher unemployment rates and federal funds interest rates than many of the projections by Federal Reserve officials.

Percent



Sources: Congressional Budget Office; Board of Governors of the Federal Reserve System, “Economic Projections of Federal Reserve Board Members and Federal Reserve Bank Presidents Under Their Individual Assessments of Projected Appropriate Monetary Policy, December 2018” (press release, December 19, 2018), <https://go.usa.gov/xEjkz> (PDF, 109 KB).

The full range of forecasts from the Federal Reserve is based on the highest and lowest of the 17 projections by the Board of Governors and the presidents of the Federal Reserve Banks. (One Federal Reserve official did not submit longer-run projections for the change in real GDP, the unemployment rate, or the federal funds rate.) The central tendency is the range formed by removing the three highest and three lowest projections—roughly speaking, the middle two-thirds of the full range.

Each of the data points for the federal funds rate represents a forecast made by one of the members of the Federal Reserve Board or one of the presidents of the Federal Reserve Banks in December 2018. The Federal Reserve officials’ forecasts of the federal funds rate are for the rate at the end of the year, whereas CBO’s forecasts are fourth-quarter values.

For CBO, longer-term projections are values for 2029. 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 values are nominal values that have been adjusted to remove the effects of changes in prices.

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

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

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

The Spending Outlook

Overview

In the Congressional Budget Office's current baseline projections, federal outlays in 2019 total \$4.4 trillion, or 20.8 percent of gross domestic product (GDP). Outlays, which are also referred to as spending in this report, are projected to grow at an average annual rate of 4.8 percent over the coming decade, reaching \$7.0 trillion in 2029, or 22.7 percent of GDP (see Table 3-1).¹ Outlays for Social Security, Medicare, and net interest account for about three-quarters of that \$2.6 trillion increase.

Outlays in some years are affected by shifts in the timing of certain federal payments: When October 1—the first day of a fiscal year—falls on a weekend, certain payments that are due on that date are made at the end of September and, as a result, are recorded in the previous fiscal year. Timing shifts primarily affect mandatory outlays and, to a much lesser degree, discretionary outlays.² Net interest outlays are not affected. The discussion of CBO's projections below reflects adjustments to remove the effects of those timing shifts.

The Mix of Outlays in 2019 Will Differ From That in the Past

In CBO's projections, total federal outlays increase by \$260 billion (or 6 percent) in 2019. Just over half of that

projected growth is attributable to mandatory outlays, which are projected to rise by \$135 billion, or 5 percent. Discretionary outlays are projected to increase from last year's amount—\$1.3 trillion—by \$67 billion, or 5 percent. The government's net interest costs are also anticipated to grow in 2019, increasing by \$59 billion (or 18 percent), to \$383 billion. (See Box 3-1 on page 64 for descriptions of the three major types of federal outlays.)

Relative to the size of the economy, federal outlays in 2019 are projected to equal 20.8 percent of GDP, above the 50-year average of 20.3 percent. That increase over historical levels is largely attributable to significant growth in mandatory spending (net of the offsetting receipts that are credited against such outlays), which is expected to equal 12.7 percent of GDP in 2019, compared with its 9.9 percent average over the 1969–2018 period. As a share of GDP, the other major components of federal spending fall below their 50-year averages: Discretionary outlays are projected to equal 6.3 percent of GDP this year, compared with their 8.4 percent average over the past 50 years, and net outlays for interest are expected to equal 1.8 percent of GDP, compared with their 50-year average of 2.0 percent (see Figure 3-1 on page 66).

Outlays Are Projected to Rise Significantly Relative to GDP

In CBO's baseline projections, outlays continue to rise in relation to the size of the economy—by a total of 2.2 percentage points of GDP (excluding the effects of timing shifts) from 2019 to 2029. Relative to GDP, mandatory spending and net interest costs are projected to rise significantly, whereas discretionary outlays are projected to decline (see Figure 3-2 on page 67). Specifically:

1. This chapter describes updates to CBO's spending projections previously released in April 2018 (including subsequent changes to those projections that were published in May 2018). Some agencies experienced a lapse in appropriations when authorities contained in the Continuing Appropriations Act, 2019—as extended by Public Law 115-298—expired on December 22, 2018. For those agencies, CBO's current baseline projections incorporate the amount of fiscal year 2019 funding that was provided before that expiration, annualized (that is, as if it was provided for the entirety of the fiscal year).
2. CBO estimates that \$62 billion in outlays (\$57 billion of which is mandatory) will shift from 2023 into 2022, \$67 billion (\$62 billion of which is mandatory) will shift from 2024 into 2023, and \$91 billion (\$85 billion of which is mandatory) will shift from 2029 into 2028. Such shifts also occurred in 2018, moving \$40 billion in mandatory outlays and \$4 billion in discretionary outlays into 2017; the effect of those shifts exaggerates any growth in affected outlays from 2018 to 2019.

- Mandatory outlays are projected to increase by 2.4 percentage points—from 12.7 percent of GDP to 15.1 percent (excluding the effects of timing shifts in 2029)—primarily because the aging of the population and rising health care costs per beneficiary will increase outlays for Social Security, Medicare, and other programs.

Table 3-1.

CBO's Baseline Projections of Outlays

	Actual, 2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total	
													2020– 2024	2020– 2029
In Billions of Dollars														
Mandatory														
Social Security	982	1,039	1,102	1,171	1,245	1,323	1,403	1,487	1,574	1,664	1,759	1,856	6,243	14,583
Medicare ^a	704	768	821	882	987	1,024	1,057	1,176	1,262	1,355	1,526	1,519	4,771	11,609
Medicaid	389	406	420	440	467	496	526	557	591	626	662	702	2,350	5,488
Other spending	703	764	765	793	847	848	846	886	909	916	967	944	4,099	8,721
Offsetting receipts	-259	-283	-274	-291	-306	-320	-338	-370	-378	-400	-414	-436	-1,530	-3,528
Subtotal	2,520	2,695	2,834	2,995	3,240	3,371	3,493	3,737	3,957	4,161	4,500	4,584	15,933	36,872
Discretionary														
Defense	622	664	648	652	667	675	685	706	723	740	764	771	3,328	7,032
Nondefense	642	670	647	647	652	663	677	693	708	724	741	759	3,286	6,911
Subtotal	1,263	1,334	1,295	1,299	1,319	1,338	1,362	1,399	1,431	1,465	1,505	1,530	6,614	13,943
Net Interest	325	383	460	521	581	637	684	724	772	821	876	928	2,882	7,003
Total	4,108	4,412	4,589	4,814	5,140	5,347	5,539	5,859	6,160	6,446	6,881	7,042	25,430	57,818
On-budget	3,259	3,506	3,619	3,778	4,031	4,159	4,273	4,510	4,731	4,929	5,265	5,328	19,860	44,623
Off-budget ^b	849	906	970	1,036	1,109	1,187	1,266	1,349	1,428	1,518	1,616	1,714	5,569	13,195
Memorandum:														
Outlays Adjusted to Exclude Timing Shifts ^c														
Mandatory outlays	2,560	2,695	2,834	2,995	3,183	3,366	3,555	3,737	3,957	4,161	4,415	4,669	15,933	36,872
Discretionary outlays	1,267	1,334	1,295	1,299	1,314	1,338	1,367	1,399	1,431	1,465	1,499	1,535	6,614	13,943
Total Outlays	4,152	4,412	4,589	4,814	5,078	5,342	5,606	5,859	6,160	6,446	6,790	7,133	25,430	57,818
Gross Domestic Product	20,236	21,252	22,120	22,939	23,778	24,672	25,642	26,656	27,667	28,738	29,862	31,006	119,151	263,080

Continued

- As interest rates rise and debt continues to accumulate, net outlays for interest are projected to jump significantly, increasing by 1.2 percentage points—from 1.8 percent of GDP to 3.0 percent—by 2029.
- Discretionary outlays are projected to fall by 1.3 percentage points of GDP, from 6.3 percent to 5.0 percent. That decline reflects lower limits on discretionary funding (that is, budget authority) 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.

Among mandatory programs, outlays for Social Security and 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 rise relative to GDP; outlays for all other mandatory programs, on net, are 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 2019 to 6.0 percent in 2029.
- Federal outlays for the major health care programs are projected to grow from 5.2 percent of GDP in 2019 to 6.8 percent in 2029, mostly because of growth in spending for Medicare.³

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

Table 3-1.

Continued

CBO's Baseline Projections of Outlays

	Actual, 2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total		
													2020– 2024	2020– 2029	
As a Percentage of Gross Domestic Product															
Mandatory															
Social Security	4.9	4.9	5.0	5.1	5.2	5.4	5.5	5.6	5.7	5.8	5.9	6.0	5.2	5.5	
Medicare ^a	3.5	3.6	3.7	3.8	4.1	4.2	4.1	4.4	4.6	4.7	5.1	4.9	4.0	4.4	
Medicaid	1.9	1.9	1.9	1.9	2.0	2.0	2.1	2.1	2.1	2.2	2.2	2.3	2.0	2.1	
Other spending	3.5	3.6	3.5	3.5	3.6	3.4	3.3	3.3	3.3	3.2	3.2	3.0	3.4	3.3	
Offsetting receipts	-1.3	-1.3	-1.2	-1.3	-1.3	-1.3	-1.3	-1.4	-1.4	-1.4	-1.4	-1.4	-1.3	-1.3	
Subtotal	12.5	12.7	12.8	13.1	13.6	13.7	13.6	14.0	14.3	14.5	15.1	14.8	13.4	14.0	
Discretionary															
Defense	3.1	3.1	2.9	2.8	2.8	2.7	2.7	2.6	2.6	2.6	2.6	2.5	2.8	2.7	
Nondefense	3.2	3.2	2.9	2.8	2.7	2.7	2.6	2.6	2.6	2.5	2.5	2.4	2.8	2.6	
Subtotal	6.2	6.3	5.9	5.7	5.5	5.4	5.3	5.2	5.2	5.1	5.0	4.9	5.6	5.3	
Net Interest	1.6	1.8	2.1	2.3	2.4	2.6	2.7	2.7	2.8	2.9	2.9	3.0	2.4	2.7	
Total	20.3	20.8	20.7	21.0	21.6	21.7	21.6	22.0	22.3	22.4	23.0	22.7	21.3	22.0	
On-budget	16.1	16.5	16.4	16.5	17.0	16.9	16.7	16.9	17.1	17.2	17.6	17.2	16.7	17.0	
Off-budget ^b	4.2	4.3	4.4	4.5	4.7	4.8	4.9	5.1	5.2	5.3	5.4	5.5	4.7	5.0	
Memorandum:															
Outlays Adjusted to															
Exclude Timing Shifts ^c															
Mandatory outlays	12.6	12.7	12.8	13.1	13.4	13.6	13.9	14.0	14.3	14.5	14.8	15.1	13.4	14.0	
Discretionary outlays	6.3	6.3	5.9	5.7	5.5	5.4	5.3	5.2	5.2	5.1	5.0	5.0	5.6	5.3	
Total Outlays	20.5	20.8	20.7	21.0	21.4	21.7	21.9	22.0	22.3	22.4	22.7	23.0	21.3	22.0	

Source: Congressional Budget Office.

- a. Excludes 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.
- c. When October 1 (the first day of the fiscal year) falls on a weekend, certain payments that would have ordinarily been made on that day are instead made at the end of September and thus are shifted into the previous fiscal year.

- Outlays for all other mandatory programs (net of offsetting receipts) are projected to decline from 2.6 percent of GDP in 2019 to 2.3 percent in 2029.

Projections of Outlays Could Differ From Actual Outcomes

CBO's past projections of outlays—excluding the effects of enacted legislation—have been generally close to actual amounts but on average have been too high. The mean absolute error (the average without regard for whether the errors were positive or negative) of CBO's projections made for the following fiscal year has been 2.3 percent of outlays (or 0.5 percent of GDP); for

projections made for the sixth year out, it has been 6.0 percent of outlays (or 1.2 percent of GDP). Actual outlays could turn out to be higher or lower than CBO projects, both because laws could change and because outcomes could (and probably will) differ from CBO's projections.

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

Box 3-1.

Categories of Federal Outlays

Outlays are the issuance of checks, disbursement of cash, or electronic transfer of funds made to liquidate a federal obligation. (Budget authority, sometimes referred to as funding, is the authority provided by federal law to incur such obligations.) On the basis of its treatment in the budget process, federal outlays can be divided into three broad categories: mandatory, discretionary, and net interest.

Mandatory outlays consist primarily of payments 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 outlays are net of offsetting receipts—fees and other charges that are recorded as negative budget authority and outlays. Offsetting receipts differ from revenues: Revenues are collected through the government’s sovereign powers (in the form of income taxes, for example), whereas offsetting receipts are mostly collected from other government accounts or from members of the public for businesslike transactions (in the form of premiums for Medicare or royalties for the drilling of oil on public lands, for example).

Discretionary outlays result from the funding controlled by annual appropriation acts in which policymakers specify

how much money can be obligated for certain government programs in specific years. Appropriations fund a broad array of government activities, including defense, law enforcement, education, and veterans’ health programs. 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 budget authority and outlays for the particular accounts affected.

CBO’s baseline projections depict the path of funding for individual discretionary accounts as directed by the provisions of the Balanced Budget and Emergency Deficit Control Act of 1985 (Public Law 99-177).¹ That law states that current appropriations should be assumed to grow with inflation in the future.² However, the baseline also incorporates the assumption that discretionary funding will not exceed the caps imposed by

1. Some agencies experienced a lapse in appropriations when authorities contained in the Continuing Appropriations Act, 2019—as extended by Public Law 115-298—expired on December 22, 2018. For those agencies, CBO’s current baseline projections incorporate the amount of fiscal year 2019 funding that was provided before that expiration, annualized (that is, as if it was provided for the entirety of the fiscal year).
2. 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.

Continued

by the annual appropriation process.⁴ Certain types of payments that federal agencies receive from the public and from other government agencies are classified as offsetting receipts and are accounted for in the budget as reductions in mandatory spending. In 2019, mandatory outlays (net of offsetting receipts) are estimated to account for about 60 percent of total federal outlays.

4. Each year, some mandatory programs are modified by provisions in annual appropriation acts. Such changes may increase or decrease spending for the affected programs for one or more years. In addition, some mandatory programs, such as Medicaid, the Supplemental Nutrition Assistance Program, and benefits for Coast Guard retirees and annuitants, are considered mandatory but require benefits to be paid from amounts provided in appropriation acts. Section 257 of the Balanced Budget and Emergency Deficit Control Act of 1985 requires CBO to project outlays for those programs as if they were fully funded, regardless of the amounts actually appropriated.

The Balanced Budget and Emergency Deficit Control Act of 1985 (Public Law 99-177), referred to here as the Deficit Control Act, requires that CBO’s projections incorporate the assumption that current laws governing mandatory programs generally remain unchanged.⁵ Therefore, CBO’s baseline projections for mandatory spending reflect the estimated effects of economic influences, growth in the number of cases, and other factors

5. 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.

Box 3-1.

Continued

Categories of Federal Outlays

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 established by the Budget Control Act (as modified)—overseas contingency operations, emergency requirements, disaster relief, efforts to reduce overpayments in certain benefit programs, and certain activities authorized by the 21st Century Cures Act (P.L. 114-255).³ Instead, for most of those activities, the caps are adjusted to accommodate such funding (up to certain limits). CBO’s projections incorporate the assumption that funding for those activities grows with inflation, subject to those limits.

The baseline projections also include discretionary outlays for highway and airport infrastructure programs and public transit programs, all of which receive mandatory budget authority from authorizing legislation. Typically, outlays of mandatory budget authority are also classified as mandatory. Each year,

3. In addition, the Consolidated Appropriations Act, 2018 (P.L. 115-141), established wildfire suppression as a category of spending that will lead to an increase in the nondefense caps, subject to specified limits; that change will begin in 2020. Also, obligation limitations, which are constraints that annual appropriation acts apply to funding allowances in mandatory authorizations and which are provided primarily for certain ground and air transportation programs, are not constrained by the caps on discretionary funding and are generally assumed to grow with inflation.

however, appropriation acts control outlays for those transportation programs by limiting how much of the mandatory budget authority the Department of Transportation can obligate. For that reason, those obligation limitations are often treated as a measure of discretionary budgetary resources, and the resulting outlays are considered discretionary.⁴ Those obligation limitations constrain outlays only during periods when they are in effect.

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 interest that it collects from various sources (for example, from states that pay the interest on advances they received from the federal Unemployment Trust Fund when the balances of their state unemployment accounts were insufficient to pay benefits promptly). Net interest is determined mostly by the size and composition of the government’s debt and by market interest rates.

4. Discretionary budgetary resources include new budget authority, unobligated balances of budget authority provided in previous years, and obligation limitations.

on the cost of those programs, even for programs that otherwise are set to expire. 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 for 2019 to 2029

In 2019, CBO estimates, total mandatory outlays will amount to \$2.7 trillion, or 12.7 percent of GDP, up from \$2.5 trillion in 2018. Most of that estimated increase is attributable to larger outlays for Social Security, Medicare, and Medicaid, moderated by an increase in offsetting receipts from Fannie Mae and Freddie Mac (among other, smaller, offsetting changes). (In the discussion of mandatory spending that follows, all numbers have been adjusted to exclude the effects of timing shifts; see Table 3-2 on page 68.)

From 2019 to 2029, outlays for mandatory programs are projected to rise by an average of about 6 percent per year, reaching \$4.7 trillion by the end of the period. As a share of GDP, mandatory outlays are projected to increase slightly through 2020—to 12.8 percent—and then rise steadily, to 15.1 percent in 2029.⁶ By comparison, mandatory outlays averaged 12.9 percent of GDP over the past 10 years and 9.9 percent over the past 50 years.

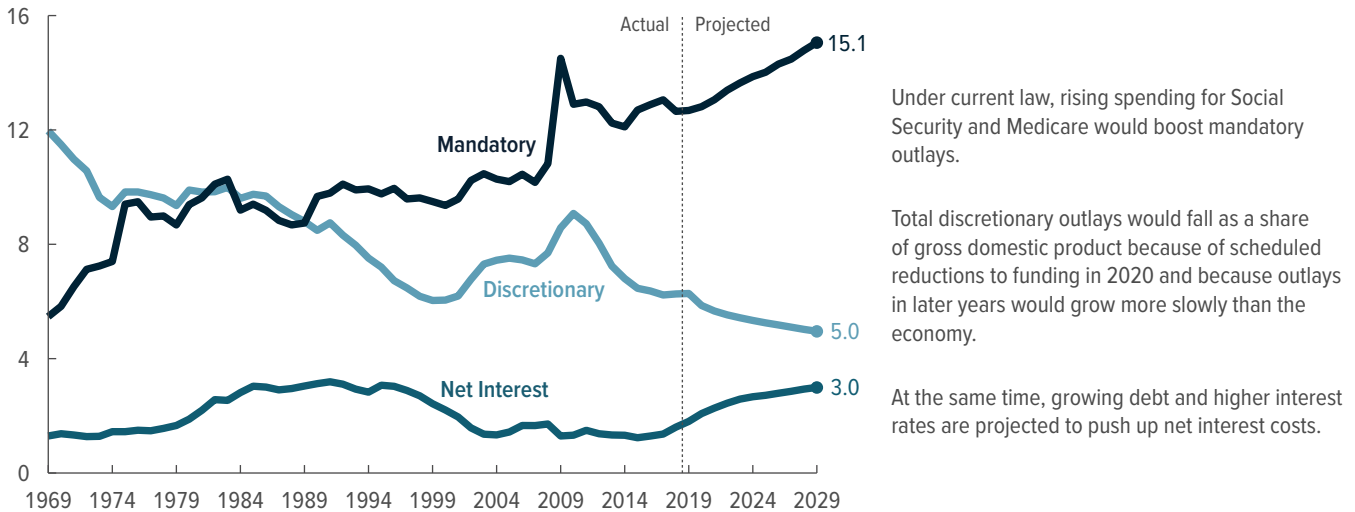
Much of the projected growth in mandatory spending over the coming decade is attributable to two factors. First, the share of the population age 65 or older has been growing significantly—more than doubling over

6. Mandatory outlays as a share of GDP are 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 outlays is slightly slower in the first two years of the period than it is in most of the later years.

Figure 3-1.

Outlays, by Type of Spending

Percentage of Gross Domestic Product



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

When October 1 (the first day of the fiscal year) falls on a weekend, certain payments that would have ordinarily been made on that day are instead made at the end of September and thus are shifted into the previous fiscal year. Outlays have been adjusted to exclude the effects of those shifts.

the past 50 years—and is expected to rise by about one-third by 2029. In CBO’s baseline projections, outlays for people age 65 or older in mandatory programs increase from 7.5 percent of GDP in 2018 to 9.8 percent in 2029, accounting for about two-thirds of mandatory spending by the end of that period.⁷

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

7. Those programs include Social Security, Medicare, Supplemental Security Income, the civilian and military retirement programs, veterans’ compensation and pensions, the Federal Employees Health Benefits program, the military’s TRICARE for Life program, and the Supplemental Nutrition Assistance Program.

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

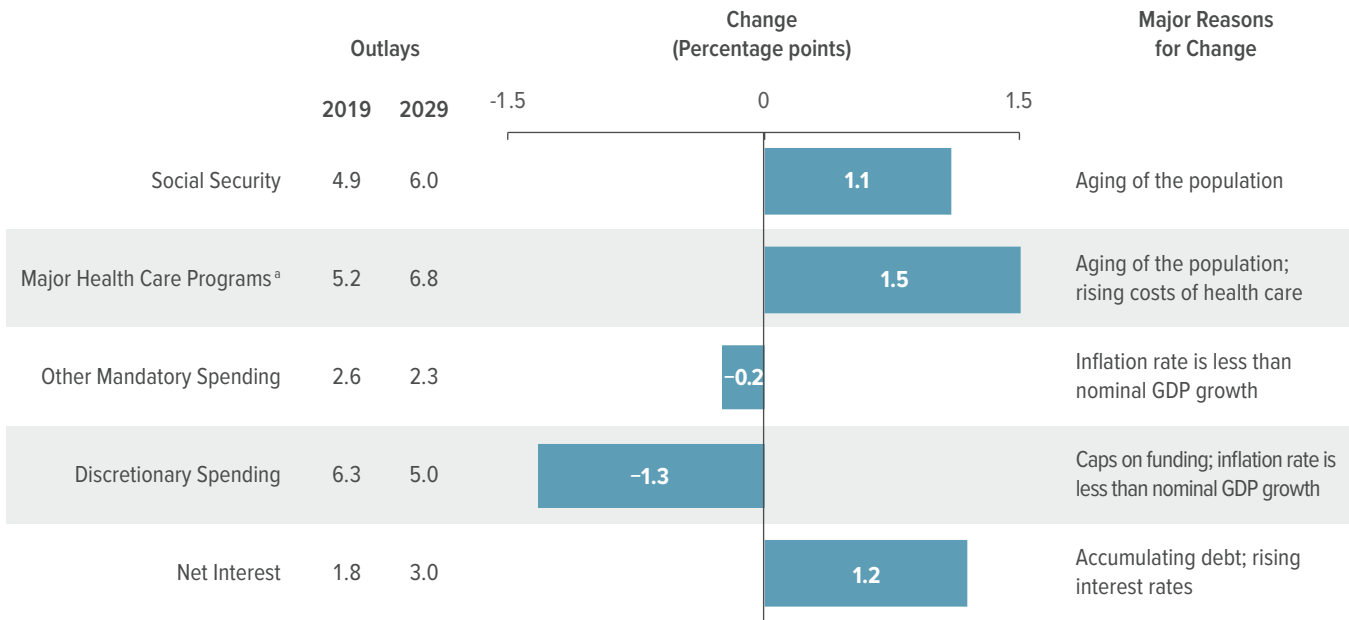
Social Security. The largest federal spending program, Social Security provides cash benefits to the elderly, to people with disabilities, and to the dependents and survivors of people covered by the program. Last year, Social Security outlays totaled \$982 billion, or 4.9 percent of GDP. Under current law, outlays for Social Security are projected to rise by \$57 billion (or about 6 percent) in 2019. That rate of increase is greater than it has been in recent years, largely because Social Security beneficiaries received a cost-of-living adjustment (COLA) of 2.8 percent in January 2019, the largest since 2012. Growth in the number of beneficiaries is also anticipated to tick up, from 1.6 percent last year to 1.8 percent this year.

Over the 2020–2029 period, outlays for Social Security are projected to grow at an average rate of about 6 percent per year, reaching \$1.9 trillion—or 6.0 percent of GDP—by 2029. That growth reflects increases in

Figure 3-2.

Major Changes in Projected Outlays From 2019 to 2029

Percentage of Gross Domestic Product



Source: Congressional Budget Office.

When October 1 (the first day of the fiscal year) falls on a weekend, certain payments that would have ordinarily been made on that day are instead made at the end of September and thus are shifted into the previous fiscal year. Outlays have been adjusted to exclude the effects of those shifts.

GDP = gross domestic product.

a. Consists of outlays 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.

the number of beneficiaries and in the amount of the average benefit. In CBO's projections, the number of beneficiaries grows by an average of 2.1 percent per year, from an average of 63.3 million beneficiaries in 2019 to 78.2 million in 2029. Average benefits grow by 3.8 percent per year, mainly because of annual COLAs, which are projected to average 2.4 percent, and because initial benefits are based on people's lifetime earnings, which tend to increase over time.

Medicare, Medicaid, and Other Major Health Care Programs. In 2018, net federal outlays for Medicare, Medicaid, and other major programs related to health care accounted for 41 percent of mandatory outlays (net of offsetting receipts; see the memorandum lines of Table 3-2) and totaled \$1.1 trillion, or 5.2 percent of GDP. In CBO's baseline projections, excluding the effects of shifts in the timing of certain payments, those

outlays increase by \$53 billion (or 5 percent) in 2019; from 2020 to 2029, they increase at an average rate of 6.5 percent per year, nearly doubling in nominal terms and reaching \$2.1 trillion, or 6.8 percent of GDP, by the end of that period.

Medicare. Outlays for Medicare, a program that provides subsidized medical insurance to people age 65 or older and to some people with disabilities, account for about half of the projected increase in outlays for the major health care programs from 2018 to 2019. CBO estimates that Medicare outlays (net of offsetting receipts—mostly in the form of premiums paid by beneficiaries—and adjusted to exclude the effects of timing shifts) will grow from \$605 billion to \$632 billion, or by 4 percent, from 2018 to 2019. Enrollment is projected to increase by 2.7 percent this year, the same rate of increase recorded last year.

Table 3-2.

CBO's Baseline Projections of Mandatory Outlays, Adjusted to Exclude the Effects of Timing Shifts

Billions of Dollars

	Actual,												Total	
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2020–2024	2020–2029
Social Security														
Old-Age and Survivors Insurance	838	894	954	1,017	1,085	1,155	1,228	1,304	1,382	1,463	1,553	1,644	5,440	12,786
Disability Insurance	144	145	148	153	160	167	175	183	192	201	206	213	804	1,797
Subtotal	982	1,039	1,102	1,171	1,245	1,323	1,403	1,487	1,574	1,664	1,759	1,856	6,243	14,583
Major Health Care Programs														
Medicare ^{a,b}	728	768	821	882	950	1,021	1,097	1,176	1,262	1,355	1,465	1,580	4,771	11,609
Medicaid	389	406	420	440	467	496	526	557	591	626	662	702	2,350	5,488
Health insurance subsidies and related spending ^c	49	58	55	61	68	69	72	75	75	77	80	83	324	713
Children's Health Insurance Program	17	18	16	14	14	15	16	16	17	18	18	19	76	165
Subtotal ^b	1,184	1,250	1,313	1,397	1,499	1,602	1,711	1,825	1,944	2,075	2,225	2,383	7,521	17,974
Income Security Programs														
Earned income, child, and other tax credits ^d	81	93	93	94	94	94	94	95	96	84	85	85	470	915
Supplemental Nutrition Assistance Program	68	65	64	65	65	66	66	67	68	69	70	72	326	672
Supplemental Security Income ^a	55	56	57	59	61	62	64	67	69	71	74	76	304	659
Unemployment compensation	29	28	29	38	46	48	49	51	53	55	57	59	209	485
Family support and foster care ^e	32	32	32	33	33	33	34	34	34	35	35	35	166	338
Child nutrition	24	25	26	27	28	29	30	31	33	34	36	37	139	310
Subtotal	290	299	302	314	326	332	338	345	352	348	356	364	1,613	3,379
Federal Civilian and Military Retirement														
Civilian ^f	103	105	110	114	118	122	126	130	133	137	141	145	589	1,276
Military ^a	59	60	63	65	67	69	70	72	74	76	78	80	333	712
Other	6	4	6	6	7	7	8	6	10	7	7	7	34	71
Subtotal	168	170	178	185	191	198	204	208	217	220	226	232	956	2,058
Veterans' Programs														
Income security ^{a,g}	93	99	103	106	110	114	120	123	127	132	135	142	554	1,213
Other	16	19	19	17	18	18	17	19	19	20	22	21	88	189
Subtotal	109	118	122	123	128	132	137	142	147	152	157	163	642	1,402
Other Programs														
Agriculture	16	24	13	14	15	15	15	15	15	15	16	16	72	150
Deposit insurance	-16	-8	-8	-7	-7	-7	-7	-7	-8	-8	-8	-9	-35	-76
MERHCF	10	10	11	11	12	13	13	14	15	15	16	17	60	137
Fannie Mae and Freddie Mac ^h	4	0	2	2	3	3	3	4	4	4	4	4	13	33
Higher education	-6	2	4	5	5	6	6	6	6	6	7	7	25	58
Other	79	73	70	72	72	71	70	70	68	69	71	71	354	703
Subtotal	87	102	91	96	100	101	100	101	101	102	106	106	489	1,004
Mandatory Outlays, Excluding the Effects of Offsetting Receipts^a	2,819	2,977	3,108	3,286	3,489	3,687	3,893	4,107	4,335	4,561	4,829	5,105	17,464	40,400

Source: Congressional Budget Office.

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

MERHCF = Department of Defense Medicare-Eligible Retiree Health Care Fund; n.a. = not applicable; * = between -\$500 million and \$500 million.

Table 3-2.

Continued

CBO's Baseline Projections of Mandatory Outlays, Adjusted to Exclude the Effects of Timing Shifts

Billions of Dollars

	Actual,												Total	
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2020–2024	2020–2029
Offsetting Receipts														
Medicare ⁱ	-123	-136	-146	-157	-170	-183	-197	-213	-229	-247	-268	-288	-854	-2,100
Federal share of federal employees' retirement														
Social Security	-18	-18	-18	-19	-20	-20	-21	-22	-22	-23	-24	-25	-99	-215
Military retirement	-18	-21	-22	-22	-23	-23	-24	-24	-25	-25	-26	-26	-113	-240
Civil service retirement and other	-36	-37	-38	-39	-41	-42	-44	-45	-46	-48	-49	-51	-204	-443
Subtotal	-72	-75	-78	-80	-83	-86	-88	-91	-94	-96	-99	-102	-416	-897
Receipts related to natural resources ^a	-11	-11	-11	-11	-12	-11	-12	-12	-12	-12	-12	-13	-58	-120
MERHCF	-8	-8	-8	-9	-9	-10	-10	-11	-11	-12	-12	-13	-45	-104
Fannie Mae and Freddie Mac ^h	-13	-24	0	0	0	0	0	0	0	0	0	0	0	0
Other	-31	-28	-30	-33	-31	-31	-31	-44	-32	-32	-22	-21	-157	-308
Subtotal	-259	-283	-274	-291	-306	-321	-338	-370	-378	-400	-414	-436	-1,530	-3,529
Total Mandatory Outlays, Net of Offsetting Receipts^a	2,560	2,695	2,834	2,995	3,183	3,366	3,555	3,737	3,957	4,161	4,415	4,669	15,933	36,872
Mandatory Outlays That Are Shifted in CBO's Baseline														
Medicare	-24	0	0	0	37	3	-40	0	0	0	61	-61	n.a.	n.a.
Supplemental Security Income	-4	0	0	0	5	*	-5	0	0	0	6	-6	n.a.	n.a.
Military retirement	-5	0	0	0	5	*	-5	0	0	0	6	-6	n.a.	n.a.
Veterans' income security	-7	0	0	0	10	1	-11	0	0	0	12	-12	n.a.	n.a.
Outer Continental Shelf	*	0	0	0	0	*	*	0	0	0	*	*	n.a.	n.a.
Total	-40	0	0	0	57	5	-62	0	0	0	85	-85	n.a.	n.a.
Total Mandatory Outlays Projected in CBO's Baseline	2,520	2,695	2,834	2,995	3,240	3,371	3,493	3,737	3,957	4,161	4,500	4,584	15,933	36,872
Memorandum:														
Outlays Net of Offsetting Receipts ^a														
Medicare	605	632	675	725	780	838	900	964	1,033	1,107	1,196	1,292	3,917	9,509
Major health care programs	1,061	1,114	1,167	1,239	1,329	1,419	1,513	1,612	1,715	1,827	1,957	2,095	6,667	15,874

- a. When October 1 (the first day of the fiscal year) falls on a weekend, certain payments that would have ordinarily been made on that day are instead made at the end of September and thus are shifted into the previous fiscal year. Outlays for programs affected by such timing shifts have been adjusted to exclude the effects of those shifts.
- b. Excludes the effects of Medicare premiums and other offsetting receipts. (Net Medicare spending, which includes those offsetting receipts, is shown in the memorandum section of the table.)
- c. Consists of outlays to subsidize health insurance purchased through the marketplaces established under the Affordable Care Act and provided through the Basic Health Program, as well as spending to stabilize premiums for health insurance purchased by individuals and small employers.
- d. Includes outlays for the American Opportunity Tax Credit and other credits.
- e. Includes Temporary Assistance for Needy Families, Child Support Enforcement, Child Care Entitlements to States, and other programs that benefit children.
- f. Includes benefits for retirement programs in the civil service, foreign service, and Coast Guard; benefits for smaller retirement programs; and annuitants' health care benefits.
- g. Includes veterans' compensation, pensions, and life insurance programs. (Outlays for veterans' health care are classified as discretionary.)
- h. Cash payments from Fannie Mae and Freddie Mac to the Treasury are recorded as offsetting receipts in 2018 and 2019. Beginning in 2020, 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.

Over the 2020–2029 period, Medicare outlays are anticipated to increase by 7 percent per year, on average, representing about two-thirds of the growth in spending for the major health care programs. About two-thirds of that annual growth is driven by the rising costs of medical care per beneficiary; growing enrollment accounts for the remainder. By 2029, projected net outlays for Medicare total \$1.3 trillion.

Medicaid. Outlays for Medicaid, a joint federal-state program that funds medical care for certain low-income, elderly, and disabled people, are estimated to increase by 4 percent (or \$14 billion) to \$406 billion in 2019. After 2019, outlays for the program are projected to grow at an average rate of about 4 percent per year through 2021 and 6 percent per year from 2022 through 2029. Slower overall growth in costs per person and a slight decline in enrollment among children and adults largely explain the lower average rate of growth through 2021. The higher projected growth rates after 2021 (which are closer to historical growth rates for the program) result from slightly greater increases in spending per beneficiary and higher unemployment, which would boost enrollment in the program.

Health Insurance Subsidies and Related Spending. Outlays for health insurance subsidies and related spending are estimated to increase by about \$8 billion (or 17 percent) this year.⁸ That jump mostly stems from two sources. First, in July 2018 the Department of Health and Human Services temporarily halted risk-adjustment payments, which are amounts paid to health insurance plans that attract less healthy enrollees, in response to a federal court decision. Typically, those risk-adjustment outlays occur in September, but most of those payments were delayed from the end of 2018 to the first quarter of fiscal year 2019. Second, premiums for the second-lowest-cost “silver” plan in the health insurance marketplaces established under the Affordable Care Act were an average of 34 percent higher in calendar year 2018 than in 2017—and those premiums are the benchmark for determining subsidies for plans offered through the marketplaces. As a result,

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

total subsidies for the first quarter of fiscal year 2019 were substantially higher than they were one year earlier.

Over the 2020–2029 period, the average growth in outlays for health insurance subsidies and related spending is projected to lessen considerably, to nearly 4 percent per year. Total subsidies depend on per-beneficiary spending and on the number of subsidized enrollees. Although per-beneficiary spending is estimated to rise with the costs of providing medical care, the number of subsidized enrollees is projected to decline slightly over time. As a result, total subsidies are projected to rise more slowly than the average costs of providing medical care. CBO estimates that, under current law, outlays for health insurance subsidies and related spending would rise by 44 percent over the projection period, increasing from \$58 billion in 2019 to \$83 billion by 2029.

Children’s Health Insurance Program. Financed jointly by the states and the federal government, the Children’s Health Insurance Program 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 in 2019 will be about \$18 billion, which is \$1 billion higher than in 2018. After 2019, federal outlays for CHIP are projected to decline through 2021, because the average federal matching rate for the program is scheduled to decrease from 93 percent in 2019 to 70 percent in 2021 and subsequent years. After 2021, outlays for the program are projected to grow by an average of 4 percent per year, principally because of increasing costs per enrollee.

Income Security. Mandatory spending for 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. CBO estimates that outlays for income security will rise by 3 percent, from \$290 billion in 2018 (excluding the effects of a shift in the timing of \$4 billion in SSI payments) to \$299 billion, or 1.4 percent of GDP, in 2019. Over the 2020–2029 period, total mandatory outlays for income security are projected to increase by an average of 2 percent per year, which is slower than the rate at which GDP is projected to grow. As a result, by 2029, such outlays are estimated 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.⁹ Those payments are categorized as outlays.

Projected outlays for refundable tax credits vary significantly over the projection period in CBO's baseline. The refundable amounts of the credits are projected to jump from \$81 billion in 2018 to \$93 billion in 2019, mostly because Public Law 115-97, referred to here as the 2017 tax act, expanded the child tax credit. In addition, the 2017 tax act temporarily reduced tax liabilities, thereby boosting outlays for the refundable portion of certain tax credits.

After remaining close to \$95 billion a year for much of the coming decade, projected outlays for the tax credits fall to \$84 billion in 2027. Many provisions in the 2017 tax act expire at the end of 2025 under current law, decreasing the amount of the child tax credit and increasing tax liabilities for most people. (Those outlays are smaller than they would have been before the 2017 tax act because one provision of the law 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 the program, which peaked in 2013, after the 2007–2009 recession, will decrease slightly this year—because of a continued decline in participation.

In CBO's projections, participation rates continue to decrease through 2029 until they return to rates seen just before the recession (about 9 percent of the population, or 32 million people). However, because decreased outlays from lower participation are expected to be offset by 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 outlays for the program begin to rise more rapidly as the decline in participation moderates but the price of

food continues to rise. By 2029, CBO projects, outlays for SNAP would total \$72 billion under current law.

Supplemental Security Income. SSI provides cash benefits to people with low income who are elderly or disabled. CBO estimates that outlays for SSI will rise by about \$5 billion in 2019, largely because \$4 billion in payments were shifted from 2018 into the previous fiscal year. (Excluding the effects of that timing shift, outlays would rise by \$1 billion this year.) Over the 2020–2029 period, outlays for the program are projected to grow by 3 percent per year, on average, mainly as a result of COLAs. By 2029, without changes to current law, projected outlays for SSI reach \$70 billion, or \$76 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. Outlays for unemployment compensation depend on several factors, such as the unemployment rate, labor force participation, and wages and salaries. CBO expects outlays for the program to decline by 3 percent, or \$1 billion, to \$28 billion in 2019 as a result of lower unemployment. Projected outlays rise by 4 percent in 2020, however, even as the unemployment rate remains steady at an average of 3.6 percent, because the total number of people unemployed and their average weekly benefit amount are anticipated to increase.

The unemployment rate is projected to climb by 0.5 percentage points in fiscal year 2021 and again in fiscal year 2022 before remaining roughly constant through 2029. In CBO's projections, outlays for unemployment compensation generally follow the changes in the unemployment rate, increasing by 31 percent and 20 percent in 2021 and 2022, respectively, and then moderating (at an average annual increase of nearly 4 percent per year) through 2029. Projected outlays reach \$59 billion in 2029—more than double the amount estimated for the current year.

Family Support, Foster Care, and Child Nutrition Programs. Outlays for other programs that support children and families, such as the Temporary Assistance for Needy Families (TANF) program and school lunch programs, grow in CBO's baseline by about 2 percent per year, on average. Funding is capped for some programs

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

(including TANF), whereas it is projected to grow with inflation and participation for others (including school lunch programs). In CBO's projections, outlays for all such programs increase from \$57 billion in 2019 to \$72 billion in 2029.

Civilian and Military Retirement. Retirement and survivors' benefits for most federal civilian employees are estimated to cost \$109 billion in 2019, the same amount as in 2018. (That total includes benefits provided through several smaller retirement programs for employees of various government agencies and for retired railroad workers.) Under current law, such outlays would grow by an average of about 3 percent annually over the projection period, CBO estimates, reaching \$152 billion in 2029. 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 \$54 billion in 2018 (or \$59 billion, excluding the effects of a timing shift that moved some annuity payments from 2018 into 2017); in 2019, they are projected to rise to \$60 billion. Most of the projected annual growth in those outlays over the 2020–2029 period results from COLAs and increases in military basic pay. Excluding the effects of future timing shifts, outlays for military retirement benefits are projected to grow by an average of about 3 percent per year, reaching \$80 billion in 2029.

Veterans' Programs. Mandatory spending for veterans' benefits includes disability compensation, education and vocational rehabilitation benefits, pensions, insurance, housing assistance, and burial benefits. Excluding the effects of shifts in the timing of certain payments, outlays for those benefits totaled \$109 billion in 2018. (Roughly 80 percent of that amount represented disability compensation.) Outlays for those benefits are estimated to rise by 8 percent, to \$118 billion, in 2019. (That total does not include most federal spending for veterans' health care, which is funded through discretionary appropriations.) The increase is primarily driven by the growth of disability compensation payments, which are rising faster than inflation. Those payments increase with the severity of veterans' service-connected injuries and illnesses. Both the average severity of beneficiaries' disabilities and the number of veterans with service-connected

disabilities have been rising in recent years, a trend that CBO expects to persist. Under current law, mandatory outlays for veterans' benefits are projected to grow at an average rate of about 3 percent per year over the next decade, reaching \$163 billion in 2029 (excluding shifts in the timing of some payments).

Other Mandatory Programs. The remainder of mandatory spending encompasses outlays for a number of other activities, including agricultural programs, 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 \$87 billion last year and are estimated to increase to \$102 billion in 2019.

That increase has three significant components. First, outlays for higher education are estimated to be \$8 billion higher this year, driven by last year's revisions to the estimated subsidy costs of outstanding loans recorded by the Department of Education.¹⁰ In 2018, such revisions reduced outlays by \$9 billion; no such revision has yet been recorded in 2019, and CBO has no basis for determining what revision, if any, might be made this year. Second, CBO estimates that net outlays related to deposit insurance will rise by \$8 billion (or about 50 percent) in 2019, primarily because CBO expects that surcharges levied on certain large insured depository institutions that occurred in 2018 (which had the effect of reducing outlays) will not be imposed in 2019. Third, outlays by the Department of Agriculture are estimated to be \$7 billion (or 50 percent) more than in 2018, largely because of payments made by the Commodity

10. 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 2019–2029 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.

Credit Corporation to farmers who have lost foreign sales because of U.S. trade disputes with other nations. Over the 2020–2029 period, total outlays for the category of other mandatory programs are projected to increase by about \$15 billion, or roughly 17 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 budget authority and outlays (that is, as reductions in 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 by Fannie Mae and Freddie Mac (for 2018 and 2019 only), and various fees paid by users of public property and services.¹¹

CBO estimates that offsetting receipts will increase by \$24 billion this year, rising from \$259 billion in 2018 to \$283 billion in 2019. Nearly half of that increase stems from larger payments to the Treasury from Fannie Mae and Freddie Mac, which CBO estimates will be \$11 billion higher than last year's payments. (In 2018, Fannie Mae and Freddie Mac reduced the value of their tax-deferred assets in response to provisions of the 2017 tax act; in addition, the Federal Housing Finance Agency and the Treasury Department directed the entities to increase their capital reserves, which lessened the payments they made to the Treasury.) Offsetting receipts

11. 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 those two entities 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 2019. Similarly, to match the Administration's historical budget totals, CBO also uses the Administration's treatment for past years.

from all other programs are estimated to be about \$13 billion larger in 2019 than in 2018, driven by an increase of just over \$13 billion in receipts of Medicare beneficiaries' premiums, slightly offset by a small reduction, on net, in receipts from other programs.

After 2019, offsetting receipts are projected to grow by an average of about 4 percent per year, from \$274 billion in 2020 to \$436 billion in 2029. Growth in receipts from Medicare premiums, which is projected to average almost 8 percent per year, accounts for nearly 90 percent of that increase.

Assumptions About Legislation for Expiring Programs Incorporated Into the Baseline

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 law and have current-year outlays greater than \$50 million are assumed to continue in CBO's baseline projections. Whether programs of that size 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, CHIP, rehabilitation services, the Child Care Entitlement to States, the Trade Adjustment Assistance program for workers, child nutrition programs, family preservation and support programs, 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 \$886 billion in outlays between 2020 and 2029, most of which are for SNAP, TANF, and COLAs for veterans' compensation (see Table 3-3). That amount represents about 2 percent of all mandatory spending.

Assumptions About Payments From Trust Funds That Are Scheduled to Continue

Without legislative action to address budgetary shortfalls, the balances of two federal trust funds that affect

Table 3-3.

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

Billions of Dollars

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total		
												2020–	2020–	
												2024	2029	
Supplemental Nutrition Assistance Program														
Budget authority	0	0	0	0	0	66	67	68	69	71	72	66	413	
Outlays	0	0	0	0	0	66	67	68	69	70	72	66	412	
Temporary Assistance for Needy Families ^a														
Budget authority	12	17	17	17	17	17	17	17	17	17	17	87	173	
Outlays	9	15	16	17	17	17	17	17	17	17	17	81	168	
Veterans' Compensation COLAs														
Budget authority	0	4	7	10	12	15	18	21	24	28	31	48	170	
Outlays	0	4	7	10	12	14	18	21	24	30	28	47	168	
Commodity Credit Corporation ^b														
Budget authority	0	0	0	0	0	4	4	11	11	12	11	4	53	
Outlays	0	0	0	0	0	1	3	10	10	11	11	1	46	
Child Care Entitlements to States ^a														
Budget authority	2	3	3	3	3	3	3	3	3	3	3	15	29	
Outlays	2	3	3	3	3	3	3	3	3	3	3	14	29	
Rehabilitation Services														
Budget authority	0	0	0	0	4	4	4	4	4	4	4	8	29	
Outlays	0	0	0	0	2	4	4	4	4	4	4	6	26	
Child Nutrition ^c														
Budget authority	1	1	1	1	1	1	1	1	1	1	1	4	10	
Outlays	1	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	1	1	1	1	1	1	1	1	1	3	7	
Outlays	0	0	*	*	1	1	1	1	1	1	1	2	5	

Continued

mandatory spending will be exhausted during the 2019–2029 period, CBO projects: Medicare's Hospital Insurance Trust Fund (in 2026), and Social Security's Disability Insurance (DI) Trust Fund (in 2027). (The Highway Trust Fund, which affects discretionary outlays, is also projected to be exhausted, in 2021.)

In keeping with the rules of 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. How those payments were continued would depend on future legislation.

CBO estimates that mandatory outlays not covered by income credited to the trust funds would total \$382 billion over the 2020–2029 period. (Discretionary outlays would total \$159 billion over the same period; see Table 3-4.) For additional information on those and other federal trust funds, see Appendix D.

Table 3-3.

Continued

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

Billions of Dollars

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total		
												2020–2029	2020–2029	
Trade Adjustment Assistance for Workers ^d														
Budget authority	0	0	0	0	*	*	*	1	1	1	1	1	1	4
Outlays	0	0	0	0	*	*	*	*	1	1	1	*	*	3
Promoting Safe and Stable Families														
Budget authority	0	0	0	*	*	*	*	*	*	*	*	*	1	3
Outlays	0	0	0	*	*	*	*	*	*	*	*	*	1	2
Ground Transportation Programs Controlled by Obligation Limitations ^e														
Budget authority	0	0	50	50	50	50	50	50	50	50	50	202	454	
Outlays	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Air Transportation Programs Controlled by Obligation Limitations ^e														
Budget authority	0	0	0	0	0	3	3	3	3	3	3	3	3	20
Outlays	0	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	15	15	0	31	
Outlays	0	0	0	0	0	0	0	0	0	7	10	0	17	
Natural Resources ^f														
Budget authority	0	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	14	25	79	82	89	166	170	181	185	206	211	442	1,395	
Total Outlays	11	22	27	31	36	107	114	125	130	145	149	223	886	

Source: Congressional Budget Office.

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

- The authorizations for Temporary Assistance for Needy Families and Child Care Entitlements to States expired on December 22, 2018.
- Agricultural commodity price and income supports and conservation under the Agriculture Improvement Act of 2018 generally expire after 2023. 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 Agriculture Improvement Act of 2018 remain in effect.
- Includes the Summer Food Service program and states' administrative expenses.
- Does not include the cost of extending Reemployment Trade Adjustment Assistance.
- Authorizing legislation for those programs provides contract authority, which is counted as mandatory budget authority. However, because the programs' outlays are subject to obligation limitations specified in annual appropriation acts, they are considered discretionary.
- Includes recreation fees for the National Park Service, Forest Service, Fish and Wildlife Service, and the Bureau of Land Management.

Discretionary Spending

Discretionary spending is funded or controlled through annual appropriations and includes most spending on national defense, elementary and secondary education, housing assistance, international affairs, and the

administration of justice, as well as outlays for highways and other programs. In CBO's projections, discretionary outlays account for about 30 percent of total federal outlays in 2019.

Table 3-4.

Payments Assumed to Be Made in CBO's Baseline After Certain Trust Funds Are Exhausted

Billions of Dollars

	Actual,												Total		
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2020–2024	2020–2029	
Mandatory Outlays															
Social Security															
Disability Insurance Trust Fund	0	0	0	0	0	0	0	0	0	0	3	18	18	0	39
Medicare															
Hospital Insurance (Part A) Trust Fund	0	0	0	0	0	0	0	0	39	80	122	103	0	343	
Total, Mandatory Outlays	0	0	0	0	0	0	0	0	39	83	140	121	0	382	
Discretionary Outlays															
Highway Trust Fund	0	0	0	0	12	17	19	20	21	22	23	24	48	159	

Source: Congressional Budget Office.

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.¹² Under current law, separate caps exist for defense and nondefense funding 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 budgetary resources (following procedures specified in the Budget Control Act) to eliminate the breach.¹³

12. Discretionary funding refers to budget authority provided in annual appropriation acts. In addition, this report sometimes refers to discretionary budgetary resources, a broader term that encompasses all amounts made available to federal agencies, under annual appropriation acts, that permit them to enter into new obligations and to liquidate them. Discretionary budgetary resources include new budget authority, unobligated balances of budget authority provided in previous years, and obligation limitations, which are constraints that appropriation acts apply to the use of funding provided in certain authorizing legislation, primarily for ground and air transportation programs.

13. The authority to determine whether 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. For more information on the discretionary caps, see Congressional Budget Office, *Sequestration Update Report: August 2018* (August 2018), www.cbo.gov/publication/54357. Also see Office of Management and Budget, *OMB Sequestration*

CBO's projections of 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 bases its projections for individual accounts on the most recent appropriations 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 the projection for each account because, although the total amount of funding 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 established under the Budget Control Act (as modified).¹⁵ Instead, for most of those activities, the caps are adjusted to accommodate such funding (up to

Update Report to the President and Congress for Fiscal Year 2019 (August 2018), <https://go.usa.gov/xEbAp>.

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. Obligation limitations also are not constrained by the caps on discretionary funding and are assumed to grow with inflation.

certain limits). Specifically, appropriations designated for overseas contingency operations (OCO) and activities designated as emergency requirements are assumed to grow with inflation, and the caps would be increased accordingly.¹⁶ For two other activities—disaster relief and certain efforts to reduce overpayments in benefit programs—the extent to which the caps can be adjusted is subject to annual constraints, as specified in law. In CBO’s baseline, funding for those activities is first projected to grow with inflation and, if necessary, adjusted to comply with those annual constraints.¹⁷ CBO follows a similar approach in projecting a portion of funding provided to carry out the 21st Century Cures Act (P.L. 114-255), which requires that discretionary funding for certain authorized activities—up to amounts specified in law—be excluded from calculations of appropriations constrained by the caps.

Under the Bipartisan Budget Act of 2018 (P.L. 115-123), which increased limits on discretionary funding that otherwise would have been in place for 2019 under the Budget Control Act (as modified), overall limits on discretionary budget authority total \$1,244 billion in 2019 (see Table 3-5).¹⁸ Those limits then fall by 10 percent to an estimated \$1,118 billion in 2020, when they revert to the lower levels set by the Budget Control Act. In 2021, the limits rise by 2 percent to \$1,145 billion, 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 2029. 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 (to pay for long-term research or construction, for instance). Therefore, discretionary outlays estimated for each year represent a mix of spending stemming not only from new budget authority but also from prior appropriations. Outlay changes are particularly likely to lag behind changes in budget authority when the latter are large or occur well into a fiscal year.

CBO’s Baseline Projections of Discretionary Spending in 2019

CBO’s projections of discretionary spending were made in mid-December 2018, reflecting laws that were then in place. At that time, only five of the 12 regular annual appropriation acts for 2019 (and one supplemental appropriation for disaster relief) had been enacted.¹⁹ Many federal agencies were operating under a continuing resolution (the Continuing Appropriations Act, 2019, which had been extended through December 21, 2018, by P.L. 115-298), which, with a few exceptions, continued the appropriations and authorities contained in appropriation acts for 2018.²⁰ Funding for those agencies subsequently lapsed when that resolution expired.²¹ For agencies affected by that lapse, CBO’s current baseline projections incorporate the amount of fiscal year 2019 funding that was provided before P.L. 115-298 expired on December 22, 2018, annualized (that is, as if that amount of funding had been provided for the entirety of the fiscal year).

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

17. In addition, the Consolidated Appropriations Act, 2018 (P.L. 115-141), established wildfire suppression as a category of spending that also will lead to an increase in the nondefense caps, subject to specified limits; that requirement will take effect in 2020.

18. The 2019 limit on discretionary budget authority does not include potential adjustments to reflect appropriations provided for purposes that are not constrained by the caps.

19. The Energy and Water, Legislative Branch, and Military Construction and Veterans Affairs Appropriations Act, 2019 (P.L. 115-244), and the Department of Defense and Labor, Health and Human Services, and Education Appropriations Act, 2019 (P.L. 115-245), provide full-year appropriations for almost all defense-related discretionary activities and just under half of the projected budget authority for nondefense discretionary programs. In addition, Division I of P.L. 115-254 (the FAA Reauthorization Act of 2018) contains the Supplemental Appropriations for Disaster Relief Act, 2018, which provides \$1.7 billion in supplemental funding for fiscal year 2019 and designates those amounts as emergency requirements.

20. Those agencies include the Departments of Agriculture; Commerce; Homeland Security; Housing and Urban Development; the Interior; Justice; State; Transportation; and the Treasury, as well as various independent agencies.

21. Some agencies affected by that lapse have continued to incur obligations by using balances of budget authority provided before 2019, or under the authorities of the Antideficiency Act (P.L. 97-258; in particular, for activities considered to be essential).

Table 3-5.

CBO's Baseline Projections of Discretionary Spending

Billions of Dollars

	Actual,												Total	
	2018 ^a	2019 ^a	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2020–2024	2020–2029
Budget Authority														
Defense	701	716	647	662	678	695	712	729	747	766	784	803	3,394	7,224
Nondefense	721	629	566	579	593	608	623	639	655	671	688	705	2,970	6,328
Total	1,422	1,345	1,213	1,241	1,272	1,303	1,335	1,368	1,402	1,437	1,472	1,509	6,363	13,552
Outlays^b														
Defense	622	664	648	652	667	675	685	706	723	740	764	771	3,328	7,032
Nondefense	642	670	647	647	652	663	677	693	708	724	741	759	3,286	6,911
Total	1,263	1,334	1,295	1,299	1,319	1,338	1,362	1,399	1,431	1,465	1,505	1,530	6,614	13,943
Memorandum:														
Caps in the Budget Control Act														
(As Amended), Including Automatic Reductions to the Caps														
Defense	629	647	576	590	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Nondefense	579	597	542	555	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total	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.	n.a.
Adjustments to the Caps^c														
Defense	72	69	70	72	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Nondefense	125	24	24	24	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total	197	93	94	96	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Source: Congressional Budget Office.

Some agencies experienced a lapse in appropriations when authorities contained in the Continuing Appropriations Act, 2019 (as extended by Public Law 115-298) expired on December 22, 2018. For those agencies, CBO's current baseline projections incorporate the amount of fiscal year 2019 funding that was provided before those authorities expired, annualized (that is, as if it was provided for the entirety of the fiscal year). They also 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 considered mandatory.

n.a. = not applicable.

- The amount of budget authority for 2018 and for 2019 in CBO's baseline does not match the sum of the caps on funding plus adjustments to the caps, mostly because changes to mandatory programs included in appropriation acts for those years (including those assumed to be enacted for 2019) are credited against the caps. In the baseline, those changes (which reduce mandatory budget authority in both years) appear in their normal mandatory accounts.
- The amounts in this table have *not* been adjusted to remove the effects of timing shifts. When October 1 (the first day of the fiscal year) falls on a weekend, certain payments—mainly for military pay—that would have ordinarily been made on that day are instead made at the end of September and thus are shifted into the previous fiscal year. Such a shift occurred in 2018; if outlays reflected for that year were adjusted to account for that shift they would be \$4 billion higher, totaling \$1,267, CBO estimates. CBO also estimates that timing shifts would increase outlays in 2022 and 2028 (by \$5 billion and \$6 billion, respectively) and reduce them in 2024 and 2029 (by \$5 billion and \$6 billion, respectively). Those adjustments would affect defense-related outlays.
- 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 2019 and the caps are adjusted accordingly. For two other activities—disaster relief and certain efforts to reduce overpayments in benefit programs—the extent to which the caps can be adjusted is subject to annual constraints, as specified in law. (Beginning in 2020, funding for wildfire suppression also will lead to an increase in the nondefense caps, subject to specified limits.) Finally, CBO follows a similar approach in projecting a portion of funding to carry out the 21st Century Cures Act (P.L. 114-255), which requires that discretionary funding for certain authorized activities—up to amounts specified in law—be excluded from calculations of the caps.

Total Discretionary Funding in 2019. Discretionary funding is projected to total \$1,345 billion this year, CBO estimates.²² (In addition, obligation limitations for transportation programs are projected to total nearly \$59 billion.)²³ Roughly three-quarters of that budget authority stems from full-year appropriations that have been enacted; the balance reflects CBO's estimate of the annualized amount of funding provided under P.L. 115-298. CBO's projection of discretionary funding for 2019 includes \$93 billion for activities that are not constrained by the funding caps. The remaining amount—\$1,253 billion—is nearly \$9 billion more than the overall limit on discretionary funding for 2019; that excess occurs because certain provisions in appropriation acts (those that have been enacted and those that are assumed to be enacted) are estimated to reduce net funding for mandatory programs in 2019. When appropriation acts include changes that reduce mandatory funding, the savings are credited against the discretionary funding provided by those acts in judging their compliance with the caps, allowing the gross amount of discretionary funding to exceed those limits. (In CBO's baseline projections, any such savings are incorporated into estimates of mandatory spending.)

Altogether, discretionary budget authority projected for 2019 totals nearly \$77 billion (or about 5 percent) less than last year's funding (see Table 3-6). That net change includes a \$104 billion (or 53 percent) reduction in funding that is not subject to the caps on discretionary funding, primarily because of a sharp drop in nondefense funding designated as an emergency requirement

22. The bulk of discretionary funding consists of specified amounts of appropriations. However, CBO's projection of funding for 2019 includes estimates of some components of discretionary funding—for example, market-driven fees that are credited as offsets to discretionary appropriations.

23. Certain programs related to ground and air transportation have a unique budgetary treatment: Authorizing laws provide them with mandatory contract authority, but, because outlays of that funding are usually constrained by obligation limitations specified in appropriation acts, those outlays are classified as discretionary. As a result, although the bulk of transportation-related budget authority is considered mandatory, obligation limitations are considered a discretionary budgetary resource, and resulting outlays are classified as discretionary. Those obligation limitations constrain outlays of underlying mandatory budget authority only during periods when they are in effect. (The largest program with that mixed budgetary treatment is the Federal-Aid Highway program, which is funded from the Highway Trust Fund.)

following the historically large amounts provided in 2018 (mostly in response to hurricanes and wildfires). That reduction in funding for activities that are not constrained by the caps was partially offset by a \$27 billion (or 2 percent) increase in projected funding for activities that are constrained by those limits.

Despite the overall net reduction in funding, CBO projects an increase in outlays this year because some of the large increases in both defense and nondefense funding provided in 2018 will be spent in 2019. Excluding the effects of timing shifts related to military pay (which, by CBO's estimates, caused defense outlays to be \$4 billion less in 2018 than they otherwise would have been), discretionary outlays are projected to rise by \$67 billion (or 5 percent) in 2019. All told, CBO projects discretionary outlays totaling \$1,334 billion in 2019—which is equal to 6.3 percent of GDP, well below the average of 8.4 percent over the past 50 years (see Figure 3-3).

Defense Funding in 2019. Both budget authority and outlays for defense increase in 2019 compared with last year's amounts. In CBO's projections, defense funding in 2019 totals \$716 billion—which is \$15 billion (or 2 percent) more than in 2018. (The Congress provided full-year appropriations for virtually all defense-related activities near the start of fiscal year 2019.)²⁴ As a whole, excluding the effects of timing shifts, outlays for defense programs in 2019 are projected to rise by \$38 billion (or 6 percent) to a total of \$664 billion. As a share of GDP, discretionary defense outlays are projected to total 3.1 percent in 2019, significantly less than the average percentage over the past 50 years (4.6 percent).

How Defense Funding for 2019 Relates to the Caps.

The increase in this year's defense funding includes an \$18 billion increase in funding subject to the limit on defense appropriations (bringing the total for such funding to \$647 billion, equal to the cap for 2019) and a \$3 billion net reduction in funding for activities that are not constrained by that limit. That net reduction includes a \$6 billion drop in funding designated as an emergency requirement and a \$3 billion increase

24. By CBO's estimates, \$708 billion of the 2019 total for defense funding stems from full-year appropriations. The remaining \$8 billion reflects CBO's annualized estimate of the amount of defense funding provided by P.L. 115-298.

Table 3-6.

Projected Changes in Discretionary Budget Authority From 2018 to 2019

Billions of Dollars

	Actual, 2018	Estimated, 2019 ^a	Percentage Change
Defense			
Funding constrained by caps	629	647	2.8
Funding for overseas contingency operations	66	69	4.4
Other funding not constrained by caps ^b	6	0	n.a.
Subtotal	701	716	2.1
Nondefense			
Funding constrained by caps	596	606	1.6
Funding for overseas contingency operations	12	12	0.0
Other funding not constrained by caps ^b	113	12	-89.6
Subtotal	721	629	-12.7
Total Discretionary Budget Authority			
Funding constrained by caps	1,225	1,253	2.2
Funding for overseas contingency operations	78	81	3.7
Other funding not constrained by caps ^b	119	12	-90.1
Total	1,422	1,345	-5.4

Source: Congressional Budget Office.

Some agencies experienced a lapse in appropriations when authorities contained in the Continuing Appropriations Act, 2019 (as extended by Public Law 115-298) expired on December 22, 2018. For those agencies, CBO's current baseline projections incorporate the amount of fiscal year 2019 funding that was provided before those authorities expired, annualized (that is, as if it was provided for the entirety of the fiscal year).

n.a. = not applicable.

a. The total amount of estimated funding for 2019 includes \$1,016 billion in enacted full-year appropriations for 2019—\$708 billion for defense and \$308 billion for nondefense. Additional amounts reflect CBO's annualized estimate of budget authority under continuing resolutions enacted for that year.

b. Some or all funding for emergencies, disaster relief, certain efforts to reduce overpayments in benefit programs, and certain activities designated in the 21st Century Cures Act (P.L. 114-255) is not constrained by the statutory caps established by the Budget Control Act of 2011 (P.L. 112-25).

in funding for OCO, bringing the total for OCO to \$69 billion this year.²⁵

Categories of Defense Funding. Three major categories of funding for the Department of Defense account for most of the defense appropriations for 2019, as they have in preceding years (see Figure 3-4). Operation and maintenance (\$279 billion), military personnel (\$151 billion), and procurement (\$147 billion) account for 81 percent of total funding. Research and development (\$95 billion) accounts for an additional 13 percent of defense-related funding. The remaining 6 percent comprises funding for military construction, family housing, and other Department of Defense programs (\$13 billion); funding

for atomic energy activities, primarily within the Department of Energy (\$22 billion); and funding for various defense-related programs and other departments and agencies (\$8 billion).

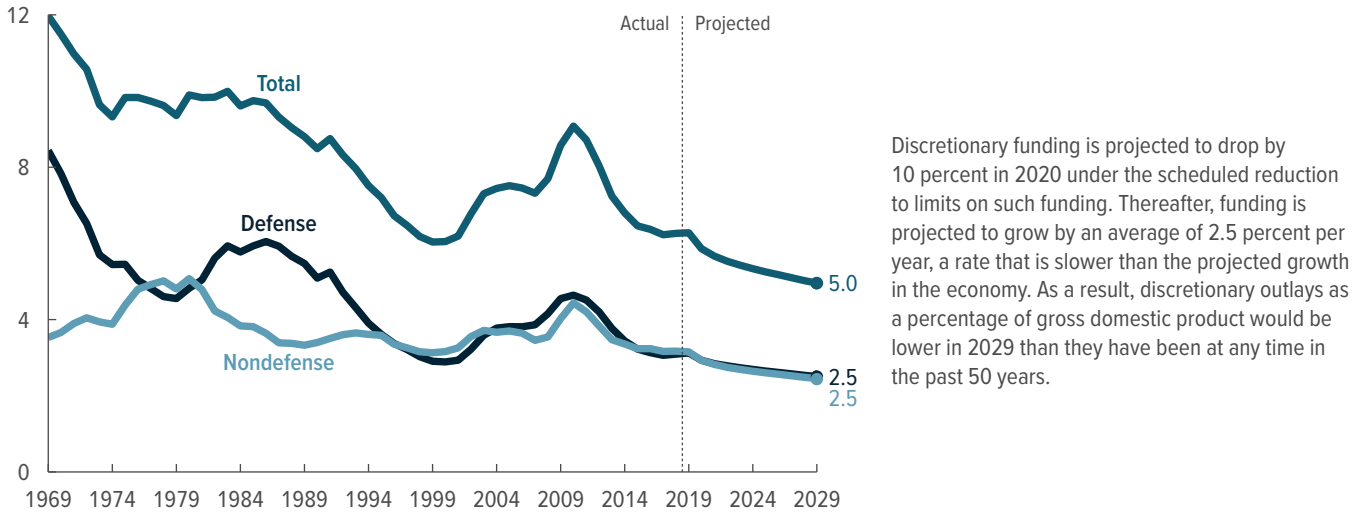
Nondefense Funding in 2019. CBO's projections for nondefense spending this year show a reduction in funding (compared with amounts in 2018) but an increase in outlays. Budget authority for nondefense activities in 2019 is projected to total \$629 billion. In addition, CBO projects obligation limitations for transportation programs totaling \$59 billion (the same amount as last year), bringing the total amount of new discretionary budgetary resources for 2019 to \$688 billion (see Table 3-7 on page 83). (About 45 percent of those discretionary budgetary resources for 2019 stem from full-year appropriation acts; the rest reflect the annualized

25. In addition, CBO projects nondefense funding for OCO totaling \$12 billion in 2019, the same amount as last year.

Figure 3-3.

Discretionary Outlays, by Category

Percentage of Gross Domestic Product



Discretionary funding is projected to drop by 10 percent in 2020 under the scheduled reduction to limits on such funding. Thereafter, funding is projected to grow by an average of 2.5 percent per year, a rate that is slower than the projected growth in the economy. As a result, discretionary outlays as a percentage of gross domestic product would be lower in 2029 than they have been at any time in the past 50 years.

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

When October 1 (the first day of the fiscal year) falls on a weekend, certain payments that would have ordinarily been made on that day are instead made at the end of September and thus are shifted into the previous fiscal year. Outlays have been adjusted to exclude the effects of those shifts.

amounts provided under P.L. 115-298.) Overall, non-defense budget authority for 2019 totals \$92 billion (or nearly 13 percent) less than in 2018.

Despite that large reduction, however, CBO projects an increase of \$28 billion (or 4 percent) in nondefense outlays this year, as agencies continue to spend the relatively large increases in nondefense funding provided last year. Altogether, nondefense outlays are projected to total \$670 billion this year, or nearly 3.2 percent of GDP. By comparison, discretionary nondefense outlays over the past 50 years have, on average, totaled 3.8 percent of GDP.

How Nondefense Funding for 2019 Relates to the Caps.

Funding that is subject to the limit on nondefense appropriations is estimated to total \$606 billion this year—over \$9 billion (or 2 percent) more than it did last year. That funding is nearly \$9 billion more than the 2019 limit on nondefense funding (\$597 billion) because of estimated reductions in mandatory budget authority included in appropriation acts that provide nondefense funding; those reductions allow gross discretionary budget authority to

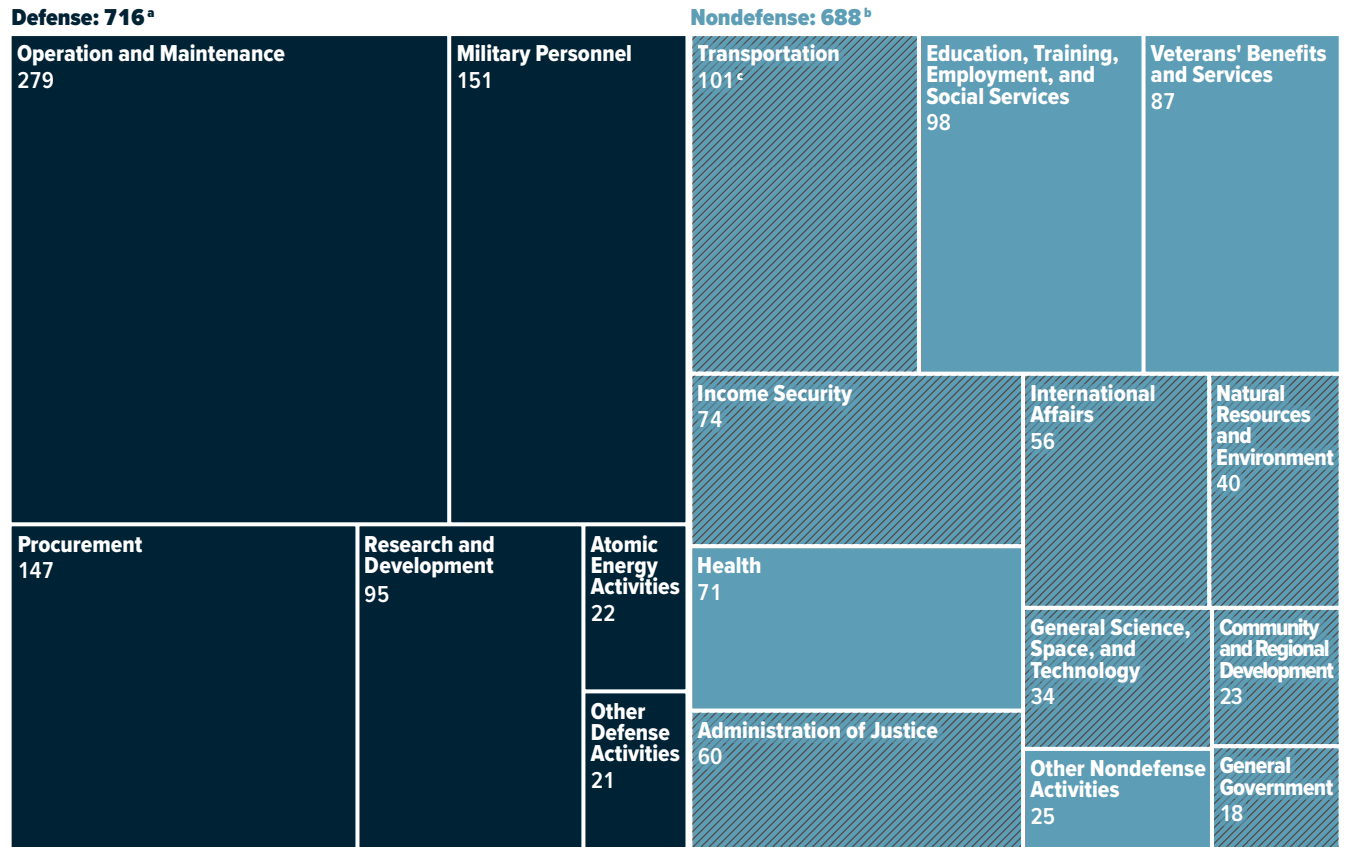
exceed the cap.²⁶ Meanwhile, funding for activities that are not constrained by the limit on nondefense funding sums to \$24 billion and includes \$12 billion for OCO, \$7 billion for disaster relief, and \$5 billion for emergency requirements (mostly for assistance to communities affected by wildfires and other major disasters declared in 2018) and other activities. In total, funding for activities not constrained by the nondefense limit for 2019 totals \$101 billion (or 90 percent) less than the historically large amount provided in 2018, most of which was designated as an emergency requirement related to hurricanes Harvey, Irma, and Maria and wildfires in western states (see Figure 3-5 on page 84).

26. CBO estimates such offsets to discretionary budget authority totaling \$15 billion in 2019. Approximately half of that amount is from reductions that were included in the five full-year appropriation acts that have been enacted for 2019; the remainder reflects CBO's annualized estimate of mandatory savings attributable to provisions of P.L. 115-298. In total, CBO's estimate of mandatory savings credited to appropriation bills in 2019 is about \$3 billion less than the average amount of estimated reductions in mandatory spending included in nondefense appropriation acts over the 2012–2018 period.

Figure 3-4.

Projected New Discretionary Budgetary Resources for Defense and Nondefense Activities in 2019

Billions of Dollars



More than two-thirds of the budgetary resources in these categories are projected on the basis of funding in P.L. 115-298.

Source: Congressional Budget Office.

Some agencies experienced a lapse in appropriations when authorities contained in the Continuing Appropriations Act, 2019 (as extended by Public Law 115-298), expired on December 22, 2018. For those agencies, CBO's current baseline projections incorporate the amount of fiscal year 2019 funding that was provided before those authorities expired, annualized (that is, as if it was provided for the entirety of the fiscal year).

- a. Includes \$708 billion in enacted full-year appropriations and \$8 billion in funding projected on the basis of P.L. 115-298.
- b. Includes \$308 billion in enacted full-year appropriations and \$380 billion in new budgetary resources projected on the basis of P.L. 115-298.
- c. Includes \$42 billion in projected budget authority and \$59 billion in projected obligation limitations.

Categories of Nondefense Discretionary Resources. Seven broad budget categories (referred to as budget functions) account for about 80 percent of the \$688 billion in new discretionary resources that CBO projects to be available in 2019. Transportation programs make up nearly 15 percent of the total, with appropriations and obligation limitations totaling \$101 billion. Activities related to education, training, employment, and social services constitute \$98 billion (or 14 percent) of nondefense

discretionary funding.²⁷ Funding for programs related to veterans' benefits and services totals \$87 billion (or 13 percent), and funding for programs related to income

27. Spending for student loans and for several other federal programs in the category of education, training, employment, and social services is not included in that total because funding for those programs is considered mandatory.

Table 3-7.

Projected Changes in New Nondefense Discretionary Budgetary Resources From 2018 to 2019

Billions of Dollars

Budget Function	Actual, 2018	Enacted Full-Year Appropriations ^a	Other Projected Budgetary Resources ^b	Total Resources for 2019 (Enacted and projected)	Total Change From 2018
Transportation ^c	104	0	101	101	-3
Education, Training, Employment, and Social Services	102	96	3	98	-3
Community and Regional Development	94	2	21	23	-71
Veterans' Benefits and Services	82	87	0	87	5
Income Security	74	23	51	74	*
Health	70	61	10	71	1
Administration of Justice	61	*	60	60	*
Natural Resources and Environment	59	8	31	40	-19
International Affairs	56	*	56	56	*
General Science, Space, and Technology	34	7	28	34	*
General Government	18	4	13	18	*
Agriculture	9	*	7	7	-2
Medicare	7	7	0	7	*
Energy	7	7	*	7	*
Social Security	6	6	0	6	*
Commerce and Housing Credit	-3	*	-2	-2	1
Total	780	308	380	688	-92

Source: Congressional Budget Office.

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

a. Reflects full-year appropriations that have been enacted for 2019.

b. Reflects CBO's estimate of the amount of budgetary resources provided under continuing resolutions enacted for 2019, annualized (that is, as if those resources were provided for the entirety of the fiscal year). The most recent such resolution (Public Law 115-298) expired on December 22, 2018. Some of the amounts in this table were apportioned by the Office of Management and Budget before that date. In addition, some agencies affected by the lapse in appropriations have continued to incur obligations for activities deemed essential. CBO has no basis for estimating those amounts.

c. Includes \$42 billion in budget authority and \$59 billion in obligation limitations for certain ground and air transportation programs.

security totals \$74 billion (or 11 percent).²⁸ Health programs account for \$71 billion (or 10 percent) of the total, while activities related to the administration of justice and international affairs constitute, respectively, \$60 billion (or 9 percent) and \$56 billion (or 8 percent) of the total.

Two other budget categories, which received the bulk of last year's historically large appropriations for emergency requirements related to hurricanes, wildfires, and other major disasters, account for most of this year's

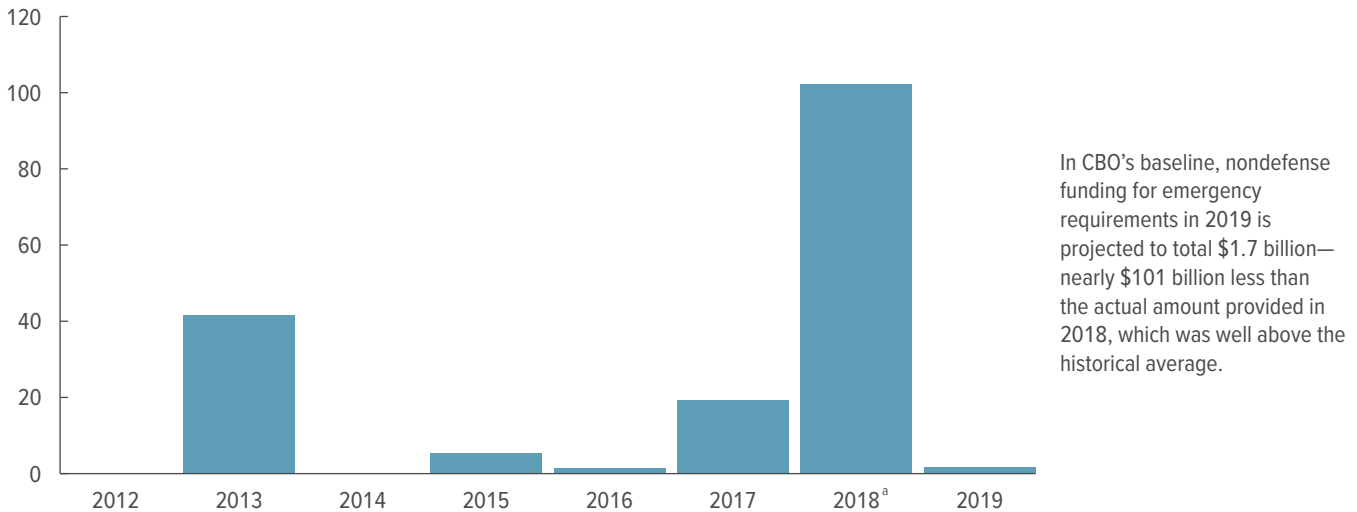
drop in nondefense funding. Specifically, projected funding for community and regional development—which includes disaster relief and other activities of the Federal Emergency Management Agency, as well as the Department of Housing and Urban Development's Community Development Block Grant program—plummets from \$94 billion to \$23 billion this year, a 76 percent reduction. Projected funding for natural resources and the environment declines from \$59 billion to \$40 billion (or by 32 percent). That budget category includes funding for wildfire suppression and activities of the Corps of Engineers, which received large appropriations in 2018 to repair damaged infrastructure following hurricanes and floods in 2017 and to construct projects to mitigate damage from future storms.

28. Most of the discretionary funding for veterans' benefits and services is used to provide health care; spending for most other benefits provided to veterans is categorized as mandatory. Likewise, funding for some significant income security programs, such as unemployment compensation and TANF, is not included in discretionary totals because those programs are included in mandatory spending.

Figure 3-5.

Discretionary Nondefense Funding for Emergency Requirements

Billions of Dollars



Source: Congressional Budget Office.

a. Excludes almost \$18 billion in additional budget authority from changes to mandatory programs that also were designated as emergency requirements.

CBO's Baseline Projections of Discretionary Spending From 2020 to 2029

In CBO's projections, discretionary funding and outlays in future years are lower relative to the size of the economy than they are projected to be in 2019, largely as a result of provisions in current law. Discretionary funding for 2020 and 2021 falls sharply in CBO's projections because the limits on most such funding in those years are much lower than they are for 2019. That drop in funding causes total discretionary outlays in CBO's baseline projections to decrease by 3 percent in 2020 and remain about the same in 2021; they grow by about 2 percent a year thereafter, reaching \$1,535 billion in 2029. As a share of GDP, however, discretionary outlays gradually decline from 5.9 percent in 2020 to 5.0 percent in 2029. (The 2029 amounts exclude the effects of timing shifts.) Over the past 50 years, discretionary outlays have never been less than 6.0 percent of GDP (in 1999), and they have averaged 8.4 percent.

Discretionary Funding in 2020. Although the limits on discretionary funding fall by an estimated \$126 billion

in 2020, adhering to those stricter limits will require a larger net reduction—of \$133 billion—in overall budget authority, CBO estimates, because of offsets to discretionary budget authority for 2019. (That net change includes a \$1 billion projected increase in funding not constrained by the caps.) By CBO's estimates, discretionary funding for defense and nondefense programs would decline by about 10 percent each in 2020, or by \$69 billion and \$64 billion, respectively.

The estimated reduction in budget authority for 2020 exceeds the drop in the caps for that year because gross discretionary funding in 2019 currently exceeds (by nearly \$9 billion) the caps for this year. (That excess results from offsets to discretionary budget authority stemming from estimated reductions in mandatory budget authority, which are typically included in appropriation acts that provide nondefense funding and which allow discretionary funding to exceed the caps.) If similar reductions to mandatory budget authority were included in appropriation acts for 2020, reductions to discretionary budget authority required to comply with the

caps for that year could be smaller. No such changes to mandatory programs are reflected in CBO's projections, though, because none have been enacted yet.²⁹

Discretionary Funding in 2021 and Subsequent Years.

In CBO's baseline projections, discretionary funding limits rise by nearly 2.4 percent in 2021, but projected budget authority rises by only about 2.3 percent. That slight difference results because CBO projects that funding for activities that are not constrained by the caps would grow by only 2.1 percent in 2021, reflecting the anticipated rates of inflation for those activities in that year. Starting in 2022, in the absence of caps, overall budget authority is projected to rise at an average annual rate of nearly 2.5 percent, following the assumption that most discretionary funding grows with inflation.

Alternative Assumptions About Discretionary Spending

If the policies governing discretionary funding varied 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 alternative paths for discretionary funding (see Chapter 5).

Net Interest

In the budget, net interest outlays primarily encompass 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 Treasury Department issues to the public. The Treasury also pays interest on debt issued to trust funds and other government accounts, but such payments are intragovernmental transactions that have no effect on the budget deficit. (For more information on federal debt, see Chapter 1.) Other federal accounts also pay and receive interest for various reasons.³⁰

In CBO's projections, outlays for net interest increase from \$325 billion in 2018 to \$383 billion (or 1.8 percent of GDP) in 2019 and more than double by 2029,

to \$928 billion. As a result, under current law, outlays for net interest are projected to reach 3.0 percent of GDP in 2029, 1 percentage point higher than their 50-year average as a share of economic output.

The primary factors that affect the federal government's net interest costs are the amount of debt held by the public and interest rates on Treasury securities. Other factors include the rate of inflation applicable to Treasury inflation-protected securities and the maturity structure of outstanding securities (for example, longer-term securities generally pay higher interest rates).

The increase in federal borrowing projected in the baseline is the most significant factor affecting the projected growth in net interest costs. Debt held by the public is projected to rise by 82 percent (in nominal terms) over the next 11 years, increasing from \$15.8 trillion, or 78 percent of GDP, at the end of 2018 to \$28.8 trillion, or 93 percent of GDP, in 2029.

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. For example, the rise in interest costs on marketable debt held by the public stemming from changes in interest rates alone causes about one-third of the total increase in interest costs from 2018 to 2029.³¹ The rate paid on three-month Treasury bills is projected to rise from an average of 2.6 percent in 2019 to 3.2 percent in 2021 before falling back to 2.8 percent in 2024 and remaining close to that rate through 2029. Similarly, the rate on 10-year Treasury notes is projected to climb to 3.7 percent in 2021, roughly where it is projected to remain through 2029. (For a more detailed discussion of CBO's forecast of interest rates, see Chapter 2.)

Uncertainty Surrounding the Spending Outlook

Budget projections are inherently uncertain; even if no changes were made to current law, actual outcomes would undoubtedly differ from CBO's projections. The

29. Since 2012, the first year in which the caps specified in the Budget Control Act applied to discretionary funding, such offsets to discretionary budget authority have averaged nearly \$18 billion per year, thus allowing discretionary funding in each year to exceed the statutory limits by about that amount.

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

31. If, instead of increasing as in CBO's economic forecast, interest rates remained constant at the rates in effect at the end of fiscal year 2018, outlays for interest on marketable debt held by the public would be lower than in CBO's baseline forecast by \$9 billion in 2019; that reduction would steadily increase over the projection period, reaching \$182 billion in 2029. The cumulative reduction in outlays would result in a decrease of \$1.1 trillion in debt at the end of the period.

agency attempts to construct its spending projections so that they fall in the middle of the range of possible outcomes under current law. Hence, actual outlays could turn out to be higher or lower than CBO projects, both because laws could change and because outcomes could (and probably will) differ from CBO's estimates.

According to CBO's analysis of the accuracy of its past projections of outlays (excluding the effects of enacted legislation), those projections were generally close to actual amounts but, on average, were too high.³² In

32. Those comparisons reflect adjustments made to exclude the effects of legislation enacted after the projections were prepared. See Congressional Budget Office, *The Accuracy of CBO's Baseline Estimates for Fiscal Year 2018* (December 2018), www.cbo.gov/publication/54872, and *An Evaluation of CBO's Past Outlay Projections* (November 2017), www.cbo.gov/publication/53328.

projections CBO made from 1985 to 2017, the mean absolute error—that is, the average of all errors without regard to whether they were positive or negative—was 2.3 percent of outlays (or 0.5 percent of GDP) for the agency's projections made for the following fiscal year and 6.0 percent of outlays (or 1.2 percent of GDP) for its projections made for the sixth year out. Applying those historical mean absolute errors to CBO's current projections of outlays would produce outcomes that were higher or lower than CBO's baseline by about \$105 billion in 2020 and by about \$325 billion in 2024. To improve its estimating methodology, CBO continually examines errors in its past projections, reviews data on spending patterns for federal programs, and consults with outside experts on those programs.

The Revenue Outlook

Overview

In the Congressional Budget Office's baseline projections, which incorporate the assumption that current laws generally remain unchanged, total revenues rise by 5.6 percent in 2019, to just over \$3.5 trillion. As a percentage of gross domestic product (GDP), revenues are expected to rise slightly this year but to remain below the average of 17.4 percent of GDP recorded over the past 50 years (see Figure 4-1). Over the next decade, revenues are projected to rise markedly—reaching a share of the nation's economic output that is almost 1 percentage point higher than the long-term average.

What Key Factors Explain Changes in Revenues Over Time?

Although revenues declined as a percentage of GDP between 2017 and 2018—from 17.2 percent in 2017 to 16.4 percent in 2018—CBO projects that, under current law, receipts would rise over the next decade, reaching 18.3 percent of GDP in 2029. The decline in receipts in 2018 resulted from the enactment in December 2017 of Public Law 115-97, referred to in this report 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.

Following that decline, CBO expects receipts to begin to rise again in 2019, growing slightly relative to the size of the economy, to 16.5 percent of GDP. After 2019, revenues are projected to continue to rise steadily through 2025, reaching 17.4 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, revenues are projected to reach 17.9 percent in 2026 and 18.3 percent in 2029. 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).

The projected 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, including lower statutory tax rates. In addition to those expirations, other factors are expected to cause receipts to grow throughout the next decade, primarily because wages are projected to grow faster than GDP and real bracket creep, which occurs when income rises faster than inflation, is projected to cause income to be taxed at higher rates, boosting taxes relative to income.
- *Corporate income tax receipts* are projected to rise as a percentage of GDP after 2019 for two main reasons. First, changes in tax rules that are scheduled to occur over the next decade would gradually boost receipts, on net. Second, CBO expects that the factors responsible for recent unexplained weakness in corporate tax collections will gradually dissipate. A projected 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 rise at a modest rate after 2019. Revenues from payroll taxes, estate and gift taxes, and remittances from the Federal Reserve are each projected to edge up slightly as a share of the economy.

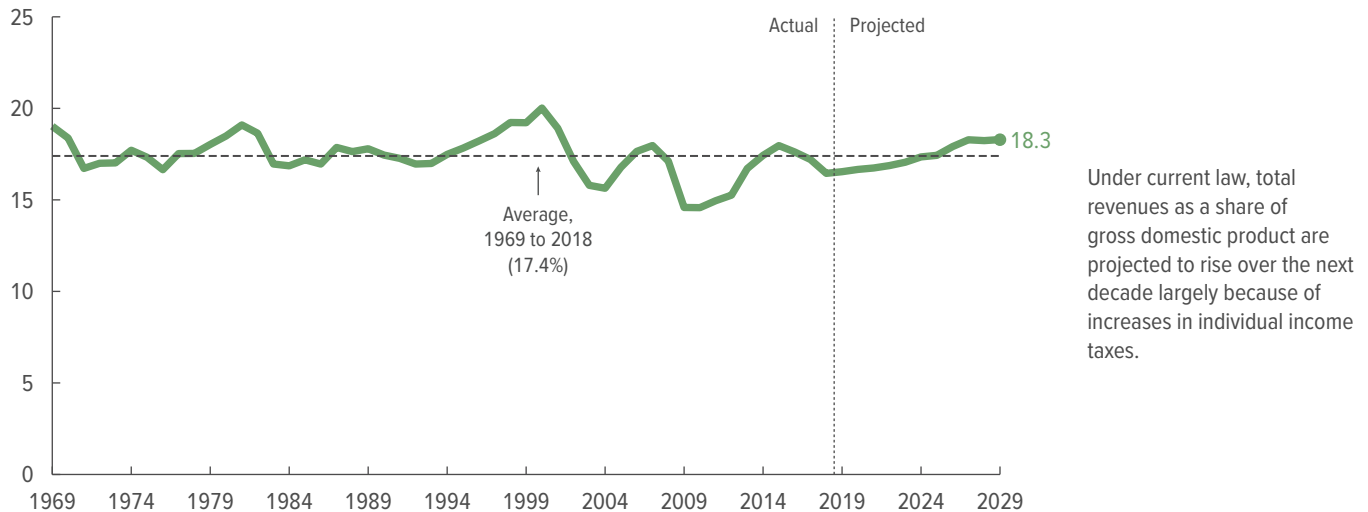
How Have CBO's Projections Changed Since the Spring of 2018?

CBO's revenue projections for the 2019–2028 period are lower than those the agency released in the spring of 2018 (that is, in CBO's adjusted April baseline). At that time, CBO published revenue projections for the 2018–2028 period; the projections in this report cover the 2019–2029 period. For the overlapping years—2019 through 2028—the current projections are below the

Figure 4-1.

Total Revenues

Percentage of Gross Domestic Product



Source: Congressional Budget Office.

previous ones by \$173 billion (or 0.4 percent). That reduction stems from a number of technical revisions, which lowered projected receipts, on net. Although new tariffs imposed by the Administration during the past year boost projected receipts from customs duties, those increases are more than offset by lower projections of individual income, corporate income, and payroll taxes stemming from new data about past income and taxes. Those downward revisions are partially offset by changes to the agency's economic forecast, primarily to projections of GDP and the types of income that comprise GDP, such as wages and salaries, corporate profits, and proprietors' income. (For more information on changes to CBO's revenue projections since the spring of 2018, 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 2019, the more than 200 tax expenditures in the income tax system will total more than \$1.6 trillion, including their effects on individual income, payroll, and corporate income taxes. That amount would equal 7.8 percent of GDP—almost half of all federal revenues received in that year.

How Uncertain Are CBO's Revenue Projections?

Revenue projections are inherently uncertain, and the agency attempts to construct its projections so that they fall in the middle of the distribution of possible outcomes. CBO's revenue projections in recent decades have, on average, been too high, owing mostly to the difficulty of forecasting when economic downturns will occur. Since 1982, the mean absolute error—that is, the average of all errors without regard for whether they were positive or negative—was about 5 percent for CBO's budget-year projections and 10 percent for the sixth-year projections. However, the overall accuracy of those projections has been similar to that of projections produced by others.

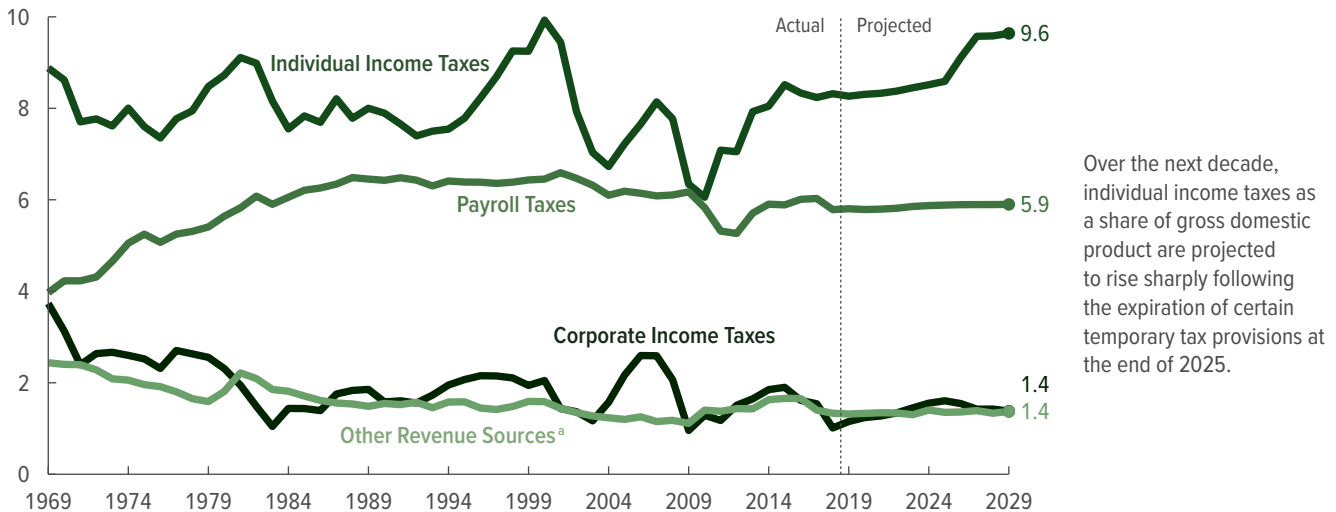
The Evolving Composition of Revenues

Federal revenues come from various sources: individual income taxes; payroll taxes, which are dedicated to certain social insurance programs; corporate income taxes;

Figure 4-2.

Revenues, by Major Source

Percentage of Gross Domestic Product



Source: Congressional Budget Office.

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

excise taxes; earnings of the Federal Reserve System, 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 34 percent of total revenues (equal to 5.9 percent of GDP) over the same period. Corporate income taxes constituted 11 percent of revenues (or 1.9 percent of GDP) over the past 50 years, and all other sources combined accounted for about 9 percent of revenues (or 1.6 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 51 percent of total revenues (and from 6.1 percent to 9.9 percent of GDP) between 1969 and 2018. 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 4-2).

- 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 temporarily 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 observed.

- 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 System and more receipts from fees and fines.

If current tax laws generally remained in effect—an assumption underlying CBO’s baseline—individual income taxes would generate a growing share of revenues and account for most of the projected increase in revenues as a share of GDP over the next decade, CBO projects. By 2029, they would reach 9.6 percent of GDP, an amount that was exceeded only once over the past 50 years and that is well above the average of 8.0 percent over that period. Receipts from payroll taxes are projected to remain relatively stable over the next decade, rising gradually from 5.8 percent in 2018 to 5.9 percent by 2029. Corporate income taxes would make a slightly smaller contribution than they have made on average for the past 50 years, supplying about 8.0 percent of total revenues and averaging about 1.4 percent of GDP over the 2019–2029 period. Taken together, the remaining sources of revenue are projected to average about 1.4 percent of GDP from 2019 through 2029, slightly more than their percentage in 2018.

Individual Income Taxes

In 2018, receipts from individual income taxes totaled nearly \$1.7 trillion, or 8.3 percent of GDP. Under current law, individual income taxes are expected to rise by 4 percent, to over \$1.7 trillion in 2019, CBO projects. That percentage increase would be slightly smaller than the 5 percent increase expected for nominal GDP, and individual income tax receipts would remain close to 8.3 percent of GDP. The projected stability in individual income tax receipts as a share of the economy in 2019 reflects offsetting factors. Changes in tax law, enacted in December of 2017, reduced receipts in 2018 and are estimated to further reduce receipts relative to GDP by 0.3 percentage points in 2019, the first full fiscal year following enactment. However, those changes are offset by other factors in 2019, including real bracket creep.

CBO projects that, if current laws remained unchanged, individual income tax receipts would rise by 1.4 percentage points as a share of economic output over the next decade (see Table 4-1). More than two-thirds of that projected increase results from the expiration of provisions

of the 2017 tax law that have temporarily lowered receipts relative to taxable personal income. The remainder results from real bracket creep and other factors.

Expiration of Temporary Tax Provisions After 2025

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 act. The provisions that are scheduled to expire include lower statutory tax rates, the higher standard deduction, the repeal of personal exemptions, and the expansion of the child tax credit. Those expirations would cause tax liabilities to rise in calendar year 2026, boosting receipts in subsequent fiscal years. CBO projects that the expiration of those tax provisions would boost individual income tax receipts relative to GDP by 0.8 percentage points over the next decade (see Figure 4-3). (For estimates of the effect on the budget of extending those and other temporary tax provisions, see Chapter 5.)

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 (inflation-adjusted) economic activity and inflation. The most important component of that effect, real bracket creep, occurs because income tax brackets are indexed 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 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 2019 to 2029. (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 amount of inflation in the economy, the effect of real bracket creep and related factors will tend to be slightly greater than in previous years.)

Table 4-1.

CBO's Baseline Projections of Revenues

	Actual, 2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total	
													2020– 2024	2020– 2029
In Billions of Dollars														
Individual Income Taxes	1,684	1,756	1,837	1,910	1,992	2,085	2,184	2,290	2,521	2,752	2,861	2,989	10,007	23,420
Payroll Taxes	1,171	1,233	1,280	1,330	1,383	1,444	1,506	1,568	1,631	1,694	1,761	1,830	6,943	15,426
Corporate Income Taxes	205	245	274	292	319	358	399	428	427	409	426	428	1,642	3,760
Other														
Excise taxes	95	98	108	111	114	106	133	123	127	132	119	137	571	1,208
Federal Reserve remittances	71	50	47	52	58	63	70	75	80	81	87	89	290	703
Customs duties	41	74	79	82	85	88	90	93	97	100	102	105	424	921
Estate and gift taxes	23	17	18	19	20	21	22	23	24	36	39	42	100	265
Miscellaneous fees and fines	40	41	43	44	42	43	45	46	48	50	51	53	217	467
Subtotal	270	280	294	308	318	321	360	361	377	400	399	426	1,602	3,564
Total	3,329	3,515	3,686	3,841	4,012	4,208	4,448	4,647	4,956	5,254	5,446	5,672	20,195	46,170
On-budget	2,474	2,613	2,745	2,862	2,997	3,153	3,350	3,506	3,770	4,023	4,168	4,345	15,108	34,921
Off-budget ^a	855	902	940	978	1,015	1,055	1,098	1,141	1,185	1,231	1,278	1,327	5,087	11,249
Memorandum:														
Gross Domestic Product	20,236	21,252	22,120	22,939	23,778	24,672	25,642	26,656	27,667	28,738	29,862	31,006	119,151	263,080
As a Percentage of Gross Domestic Product														
Individual Income Taxes	8.3	8.3	8.3	8.3	8.4	8.4	8.5	8.6	9.1	9.6	9.6	9.6	8.4	8.9
Payroll Taxes	5.8	5.8	5.8	5.8	5.8	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.8	5.9
Corporate Income Taxes	1.0	1.2	1.2	1.3	1.3	1.5	1.6	1.6	1.5	1.4	1.4	1.4	1.4	1.4
Other														
Excise taxes	0.5	0.5	0.5	0.5	0.5	0.4	0.5	0.5	0.5	0.5	0.4	0.4	0.5	0.5
Federal Reserve remittances	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3
Customs duties	0.2	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.4	0.3
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	1.3	1.3	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.4	1.3	1.4	1.3	1.4
Total	16.4	16.5	16.7	16.7	16.9	17.1	17.3	17.4	17.9	18.3	18.2	18.3	16.9	17.5
On-budget	12.2	12.3	12.4	12.5	12.6	12.8	13.1	13.2	13.6	14.0	14.0	14.0	12.7	13.3
Off-budget ^a	4.2	4.2	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.

Other Factors

CBO anticipates that over the next decade, other factors would have smaller and partially offsetting effects on individual income tax revenues, boosting those receipts by 0.1 percent of GDP, on net. One factor underlying that increase is projected growth in taxable components of personal income in relation to growth in GDP. (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

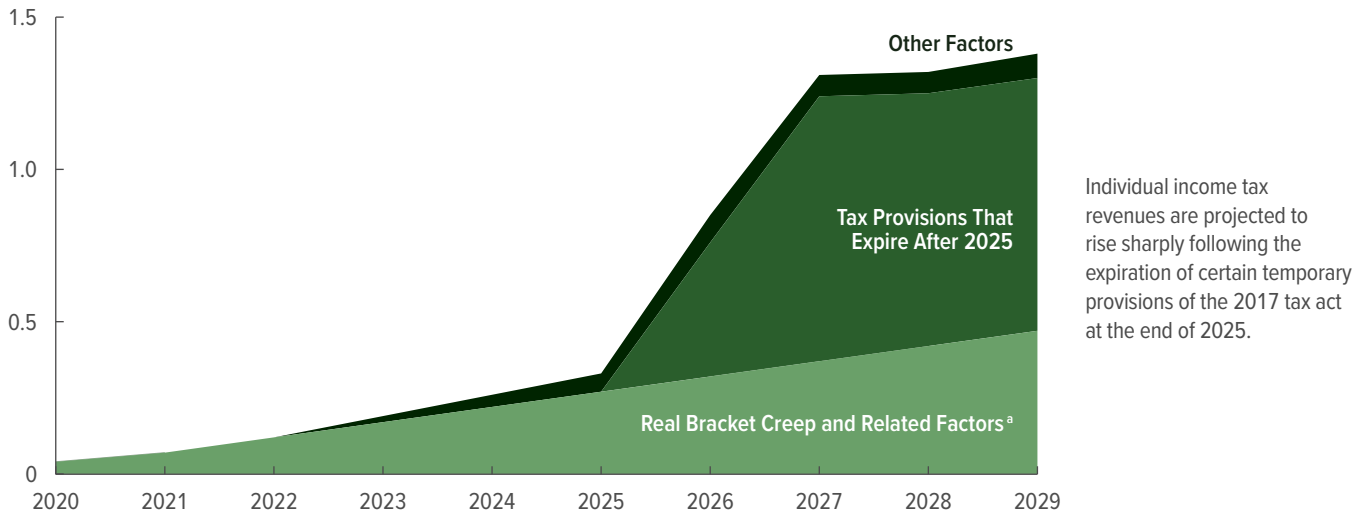
for use in its national income and product accounts.) According to CBO's projections, taxable personal income would grow at a rate of 4.0 percent per year over the next decade, largely as a result of increases in wages and salaries. That income growth is faster than the expected growth in nominal GDP and would boost receipts relative to GDP by 0.1 percentage point.

In CBO's baseline projections, earnings from wages and salaries are expected to increase faster for people

Figure 4-3.

Growth of Individual Income Tax Receipts in CBO's Baseline Projections

Percentage of Gross Domestic Product



Source: Congressional Budget Office.

a. Real bracket creep is the process in which, as income rises faster than inflation, an ever-larger proportion of income becomes subject to higher tax rates.

with higher earnings than for others during the next decade—as has been the case for the past several decades. That faster growth in earnings for people with higher wages and salaries 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.¹

Furthermore, as the population continues to age, 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 0.1 percentage point over the next decade.

Finally, in addition to the individual tax provisions that are scheduled to expire after 2025, rules allowing 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 noncorporate businesses, whose owners' business income is subject to the individual income tax, boosting receipts by 0.1 percent of GDP by 2029.

In the other direction, a decline in realizations of capital gains would lower receipts relative to GDP over the next decade, CBO estimates. Those realizations have been relatively high recently, and CBO anticipates that 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 2020–2025 period—would reduce individual

1. CBO projects that 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 4-2.

CBO's Baseline Projections of Payroll Tax Revenues

Billions of Dollars

	Actual,												Total	
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2020–2024	2020–2029
Social Security	855	902	940	978	1,015	1,055	1,098	1,141	1,185	1,231	1,278	1,327	5,087	11,249
Medicare	261	278	292	305	317	330	344	359	374	389	406	423	1,587	3,537
Unemployment Insurance	45	43	37	35	38	46	50	54	56	58	61	63	207	499
Railroad Retirement	6	6	6	6	6	6	7	7	7	7	7	7	31	66
Other Retirement ^a	5	5	5	6	6	7	7	8	8	9	9	10	30	74
Total	1,171	1,233	1,280	1,330	1,383	1,444	1,506	1,568	1,631	1,694	1,761	1,830	6,943	15,426

Source: Congressional Budget Office.

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

income taxes relative to GDP by about 0.3 percentage points.²

Payroll Taxes

Receipts from payroll taxes, which fund social insurance programs, totaled about \$1.2 trillion in 2018, or 5.8 percent of GDP. In CBO's projections, those receipts remain at 5.8 percent of GDP in 2019 and slowly rise to 5.9 percent of GDP in 2029. The yearly growth in payroll taxes as a percentage of GDP from 2019 through 2029 is consistent with growth in wages as a share of GDP over that period.

Sources of Payroll Tax Receipts

The two largest sources of payroll taxes are those that are dedicated to Social Security and Medicare Part A. 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 4-2). The premiums that Medicare enrollees pay for Part B (Medical Insurance) 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 employed 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 (that amount, which is indexed to growth in average earnings for all workers, is \$132,900 in 2019). 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 who file a joint income tax return), bringing the total Medicare tax on such earnings to 3.8 percent.

Projected Receipts

Payroll taxes in CBO's baseline rise as a share of GDP from 2019 through 2029 because wages and salaries, the main tax bases for those taxes, are projected to rise as a share of GDP, from 43.0 percent in 2019 to 43.9 percent in 2029. Partially offsetting that increase in wages and salaries is a small expected increase in the share of earnings above the taxable maximum amount for Social Security taxes. That share is projected to rise from 19 percent in 2019 to 20 percent in 2029 because earnings from wages and salaries are expected to increase faster for people with higher earnings than for others during the next decade.³

2. Additional detail on CBO's projections of realizations of capital gains are included with the supplemental materials that accompany this report at www.cbo.gov/publication/54918.

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.

In addition, receipts from unemployment insurance taxes are projected to decline slightly relative to wages and salaries and GDP between 2018 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 following the recession that began in 2008. 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 2018, receipts from corporate income taxes totaled \$205 billion, or 1.0 percent of GDP. CBO expects corporate tax receipts to rise by \$40 billion in 2019, to 1.2 percent of GDP. After 2019, in CBO's baseline projections, those receipts rise through 2025, reaching 1.6 percent of GDP. After 2025, receipts begin to decline, falling to 1.4 percent of GDP from 2027 through 2029. That pattern reflects several factors, including an anticipated recovery from unexplained weakness in recent receipts, the varying effects on receipts of the 2017 tax act over time (including the phaseout of the full-expensing provisions), and a projected decline in domestic economic profits relative to GDP over the next decade.

Receipts in 2019

CBO expects corporations' income tax payments, net of refunds, to increase by \$40 billion (or 20 percent) in 2019, to \$245 billion. That increase is larger than the projected increases in domestic economic profits and GDP in that year; they are projected to grow by 10 percent and 5 percent, respectively. Consequently, those revenues are projected to increase relative to both profits and GDP.

The projected increase in corporate income tax receipts relative to domestic economic profits in 2019 results in part from provisions of the 2017 tax act. One effect of the reduction in January 2018 of the corporate tax rate to 21 percent was an incentive for some firms to accelerate expenses. By accelerating expenses, such as employee compensation, they could claim deductions at higher tax rates, thus lowering their tax liabilities in fiscal year 2018. That opportunity, which probably temporarily reduced corporate receipts in 2018, no longer exists.

Receipts After 2019

In CBO's baseline projections, receipts from corporate income taxes rise as a share of GDP, on net, by 0.2 percentage points between 2019 and 2029. Two factors cause receipts to rise as a share of GDP relative to 2019. First, corporate tax receipts, which for the past several years were lower than can currently be explained by available data, are projected to recover. Second, the full-expensing provisions of the 2017 tax act are scheduled to phase out by 2027. Those factors are partially offset by two other factors that each work to lower the share by 2029: the net effect of other provisions of the 2017 tax act, most significantly the onetime tax on previously untaxed foreign profits, and an expected decline in domestic economic profits relative to GDP.

Temporary Weakness in 2017 and 2018 Tax 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 factors responsible for that weakness (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 that temporary decline in receipts would increase projected tax revenues as a share of GDP by about 0.3 percentage points from 2020 through 2029.

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 if those provisions had expired. For tax years 2013 through 2017, companies were permitted to immediately deduct 50 percent of such investments. Beginning in the fourth quarter of 2017, businesses could fully expense equipment purchased and put into service through the end of 2022, after which the share of investments that businesses are allowed to 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.

Other Provisions of the 2017 Tax Act. The 2017 tax act included a number of other provisions that will affect corporate taxes over time. Those provisions include a onetime tax on previously untaxed foreign profits, the last payment for which is due in 2026, as well as scheduled changes to the way in which businesses calculate tax liability over the next decade. On net, those provisions are expected to reduce corporate receipts as a share of GDP by 0.1 percentage point over the next decade.

Beginning in 2018, businesses are required to pay a new onetime tax on previously untaxed foreign profits, also known as deemed repatriation. Taxes on those earnings, which are based on the value of those profits as of late 2017 (and which are unrelated to future business activity), can be paid in installments over the next eight years. Because the required installments are not equal in size, the effect of those receipts in CBO's baseline varies over the 2018–2026 period. As a result, those payments are projected to boost receipts to varying degrees from 2019 through 2026 but not in subsequent years, thereby contributing to the reduction in receipts in relation to GDP through 2029.

Partially offsetting the end of the payments for the onetime tax on previously untaxed foreign profits are provisions that will change the way in which businesses calculate their tax liability over the next decade. Among those provisions is a change to the calculation of income that is attributable to the new limits on the deductibility of interest expenses, which occurs in 2022. Also in 2022, firms 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. The effects of those provisions increase revenues in CBO's baseline after 2022. The rules related to the taxation of profits abroad will also change in 2026, boosting revenues in subsequent years. Provisions that have changing rules include the tax on Global Intangible Low-Taxed Income, the deduction for Foreign-Derived Intangible Income, and the Base Erosion and Anti-Abuse Tax.⁴

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 0.1 percentage point over the next decade.

Smaller Sources of Revenues

The remaining sources of federal revenues are excise taxes, remittances from the Federal Reserve System to the Treasury, customs duties, estate and gift taxes, and miscellaneous fees and fines. Revenues from those sources totaled \$270 billion in 2018, or 1.3 percent of GDP (see Table 4-3). In CBO's projections, those receipts remain at 1.3 percent of GDP in 2019 as a result of offsetting movements in customs duties and remittances from the Federal Reserve. Customs duties, which have remained close to 0.2 percent of GDP for the past two decades are projected to rise above 0.3 percent of GDP as a result of new tariffs imposed by the Administration during the past year. Remittances from the Federal Reserve, which averaged 0.5 percent of GDP in the years following the 2008 financial crisis, are expected to decline and move closer to amounts observed before the crisis.

CBO projects that, under current law, receipts from those smaller sources of revenues would remain between 1.3 percent and 1.4 percent of GDP from 2019 through 2029. The small changes over that period result mostly from changes in the amounts received in remittances from the Federal Reserve and from changes in 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. In CBO's baseline projections, over 90 percent of excise tax receipts come from taxes related to highways, health care, tobacco and alcohol, and aviation.

Excise tax revenues are projected to rise from \$98 billion in 2019 to \$137 billion in 2029. Nevertheless, declines are expected to occur in some years because of the timing of payments of the health insurance providers' fee. In addition, taxes on gasoline and tobacco would continue to decline over the 10-year period. Excise taxes are projected to decrease slightly as a share of GDP, from 0.5 percent in 2019 to 0.4 percent in 2029, primarily because many excise taxes are imposed as a fixed dollar amount per unit sold and the number of units is growing slowly or declining.

4. For additional explanation of tax provisions included in the 2017 tax act, see Congressional Budget Office, *The Budget and Economic Outlook: 2018 to 2028* (April 2018), pp. 108–110, www.cbo.gov/publication/53651.

Table 4-3.

CBO's Baseline Projections of Smaller Sources of Revenues

Billions of Dollars

	Actual,												Total	
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2020–2024	2020–2029
Excise Taxes														
Highway	41	42	42	42	41	41	41	41	41	41	41	41	207	410
Health care	9	12	21	23	25	17	44	33	36	41	26	44	129	309
Aviation	16	17	18	18	19	20	20	21	22	22	23	24	95	208
Tobacco	13	13	13	13	12	12	12	12	11	11	11	11	62	118
Alcohol	8	9	9	11	11	11	11	11	12	12	12	12	53	113
Other	6	5	5	5	5	5	5	5	5	5	5	5	25	51
Subtotal	95	98	108	111	114	106	133	123	127	132	119	137	571	1,208
Federal Reserve Remittances	71	50	47	52	58	63	70	75	80	81	87	89	290	703
Customs Duties	41	74	79	82	85	88	90	93	97	100	102	105	424	921
Estate and Gift Taxes	23	17	18	19	20	21	22	23	24	36	39	42	100	265
Miscellaneous Fees and Fines														
Universal Service Fund fees	9	9	10	10	10	10	11	11	11	11	11	11	52	107
Other fees and fines	30	32	33	34	32	33	34	36	38	39	40	42	165	360
Subtotal	40	41	43	44	42	43	45	46	48	50	51	53	217	467
Total	270	280	294	308	318	321	360	361	377	400	399	426	1,602	3,564

Memorandum:

Projected revenues from excise taxes that are assumed to be extended after expiration

0	0	1	1	1	35	55	56	56	57	58	59	93	379
---	---	---	---	---	----	----	----	----	----	----	----	----	-----

Source: Congressional Budget Office.

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

In general, CBO's baseline reflects 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 will be extended. Revenues from excise taxes that are assumed to be extended after expiration total nearly one-third of excise tax revenues projected over the next decade (see Table 4-3). Trust funds financed in part by excise taxes that are scheduled to expire include the Highway, Airport and Airway, Patient-Centered Outcomes Research, Oil Spill Liability, Sport Fish Restoration and Boating, and Leaking Underground Storage Tank trust funds.

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 by an average of 0.3 percent per year from 2019 through 2029. Over that period, annual receipts average slightly more than \$40 billion.

CBO's projection of a slight decline in highway tax revenues is the net effect of falling receipts from taxes on fuel and rising receipts from taxes on trucks. Gasoline consumption is expected to decline because improvements in vehicles' fuel economy are expected to more than offset the increase in the number of miles that people

drive.⁵ CBO expects that increased fuel economy would likewise reduce the consumption of diesel fuel per mile driven over the 10-year period. Under current law, most of the federal excise taxes used to fund highway programs are scheduled to expire on September 30, 2022. CBO's baseline incorporates the assumption that those expiring taxes would be extended because they are dedicated to a trust fund.

Health Care Taxes. In CBO's baseline projections, receipts from health care taxes grow from \$12 billion in 2019 to \$44 billion in 2029. The largest of those taxes is the excise tax imposed on many health insurers under the Affordable Care Act (P.L. 111-148). 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. The tax was suspended for 2019, but a portion of the tax payments for 2018 were received in fiscal year 2019 because the due date for payment of the 2018 tax, the last day of fiscal year 2018, fell on a weekend. (The deadline will also fall on a weekend in 2023, 2028, and 2029, significantly affecting the expected pattern of receipts for the tax over the next decade.) In 2019, revenues from the tax are projected to total \$9 billion; they are projected to rise to \$25 billion in 2029.

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 through 2029. A moratorium on the medical-devices tax is in effect until calendar year 2020, so the tax is not projected to generate revenues until that year. In 2029, that tax is projected to generate about \$4 billion in revenues. The excise tax on high-cost

employment-based health plans is not scheduled to be implemented until 2022. Revenues from that tax are projected to total \$12 billion in 2029 under current law.

Tobacco and Alcohol Taxes. In CBO's baseline projections, revenues from taxes on tobacco products total \$13 billion in 2019. That amount is projected to decrease by roughly 2 percent a year over the next decade to \$11 billion in 2029 as tobacco consumption continues to decline. Receipts from taxes on alcoholic beverages are expected to total \$9 billion in 2019 and 2020. A provision the 2017 tax act that lowered taxes on most types of alcohol expires after that, so those receipts are projected to climb by more than 15 percent in 2021. Beginning in 2022, receipts would grow at about 2 percent per year, reaching \$12 billion by 2029.

Aviation Taxes. In CBO's baseline, receipts from taxes on airline tickets, aviation fuels, and various aviation-related transactions increase from \$17 billion in 2019 to \$24 billion in 2029, yielding an average annual rate of growth of about 4 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 economic activity and prices increase. Under current law, aviation taxes are scheduled to expire in 2023. As in the case with highway taxes, CBO's baseline incorporates the assumption that those expiring taxes would be extended because they are dedicated to a trust fund.

Other Excise Taxes. Other excise taxes are projected to generate a total of about \$5 billion in revenues in 2019 and \$56 billion in revenues from 2019 through 2029. The category consists of other taxes dedicated to trust funds, including the Federal Aid in Wildlife Restoration trust fund (which is financed by taxes on firearms and bows and arrows), the Oil Spill Liability Trust Fund, and the Patient-Centered Outcomes Research Trust Fund, as well as other smaller excise taxes.

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

5. In August 2018, the Administration proposed freezing existing Corporate Average Fuel Economy standards at their 2020 levels through 2026 (see <https://go.usa.gov/xEWpR>). Following CBO's usual practice, the baseline incorporates a 50 percent probability that the proposed rule will be finalized and implemented. If that occurred, CBO anticipates average fuel economy would continue to improve, albeit at a slower rate, because older, less fuel-efficient vehicles would be replaced by newer models more slowly than otherwise.

largest component of such income is what the Federal Reserve earns as interest on its holdings of securities.

In CBO's baseline projections, the Federal Reserve's remittances in 2019 amount to \$50 billion (or 0.2 percent of GDP). Remittances are projected to decrease between 2019 and 2020, and then to increase steadily through 2029. The decline in 2020 results from the Federal Reserve's rising interest expenses and a reduction in the amount of assets that it holds. CBO also projects that the anticipated increase in interest rates on Treasury securities over the projection period would boost earnings for the Federal Reserve—but only gradually—as it purchases new securities that earn higher yields. (See Chapter 2 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 2019–2029 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 continuing to account for about 0.6 percent of GDP between 2019 and 2029.

Customs Duties. Customs duties, which are assessed on certain imports, have totaled about 0.2 percent of GDP in recent years, amounting to \$41 billion in 2018. CBO projects that those receipts would increase to 0.3 percent of GDP in 2019 and remain between 0.3 percent and 0.4 percent of GDP through the next decade. The increase in duties relative to GDP reflects new tariffs implemented by the Administration during 2018. Those include tariffs on imports of solar panels and certain appliances, which took effect on February 7, 2018; on steel and aluminum imports from most countries, which took effect on March 23, 2018; and on a range of products imported from China, the first of which took effect on July 6, 2018. The additional taxes levied on affected imports varies from 10 percent to 30 percent of the assessed customs values. CBO's baseline incorporates the assumption that those recently imposed tariffs continue throughout the projection period at the rates currently in

effect.⁶ However, the Administration has broad authority to modify tariff policy without legislative action.⁷ (For a detailed discussion of the effects of recent changes in trade policy on the economy, see Chapter 2.)

Estate and Gift Taxes. In 2018, revenues from 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 through tax year 2025, revenues 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 subsequent years.

Miscellaneous Fees and Fines. Receipts from other fees and fines totaled \$40 billion (0.2 percent of GDP) in 2018. Under current law, those fees and fines would continue to average 0.2 percent of GDP from 2019 through 2029, 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. Unlike many spending programs, tax expenditures are not subject to annual appropriations. Because of that budgetary treatment, tax expenditures are much less transparent than discretionary spending or spending on benefit programs. In fact, most tax expenditures are not explicitly recorded in the federal budget.

6. Specifically, the baseline projections incorporate the assumption that, in cases in which the Administration exercises its broad authority to impose tariffs without legislative action, the tariffs in effect at the time the analysis was completed would continue permanently without planned or unplanned changes. Most significantly, the tariffs imposed on imports from China under section 301 of the Trade Act of 1974 are assumed to continue indefinitely at a rate of 10 percent throughout the projection period. When initially imposed in September 2018, those tariffs were scheduled to increase to 25 percent on January 1, 2019. However, in December 2018, the Administration delayed that scheduled increase until March 2, 2019.

7. The Administration's recent tariff actions were taken under authority granted in section 232 of the Trade Expansion Act of 1962, section 201 of the Trade Act of 1974, and section 301 of the Trade Act of 1974.

The one exception is the portion of refundable tax credits that exceeds a taxpayer's tax liability; that amount is recorded as mandatory spending in the budget.

As with 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."⁸ That law requires the federal budget to list tax expenditures, and every year the staff of the Joint Committee on Taxation (JCT) and the Treasury's Office of Tax Analysis each publish estimates of individual and corporate income tax expenditures.⁹

Magnitude of Tax Expenditures

Tax expenditures have a major impact on the federal budget. On the basis of estimates prepared by JCT, CBO estimates that in fiscal year 2019, the more than 200 tax expenditures in the individual and corporate income tax systems will total more than \$1.6 trillion—or 7.8 percent of GDP—if their effects on payroll taxes as well as on income taxes are included.¹⁰ That amount

equals almost half of all federal revenues projected to be received in 2019 and exceeds projected outlays for all discretionary outlays combined (see Figure 4-4).

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 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 2019, those and other factors are expected to be approximately offsetting, so the total amount of tax expenditures roughly equals 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 2019

CBO estimates that the 10 largest tax expenditures account for nearly three-quarters of the total budgetary effects of all tax expenditures in fiscal year 2019, totaling 5.6 percent of GDP.¹¹ Those 10 tax expenditures fall into four categories: exclusions from taxable income, deductions, preferential tax rates, and tax credits.

Exclusions From Taxable Income. Exclusions of certain types of income from taxation account for the greatest

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

9. For this analysis, CBO followed 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 2018–2022*, JCX-81-18 (October 2018), <https://go.usa.gov/xEWpf>. 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).

10. 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. 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.

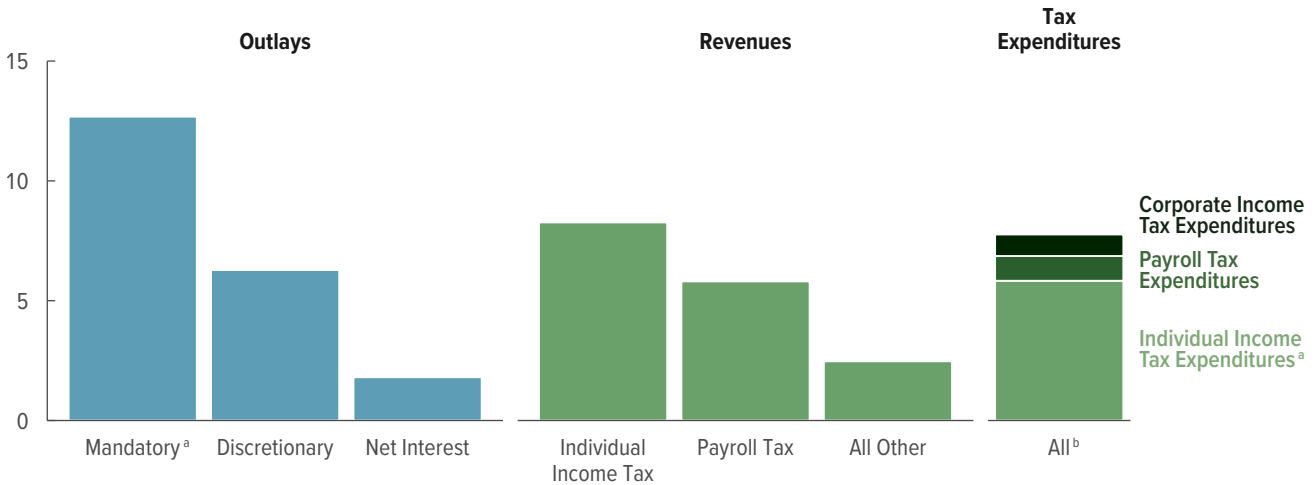
11. CBO combined the components of certain tax expenditures that JCT reported separately, such as tax expenditures for different types of charitable contributions.

Figure 4-4.

Outlays, Revenues, and Tax Expenditures in 2019

Tax expenditures, which are projected to total more than \$1.6 trillion in 2019, cause revenues to be lower than they would be otherwise and, like spending programs, contribute to the deficit.

Percentage of Gross Domestic Product



Source: Congressional Budget Office, using estimates by the staff of the Joint Committee on Taxation.

- a. The outlay portions of refundable tax credits are included in tax expenditures as well as mandatory outlays. In 2019, they are estimated to total 0.7 percent of gross domestic product.
- b. 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 2019, 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, they do not reflect the amount of revenues that would be raised if those provisions of the tax code were eliminated and taxpayers adjusted their activities in response to the changes.

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; and contributions to and earnings of pension funds (minus pension benefits that are included in taxable income).

- 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 equal 1.4 percent of GDP in 2019 (see Figure 4-5).
- The exclusion of pension plan contributions and earnings has the second largest impact, resulting in tax expenditures that are estimated to total 1.4 percent of GDP this year, including effects on payroll taxes.¹²

12. 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,

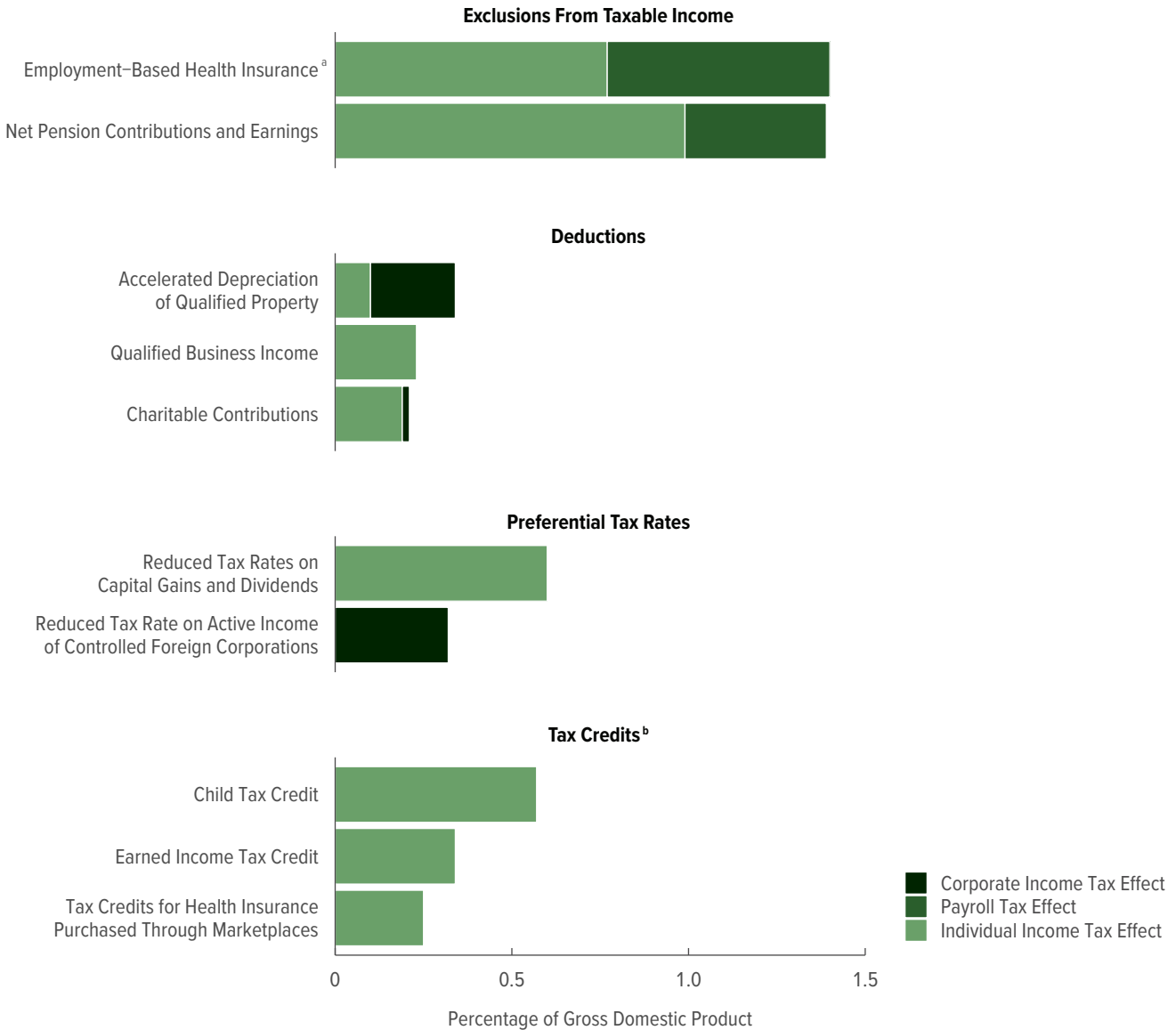
Deductions From Income. Deductions for certain types of payments allow taxpayers to further reduce their taxable income. For instance, businesses are generally able to deduct the cost of an investment over a measure of the life of that investment. Some provisions of law allow businesses to deduct those expenses from their taxable income over a shorter period of time; that “accelerated depreciation” is considered a tax expenditure. In addition, many owners of pass-through businesses can take a deduction equal to 20 percent of qualified business income, which includes reasonable compensation of owners for services rendered to the business.¹³ And itemized deductions allow taxpayers to deduct more than the fixed standard deduction on the basis of expenses they have incurred.

although contributions to and earnings accrued in those plans are also excluded from taxable income until withdrawal.

13. Pass-through businesses are businesses whose income is taxed under the individual income tax rather than the corporate income tax.

Figure 4-5.

Budgetary Effects of the Largest Tax Expenditures in 2019



Source: Congressional Budget Office, using estimates by the staff of the Joint Committee on Taxation.

These effects are calculated by dividing the sum of the tax expenditures in 2019 by the sum of gross domestic product that year. Because estimates of tax expenditures are based on people’s behavior with the tax expenditures in place, they do not reflect the amount of revenues that would be raised if those provisions of the tax code were eliminated and taxpayers adjusted their activities in response to the changes.

a. Includes employers’ contributions for health care, health insurance premiums, and long-term-care insurance premiums.

b. Includes effect on outlays.

- Tax expenditures for accelerated depreciation of qualified property purchased by businesses are estimated to equal 0.3 percent of GDP in 2019.
- Tax expenditures for the 20 percent deduction for qualified business income available to pass-through businesses are estimated to equal 0.2 percent of GDP in 2019.
- Tax expenditures for the itemized deduction for charitable contributions are estimated to equal 0.2 percent of GDP in 2019.

Preferential Tax Rates. Under the individual income tax, preferential tax rates apply to some forms of income, including dividends and long-term capital gains. Under the corporate income tax, income in controlled foreign subsidiaries is taxed at a lower rate than profits of domestic corporations.

- Tax expenditures for the preferential tax rates on dividends and long-term capital gains are estimated to total 0.6 percent of GDP in 2019.¹⁴
- Tax expenditures for the reduced tax rate on active income of controlled foreign corporations are estimated to equal 0.3 percent of GDP in 2019.¹⁵

Tax Credits. 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.

- The tax expenditure for the credit for children and other dependents is estimated to total 0.6 percent

14. Taxpayers with income over certain thresholds—\$200,000 for single filers and \$250,000 for married couples who file 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.

15. Although current and future income of controlled foreign corporations is subject to a lower tax rate, there is also a onetime tax on their previously accumulated deferred income, which taxpayers can elect to pay over the course of eight years. The estimated tax expenditure does not include any offset with respect to the onetime tax on prior-year income.

of GDP in 2019. About one-quarter of those expenditures are recorded as mandatory spending in the federal budget because they are paid to people who do not owe any income taxes.

- The tax expenditure for the earned income tax credit is estimated to total 0.3 percent of GDP in 2019. Most of those expenditures are recorded as mandatory spending in the federal budget.
- Tax expenditures for the premium tax credit—which helps people with low and moderate income purchase health insurance through marketplaces—are estimated to total 0.3 percent of GDP in 2019. Most of those expenditures are recorded as mandatory spending in the federal budget.

Effect of the Future Expiration of the 2017 Tax Act on Tax Expenditures

The 2017 tax act made many changes that affect tax expenditures. In particular, the act included temporary provisions that, on balance, reduce the amount of tax expenditures through 2025. If those provisions expire as scheduled, CBO expects that tax expenditures will rise in later years.

Among those changes, the 2017 tax act curtailed itemized deductions that are considered to be tax expenditures. For example, a new limit was placed on the itemized deduction for state and local taxes (including income, sales, and property taxes). In addition, the limit on the amount of debt for owner-occupied housing for which the mortgage interest is deductible was lowered. At the same time, the act almost doubled the standard deduction. Those changes reduced 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.

Economic Effects of Tax Expenditures

Many tax expenditures may further societal goals. For example, the tax expenditures for health insurance costs and pension contributions may help promote a healthier population, adequate financial resources for retirement, and greater national saving. However, some tax expenditures may have effects beyond the societal goals they were intended to advance.

First, tax expenditures may lead to an inefficient allocation of economic resources. They do so by subsidizing activity 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 and to reallocate existing savings from accounts that are not tax-preferred to retirement accounts, rather than add to their savings.

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 would make the expenditures of 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 some people to work more.

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 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 earnings of pension funds, taxpayers would need to calculate the appreciation in the value of their holdings in such funds.

Fifth, tax expenditures affect the distribution of the tax burden. Some tax expenditures, such as the preferential

tax rates on capital gains and dividend income, primarily benefit high-income taxpayers. Others, such as the earned income tax credit, primarily benefit those with lower income. Tax expenditures can also lead to an uneven distribution of the tax burden among people who have similar income.¹⁶

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 revenue projections for the current year and the subsequent 10 years 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 begins about six months after the projections are released) and the sixth year were generally too high, on average, mainly because of the difficulty of forecasting when economic downturns will occur. The overall accuracy of CBO's revenue projections has been similar to that of the projections of others. Since 1982, the mean absolute error—that is, the average of all errors without regard for whether they were positive or negative—was 5.0 percent for CBO's budget-year projections and 10.1 percent for the sixth-year projections.¹⁷ In CBO's current baseline projections, percentage errors of those amounts would equal about \$180 billion (or 0.8 percent of GDP) in 2020 and \$450 billion (or 1.8 percent of GDP) in 2024.

16. For a detailed analysis, see Congressional Budget Office, *The Distribution of Major Tax Expenditures in the Individual Income Tax System* (May 2013), www.cbo.gov/publication/43768.

17. Those errors include CBO's projections from 1982 through the most recent fiscal years for which actual receipts are available for each projection horizon—2017 for the budget-year projections and 2013 for the sixth-year projections. The complete series of past errors is included with the supplemental materials that accompany this report at www.cbo.gov/publication/54918. For a more detailed analysis of past errors, 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. For a more detailed analysis of errors in 2018, see Congressional Budget Office, *The Accuracy of CBO's Baseline Estimates for Fiscal Year 2018* (December 2018), www.cbo.gov/publication/54872.

Estimated Budgetary Outcomes Under Alternative Assumptions About Fiscal Policy

Overview

The Congressional Budget Office's baseline budget projections are intended to show what would happen to federal spending, revenues, and deficits if current laws governing spending and taxes 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 how its budget projections would change given alternative assumptions about future policies. (Those estimates do not incorporate any economic effects of such changes in fiscal policies relative to current law.)

To develop the policy alternatives, CBO considered assumptions about discretionary spending and revenues that differ from those underlying the baseline. For example, CBO's baseline projections of discretionary spending reflect the assumption that substantial spending cuts will take place in 2020 to comply with the existing caps on discretionary appropriations currently set in law. Some policymakers have discussed alternatives to such cuts. As another example, CBO's projections of revenues reflect assumptions that substantial tax increases will take place as scheduled under current law and that recently imposed tariffs will remain at current levels. In those cases as well, policymakers have discussed alternatives to the policies that would take effect under current law.

Using some of those options, CBO developed an alternative fiscal scenario that illustrates the effects of deviations from current law that would maintain major policies that are currently in place. The projected budgetary outcomes under that scenario account for some of the interactions that would occur if the separate policies were enacted in combination.

Discretionary Spending

CBO projects discretionary spending according to procedures specified in law. However, lawmakers have often enacted legislation providing amounts of funding that differ from what is projected in the baseline. For

example, CBO's baseline projections have incorporated caps on most new discretionary funding that were put in place by the Budget Control Act of 2011. Since 2013, however, lawmakers have ultimately raised those caps by a total of \$439 billion. Additionally, some funding is not limited by those caps and can vary significantly. For example, in recent years, the Congress has appropriated funding for emergency requirements (one category of funding not subject to the caps) in amounts varying from zero to \$102 billion.

In CBO's baseline, discretionary funding subject to the caps is projected to fall sharply in 2020 before increasing with inflation after 2021, whereas funding not limited by the caps is projected to increase with inflation after 2019. To illustrate two ways in which discretionary spending could differ from CBO's baseline projections, the agency estimated budgetary outcomes if all such funding were to grow with inflation after 2019 and if it were held at the estimated 2019 amounts after that year (see Figure 5-1).

If discretionary appropriations grew at the same rate as inflation from 2020 through 2029 rather than being constrained by the funding caps that would otherwise apply in 2020 and 2021, outlays would be \$1.8 trillion more over the 2020–2029 period than they are in CBO's baseline, excluding added debt-service costs (see Table 5-1 on page 108).¹ All told, discretionary outlays under that scenario would total 5.6 percent of gross domestic product (GDP) in 2029, instead of 4.9 percent as projected in CBO's baseline. In 2018, they were 6.2 percent of GDP. The resulting increase in debt-service costs would add another \$290 billion to outlays over the 2020–2029 period.

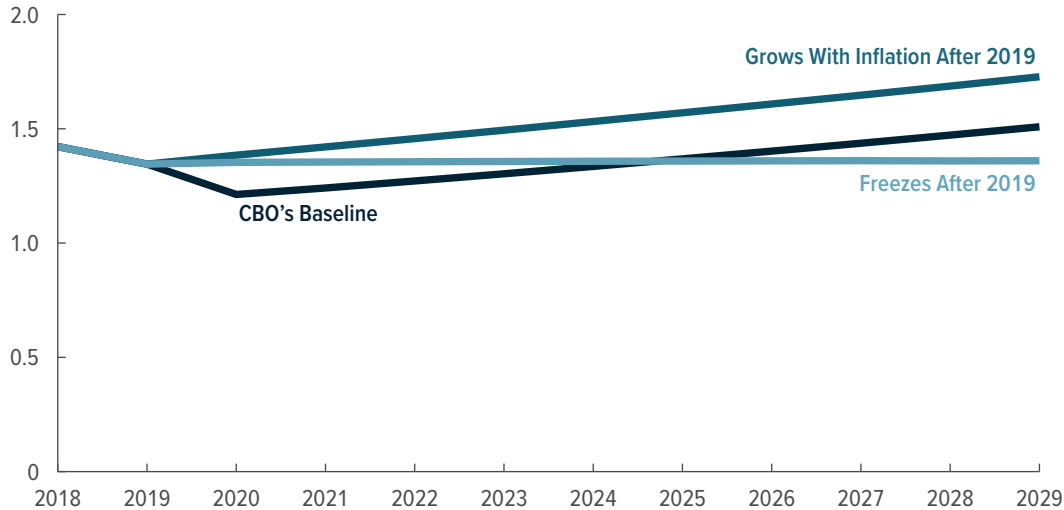
If, by contrast, lawmakers froze appropriations, including transportation-related obligation limitations, at the

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

Figure 5-1.

Alternative Paths for Discretionary Budget Authority

Trillions of Dollars



Discretionary funding in future years could be more or less than the amounts in CBO's baseline projections, which reflect the assumption that funding for 2020 and 2021 will adhere to the current-law caps and grow with inflation thereafter.

Source: Congressional Budget Office.

nominal 2019 amount for 2020 through 2029, outlays would be \$36 billion more over that period than projected in the baseline, excluding added debt-service costs. Total discretionary budget authority under this scenario would exceed the amount in CBO's baseline from 2020 through 2024 and would then drop below the amount in the baseline (by increasing amounts each year) between 2025 and 2029. In 2029, discretionary outlays under this scenario would total 4.5 percent of GDP.

Revenues

CBO's baseline projections reflect assumptions that temporary provisions of the tax code will expire as scheduled under current law and that recently imposed tariffs will remain at current levels. Revenues would differ if certain temporary tax policies were continued or if tariffs were changed.

Alternatives That Affect the Tax Code

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 (Public Law 115-97), most of which expire at the end of 2025. The expiring provisions affect major elements of the individual income tax, including 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 (that is, the number of people who pay the alternative minimum tax and the amounts they pay).² The act's expansion of the estate and gift tax exemption also 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 \$957 billion over the 2020–2029 period (excluding added debt-service costs). Most of those effects would occur after 2026.

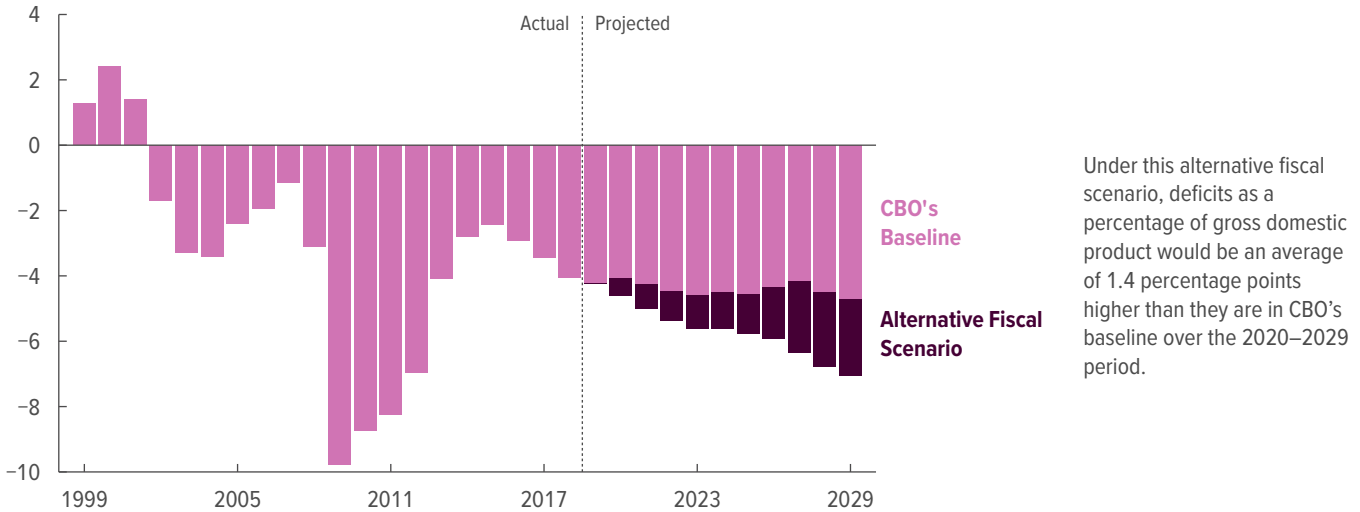
The 2017 tax act also temporarily expanded a provision known as bonus depreciation, which allows businesses to immediately deduct a portion of the cost of certain investments. Bonus depreciation was expanded to 100 percent of the cost of such investments through 2022; it then phases down between 2023 and 2026. Extending that expansion of bonus depreciation, and thus averting the phasedown, would increase deficits by \$174 billion (excluding added debt-service costs) over the 2020–2029 period.

2. 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.

Figure 5-2.

Projected Deficits Under CBO's Baseline and an Alternative Fiscal Scenario

Percentage of Gross Domestic Product



Source: Congressional Budget Office.

The alternative fiscal scenario depicted includes the effects of allowing discretionary funding to grow with inflation beginning in 2020, extending several expiring tax provisions (namely, certain provisions of the 2017 tax act, expensing of certain investments at a 100 percent rate, and more than 20 other expiring revenue provisions, including trade preference programs), and repealing certain postponed health taxes.

When October 1 (the first day of the fiscal year) falls on a weekend, certain payments that would have ordinarily been made on that day are instead made at the end of September and thus are shifted into the previous fiscal year. All projections presented here have been adjusted to exclude the effects of those timing shifts. Historical amounts have been adjusted as far back as the available data will allow.

In addition to the provisions described above, more than 20 tax provisions expire between December 31, 2018, and the end of the projection period. Those include tax preferences for renewable energy and other tax credits. In addition, several trade preference programs, which promote trade with certain developing countries, including those in the Caribbean and sub-Saharan Africa, are scheduled to expire between 2020 and 2026. If those temporary tax provisions and trade preference programs were permanently extended, JCT and CBO estimate, the deficit would be larger than projected in the baseline by a total of \$103 billion (excluding added debt-service costs) over the 2020–2029 period.

Deficits also would increase if certain postponed taxes established by the Affordable Care Act were repealed. 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. Repealing those

taxes would increase the deficit by a total of \$392 billion (excluding added debt-service costs) over the 2020–2029 period, JCT estimates.

Altogether, if all of the above revenue provisions were permanently extended, CBO and JCT estimate, deficits would be larger by a total of \$1.6 trillion over the 2020–2029 period. Increased debt-service costs would add another \$143 billion to those deficits.

Alternatives That Affect Tariffs

The Administration has broad authority to impose tariffs without legislative action. CBO's baseline reflects the assumption that tariffs imposed with that authority and in effect at the time the analysis was completed would continue permanently without scheduled or unscheduled changes. Those include tariffs on imports of solar panels and certain appliances, which took effect on February 7, 2018; on steel and aluminum imports from most countries, which took effect on March 23, 2018; and on a range of products imported from China, the

Table 5-1.

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

Billions of Dollars

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total	
												2020–2024	2020–2029
Policy Alternatives That Affect Discretionary Outlays													
Increase Discretionary Appropriations at the Rate of Inflation ^a													
Increase (-) in the deficit ^b	0	-97	-144	-165	-178	-187	-193	-199	-204	-208	-213	-770	-1,787
Added debt-service costs	0	-2	-6	-11	-18	-24	-30	-37	-45	-54	-62	-61	-290
Freeze Discretionary Appropriations at the 2019 Amount ^c													
Increase (-) in the deficit ^b	0	-78	-96	-84	-62	-35	-4	28	62	99	133	-355	-36
Added debt-service costs	0	-1	-4	-8	-10	-12	-13	-13	-12	-9	-6	-36	-89
Policy Alternatives That Affect the Tax Code^d													
Continue Certain Revenue Policies													
Extend certain provisions of the 2017 tax act ^e	*	-3	-4	-4	-5	-5	-12	-98	-257	-275	-295	-21	-957
Extend the expansion of bonus depreciation at 100 percent rate ^f	0	0	0	0	-9	-19	-27	-32	-36	-29	-23	-28	-174
Extend other expiring revenue provisions ^g	*	-1	-4	-5	-8	-9	-11	-13	-15	-17	-20	-27	-103
Repeal certain postponed health taxes ^h	0	-15	-16	-25	-33	-37	-42	-46	-54	-59	-66	-125	-392
Increase (-) in the deficit ^b	*	-18	-24	-34	-54	-70	-91	-189	-362	-381	-403	-201	-1,626
Added debt-service costs	*	*	-1	-2	-4	-6	-9	-13	-23	-36	-50	-13	-143
Policy Alternatives That Affect Trade Policies													
Allow Scheduled Changes to Tariffs to Take Effect ⁱ													
Decrease in the deficit ^b	1	11	11	11	11	11	11	11	11	11	11	54	110
Reduced debt-service costs	*	*	1	1	1	2	2	3	3	3	4	5	20
Revert Tariffs to 2017 Levels ^j													
Increase (-) in the deficit ^b	-15	-35	-36	-37	-38	-38	-39	-39	-39	-40	-40	-184	-381
Added debt-service costs	*	-1	-2	-4	-5	-6	-8	-9	-11	-12	-14	-19	-73

Continued

first of which took effect on July 6, 2018. Those policies increase the revenues from tariffs by about 0.1 percent of GDP in 2019.

Projected revenues would differ if scheduled changes took place or if tariffs returned to their historical levels. Under the Administration's announced plans, the tariffs on certain Chinese imports are scheduled to increase from 10 percent to 25 percent in March 2019, and the tariffs on certain imported appliances and solar panels will sunset in 2021 and 2022, respectively. If those changes occurred and there were no further changes to tariffs on those goods over the next decade, revenues would increase by \$110 billion over the

2020–2029 period relative to CBO's baseline projections. If, instead, the new policies put in place in 2018 were reversed beginning on April 1, 2019, and then tariffs remained at their historical levels for the next decade, revenues from tariffs would be reduced by \$381 billion over the 2020–2029 period relative to the baseline.

An Alternative Fiscal Scenario

If current law were changed to maintain major policies that are currently in place, far larger deficits and greater debt would result than are shown in CBO's current baseline. Over the 2020–2029 period, deficits would be larger by a total of \$3.4 trillion (plus an added \$433 billion in debt-service costs), causing cumulative deficits

Table 5-1.

Continued

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

Billions of Dollars

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total		
												2020– 2024	2020– 2029	
Policy Alternative That Affects Outlays and Revenues														
Changes in Deficits From an Alternative Fiscal Scenario ^a														
Increase (-) in the deficit ^b	*	-115	-168	-199	-232	-257	-285	-388	-565	-589	-615	-971	-3,413	
Added debt-service costs	*	-2	-7	-14	-21	-30	-39	-51	-68	-89	-112	-74	-433	
Memorandum:														
Alternative Fiscal Scenario														
Revenues ¹	3,515	3,667	3,817	3,977	4,152	4,376	4,553	4,763	4,906	5,078	5,282	19,988	44,570	
Outlays ¹	4,412	4,688	4,966	5,256	5,539	5,820	6,089	6,406	6,731	7,100	7,470	26,268	60,064	
Deficit ¹	-898	-1,021	-1,149	-1,279	-1,387	-1,444	-1,536	-1,643	-1,825	-2,022	-2,188	-6,279	-15,494	
Deficit in CBO's Baseline ¹	-897	-903	-974	-1,066	-1,134	-1,158	-1,212	-1,204	-1,192	-1,344	-1,460	-5,235	-11,648	

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

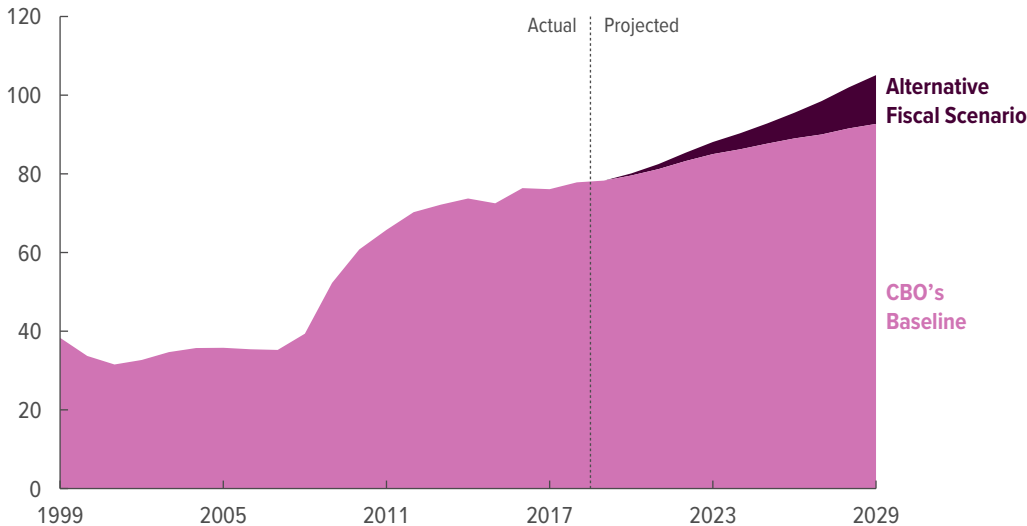
* = between -\$500 million and \$500 million.

- a. These estimates reflect the assumption that appropriations will not be constrained by caps set by the Budget Control Act of 2011 (as amended) and will instead grow from their 2019 level at the rate of inflation. Discretionary funding related to federal personnel was inflated using the employment cost index for wages and salaries; other discretionary funding was inflated using the gross domestic product price index.
- b. Excludes debt-service costs.
- c. This option reflects the assumption that appropriations would generally be frozen at the 2019 level.
- d. These estimates are mainly from the staff of the Joint Committee on Taxation and are preliminary. They are relative to current law and incorporate economic projections that underlie CBO's April 2018 baseline. The estimates include some effects on outlays for refundable tax credits.
- e. This alternative incorporates the assumption that lawmakers will permanently extend many provisions of the 2017 tax act (Public Law 115-97). Most significantly, under this alternative the provisions that lower individual income tax rates, expand the income tax base, expand the child tax credit, reduce the amount of income subject to the alternative minimum tax, and increase the estate and gift tax exemption are all extended. The expanded expensing of certain investments, however, is not extended; the effects of that alternative are shown separately.
- f. This alternative would extend the provisions that allow businesses to expense (immediately deduct from their taxable income) a greater share of the cost of their investment in equipment and certain other assets. 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 alternative would extend the 100 percent allowance permanently beyond 2022.
- g. This alternative would extend more than 20 tax provisions that expired in 2018 or are scheduled to expire. It also includes the extension of a number of trade preference programs scheduled to expire between 2020 and 2026 that affect customs duties. It does not include an extension of the bonus depreciation provisions or a repeal of certain health-related provisions; those effects are shown separately.
- 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 by 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 allow scheduled changes to newly imposed tariffs to occur. Tariffs on certain Chinese imports would increase from 10 percent to 25 percent in March 2019, and tariffs on certain imported appliances and solar panels would expire in 2021 and 2022, respectively.
- j. This alternative would return tariffs that were raised by administrative action in 2018 to their 2017 levels. Those include tariffs on imports of solar panels and certain appliances, on steel and aluminum imports from most countries, and on a range of products imported from China.
- k. This alternative fiscal scenario incorporates all of the policy alternatives in this table except the ones labeled "Freeze Discretionary Appropriations at the 2019 Amount" and "Policy Alternatives That Affect Trade Policies."
- l. When October 1 (the first day of the fiscal year) falls on a weekend, certain payments that would have ordinarily been made on that day are instead made at the end of September and thus are shifted into the previous fiscal year. All values have been adjusted to exclude the effects of those timing shifts.

Figure 5-3.

Federal Debt Held by the Public Under CBO's Baseline and an Alternative Fiscal Scenario

Percentage of Gross Domestic Product



Under this alternative fiscal scenario, by 2028 debt held by the public would exceed the country's gross domestic product for the first time since 1946.

Source: Congressional Budget Office.

The alternative fiscal scenario depicted includes the effects of allowing discretionary funding to grow with inflation beginning in 2020, extending several expiring tax provisions (namely, certain provisions of the 2017 tax act, expensing of certain investments at a 100 percent rate, and roughly 20 other expiring revenue provisions, including trade preference programs), and repealing certain postponed health taxes.

of nearly \$15.5 trillion, if the following policy decisions were made:

- The caps on discretionary appropriations did not take effect and appropriations instead grew at the same rate as inflation in each year after 2019;
- The expiring revenue provisions of the 2017 tax act were extended, 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;
- The expansion of bonus depreciation for businesses deducting certain investments were held at a 100 percent rate;
- Certain temporary tax provisions that have recently expired or are scheduled to expire in coming years, including several trade preference programs, were permanently extended; and

- Certain postponed taxes established by the Affordable Care Act were repealed.³

Under that scenario, revenues from 2020 through 2029 would average 16.9 percent of GDP, almost 0.5 percentage points below their 50-year average, and outlays would average 22.7 percent, roughly 2.4 percentage points above their 50-year average. Deficits would average nearly 5.8 percent of GDP through 2029 and end up 2.3 percentage points higher in 2029 than under CBO's baseline (see Figure 5-2 on page 107). Debt held by the public would reach about 105 percent of GDP by the end of 2029 (see Figure 5-3). That amount would be the largest share since 1946. Moreover, the pressures that are projected to contribute to that rise—such as an aging population and rising interest rates—would accelerate and drive up debt even more in subsequent decades.

3. Those policies encompass all of the policy alternatives shown in Table 5-1 except the ones labeled "Freeze Discretionary Appropriations at the 2019 Amount" and "Policy Alternatives That Affect Trade Policies."

Changes in CBO's Baseline Projections

Overview

The Congressional Budget Office estimates that in the absence of further legislation affecting spending and revenues, the budget deficit for fiscal year 2019 will total \$897 billion.¹ That amount is \$75 billion smaller than the \$973 billion deficit estimated in CBO's adjusted April 2018 baseline projections.² CBO also now projects that the cumulative deficit for the 2019–2028 period would be about \$1.2 trillion smaller than shown in the adjusted April projections—\$11.2 trillion rather than \$12.4 trillion—if current laws generally remained the same. All told, in CBO's new projections, outlays over that period are about 2.5 percent smaller, and revenues are about 0.4 percent smaller.

The differences between the current projections and the previous ones 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 result from the agency's updated economic forecast (and include the macroeconomic effects associated with legislative changes); and

- Technical changes, which are updates to projections other than legislative or economic changes.

The decrease in the projected deficit for 2019 stems primarily from \$47 billion in technical changes. Economic and legislative changes together reduce the estimated deficit for 2019 by an additional \$29 billion.

Over the 2019–2028 period, legislative changes are the main reason for the reduction in projected deficits; they reduce the projected cumulative deficit by \$774 billion, almost entirely because of less projected emergency spending (see Figure A-1). Revisions to CBO's economic forecast since April—chiefly lower anticipated interest rates—cause \$336 billion in reductions to projected deficits.³ Technical updates to the agency's projections of revenues and outlays largely offset one another, decreasing the 10-year total deficit by \$115 billion.

Legislative Changes

Since CBO issued its adjusted April 2018 projections, the largest changes in its projections of the deficit for the 2019–2028 period stem from recently enacted legislation and are seen almost entirely in changes to outlays (see Table A-1 on page 114).

Changes in Revenues

The differences between CBO's current and previous projections of revenues that are attributable to legislative changes are small: less than \$1 billion in any year and for the 10-year projection period. The largest such change is a \$0.9 billion decrease in customs duties over the 2019–2021 period caused by the Miscellaneous Tariff Bill Act of 2018 (Public Law 115-239), which reduced or suspended the duty rates on certain imports. (Larger

1. Some agencies experienced a lapse in appropriations when authorities contained in the Continuing Appropriations Act, 2019—as extended by Public Law 115-298—expired on December 22, 2018. For those agencies, CBO's current baseline projections incorporate the amount of fiscal year 2019 funding that was provided before that expiration, annualized (that is, as if it was provided for the entirety of the fiscal year).

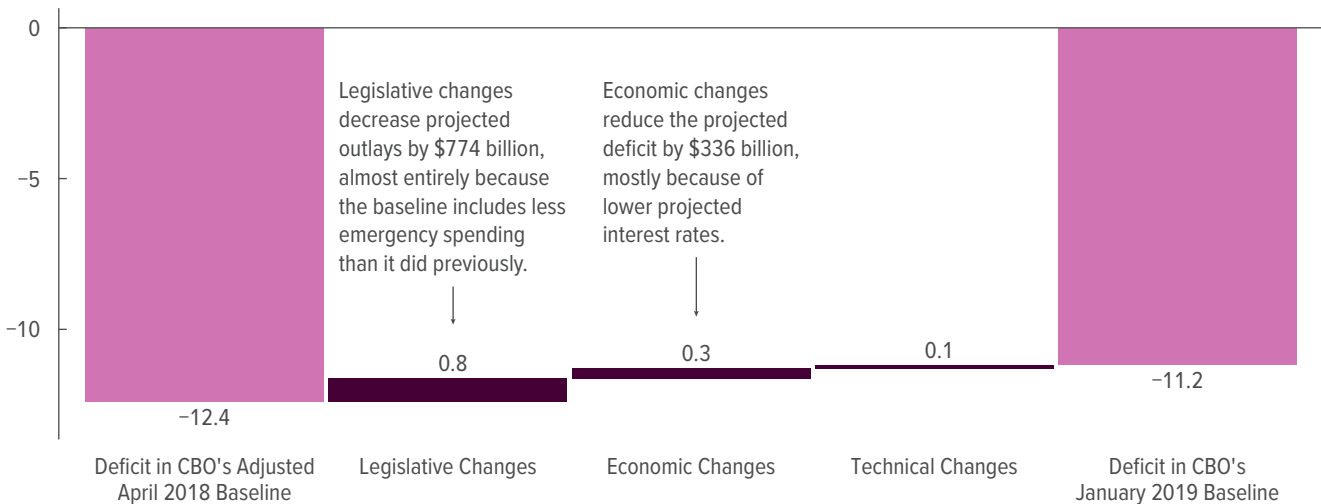
2. CBO's adjusted April 2018 baseline projections are those published in *An Analysis of the President's 2019 Budget* (May 2018), www.cbo.gov/publication/53884. CBO made them by adjusting the projections published in *The Budget and Economic Outlook: 2018 to 2028* (April 2018), www.cbo.gov/publication/53651. The changes decreased projected deficits by \$17 billion over the 2019–2028 period and are detailed in Table 6 in *An Analysis of the President's 2019 Budget*.

3. This appendix describes the budgetary effects of the revisions to CBO's economic forecast since April 2018. Some of those revisions were made between April and August, when CBO updated its economic forecast but not its budget projections. See Congressional Budget Office, *An Update to the Economic Outlook: 2018 to 2028* (August 2018), www.cbo.gov/publication/54318.

Figure A-1.

Changes in CBO's Baseline Projection of the 10-Year Deficit Since Spring 2018

Trillions of Dollars



Source: Congressional Budget Office.

The adjusted April 2018 baseline refers to projections that CBO published in *An Analysis of the President's 2019 Budget* (May 2018), www.cbo.gov/publication/53884, which reflect a number of relatively small changes to the projections published in *The Budget and Economic Outlook: 2018 to 2028* (April 2018), www.cbo.gov/publication/53651.

revisions to projected receipts from customs duties are classified as technical changes and discussed below.)

Changes in Outlays

As a result of recently enacted legislation, CBO has reduced its estimate of outlays in 2019 by \$12 billion, primarily for discretionary spending. For the 10-year period, the agency has reduced projected outlays by \$774 billion (or 1 percent). There were two main drivers of that change. Projected spending for nondefense discretionary programs fell; so did the associated costs for debt service (the interest that the government pays on its debt).

Changes in Discretionary Spending. Legislative changes to discretionary programs enacted since CBO published its adjusted April 2018 projections led the agency to reduce projected outlays by \$16 billion in 2019 and by a total of \$686 billion for the 2019–2028 period.⁴ Over that 10-year period, CBO's projections of nondefense

4. Discretionary spending is controlled by annual appropriation acts that specify the amounts that are to be provided for a broad array of government activities, including defense, law enforcement, education, and veterans' health programs.

and defense outlays are now \$633 billion and \$53 billion lower, respectively. Because most discretionary funding is subject to the caps established by the Budget Control Act of 2011 (P.L. 112-25), legislative changes to CBO's projections of that funding result chiefly from changes in appropriations for programs and activities that are not constrained by the caps: overseas contingency operations, disaster relief, emergency requirements, program integrity initiatives, and certain health-related programs.⁵

The substantial reduction over the 10-year period is almost entirely because appropriations for 2019 that are

5. Overseas contingency operations are war-related activities (primarily in Afghanistan), and program integrity initiatives aim to reduce improper benefit payments in Disability Insurance, Supplemental Security Income, Medicare, Medicaid, and the Children's Health Insurance Program. For more information on the discretionary caps, see Congressional Budget Office, *Sequestration Update Report: August 2018* (August 2018), www.cbo.gov/publication/54357. In addition, obligation limitations—constraints that discretionary appropriation acts apply to the use of mandatory funding provided in certain authorizing legislation, primarily for ground and air transportation programs—are not constrained by the caps on discretionary funding and are assumed to grow with inflation.

designated as emergency requirements total \$2 billion so far—a sharp reduction from the \$108 billion that was appropriated in 2018, mostly for relief and recovery efforts related to the hurricanes and wildfires that occurred in 2017. In accordance with the statutory rules that govern the agency's projections of discretionary spending, CBO's adjusted April 2018 projections were based on the amounts appropriated for 2018 (adjusted for inflation). CBO's current projections, by contrast, are based on the much smaller amount of funding provided for 2019.

Changes in Mandatory Spending. Mandatory outlays are largely unchanged by legislation since CBO published its adjusted April 2018 projections.⁶ Those outlays are now projected to be \$3 billion higher in 2019 and over the entire 2019–2028 period.

Farm Bill. The recently enacted Agriculture Improvement Act of 2018 (P.L. 115-334, often called the farm bill) is projected to increase mandatory outlays by \$1.4 billion in 2019. But because the bill is estimated to reduce outlays in future years in relation to the amounts previously projected, the net change in outlays is an increase of only \$70 million over the 2019–2028 period.⁷ Following the rules specified in the Balanced Budget and Emergency Deficit Control Act of 1985 (P.L. 99-177), that estimate incorporates the assumption that the programs authorized by the farm bill will remain in effect after 2023, the final year covered by the bill's authorizations.

VA MISSION Act. CBO estimates that the recently enacted VA MISSION Act of 2018 (P.L. 115-182) will increase outlays by \$2.4 billion in 2019 and \$2.8 billion in 2020 for the Veterans Choice Program, which pays for certain veterans to receive health care from participating providers in the private sector.

Changes in Debt Service. Excluding the cost of debt service, the changes that CBO made to its projections because of recently enacted legislation decreased the projection of the cumulative deficit for the 2019–2028 period by \$683 billion. The resulting decrease in the estimate of federal borrowing led CBO to reduce

projected outlays for interest on federal debt by \$91 billion over the 10-year period.

Economic Changes

The economic forecast underlying CBO's current projections was completed in December 2018 and 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. The economic forecast also incorporates the macroeconomic effects of legislation enacted through early December 2018. CBO's previous budget projections were based on an economic forecast that was published in April 2018.

Incorporating the most recent economic forecast led CBO to make its estimates of the deficit \$16 billion smaller for the current year, and \$336 billion smaller for the 2019–2028 period, than in the adjusted April 2018 baseline projections. The largest factor in the 10-year change is a decrease in projected outlays for interest costs.

Changes in Revenues

Revisions to CBO's economic forecast caused the agency to increase its projections of revenues by \$13 billion for 2019 and by \$70 billion (or less than 1 percent) for the 2019–2028 period.

Individual Income Taxes. Changes in the economic forecast led CBO to increase its projection of revenues from individual income taxes by \$23 billion (or 1 percent) for 2019 and by \$102 billion (or less than 1 percent) over the 2019–2028 period. CBO's forecast of wages and salaries over the next decade has been revised downward, lowering projected individual income taxes. However, that economic change has been more than offset by effects of large revisions made by the Bureau of Economic Analysis (BEA) in the national income and product accounts for earlier years. Specifically, BEA revised upward its estimates of proprietors' income and monetary interest income (which is the share of personal interest income that does not come from marketed goods and services). Those revisions led to a boost in those kinds of income, and in taxes on such income, in CBO's projections. (They also led CBO to lower its estimates of average tax rates on those sources of income; that change is a technical one and is described below. It largely offsets the upward economic changes stemming from BEA's revisions.)

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

7. See Congressional Budget Office, *Direct Spending and Revenue Effects for the Conference Agreement on H.R. 2* (attachment to a letter to the Honorable K. Michael Conaway, December 11, 2018), www.cbo.gov/publication/54880.

Table A-1.

Changes in CBO's Baseline Projections of the Deficit Since Spring 2018

Billions of Dollars

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total,	
											2019– 2023	2019– 2028
Deficit in CBO's Adjusted April 2018 Baseline	-973	-1,003	-1,118	-1,275	-1,273	-1,245	-1,352	-1,321	-1,314	-1,527	-5,642	-12,401
	Legislative Changes											
Changes in Revenues	*	*	*	*	*	*	*	*	*	*	*	*
Changes in Outlays												
Mandatory outlays	3	3	*	*	1	*	*	-1	-2	-2	7	3
Discretionary outlays												
Defense	-1	-3	-4	-5	-6	-6	-7	-7	-7	-7	-18	-53
Nondefense	-15	-34	-40	-54	-63	-71	-79	-86	-93	-98	-206	-633
Subtotal, discretionary	-16	-36	-44	-60	-69	-78	-85	-93	-100	-106	-225	-686
Debt service	*	-1	-2	-4	-7	-9	-12	-15	-19	-23	-14	-91
Total Change in Outlays	-12	-35	-47	-64	-74	-86	-97	-108	-120	-130	-232	-774
Decrease in the Deficit From Legislative Changes	13	34	47	64	74	86	97	108	120	130	232	774
	Economic Changes											
Changes in Revenues												
Individual income taxes	23	17	18	17	16	13	9	2	-4	-9	90	102
Corporate income taxes	-14	-14	-12	-9	-4	1	2	3	3	3	-52	-41
Payroll taxes	1	-3	-3	-4	-4	-4	-4	-7	-8	-9	-13	-45
Other	3	6	6	5	3	5	6	7	6	8	22	53
Total Change in Revenues	13	5	9	9	11	15	12	5	-3	-8	48	70
Changes in Outlays												
Mandatory outlays												
Social Security	4	3	4	5	5	6	6	4	2	*	21	40
Other	-2	-3	-4	-2	2	2	3	4	5	7	-10	12
Subtotal, mandatory	2	*	-1	3	7	8	9	9	8	7	11	52
Discretionary outlays	*	*	*	*	*	*	-1	-1	-1	-1	*	-3
Net interest												
Debt service	*	-1	-2	-4	-6	-8	-9	-10	-10	-11	-13	-61
Effect of interest rates and inflation	-5	-17	-39	-50	-47	-33	-24	-17	-13	-8	-159	-255
Subtotal, net interest	-5	-18	-41	-55	-53	-41	-33	-27	-23	-19	-172	-315
Total Change in Outlays	-3	-18	-42	-52	-46	-33	-25	-19	-16	-13	-161	-267
Decrease in the Deficit From Economic Changes	16	23	51	61	58	48	37	24	14	5	209	336

Continued

Table A-1.

Continued

Changes in CBO's Baseline Projections of the Deficit Since Spring 2018

Billions of Dollars

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total,	
											2019– 2023	2019– 2028
Technical Changes												
Changes in Revenues												
Customs duties	34	37	37	37	37	38	39	39	40	40	182	377
Individual income taxes	-11	-13	-8	-17	-26	-32	-38	-56	-50	-54	-75	-305
Corporate income taxes	-17	-19	-22	-25	-26	-23	-21	-24	-25	-25	-111	-229
Payroll taxes	2	-1	-5	-8	-8	-9	-10	-9	-10	-11	-21	-69
Other	4	-2	1	*	-13	10	-3	-2	1	-16	-9	-18
Total Change in Revenues	11	1	3	-13	-35	-15	-33	-52	-44	-66	-33	-243
Changes in Outlays												
Mandatory outlays												
Social Security	-8	-11	-12	-12	-13	-13	-14	-14	-14	-15	-57	-127
Medicare	-7	-7	-10	-10	-9	-9	-10	-11	-12	-8	-43	-94
Health insurance subsidies and related spending	1	-6	-7	-8	-9	-8	-7	-6	-7	-7	-29	-64
Earned income and child tax credits	-5	-5	-6	-6	-6	-6	-7	-7	-5	-5	-28	-57
Medicaid	5	4	3	2	2	2	3	5	6	8	16	40
Veterans' compensation and pensions	4	5	3	4	4	3	4	4	4	4	19	37
Fannie Mae and Freddie Mac	-27	0	1	2	1	1	1	2	2	2	-23	-15
Other	10	-8	-8	-1	-2	*	-4	-4	-4	-5	-9	-26
Subtotal, mandatory	-27	-29	-36	-30	-32	-30	-33	-32	-30	-25	-154	-305
Discretionary outlays	-8	-7	-3	-3	-2	*	-1	-2	-2	-2	-23	-30
Net interest												
Debt service	-2	-6	-7	-9	-9	-9	-10	-10	-10	-9	-33	-81
Other	1	1	3	6	6	5	6	7	10	13	17	58
Subtotal, net interest	-1	-5	-5	-2	-4	-4	-4	-3	*	4	-17	-23
Total Change in Outlays	-36	-41	-44	-35	-37	-34	-38	-37	-32	-23	-194	-358
Increase (-) or Decrease in the Deficit From Technical Changes	47	43	47	22	2	19	6	-16	-12	-43	161	115
All Changes												
Decrease in the Deficit	75	100	145	147	134	153	140	117	122	92	601	1,225
Deficit in CBO's January 2019 Baseline	-897	-903	-974	-1,128	-1,139	-1,091	-1,212	-1,204	-1,192	-1,435	-5,041	-11,176
Memorandum:												
Changes in Revenues	24	6	12	-3	-24	*	-20	-47	-47	-74	15	-173
Changes in Outlays	-51	-94	-133	-150	-158	-153	-160	-164	-169	-166	-586	-1,398

Source: Congressional Budget Office.

The adjusted April 2018 baseline refers to projections that CBO published in *An Analysis of the President's 2019 Budget* (May 2018), www.cbo.gov/publication/53884, which reflect a number of relatively small changes to the projections published in *The Budget and Economic Outlook: 2018 to 2028* (April 2018), www.cbo.gov/publication/53651.

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

Corporate Income Taxes. Economic changes led CBO to decrease its projection of corporate income taxes by \$14 billion (or 5 percent) in 2019 and by \$41 billion (or less than 1 percent) over the 2019–2028 period. Specifically, CBO now forecasts lower domestic profits than it did previously.

Payroll Taxes. Changes in the economic forecast led CBO to reduce its projections of payroll tax receipts by \$45 billion (or 1 percent) over the 2019–2028 period, on net. The downward revision in CBO’s forecast of wages and salaries over the next decade was responsible for pushing down the projections, though that revision was partially offset by the upward revisions made by BEA to proprietors’ income, which boost that source of income in CBO’s projections. (With payroll taxes, as with individual income taxes, the economic changes stemming from BEA’s revisions to proprietors’ income are largely offset by corresponding technical changes.)

Other Revenues. For economic reasons, CBO increased its projection of revenues from other sources by \$3 billion in 2019 and by \$53 billion over the 2019–2028 period. An increase of \$39 billion (or 6 percent) in projected remittances from the Federal Reserve to the Treasury over that period explains most of that change.⁸ CBO lowered its forecast of short-term interest rates over the first half of the 10-year period—decreasing projections of the interest payments that the Federal Reserve will make to depository institutions and thereby increasing remittances.⁹ Remittances are projected to be larger in the second half of the period as well, reflecting the expectation that the Federal Reserve will hold more assets than CBO had previously projected, increasing its net earnings and remittances.

Changes in Outlays

As a result of the updated economic forecast, CBO lowered its estimate of outlays for the current year by \$3 billion. For the 2019–2028 period, economic updates led CBO to decrease its projection of outlays by \$267 billion (or less than 1 percent), mostly because of reductions in

net interest costs (\$315 billion) that were partially offset by an increase in mandatory spending (\$52 billion).

Mandatory Outlays. Because of changes in the economic forecast, CBO increased its projections of mandatory spending by \$2 billion for 2019 and by \$52 billion for the 2019–2028 period. The largest economic changes were in CBO’s projections for Social Security.

Social Security. CBO increased projected outlays for Social Security over the 2019–2028 period by \$40 billion (or less than 1 percent), mostly because the cost-of-living adjustment (COLA) that beneficiaries received in January 2019 was larger than CBO had expected when making its adjusted April 2018 projections. Social Security’s COLAs are based on changes in the consumer price index for urban wage earners and clerical workers (CPI-W), which turned out to be larger than CBO had anticipated.¹⁰

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 increased projected outlays by \$12 billion over the 2019–2028 period, the net result of both upward and downward adjustments. The largest projected increase (\$10 billion), for the earned income and child tax credits, was because of higher projected inflation in the near term and lower projected wage growth. In the other direction, the largest projected reduction (also \$10 billion), for the costs of student loans, was because of lower interest rates projected for the near term.

Discretionary Outlays. Changes to the measures of inflation that CBO is required to use in developing its baseline projections of discretionary funding drove the economic changes in discretionary outlays. In CBO’s baseline projections, the agency adjusts discretionary funding related to federal personnel using the employment cost index for wages and salaries, and it adjusts other discretionary funding using the GDP price index. As a result of minor projected changes in those measures, discretionary funding is projected to be slightly lower over the 2019–2028 period than it was in CBO’s

8. The income produced by the various activities of the Federal Reserve System, minus the cost of generating that income and the cost of the system’s operations, is remitted to the Treasury and counted as revenues.

9. Most of that change in projected interest rates was made in CBO’s August 2018 forecast.

10. Most of those changes in the CPI-W were reflected in CBO’s August 2018 economic forecast.

previous baseline projections, and corresponding outlays are lower by \$3 billion.¹¹

Net Interest. Since CBO published its April projections, revisions to its economic forecast have led the agency to reduce its baseline projection of net interest outlays. The reduction amounts to \$315 billion for the 2019–2028 period.

Two economic factors had a direct effect on net interest outlays. First, CBO has decreased its projections of rates on Treasury securities in relation to those underlying its adjusted April 2018 baseline. Both short- and long-term interest rates are projected to be lower through 2023—by roughly 0.3 percentage points, on average—than they were previously. Second, in the other direction, inflation through 2020 is projected to be higher than the agency projected in April 2018, which raises estimated net interest outlays on inflation-protected securities.¹² Primarily as a result of the lower interest rates, CBO decreased its projection of net interest outlays by \$255 billion over the 2019–2028 period.

In addition, CBO reduced its projection of net interest outlays by \$61 billion over that period to account for the smaller deficits resulting from economic changes. That reduction reflects updates to projections of revenues and outlays that are attributable to CBO's economic forecast—specifically, a net reduction in the deficit of \$276 billion over the period (not including the effects on debt-service costs).

Technical Changes

Technical changes—that is, changes 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 deficit by \$47 billion in 2019 and by \$115 billion over the 2019–2028 period.

11. Most of the changes in the projections of the employment cost index and the GDP price index were incorporated in CBO's August 2018 economic forecast.

12. 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. Most of that change in projected inflation was incorporated in CBO's August 2018 economic forecast.

Changes in Revenues

CBO increased its projections of revenues over the 2019–2021 period by \$15 billion because of technical changes but decreased those projections for subsequent years. Over the entire 2019–2028 period, the net change came to a reduction of \$243 billion (or 0.5 percent).

Customs Duties. The largest technical revision to projected revenues was in customs duties—increases of \$34 billion in 2019 and of \$377 billion (or 76 percent) over the 2019–2028 period. The increases reflect new tariffs imposed by the Administration during 2018; CBO's projections incorporate the assumption that the new tariffs will continue at current rates throughout the 10-year period.¹³ (For more discussion of the effects of the new tariffs on revenues, see Chapter 4. For a discussion of the effects of recent changes in trade policy on the economy, see Chapter 2.)

Individual Income Taxes. Technical revisions reduced projections of individual income tax receipts by \$11 billion in 2019 and by \$305 billion (or 1 percent) over the 2019–2028 period. Most of the 10-year change stemmed from new data about past income and taxes. Tax liabilities reported on recent tax returns were smaller than CBO had projected, and BEA has revised upward its estimates of some of the sources of income on which those taxes were levied (in particular, proprietors' income and monetary interest income). Consequently, CBO now estimates that the average tax rates on those types of income—that is, tax liabilities as a percentage of income—were lower than previously projected. CBO has decreased its projections of future revenues from those taxes accordingly. In addition, recent taxable distributions from pension plans have been smaller than CBO previously projected; that weakness continues in CBO's current projections.

Corporate Income Taxes. For technical reasons, CBO reduced its projection of receipts from corporate income taxes by \$17 billion in 2019 and by \$229 billion (or 6 percent) over the 2019–2028 period. Most significantly, to better reflect historical relationships, CBO increased its estimate of U.S. multinational firms' foreign

13. Specifically, the baseline projections incorporate the assumption that, in cases in which the Administration exercises its broad authority to impose tariffs without legislative action, the tariffs and corresponding rates in effect at the time the analysis was completed would continue permanently without planned or unplanned changes.

income before the enactment of P.L. 115-97 (referred to in this report as the 2017 tax act) and also increased its estimate of foreign tax credits applied to that income, on net reducing receipts. CBO also lowered its projection of corporate taxes to reflect new data from corporate income tax returns for 2016. Those data revealed larger losses accruing to corporations subject to the corporate income tax than CBO had expected, which went part-way toward explaining what had been surprisingly weak collections in recent years. As a result, CBO now expects more of the weakness in collections to persist.

Payroll Taxes. CBO reduced its projection of payroll taxes by \$69 billion (or less than 1 percent), on net, over the 2019–2028 period, largely as a result of incorporating new administrative and tax data about the relationship in recent years between earnings and payroll tax receipts. In addition, because BEA has revised upward its estimates of past proprietors' income, CBO now estimates that the average tax rate on that income was lower than previously projected. CBO has decreased its projections of future revenues from those taxes accordingly.

Other Revenues. Technical revisions led CBO to reduce its projection of revenues from the remaining, smaller sources of revenues by \$18 billion (or less than 1 percent), on net, over the 2019–2028 period. Revenues from one of those sources, miscellaneous fees and fines, were reduced by \$22 billion (or 5 percent) over the period. That change reflects the net effect of several changes: downward revisions to projected collections for the risk-adjustment program, in which health insurers make payments to the government or receive payments from it according to the health of their enrollees; downward revisions to projected collections of the Universal Service Fund of the Federal Communications Commission; and an upward revision to projected penalties collected from employers that do not offer health insurance to their employees. (The first two of those changes have corresponding and offsetting changes to outlays, leaving projections of the deficit largely unchanged.)

Changes in Outlays

Because of technical updates—largely to estimates of mandatory spending—CBO lowered its estimate of outlays in 2019 by \$36 billion and its estimate of outlays over the 2019–2028 period by \$358 billion.

Mandatory Outlays. CBO reduced its projection of mandatory spending in the current year by \$27 billion. For the 2019–2028 period, technical changes decreased the projection of mandatory outlays by \$305 billion (or 1 percent).

Social Security. For technical reasons, CBO's 10-year projection of spending for Social Security is \$127 billion (or 1 percent) lower than the agency last projected. That change arises largely from a reduction in the projected Old-Age and Survivors Insurance caseload of nearly 1 percent and a reduction in the projected Disability Insurance caseload of about 5 percent. The reduced caseload projections stem primarily from smaller-than-expected actual caseloads in 2018, lower projected population growth, and (in the Disability Insurance program) a reduction in the projected share of the population receiving benefits.

Medicare. CBO lowered its projection of Medicare outlays by \$94 billion (or 1 percent) over the 2019–2028 period for technical reasons. Most of that reduction was because spending in 2018 for Medicare's Part D (prescription drugs) and Part A (Hospital Insurance) was less than CBO had projected in its adjusted April 2018 baseline; in response, CBO revised downward its projections of spending for the next decade. Those reductions were partially offset by an increase in projected spending over the 2019–2028 period for Part B (Medical Insurance, which covers doctors' services, outpatient care, home health services, and other medical services). That change was based on higher-than-expected outlays for Part B in 2018. In addition, CBO increased its estimates of the government's income from premiums (which are recorded as offsetting receipts—that is, reductions in outlays) in order to maintain the projected reserve balance in the Part B account of the Supplementary Medical Insurance Trust Fund at the historical level of about two months' worth of spending.

Health Insurance Subsidies and Related Spending. For technical reasons, CBO reduced its projections of spending for subsidies for health insurance purchased through the marketplaces established under the Affordable Care Act and related spending by \$64 billion (or 8 percent), on net, over the 2019–2028 period. The current projections reflect premiums for health insurance purchased through the marketplaces in 2019 that are lower than previously expected. Those lower estimates of premiums lead to a \$58 billion reduction in the estimated costs of

subsidizing the premiums over the 10-year period and a reduction in projected spending on the risk-adjustment program.

Earned Income and Child Tax Credits. Because outlays reported for those refundable tax credits in 2018 were lower than expected, CBO reduced its 10-year projection of spending by \$57 billion in relation to the adjusted April 2018 baseline. (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.)

Medicaid. CBO's 10-year projection of spending for Medicaid is \$40 billion (or 1 percent) higher than it was in the agency's adjusted April 2018 projections, primarily because actual spending in 2018 was greater than previously projected.

Veterans' Compensation and Pensions. CBO increased its projections of total outlays for veterans' disability compensation and pensions by \$37 billion over the 2019–2028 period. The two components of that combined increase moved in different directions, however. On the basis of 2018 data, CBO increased its projections of average disability payments. But the agency reduced its estimates of the number of pension beneficiaries and therefore reduced its projections of pension costs.

Fannie Mae and Freddie Mac. The largest technical change in mandatory outlays for 2019 is a \$27 billion reduction in net outlays associated with Fannie Mae and Freddie Mac, two institutions that facilitate the flow of funding for home loans nationwide. The reason is that in CBO's baseline projections, those entities are treated differently in the current fiscal year and in the later years of the 10-year period. For the current year, the baseline includes an estimate of the net cash payments from those entities to the Treasury, following the treatment in the Administration's budget reports. For later years, the baseline includes risk-adjusted projections of subsidy costs.¹⁴

14. The government placed Fannie Mae and Freddie Mac into conservatorship in 2008 and now controls their operations. As a result, CBO considers the two entities' activities to be governmental and includes their budgetary effects in its projections as though they were federal agencies. On that basis, for the 10 years after the current fiscal year, CBO projects subsidy costs for new activities according to procedures that are similar to those specified in the Federal Credit Reform Act of 1990 for determining the costs of federal credit programs—but

On the basis of their most recent quarterly financial releases, CBO estimates that the net payments from Fannie Mae and Freddie Mac to the Treasury, which are recorded in the budget as offsetting receipts, will total \$24 billion in 2019. By comparison, CBO's adjusted April 2018 baseline showed an estimated subsidy *cost*—that is, additional federal outlays—of about \$3 billion for Fannie Mae and Freddie Mac in 2019. All told, projected 2019 outlays are reduced by \$27 billion.

For the 2020–2028 period, CBO now estimates that subsidy costs will total \$28 billion—about \$12 billion more than it previously projected. That increase is largely driven by an increase in CBO's estimate of the compensation that private lenders would require for market risk (that is, the risk that they cannot protect themselves against by diversifying their portfolios). In total, CBO's projection of net outlays for Fannie Mae and Freddie Mac is \$15 billion lower for the 2019–2028 period than in its adjusted April 2018 baseline.

Other Mandatory Programs. Technical updates led CBO to increase projected outlays for other mandatory programs by \$10 billion for 2019 but to decrease them by \$26 billion for the 10-year period. CBO reduced its 10-year projection of outlays for Supplemental Security Income by \$13 billion because of updated data on benefit amounts and caseloads. The agency also reduced projected outlays for military retirement benefits by \$12 billion because of slightly higher projected mortality rates and a downward revision to projected average payments. And CBO reduced its projections of outlays for child nutrition programs by \$12 billion because fewer free meals were provided in 2018 than expected. In the other direction was an \$18 billion increase in projected outlays for the Children's Health Insurance Program as a result of higher-than-expected spending in 2018. Smaller adjustments to projections for a number of other mandatory programs reduced projected outlays by a further \$6 billion, on net.

Discretionary Outlays. Because of technical updates, CBO's estimates of discretionary outlays in 2019 are \$8 billion smaller than they were previously. Projected

with adjustments to reflect the associated market risk. The Administration, in contrast, considers Fannie Mae and Freddie Mac to be outside the federal government for budgetary purposes and records cash transactions between those entities and the Treasury as federal outlays or receipts. (In CBO's view, those transactions should be considered intragovernmental.)

outlays over the 2019–2028 period are also lower, by \$30 billion (or less than 1 percent). The largest changes over the 10-year period arise from lower projections of outlays for international assistance programs (\$15 billion) and housing assistance (\$4 billion). Those reductions are partially offset by a \$10 billion increase in projected defense outlays. Those changes all stem from adjustments to better reflect the recent rates at which funding for those programs has been spent.

Net Interest. Technical changes led CBO to decrease its projections of net interest outlays by \$1 billion for 2019 and by \$23 billion for the 2019–2028 period. That

change results from two partly offsetting effects. In one direction, lower debt-service costs subtract \$81 billion from net interest outlays projected over the 10-year period. That reduction is a result of the reduced deficits that are attributable to two changes: technical changes in CBO’s baseline projections for revenues and outlays, and reductions in CBO’s estimates of the borrowing needed to finance the government’s credit programs, such as student loans. In the other direction, interest costs are higher by \$58 billion over the 2019–2028 period because of larger-than-expected debt at the beginning of 2019 and changes to CBO’s projections of the mix of securities that the Treasury uses in its borrowing.

How Changes in Economic Conditions Might Affect the Federal Budget

Overview

Some of the uncertainty in budget projections stems from the fact that the federal budget is highly sensitive to economic conditions, which are difficult to predict. If conditions differed from those in the Congressional Budget Office’s economic forecast, budgetary outcomes could diverge from those in the agency’s baseline budget projections. To show how variations in economic conditions might affect the budget, CBO analyzed how the budget might change if values of the following key economic variables differed from those in the agency’s forecast:

- The growth of productivity and, consequently, the growth of real (inflation-adjusted) gross domestic product (GDP);
- Labor force growth and, in turn, real economic growth;
- Interest rates; and
- Inflation.

To illustrate the budgetary effects of economic changes, CBO created and analyzed four scenarios to develop “rules of thumb” for those variables. The scenarios reflect the following changes from the agency’s current economic forecast: slower growth of productivity, slower growth of the labor force, higher interest rates, and higher inflation. Each of those changes would increase deficits above the amounts in CBO’s baseline budget projections; however, the values of any of the variables could be higher or lower than they are in CBO’s forecast. The rules of thumb are roughly symmetrical, so if productivity or the labor force instead increased more quickly than projected, or if interest rates or inflation were lower than projected, deficits would be smaller than they are in the agency’s baseline budget projections.

Background

When economic conditions differ from those in the agency’s forecast, actual federal spending and revenues are likely to differ from CBO’s projections because economic conditions affect federal revenues and outlays in several ways. Revenues depend on the total amount of income that is subject to taxation, including wages and salaries, other income received by individuals, and corporate profits. Those types of income generally rise or fall (though not necessarily proportionally) in response to changes in economic growth and inflation. In addition, the Treasury regularly refinances portions of the government’s outstanding debt—and issues more debt to finance new deficits—at market interest rates. Thus, the amount that the federal government spends to pay interest on its debt is directly tied to those rates. Spending for many mandatory programs is also affected by economic growth and inflation—either explicitly (for example, through cost-of-living adjustments) or indirectly. Finally, although actual spending for discretionary programs is determined solely by Congressional action, CBO’s projections of such spending are affected by changes in inflation when the spending is not constrained by the caps on discretionary budget authority that are in place under current law.¹

The Economic Variables That CBO Examined

CBO examined how differences in key economic variables would affect the budget projections by analyzing four illustrative economic scenarios; those simplified scenarios underlie the agency’s rules of thumb. In each of those scenarios, the values of economic variables differ from those in the agency’s forecast by 0.1 percentage point each year starting in January 2019. The first

1. The Bipartisan Budget Act of 2018 (Public Law 115-123) increased the limits on discretionary funding that were in place under the Budget Control Act of 2011 (P.L. 112-25) for 2019 but did not change them for 2020 or 2021. Overall limits on discretionary budget authority total \$1,244 billion in 2019, falling to an estimated \$1,118 billion in 2020 and rising to \$1,145 billion in 2021.

two scenarios—involving slower productivity growth and slower labor force growth—incorporate changes to variables that directly affect real economic growth. Those changes would cause such growth to be slower than it is in CBO’s forecast, thereby affecting other economic variables as well. The third and fourth scenarios—involving higher interest rates and higher inflation—differ from the first two in that they do not incorporate any changes in real economic growth. CBO has produced a workbook in which users can create their own alternative scenarios for productivity growth, labor force growth, interest rates, and inflation to see how revenues, outlays, and deficits might differ from CBO’s baseline budget projections.²

For simplicity, CBO constructed the scenarios such that the values for the four economic variables differed from those in the agency’s forecast by 0.1 percentage point in the direction that would worsen the budget outlook. The scenarios are not intended to indicate the extent to which, or the direction in which, actual economic conditions might differ from those in CBO’s projections. For example, the agency estimates that there is roughly a two-thirds chance that the average annual growth rate of real GDP over the next five years will be within 1.3 percentage points above or below the projected rate. Similarly, there is about a two-thirds chance that the average annual rate of inflation (as measured by the GDP price index) over the next five years will be within 0.8 percentage points of the rate in CBO’s forecast in either direction, and there is the same probability that the average interest rate (on 10-year Treasury notes, in real terms) will be within 0.9 percentage points of the forecast rate.³

Economic conditions could differ from those in CBO’s forecast for a variety of reasons. Shifts in economic trends are difficult to identify, and until forecasters can identify those trends, they may make incorrect inferences about the future trajectory of the economy. For example, CBO and other forecasters only slowly appreciated

recent shifts in trends in interest rates and productivity growth. Changes in policy can also cause economic outcomes to differ from CBO’s projections. As one of many examples, future changes in immigration policy could have significant implications for growth in the labor force. Furthermore, the full effect of those policy changes may not be immediately apparent, so actual conditions may diverge from CBO’s projections even if the projections are intended to account for those policy changes. Finally, sometimes changes in economic conditions, such as turning points in the business cycle, simply cannot be predicted on the basis of available information.

Productivity Growth. In this scenario, productivity growth is 0.1 percentage point lower each year than it is in CBO’s economic forecast, causing real GDP to be about 1.4 percent lower in 2029 than forecast (see Table B-1). The slowdown in productivity growth, in turn, affects other economic variables, such as the size of the labor force, wage rates, and interest rates.

Labor Force Growth. In the second scenario, the rate of growth in the labor force is 0.1 percentage point lower each year than the rate in the agency’s economic forecast, causing real GDP to be about 0.7 percent lower than forecast for 2029. If the population grew at the rate that CBO projects, the slower growth of the labor force would cause the labor force participation rate to fall below the agency’s current estimates by roughly equal amounts each year until it was about 0.6 percentage points lower in 2029 than forecast. Like slower productivity growth, slower labor force growth affects other economic variables as well.

Interest Rates. In the third scenario, interest rates are 0.1 percentage point higher each year than those in CBO’s forecast. Inflation is held equal to the forecast rate in this scenario, so the corresponding rule of thumb shows the effects of higher real interest rates. Unlike the other scenarios, this scenario does not include any changes to the projected amounts of interest payments made or received by individuals or businesses in CBO’s economic forecast.

Inflation. In the fourth scenario, inflation is 0.1 percentage point higher each year than it is in the agency’s economic forecast. All economic indicators measured as nominal values, such as taxable income and interest rates, increase in response to higher inflation, but indicators

2. Congressional Budget Office, “Workbook for How Changes in Economic Conditions Might Affect the Federal Budget, January 2019,” www.cbo.gov/publication/54934.
3. CBO estimated those ranges on the basis of an analysis of its forecasting accuracy over the past four decades for GDP and since 1984 for inflation and interest rates. For more on the uncertainty underlying economic forecasts, see Congressional Budget Office, *CBO’s Economic Forecasting Record: 2017 Update* (October 2017), www.cbo.gov/publication/53090.

Table B-1.

Differences Between the Illustrative Scenarios and CBO's Economic Forecast in 2029

	Level of Real GDP (Percent)	Level of Nominal GDP (Percent)	Labor Force (Percent)	Interest Rate on 10-Year Treasury Notes (Percentage points)	Level of the GDP Price Index (Percent)	Level of the Employment Cost Index ^a (Percent)
Slower Productivity Growth	-1.4	-1.4	-0.2	-0.10	0	-1.2
Slower Labor Force Growth	-0.7	-0.7	-1.0 ^b	-0.05	0	0.4
Higher Interest Rates	0	0	0	0.10	0	0
Higher Inflation	0	1.1	0	0.10	1.1	1.1

Source: Congressional Budget Office.

Real values are nominal values that have been adjusted to remove the effects of changes in prices.

Each rule of thumb is roughly symmetrical. CBO based its rules of thumb on scenarios in which economic variables differed from those in the agency's forecast in the direction that would worsen the budget outlook, but those variables could be higher or lower than forecast. If, for example, productivity growth was faster than CBO projected, real GDP would be higher than it is in the agency's economic forecast rather than lower, as it is in the table.

GDP = gross domestic product.

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

b. Although CBO used a growth rate of the labor force for this scenario that was 0.1 percentage point lower than it is in the agency's economic forecast each year, the resulting reduction in the size of the labor force in 2029 is only 1.0 percent (rather than 1.1 percent, as might be expected from 11 years of growth that was 0.1 percentage point slower) because the initial decline in the labor force is slightly offset by an increase in the supply of labor resulting from higher wage rates.

measured as real values, such as real GDP, are the same as in CBO's economic forecast.

Applying the Rules of Thumb

CBO's rules of thumb provide a rough sense of how changes in those economic variables would affect revenues and outlays. The rules of thumb are roughly symmetrical and scalable, which means that they can be used to analyze a number of scenarios in which values for those variables differ from the ones presented here, although there are some caveats.

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

Scalability. In addition to being symmetrical, the rules of thumb are also roughly scalable—that is, an increase or decrease in the value of a given economic variable will produce a roughly proportional increase or decrease in

the resulting budgetary effects. For example, if productivity growth was 0.2 percentage points lower each year than it is in CBO's economic forecast rather than 0.1 percentage point lower as it is in the scenario discussed here, the increase in the deficit would roughly double.

However, the scalability of the rules of thumb is limited. The more the values of economic variables differ from those in CBO's forecast, the less accurate the estimates produced using the rules of thumb are likely to be. Although two of the illustrative scenarios incorporate a broad set of interactions between several economic variables, all four rules of thumb are nevertheless simplified and do not account for more complex interactions among variables—such as those among growth in real GDP, inflation, and the unemployment rate. That limitation becomes more pertinent as the difference between the value of an economic variable in a given scenario and in CBO's forecast increases. Certain elements of the tax code and some provisions relating to mandatory outlays also make it likely that as such differences increase, estimates produced using the rules of thumb will become less and less accurate.

Moreover, the rules of thumb are based on scenarios in which the values of variables differ from the values in CBO's economic forecast by the same amount each year. The rules of thumb can be applied to scenarios in which the differences vary somewhat from year to year, but they cannot be used to accurately estimate the budgetary effects of significant variations in those differences over the 10-year period. For example, if the rate of labor force growth differed from the value in CBO's forecast by 0.5 percentage points in 2029 but was the same as the forecast value in all other years, the average annual difference would be a bit below 5 basis points (that is, 0.05 percentage points).⁴ CBO's estimate of the budgetary effect over the decade would not, however, be one-half the amount shown for the scenario for slower labor force growth (a difference of 0.1 percentage point each year), nor would the agency's estimate of the budgetary effect in 2029 be five times greater than the value for that year under the illustrative scenario. Both estimates would be considerably smaller than those ratios.

To assess the scalability of the rules of thumb, CBO compared estimates produced by means of the simplified calculations in its online workbook with estimates made by means of a broader set of models that the agency uses to assess the effects of economic changes on the budget. CBO found that the four rules of thumb produced approximations of the estimates generated using CBO's economic and budget models as long as the values for each of the variables did not differ from the forecast values by more than a certain amount. Specifically, the rules of thumb were scalable as long as the annual differences from the forecast values were within the following ranges:

- For productivity growth, between -0.5 percentage points and 0.5 percentage points,
- For labor force growth, between -0.75 percentage points and 0.75 percentage points,
- For interest rates, between -1.0 percentage point and 1.0 percentage point, and
- For inflation, between -1.0 percentage point and 1.0 percentage point.

4. One basis point is equivalent to one-hundredth of a percentage point, or 0.01 percentage points. Basis points are commonly used as a unit of measure for percentage differences of less than 1 percentage point.

In general, differences outside those ranges in any given year would generate budgetary effects that could not be reasonably approximated by the rules of thumb and therefore would require a more detailed analysis using CBO's comprehensive models.

Caveats. If economic conditions changed in such a way that they reflected the changes incorporated in two or more of the scenarios, the budgetary effects would most likely differ from the sum of the estimates calculated using the individual rules of thumb. For example, if rates of productivity growth and labor force growth were both lower than they are in CBO's economic forecast, the two effects would interact and lower output growth by more than would be suggested by simply adding those effects.

The rules of thumb capture the budgetary effects of specified changes in the economy, but they do not account for the source of those changes, which could include changes in fiscal policy. They can be used to make estimates that approximate the estimates of macroeconomic feedback to the federal budget that CBO would produce by using its full set of models in "dynamic analyses" of certain legislative proposals. However, the rules of thumb do not include the direct budgetary effects of any change in fiscal policy. In addition, changes in fiscal policy would probably have broader economic effects than those included in the simplified scenarios considered here. For example, a proposal might call for a change in government spending that would affect inflation. CBO's dynamic analysis of such a proposal would include estimates of changes in inflation that could be reasonably approximated by using the rule of thumb for inflation. Nonetheless, such a change to government spending would have direct effects on the budget, as well as additional effects on the economy, that are not captured by that rule of thumb. Similarly, a new tax policy that changed effective tax rates would probably alter the relationship between changes in the economy and revenues, which would cause its budgetary effects to differ from those that would be estimated using the rules of thumb.

Changes in Productivity Growth and Labor Force Growth

The growth of productivity and the growth of the labor force are important determinants of real economic growth. All else being equal, faster productivity growth and faster labor force growth both lead to greater economic growth and thus reduce budget deficits. Slower productivity growth and slower labor force growth both

reduce the growth of GDP, thereby worsening the budget outlook.⁵

Slower Growth of Productivity

The first rule of thumb illustrates the budgetary effects of growth in productivity that is slightly weaker than CBO currently anticipates. Specifically, if productivity grew at a rate that was 0.1 percentage point lower each year than the rate in the agency's economic forecast, annual deficits would be larger than projected by amounts that would climb to \$65 billion by 2029, CBO estimates. Between 2020 and 2029, the cumulative deficit would be \$307 billion larger than it is in CBO's baseline projections (see Table B-2).

In this analysis, CBO examined how the slower growth of total factor productivity (that is, real output per unit of combined labor and capital services) might affect GDP, income, and interest rates. The agency found that slower-than-anticipated productivity growth would lead to slower growth in GDP because both labor and capital would be producing less than projected in CBO's current economic forecast. If workers produced less, the hourly wage rate would be lower; therefore, the supply of labor would also decline. As a result, total labor income would be lower. Meanwhile, if capital produced less output, the returns on that capital would also decline, further decreasing total taxable income. Lower returns on capital would also cause private investment to be lower. Treasury securities compete with other investments for investors' money, so those lower rates of return on private investments imply that rates on Treasury securities would also be lower. Other variables, such as the unemployment rate and inflation, could be affected as well; however, this simplified scenario does not include the effects of changes in those variables.

If actual productivity growth was 0.1 percentage point lower each year than it is projected to be, by the end of 2029, GDP and total income would be about 1.4 percent lower than they are in CBO's forecast, CBO estimates. Meanwhile, interest rates would be about 1 basis point below those in the agency's forecast for 2019, and that difference would increase by roughly 1 additional

basis point in each subsequent year. By the end of 2029, interest rates would be about 10 basis points lower than in the forecast (see Table B-1 on page 123).

If economic growth slowed in each year as a result of lower productivity growth, taxable income would also grow more slowly than projected, and tax revenues would be lower by increasing amounts over time, resulting in a shortfall of \$84 billion in 2029. Between 2020 and 2029, the drop in revenues stemming from the slower growth in income would increase deficits by a total of \$405 billion.

Slower growth in income would also lead to a \$34 billion net decrease in mandatory outlays for programs whose spending is either explicitly or implicitly linked to wage growth. Outlays for Medicare, Medicaid, unemployment insurance, and Social Security would see a decrease of \$40 billion, which would be partially offset by a \$6 billion increase in outlays for the refundable portions of the earned income tax credit, the child tax credit, and the American Opportunity Tax Credit.⁶

Because slower productivity growth would push interest rates down, the amount of interest that the federal government would pay on the debt projected in CBO's baseline would decrease by \$96 billion between 2020 and 2029. However, if revenues were reduced by the amounts indicated above, the federal government would need to borrow more than projected to finance the resulting net increase in the deficit. That additional borrowing would add \$32 billion to interest payments between 2020 and 2029. Together, those effects would result in net interest outlays that were \$64 billion less than the amount in the agency's baseline projections over the 2020–2029 period.

Slower Growth of the Labor Force

The second rule of thumb illustrates the budgetary effects of the labor force's growing slightly more slowly than CBO anticipates. Specifically, if the unemployment rate remained unchanged and annual growth in the labor force was 0.1 percentage point slower than in CBO's economic forecast, annual deficits would be larger than those in the agency's baseline budget projections by amounts that would grow each year and reach \$33 billion by 2029, CBO estimates. The cumulative deficit

5. For further discussion of how changes in the labor force participation rate (which lead to changes in labor force growth) and changes in productivity affect GDP, as well as of the uncertainty of such projections, see Chapter 7 in Congressional Budget Office, *The 2016 Long-Term Budget Outlook* (July 2016), www.cbo.gov/publication/51580.

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

Table B-2.

How Changes in Productivity Growth and Labor Force Growth Might Affect CBO's Baseline Budget Projections

Billions of Dollars

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total	
												2020–2029	2020–2029
Productivity Growth Is 0.1 Percentage Point Lower per Year													
Changes in Revenues	-3	-8	-13	-19	-25	-32	-40	-51	-61	-72	-84	-96	-405
Changes in Outlays													
Mandatory outlays	*	-1	-1	-1	-2	-3	-3	-4	-5	-6	-7	-8	-34
Net interest													
Lower rates	*	-2	-3	-4	-6	-8	-10	-12	-14	-17	-20	-23	-96
Debt service	*	*	*	1	1	2	3	4	5	7	9	5	32
Subtotal, net interest	*	-2	-3	-4	-4	-6	-7	-8	-9	-11	-12	-18	-64
Total Change in Outlays	-1	-2	-4	-5	-6	-8	-10	-12	-14	-17	-19	-25	-98
Increase (-) in the Deficit	-2	-5	-9	-14	-19	-24	-30	-38	-47	-55	-65	-71	-307
Labor Force Growth Is 0.1 Percentage Point Lower per Year													
Changes in Revenues	-1	-3	-5	-7	-10	-13	-16	-20	-24	-29	-34	-38	-161
Changes in Outlays													
Mandatory outlays	*	*	*	*	1	1	1	2	2	3	5	2	16
Net interest													
Lower rates	*	-1	-2	-2	-3	-3	-4	-5	-7	-8	-10	-12	-45
Debt service	*	*	*	*	1	1	1	2	2	3	4	2	15
Subtotal, net interest	*	-1	-2	-2	-2	-3	-3	-4	-4	-5	-5	-10	-31
Total Change in Outlays	*	-1	-2	-2	-2	-2	-2	-2	-2	-1	-1	-8	-15
Increase (-) in the Deficit	-1	-2	-4	-6	-8	-11	-14	-18	-22	-27	-33	-30	-146

Source: Congressional Budget Office.

The rules of thumb capture the budgetary effects of specified changes in the economy, but they do not account for the source of those changes. The source may or may not be a change in fiscal policy, which would have additional budgetary effects. In addition, such a change in fiscal policy would probably have broader economic effects than those underlying the budgetary estimates shown here.

Each rule of thumb is roughly symmetrical. If, for example, productivity growth was 0.1 percentage point lower each year than it is in CBO's economic forecast, deficits would be reduced by about the same amount that they are increased each year in the table above.

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

between 2020 and 2029 would be \$146 billion larger than it is in the agency's baseline budget projections (see Table B-2). The budgetary effects under this scenario are considerably smaller than those under the scenario for slower productivity growth because the resulting economic effects are smaller (see Table B-1 on page 123).

To arrive at this rule of thumb, CBO began by analyzing how the slower growth of the labor force under the illustrative scenario might affect GDP, income, and interest rates. Slower-than-projected growth in the labor force would push the wage rate above CBO's current estimate.

Those higher wage rates would bring about a small boost in labor income and in the supply of labor, which would partially offset the effects of the initial decline in labor force growth. Despite those effects, total labor income would be lower than it is in CBO's baseline. Meanwhile, the number of workers using a given amount of capital would fall below the number projected in CBO's economic forecast, so the returns on that capital would decline as well. As described above, the resulting decline in the rates of return on private investment would imply that interest rates on Treasury securities would be lower than they are in CBO's economic forecast. Although

other variables—including the unemployment rate, inflation, the distribution of labor income, and rates of retirement—could also be affected by the labor force’s growing more slowly than projected, this rule of thumb does not incorporate the effects of such changes.

In CBO’s estimation, if the rate of growth in the labor force was 0.1 percentage point slower than anticipated, GDP growth would also be slower each year. Meanwhile, interest rates would be slightly lower than forecast for 2019, and that difference would increase in each subsequent year. By the end of 2029, GDP and labor income would be 0.7 percent lower than they are in CBO’s forecast, and interest rates would be about 5 basis points lower (see Table B-1 on page 123).

The slower economic growth would cause taxable labor income and profits to grow more slowly than projected, resulting in tax revenues that were less than the amounts in CBO’s baseline projections. The shortfall would increase over time, reaching \$34 billion in 2029. Also, the higher-than-projected wage rates and the smaller-than-projected number of workers, would, on net, add a total of \$16 billion to mandatory outlays between 2020 and 2029. Specifically, because outlays for Medicare, Medicaid, and Social Security are linked to wage growth, mandatory spending on those programs would increase by about \$19 billion. But because there would be fewer workers and higher wages, \$3 billion of that amount would be offset by a decrease in outlays for unemployment insurance benefits and the refundable portions of the earned income tax credit, the child tax credit, and the American Opportunity Tax Credit.

Between 2020 and 2029, the lower interest rates that resulted from the slower growth of the labor force would reduce the amount of interest that the federal government would pay on the debt projected in CBO’s baseline by about \$45 billion. However, the reduction in revenues and slight increase in mandatory spending would increase the deficit, requiring the federal government to borrow more than projected. That additional borrowing would add a little less than \$15 billion to interest payments. Overall, CBO estimates that net interest outlays between 2020 and 2029 would be \$31 billion less than they are in the agency’s baseline projections.

Changes in Interest Rates and Inflation

Changes in interest rates and inflation affect the federal budget. Higher interest rates would increase the flow of

interest payments to and from the federal government, and higher inflation rates would raise both revenues and outlays, though the effect on outlays would be larger. Lower interest rates and inflation would have the opposite effects.

Higher Interest Rates

The third rule of thumb illustrates the sensitivity of the budget to an increase in interest rates when all other economic variables are left unchanged. In the illustrative scenario, all interest rates—including both the rate on 3-month Treasury bills and the rate on 10-year Treasury notes—are 0.1 percentage point higher each year than they are in CBO’s economic forecast. Under that scenario, in CBO’s estimation, deficits would increase progressively over the projection period by amounts that rose to \$29 billion in 2029. The cumulative deficit between 2020 and 2029 would be \$182 billion larger than it is in the agency’s baseline projections (see Table B-3).

Most of that difference would arise because the government’s interest costs would be larger. As the Treasury replaced maturing securities and increased its borrowing to cover future deficits, the budgetary effects of higher interest rates would mount. Under this scenario, the added costs of higher interest rates on the debt projected in CBO’s baseline would reach \$25 billion in 2029 and would total \$161 billion between 2020 and 2029.

As part of conducting monetary policy, the Federal Reserve buys and sells Treasury and other securities. The Federal Reserve also pays interest on reserves (deposits that banks hold at the central bank). The interest that the Federal Reserve earns on its portfolio of securities and the interest that it pays on reserves affect its remittances to the Treasury, which are counted as revenues. If, over the next 10 years, all interest rates were 0.1 percentage point higher than CBO projects, the Federal Reserve’s remittances over the next few years would be smaller than projected because higher interest payments on reserves would outstrip the additional earnings from interest on its portfolio. Over time, however, the current holdings in the portfolio would mature and be replaced with higher-yielding investments; as a result, by 2023, the Federal Reserve’s remittances would be larger. Overall, rates that were 0.1 percentage point higher than those in CBO’s economic forecast would (all else being equal) cause revenues from the Federal Reserve’s remittances over the 2020–2029 period to be \$3 billion more than projected.

Table B-3.

How Changes in Interest Rates and Inflation Might Affect CBO's Baseline Budget Projections

Billions of Dollars

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total	
												2020–2029	2020–2029
Interest Rates Are 0.1 Percentage Point Higher per Year													
Changes in Revenues	-1	-1	-1	*	*	*	1	1	1	1	1	-2	3
Changes in Outlays													
Higher rates	2	5	8	11	13	16	18	20	22	23	25	53	161
Debt service	*	*	1	1	1	2	2	3	4	5	6	5	25
Total Change in Outlays	2	5	8	12	15	18	21	23	26	28	30	58	185
Increase (-) in the Deficit	-3	-7	-9	-12	-15	-17	-20	-22	-24	-27	-29	-60	-182
Inflation Is 0.1 Percentage Point Higher per Year													
Changes in Revenues	1	5	9	14	18	23	29	35	42	49	56	70	282
Changes in Outlays													
Mandatory spending	*	3	4	7	10	13	17	21	24	30	34	37	162
Discretionary spending ^a	0	*	*	1	2	3	5	6	7	9	11	6	44
Net interest													
Higher rates ^b	4	5	9	12	15	17	19	21	23	25	26	59	174
Debt service	*	*	*	*	1	1	1	2	2	3	4	3	15
Subtotal, net interest	4	6	10	13	16	18	21	23	25	27	30	62	189
Total Change in Outlays	4	8	14	21	27	34	42	50	57	66	74	105	394
Increase (-) in the Deficit	-3	-3	-5	-7	-9	-11	-13	-14	-15	-17	-18	-35	-113

Source: Congressional Budget Office.

The rules of thumb capture the budgetary effects of specified changes in the economy, but they do not account for the source of those changes. The source may or may not be a change in fiscal policy, which would have additional budgetary effects. In addition, such a change in fiscal policy would probably have broader economic effects than those underlying the budgetary estimates shown here.

Each rule of thumb is roughly symmetrical. If, for example, interest rates were 0.1 percentage point lower each year than they are in CBO's economic forecast, deficits would be reduced by about the same amount that they are increased each year in the table above.

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

- Most discretionary spending through 2021 is governed by caps established by the Budget Control Act of 2011; in CBO's baseline, that spending would not be affected by changes in projected inflation.
- The change in outlays attributable to higher interest rates in this scenario differs from the estimate in the rule of thumb for interest rates because the principal of inflation-protected securities issued by the Treasury grows with inflation.

The larger deficits generated by the increase in interest rates would require the Treasury to borrow more than it is projected to borrow in CBO's baseline. That additional borrowing would raise the cost of servicing the debt by amounts that increased each year and reached \$6 billion in 2029. Between 2020 and 2029, the additional borrowing would add a total of \$25 billion to the cost of servicing the federal debt.

Higher Inflation

The fourth rule of thumb shows the budgetary effects of inflation that is 0.1 percentage point higher each year than it is in CBO's baseline when all other economic variables—except for interest rates, which are addressed below—are left unchanged. All wage and price indexes, including the GDP price index, the consumer price index for all urban consumers (CPI-U), the chained CPI-U, and the employment cost index for wages and

salaries of workers in private industry, would rise by 0.1 percentage point more each year than they do in CBO's economic forecast. Although higher inflation would increase both revenues and outlays, the impact on outlays would be greater, resulting in larger budget deficits on net. Changes in inflation could also lead to changes in real economic growth and unemployment; however, only the effects of changes in inflation are examined in this scenario.

Under this scenario, total revenues between 2020 and 2029 would be \$282 billion higher than they are in the agency's baseline budget projections, and total outlays would be \$394 billion higher, CBO estimates. The cumulative deficit for the 2020–2029 period would be \$113 billion larger than projected (see Table B-3).

Effects on Revenues. Larger increases in wage rates and prices generally lead to greater labor income, profits, and other income, which in turn generate larger collections of individual income taxes, payroll taxes, and corporate income taxes. Many provisions in the individual income tax system—including the income thresholds for the tax brackets—are adjusted, or indexed, for inflation. Therefore, the share of taxpayers' income that is taxed at certain rates does not change very much when income increases because of higher inflation, so tax collections tend to rise roughly proportionally with income under those circumstances. However, not all parameters of the individual income tax system are indexed for inflation. For example, the income thresholds for the surtax on investment income are fixed in nominal dollars, so if income rose because of inflation, the surtax would apply to a larger share of taxpayers' income.

For the payroll tax, rates are mostly the same for all income levels, and the maximum amount of earnings subject to the Social Security tax rises (after a lag) with average wages in the economy. Higher wage inflation therefore leads to a roughly proportional increase in payroll tax revenues. Similarly, nearly all corporate profits are taxed at a single 21 percent statutory rate. Consequently, an increase in profits resulting from higher inflation generates a roughly proportional increase in corporate tax revenues. All told, inflation that was 0.1 percentage point higher than forecast each year would add \$282 billion in revenues to the amounts in the agency's baseline budget projections between 2020 and 2029.

Effects on Mandatory Spending. Higher inflation would also increase the cost of a number of mandatory spending programs, adding \$162 billion to projected spending, CBO estimates. Benefits for many mandatory programs are automatically adjusted each year to reflect increases in prices. Specifically, benefits paid for Social Security, federal employees' retirement programs, disability compensation for veterans, the Supplemental Nutrition Assistance Program, Supplemental Security Income, child nutrition programs, and the refundable portion of the earned income tax credit, among others, are adjusted (with a lag) for changes in the consumer price index, one of its components, or another measure of inflation. Many of Medicare's payment rates are also adjusted annually for inflation. Spending for some other programs, such as Medicaid, is not formally indexed to changes in prices but nevertheless tends to grow with inflation because the costs of providing benefits under those programs increase as nominal wages and prices rise. In addition, to the extent that benefit payments in retirement and disability programs are linked to participants' pre-enrollment wages, increases in nominal wages resulting from higher wage inflation would boost future outlays for those programs.

Effects on Discretionary Spending. Higher inflation would raise CBO's projections of spending for discretionary programs in two main ways. First, higher inflation would increase projected outlays for most discretionary programs after 2021. The Budget Control Act of 2011, as modified by subsequent legislation, imposed caps on most discretionary budget authority through 2021, and CBO's baseline incorporates the assumption that total appropriations for most purposes will equal those caps. Higher inflation would not alter the statutory caps and thus would have no effect on CBO's projections of spending that is constrained by those limits. However, for the years after 2021—when, under current law, the caps will no longer be in place—CBO's baseline projections incorporate the assumption that the discretionary funding currently subject to the caps will increase with inflation from the 2021 amount. As a result, inflation that was 0.1 percentage point higher each year than the rates underlying CBO's economic forecast would boost projected outlays for the 2022–2029 period by a total of \$40 billion.

Although the caps on discretionary appropriations are not indexed for inflation, higher inflation would diminish the amount of goods that could be acquired and the benefits and services that could be provided under those

caps.⁷ If higher inflation led lawmakers to adjust the discretionary caps, the effect on spending and on deficits would be greater.

The second way in which higher inflation would increase CBO's projections of discretionary outlays for the 2020–2029 period is through its effect on spending that is not constrained by the caps. By law, adjustments to the caps are made to accommodate appropriations for certain purposes. For 2019, CBO's baseline includes adjustments of \$81 billion designated for overseas contingency operations (war-related activities, primarily in Afghanistan), \$7 billion in funding for disaster relief, \$2 billion in funding for emergency requirements, and \$2 billion for initiatives aimed at enhancing program integrity by reducing improper payments from certain benefit programs.⁸ Because the funding for those activities is not constrained by the caps in 2020 and 2021, it is projected to increase with inflation in those years and over the rest

of the period. As a result, if inflation was 0.1 percentage point higher each year than forecast, CBO's projections of such outlays for the 2020–2029 period would increase by a total of \$4 billion.

All told, CBO's projections of discretionary outlays through 2029 would be \$44 billion greater than the amounts in the agency's current baseline budget projections.

Effects on Net Interest Costs. Inflation also has an impact on outlays for net interest because it affects nominal interest rates. If inflation was 0.1 percentage point higher than CBO projects, then interest rates would be 0.1 percentage point higher (all else being equal). As a result, new federal borrowing would incur higher interest costs, and outstanding inflation-indexed securities would be more costly for the federal government. In addition, higher interest rates would first reduce and then increase revenues from the Federal Reserve's remittances to the Treasury. The direct effect of such higher rates would be to add \$174 billion in interest costs to CBO's baseline projections of outlays. Moreover, the effects of higher inflation would increase federal debt between 2020 and 2029, boosting interest costs by an additional \$15 billion.

-
7. By CBO's estimate, the caps on discretionary spending for 2020 and 2021 are about 10 percent lower and 8 percent lower, respectively, than the cap for 2019.
 8. The extent to which the discretionary caps for the funding of program integrity initiatives can be adjusted is limited by other statutory provisions.

The Automatic Stabilizers in the Federal Budget

Overview

Federal revenues and outlays regularly respond to cyclical movements in the economy in ways that tend to dampen those movements. When the economy is operating below its potential, wages and salaries, corporate profits, and other tax bases are smaller than they would have been if the economy was operating at its potential; as a result, federal revenues are lower as well. Meanwhile, outlays for unemployment insurance benefits and some other transfer programs are higher. Those changes in revenues and outlays tend to encourage private spending. By contrast, when the economy is operating above its potential, revenues are higher and transfer payments lower than they would have been if the economy was operating at its potential—changes that tend to restrain private spending. The changes in revenues and outlays that are attributable to cyclical changes in the economy are known as automatic stabilizers. They are automatic because they occur without any legislated changes in tax or spending policies. They are stabilizers because they tend to dampen the magnitude of cyclical fluctuations in the economy.

The Congressional Budget Office estimates the automatic stabilizers in order to inform policymakers and analysts about the extent to which changes in the budget deficit are caused by cyclical developments in the economy and are therefore likely to prove temporary. The automatic stabilizers are measured as the estimated effects on federal revenues and outlays—and thus on federal budget deficits—of the cyclical components of gross domestic product (GDP) and the unemployment rate.¹ Those cyclical components are the output gap, or the difference between GDP and potential GDP (CBO’s estimate of the maximum sustainable output of the economy), and the unemployment gap, the difference between the rate

of unemployment and the underlying long-term rate of unemployment.²

On the basis of CBO’s current economic and budgetary projections, which incorporate the assumption that current law will generally remain unchanged, the agency projects that the automatic stabilizers would reduce deficits through 2021 but then slightly increase the deficit every year thereafter. Over the next decade, federal budget deficits without automatic stabilizers are projected to vary narrowly around 4.3 percent of potential GDP.

Estimates of the Automatic Stabilizers Over the Next Decade

Between 2019 and 2021, the economy is expected to operate above its potential, so outlays for unemployment insurance and other categories that vary with the economy are projected to be smaller—and tax revenues, greater—than they would be if the economy was operating at its potential. Thus, the automatic stabilizers would reduce deficits during those years. In 2020, for example, they are projected to reduce the deficit by \$79 billion, or 0.4 percent of potential GDP (see Table C-1).³ Thereafter—when GDP is projected to fall short of potential GDP and when, beginning in 2023, the unemployment rate is projected to exceed CBO’s estimate of the underlying long-term rate of unemployment—the automatic stabilizers would slightly increase deficits (see Figure C-1 on page 136). From 2022 to 2029, the automatic stabilizers increase projected deficits

1. CBO’s estimates of the automatic stabilizers reflect the assumption that discretionary spending and interest payments do not respond automatically to the business cycle. For a description of the methods that CBO uses to estimate automatic stabilizers, see Frank Russek and Kim Kowalewski, *How CBO Estimates Automatic Stabilizers*, Working Paper 2015-07 (Congressional Budget Office, November 2015), www.cbo.gov/publication/51005.

2. The underlying long-term rate of unemployment is, for the most part, equal to CBO’s estimate of the natural rate of unemployment, but it excludes the effects of certain structural factors that boosted the natural rate in the years immediately following the 2007–2009 recession. The natural rate of unemployment is the rate of unemployment arising from all sources except fluctuations in the overall demand for goods and services.

3. In addition to showing the automatic stabilizers in billions of dollars, CBO also presents them as percentages of potential GDP, which unlike GDP, excludes fluctuations that are attributable to the business cycle. The agency’s previous estimates of the automatic stabilizers are available at www.cbo.gov/publication/51139.

Table C-1.

Deficit or Surplus With and Without CBO's Estimate of Automatic Stabilizers, and Related Estimates

	Deficit (-) or Surplus With Automatic Stabilizers	-	Automatic Stabilizers	=	Revenues and Outlays Without Automatic Stabilizers		Output Gap ^a	Unemployment Gap (Percentage points) ^b	
					Deficit (-) or Surplus Without Automatic Stabilizers	Revenues			Outlays
In Billions of Dollars									
1969	3		11		-8	181	188	26	-2.4
1970	-3		3		-6	194	200	2	-1.9
1971	-23		-6		-18	193	211	-16	-0.2
1972	-23		-3		-21	211	231	-5	-0.1
1973	-15		11		-26	222	248	40	-0.9
1974	-6		11		-17	256	273	28	-1.1
1975	-53		-18		-35	294	329	-56	1.2
1976	-74		-23		-50	314	365	-51	1.8
1977	-54		-11		-42	362	404	-24	1.1
1978	-59		4		-64	395	458	11	*
1979	-41		16		-56	450	506	36	-0.4
1980	-74		-10		-64	525	588	-37	0.6
1981	-79		-22		-57	613	670	-39	1.2
1982	-128		-66		-62	664	726	-179	3.0
1983	-208		-97		-111	667	777	-229	4.0
1984	-185		-31		-154	687	841	-81	1.7
1985	-212		-14		-199	742	940	-53	1.2
1986	-221		-15		-206	779	985	-55	1.1
1987	-150		-26		-124	878	1,001	-81	0.5
1988	-155		-12		-143	923	1,066	-39	-0.3
1989	-153		1		-153	994	1,147	-5	-0.6
1990	-221		-11		-210	1,045	1,255	-42	-0.3
1991	-269		-77		-193	1,125	1,317	-227	1.0
1992	-290		-90		-200	1,168	1,368	-221	1.8
1993	-255		-74		-181	1,216	1,397	-181	1.6
1994	-203		-47		-156	1,298	1,455	-109	0.9
1995	-164		-24		-140	1,374	1,514	-69	0.2
1996	-107		-13		-94	1,465	1,560	-32	0.1
1997	-22		21		-42	1,561	1,603	60	-0.2
1998	69		45		25	1,685	1,660	101	-0.7
1999	126		67		59	1,772	1,713	154	-1.0

Continued

Table C-1.

Continued

Deficit or Surplus With and Without CBO's Estimate of Automatic Stabilizers, and Related Estimates

	Deficit (-) or Surplus With Automatic Stabilizers	-	Automatic Stabilizers	=	Deficit (-) or Surplus Without Automatic Stabilizers		Revenues and Outlays Without Automatic Stabilizers		Output Gap ^a	Unemployment Gap (Percentage points) ^b
					Revenues	Outlays	Revenues	Outlays		
In Billions of Dollars (Continued)										
2000	236		87		149	1,954	1,805	193	-1.2	
2001	128		17		111	1,988	1,876	-25	-0.8	
2002	-158		-75		-83	1,923	2,006	-235	0.6	
2003	-378		-103		-275	1,873	2,148	-295	0.9	
2004	-413		-59		-354	1,928	2,282	-149	0.6	
2005	-318		-22		-297	2,170	2,467	-49	0.2	
2006	-248		12		-261	2,397	2,658	31	-0.2	
2007	-161		20		-181	2,555	2,736	38	-0.4	
2008	-459		-23		-436	2,542	2,978	-82	0.4	
2009	-1,413		-256		-1,156	2,297	3,454	-809	3.6	
2010	-1,294		-301		-993	2,369	3,362	-703	4.7	
2011	-1,300		-263		-1,036	2,475	3,511	-623	4.1	
2012	-1,087		-208		-879	2,579	3,458	-503	3.2	
2013	-680		-207		-473	2,915	3,388	-529	2.6	
2014	-485		-168		-317	3,144	3,460	-425	1.6	
2015	-439		-86		-353	3,311	3,664	-206	0.7	
2016	-585		-76		-509	3,333	3,842	-238	0.3	
2017	-665		-53		-612	3,370	3,982	-168	-0.1	
2018	-779		8		-787	3,335	4,122	15	-0.6	
2019	-897		72		-969	3,470	4,439	177	-1.0	
2020	-903		79		-982	3,637	4,619	161	-1.0	
2021	-974		41		-1,015	3,819	4,834	74	-0.5	
2022	-1,128		-4		-1,124	4,021	5,144	-20	*	
2023	-1,139		-38		-1,100	4,241	5,341	-98	0.2	
2024	-1,091		-51		-1,041	4,490	5,531	-129	0.2	
2025	-1,213		-53		-1,160	4,690	5,850	-136	0.3	
2026	-1,204		-64		-1,141	5,008	6,149	-165	0.3	
2027	-1,192		-67		-1,126	5,309	6,434	-164	0.3	
2028	-1,435		-61		-1,374	5,495	6,870	-150	0.3	
2029	-1,370		-62		-1,308	5,723	7,031	-156	0.3	

Continued

Table C-1.

Continued

Deficit or Surplus With and Without CBO's Estimate of Automatic Stabilizers, and Related Estimates

	Deficit (-) or Surplus With Automatic Stabilizers	-	Automatic Stabilizers	=	Deficit (-) or Surplus Without Automatic Stabilizers		Revenues and Outlays Without Automatic Stabilizers		Output Gap ^a	Unemployment Gap (Percentage points) ^b
					Revenues	Outlays	Revenues	Outlays		
As a Percentage of Potential GDP										
1969	0.3		1.1		-0.8	18.9	19.7	2.8		-2.4
1970	-0.3		0.3		-0.6	18.5	19.1	0.1		-1.9
1971	-2.0		-0.5		-1.5	17.1	18.6	-1.4		-0.2
1972	-1.9		-0.2		-1.7	17.2	18.9	-0.4		-0.1
1973	-1.1		0.9		-2.0	16.9	18.9	3.1		-0.9
1974	-0.4		0.7		-1.2	17.6	18.7	1.9		-1.1
1975	-3.2		-1.1		-2.1	17.7	19.8	-3.3		1.2
1976	-4.0		-1.3		-2.7	17.1	19.8	-2.8		1.8
1977	-2.6		-0.5		-2.1	17.7	19.7	-1.2		1.1
1978	-2.6		0.2		-2.8	17.4	20.3	0.5		*
1979	-1.6		0.6		-2.2	17.8	20.0	1.4		-0.4
1980	-2.6		-0.4		-2.3	18.5	20.8	-1.3		0.6
1981	-2.5		-0.7		-1.8	19.3	21.1	-1.2		1.2
1982	-3.7		-1.9		-1.8	19.0	20.8	-5.1		3.0
1983	-5.5		-2.6		-2.9	17.7	20.6	-6.1		4.0
1984	-4.6		-0.8		-3.8	17.1	20.9	-2.0		1.7
1985	-4.9		-0.3		-4.6	17.2	21.8	-1.2		1.2
1986	-4.8		-0.3		-4.5	17.0	21.5	-1.2		1.1
1987	-3.1		-0.5		-2.6	18.1	20.7	-1.7		0.5
1988	-3.0		-0.2		-2.8	17.8	20.6	-0.8		-0.3
1989	-2.7		**		-2.8	17.9	20.6	-0.1		-0.6
1990	-3.7		-0.2		-3.5	17.6	21.1	-0.7		-0.3
1991	-4.3		-1.2		-3.0	17.8	20.8	-3.6		1.0
1992	-4.4		-1.4		-3.0	17.6	20.6	-3.3		1.8
1993	-3.7		-1.1		-2.6	17.5	20.1	-2.6		1.6
1994	-2.8		-0.6		-2.1	17.8	20.0	-1.5		0.9
1995	-2.1		-0.3		-1.8	18.0	19.8	-0.9		0.2
1996	-1.3		-0.2		-1.2	18.4	19.5	-0.4		0.1
1997	-0.3		0.2		-0.5	18.6	19.1	0.7		-0.2
1998	0.8		0.5		0.3	19.1	18.8	1.1		-0.7
1999	1.3		0.7		0.6	19.0	18.4	1.7		-1.0

Continued

Table C-1.

Continued

Deficit or Surplus With and Without CBO's Estimate of Automatic Stabilizers, and Related Estimates

	Deficit (-) or Surplus With Automatic Stabilizers	-	Automatic Stabilizers	=	Deficit (-) or Surplus Without Automatic Stabilizers		Revenues and Outlays Without Automatic Stabilizers		Output Gap ^a	Unemployment Gap (Percentage points) ^b
					Revenues	Outlays	Revenues	Outlays		
As a Percentage of Potential GDP (Continued)										
2000	2.4		0.9		1.5	19.7	18.2	1.9	-1.2	
2001	1.2		0.2		1.1	18.8	17.8	-0.2	-0.8	
2002	-1.4		-0.7		-0.8	17.4	18.1	-2.1	0.6	
2003	-3.3		-0.9		-2.4	16.2	18.5	-2.5	0.9	
2004	-3.4		-0.5		-2.9	15.8	18.7	-1.2	0.6	
2005	-2.5		-0.2		-2.3	16.8	19.1	-0.4	0.2	
2006	-1.8		0.1		-1.9	17.6	19.5	0.2	-0.2	
2007	-1.1		0.1		-1.3	17.9	19.2	0.3	-0.4	
2008	-3.1		-0.2		-2.9	17.1	20.1	-0.6	0.4	
2009	-9.3		-1.7		-7.6	15.1	22.7	-5.3	3.6	
2010	-8.3		-1.9		-6.4	15.2	21.6	-4.5	4.7	
2011	-8.1		-1.6		-6.5	15.4	21.9	-3.9	4.1	
2012	-6.6		-1.3		-5.3	15.6	20.9	-3.0	3.2	
2013	-4.0		-1.2		-2.8	17.0	19.8	-3.1	2.6	
2014	-2.7		-0.9		-1.8	17.7	19.5	-2.4	1.6	
2015	-2.4		-0.5		-1.9	18.1	20.0	-1.1	0.7	
2016	-3.1		-0.4		-2.7	17.7	20.4	-1.3	0.3	
2017	-3.4		-0.3		-3.1	17.3	20.5	-0.9	-0.1	
2018	-3.9		**		-3.9	16.5	20.4	0.1	-0.6	
2019	-4.3		0.3		-4.6	16.5	21.1	0.8	-1.0	
2020	-4.1		0.4		-4.5	16.6	21.0	0.7	-1.0	
2021	-4.3		0.2		-4.4	16.7	21.1	0.3	-0.5	
2022	-4.7		**		-4.7	16.9	21.6	-0.1	*	
2023	-4.6		-0.2		-4.4	17.1	21.6	-0.4	0.2	
2024	-4.2		-0.2		-4.0	17.4	21.5	-0.5	0.2	
2025	-4.5		-0.2		-4.3	17.5	21.8	-0.5	0.3	
2026	-4.3		-0.2		-4.1	18.0	22.1	-0.6	0.3	
2027	-4.1		-0.2		-3.9	18.4	22.3	-0.6	0.3	
2028	-4.8		-0.2		-4.6	18.3	22.9	-0.5	0.3	
2029	-4.4		-0.2		-4.2	18.4	22.6	-0.5	0.3	

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

Automatic stabilizers are automatic changes in revenues and outlays that are attributable to cyclical movements in GDP and unemployment.

The deficits without automatic stabilizers have *not* been adjusted to remove the effects of timing shifts. When October 1 (the first day of the fiscal year) falls on a weekend, certain payments that would have ordinarily been made on that day are instead made at the end of September and thus are shifted into the previous fiscal year. Those timing shifts will noticeably boost spending and the deficit in 2022 and 2028 and reduce spending and the deficit in 2024 and 2029. See Table 1-2 on page 8 for more details.

Shaded amounts are actual deficits or surpluses.

GDP = gross domestic product; * = between -0.05 percentage points and 0.05 percentage points; ** = between -0.05 percent and 0.05 percent.

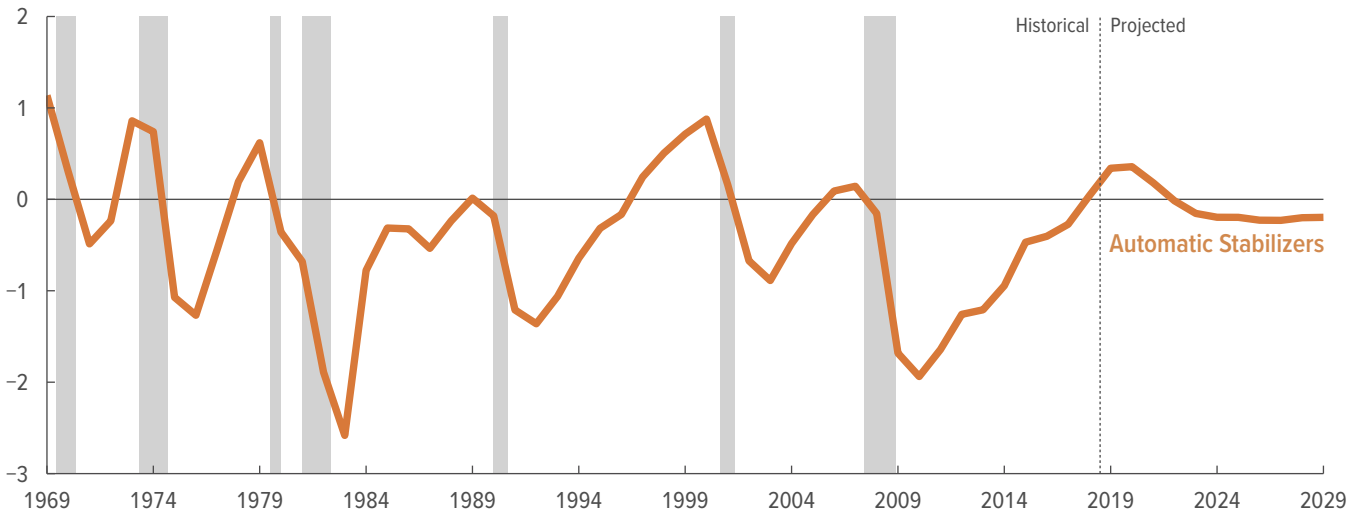
a. The output gap equals actual or projected GDP minus potential GDP (CBO's estimate of the maximum sustainable output of the economy).

b. The unemployment gap equals the actual or projected rate of unemployment minus the underlying long-term rate of unemployment.

Figure C-1.

Contribution of Automatic Stabilizers to Budget Deficits and Surpluses

Percentage of Potential Gross Domestic Product



Source: Congressional Budget Office.

Automatic stabilizers are automatic changes in revenues and outlays that are attributable to cyclical movements in gross domestic product and unemployment.

Potential gross domestic product is CBO's estimate of the maximum sustainable output of the economy.

Data are fiscal year values.

by an average of 0.2 percent of potential GDP—roughly equal to its long-run average value—as the projected output and unemployment gaps begin to settle at their long-run average values of -0.5 percent and 0.25 percent, respectively.⁴

Budget Deficits Without Automatic Stabilizers

Removing CBO's estimate of the automatic stabilizers from the federal budget deficit yields an estimate of what the deficit would be if GDP was at its potential, the unemployment rate equaled its underlying long-term rate, and all other factors were unchanged. The budget deficit without automatic stabilizers can help

analysts evaluate the extent to which changes in the deficit are caused by factors other than cyclical developments in the economy, such as changes in legislation and demographics.⁵

If current laws generally remained unchanged, over the next few years budget deficits without automatic stabilizers would fall slightly from 4.6 percent of potential GDP in 2019 to 4.4 percent in 2021, CBO estimates (see Figure C-2). Thereafter, the deficit without automatic stabilizers would average 4.3 percent of potential GDP as strong growth in revenues without automatic stabilizers outpaces the growth in outlays without automatic stabilizers. That strong growth in revenues is due, in part, to the scheduled expiration of many temporary provisions of Public Law 115-97 (referred to here as the 2017 tax

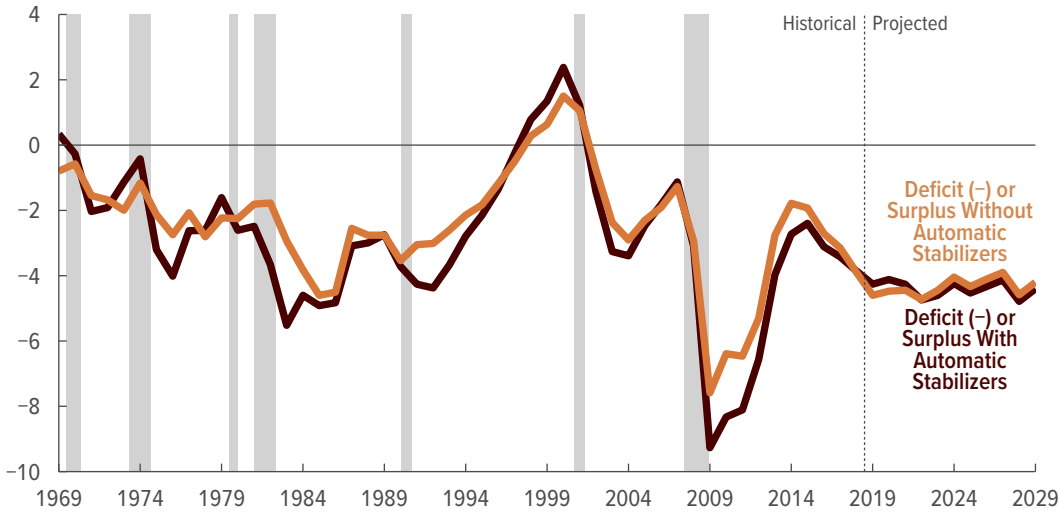
4. For further discussion of CBO's estimate of the average output gap, see Congressional Budget Office, *Why CBO Projects That Actual Output Will Be Below Potential Output on Average* (February 2015), www.cbo.gov/publication/49890. CBO's estimate of the average unemployment gap is consistent with its estimate of the average output gap.

5. The budget deficit without automatic stabilizers is sometimes referred to as the cyclically adjusted deficit or structural deficit.

Figure C-2.

Budget Deficits and Surpluses With and Without Automatic Stabilizers

Percentage of Potential Gross Domestic Product



The estimated deficit without automatic stabilizers has tended to increase during recessions and early in recoveries, in part because of legislation enacted to boost the economy.

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

Automatic stabilizers are automatic changes in revenues and outlays that are attributable to cyclical movements in gross domestic product and unemployment.

Potential gross domestic product is CBO’s estimate of the maximum sustainable output of the economy.

The deficits without automatic stabilizers have *not* been adjusted to remove the effects of timing shifts. When October 1 (the first day of the fiscal year) falls on a weekend, certain payments that would have ordinarily been made on that day are instead made at the end of September and thus are shifted into the previous fiscal year. Those timing shifts will noticeably boost spending and the deficit in 2022 and 2028 and reduce spending and the deficit in 2024 and 2029. See Table 1-2 on page 8 for more details.

Data are fiscal year values.

act) at the end of calendar year 2025.⁶ By 2029, the projected budget deficit without automatic stabilizers equals 4.2 percent of potential GDP, which is 0.2 percentage points less than the deficit in CBO’s baseline. However, the 2029 deficit without automatic stabilizers was reduced by \$91 billion because in 2028, October 1 (the first day of fiscal year 2029) will fall on a weekend and certain payments that would ordinarily have been made on that date will instead be made in September, thus

boosting outlays in fiscal year 2028 and reducing them in 2029.⁷ If not for that shift, the deficit in 2029 would be about \$1.5 trillion, or about 4.7 percent of potential GDP, and the deficit without automatic stabilizers would be 4.5 percent of potential GDP, CBO projects.

Despite the exclusion of the estimated effects of cyclical movements in the economy, the deficit without automatic stabilizers as a percentage of potential GDP appears to be correlated with the business cycle. In particular, the deficit without automatic stabilizers tends to increase during times of recession and early in recoveries. One reason for that correlation is that during times of

6. The 2017 tax act made important changes to both the individual and corporate income tax systems. As a result, the underlying relationships between some types of taxable income and cyclical factors that affect the economy have changed. For example, the law amended some provisions that govern the use of net operating losses to lower taxable business income. Because such losses are highly sensitive to the business cycle, the relationship between taxable business income and cyclical movements in the economy has changed. Those changes are reflected in CBO’s estimated effects of the automatic stabilizers starting in 2018.

7. October 1 will fall on a weekend in 2022, 2023, and 2028, so certain payments will be shifted from fiscal years 2023, 2024, and 2029 to fiscal years 2022, 2023, and 2028. Those shifts will noticeably boost spending and the deficit in 2022 and 2028 and reduce spending and the deficit in 2024 and 2029. For details on the effects of those timing shifts, see Table 1-2 on page 8.

recession or high unemployment, policymakers often legislate changes to support the weak economy—such as cutting taxes or increasing government spending—that increase the deficit (or reduce the surplus). Those changes require legislation, so their budgetary effects are not automatic, and they are not viewed as automatic stabilizers. After times of recession or high unemployment, the deficit without automatic stabilizers has typically shrunk. That pattern was evident from 2009 to 2014, though the deficit without automatic stabilizers has grown since then.

Another reason that the deficit without automatic stabilizers appears to be correlated with the business cycle may be that CBO's methods for estimating the automatic stabilizers only partially remove the budgetary effects of certain changes. For example, large fluctuations in the stock market, which have a notable effect on federal revenues from capital gains taxes, have not had a sufficiently regular relationship with business cycles to be considered primarily cyclical in nature.

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 2018, there was \$5.7 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 D-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 1.)

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 and Barry F. Huston, *Social Security: What Would Happen If the Trust Funds Ran Out?* Report for Congress RL33514 (Congressional Research Service, updated June 11, 2018), <https://go.usa.gov/xEDYv> (PDF, 1.28 MB).

Table D-1.

CBO's Baseline Projections of Trust Fund Balances

Billions of Dollars

	Actual, 2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Social Security												
Old-Age and Survivors Insurance	2,801	2,795	2,772	2,721	2,637	2,517	2,364	2,172	1,948	1,681	1,362	993
Disability Insurance ^a	93	94	87	79	71	60	48	33	17	0	0	0
Subtotal	2,895	2,888	2,859	2,800	2,708	2,578	2,411	2,206	1,964	1,681	1,362	993
Medicare												
Hospital Insurance (Part A) ^a	203	203	200	189	155	121	88	30	0	0	0	0
Supplementary Medical Insurance (Part B)	98	100	103	106	102	105	108	106	113	113	108	105
Subtotal	301	303	303	295	257	226	196	137	113	113	108	105
Military Retirement	743	826	923	1,024	1,125	1,237	1,361	1,484	1,615	1,638	1,656	1,684
Civilian Retirement^b	943	960	971	982	992	1,002	1,011	1,021	1,030	1,039	1,048	1,057
Unemployment Insurance	73	83	89	84	75	71	69	70	70	71	71	72
Highway and Mass Transit^a	41	32	19	4	0	0	0	0	0	0	0	0
Airport and Airway	14	16	19	22	25	28	32	36	41	45	51	56
Railroad Retirement (Treasury holdings)^c	3	3	3	3	3	3	3	3	3	3	3	3
Other^d	119	122	125	128	130	133	135	137	140	142	145	148
Total Trust Fund Balance	5,132	5,235	5,309	5,342	5,314	5,277	5,218	5,093	4,975	4,732	4,444	4,118

Memorandum:

Railroad Retirement (Non-Treasury holdings) ^c	26	22	22	21	20	19	18	18	17	17	16	16
--	----	----	----	----	----	----	----	----	----	----	----	----

Source: Congressional Budget Office.

These balances are for the end of the fiscal year and include securities invested in Treasury holdings.

- 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 the manner in which those payments continued would depend on future legislation, CBO shows zero rather than a cumulative negative balance in the trust fund after the exhaustion date.
- Includes Civil Service Retirement, Foreign Service Retirement, and several smaller retirement funds.
- The Railroad Retirement and Survivors' Improvement Act of 2001 established an entity, the National Railroad Retirement Investment Trust, that is allowed to invest in non-Treasury securities, such as stocks and corporate bonds.
- 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 \$101 billion in fiscal year 2019.³ Under current law,

income credited to the trust funds is also projected to exceed outlays in 2020 and 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

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. After CBO produced its estimates of trust fund spending and balances, funding lapsed for many agencies, including the Department of Transportation. However, the budget authority and preliminary obligation limitations provided for programs funded through the Highway Trust Fund are set

in law (currently authorized under the Fixing America's Surface Transportation Act). Therefore, although annual appropriations typically supersede those initial obligation limitations, in the event of a lapse in funding, the limitations initially authorized are in effect and Highway Trust Fund spending continues mostly uninterrupted. For its baseline projections, CBO incorporated the assumption that future funding obligation limitations will be consistent with amounts provided before the lapse, adjusted annually for inflation.

Table D-2.

CBO's Baseline Projections of Trust Fund Deficits and Surpluses

Billions of Dollars

	Actual,												Total	
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2020–2024	2020–2029
Social Security														
Old-Age and Survivors Insurance	-19	-7	-23	-51	-84	-119	-154	-191	-225	-267	-319	-369	-431	-1,802
Disability Insurance ^a	24	*	-7	-7	-9	-10	-13	-14	-17	-20	-18	-18	-46	-133
Subtotal	5	-6	-30	-58	-93	-130	-166	-206	-242	-287	-337	-387	-477	-1,935
Medicare														
Hospital Insurance (Part A) ^b	5	*	-3	-11	-34	-35	-33	-58	-69	-80	-122	-103	-115	-546
Supplementary Medical Insurance (Part B)	28	2	3	4	-4	3	3	-1	6	*	-5	-3	7	4
Subtotal	33	2	*	-7	-38	-31	-30	-59	-63	-80	-127	-106	-107	-541
Military Retirement	82	83	96	101	101	112	124	123	131	23	18	28	535	858
Civilian Retirement ^b	18	17	11	11	10	10	10	9	9	9	9	9	51	97
Unemployment	12	10	6	-5	-9	-4	-2	*	1	1	1	1	-14	-11
Highway and Mass Transit ^a	-11	-9	-13	-15	-16	-17	-19	-20	-21	-22	-23	-24	-80	-191
Airport and Airway	1	2	3	3	3	3	4	4	4	5	5	6	16	40
Other ^c	9	2	2	2	2	3	3	3	3	3	3	3	12	27
Total Trust Fund Deficit (-) or Surplus	149	101	75	32	-40	-55	-76	-144	-177	-348	-451	-471	-65	-1,656
Intragovernmental Transfers to Trust Funds ^d	746	795	817	857	895	932	974	1,014	1,067	1,008	1,057	1,100	4,475	9,721
Net Budgetary Impact of Trust Fund Programs	-597	-694	-743	-825	-935	-987	-1,050	-1,158	-1,244	-1,356	-1,508	-1,571	-4,540	-11,377

Source: Congressional Budget Office.

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

- a. CBO projects that this trust fund will be exhausted during the 2019–2029 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. The manner in which those payments would continue would depend on future legislation.
- b. Includes Civil Service Retirement, Foreign Service Retirement, and several smaller retirement 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.

deficit of \$1.7 trillion over the 2020–2029 period (see Table D-3).⁴

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 for 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 \$795 billion in 2019 and to reach \$1.1 trillion in 2029. Excluding those transfers and counting only income from sources outside of the government (such as payroll taxes and Medicare

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).

premiums), CBO estimates that the trust fund programs will add \$694 billion to the federal deficit in 2019. They are projected to add to deficits throughout the 2020–2029 period by amounts that grow from \$743 billion in 2020 to \$1.6 trillion in 2029.

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), Medicare’s Hospital Insurance Trust Fund (in fiscal year 2026), and Social Security’s Disability Insurance (DI) Trust Fund (in fiscal year 2027).

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.⁵

Old-Age and Survivors Insurance

The OASI trust fund, which held \$2.8 trillion in GAS securities at the end of 2018, 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 \$741 billion last year to \$811 billion in 2019. Under current law, noninterest income received by the fund would increase over the remainder of the period, growing to \$1.2 trillion by 2029, CBO estimates (see Table D-3).⁶ Expenditures from the fund are projected to be \$897 billion in 2019—exceeding noninterest income by \$86 billion—and to grow faster than

noninterest income each year over that period, rising to \$1.6 trillion in 2029.

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 4 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 \$412 billion in 2029, CBO estimates. Even with interest receipts included, the OASI trust fund is projected to record deficits that, in CBO’s baseline, reach \$369 billion in 2029. According to CBO’s most recent long-term projections, the balance of the OASI trust fund would be exhausted in calendar year 2032.⁷

Disability Insurance

The DI trust fund is much smaller than the OASI fund; its balance at the end of 2018 was \$93 billion. In CBO’s current baseline, the annual income of the DI fund, excluding interest, declines slightly from \$145 billion in 2019 to \$141 billion in 2020, because a temporary increase in the payroll tax allocation expired at the end of calendar year 2018. (That increase boosted the fund’s income through the first quarter of fiscal year 2019.) After 2020, the fund’s income is projected to grow gradually, reaching \$199 billion in 2029 (see Table D-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 \$148 billion in 2019 to \$217 billion in 2029. Noninterest income credited to the DI fund exceeded expenditures in 2018 because of the payroll tax reallocation, but the DI trust fund is projected to add to the federal deficit in each year of the baseline period, CBO estimates. Even with interest receipts included, the trust fund is projected to run an annual deficit starting in 2020 (see Figure D-1).

Under current law, the balance of the DI fund is expected to be exhausted in 2027.⁸ If the outlays were

5. 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 were credited to the OASI trust fund.
6. 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 D-3.

7. See Congressional Budget Office, *The 2018 Long-Term Budget Outlook* (June 2018), www.cbo.gov/publication/53919.
8. CBO had previously projected that the DI trust fund would be exhausted in 2025; see Congressional Budget Office, *The Budget and Economic Outlook: 2018 to 2028* (April 2018), www.cbo.gov/publication/53651. However, recent data have shown that DI caseloads are smaller than anticipated. Therefore, CBO has revised its projection of deficits in the fund, resulting in a later exhaustion date.

Table D-3.

CBO's Baseline Projections of Balances in the OASI, DI, and HI Trust Funds

Billions of Dollars

	Actual,											Total		
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2020–2024	2020–2029
OASI Trust Fund														
Beginning-of-Year Balance	2,820	2,801	2,795	2,772	2,721	2,637	2,517	2,364	2,172	1,948	1,681	1,362	n.a.	n.a.
Income (Excluding interest)	741	811	858	893	929	967	1,007	1,048	1,096	1,142	1,188	1,235	4,654	10,363
Expenditures	-841	-897	-957	-1,021	-1,089	-1,159	-1,232	-1,308	-1,386	-1,467	-1,558	-1,648	-5,458	-12,825
Noninterest Deficit	-101	-86	-100	-127	-160	-192	-225	-260	-290	-326	-370	-412	-804	-2,462
Interest Received	82	80	77	77	76	73	71	69	65	59	51	44	373	660
Total Deficit	-19	-7	-23	-51	-84	-119	-154	-191	-225	-267	-319	-369	-431	-1,802
End-of-Year Balance	2,801	2,795	2,772	2,721	2,637	2,517	2,364	2,172	1,948	1,681	1,362	993	n.a.	n.a.
DI Trust Fund^a														
Beginning-of-Year Balance	70	93	94	87	79	71	60	48	33	17	0	0	n.a.	n.a.
Income (Excluding interest)	168	145	141	146	152	158	164	171	177	184	191	199	760	1,682
Expenditures	-147	-148	-151	-156	-163	-171	-179	-186	-195	-204	-209	-217	-819	-1,831
Noninterest Deficit (-) or Surplus	21	-3	-10	-10	-11	-13	-15	-16	-18	-20	-18	-18	-59	-149
Interest Received	2	3	3	3	3	2	2	1	1	*	0	0	13	16
Total Deficit (-) or Surplus	24	*	-7	-7	-9	-10	-13	-14	-17	-20	-18	-18	-46	-133
End-of-Year Balance	93	94	87	79	71	60	48	33	17	0	0	0	n.a.	n.a.
HI Trust Fund^a														
Beginning-of-Year Balance	198	203	203	200	189	155	121	88	30	0	0	0	n.a.	n.a.
Income (Excluding interest)	301	319	335	351	366	382	400	418	440	461	480	498	1,834	4,131
Expenditures	-303	-326	-345	-368	-406	-422	-437	-478	-509	-541	-601	-601	-1,979	-4,709
Noninterest Deficit	-2	-7	-10	-18	-40	-40	-37	-60	-69	-80	-122	-103	-145	-578
Interest Received	7	7	7	7	6	5	4	2	0	0	0	0	30	32
Total Deficit (-) or Surplus	5	*	-3	-11	-34	-35	-33	-58	-69	-80	-122	-103	-115	-546
End-of-Year Balance	203	203	200	189	155	121	88	30	0	0	0	0	n.a.	n.a.

Source: Congressional Budget Office.

Balances shown are invested in Government Account Series securities issued by the Treasury.

DI = Disability Insurance; HI = Hospital Insurance; OASI = Old-Age and Survivors Insurance; n.a. = not applicable; * = between zero and \$500 million.

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 the manner in which those payments 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.

limited thereafter to income credited to the trust fund, then during the remainder of fiscal year 2027 they would be 10 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 2018 were held by the Military Retirement

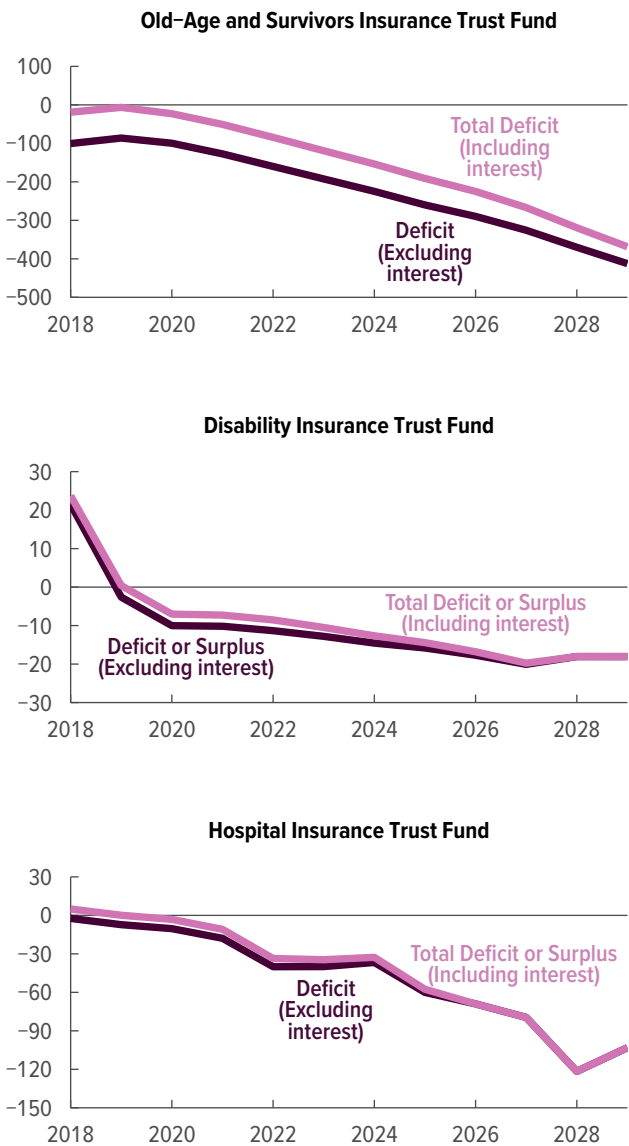
Trust Fund (\$743 billion) and by various civilian employee retirement funds (a total of \$943 billion).⁹ Those accounts are primarily funded through transfers from federal agencies, payroll deductions from workers, and supplemental payments from the Treasury. Unlike

9. Those civilian retirement funds include the Civil Service Retirement Trust Fund, the Foreign Service Retirement Trust Fund, and several smaller retirement funds.

Figure D-1.

CBO's Baseline Projections of Annual Deficits and Surpluses in 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.

Social Security's and Medicare's trust funds, those retirement funds are projected to run surpluses throughout the coming decade. In CBO's baseline projections, those annual surpluses grow from a combined total of \$100 billion in 2019 to \$140 billion in 2026 and then decline to \$37 billion in 2029.

Of the cumulative growth in the funds' balances over the 10-year period, 90 percent is attributable to the Military Retirement Trust Fund (see Table D-1 on page 140). In CBO's current baseline, the balance of the Military Retirement Trust Fund increases rapidly over the coming decade, reaching nearly \$1.7 trillion in 2029. 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 \$1.1 trillion at the end of 2029.

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.¹⁰

Hospital Insurance Trust Fund

The HI fund, which had a balance of \$203 billion at the end of 2018, is the larger of Medicare's two trust funds. The fund's income is derived primarily from the Medicare payroll tax (2.9 percent of workers' earnings, divided equally between the worker and the employer). In 2018, those taxes accounted for 86 percent of the \$301 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 2018.

10. 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.

The fund's noninterest income is projected to increase from \$319 billion in 2019 to \$498 billion in 2029—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 6 percent—rising from \$326 billion in 2019 to \$601 billion in 2029. 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 2029, CBO estimates. That imbalance would produce annual deficits that are relatively small in the first half of the period but then rise to \$60 billion in 2025, the year before the trust fund's exhaustion. Even including interest receipts, the trust fund is projected to run deficits in all years during the baseline period after 2019 (see Table D-3 and Figure D-1).

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 2018, for example, \$318 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 2018, the SMI fund held \$98 billion in GAS securities. Those holdings are projected to remain relatively steady over the 10-year period and to total \$105 billion in 2029.

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.¹¹

11. 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.

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 \$115 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, Public Law 114-94) transferred \$70 billion to the Highway Trust Fund, mostly from the general fund of the Treasury, as the fund's balance neared

exhaustion. Including that amount, those transfers have totaled almost \$144 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 2022.¹²

12. In keeping with the rules in section 257 of the Balanced Budget and Emergency Deficit Control Act of 1985 (P.L. 99-177), CBO's baseline incorporates the assumption that payments to fulfill the programs' obligations would continue to be made in full after the trust fund was exhausted.

CBO's Economic Projections for 2019 to 2029

The tables in this appendix show the Congressional Budget Office's economic projections for each year from 2019 to 2029. Table E-1 shows CBO's economic projections by calendar year, and Table E-2 shows them by fiscal year.

Table E-1.

CBO's Economic Projections, by Calendar Year

	Estimated, 2018 ^a	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Percentage Change From Year to Year												
Gross Domestic Product												
Real ^b	2.9	2.7	1.9	1.6	1.6	1.7	1.8	1.8	1.7	1.8	1.8	1.8
Nominal	5.2	4.8	3.9	3.7	3.7	3.8	4.0	3.9	3.8	3.9	3.9	3.8
Inflation												
PCE price index	2.1	1.9	2.2	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0
Core PCE price index ^c	1.9	2.0	2.2	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0
Consumer price index ^d	2.5 ^e	2.1	2.6	2.6	2.5	2.5	2.4	2.3	2.3	2.3	2.3	2.4
Core consumer price index ^e	2.1 ^e	2.4	2.6	2.6	2.5	2.4	2.3	2.3	2.3	2.3	2.3	2.4
GDP price index	2.2	2.1	2.0	2.0	2.0	2.1	2.1	2.1	2.0	2.0	2.0	2.0
Employment Cost Index ^f	3.0	3.4	3.6	3.6	3.4	3.3	3.2	3.1	3.1	3.1	3.1	3.1
Calendar Year Average												
Unemployment Rate (Percent)	3.9 ^e	3.5	3.7	4.2	4.6	4.8	4.8	4.8	4.8	4.8	4.7	4.7
Payroll Employment (Monthly change, in thousands) ^g	203 ^e	148	68	21	17	48	62	57	49	64	65	66
Interest Rates (Percent)												
Three-month Treasury bills	1.9 ^e	2.8	3.2	3.2	3.2	3.0	2.8	2.7	2.7	2.8	2.8	2.8
Ten-year Treasury notes	2.9 ^e	3.4	3.6	3.7	3.7	3.8	3.7	3.7	3.7	3.7	3.7	3.8
Tax Bases (Percentage of GDP)												
Wages and salaries	43.1	43.1	43.4	43.6	43.7	43.7	43.8	43.8	43.8	43.8	43.9	43.9
Domestic economic profits ^h	8.7	8.9	8.4	8.1	7.9	7.8	7.9	7.9	7.9	7.9	8.0	8.0
Tax Bases (Billions of dollars)												
Wages and salaries	8,831	9,254	9,685	10,084	10,476	10,890	11,332	11,785	12,242	12,722	13,226	13,748
Domestic economic profits ^h	1,789	1,910	1,876	1,872	1,896	1,944	2,033	2,120	2,195	2,306	2,409	2,496
Nominal GDP (Billions of dollars)	20,503	21,478	22,326	23,145	23,996	24,907	25,894	26,909	27,926	29,018	30,144	31,299

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

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

- a. Values for 2018 do not reflect the values for GDP and related series that the Bureau of Economic Analysis has released since early December 2018.
- b. Real values are nominal values that have been adjusted to remove the effects of changes in prices.
- c. Excludes prices for food and energy.
- d. The consumer price index for all urban consumers.
- e. Actual value for 2018.
- f. The employment cost index for wages and salaries of workers in private industry.
- g. The average monthly change, calculated by dividing the change in payroll employment from the fourth quarter of one calendar year to the fourth quarter of the next by 12.
- h. Consists of domestic profits, adjusted to remove distortions in depreciation allowances caused by tax rules and to exclude the effects of changes in prices on the value of inventories.

Table E-2.

CBO's Economic Projections, by Fiscal Year

	Actual, 2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
	Percentage Change From Year to Year											
Gross Domestic Product												
Real ^a	2.7	2.9	2.0	1.6	1.6	1.7	1.8	1.8	1.7	1.8	1.8	1.8
Nominal	5.0	5.0	4.1	3.7	3.7	3.8	3.9	4.0	3.8	3.9	3.9	3.8
Inflation												
PCE price index	2.0	1.9	2.1	2.2	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0
Core PCE price index ^b	1.8	2.0	2.2	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0
Consumer price index ^c	2.4	2.2	2.4	2.6	2.5	2.5	2.4	2.3	2.3	2.3	2.3	2.4
Core consumer price index ^b	2.0	2.3	2.6	2.6	2.5	2.4	2.4	2.3	2.3	2.3	2.3	2.3
GDP price index	2.2	2.1	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.0	2.0	2.0
Employment Cost Index ^d	2.9	3.3	3.6	3.6	3.5	3.3	3.2	3.1	3.1	3.1	3.1	3.1
	Fiscal Year Average											
Unemployment Rate (Percent)	4.0	3.6	3.6	4.0	4.5	4.8	4.8	4.8	4.8	4.8	4.8	4.7
Payroll Employment (Monthly change, in thousands) ^e	204	163	88	28	14	40	61	60	49	60	66	66
Interest Rates (Percent)												
Three-month Treasury bills	1.7	2.6	3.1	3.2	3.2	3.1	2.9	2.7	2.7	2.8	2.8	2.8
Ten-year Treasury notes	2.7	3.3	3.6	3.7	3.7	3.8	3.7	3.7	3.7	3.7	3.7	3.7
Tax Bases (Percentage of GDP)												
Wages and salaries	43.2	43.0	43.3	43.5	43.6	43.7	43.8	43.8	43.8	43.8	43.9	43.9
Domestic economic profits ^f	8.6	9.0	8.5	8.2	7.9	7.8	7.8	7.9	7.9	7.9	8.0	8.0
Tax Bases (Billions of dollars)												
Wages and salaries	8,734	9,144	9,581	9,986	10,378	10,783	11,220	11,671	12,127	12,599	13,099	13,616
Domestic economic profits ^f	1,739	1,909	1,881	1,871	1,887	1,929	2,008	2,101	2,173	2,275	2,386	2,474
Nominal GDP (Billions of dollars)	20,236	21,252	22,120	22,939	23,778	24,672	25,642	26,656	27,667	28,738	29,862	31,006

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

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

- a. Real values are nominal values that have been adjusted to remove the effects of changes in prices.
- 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. The average monthly change, calculated by dividing the change in payroll employment from the fourth quarter of one calendar year to the fourth quarter of the next by 12.
- f. Consists of domestic profits, adjusted to remove distortions in depreciation allowances caused by tax rules and to exclude the effects of changes in prices on the value of inventories.

Historical Budget Data

This appendix provides historical data on revenues, outlays, and the deficit or surplus—in forms consistent with the projections in Chapter 1, 3, and 4—for fiscal years 1969 to 2018. The data, which come from the Congressional Budget Office and the Office of Management and Budget, are shown both in billions of nominal dollars and as a percentage of gross domestic product. Some of the numbers have been revised since April 2018, when these tables were last published on CBO’s website (www.cbo.gov/publication/53651).

Federal revenues, outlays, the deficit or surplus, and debt held by the public are shown in Table F-1. Revenues, outlays, and the deficit or surplus have both on-budget and off-budget components. (Off-budget items are treated differently from on-budget items for certain budget enforcement procedures, but they are usually counted when measuring budget deficits or surpluses.) 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 F-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 F-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 F-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 F-4 divides discretionary outlays into defense and nondefense components. Table F-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 provide benefits to recipients with limited income and assets; those programs include the earned income and child tax credits, the Supplemental Nutrition Assistance Program (formerly known as the Food Stamp program), Supplemental Security Income, and unemployment compensation. Other retirement and disability programs provide benefits to federal civilian employees, members of the military, and veterans. The category of other mandatory programs includes the activities of the Commodity Credit Corporation, the Department of Defense Medicare-Eligible Retiree Health Care Fund, the subsidy costs of federal student loan programs, and the Children’s Health Insurance Program.

Table F-1.

Revenues, Outlays, Deficits, Surpluses, and Debt Held by the Public Since 1969

	Revenues	Outlays	Deficit (-) or Surplus				Debt Held by the Public ^a
			On-Budget	Social Security	Postal Service	Total	
In Billions of Dollars							
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
2018	3,328.7	4,107.8	-785.2	4.7	1.5	-779.0	15,751.2

Continued

Table F-1.

Continued

Revenues, Outlays, Deficits, Surpluses, and Debt Held by the Public Since 1969

	Revenues	Outlays	Deficit (-) or Surplus				Debt Held by the Public ^a
			On-Budget	Social Security	Postal Service	Total	
As a Percentage of Gross Domestic Product							
1969	19.1	18.7	-0.1	0.4	n.a.	0.3	28.4
1970	18.4	18.7	-0.8	0.6	n.a.	-0.3	27.1
1971	16.8	18.8	-2.3	0.3	n.a.	-2.1	27.1
1972	17.0	19.0	-2.1	0.3	**	-1.9	26.5
1973	17.1	18.2	-1.1	**	**	-1.1	25.2
1974	17.8	18.2	-0.5	0.1	-0.1	-0.4	23.2
1975	17.4	20.7	-3.4	0.1	-0.1	-3.3	24.6
1976	16.7	20.8	-3.9	-0.2	-0.1	-4.1	26.7
1977	17.6	20.2	-2.5	-0.2	**	-2.7	27.1
1978	17.6	20.2	-2.4	-0.2	**	-2.6	26.7
1979	18.1	19.6	-1.5	-0.1	**	-1.6	25.0
1980	18.5	21.2	-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	22.9	-5.9	**	**	-5.9	32.2
1984	16.9	21.6	-4.7	**	**	-4.7	33.1
1985	17.2	22.2	-5.2	0.2	**	-5.0	35.3
1986	17.0	21.9	-5.3	0.4	**	-4.9	38.5
1987	17.9	21.1	-3.5	0.4	**	-3.1	39.6
1988	17.7	20.7	-3.7	0.8	**	-3.0	39.9
1989	17.8	20.6	-3.7	0.9	**	-2.7	39.4
1990	17.5	21.2	-4.7	1.0	**	-3.7	40.9
1991	17.3	21.7	-5.3	0.9	**	-4.4	44.1
1992	17.0	21.5	-5.3	0.8	**	-4.5	46.8
1993	17.0	20.8	-4.4	0.7	**	-3.8	47.9
1994	17.5	20.4	-3.6	0.8	**	-2.8	47.8
1995	17.9	20.0	-3.0	0.8	**	-2.2	47.7
1996	18.3	19.6	-2.2	0.8	**	-1.4	47.0
1997	18.7	18.9	-1.2	1.0	**	-0.3	44.6
1998	19.3	18.5	-0.3	1.1	**	0.8	41.7
1999	19.3	18.0	**	1.3	**	1.3	38.3
2000	20.0	17.7	0.9	1.5	**	2.3	33.7
2001	18.9	17.7	-0.3	1.5	**	1.2	31.5
2002	17.1	18.6	-2.9	1.5	**	-1.5	32.7
2003	15.8	19.1	-4.8	1.4	**	-3.3	34.7
2004	15.6	19.1	-4.7	1.3	**	-3.4	35.7
2005	16.8	19.3	-3.8	1.4	**	-2.5	35.8
2006	17.6	19.5	-3.2	1.4	**	-1.8	35.4
2007	18.0	19.1	-2.4	1.3	**	-1.1	35.2
2008	17.1	20.2	-4.4	1.3	**	-3.1	39.4
2009	14.6	24.4	-10.7	1.0	**	-9.8	52.3
2010	14.6	23.3	-9.2	0.6	**	-8.7	60.8
2011	15.0	23.4	-8.9	0.4	**	-8.4	65.8
2012	15.3	22.0	-7.2	0.4	**	-6.8	70.3
2013	16.7	20.8	-4.3	0.2	**	-4.1	72.2
2014	17.4	20.2	-3.0	0.2	**	-2.8	73.7
2015	18.0	20.4	-2.6	0.1	**	-2.4	72.5
2016	17.6	20.8	-3.3	0.2	**	-3.2	76.4
2017	17.2	20.7	-3.7	0.2	**	-3.5	76.1
2018	16.4	20.3	-3.9	**	**	-3.9	77.8

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

n.a. = not applicable; * = between -\$50 million and \$50 million; ** = between -0.05 percent and 0.05 percent.

a. Value is for the end of the fiscal year.

Table F-2.

Revenues, by Major Source, Since 1969

	Individual Income Taxes	Payroll Taxes	Corporate Income Taxes	Excise Taxes	Estate and Gift Taxes	Customs Duties	Miscellaneous Receipts	Total
In Billions of Dollars								
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
2018	1,683.5	1,170.7	204.7	95.0	23.0	41.3	110.5	3,328.7

Continued

Table F-2.

Continued

Revenues, by Major Source, Since 1969

	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								
1969	8.9	4.0	3.7	1.6	0.4	0.2	0.3	19.1
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	16.8
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	17.1
1974	8.0	5.1	2.6	1.1	0.3	0.2	0.4	17.8
1975	7.6	5.3	2.5	1.0	0.3	0.2	0.4	17.4
1976	7.4	5.1	2.3	1.0	0.3	0.2	0.4	16.7
1977	7.8	5.3	2.7	0.9	0.4	0.3	0.3	17.6
1978	8.0	5.3	2.6	0.8	0.2	0.3	0.3	17.6
1979	8.5	5.4	2.6	0.7	0.2	0.3	0.4	18.1
1980	8.7	5.7	2.3	0.9	0.2	0.3	0.5	18.5
1981	9.1	5.8	2.0	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	7.6	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	6.4	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	17.7
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	17.5
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	7.6	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	17.9
1996	8.3	6.4	2.2	0.7	0.2	0.2	0.3	18.3
1997	8.7	6.4	2.2	0.7	0.2	0.2	0.3	18.7
1998	9.3	6.4	2.1	0.6	0.3	0.2	0.4	19.3
1999	9.3	6.5	1.9	0.7	0.3	0.2	0.4	19.3
2000	9.9	6.5	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	18.9
2002	7.9	6.5	1.4	0.6	0.2	0.2	0.3	17.1
2003	7.0	6.3	1.2	0.6	0.2	0.2	0.3	15.8
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	16.8
2006	7.7	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	18.0
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	7.9	5.7	1.6	0.5	0.1	0.2	0.6	16.7
2014	8.0	5.9	1.9	0.5	0.1	0.2	0.8	17.4
2015	8.5	5.9	1.9	0.5	0.1	0.2	0.8	18.0
2016	8.3	6.0	1.6	0.5	0.1	0.2	0.8	17.6
2017	8.2	6.0	1.5	0.4	0.1	0.2	0.7	17.2
2018	8.3	5.8	1.0	0.5	0.1	0.2	0.5	16.4

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

** = between -0.05 percent and 0.05 percent.

Table F-3.

Outlays, by Major Category, Since 1969

	Discretionary	Mandatory		Net Interest	Total
		Programmatic Outlays ^a	Offsetting Receipts		
In Billions of Dollars					
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	2,772.2	-253.4	262.6	3,981.6
2018	1,263.4	2,778.7	-259.0	324.7	4,107.8

Continued

Table F-3.

Continued

Outlays, by Major Category, Since 1969

	Discretionary	Mandatory		Net Interest	Total
		Programmatic Outlays ^a	Offsetting Receipts		
As a Percentage of Gross Domestic Product					
1969	12.0	6.6	-1.1	1.3	18.7
1970	11.5	6.9	-1.1	1.4	18.7
1971	11.0	7.8	-1.3	1.3	18.8
1972	10.6	8.3	-1.2	1.3	19.0
1973	9.6	8.6	-1.3	1.3	18.2
1974	9.3	8.8	-1.4	1.4	18.2
1975	9.8	10.5	-1.1	1.4	20.7
1976	9.8	10.6	-1.1	1.5	20.8
1977	9.7	10.1	-1.1	1.5	20.2
1978	9.6	10.0	-1.0	1.6	20.2
1979	9.4	9.6	-1.0	1.7	19.6
1980	9.9	10.4	-1.0	1.9	21.2
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	22.9
1984	9.6	10.3	-1.1	2.8	21.6
1985	9.7	10.5	-1.1	3.0	22.2
1986	9.7	10.2	-1.0	3.0	21.9
1987	9.3	9.9	-1.1	2.9	21.1
1988	9.0	9.8	-1.1	3.0	20.7
1989	8.8	9.8	-1.1	3.0	20.6
1990	8.5	10.6	-1.0	3.1	21.2
1991	8.8	11.5	-1.7	3.2	21.7
1992	8.3	11.2	-1.1	3.1	21.5
1993	8.0	10.9	-1.0	2.9	20.8
1994	7.5	11.0	-1.0	2.8	20.4
1995	7.2	10.8	-1.0	3.1	20.0
1996	6.7	10.8	-0.9	3.0	19.6
1997	6.5	10.6	-1.0	2.9	18.9
1998	6.2	10.6	-0.9	2.7	18.5
1999	6.0	10.3	-0.8	2.4	18.0
2000	6.1	10.2	-0.8	2.2	17.7
2001	6.2	10.4	-0.8	2.0	17.7
2002	6.8	11.0	-0.8	1.6	18.6
2003	7.3	11.4	-0.9	1.4	19.1
2004	7.4	11.2	-0.9	1.3	19.1
2005	7.5	11.3	-1.0	1.4	19.3
2006	7.5	11.4	-1.1	1.7	19.5
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	14.2	-1.3	1.3	23.3
2011	8.7	14.5	-1.4	1.5	23.4
2012	8.0	14.1	-1.4	1.4	22.0
2013	7.2	14.1	-1.8	1.3	20.8
2014	6.8	13.7	-1.6	1.3	20.2
2015	6.5	14.1	-1.4	1.2	20.4
2016	6.4	14.4	-1.3	1.3	20.8
2017	6.2	14.4	-1.3	1.4	20.7
2018	6.2	13.7	-1.3	1.6	20.3

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

a. Excludes offsetting receipts.

Table F-4.

Discretionary Outlays Since 1969

	Defense	Nondefense	Total
	In Billions of Dollars		
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
2018	621.7	641.7	1,263.4

Continued

Table F-4.

Continued

Discretionary Outlays Since 1969

	Defense	Nondefense	Total
As a Percentage of Gross Domestic Product			
1969	8.4	3.5	12.0
1970	7.8	3.7	11.5
1971	7.1	3.9	11.0
1972	6.5	4.0	10.6
1973	5.7	3.9	9.6
1974	5.4	3.9	9.3
1975	5.5	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	4.6	4.8	9.4
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	6.1	3.6	9.7
1987	5.9	3.4	9.3
1988	5.7	3.4	9.0
1989	5.5	3.3	8.8
1990	5.1	3.4	8.5
1991	5.2	3.5	8.8
1992	4.7	3.6	8.3
1993	4.3	3.7	8.0
1994	3.9	3.6	7.5
1995	3.6	3.6	7.2
1996	3.3	3.4	6.7
1997	3.2	3.3	6.5
1998	3.0	3.2	6.2
1999	2.9	3.1	6.0
2000	2.9	3.2	6.1
2001	2.9	3.3	6.2
2002	3.2	3.6	6.8
2003	3.6	3.7	7.3
2004	3.8	3.7	7.4
2005	3.8	3.7	7.5
2006	3.8	3.6	7.5
2007	3.8	3.5	7.3
2008	4.2	3.5	7.7
2009	4.6	4.0	8.6
2010	4.6	4.4	9.1
2011	4.5	4.2	8.7
2012	4.2	3.8	8.0
2013	3.8	3.5	7.2
2014	3.4	3.4	6.8
2015	3.2	3.2	6.5
2016	3.2	3.2	6.4
2017	3.1	3.2	6.2
2018	3.1	3.2	6.2

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

Table F-5.

Mandatory Outlays Since 1969

	Social Security	Medicare ^a	Medicaid	Income Security ^b	Other Retirement and Disability	Other Programs	Offsetting Receipts	Total	Memorandum: Major Health Care Programs (Net) ^c
In Billions of Dollars									
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	293.8	267.6	194.7	-253.4	2,518.8	1,030.4
2018	982.2	704.3	389.2	285.3	264.4	153.2	-259.0	2,519.7	1,037.4

Continued

Table F-5.

Continued

Mandatory Outlays Since 1969

	Social Security	Medicare ^a	Medicaid	Income Security ^b	Other Retirement and Disability	Other Programs	Offsetting Receipts	Total	Memorandum: Major Health Care Programs (Net) ^c
As a Percentage of Gross Domestic Product									
1969	2.6	0.6	0.2	0.7	1.3	1.0	-1.1	5.5	0.8
1970	2.7	0.6	0.3	0.8	1.4	1.0	-1.1	5.8	0.8
1971	2.8	0.7	0.3	1.2	1.5	0.9	-1.3	6.5	0.9
1972	3.1	0.7	0.4	1.4	1.6	1.1	-1.2	7.1	1.0
1973	3.2	0.7	0.3	1.1	1.7	1.3	-1.3	7.2	0.9
1974	3.6	0.7	0.4	1.2	1.7	1.1	-1.4	7.4	1.0
1975	3.7	0.9	0.4	1.8	2.0	1.5	-1.1	9.4	1.2
1976	4.0	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	4.1	1.1	0.5	1.3	1.7	1.1	-1.0	8.6	1.5
1980	4.0	1.2	0.5	1.6	1.7	1.2	-1.0	9.4	1.6
1981	4.2	1.3	0.5	1.6	1.8	1.2	-1.2	9.6	1.7
1982	4.4	1.5	0.5	1.6	1.8	1.2	-1.1	10.1	1.9
1983	4.6	1.6	0.5	1.8	1.8	1.2	-1.3	10.3	2.0
1984	4.8	1.5	0.5	1.3	1.6	0.8	-1.1	9.1	1.9
1985	4.5	1.6	0.5	1.2	1.5	1.3	-1.1	9.4	2.0
1986	4.4	1.6	0.6	1.2	1.4	1.1	-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	4.3	1.7	0.6	1.1	1.4	0.8	-1.1	8.7	2.1
1989	4.2	1.7	0.6	1.1	1.4	0.9	-1.1	8.7	2.1
1990	4.1	1.8	0.7	1.2	1.3	1.5	-1.0	9.6	2.3
1991	4.2	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	0.2	-1.0	9.9	3.0
1994	4.5	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	9.8	3.3
1996	4.4	2.4	1.2	1.5	1.2	0.1	-0.9	9.9	3.3
1997	4.4	2.5	1.1	1.4	1.2	0.1	-1.0	9.6	3.3
1998	4.3	2.4	1.1	1.4	1.2	0.3	-0.9	9.6	3.3
1999	4.2	2.2	1.1	1.4	1.2	0.4	-0.8	9.5	3.1
2000	4.1	2.1	1.2	1.3	1.1	0.4	-0.8	9.4	3.1
2001	4.0	2.3	1.2	1.4	1.1	0.4	-0.8	9.6	3.3
2002	4.1	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	10.5	3.6
2004	4.2	2.5	1.5	1.6	1.1	0.5	-0.9	10.3	3.7
2005	4.1	2.6	1.4	1.5	1.2	0.5	-1.0	10.3	3.7
2006	4.0	2.8	1.3	1.5	1.1	0.8	-1.1	10.4	3.7
2007	4.0	3.1	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	4.2	3.5	1.7	2.4	1.3	2.2	-1.3	14.5	4.7
2010	4.7	3.5	1.8	2.9	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	4.7	3.4	1.6	2.2	1.3	0.8	-1.4	12.6	4.5
2013	4.8	3.5	1.6	2.0	1.4	0.6	-1.8	12.2	4.6
2014	4.9	3.5	1.7	1.8	1.4	0.4	-1.6	12.1	4.8
2015	4.9	3.5	1.9	1.7	1.4	0.7	-1.4	12.7	5.2
2016	4.9	3.7	2.0	1.6	1.5	0.6	-1.3	13.1	5.5
2017	4.9	3.6	1.9	1.5	1.4	1.0	-1.3	13.1	5.3
2018	4.9	3.5	1.9	1.4	1.3	0.8	-1.3	12.5	5.1

Sources: Congressional Budget Office; 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 outlays 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

1-1.	CBO's Baseline Budget Projections, by Category	7
1-2.	CBO's Baseline Projections of Outlays and Deficits, Adjusted to Exclude the Effects of Timing Shifts	8
1-3.	CBO's Baseline Projections of Federal Debt	16
1-4.	Key Projections in CBO's Extended Baseline	19
2-1.	U.S. Imports Affected by Tariffs Recently Imposed by the United States	28
2-2.	U.S. Exports Affected by Tariffs Recently Imposed by Other Countries	29
2-3.	CBO's Economic Projections for Calendar Years 2019 to 2029	30
2-4.	Projected Growth in Real GDP and Its Components	32
2-5.	Key Inputs in CBO's Projections of Real Potential GDP	45
2-6.	Comparison of CBO's Current and Previous Economic Projections for Calendar Years 2018 to 2028	56
3-1.	CBO's Baseline Projections of Outlays	62
3-2.	CBO's Baseline Projections of Mandatory Outlays, Adjusted to Exclude the Effects of Timing Shifts	68
3-3.	Costs for Mandatory Programs That Continue Beyond Their Current Expiration Date in CBO's Baseline	74
3-4.	Payments Assumed to Be Made in CBO's Baseline After Certain Trust Funds Are Exhausted	76
3-5.	CBO's Baseline Projections of Discretionary Spending	78
3-6.	Projected Changes in Discretionary Budget Authority From 2018 to 2019	80
3-7.	Projected Changes in New Nondefense Discretionary Budgetary Resources From 2018 to 2019	83
4-1.	CBO's Baseline Projections of Revenues	91
4-2.	CBO's Baseline Projections of Payroll Tax Revenues	93
4-3.	CBO's Baseline Projections of Smaller Sources of Revenues	96
5-1.	Budgetary Effects of Selected Policy Alternatives Not Included in CBO's Baseline	108
A-1.	Changes in CBO's Baseline Projections of the Deficit Since Spring 2018	114
B-1.	Differences Between the Illustrative Scenarios and CBO's Economic Forecast in 2029	123
B-2.	How Changes in Productivity Growth and Labor Force Growth Might Affect CBO's Baseline Budget Projections	126
B-3.	How Changes in Interest Rates and Inflation Might Affect CBO's Baseline Budget Projections	128
C-1.	Deficit or Surplus With and Without CBO's Estimate of Automatic Stabilizers, and Related Estimates	132
D-1.	CBO's Baseline Projections of Trust Fund Balances	140
D-2.	CBO's Baseline Projections of Trust Fund Deficits and Surpluses	141

D-3.	CBO's Baseline Projections of Balances in the OASI, DI, and HI Trust Funds	143
E-1.	CBO's Economic Projections, by Calendar Year	147
E-2.	CBO's Economic Projections, by Fiscal Year	148
F-1.	Revenues, Outlays, Deficits, Surpluses, and Debt Held by the Public Since 1969	150
F-2.	Revenues, by Major Source, Since 1969	152
F-3.	Outlays, by Major Category, Since 1969	154
F-4.	Discretionary Outlays Since 1969	156
F-5.	Mandatory Outlays Since 1969	158

Figures

1-1.	Total Deficits and Surpluses	6
1-2.	Total Revenues and Outlays	9
1-3.	Baseline Deficits Compared With Deficits and Surpluses When the Unemployment Rate Has Been Relatively Low	10
1-4.	CBO's Baseline Projections of Outlays and Revenues, Compared With Actual Values 25 and 50 Years Ago	11
1-5.	Population, by Age Group	14
1-6.	Domestic and Foreign Holders of Treasury Debt, 2018	15
1-7.	The Uncertainty of CBO's Baseline Projections of the Budget Deficit	18
1-8.	Federal Debt Held by the Public	20
2-1.	CBO's Economic Forecast in Brief	22
2-2.	Projected Contributions to the Growth of Real GDP	31
2-3.	Consumer Spending and Income	33
2-4.	Business Fixed Investment and the Price of Oil	35
2-5.	Residential Investment and Household Formation	36
2-6.	Government Purchases	37
2-7.	Imports, Exports, and the Exchange Value of the U.S. Dollar	38
2-8.	The Relationship Between GDP and Potential GDP	39
2-9.	The Labor Market	41
2-10.	Inflation	43
2-11.	Interest Rates	44
2-12.	Labor Income	50
2-13.	Duration of Economic Expansions Since 1945	52
2-14.	The Uncertainty of CBO's Projections of Output	54
2-15.	Comparison of CBO's Economic Projections With the <i>Blue Chip</i> Survey	58
2-16.	Comparison of CBO's Economic Projections With Projections Made by Federal Reserve Officials	59

3-1.	Outlays, by Type of Spending	66
3-2.	Major Changes in Projected Outlays From 2019 to 2029	67
3-3.	Discretionary Outlays, by Category	81
3-4.	Projected New Discretionary Budgetary Resources for Defense and Nondefense Activities in 2019	82
3-5.	Discretionary Nondefense Funding for Emergency Requirements	84
4-1.	Total Revenues	88
4-2.	Revenues, by Major Source	89
4-3.	Growth of Individual Income Tax Receipts in CBO's Baseline Projections	92
4-4.	Outlays, Revenues, and Tax Expenditures in 2019	100
4-5.	Budgetary Effects of the Largest Tax Expenditures in 2019	101
5-1.	Alternative Paths for Discretionary Budget Authority	106
5-2.	Projected Deficits Under CBO's Baseline and an Alternative Fiscal Scenario	107
5-3.	Federal Debt Held by the Public Under CBO's Baseline and an Alternative Fiscal Scenario	110
A-1.	Changes in CBO's Baseline Projection of the 10-Year Deficit Since Spring 2018	112
C-1.	Contribution of Automatic Stabilizers to Budget Deficits and Surpluses	136
C-2.	Budget Deficits and Surpluses With and Without Automatic Stabilizers	137
D-1.	CBO's Baseline Projections of Annual Deficits and Surpluses in the OASI, DI, and HI Trust Funds	144



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, Steven Davis, Kathryn Dominguez, Robert Hall, Jan Hatzius, Donald Kohn, Gregory Mankiw, Emi Nakamura, Jonathan Parker, Adam Posen, James Poterba, Valerie Ramey, Brian Sack, Robert Shimer, James Stock, Kevin Warsh, and Mark Zandi. Greg Daco, Jeff Hoopes, Catherine Mann, and Ralph Monaco attended the panel's meeting as guests. Enhancements to the report this year were also made on the basis of comments about previous versions of it that were provided by Romina Boccia of the Heritage Foundation, Karen Dynan of Harvard University, G. William Hoagland of the Bipartisan Policy Center, and Phillip Swagel of the University of Maryland. 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; 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/54918); and providing other support.

CBO continually seeks feedback to make its work as useful as possible. Please send any feedback to communications@cbo.gov.

Keith Hall
Director
January 2019

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.

Yiqun Gloria Chen	Labor markets
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
Junghoon Lee	Fiscal policy
Jeffrey Perry	Financial markets
Jeffrey Schafer	Inflation, house prices
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, Joshua Shakin, and Edward Harris. In addition, the staff of the Joint Committee on Taxation provided valuable assistance.

Kathleen Burke	Individual income taxes, wage distribution
Paul Burnham	Retirement income
Dorian Carloni	Business taxation
Jacob Fabian	Customs duties
Nathaniel Frentz	Federal Reserve System earnings, miscellaneous fees and fines
Bilal Habib	Tax modeling
Bayard Meiser	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
Jennifer Shand	Corporate income taxes
Naveen Singhal	Capital gains realizations, tax modeling
Ellen Steele	Refundable tax credits

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, David Newman, 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, military construction, and family housing)
Paul Holland	Veterans' education benefits, reservists' education benefits
William Ma	Defense (operation and maintenance, procurement, compensation for radiation exposure and energy employees' occupational illness, other defense programs)
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

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
Jamease Kowalczyk	Medicare
Sarah Masi	Health
Kevin McNellis	Health insurance marketplaces, other programs
Ezra Porter	Health insurance coverage

Health (Continued)

Lisa Ramirez-Branum	Medicaid, health insurance coverage
Lara Robillard	Medicare
Sarah Sajewski	Medicare
Robert Stewart	Medicaid, Children's Health Insurance Program, Indian Health Service
Emily Vreeland	Health insurance coverage
Ellen Werble	Prescription drugs, Public Health Service
Colin Yee	Medicare
Rebecca Yip	Medicare, Public Health Service

Income Security and Education

Susan Yeh Beyer	Child nutrition and other nutrition programs
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
Jennifer Gray	Supplemental Nutrition Assistance Program and other nutrition programs, Social Services Block Grant, support programs for children and families
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

Natural and Physical Resources (Continued)

Wendy Kiska	Federal Deposit Insurance Corporation
James Langley	Agriculture
Jeffrey Perry	Fannie Mae and Freddie Mac, Federal Housing Administration
Matthew Pickford	General government, legislative branch
Stephen Rabent	Commerce, Small Business Administration, Universal Service Fund, deposit insurance, credit unions
Robert Reese	Community and regional development, Federal Emergency Management Agency, Bureau of Indian Affairs, other natural resources, highways, mass transit, Amtrak
Mitchell Remy	Fannie Mae and Freddie Mac, Federal Housing Administration
Janani Shankaran	Recreational resources, judicial branch, science and space exploration, conservation and land management
Jon Sperl	Pollution control and abatement
Aurora Swanson	Water resources, Fannie Mae and Freddie Mac, Federal Housing Administration

Other Areas and Functions

Shane Beaulieu	Computer support
Barry Blom	General budget projections
Joanna Capps	Appropriation bills (Labor, Health and Human Services, and Education; Legislative Branch)
Aaron Feinstein	Other interest, monthly Treasury data, historical data
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)
Dan Ready	Various federal retirement programs, national income and product accounts, federal pay
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

Long-Term Projections

The long-term projections were prepared by the Health, Retirement, and Long-Term Analysis Division and the Macroeconomic Analysis Division. That work was supervised by Julie Topoleski and Devrim Demirel. Aaron Betz, Charles Pineles-Mark, and Robert Shackleton prepared the projections.

Writing

Barry Blom wrote the summary and Chapter 1, with assistance from William Carrington and Avi Lerner. Yiqun Gloria Chen wrote Chapter 2. Amber Marcellino wrote Chapter 3, with assistance from Megan Carroll and Avi Lerner. Kathleen Burke, Jacob Fabian, Nathaniel Frentz, Bayard Meiser, Kurt Seibert, Joshua Shakin, and Jennifer Shand wrote Chapter 4. Dan Ready wrote Chapter 5, with assistance from Shannon Mok. Aaron Feinstein wrote Appendix A, with assistance from Nathaniel Frentz. Dan Ready wrote Appendix B, with assistance from Nathaniel Frentz and John Seliski. John Seliski wrote Appendix C. Avi Lerner wrote Appendix D. Claire Sleigh compiled Appendix E, and Aaron Feinstein compiled Appendix F.

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, Rebecca Lanning, Loretta Lettner, Bo Peery, Benjamin Plotinsky, and Elizabeth Schwinn edited the report; Casey Labrack and Jorge Salazar prepared it for publication; and Annette Kalicki, Adam Russell, Simone Thomas, and Maria Thomason published it on CBO's website.

Aaron Betz, Susan Beyer, Kent Christensen, Meredith Decker, Jacob Fabian, Aaron Feinstein, Ann Futrell, Paul Holland, Justin Latus, Bayard Meiser, Cecilia Pastrone, Stephen Rabent, Dan Ready, Dawn Sauter Regan, Janani Shankaran, Claire Sleigh, and Adam Staveski fact-checked the report. Lara Robillard coordinated the preparation of tables of baseline projections; Kim Kowalewski and Nabeel Alsalam coordinated the preparation of figures of economic projections. Bayard Meiser, Cecilia Pastrone, Dan Ready, Claire Sleigh, and Adam Staveski compiled data and supplemental information. Jorge Salazar and Simone Thomas coordinated the presentation of those materials.