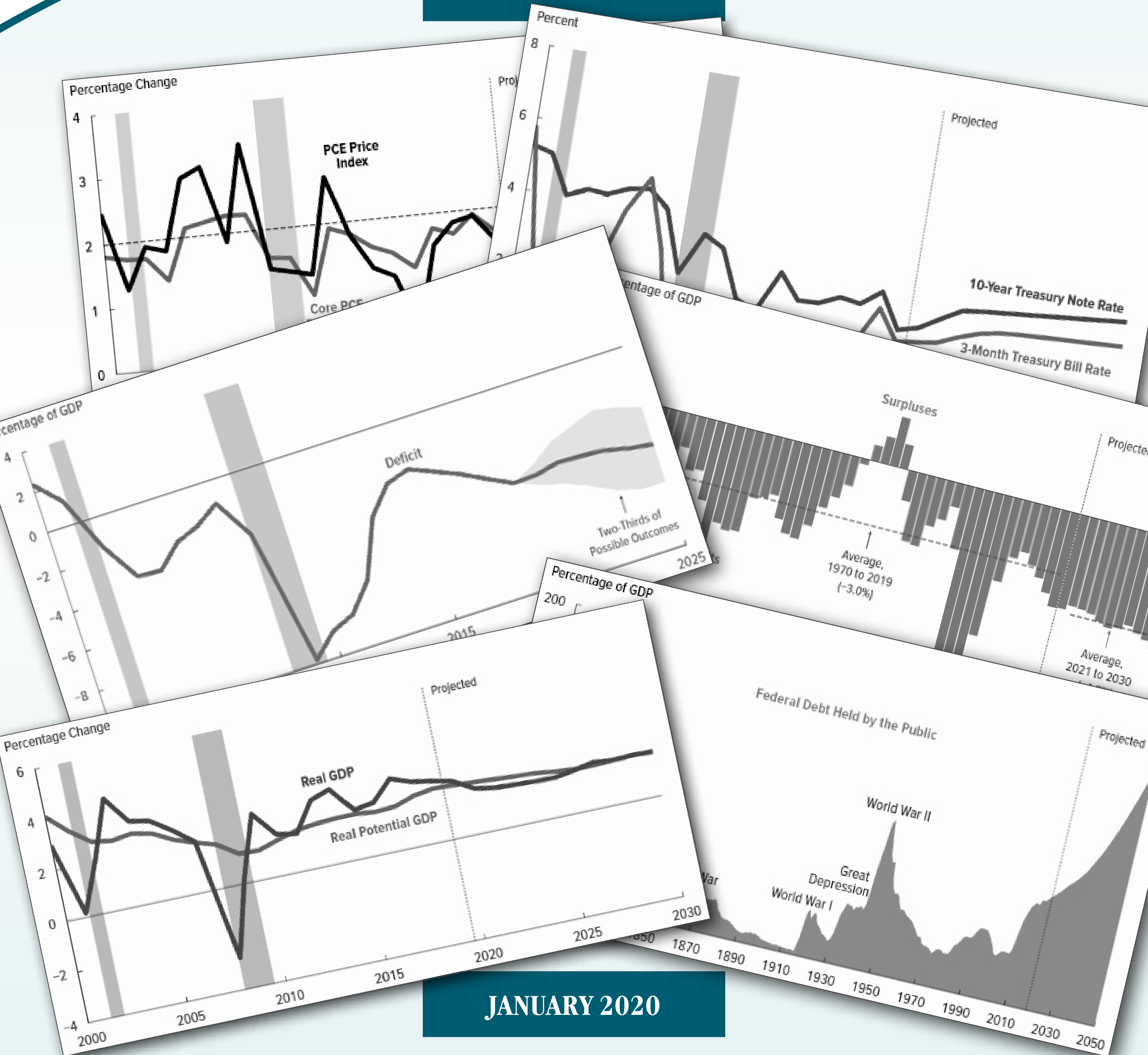
CONGRESS OF THE UNITED STATES
CONGRESSIONAL BUDGET OFFICE

CBO

The Budget and Economic Outlook: 2020 to 2030



JANUARY 2020

At a Glance

The Congressional Budget Office regularly publishes reports that present projections of what federal deficits, debt, revenues, and spending—and the economic path underlying them—would be for the current year and for the following 10 years and beyond if existing laws governing taxes and spending generally remained unchanged. This report is the latest in that series—and it shows a cumulative 10-year deficit that is slightly larger and a cumulative 30-year deficit that is notably larger than those in CBO's previous projections.

- **The Budget.** In CBO's projections, the federal budget deficit is $1.0 trillion in 2020 and averages $1.3 trillion between 2021 and 2030. Projected deficits rise from 4.6 percent of gross domestic product (GDP) in 2020 to 5.4 percent in 2030.

  Other than a six-year period during and immediately after World War II, the deficit over the past century has not exceeded 4.0 percent for more than five consecutive years. And during the past 50 years, deficits have averaged 1.5 percent of GDP when the economy was relatively strong (as it is now).

  Because of the large deficits, federal debt held by the public is projected to grow, from 81 percent of GDP in 2020 to 98 percent in 2030 (its highest percentage since 1946). By 2050, debt would be 180 percent of GDP—far higher than it has ever been (see Chapter 1).

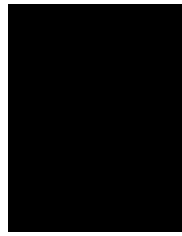
- **The Economy.** In 2020, inflation-adjusted GDP is projected to grow by 2.2 percent, largely because of continued strength in consumer spending and a rebound in business fixed investment. Output is projected to be higher than the economy's maximum sustainable output this year to a greater degree than it has been in recent years, leading to higher inflation and interest rates after a period in which both were low, on average. Continued strength in the demand for labor keeps the unemployment rate low and drives employment and wages higher.

  After 2020, economic growth is projected to slow. From 2021 to 2030, output is projected to grow at an average annual rate of 1.7 percent, roughly the same rate as potential growth. That average growth rate of output is less than its long-term historical average, primarily because the labor force is expected to grow more slowly than it has in the past. Over that same period, the interest rate on 10-year Treasury notes is projected to rise gradually, reaching 3.1 percent in 2030 (see Chapter 2).

- **Changes Since CBO's Previous Projections.** CBO's estimate of the deficit for 2020 is now $8 billion more—and its projection of the cumulative deficit over the 2020–2029 period, $160 billion more—than the agency projected in August 2019. That 10-year increase is the net result of changes that go in opposite directions. Lower projected interest rates and higher estimates of wages, salaries, and proprietors' income reduced projected deficits, but a combination of recent legislation and other changes increased them (see Appendix A).

  Relative to the projections in CBO's long-term budget outlook, last published in June 2019, debt held by the public as a percentage of GDP in 2049 is now projected to be 30 percentage points higher. That increase is largely the result of legislation enacted since June—which decreased revenues and increased discretionary outlays—and of lower projected GDP (see Box 1-1).

www.cbo.gov/publication/56020



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In late December 2019, major legislation was enacted that funded the federal government for the rest of the fiscal year. The projections in this report reflect the budgetary and economic effects of that legislation but do not reflect economic developments, administrative actions, or regulatory changes that occurred after January 7, 2020, or any legislation enacted after that date. Because the timing of the major legislation did not allow enough time for all of the analysis and writing that the Congressional Budget Office typically performs, this report omits some chapters and appendixes that have often appeared in past editions. However, some of those components will be published separately on February 6, 2020.

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.

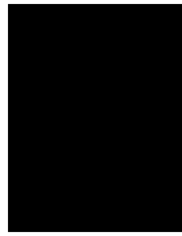
Numbers in the text, tables, and figures may not add up to totals because of rounding.

Some of the figures in this report use shaded vertical bars to indicate periods of recession. (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 for people under age 65.

Supplemental data for this analysis are available on CBO's website (www.cbo.gov/publication/56020), 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).

CBO has corrected this report since its original publication. Corrections are listed at the end of the report.



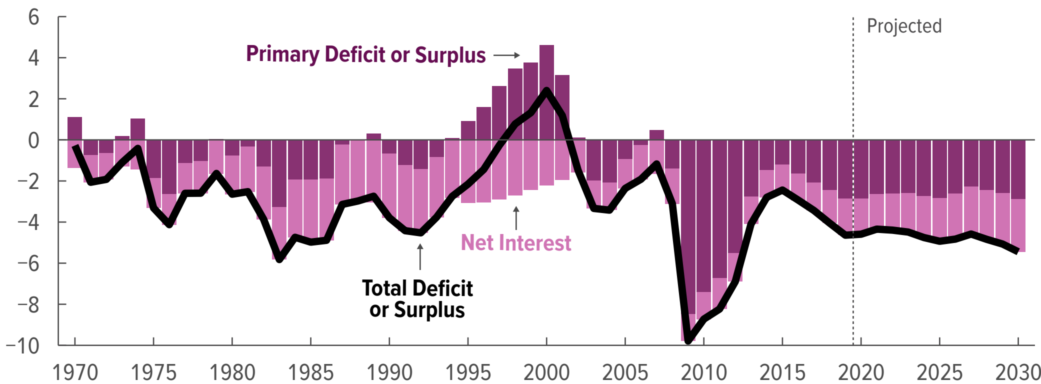
Visual Summary

In this report, the Congressional Budget Office provides detailed projections of the federal budget and the U.S. economy under current law for this year and the decade that follows as well as projections for the following two decades. The cumulative deficit currently projected for the next 10 years is slightly larger than what CBO projected last August because deficit increases resulting from new legislation and other changes are greater than the deficit-reducing effects of revisions to CBO's economic forecast. Beyond 2030, projected deficits have increased substantially. As a result, debt held by the public as a percentage of gross domestic product (GDP) in 2049 is now projected to be 30 percentage points higher than it was in CBO's previous long-term projections.

Deficits and Debt

CBO estimates a 2020 deficit of $1.0 trillion, or 4.6 percent of GDP. The projected gap between spending and revenues increases to 5.4 percent of GDP in 2030. Federal debt held by the public is projected to rise over the coming decade, from 81 percent of GDP in 2020 to 98 percent of GDP in 2030. It continues to grow thereafter in CBO's projections, reaching 180 percent of GDP in 2050, well above the highest level ever recorded in the United States.

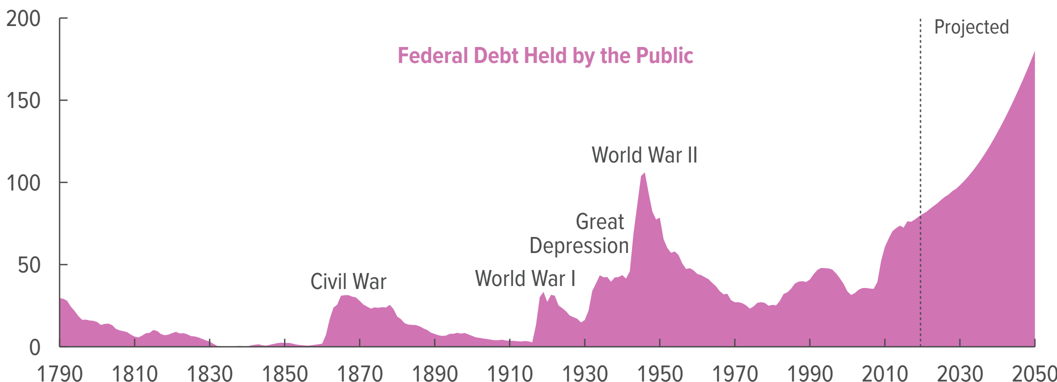
Percentage of Gross Domestic Product



Over the 2020–2030 period, primary deficits—that is, deficits excluding net outlays for interest—are projected to average 2.6 percent of GDP. Over the same period, federal debt and interest rates are both projected to rise, causing net outlays for interest to increase steadily, from 1.7 percent of GDP in 2020 to 2.6 percent of GDP in 2030.

See Figure 1-3 on page 9

Percentage of Gross Domestic Product

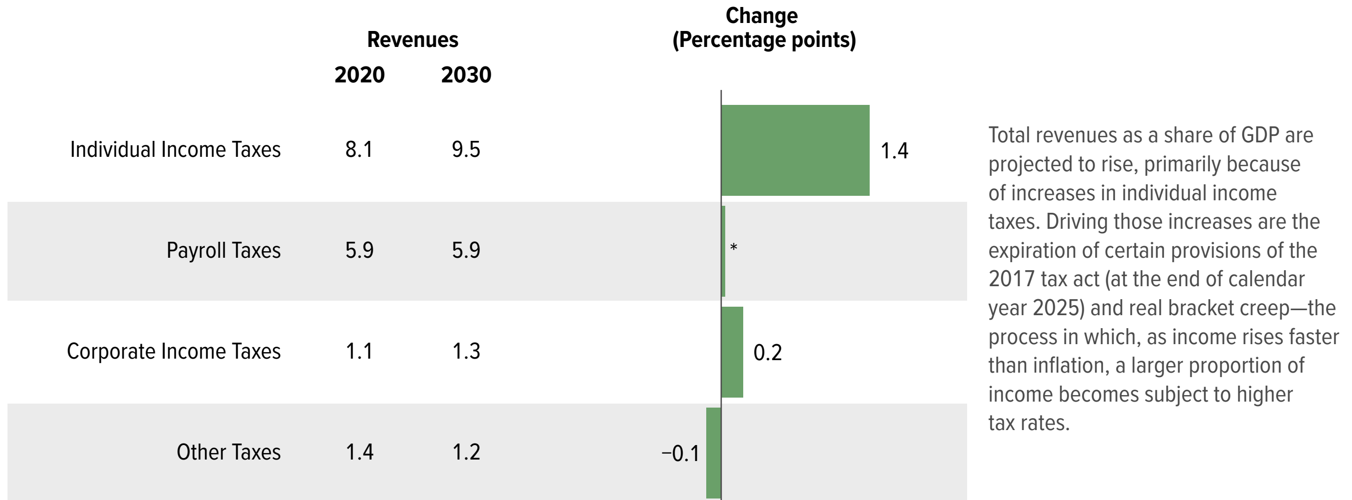


High and rising federal debt would reduce national saving and income, boost the government's interest payments, limit policymakers' ability to respond to unforeseen events, and increase the likelihood of a fiscal crisis.

See Figure 1-4 on page 11

Revenues

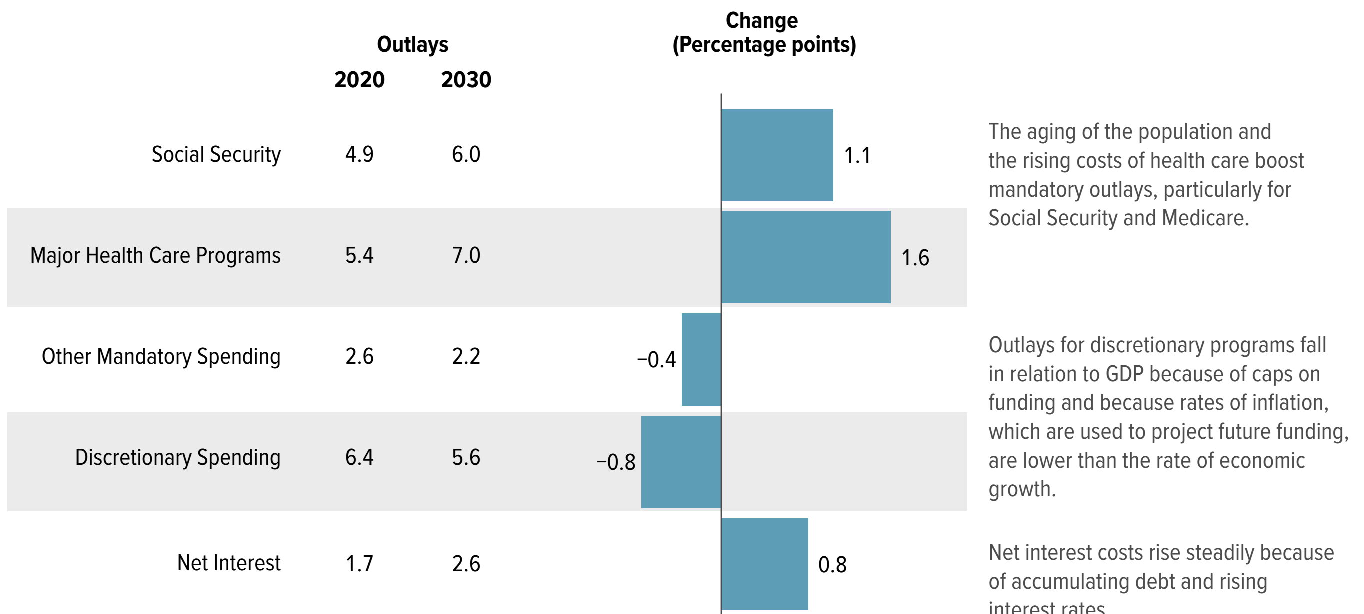
In CBO's baseline projections, revenues total $3.6 trillion in 2020, or 16.4 percent of GDP, and rise to 18.0 percent of GDP in 2030.



See Figure 1-8 on page 24; ** = between zero and 0.05 percentage points*

Outlays

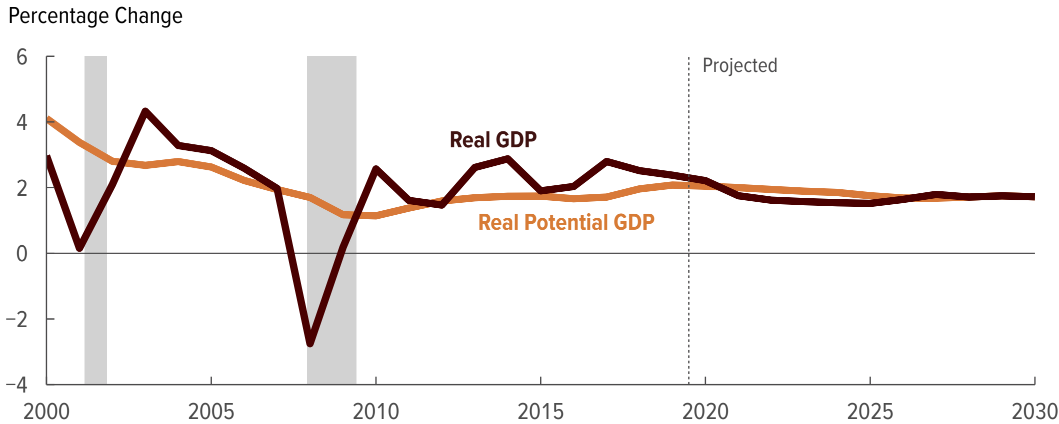
In 2020, CBO estimates, outlays will total $4.6 trillion, or 21.0 percent of GDP. In the agency's baseline projections, they rise to 23.4 percent of GDP in 2030.



See Figure 1-7 on page 20

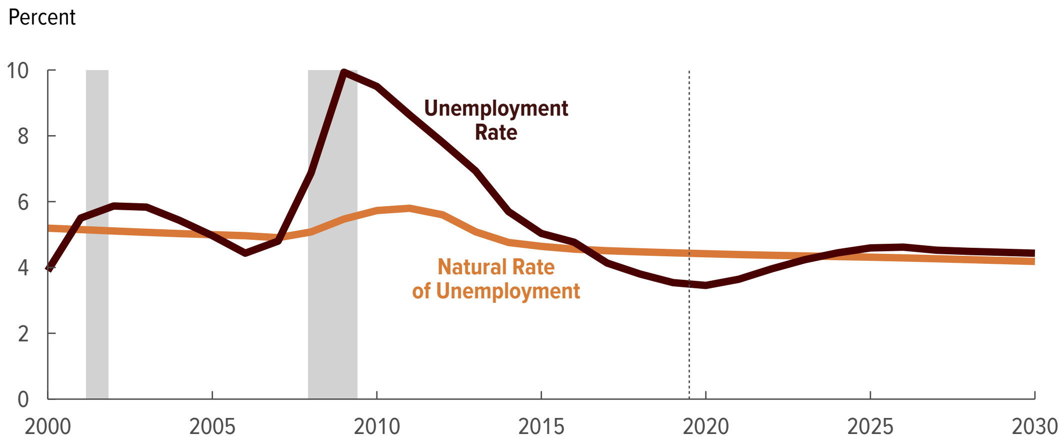
The Economy

Adjusted for inflation, GDP is projected to grow by 2.2 percent in 2020. From 2021 to 2030, output is projected to grow at an average annual rate of 1.7 percent, roughly the same rate as the economy's maximum sustainable output (or potential GDP), which is determined by factors such as the size of the labor force, the average number of hours worked, capital investment, and productivity growth.



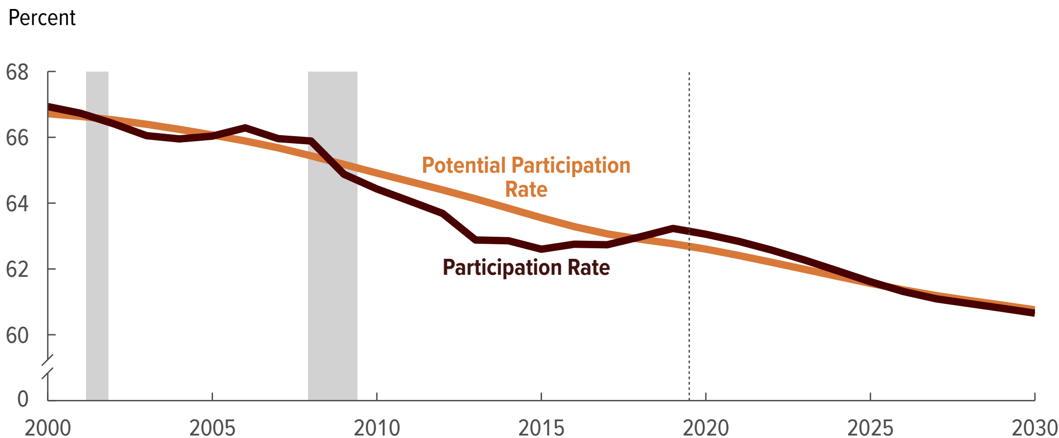
See Figure 2-1 on page 31

In CBO's projections, output grows faster than potential GDP in 2020, largely because of strong consumer spending and a rebound in business fixed investment. In later years, economic growth slows as growth in consumer spending and private investment moderates.



See Figure 2-2 on page 39

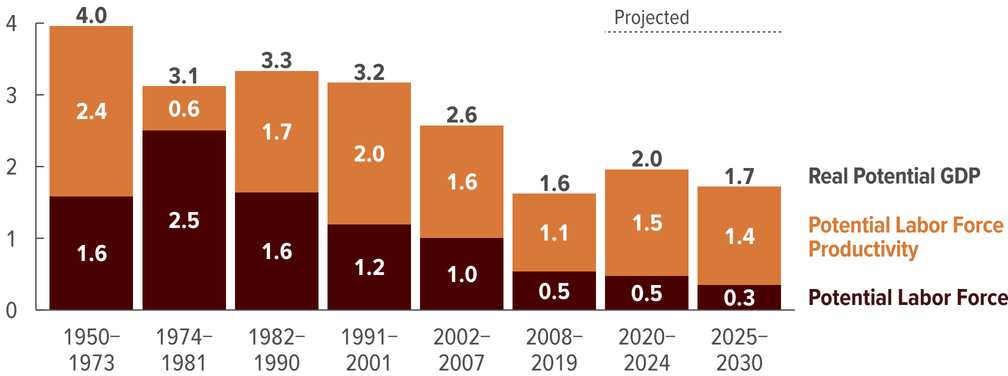
The unemployment rate remains near historic lows throughout 2020. It then rises steadily, mostly because of slower economic growth. In 2024, it surpasses the natural rate of unemployment (the rate arising from all sources other than fluctuations in the overall demand for goods and services).



See Figure 2-2 on page 39

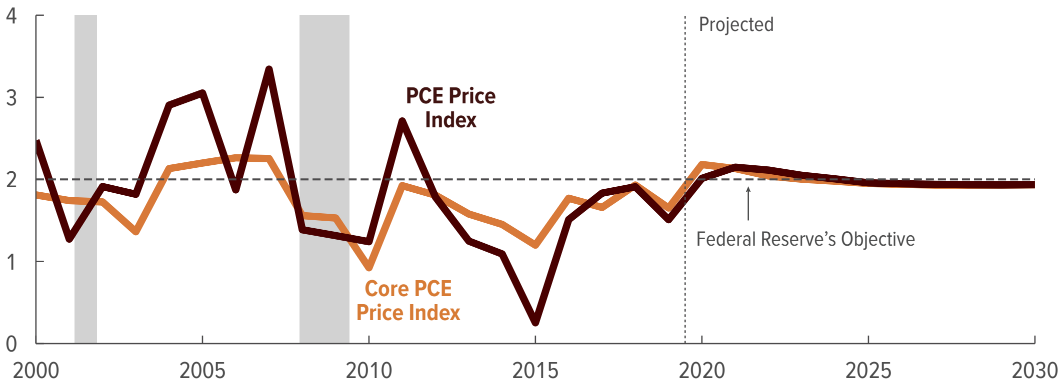
The strong labor market keeps the labor force participation rate elevated for much of 2020. Starting in 2021, as economic and job growth slows, participation falls toward its potential rate, which also decreases, largely because of the aging of the population.

The Economy (Continued)



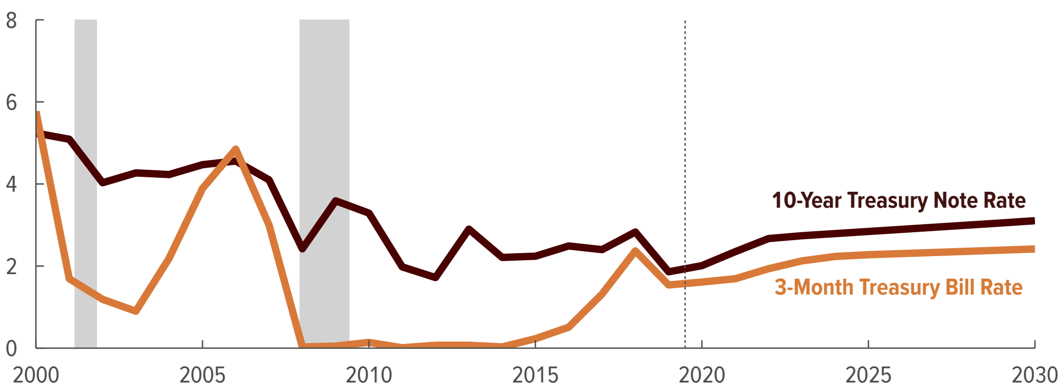
See Figure 2-6 on page 47

Over the next decade, real potential GDP is projected to grow more slowly than it did before 2008, primarily because the labor force is expected to grow more slowly than it has in the past.



See Figure 2-4 on page 42; PCE = personal consumption expenditures

In CBO's projections, a number of factors cause inflation to accelerate in 2020, including strong labor and product markets. After 2021, diminishing strength in those markets slows the rate of inflation.



See Figure 2-5 on page 43

Factors that push projected interest rates below their pre-2008 average include lower average expected inflation and slower growth of the labor force. Those factors are partially offset by others, such as a larger federal debt relative to GDP.

1

Chapter 1: The Budget Outlook

Overview

If current laws governing taxes and spending generally remained unchanged, federal deficits would continue to be large by historical standards from 2020 through 2030 and beyond, the Congressional Budget Office projects (see Figure 1-1). As a result of those deficits, federal debt would rise each year, reaching a percentage of the nation's output that is unprecedented in U.S. history.

CBO currently projects a federal deficit of $1.0 trillion in 2020; in its baseline budget projections, deficits average $1.3 trillion per year and total $13.1 trillion over the 2021–2030 period (see Table 1-1). Relative to the size of the economy, deficits would remain above 4.3 percent of gross domestic product (GDP) in every year between 2020 and 2030. Other than a six-year period during and immediately after World War II, the deficit over the past century has not exceeded 4.0 percent for more than five consecutive years. Over the past 50 years, the annual deficit has averaged 3.0 percent of GDP, but it generally has been much smaller when the economy was strong.

Those large deficits would lead to growth in debt held by the public: Under current law, debt held by the public would rise from 79 percent of GDP in 2019 to 98 percent at the end of 2030. Federal debt at that point would be higher as a percentage of GDP than at any time since 1945 and 1946. In the years after 2030, it would continue to increase, reaching 180 percent of GDP in 2050, CBO projects, well above the highest level ever recorded in the United States.

Relative to the projections CBO published in August 2019, the agency's estimate of the deficit for 2020 is now 0.7 percent (or $8 billion) more, and projected deficits over the 2020–2029 period total 1.3 percent (or $160 billion) more.[1] That increase over the next 10 years is the net result of changes that go in opposite directions. Revisions to CBO's economic forecast reduced deficits by $705 billion. However, enacted legislation increased projected deficits by $505 billion through 2029, and all other changes increased them by another $360 billion (see Appendix A).

Relative to the agency's most recent long-term budget projections, published in June 2019, debt held by the public as a percentage of GDP in 2049 is now projected to be 30 percentage points higher.[2]

Deficits and Debt

CBO constructs its baseline in accordance with provisions set forth in the Balanced Budget and Emergency Deficit Control Act of 1985 (Public Law 99-177, referred to here as the Deficit Control Act) and the Congressional Budget and Impoundment Control Act of 1974 (P.L. 93-344). Those laws require CBO to construct its baseline under the assumption that current laws will generally stay the same. Thus, CBO's baseline is not intended to provide a forecast of future budgetary outcomes; rather, it is meant to provide a benchmark that policymakers can use to assess the potential effects of future policy decisions on federal spending and revenues and, therefore, on deficits and debt.

CBO estimates that, in 2020, the federal deficit will reach $1,015 billion, which is $31 billion more than the shortfall recorded last year. Relative to the size of the economy, this year's deficit would be about the same as last year's shortfall—4.6 percent of GDP—which is the difference between revenues equal to 16.4 percent of GDP and outlays equal to 21.0 percent of GDP.

Ten-Year Projections

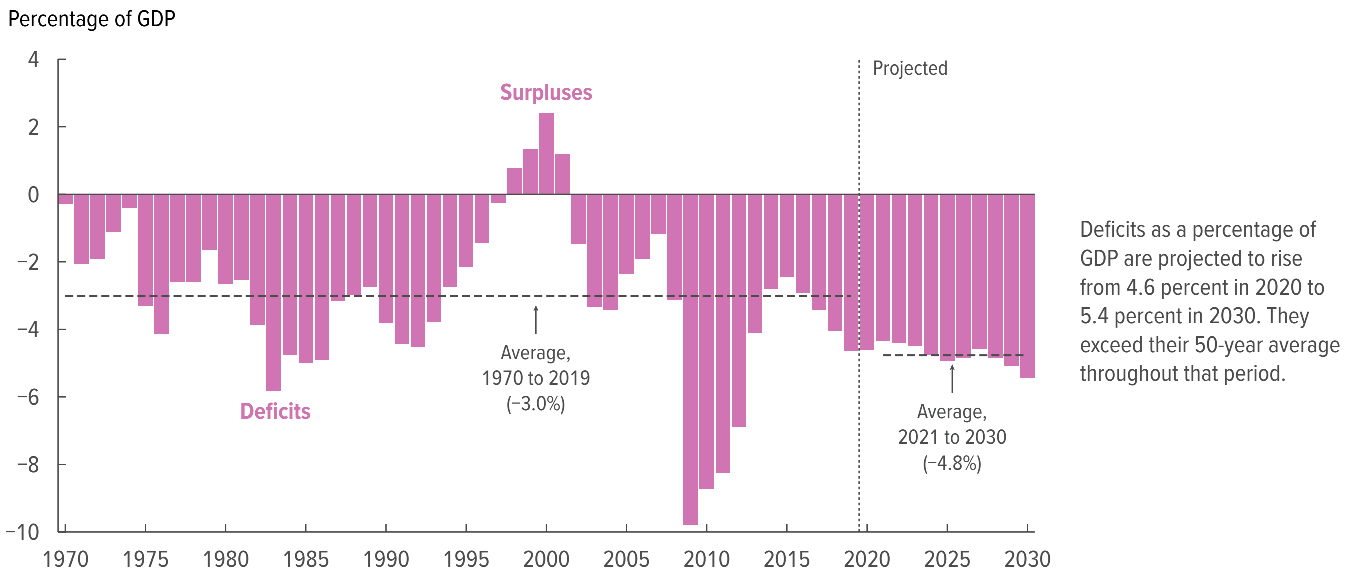
Over the next 10 years, deficits are projected to increase by more than 1 percentage point of GDP, rising from 4.3 percent in 2021 to 5.4 percent in 2030. Both revenues and outlays are projected to grow faster than GDP, though the increases in outlays would be larger. Federal

1. See Congressional Budget Office, *An Update to the Budget and Economic Outlook: 2019 to 2029* (August 2019), www.cbo.gov/publication/55551.

2. See Congressional Budget Office, *The 2019 Long-Term Budget Outlook* (June 2019), www.cbo.gov/publication/55331.

Figure 1-1.

Total Deficits and Surpluses



Deficits as a percentage of GDP are projected to rise from 4.6 percent in 2020 to 5.4 percent in 2030. They exceed their 50-year average throughout that period.

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.

GDP = gross domestic product.

revenues rise in CBO's projections, from 16.6 percent of GDP in 2021 to 18.0 percent of GDP in 2030. The projected growth in revenues after 2025 is mostly attributable to the scheduled expiration of nearly all of the individual income tax provisions of P.L. 115-97, referred to here as the 2017 tax act. Federal outlays are projected to climb from 20.9 percent of GDP in 2021 to 23.4 percent in 2030 (see Figure 1-2).[3]

The average deficit projected over the next 10 years is 1.8 percentage points more than the 3.0 percent of GDP that annual deficits have averaged over the past 50 years. Until recently, deficits tended to be small by historical standards when the economy was relatively strong over a period of several years. For example, between 1969 and 2018, the average deficit totaled 1.5 percent of GDP in years when the unemployment rate was below 6 percent. CBO projects that the unemployment rate will remain below 6 percent in each year through 2030. (In CBO's economic forecast, the unemployment rate peaks at 4.6 percent in 2026 and 2027.)

Primary deficits—that is, deficits excluding net outlays for interest—are projected to range between 2.3 percent and 2.9 percent of GDP over the next 10 years, averaging 2.6 percent of GDP from 2021 through 2030. The primary deficit in 2030 is 0.3 percent of GDP larger than the one in 2021. At the same time, mostly because of projected increases in interest rates and federal borrowing, net outlays for interest would grow steadily from 1.7 percent of GDP to 2.6 percent (see Figure 1-3 on page 9). The increase in federal borrowing is the most significant factor affecting the projected growth in those outlays.

The deficits projected in CBO's baseline would boost federal debt held by the public, which consists mostly of the securities that the Treasury issues to raise cash to fund the federal government's activities and pay off its

3. Because October 1 will fall on a weekend in 2022, 2023, and 2028, certain payments that are due on those days will be made at the end of September instead, thus shifting into the previous fiscal year. In CBO's projections, those shifts noticeably boost projected outlays and deficits in fiscal years 2022 and 2028 but reduce them in fiscal years 2024 and 2029.

Table 1-1.

CBO's Baseline Budget Projections, by Category

													Total	
	Actual, 2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2021–2025	2021–2030
							In Billions of Dollars							
Revenues														
Individual income taxes	1,718	1,792	1,905	1,997	2,096	2,179	2,267	2,485	2,710	2,811	2,929	3,049	10,445	24,428
Payroll taxes	1,243	1,302	1,356	1,409	1,464	1,523	1,584	1,642	1,703	1,768	1,832	1,896	7,335	16,177
Corporate income taxes	230	234	257	292	334	362	386	385	382	390	398	406	1,631	3,592
Other	271	304	298	304	312	317	325	339	358	374	386	394	1,556	3,408
Total	**3,462**	**3,632**	**3,816**	**4,001**	**4,206**	**4,382**	**4,562**	**4,851**	**5,154**	**5,343**	**5,545**	**5,745**	**20,967**	**47,605**
On-budget	2,548	2,672	2,815	2,961	3,127	3,263	3,403	3,650	3,909	4,051	4,207	4,359	15,570	35,746
Off-budget[a]	914	960	1,001	1,040	1,079	1,119	1,159	1,201	1,245	1,291	1,338	1,386	5,397	11,859
Outlays														
Mandatory	2,735	2,859	2,979	3,201	3,337	3,469	3,723	3,945	4,139	4,456	4,508	4,878	16,709	38,635
Discretionary	1,336	1,406	1,444	1,492	1,518	1,549	1,594	1,631	1,670	1,714	1,743	1,790	7,597	16,144
Net interest	376	382	394	424	470	515	561	609	658	711	761	819	2,364	5,921
Total	**4,447**	**4,647**	**4,816**	**5,117**	**5,325**	**5,534**	**5,877**	**6,184**	**6,467**	**6,880**	**7,012**	**7,487**	**26,669**	**60,700**
On-budget	3,540	3,687	3,789	4,017	4,147	4,275	4,537	4,766	4,963	5,284	5,318	5,692	20,765	46,787
Off-budget[a]	907	961	1,027	1,100	1,178	1,259	1,340	1,419	1,505	1,597	1,693	1,796	5,904	13,913
Deficit (-) or Surplus	**-984**	**-1,015**	**-1,000**	**-1,116**	**-1,119**	**-1,152**	**-1,315**	**-1,333**	**-1,313**	**-1,538**	**-1,466**	**-1,742**	**-5,702**	**-13,095**
On-budget	-992	-1,015	-974	-1,056	-1,020	-1,012	-1,134	-1,116	-1,054	-1,232	-1,112	-1,333	-5,195	-11,041
Off-budget[a]	8	-1	-26	-60	-100	-140	-181	-218	-260	-305	-355	-410	-507	-2,054
Debt Held by the Public	16,803	17,855	18,886	20,066	21,248	22,453	23,827	25,196	26,545	28,152	29,667	31,447	n.a.	n.a.
Memorandum:														
GDP	21,220	22,111	23,029	23,916	24,809	25,724	26,653	27,615	28,653	29,737	30,850	32,003	124,131	272,989
							As a Percentage of GDP							
Revenues														
Individual income taxes	8.1	8.1	8.3	8.3	8.5	8.5	8.5	9.0	9.5	9.5	9.5	9.5	8.4	8.9
Payroll taxes	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
Corporate income taxes	1.1	1.1	1.1	1.2	1.3	1.4	1.4	1.4	1.3	1.3	1.3	1.3	1.3	1.3
Other	1.3	1.4	1.3	1.3	1.3	1.2	1.2	1.2	1.3	1.3	1.3	1.2	1.3	1.2
Total	**16.3**	**16.4**	**16.6**	**16.7**	**17.0**	**17.0**	**17.1**	**17.6**	**18.0**	**18.0**	**18.0**	**18.0**	**16.9**	**17.4**
On-budget	12.0	12.1	12.2	12.4	12.6	12.7	12.8	13.2	13.6	13.6	13.6	13.6	12.5	13.1
Off-budget[a]	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
Outlays														
Mandatory	12.9	12.9	12.9	13.4	13.4	13.5	14.0	14.3	14.4	15.0	14.6	15.2	13.5	14.2
Discretionary	6.3	6.4	6.3	6.2	6.1	6.0	6.0	5.9	5.8	5.8	5.6	5.6	6.1	5.9
Net interest	1.8	1.7	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	1.9	2.2
Total	**21.0**	**21.0**	**20.9**	**21.4**	**21.5**	**21.5**	**22.1**	**22.4**	**22.6**	**23.1**	**22.7**	**23.4**	**21.5**	**22.2**
On-budget	16.7	16.7	16.5	16.8	16.7	16.6	17.0	17.3	17.3	17.8	17.2	17.8	16.7	17.1
Off-budget[a]	4.3	4.3	4.5	4.6	4.7	4.9	5.0	5.1	5.3	5.4	5.5	5.6	4.8	5.1
Deficit (-) or Surplus	**-4.6**	**-4.6**	**-4.3**	**-4.7**	**-4.5**	**-4.5**	**-4.9**	**-4.8**	**-4.6**	**-5.2**	**-4.8**	**-5.4**	**-4.6**	**-4.8**
On-budget	-4.7	-4.6	-4.2	-4.4	-4.1	-3.9	-4.3	-4.0	-3.7	-4.1	-3.6	-4.2	-4.2	-4.0
Off-budget[a]	*	*	-0.1	-0.3	-0.4	-0.5	-0.7	-0.8	-0.9	-1.0	-1.2	-1.3	-0.4	-0.8
Debt Held by the Public	79.2	80.8	82.0	83.9	85.6	87.3	89.4	91.2	92.6	94.7	96.2	98.3	n.a.	n.a.

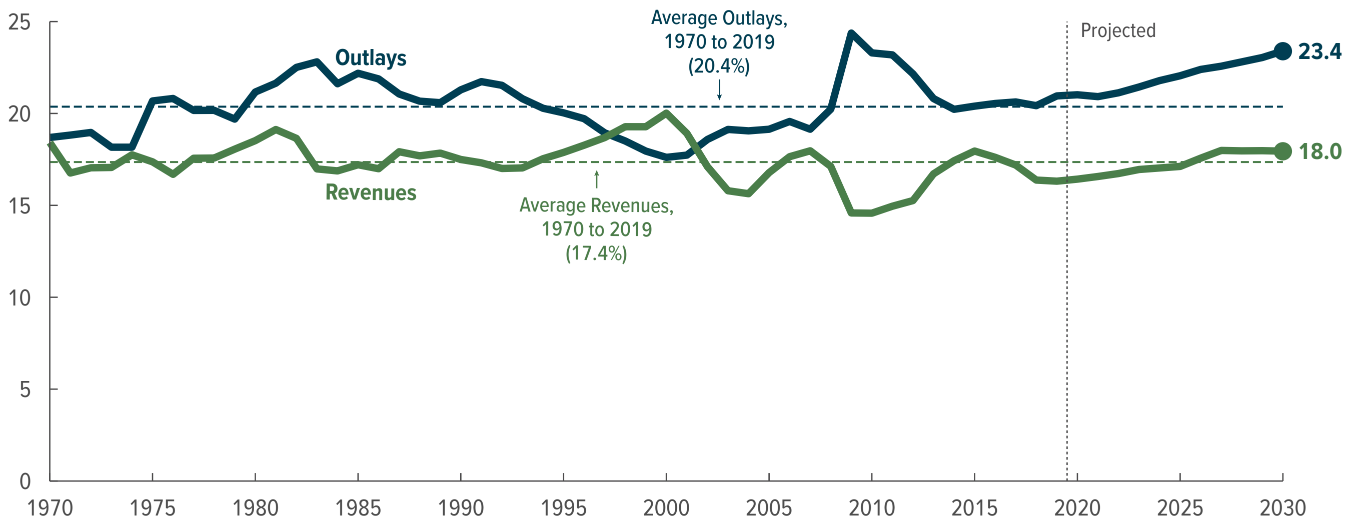
Source: Congressional Budget Office.

GDP = gross domestic product; 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.

Figure 1-2.

Total Revenues and Outlays



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.

GDP = gross domestic product.

maturing liabilities. The net amount that the Treasury borrows by issuing those securities (calculated as the amounts that are sold minus the amounts that have matured) is influenced primarily by the annual budget deficit.

In CBO's baseline, after accounting for all of the government's borrowing needs, debt held by the public rises from $17.9 trillion at the end of 2020 to $31.4 trillion at the end of 2030 (see Table 1-2). As a percentage of GDP, that debt would increase from 81 percent at the end of 2020 to 98 percent by the end of the projection period. At that point, such debt would be the largest since 1946 and more than twice the average over the past 50 years.

Long-Term Projections

Beyond 2030, debt held by the public is projected to increase substantially (see Figure 1-4 on page 11). By 2050, it would equal 180 percent of GDP, CBO projects, nearly 75 percentage points higher than it was in 1946, when federal debt reached its peak. (See Box 1-1 on page 12 for more details on CBO's long-term budget projections.)

Consequences of Rising Federal Debt

If federal debt as a percentage of GDP continued to rise at the pace that CBO projects it would under current law, the economy would be affected in two significant ways:

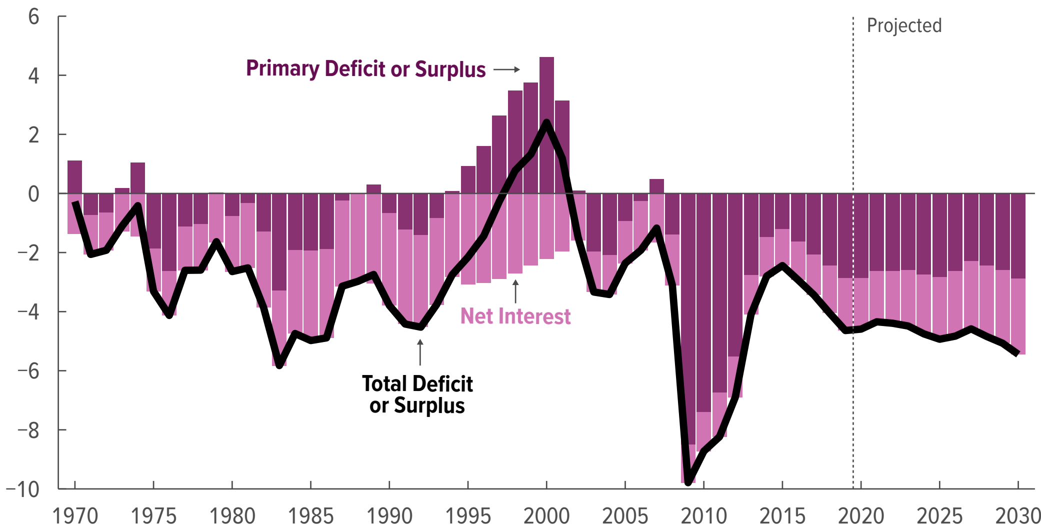
- That growing debt would dampen economic output over time, and
- Rising interest costs associated with that debt would increase interest payments to foreign debt holders and thus reduce the income of U.S. households by increasing amounts.

The increases in debt that CBO projects would also pose significant risks to the fiscal and economic outlook, although those risks are not currently apparent in financial markets. In addition, high debt might cause policymakers to feel constrained from implementing deficit-financed fiscal policy to respond to unforeseen events or for other purposes, such as to promote economic activity or strengthen national defense. Negative

Figure 1-3.

Total Deficit, Primary Deficit, and Net Interest

Percentage of GDP



In CBO's projections, primary deficits fluctuate between 2.3 percent and 2.9 percent of GDP over the next decade, but total deficits grow because of rising interest costs.

Source: Congressional Budget Office.

Primary deficits or surpluses exclude net outlays for interest.

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.

economic and financial effects that were less abrupt but still significant—such as expectations of higher inflation or an increased burden of financing public and private activity—would also have a greater chance of occurring. Those effects would worsen the consequences associated with high and rising federal debt.

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 below projected amounts, or adopting some combination of those approaches.

Uncertainty in Projections of Deficits and Debt

Future deficits and debt are likely to differ from CBO's current-law projections for a number of reasons. Changes to laws and administrative actions—particularly those affecting fiscal policies—that cause them to differ from the laws and policies underlying CBO's baseline projections could lead to budgetary outcomes that diverge considerably from those in the baseline.

Even if federal laws remained the same over the next decade, actual budgetary outcomes would differ from CBO's baseline projections because of unanticipated changes in economic conditions and in other factors that affect federal spending and revenues. 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 growth in productivity. Discrepancies between those forecasts and actual economic outcomes—for example, because of a crisis in the financial sector—can cause significant differences between baseline budget projections and budgetary outcomes. Differences might also be caused by unanticipated developments that affect other aspects of CBO's projections, such as new trends in spending on health care, or changes in the claiming of tax credits or participation in benefit programs. CBO 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, and recognizes that actual outcomes will typically differ to some degree from any such projections.

Table 1-2.

CBO's Baseline Projections of Federal Debt

Billions of Dollars

	Actual, 2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Debt Held by the Public at the Beginning of the Year	15,750	16,803	17,855	18,886	20,066	21,248	22,453	23,827	25,196	26,545	28,152	29,667
Changes in Debt Held by the Public												
Deficit	984	1,015	1,000	1,116	1,119	1,152	1,315	1,333	1,313	1,538	1,466	1,742
Other means of financing[a]	69	37	30	64	63	53	60	35	36	69	49	38
Total	1,053	1,052	1,031	1,180	1,182	1,205	1,375	1,369	1,349	1,606	1,516	1,780
Debt Held by the Public at the End of the Year												
In billions of dollars	**16,803**	**17,855**	**18,886**	**20,066**	**21,248**	**22,453**	**23,827**	**25,196**	**26,545**	**28,152**	**29,667**	**31,447**
As a percentage of GDP	**79.2**	**80.8**	**82.0**	**83.9**	**85.6**	**87.3**	**89.4**	**91.2**	**92.6**	**94.7**	**96.2**	**98.3**
Memorandum:												
Debt Held by the Public Minus Financial Assets[b]												
In billions of dollars	14,961	15,976	16,976	18,092	19,211	20,363	21,678	23,011	24,325	25,862	27,328	29,071
As a percentage of GDP	70.5	72.3	73.7	75.6	77.4	79.2	81.3	83.3	84.9	87.0	88.6	90.8
Gross Federal Debt[c]	22,668	23,790	24,901	26,112	27,295	28,476	29,790	31,109	32,252	33,583	34,805	36,204
Debt Subject to Limit[d]	22,687	23,810	24,921	26,132	27,317	28,498	29,813	31,133	32,276	33,609	34,831	36,231
Average Interest Rate on Debt Held by the Public (Percent)	2.5	2.4	2.3	2.3	2.4	2.5	2.6	2.6	2.7	2.7	2.8	2.8

Source: Congressional Budget Office.

GDP = gross domestic product.

a. Factors not included in budget totals that affect the government's need to borrow from the public. Those factors include 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.

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

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

d. The amount of federal debt that is subject to the overall limit set in law. That measure of debt excludes debt issued by the Federal Financing Bank and reflects certain other adjustments that are excluded from gross federal debt. The debt limit was most recently set at $22.0 trillion but has been suspended through July 31, 2021. On August 1, 2021, the debt limit will be raised to its previous level plus the amount of federal borrowing that occurred while the limit was suspended. For more details, see Congressional Budget Office, *Federal Debt and the Statutory Limit, February 2019* (February 2019), www.cbo.gov/publication/54987.

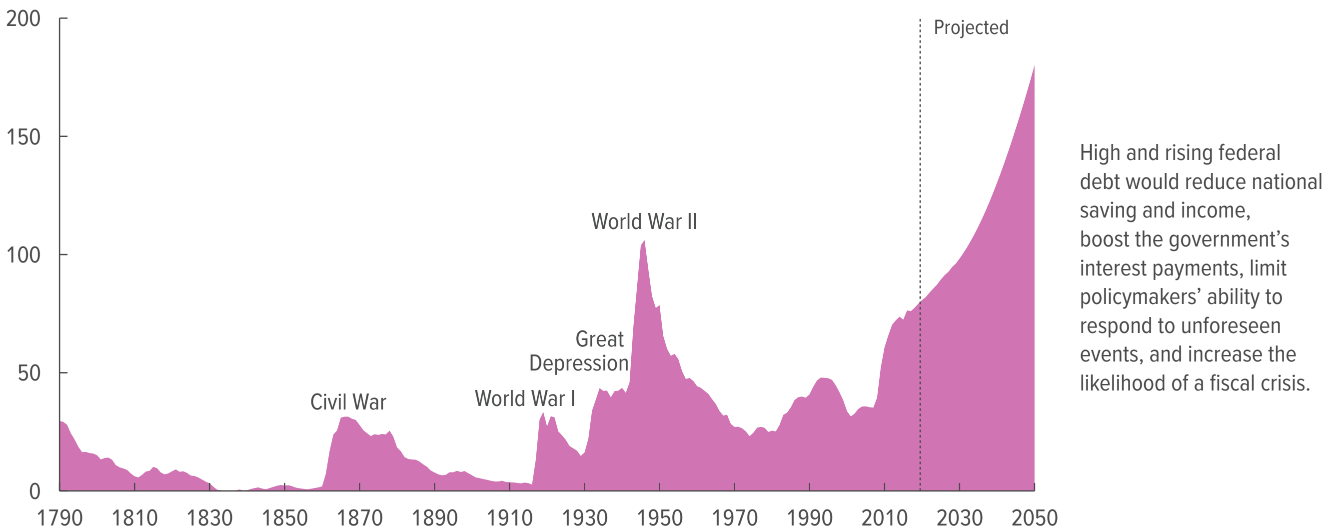
Historical experience gives some indication of the magnitude of the uncertainty of budget projections.[4] On the basis of an analysis of its past projections, CBO estimates that there is approximately a two-thirds chance that, under current law, the deficit in 2021 would be between 3.3 percent and 5.4 percent of GDP. The range in 2025 would be larger: CBO estimates that, under current law, there is approximately a two-thirds chance that the deficit would be between 3.1 percent and 6.8 percent of GDP in that year (see Figure 1-5 on page 14).

Errors in the projections of debt tend to compound over time, so the uncertainty surrounding those projections

4. See Congressional Budget Office, *An Evaluation of CBO's Past Deficit and Debt Projections* (September 2019), www.cbo.gov/publication/55234.

Figure 1-4.

Federal Debt Held by the Public



Source: Congressional Budget Office.

GDP = gross domestic product.

is greater. For example, in CBO's baseline, federal debt held by the public is projected to equal 89 percent of GDP in 2025. Taking into account the errors in its past projections, CBO estimates that there is approximately a two-thirds chance that, under current law, federal debt would be between 80 percent and 98 percent of GDP in that year.

Outlays

Federal outlays in CBO's baseline are projected to rise from $4.6 trillion in 2020 to $7.5 trillion in 2030. Increases in mandatory spending—particularly for Social Security and Medicare—account for nearly three-quarters of that increase.

Total Outlays in 2020

In CBO's projections, total federal outlays in 2020 increase by $201 billion (or 5 percent) from their 2019 amounts. Most of that increase is attributable to mandatory outlays, which are anticipated to rise by $125 billion (or 5 percent). Discretionary outlays also are expected to increase by 5 percent this year, to a total of $1.4 trillion, an increase of $69 billion. The government's net interest costs in 2020 are expected to inch up by $7 billion (or 2 percent), to $382 billion. (See Box 1-2 on page 15 for descriptions of the three major types of federal outlays.)

Federal outlays in 2020 are projected to be 21.0 percent of GDP, 0.6 percentage points above their average of 20.4 percent over the 1970–2019 period. Mandatory spending (net of the offsetting receipts that are credited against such outlays) is expected to equal 12.9 percent of GDP in 2020, compared with an average of 10.1 percent over the past 50 years. As a share of GDP, the other major components of federal spending are projected to fall below their 50-year averages: Discretionary outlays are expected to equal 6.4 percent of GDP this year, compared with their average of 8.3 percent over the past 50 years, and net outlays for interest are expected to equal 1.7 percent of GDP, compared with their 50-year average of 2.0 percent.

Total Outlays in 2030

Over the coming decade, CBO projects, federal outlays would grow at an average annual rate of 4.9 percent. Outlays for Social Security, Medicare, and net interest account for a little more than two-thirds of

Box 1-1.

The Budget Outlook for the Next 30 Years

Beyond the coming decade, the fiscal outlook is daunting. In the Congressional Budget Office's projections, growing budget deficits boost federal debt dramatically over the next three decades (see the table). By 2050, debt is projected to reach 180 percent of gross domestic product (GDP), far higher than any percentage previously recorded in the United States and on track to grow even larger. Relative to GDP, CBO projects, federal debt would be higher and deficits larger over the next three decades than the agency projected in June 2019, when it last updated its long-term budget projections.

Those long-term projections follow CBO's 10-year baseline projections for the coming decade and then extend the baseline concept for subsequent years.[1] The paths of the economic and demographic variables used to construct CBO's projections are uncertain. But even if their values differed from those underlying the extended baseline projections, federal debt would probably be much higher in 30 years than it is today, if current laws generally remained unchanged.

Projected Spending and Revenues Through 2050

Federal revenues would rise relative to GDP under current law, increasing from 16.3 percent of GDP in 2019 to 18.6 percent in 2050. However, spending would increase even more, rising from 21.0 percent of GDP in 2019 to 30.4 percent in 2050—driven by increases of 4.8 percentage points in mandatory spending and 5.4 percentage points in net outlays for interest. Increases in mandatory spending would result from the aging of the population and growth in per capita spending on health care. Higher interest costs would stem from increases in federal borrowing and rising interest rates. In contrast, discretionary spending is projected to decline by 0.8 percentage points as a share of GDP. All told, the budget deficit in 2050 would be close to 12 percent of GDP, almost four times what it has averaged over the past 50 years.

Changes in CBO's 30-Year Projections

In CBO's extended baseline projections, debt in 2049 is equal to 174 percent of GDP, which is 30 percentage points higher than the level the agency projected in June.[2] Three factors account for that upward revision. First, revenues as a share of GDP are projected to be lower, primarily as a result of legislation enacted in December 2019. Second, CBO has increased its projections of spending, largely as a result of legislation enacted in August. Third, CBO has lowered its projections of GDP growth.

Changes in Revenues. The long-term projections for revenues are lower than they were last June, primarily because the tax on employment-based health insurance plans with high premiums was repealed. Other factors, including slower projected economic growth and other legislative changes, also reduced long-term revenue projections. As a share of GDP, revenues in 2049 are now projected to total 18.5 percent, which is 1.0 percentage point lower than CBO projected last June.

Changes in Spending. Projections of spending over the next three decades are higher than those reported last June, primarily because of the higher limits on discretionary funding in 2020 and 2021 put in place by the Bipartisan Budget Act of 2019. (Those higher limits were reflected in the 10-year baseline budget projections that CBO released last August.) The projected path of discretionary spending in the extended baseline is extrapolated from that higher level. Meanwhile, net outlays for interest are initially lower and then higher than CBO previously projected. That pattern results from a downward revision to interest rates in the first decade that is attenuated over the next two decades as greater federal borrowing is projected to put upward pressure on interest rates. Overall, projected spending in 2049 totals 30.0 percent of GDP, 1.7 percentage points higher than in the agency's June projections.

Changes in Economic Growth. In CBO's current projections, real (inflation-adjusted) GDP grows at a rate of 1.7 percent per year over the next 10 years, slightly slower than in the agency's June 2019 projections. Over the subsequent two decades, the rate of growth, at 1.6 percent, is also slower than it was projected to be in June—in part because of slower growth in the agency's projections of capital services resulting from higher projected deficits in the long term. In addition, CBO now accounts for how changes in long-term population growth and household formation reduce private residential investment. Slightly slower population growth also contributes to the slower growth of GDP.

1. The analysis reflects statutory requirements that CBO's baseline projections incorporate the assumptions that current law generally remains unchanged, that some mandatory programs are nevertheless extended after their authorizations lapse, and that spending for Medicare and Social Security continues as scheduled even if their trust funds are exhausted.

2. For years after 2030, CBO has updated its long-term population, economic, and revenue projections and has updated spending projections using a simplified approach. CBO expects to publish fully updated long-term projections in the spring of 2020. For the most recent detailed description, see Congressional Budget Office, *The 2019 Long-Term Budget Outlook* (June 2019), www.cbo.gov/publication/55331.

Continued

Box 1-1. Continued

The Budget Outlook for the Next 30 Years

Key Projections in CBO's Extended Baseline

Percentage of GDP

	2020	2021	Projected Annual Average: 2022–2025	2026–2030	2031–2040	2041–2050
Revenues						
Individual income taxes	8.1	8.3	8.4	9.4	9.7	10.1
Payroll taxes	5.9	5.9	5.9	5.9	5.9	5.8
Corporate income taxes	1.1	1.1	1.4	1.3	1.2	1.2
Other	1.4	1.3	1.2	1.2	1.2	1.3
Total Revenues	**16.4**	**16.6**	**17.0**	**17.9**	**18.1**	**18.4**
Outlays						
Mandatory						
Social Security	4.9	5.0	5.3	5.8	6.3	6.4
Major health care programs[a]	5.4	5.4	5.8	6.6	7.8	9.0
Other	2.6	2.5	2.4	2.3	2.1	2.0
Subtotal	12.9	12.9	13.6	14.7	16.2	17.3
Discretionary	6.4	6.3	6.1	5.7	5.5	5.5
Net interest	1.7	1.7	1.9	2.4	3.4	5.8
Total Outlays	**21.0**	**20.9**	**21.6**	**22.9**	**25.1**	**28.6**
Deficit	**-4.6**	**-4.3**	**-4.7**	**-5.0**	**-7.0**	**-10.2**
Debt Held by the Public at the End of the Period	**81**	**82**	**89**	**98**	**130**	**180**
Memorandum:						
Social Security						
Revenues[b]	4.5	4.5	4.6	4.6	4.6	4.5
Outlays[c]	4.9	5.0	5.3	5.8	6.3	6.4
Contribution to the Federal Deficit[d]	-0.4	-0.5	-0.8	-1.2	-1.7	-1.9
Medicare						
Revenues[b]	1.4	1.5	1.5	1.5	1.6	1.6
Outlays[c]	3.8	3.9	4.3	5.0	6.1	7.2
Offsetting receipts	-0.6	-0.7	-0.7	-0.9	-1.1	-1.4
Contribution to the Federal Deficit[d]	-1.7	-1.8	-2.0	-2.6	-3.4	-4.3
GDP at the End of the Period (Trillions of dollars)	22.1	23.0	26.7	32.0	45.6	64.8

Source: Congressional Budget Office.

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

Additional information about these long-term projections is included in the supplemental data that accompany this report. Those data are available online at www.cbo.gov/publication/56020.

GDP = gross domestic product.

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

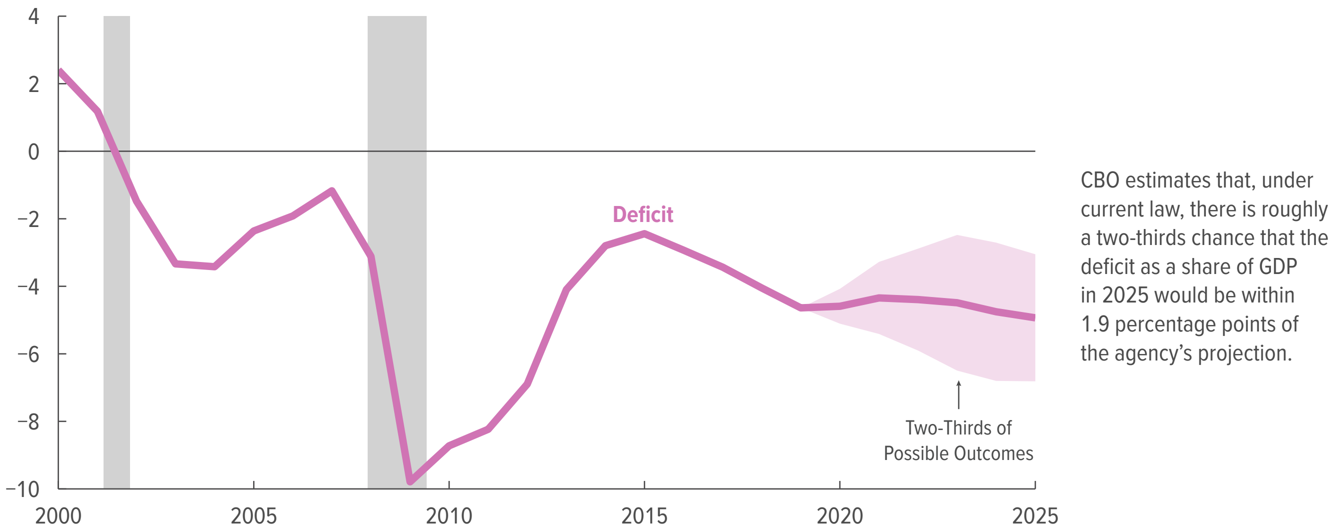
b. Includes payroll taxes other than those paid by the federal government on behalf of its employees; those payments are intragovernmental transactions. Also includes income taxes paid on Social Security benefits, which are credited to the trust funds.

c. Does not include outlays related to the administration of the program, which are discretionary. For Social Security, outlays do not include intragovernmental offsetting receipts stemming from the employer's share of payroll taxes paid to the Social Security trust funds by federal agencies on behalf of their employees.

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

Figure 1-5.

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



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.

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 2018.

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

GDP = gross domestic product.

the $2.8 trillion increase in outlays over the projection period.

As a result of that growth, federal outlays in 2030 are projected to exceed their 50-year average by 3.0 percentage points, totaling 23.4 percent of GDP (see Figure 1-6).

Specifically, in 2030:

- Mandatory spending, which is projected to reach 15.2 percent of GDP, would exceed its 50-year average by 5.2 percentage points.
- Net interest outlays are projected to total 2.6 percent of GDP, exceeding their historical average by 0.5 percentage points of GDP.
- In contrast, discretionary outlays are projected to decline to 5.6 percent of GDP, 2.7 percentage points below their average over the previous 50 years and lower than at any point during that period. (Under the rules that govern the construction of CBO's baseline, discretionary spending after 2021 is projected to keep pace with future inflation, but GDP is projected to grow faster.)

Mandatory Spending

Mandatory, or direct, spending includes outlays for most federal benefit programs and for certain other payments to people, businesses, nonprofit institutions, and state and local governments. Such spending is generally governed by statutory criteria and is not normally constrained by the annual appropriation process.[5] Certain

5. 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 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 Deficit Control Act requires CBO to project outlays for those programs as if they were fully funded, regardless of the amounts actually appropriated.

Box 1-2.

Categories of Federal Outlays

Outlays are the issuance of checks, disbursement of cash, or electronic transfer of funds made to liquidate a federal obligation. (The authority provided by federal law to incur such obligations is known as budget authority and is sometimes referred to as funding.) On the basis of their 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. In any year, some discretionary outlays arise from budget authority provided in the same year, and some arise from appropriations made in previous years.

In addition to outlays for the activities described above, CBO's baseline projections 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, 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.[1] They serve to 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 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.

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

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.

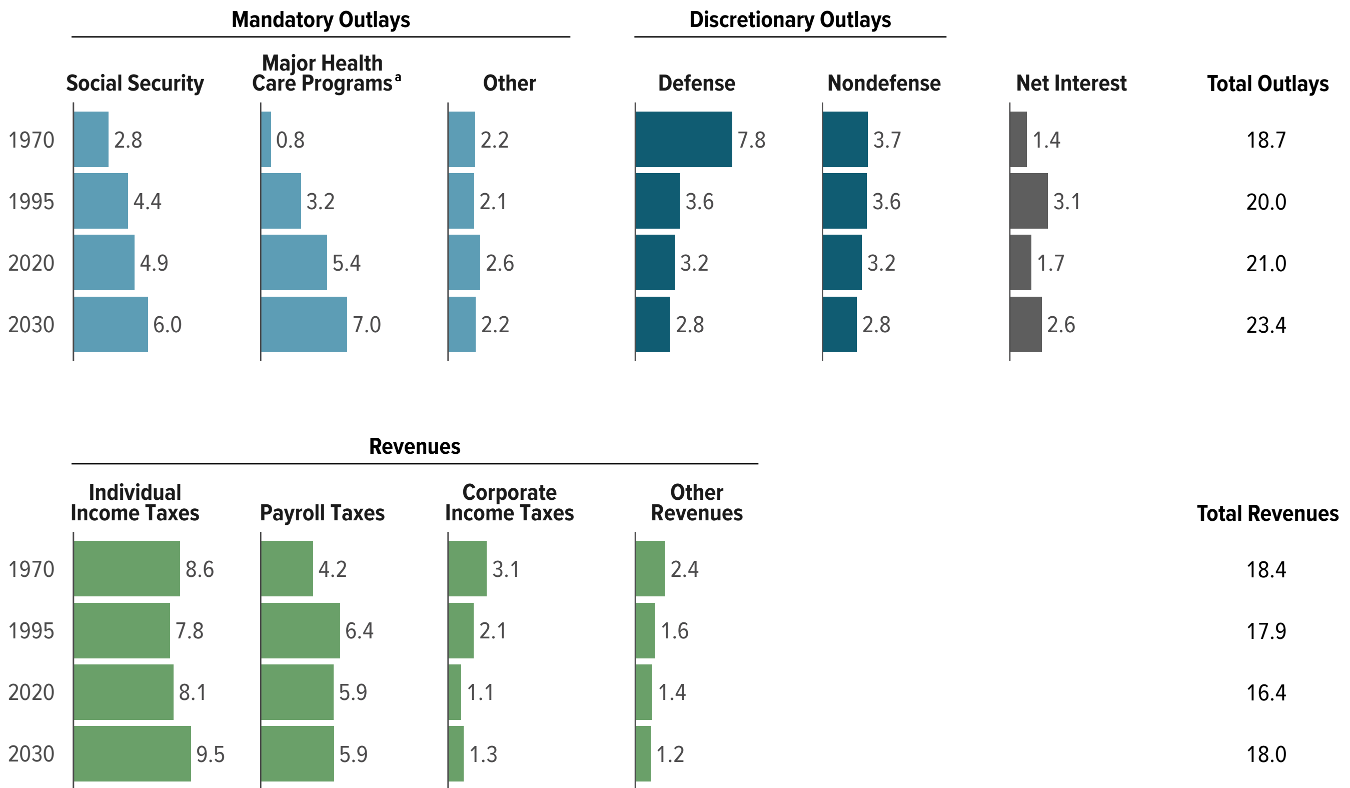
The Deficit Control Act requires CBO to construct baseline projections of most mandatory spending under the assumption that current laws continue unchanged. Therefore, CBO's baseline projections of mandatory spending reflect the estimated effects of economic influences, growth in the number of beneficiaries participating in certain mandatory programs, and other factors related to the costs of those programs, even those programs that are set to expire under current law.[6] The

6. 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 able to make all scheduled payments even if the trust funds associated with those programs do not contain the funding to make full 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.

Figure 1-6.

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

Percentage of GDP



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. That happened in 1994 and 1995, so values for 1995 have been adjusted to exclude the effects of those timing shifts.

GDP = gross domestic product.

a. Consists of outlays for Medicare (net of premiums and other offsetting receipts), Medicaid, the Children's Health Insurance Program, premium tax credits, and related spending.

projections also incorporate a set of across-the-board reductions in budgetary resources (known as sequestration) that are required under current law for some mandatory programs.

Outlays for mandatory programs (net of offsetting receipts), which totaled $2.7 trillion in 2019, are projected to rise to $4.9 trillion by the end of the projection period (see Table 1-3). Overall, mandatory outlays are projected to increase at an average annual rate of 5.4 percent between 2019 and 2030.

Much of the projected growth in mandatory spending as a percentage of GDP over the coming decade is attributable to two factors: an increasing number of participants in Social Security and Medicare, and growth in federal health care costs per beneficiary. The number of participants is growing rapidly because the United States is an aging society. The number of people age 65 or older is now more than twice what it was 50 years ago, and that number is expected to rise by about one-third by 2030. When the percentage increase in the number of participants is greater than in the population and costs per beneficiary grow faster than GDP per capita, then spending as a percentage of GDP increases. In CBO's projections

for Medicare and Medicaid, per-enrollee spending grows faster than GDP per person, averaging 5.3 percent per year between 2019 and 2030. Projected increases in the volume and intensity of health care utilization contribute to that faster growth. Taking into account the range of experience over the past three decades, CBO's projections of per-enrollee spending growth are higher than the growth over the past decade and lower than that over the two decades preceding that period.

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

Social Security and the Major Health Care Programs. Outlays for Social Security and the major health care programs—Medicare, Medicaid, premium tax credits and related spending, and the Children's Health Insurance Program—account for more than 90 percent of the projected growth in mandatory spending through 2030.[7] Under current law, spending for those programs, net of offsetting receipts, would grow at an average annual rate of 6.1 percent over the coming decade, CBO estimates, increasing from 10.2 percent of GDP in 2019 to 13.0 percent in 2030.[8]

Specifically, in CBO's current baseline:

- Outlays for Social Security, which totaled 4.9 percent of GDP in 2019, rise steadily thereafter, reaching 6.0 percent of GDP in 2030 (see Figure 1-7 on page 20).

- Outlays for Medicare, which totaled 3.0 percent of GDP in 2019, grow in most years through 2030, when they total 4.4 percent.

- Federal outlays for Medicaid remain relatively stable as a percentage of GDP over the coming decade, averaging about 2 percent each year.

- Outlays for premium tax credits and related spending average 0.2 percent of GDP per year through 2030.

Other Mandatory Programs. Aside from spending on Social Security and the major health care programs, all other mandatory spending, which totaled 2.7 percent of GDP in 2019, is projected to decline as a share of GDP, to 2.2 percent in 2030. That category includes spending on income support programs (such as unemployment compensation and the Supplemental Nutrition Assistance Program), military and civilian retirement programs, most veterans' benefits, and major agriculture programs. The projected decline in spending relative to GDP occurs in part because benefit amounts for many of those programs increase each year to keep pace with inflation, and in CBO's economic forecast, the rate of inflation is less than the rate of growth in nominal GDP. (For more details about CBO's economic forecast, see Chapter 2.)

Discretionary Spending

Discretionary spending encompasses an array of federal activities that are funded through or controlled by annual appropriations. That category includes most defense spending as well as spending for many nondefense activities, such as elementary and secondary education, housing assistance, international affairs, and the administration of justice, along with outlays for highway programs. In any year, some discretionary outlays arise from budget authority provided in the same year, and some from appropriations made in previous years.[9]

The Bipartisan Budget Act of 2019 (P.L. 116-37) revised the limits (or caps) that had previously been set on discretionary appropriations for 2020 and 2021.[10] CBO's projections of discretionary funding incorporate

7. Premium tax credits are federal subsidies for health insurance purchased through the marketplaces established by the Affordable Care Act. Related spending consists almost entirely of payments for risk adjustment and the Basic Health Program, an optional state program that covers low-income residents outside of the health insurance marketplaces.

8. Offsetting receipts primarily include payments of premiums, recoveries of overpayments made to providers, and amounts paid by states from savings on Medicaid's prescription drug costs.

9. Budget authority is the funding provided by federal laws to incur financial obligations that will result in immediate or future outlays of federal government funds. Outlays are the amount of money spent each year.

10. 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. See Congressional Budget Office, cost estimate for the Bipartisan Budget Act of 2019 (July 23, 2019), www.cbo.gov/publication/55478. 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.

Table 1-3.

Mandatory Outlays Projected in CBO's Baseline

Billions of Dollars

	Actual, 2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total 2021–2025	Total 2021–2030
Social Security														
Old-Age and Survivors Insurance	893	949	1,009	1,075	1,145	1,217	1,292	1,368	1,448	1,536	1,623	1,713	5,739	13,428
Disability Insurance	145	145	149	155	162	169	176	184	193	198	205	213	810	1,804
Subtotal	1,038	1,094	1,158	1,230	1,307	1,386	1,468	1,553	1,642	1,734	1,828	1,926	6,549	15,232
Major Health Care Programs														
Medicare[a]	775	835	896	1,004	1,043	1,073	1,201	1,287	1,379	1,542	1,518	1,722	5,217	12,665
Medicaid	409	425	444	466	494	523	555	587	620	655	692	732	2,481	5,768
Premium tax credits and related spending[b]	56	52	52	53	56	58	61	63	64	65	68	71	279	610
Children's Health Insurance Program	18	16	14	14	15	16	16	17	18	18	19	20	75	166
Subtotal[a]	1,258	1,327	1,405	1,538	1,607	1,670	1,832	1,954	2,080	2,281	2,297	2,545	8,052	19,209
Income Security Programs														
Earned income, child, and other tax credits[c]	99	96	94	93	94	95	95	96	83	83	83	83	471	898
Supplemental Nutrition Assistance Program	63	63	61	61	62	63	64	64	65	67	68	70	311	644
Supplemental Security Income	56	57	57	64	61	58	65	67	69	77	68	76	305	663
Unemployment compensation	28	28	30	34	43	47	48	50	52	54	56	57	201	470
Family support and foster care[d]	32	33	33	33	33	33	34	34	34	34	35	35	166	338
Child nutrition	24	25	26	27	28	29	30	32	33	34	36	38	140	312
Subtotal	303	301	301	312	320	325	336	344	336	349	345	359	1,593	3,326
Federal Civilian and Military Retirement														
Civilian[e]	106	109	113	117	121	125	129	133	137	141	144	148	606	1,309
Military	61	62	64	71	69	65	72	74	76	84	74	82	341	730
Other	3	3	3	4	4	4	1	10	6	5	6	6	16	49
Subtotal	170	173	181	192	194	195	202	216	219	230	224	236	963	2,088
Veterans' Programs														
Income security[f]	101	107	113	126	122	117	131	136	140	156	137	154	610	1,332
Other	14	17	17	17	17	16	18	18	19	20	19	21	85	182
Subtotal	115	124	130	144	139	133	149	154	159	177	156	175	695	1,515
Other Programs														
Agriculture	32	28	16	17	18	17	17	17	17	17	16	16	86	169
Deposit insurance	-8	-7	-6	-6	-6	-5	-6	-6	-7	-7	-7	-8	-29	-65
MERHCF	10	11	11	12	13	13	14	14	15	16	17	18	63	143
Fannie Mae and Freddie Mac[g]	0	0	1	4	3	3	4	4	4	4	4	5	15	36
Higher education	33	2	4	5	5	5	5	5	5	5	5	5	24	49
Other	57	80	73	72	69	69	71	70	70	70	71	71	353	706
Subtotal	125	114	99	103	102	103	105	105	104	106	106	107	512	1,039

Continued

Table 1-3. Continued

Mandatory Outlays Projected in CBO's Baseline

	Actual, 2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total 2021–2025	Total 2021–2030
Mandatory Outlays, Excluding the Effects of Offsetting Receipts	**3,010**	**3,134**	**3,273**	**3,519**	**3,669**	**3,811**	**4,093**	**4,325**	**4,540**	**4,876**	**4,956**	**5,348**	**18,364**	**42,409**
Offsetting Receipts														
Medicare[h]	-131	-140	-155	-168	-181	-196	-211	-227	-245	-264	-286	-308	-910	-2,239
Federal share of federal employees' retirement														
Civil service retirement and other	-36	-39	-40	-41	-43	-45	-46	-48	-50	-51	-53	-54	-216	-471
Military retirement	-21	-22	-25	-26	-26	-27	-28	-28	-29	-30	-30	-31	-132	-280
Social Security	-18	-18	-19	-20	-20	-21	-22	-22	-23	-24	-25	-25	-102	-221
Subtotal	-75	-79	-84	-87	-90	-93	-96	-99	-102	-105	-108	-111	-450	-973
Receipts related to natural resources	-14	-13	-12	-13	-12	-12	-12	-12	-13	-12	-13	-14	-62	-127
MERHCF	-8	-8	-9	-9	-10	-10	-11	-11	-12	-12	-13	-13	-48	-109
Fannie Mae and Freddie Mac[g]	-19	-4	0	0	0	0	0	0	0	0	0	0	0	0
Other	-28	-30	-35	-40	-40	-31	-40	-31	-31	-27	-29	-23	-186	-326
Subtotal	-275	-274	-295	-317	-332	-342	-370	-380	-401	-421	-448	-469	-1,656	-3,774
Total Mandatory Outlays, Net of Offsetting Receipts	**2,735**	**2,859**	**2,979**	**3,201**	**3,337**	**3,469**	**3,723**	**3,945**	**4,139**	**4,456**	**4,508**	**4,878**	**16,709**	**38,635**
Memorandum:														
Outlays, Net of Offsetting Receipts														
Medicare	644	695	741	836	862	878	990	1,060	1,134	1,279	1,232	1,414	4,306	10,425
Major health care programs	1,126	1,187	1,250	1,370	1,426	1,474	1,622	1,727	1,836	2,017	2,011	2,237	7,141	16,969

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 (including TRICARE for Life).

a. 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.)

b. Premium tax credits are federal subsidies for health insurance purchased through the marketplaces established by the Affordable Care Act. Related spending consists alm ost entirely of payments for risk adjustment and the Basic Health Program.

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

d. Includes Temporary Assistance for Needy Families, Child Support Enforcement, Child Care Entitlements to States, and other programs that benefit children.

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

f. Includes veterans' compensation, pensions, and life insurance programs. (Outlays for veterans' health care are classified as discretionary.)

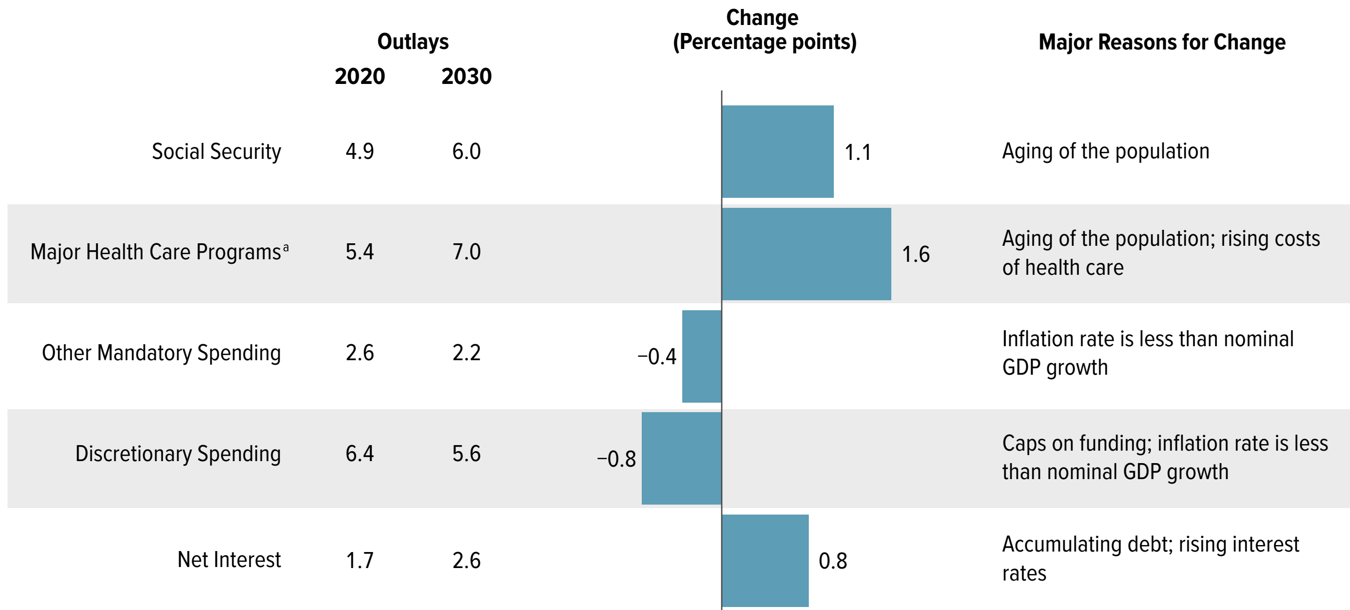
g. Cash payments from Fannie Mae and Freddie Mac to the Treasury are recorded as offsetting receipts in 2019 and 2020. Beginning in 2021, CBO's estimates reflect the net lifetime costs—that is, the subsidy costs adjusted for market risk—of the guarantees that those entities will issue and of the loans that they will hold. CBO counts those costs as federal outlays in the year of issuance.

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

Figure 1-7.

Changes in Projected Outlays From 2020 to 2030

Percentage of GDP



Source: Congressional Budget Office.

GDP = gross domestic product.

a. Consists of outlays for Medicare (net of premiums and other offsetting receipts), Medicaid, the Children's Health Insurance Program, premium tax credits, and related spending.

those limits and are formulated on the basis of 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.[11] After account-level projections are made, the total amount of budget authority is adjusted to comply with the caps on discretionary funding through 2021. Projections for years after 2021 reflect the assumption that discretionary funding keeps pace with inflation.

Some elements of discretionary funding are not constrained by the caps—for most of those exceptions, the caps are adjusted to accommodate the provided funding. In particular, adjustments to the caps are made for all appropriations designated for overseas contingency operations (OCO) and emergency requirements. Subject to certain limits, additional adjustments are made for funding designated for disaster relief activities, some efforts to reduce overpayments in benefit programs, wildfire suppression, and (for this year only) activities related to the 2020 census. In addition, in accordance with the 21st Century Cures Act (P.L. 114-255), a portion of funding for certain authorized activities—up to amounts specified in law—is exempt from the caps. For those elements not constrained by the caps, funding is assumed to grow with inflation from the amounts provided in 2020 or to adhere to specified limits for those activities while the caps are in place.[12]

In CBO's baseline, discretionary budget authority totals $1.4 trillion in both 2020 and 2021, including

11. The Deficit Control Act specifies which measures of inflation CBO should use: Discretionary funding related to federal personnel is adjusted 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.

12. For more information on the adjustments to the discretionary funding caps, see Congressional Budget Office, *Final Sequestration Report for Fiscal Year 2020* (January 2020), www.cbo.gov/publication/55995.

$113 billion in 2020 and $114 billion in 2021 for OCO and other activities not constrained by the caps (see Table 1-4).[13] The amount for 2020 that is constrained by the caps—$1,304 billion—is $16 billion more than the overall limit on discretionary funding for this year; that excess occurs because the appropriation acts for 2020 included provisions that were estimated to reduce budget authority for mandatory programs.[14] For 2021, the remaining amount of projected budget authority is equal to the cap, or $1,298 billion.

Over the 2020–2030 period, total discretionary budget authority is projected to increase by 2.2 percent a year, on average. Measured in dollar terms, the outlays that would flow from the projected budget authority would rise from $1.4 trillion in 2020 to $1.8 trillion in 2030, for an average yearly increase of 2.3 percent. Measured as a share of GDP, however, discretionary outlays would drop from 6.4 percent in 2020 to 5.6 percent in 2030. That 2030 percentage would be the smallest in any year since 1962 (the earliest year for which such data have been reported); by comparison, discretionary outlays averaged 8.3 percent of GDP over the past 50 years, although they were as low as 6.0 percent of GDP in 1999.

Defense Spending. By CBO's estimate, discretionary funding for defense programs in 2020 currently totals $746 billion, including $72 billion for OCO and $8 billion for activities designated as emergency requirements. Defense outlays, which amounted to $676 billion in 2019, will increase by $28 billion (or 4 percent), to $705 billion, the agency estimates. Outlays are projected to increase by $9 billion (or 3 percent) for operation and maintenance, $9 billion (or 7 percent) for procurement, $6 billion (or 7 percent) for research, development, test, and evaluation, and $4 billion (or 3 percent) for military personnel, among other smaller changes in other areas.

In 2021, budget authority for defense programs is projected to equal $753 billion, an increase of $7 billion (or 1 percent) from the 2020 amount. Most of that increase is constrained by the cap on defense funding, which is scheduled to rise by $5 billion (or less than 1 percent) from 2020 to 2021. The remaining $2 billion reflects increases in projected funding for OCO and emergency requirements, which grows with inflation. After 2021, defense funding is projected to grow by 2.5 percent a year, on average, reaching $937 billion in 2030. Over the same period, CBO projects, outlays for defense programs would grow at a rate similar to that of budget authority, rising from $752 billion in 2022 to $906 billion in 2030. As a percentage of GDP, discretionary outlays for defense are projected to fall from 3.2 percent in 2020 to 2.8 percent in 2030.

Nondefense Spending. For 2020, nondefense discretionary funding in CBO's baseline totals $671 billion. That amount includes $33 billion that is not limited by the caps on discretionary budget authority (including $18 billion for disaster relief). CBO estimates that nondefense discretionary outlays will increase by $41 billion (or 3 percent) in 2020, to $701 billion. Among the largest components of that increase are $5 billion for the 2020 census, $5 billion for agriculture programs, and $4 billion for veterans' benefits and services. The remaining growth in nondefense discretionary outlays is the result of smaller increases in spending for various programs.

For 2021, CBO's projection of nondefense discretionary budget authority totals $659 billion, $12 billion (or 2 percent) less than 2020 amounts. Although the cap on nondefense funding increases by $5 billion in 2021, CBO estimates that complying with the cap would require a $12 billion reduction in the amount of budget authority provided for activities that are constrained by it, unless the appropriation acts for 2021 contained provisions that would reduce mandatory budget authority. Projected funding for activities that are not limited by the cap on nondefense discretionary funding remains at $33 billion.

After 2021, funding is projected to grow by 2.6 percent a year, on average, reaching $828 billion in 2030. Discretionary outlays for nondefense programs are

13. The budget authority for 2020 was provided in two omnibus appropriation acts: the Consolidated Appropriations Act, 2020 (P.L. 116-93), and the Further Consolidated Appropriations Act, 2020 (P.L. 116-94), both enacted on December 20, 2019. In addition, P.L. 116-94 included obligation limitations for certain transportation programs totaling $61 billion for 2020. Those limitations are not constrained by the caps on discretionary funding.

14. When appropriation acts include changes that reduce mandatory funding, the estimated savings are credited against the discretionary funding provided by those acts when assessing whether the appropriation acts comply with the caps. Once in law, however, any such savings are incorporated into CBO's baseline projections for mandatory spending.

Table 1-4.

CBO's Baseline Projections of Discretionary Spending

Billions of Dollars

	Actual, 2019[a]	2020[a]	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total 2021–2025	Total 2021–2030
Budget Authority														
Defense	719	746	753	772	792	812	832	852	873	894	915	937	3,962	8,433
Nondefense	658	671	659	679	699	716	736	753	772	789	808	828	3,489	7,440
Total	**1,377**	**1,417**	**1,412**	**1,452**	**1,491**	**1,528**	**1,568**	**1,606**	**1,645**	**1,683**	**1,723**	**1,765**	**7,451**	**15,873**
Outlays														
Defense	676	705	728	752	767	781	806	825	844	870	879	906	3,834	8,159
Nondefense	660	701	715	740	752	768	788	806	825	844	863	884	3,763	7,985
Total	**1,336**	**1,406**	**1,444**	**1,492**	**1,518**	**1,549**	**1,594**	**1,631**	**1,670**	**1,714**	**1,743**	**1,790**	**7,597**	**16,144**
Memorandum:														
Caps on Budget Authority Specified in the Budget Control Act (As Amended), Including Automatic Reductions to the Caps														
Defense	647	667	672	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Nondefense	597	622	627	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total	**1,244**	**1,288**	**1,298**	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Adjustments to the Caps[b]														
Defense	72	79	81	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Nondefense	44	33	33	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total	**116**	**113**	**114**	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Discretionary Outlays That Are Shifted in CBO's Baseline[c]	0	0	0	5	*	-5	0	0	0	6	-6	0	n.a.	n.a.

Source: Congressional Budget Office.

CBO's current baseline projections incorporate the assumption that the caps on discretionary budget authority and the automatic enforcement procedures specified in the Budget Control Act of 2011 (as amended) remain in effect through 2021.

Nondefense discretionary outlays are usually greater than budget authority because of spending from the Highway Trust Fund and the Airport and Airway Trust Fund that is subject to obligation limitations set in appropriation acts. The budget authority for such programs is provided in authorizing legislation and is considered mandatory.

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

a. The amount of budget authority for 2019 and 2020 in CBO's baseline does not match the sum of the caps on funding plus adjustments to the caps. That occurs mostly because estimated reductions in mandatory budget authority stemming from provisions in appropriation acts for those years were credited as offsets to new discretionary budget authority in judging the acts' compliance with the caps. In the baseline, those changes to mandatory budget authority appear in their normal mandatory accounts.

b. Some or all of the discretionary funding related to seven 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 2020, and the caps are adjusted accordingly. For four other activities—disaster relief, wildfire suppression (for 2020 and 2021), activities related to the 2020 census (for this year only), 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 addition, the 21st Century Cures Act (Public Law 114-255) requires that discretionary funding for certain authorized activities—up to amounts specified in law—be excluded from calculations of funding subject to the caps.

c. When October 1 (the first day of the fiscal year) falls on a weekend, as it will in calendar years 2022, 2023, and 2028, payments 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.

estimated to be $715 billion in 2021; they would then follow the same trajectory as budget authority, increasing to $884 billion in 2030.[15] Relative to the size of the economy, outlays for nondefense discretionary programs would fall from 3.2 percent of GDP in 2020 to 2.8 percent of GDP in 2030.

Net Interest

In the budget, net outlays for interest primarily encompass the government's interest payments on federal debt, offset by interest income that the government receives. Net outlays for 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.

In CBO's projections, net outlays for interest in 2020 edge up to $382 billion, from $376 billion in 2019. Those outlays more than double over the next 10 years, reaching $819 billion in 2030. As a result, under current law, net outlays for interest are projected to grow from 1.7 percent of GDP in 2020 to 2.6 percent in 2030.

Two primary factors affect the federal government's net interest costs: the amount of debt held by the public (which is projected to be 87 percent more at the end of 2030 than it was at the end of 2019) and interest rates on Treasury securities. The projected increase in federal debt is the most significant factor affecting the projected growth in net outlays for interest.

The increase in interest rates accounts for about two-fifths of the projected growth in net interest outlays over the projection period. CBO estimated the contribution of rising interest rates to net interest costs by keeping interest rates on marketable debt held by the public at their values in the fourth quarter of fiscal year 2019. For example, the rate paid on 10-year Treasury notes was assumed to remain at 1.8 percent, rather than rising to 3.1 percent in 2030, as CBO projects in its economic forecast. (For a more detailed discussion of CBO's forecast of interest rates, see Chapter 2.) In that scenario, outlays for interest in 2030 would be $284 billion lower (including the effects of debt service) than in CBO's baseline projections, and debt would be $1.3 trillion lower at the end of that year.

Revenues

Federal revenues in 2019 totaled $3.5 trillion, or 16.3 percent of GDP. Under current law, CBO estimates, revenues will increase by 4.9 percent in 2020, to just over $3.6 trillion. As a percentage of GDP, revenues are expected to rise to 16.4 percent this year, below the average of 17.4 percent recorded over the past 50 years. Over the next decade, CBO projects, revenues would rise markedly, reaching 18.0 percent of GDP by 2030. That growth—which mainly reflects an increase in revenues from individual income taxes and, to a lesser extent, from corporate income taxes and estate and gift taxes—would slow because of a decline in receipts from excise taxes. Other sources of revenue are projected to grow at the same pace as GDP (see Figure 1-8).

In CBO's baseline, the largest movements in revenues over the next decade are as follows:

- **Individual income tax receipts** increase relative to GDP between 2020 and 2030, mostly because the expiration of provisions of the 2017 tax act is projected to increase receipts relative to taxable personal income (see Figure 1-9). Real bracket creep and other factors (explained in more detail below) also contribute to that increase.

- **Corporate income tax receipts** increase relative to GDP between 2020 and 2030, reaching their peak in 2025 and gradually declining thereafter. In 2030, corporate receipts are projected to be higher relative to GDP than in 2020, largely because of scheduled changes in provisions of the 2017 tax act that will broaden the tax base or increase certain tax rates. The decline in corporate receipts after 2025 is mostly attributable to the end of scheduled payments for a onetime tax on previously untaxed foreign profits.

- **Estate and gift tax receipts** increase slightly relative to GDP between 2020 and 2030, primarily because of the expiration of a provision of the 2017 tax act that doubled the exemption amount through tax year 2025.

15. 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.

Figure 1-8.

Changes in Projected Revenues From 2020 to 2030

Percentage of GDP

	Revenues 2020	Revenues 2030	Change (Percentage points)	Major Reasons for Change
Individual Income Taxes	8.1	9.5	1.4	Expiration of certain provisions of the 2017 tax act at the end of calendar year 2025; real bracket creep [a]
Payroll Taxes	5.9	5.9	*	Not applicable
Corporate Income Taxes	1.1	1.3	0.2	Scheduled changes in tax rules enacted in the 2017 tax act
Other Taxes	1.4	1.2	−0.1	Repeal of a tax on health insurance providers

Source: Congressional Budget Office.

GDP = gross domestic product; * = between zero and 0.05 percentage points.

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

- **Excise tax receipts** decline in 2021 following the final payment of a tax on health insurance providers, which was recently repealed. Excise taxes continue to gradually decline as a share of GDP thereafter, along with the tax bases on which many excise taxes are levied.

Individual Income Taxes

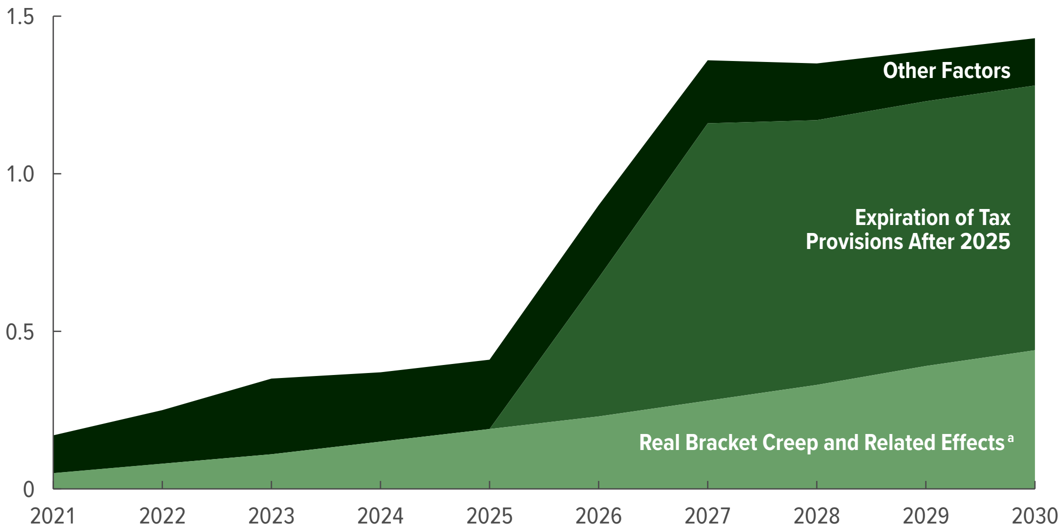
In 2019, receipts from individual income taxes totaled $1.7 trillion, or 8.1 percent of GDP. Under current law, receipts from individual income taxes are expected to rise by 4 percent, to almost $1.8 trillion in 2020. That percentage increase is about the same as the increase expected for nominal GDP, so individual income tax receipts would remain at 8.1 percent of GDP. 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.

Scheduled Tax Changes After 2025. The most significant factor pushing up taxes relative to income is the scheduled expiration, at the end of calendar year 2025, of nearly all the individual income tax provisions of 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, the expansion of the child tax credit, and the deduction for qualified business income. Those expirations would cause tax liabilities to rise in calendar year 2026, boosting individual income tax receipts relative to GDP by 0.8 percentage points.

Real Bracket Creep and Related Effects. The second largest factor pushing up 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 only to inflation. If income grows faster than inflation, as generally occurs when the economy is expanding, more income is pushed into higher tax brackets. 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. In CBO's baseline, real bracket creep and related effects cause projected revenues

Figure 1-9.

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



Individual income tax revenues are projected to rise sharply after certain provisions of the 2017 tax act expire at the end of calendar year 2025.

Source: Congressional Budget Office.

GDP = gross domestic product.

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

measured as a percentage of GDP to rise by 0.4 percentage points from 2020 to 2030.[16]

Other Factors. Over the next decade, several other factors would raise projected receipts as a share of GDP by 0.2 percentage points, on net, in CBO's estimation. In addition to the individual income tax provisions that are scheduled to expire after 2025, other tax rules are also scheduled to change. Rules allowing accelerated depreciation deductions for certain business investments are scheduled to phase out between 2022 and 2027, and a number of tax provisions that were recently extended temporarily by the Further Consolidated Appropriations Act, 2020 (P.L. 116-94), are scheduled to expire after 2020.

Also, as the population continues to age, taxable retirement income 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 and traditional defined benefit pension plans, as well as taxable Social Security benefits. Partially offsetting those revenue increases is a projected decline in realizations of capital gains relative to the size of the economy. Those realizations have been larger in the past several years than their historical average share of GDP (after accounting for differences in applicable tax rates). CBO projects that such realizations would gradually return to levels consistent with their historical average by 2030.

Corporate Income Taxes

In 2019, receipts from corporate income taxes totaled $230 billion, or 1.1 percent of GDP. CBO expects corporate tax receipts to rise by 2 percent in 2020, remaining at 1.1 percent of GDP. Under current law, CBO projects, corporate income tax receipts would rise through 2025, reaching 1.4 percent of GDP. After 2025, receipts would begin to decline, falling to 1.3 percent of GDP in 2030. That pattern reflects the varying effects over time of provisions of the 2017 tax act and other factors.

Provisions of the 2017 Tax Act. A number of provisions of the 2017 tax act include scheduled changes over the next decade that will increase corporate taxes by reducing allowable deductions or increasing tax rates on certain

16. See Congressional Budget Office, "How Income Growth Affects Tax Revenues in CBO's Long-Term Budget Projections" (June 2019), www.cbo.gov/publication/55368.

types of income. Those changes contribute 0.1 percentage point to the increase in receipts as a share of GDP between 2020 and 2030.

Most significantly, provisions allowing firms to immediately deduct from their taxable income 100 percent of their investments in equipment are scheduled to phase out between 2023 and 2026. Additionally, in 2022, a stricter limit on the deductibility of interest expenses will take effect, and 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. Rules related to the taxation of profits abroad will also change in 2026, increasing revenues in subsequent years.[17]

Receipts will be further affected over the next decade by the end of the scheduled payments for a onetime tax on certain foreign profits. That tax applied to foreign profits for which U.S. taxes had been deferred under previous law. 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 eight years. Because the required installments are not equal in size, the effect of those receipts in CBO's baseline varies over the 2019–2026 period. As a result, those payments boost receipts to varying degrees from 2019 through 2026 but not in subsequent years, thereby contributing to the reduction in receipts relative to GDP through 2030.

Other Factors. Over the next decade, other factors would raise projected receipts as a share of GDP by 0.1 percentage point. CBO projects that domestic corporate profits would increase slightly relative to GDP over the next decade. That anticipated increase in profits would cause corporate tax receipts to rise as a share of the economy. In addition, a number of tax provisions that were recently extended temporarily by the Further Consolidated Appropriations Act, 2020, are scheduled to expire after 2020, which would also boost receipts over the next several years.

Receipts From Other Sources

Receipts from all other sources, which are described below, totaled $1.5 trillion in 2019, or 7.1 percent of GDP. Those receipts are projected to remain between 7.1 percent and 7.3 percent of GDP over the next decade.

Payroll Taxes. Receipts from payroll taxes, which fund social insurance programs—primarily Social Security and Medicare—totaled $1.2 trillion in 2019, or about 5.9 percent of GDP. Those receipts are projected to remain at that share throughout the next decade because workers' earnings, which constitute most of the payroll tax base, remain relatively stable as a share of GDP in CBO's economic forecast.

Estate and Gift Taxes. Revenues from estate and gift taxes totaled $17 billion in 2019, or just below 0.1 percent of GDP. Revenues from that source are projected to rise to just above 0.1 percent in 2027 and subsequent years after a provision of the 2017 tax act that doubled the amount of the estate and gift tax exemption expires at the end of calendar year 2025.

Excise Taxes. Excise taxes are levied on the production or purchase of particular types of goods or services, including motor fuels, tobacco, alcohol, and aviation services. Collections of excise taxes totaled $99 billion in 2019, or 0.5 percent of GDP. Those receipts are projected to remain at that level in 2020 before declining to 0.3 percent of GDP by 2030. That decline would occur 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.

In addition, an annual fee on health insurance providers was recently repealed by the Further Consolidated Appropriations Act, 2020. Because the final payment of that fee is due in September 2020, it will boost receipts this year but not in subsequent years.

Customs Duties. Collections of customs duties, which are assessed on certain imports, totaled 0.3 percent of GDP in 2019. Those receipts are projected to rise to 0.4 percent of GDP in 2020 and remain at that level throughout the next decade. Those duties include tariffs imposed by the Administration beginning in 2018 that have increased customs duties by roughly 0.2 percent of GDP.[18] CBO's baseline incorporates the assumption that tariffs, along with any subsequent exemptions provided

17. For additional explanation of the 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.

18. The Administration's recent actions on tariffs were taken under authority granted in section 232 of the Trade Expansion Act of 1962 and sections 201 and 301 of the Trade Act of 1974.

by the Administration, continue throughout the projection period at the rates in effect as of January 7, 2020, when the economic forecast was completed.[19]

Remittances From the Federal Reserve. 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 central bank remitted $53 billion to the Treasury in 2019, or 0.2 percent of GDP. CBO expects remittances to increase to 0.3 percent of GDP in 2020, primarily as a result of lower short-term interest rates, which reduce the Federal Reserve's interest expenses and therefore increase remittances. CBO projects that remittances would remain at 0.3 percent of GDP throughout the next decade.

Miscellaneous Fees and Fines. Receipts from other fees and fines totaled $32 billion in 2019, or 0.2 percent of GDP. CBO projects that, under current law, collections of fees and fines would remain between 0.1 percent and 0.2 percent of GDP in each year through 2030.

Tax Expenditures

The tax rules that form the basis for CBO's projections include an array of exclusions, deductions, preferential rates, and credits. Those provisions reduce revenues for any given level of tax rates in both the individual and corporate income tax systems. Many 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.[20]

Unlike many spending programs, tax expenditures are not subject to annual appropriations. Because of that budgetary treatment, tax expenditures are less transparent than discretionary spending or spending on benefit programs. In fact, most tax expenditures are not explicitly recorded in the federal budget. 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.

Tax expenditures contribute to the budget deficit just as federal spending does. They also influence people's choices about working, saving, and investing, and they affect the distribution of income. The Congressional Budget and Impoundment Control Act of 1974 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.[21]

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19. Specifically, CBO's 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 when this analysis was completed on January 7, 2020, would continue permanently without planned or unplanned changes. The tariffs imposed during the past two years include those 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.

    On January 15, 2020, the United States and China signed a new trade agreement. The Administration announced that tariffs on certain imports from China that were imposed at a rate of 15 percent on September 1, 2019, will be reduced to 7.5 percent on February 14, 2020. Neither the planned changes to trade policy included in that agreement, nor changes to tariffs imposed after January 7, 2020, are included in CBO's current baseline projections.

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

21. 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 statutory tax rate, generally defines income on an accrual basis, and allows for cost recovery according to a specified depreciation system that is less favorable than under current law. For more information, see Joint Committee on Taxation, *Estimates of Federal Tax Expenditures for Fiscal Years 2019–2023*, JCX-55-19 (December 2019), www.jct.gov/publications.html?func=startdown&id=5238.

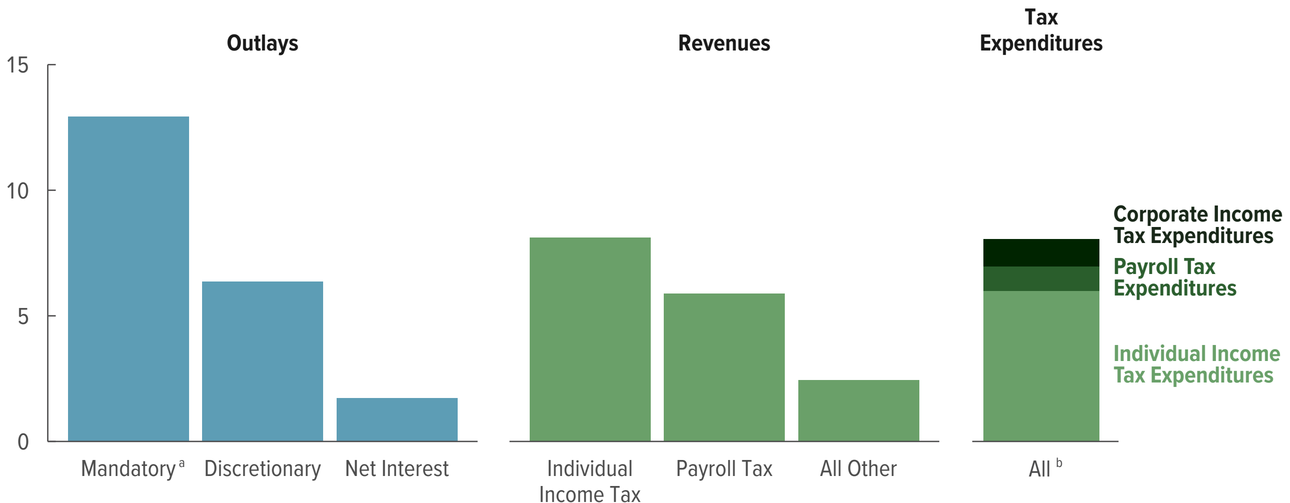
    Unlike JCT, CBO includes estimates of the largest payroll tax expenditures. As defined by CBO, a normal payroll tax structure includes the existing payroll tax rates as applied to a broad definition of compensation—which consists of cash wages and fringe benefits. The Treasury's definition of tax expenditures is broadly similar to JCT's. See Office of Management and Budget, *Budget of the U.S. Government, Fiscal Year 2020: Analytical Perspectives* (March 2019), pp. 171–228, https://go.usa.gov/xdCcf (PDF, 6.5 MB).

Figure 1-10.

Outlays, Revenues, and Tax Expenditures in 2020

Tax expenditures, which are projected to total more than $1.8 trillion in 2020, reduce revenues and, like spending programs, contribute to the deficit.

Percentage of GDP



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

GDP = gross domestic product.

a. The outlay portions of refundable tax credits are included in tax expenditures as well as mandatory outlays. In 2020, they are estimated to total 0.6 percent of GDP.

b. This total is the sum of the estimates for all of the separate tax expenditures and does not account for interactions among them. However, CBO estimates that in 2020, the total of all tax expenditures roughly equals the sum of each considered separately. Because estimates of tax expenditures are based on people's behavior with current provisions of the tax code in place, they do not reflect the amount of revenues that would be raised if those provisions were eliminated and taxpayers adjusted their activities in response.

Tax expenditures have a large effect on the federal budget. In fiscal year 2020, the value of the more than 200 tax expenditures in the individual and corporate income tax systems will total about $1.8 trillion—or 8.0 percent of GDP—if their effects on payroll as well as income taxes are included.[22] That amount, which was calculated by CBO on the basis of estimates prepared by JCT, equals almost half of all federal revenues that are projected to be collected in 2020 and exceeds all projected discretionary outlays combined (see Figure 1-10).[23] Estimates of tax expenditures measure the difference between households' tax liabilities under current law and the tax liabilities they would have incurred if the provisions generating those tax expenditures were repealed but households' behavior was unchanged. Such estimates do not represent the amount of revenues that would be raised if those provisions were eliminated, because the changes in incentives that would result from eliminating those provisions would lead households to modify their behavior in ways that would mute the impact on revenues.

22. 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 also decrease spending for Social Security by reducing the earnings base on which Social Security benefits are calculated.

23. That total does not incorporate the changes to tax law made by the Further Consolidated Appropriations Act, 2020. JCT estimated that the act will reduce revenues by about $35 billion in 2020. For more information on the magnitude of each separate tax expenditure, see Joint Committee on Taxation, *Estimates of Federal Tax Expenditures for Fiscal Years 2019–2023*, JCX-55-19 (December 2019), www.jct.gov/publications.html?func=startdown&id=5238. For more information on how that total was determined, see Congressional Budget Office, *The Budget and Economic Outlook: 2019 to 2029* (January 2019), pp. 99–102, www.cbo.gov/publication/54918.

2

Chapter 2: The Economic Outlook

Overview

If current laws governing federal taxes and spending generally remained in place, the economy would expand at an average annual rate of 1.7 percent over the next decade, the Congressional Budget Office projects. By comparison, that rate was 1.8 percent over the past 15 years and 2.3 percent over the past 5 years. The agency's latest economic forecast includes the following projections of real (inflation-adjusted) gross domestic product (GDP) and other key variables for 2020 through 2030:

- **In 2020, real GDP is projected to grow by 2.2 percent on a fourth-quarter-to-fourth-quarter basis.** Consumer spending and business fixed investment will largely drive growth this year, CBO projects. Growth in consumer spending is expected to remain solid in 2020, buoyed by recent gains in household wealth and by momentum in the growth of wages and salaries. Growth of business fixed investment rebounds this year, CBO projects, because many of the factors that weighed on investment during 2019—including lower oil prices, rising business uncertainty about future trade policies, and a decline in aircraft purchases—are expected to reverse or to have a smaller impact on growth. In subsequent years, economic growth is projected to slow as the growth of consumer spending and private investment moderates because of rising interest rates, slowing growth in labor compensation, and diminishing fiscal stimulus (see Table 2-1).

- **GDP is expected to be higher than potential GDP in 2020 to a greater degree than in recent years, leading to increases in inflation and interest rates after years in which both remained low.** Potential GDP is an estimate of the maximum sustainable output of the economy. When GDP is above potential GDP, the overall demand for goods and services exceeds the economy's maximum sustainable level of production, which leads to upward pressure on inflation and interest rates. In CBO's projections, solid economic growth in 2020 increases the output gap—the difference between GDP and potential GDP, expressed as a percentage of potential GDP—so that it reaches a cyclical peak of 0.8 percent. In later years, as economic growth moderates, the output gap narrows steadily and real GDP eventually falls below its potential level (see Figure 2-1).

- **Solid economic growth and continued strength in labor demand are projected to keep the unemployment rate low and drive employment and wages higher in 2020.** In CBO's estimation, strong growth in labor demand this year will move employment further above potential employment.[1] When employment exceeds its potential, employers bid up the price of labor to recruit and retain workers, putting upward pressure on wages and salaries and other forms of labor compensation. In later years, moderating economic growth and rising wages are projected to restrain growth in the demand for labor, reducing job growth. Although economic and job growth are projected to slow, employment, which tends to lag behind movements in output, is expected to remain above its maximum sustainable level over the next five years, supporting relatively robust wage growth during that time.

- **In the second half of the projection period, real GDP is projected to grow at an average annual rate of 1.7 percent, the same as its potential.** CBO's projections of GDP, unemployment, inflation, and interest rates for 2025 through 2030 are based mainly on the agency's projections of underlying trends in the factors that determine those variables. Over most of that period, in CBO's forecast, real GDP tends to

1. Potential employment is CBO's estimate of the maximum sustainable level of employment. It is 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.

Table 2-1.

CBO's Economic Projections for Calendar Years 2020 to 2030

	Estimated, 2019[a]	2020	2021	2022	Annual Average 2023–2024	Annual Average 2025–2030
	Percentage Change From Fourth Quarter to Fourth Quarter					
Gross Domestic Product						
Real[b]	2.4	2.2	1.8	1.6	1.6	1.7
Nominal	4.2	4.2	3.9	3.8	3.7	3.7
Inflation						
PCE price index	1.5	2.0	2.1	2.1	2.0	1.9
Core PCE price index[c]	1.7	2.2	2.1	2.0	2.0	1.9
Consumer price index[d]	2.0[e]	2.5	2.6	2.6	2.4	2.2
Core consumer price index[c]	2.3[e]	2.8	2.6	2.5	2.4	2.2
GDP price index	1.8	1.9	2.1	2.1	2.1	2.0
Employment Cost Index[f]	3.1	3.6	3.6	3.6	3.4	3.1
	Fourth-Quarter Level (Percent)					
Unemployment Rate	3.5[e]	3.5	3.6	4.0	4.4[g]	4.4[h]
	Percentage Change From Year to Year					
Gross Domestic Product						
Real[b]	2.3	2.2	1.9	1.7	1.6	1.7
Nominal	4.2	4.2	4.1	3.8	3.7	3.7
Inflation						
PCE price index	1.4	1.9	2.1	2.1	2.0	1.9
Core PCE price index[c]	1.6	2.0	2.2	2.1	2.0	1.9
Consumer price index[d]	1.8[e]	2.4	2.5	2.6	2.4	2.3
Core consumer price index[c]	2.2[e]	2.7	2.6	2.5	2.4	2.2
GDP price index	1.8	1.9	2.1	2.1	2.1	2.0
Employment Cost Index[f]	3.0	3.5	3.6	3.6	3.5	3.1
	Annual Average					
Unemployment Rate (Percent)	3.7[e]	3.5	3.5	3.8	4.3	4.5
Payroll Employment (Monthly change, in thousands)[i]	181[e]	135	59	17	17	51
Interest Rates (Percent)						
Three-month Treasury bills	2.1[e]	1.6	1.7	1.8	2.1	2.3
Ten-year Treasury notes	2.1[e]	1.9	2.2	2.6	2.7	3.0
Tax Bases (Percentage of GDP)						
Wages and salaries	43.5	43.7	43.8	43.9	43.9	43.8
Domestic corporate profits[j]	7.2	7.6	7.7	7.7	7.8	7.8

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

For economic projections for each year from 2020 to 2030, see Appendix B.

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

a. Values for 2019 do not reflect the values for GDP and related series that the Bureau of Economic Analysis has released since early January 2020.

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 2019.

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

g. Value for the fourth quarter of 2024.

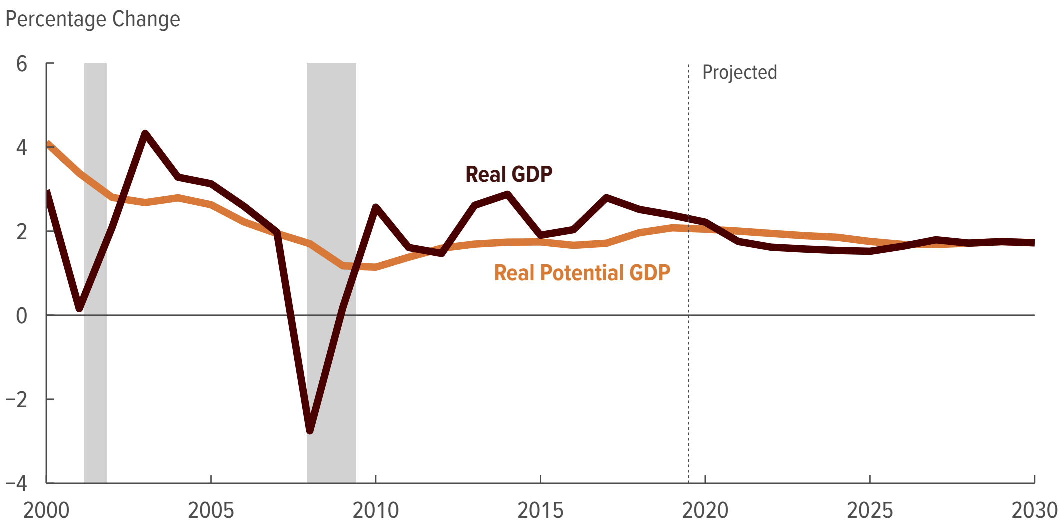
h. Value for the fourth quarter of 2030.

i. The average monthly change in the number of employees on nonfarm payrolls, calculated by dividing the change from the fourth quarter of one calendar year to the fourth quarter of the next by 12.

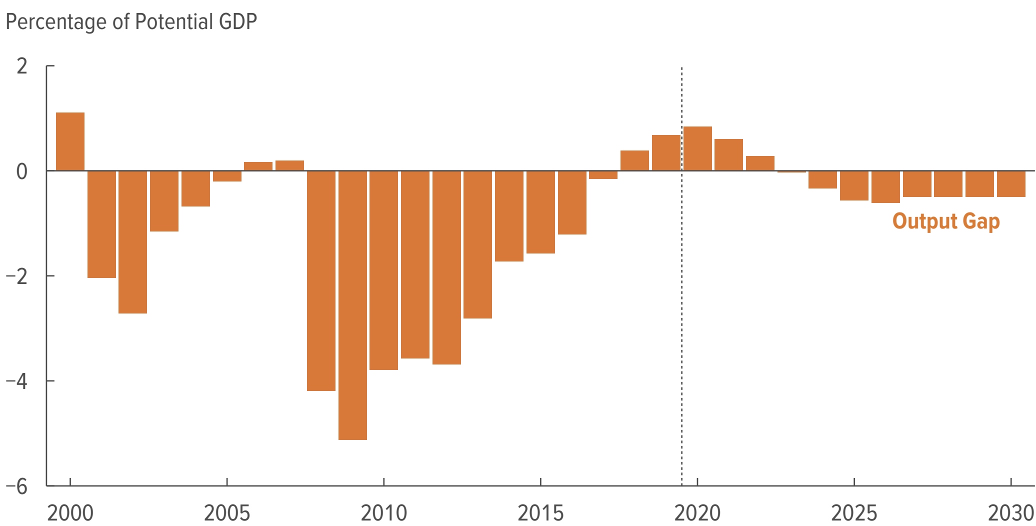
j. Adjusted to remove distortions in depreciation allowances caused by tax rules and to exclude the effects of changes in prices on the value of inventories.

Figure 2-1.

The Relationship Between GDP and Potential GDP



In CBO's projections, output grows faster than the economy's maximum sustainable output in 2020, largely because of increased consumer spending and a rebound in business fixed investment. In later years, economic growth slows as growth in consumer spending and private investment moderates.



Strong demand for labor and products pushes the output gap to a cyclical peak in 2020. Over the next few years, the output gap narrows, reducing the upward pressure on inflation and interest rates.

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 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 2019 are CBO's estimates.

GDP = gross domestic product.

grow at the same rate as real 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 growth. CBO's analysis of those factors accounts for the effects of federal tax and spending policies, as well as trade and other public policies, embodied in current law. In some cases, the agency expects that those policies would not only affect potential output but also influence the overall demand for goods and services.

Significant uncertainty surrounds CBO's economic forecast, which the agency constructed to be the average of the distribution of possible outcomes if, through 2030, the federal policies embodied in current law were generally unchanged and the trade policies in effect when CBO completed its projections remained in place. If federal fiscal policies, trade policies, or other policies (such as federal regulations) changed, then economic outcomes would probably differ from CBO's economic projections. Even if no changes were made to those policies, economic outcomes would still probably differ from CBO's projections because of other factors, such as unexpected changes in the underlying trends in productivity and labor force growth, international developments, and perhaps a recession.

CBO's current economic forecast is similar to the forecast the agency published in August 2019, but it differs in some ways. In particular, CBO's current projections of interest rates and inflation are lower. CBO also lowered its estimates of potential output growth and its projections of the unemployment rate in the latter part of the projection period.

CBO's economic projections in this forecast are similar to those of other forecasters. They are within the full range of forecasts for 2020 and 2021 by the private-sector economists who contributed to the January 2020 *Blue Chip Economic Indicators*, as well as the latest forecasts for 2020 through 2022 contained in the Federal Reserve's *Summary of Economic Projections*.

Fiscal and Trade Policies

CBO's economic projections reflect the federal fiscal policies specified in current law. They also incorporate the assumption that the tariffs on U.S. imports and exports in effect as of January 7, 2020—the day the agency completed its economic projections—will remain in place through 2030.[2] Changes in federal fiscal policies affect the economy not only through changes in the federal government's purchases of goods and services but also through changes in the federal tax code and federal transfer programs (such as Social Security and Medicare), which affect households' spending, saving, and labor supply decisions as well as businesses' investment and hiring decisions. Changes to trade policies—such as increases in tariffs on certain imported and exported goods—can affect economic activity through changes to domestic prices and through uncertainty about future changes in trade policies, which, in turn, influence trade flows, business investment, and real output and income.

Federal fiscal policies and tariffs directly affect deficits and debt. Changes in deficits and debt affect CBO's long-run projections of potential GDP by altering national saving (the total amount of saving by households, businesses, and governments) and, in turn, the funds that are available for private investment in productive capital (such as office buildings, factories, and equipment).

Fiscal Policies

According to CBO's estimates, recent changes in federal fiscal policies will increase the level of real GDP over the next few years as a result of greater government spending and lower taxes. In particular, legislation enacted since the agency published its previous economic projections in August 2019 will boost the level of real GDP (on a calendar year basis) by about 0.1 percent in 2020 and by less than that amount in 2021 and 2022.

The most significant legislation affecting CBO's economic projections—the Consolidated Appropriations Act, 2020 (Public Law 116-93), and the Further Consolidated Appropriations Act, 2020 (P.L. 116-94), both enacted in December 2019—provided annual appropriations for the entire federal government and adopted various tax provisions, including the extension of certain individual and business tax provisions and the repeal of three excise taxes related to health care. As a consequence, CBO modestly increased projected federal spending and lowered projected federal revenues over the next few years. The effect of those appropriation acts and other recently enacted legislation increased CBO's projections of the primary deficit—that is, deficits excluding net outlays for interest—by $48 billion in fiscal year 2020 and $451 billion over the 2020–2029 period (see Appendix A). Almost all of that increase was driven by a reduction in revenues stemming largely from the repeal of three excise taxes related to health care.

2. In particular, the agency's economic projections incorporate the assumption that, when the Administration exercises its broad authority to impose tariffs without legislative action, the tariffs in effect when the analysis was completed continue permanently without planned or unplanned changes. On December 2, 2019, the President announced new tariffs on steel and aluminum products imported from Argentina and Brazil. Those tariffs have not yet been implemented and are not included in CBO's current economic projections. CBO's current projections also do not include the effects of changes to tariffs since January 7, 2020; the trade agreement with China on January 15, 2020; or the new United States–Mexico–Canada Agreement.

CBO projects that those larger primary deficits would eventually cause the level of real GDP to be 0.1 percent lower by the end of the projection period than it otherwise would have been. When the government borrows, it borrows from people and businesses whose savings would otherwise be financing private investment. Although an increase in government borrowing strengthens the incentive to save, the resulting rise in saving is not as large as the increase in government borrowing; national saving, or the amount of domestic resources available for private investment, therefore falls. However, private investment falls less than national saving does in response to government deficits, because the higher interest rates that are likely to result from increased federal borrowing tend to attract more foreign capital to the United States. In CBO's assessment, the crowding out of private investment occurs gradually, as interest rates and the funds available for private investment adjust in response to increased federal deficits.

Another element affecting CBO's current-law projections in later years is the expiration of certain provisions of the tax code. The expiration of some provisions affecting individual income taxes at the end of 2025 and the phaseout of bonus depreciation by the end of 2026 are projected to temporarily push down the level of real GDP relative to its potential. Real GDP then recovers until the relationship between the levels of GDP and potential GDP reaches its long-run average in the final years of the projection period.

Trade Policies

In CBO's estimation, the trade barriers put in place by the United States and its trading partners between January 2018 and January 2020 would reduce real GDP over the projection period. The effects of those barriers on trade flows, prices, and output are projected to peak during the first half of 2020 and then begin to subside. Tariffs are expected to reduce the level of real GDP by roughly 0.5 percent and raise consumer prices by 0.5 percent in 2020. As a result, tariffs are also projected to reduce average real household income by $1,277 (in 2019 dollars) in 2020. CBO expects the effect of trade barriers on output and prices to diminish over time as businesses continue to adjust their supply chains in response to the changes in the international trading environment. By 2030, in CBO's projections, the tariffs lower the level of real GDP by 0.1 percent.

In January 2018, the United States started imposing new trade barriers. As of January 7, 2020, the United States had imposed tariffs on 16.8 percent of goods imported into the country, measured as a share of the value of all U.S. imports in 2017 (see Table 2-2).[3] Some of those tariffs apply to imports from nearly all U.S. trading partners, including tariffs on washing machines, solar panels, and steel and aluminum products. A few countries are exempted from certain tariffs. For example, Canadian and Mexican imports were granted exemptions from the tariffs on steel and aluminum products. Other tariffs affected only imports from China, covering about half of U.S. imports from China and targeting intermediate goods (items used for the production of other goods and services), capital goods (such as computers and other equipment), and some consumer goods (such as apparel and footwear).

In response to the tariffs, U.S. trading partners have retaliated by imposing their own trade barriers. As of January 7, 2020, retaliatory tariffs had been imposed on 9.3 percent of all goods exported by the United States—primarily industrial supplies and materials as well as agricultural products (see Table 2-3).

In CBO's projections, increases in tariffs reduce U.S. economic activity in three ways. First, they make consumer goods and capital goods more expensive, thereby reducing the purchasing power of U.S. consumers and businesses.[4] Second, they increase businesses' uncertainty about future barriers to trade. Such uncertainty leads some U.S. businesses to delay or forgo new investments or make costly adjustments to their supply chains. Third, they prompt retaliatory tariffs by U.S. trading partners, which reduce U.S. exports by making them more expensive for foreign purchasers. All of those effects lower U.S. output. U.S. consumers and businesses replace certain imported goods with goods produced in the United States, which offsets some of that decline. In addition, tariff revenues, by reducing the deficit, increase the resources available for private investment in later years.

3. The values and shares of affected goods are measured relative to their values and shares in 2017—the year before the tariffs were imposed.

4. For further discussion on how tariffs affect the U.S. economy, see Congressional Budget Office, *An Update to the Budget and Economic Outlook: 2019 to 2029* (August 2019), Box 2-2, www.cbo.gov/publication/55551.

Table 2-2.

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

Billions of Dollars

		Value of Imports Affected by Tariffs							
Category of Goods	Value of Imports in 2017	Tariff on Solar Panels	Tariff on Washing Machines	Tariff on Steel	Tariff on Aluminum	Tariffs on Chinese Goods	Tariffs on EU Goods	All Recent Tariffs	Share of Category Affected by Tariffs (Percent)
Food, Feed, and Beverages	138	0	0	0	0	8	5	11	7.9
Industrial Supplies and Materials	507	0	0	14	9	59	0	72	14.2
Capital Goods, Except Automotive	641	6	*	2	*	179	5	181	28.3
Automotive Vehicles, Parts, and Engines	359	1	0	0	0	24	0	25	6.9
Consumer Goods	602	0	2	0	*	104	*	105	17.5
Other Goods	95	0	0	0	0	*	0	*	**
Total	**2,342**	**7**	**2**	**16**	**9**	**374**	**10**	**395**	16.8
Share of Total Imports (Percent)	100.0	0.3	0.1	0.7	0.4	16.0	0.4	16.8	n.a.

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

The values and shares of affected goods are measured relative to their amounts in 2017—the year before the tariffs were imposed.

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

The Economic Outlook for 2020 to 2024

In CBO's projections for 2020 to 2024, economic growth initially exceeds and then falls below its maximum sustainable pace. CBO expects real GDP to grow by 2.2 percent this year, by 1.8 percent in 2021, and by 1.6 percent in 2022, all measured on a fourth-quarter-to-fourth-quarter basis (see Table 2-4).

Strong economic growth in 2020 is projected to push output further above its potential level this year, putting upward pressure on inflation and interest rates. CBO expects rising inflation this year and next, along with continued strength in labor and product markets, to prompt the Federal Reserve to start tightening monetary policy by increasing the range of the federal funds rate by the end of 2021. (The federal funds rate is the interest rate that financial institutions charge each other for overnight loans of their monetary reserves.) In the agency's projection, those factors and diminishing fiscal stimulus slow the economy and dampen the labor market's current momentum, narrowing the output gap and the gap between employment and potential employment in 2021 and 2022.

CBO's projections of the economy over the next five years reflect anticipated fluctuations in the components of final demand (such as consumption and investment), projected changes in supply-side factors (such as growth in productivity and the labor supply), and the interactions between them.[5] In CBO's forecast, near-term fluctuations in economic activity are determined primarily by demand-side developments but are also influenced by supply-side factors. For example, if an increase in demand pushed GDP beyond its maximum sustainable level, then upward pressure on inflation and interest rates would be expected. If the increase in demand was matched by an equivalent boost to potential output, however, then GDP would not exceed its maximum sustainable level, and no additional upward pressure on inflation or interest rates would occur.

Output

CBO expects output to grow 2.2 percent in 2020. In the agency's projections, that growth is supported by continued strength in consumer spending and a marked pickup in real business investment, with investment in aircraft and in oil wells rebounding and a restraint on investment growth loosening as adverse effects on growth from uncertainty about future trade policies are reduced. Some of the factors that are expected to support output growth this year would taper off in later years, CBO projects.

5. 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.

Table 2-3.

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

Billions of Dollars

Category of Goods	Value of Exports in 2017	Value of Exports Affected by Tariffs: Tariffs Imposed by China	Tariffs Imposed by Rest of World	All Recent Tariffs	Share of Category Affected by Tariffs (Percent)
Food, Feed, and Beverages	133	35	2	37	28.0
Industrial Supplies and Materials	465	48	2	51	10.9
Capital Goods, Except Automotive	533	24	0	24	4.6
Automotive Vehicles, Parts, and Engines	158	22	*	22	14.0
Consumer Goods	198	7	2	9	4.5
Other Goods	60	*	*	*	**
Total	**1,546**	**137**	**6**	**143**	9.3
Share of Total Exports (Percent)	100.0	8.9	0.4	9.3	n.a.

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

The values and shares of affected goods are measured relative to their amounts in 2017—the year before the tariffs were imposed.

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

The growth of real GDP is expected to average 1.6 percent per year from 2021 through 2024, slower than real potential GDP's pace of 1.9 percent over the same period. In CBO's projections, that difference arises because government purchases and residential investment grow at rates that are slower than the growth rate of real potential GDP.

Consumer Spending. In the agency's projections, real consumer spending on goods and services remains robust in 2020, increasing by 2.5 percent compared with 2.7 percent in 2019 (see Table 2-4). Faster gains in wages and salaries over the past few years have helped drive the recent increases in consumer spending. In addition, CBO estimates that the 2017 tax act helped support spending growth, largely because the reduction in individual income taxes led to an increase in disposable personal income.[6] Solid increases in housing wealth, sharp increases in equity wealth, and continued increases in the availability of consumer credit last year also boosted consumer spending. In 2020, CBO expects recent gains in household wealth and the momentum in the growth of wages and salaries to support strong consumer spending throughout the year.

Over the 2021–2024 period, in CBO's projections, average annual growth in consumer spending slows to 1.9 percent, similar to the rate of growth of real disposable income. The growth of consumer spending moderates as the boost from the 2017 tax act diminishes and as rising interest rates and a slowing aggregate economy moderate the growth of asset prices and wages and salaries.

Business Investment. In CBO's projections, real growth in business fixed investment picks up this year to 4.2 percent, after slowing to 0.2 percent in 2019 from 5.9 percent in 2018. That slowdown was due, in part, to the suspension of deliveries of the Boeing 737 MAX aircraft, rising business uncertainty about future trade policies, and reduced drilling activity (see Table 2-4). CBO expects many factors that weighed on the growth of investment in 2019 to reverse or to have a smaller impact in 2020. Less investment in aircraft due to fewer deliveries of Boeing's 737 MAX subtracted about a half percentage point from growth of business fixed investment in 2019; a resumption of deliveries, including inventoried aircraft, will add at least that much to growth of business fixed investment in 2020, CBO projects. Increased tariff rates and rising business uncertainty about future

6. For a discussion of the 2017 tax act's effects on CBO's macroeconomic projections, see Congressional Budget Office, *The Budget and Economic Outlook: 2018 to 2028* (April 2018), Appendix B, www.cbo.gov/publication/53651.

Table 2-4.

Projected Growth of Real GDP and Its Components

Percent

	Estimated, 2019	2020	2021	2022	Annual Average 2023–2024	Annual Average 2025–2030
	Projected Growth of Real GDP and Its Components (Percent)					
Real GDP	2.4	2.2	1.8	1.6	1.6	1.7
Components of Real GDP						
Consumer spending[a]	2.7	2.5	2.0	1.9	1.7	1.9
Business investment[b]	-1.6	3.6	3.1	1.9	2.1	2.7
Business fixed investment[c]	0.2	4.2	2.7	1.9	2.1	2.7
Residential investment[d]	0.9	5.7	1.5	1.4	1.2	0.1
Purchases by federal, state, and local governments[e]	2.6	0.9	0.6	0.5	0.6	0.5
Federal	3.3	1.4	0.6	0.4	0.4	0.4
State and local	2.2	0.7	0.5	0.6	0.6	0.6
Exports	-0.7	3.1	1.8	2.4	2.5	2.5
Imports	-2.3	4.8	2.7	2.2	2.2	2.4
	Contributions to the Growth of Real GDP (Percentage points)					
Components of Real GDP						
Consumer spending[a]	1.9	1.7	1.4	1.3	1.2	1.3
Business investment[b]	-0.2	0.5	0.4	0.2	0.3	0.3
Business fixed investment[c]	*	0.5	0.4	0.3	0.3	0.3
Residential investment[d]	*	0.2	0.1	0.1	*	*
Purchases by federal, state, and local governments[e]	0.5	0.2	0.1	0.1	0.1	0.1
Federal	0.2	0.1	*	*	*	*
State and local	0.2	0.1	0.1	0.1	0.1	0.1
Exports	-0.1	0.3	0.2	0.3	0.3	0.3
Imports	0.3	-0.7	-0.4	-0.3	-0.3	-0.3

Source: Congressional Budget Office.

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

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; * = between zero and 0.05 percentage points.

a. Consists of personal consumption expenditures.

b. Comprises business fixed investment and investment in inventories.

c. Consists of purchases of equipment, nonresidential structures, and intellectual property products.

d. 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.

e. Based on the national income and product accounts.

trade policies reduced investment in 2019. Although increased uncertainty associated with trade policies is likely to remain in 2020, it is unlikely to restrain growth of investment as much as it did in 2019. CBO expects oil prices to rise in 2020, causing oil exploration and development to increase. The agency estimates that the 2017 tax act boosted the growth of business fixed investment during 2018 and 2019 and will continue to do so in 2020.

From 2021 through 2024, in CBO's projections, the growth of real business fixed investment slows to an average of 2.2 percent per year. One reason is that slower economic growth reduces businesses' desire to expand capacity. CBO also expects rising interest rates to increase the cost of new investment. In addition, the tax code's treatment of research and development expenditures becomes less favorable beginning in 2022, and the treatment of equipment investment under

bonus depreciation becomes progressively less favorable beginning in 2023. However, CBO expects businesses' uncertainty about future trade policies to gradually fade, which would remove one factor restraining investment.

Residential Investment. In CBO's projections, real residential investment, which declined in 2018 and grew moderately in 2019, grows considerably faster than overall GDP in 2020 but at more moderate rates thereafter. Specifically, after declining by 4.4 percent in 2018 and growing by 0.9 percent in 2019, real residential investment increases by 5.7 percent in 2020 and by an average of 1.3 percent per year from 2021 through 2024 (see Table 2-4). In CBO's assessment, the decline in residential investment in 2018 resulted in part from provisions of the 2017 tax act that reduced incentives to own homes and also from higher mortgage interest rates. The rise in 2019 and the anticipated pickup in growth in 2020, by contrast, mainly reflect lower mortgage interest rates than in 2018, continued strength in household formation, and further easing of mortgage lending standards. CBO expects growth of residential investment to slow after 2020 as mortgage rates gradually rise.

Government Purchases. If current laws governing federal taxes and spending generally remained in place, real purchases of goods and services by federal, state, and local governments would increase by 0.9 percent in 2020—down from 2.6 percent in 2019—and then grow by an average of 0.5 percent per year from 2021 through 2024, CBO estimates (see Table 2-4).

In CBO's projections, the growth in real purchases by the federal government slows from 3.3 percent in 2019 (on a fourth-quarter-to-fourth-quarter basis), which reflected a significant increase in discretionary outlays in fiscal year 2019, to 1.4 percent in 2020 (on a fourth-quarter-to-fourth-quarter basis). CBO's baseline projections for federal purchases incorporate recently enacted legislation, which boosted discretionary spending in fiscal year 2020 relative to 2019. Those projections also incorporate the assumption that discretionary funding will comply with the caps on discretionary appropriations that were established by the Budget Control Act of 2011 (P.L. 112-25, as amended) through fiscal year 2021 and then will grow at the rate of inflation.[7] Taken together, those assumptions generate the projected slowdown in the growth of real federal purchases by the end of calendar year 2020.[8] From 2021 through 2024, real purchases by the federal government are projected to grow by an average of 0.5 percent per year.

After growing 2.2 percent in 2019, real purchases by state and local governments are projected to increase by 0.7 percent in 2020 because of a drop-off in state and local investment. That drop-off is partly driven by a slowdown in the growth of real personal income and, as a result, a slowdown in the growth of real state and local tax receipts. From 2021 through 2024, real purchases by state and local governments are expected to grow by an average of 0.6 percent per year, roughly keeping pace with the growth of the population.

Net Exports. After declining since 2014, real net exports rose in 2019 but are projected to decline slightly from 2020 through 2024. Real import and export growth were unusually weak in 2019, as imports fell by 2.3 percent and exports fell by 0.7 percent (see Table 2-4). In 2020 and 2021, CBO expects that the growth of real exports and real imports will rebound from those historically slow growth rates, resulting in declining real net exports due to a stronger rise in imports. Beyond 2021, CBO projects growth in imports and exports to be mostly offsetting, as weaker growth in U.S. domestic demand (which is the sum of consumption, private investment, and government purchases) limits the growth of U.S. imports and the continued strength of the dollar suppresses U.S export growth.

Growth of real imports is expected to increase in 2020 as the negative effects of import tariffs continue to wane. In 2019, real imports fell as the higher trade barriers imposed since January 2018 increased the cost of imports, especially imports of capital goods. In 2020, CBO expects a small rebound in U.S. import growth, as businesses continue adjusting their global supply chains in response to tariffs and increase imports from countries not subject to the tariffs imposed between January 2018 and January 2020. However, projected weaker growth

7. CBO's projections are made in accordance with provisions set forth in the Balanced Budget and Emergency Deficit Control Act of 1985 (P.L. 99-177) and the Congressional Budget and Impoundment Control Act of 1974 (P.L. 93-344). See Chapter 1 for a discussion of the agency's discretionary funding projections.

8. Because fiscal year 2021 begins in the fourth quarter of calendar year 2020, the caps on discretionary funding in fiscal year 2021 start affecting CBO's economic projections in the fourth quarter of 2020.

of U.S. domestic demand in 2020 is expected to reduce U.S. purchases of imported goods and services, partially offsetting that positive effect.

Growth of real exports in 2020 is expected to rebound modestly for three reasons. First, in CBO's projections, stronger growth of U.S. exports is driven mostly by increases in exports of aircraft. In 2019, the suspension of deliveries of the Boeing 737 MAX aircraft sharply reduced U.S. real exports of capital goods and created a backlog of unfulfilled foreign aircraft orders. CBO projects that Boeing will resume its deliveries in 2020, leading to a surge in exports of aircraft that had been held in inventory. The second reason for the rebound in export growth is the diminishing effect of trade barriers imposed since 2018, as U.S. businesses adjust their supply chains and find new destinations for their exports. The last reason for stronger export growth is a projected increase in the pace of economic activity among the United States' leading trading partners, which will increase demand for U.S. exports.

Partially offsetting the factors that increase U.S. exports in 2020 is the continued strength of the dollar, which reduces the competitiveness of U.S. exports in foreign markets. The exchange value of the dollar rose substantially during the past two years. The recent strength of the dollar reflects relatively tighter monetary policy and relative strength in the U.S. economy compared with those of its major trading partners. In CBO's projections, the divergence in monetary policies is expected to persist, keeping the dollar strong through 2024. CBO expects that strength to reduce the growth of real exports by making U.S. goods more costly for foreign purchasers.

After 2020, in CBO's projections, U.S. imports and exports continue to grow slowly and at similar rates. As growth of U.S. consumer spending and investment slows in those years, growth of U.S. imports remains weak, averaging 2.3 percent. Growth of U.S. exports is also modest, because of continued slow growth in the economies of major U.S. trading partners and the persistent strength of the dollar. From 2021 to 2024, U.S. real exports are expected to grow by an average of only 2.3 percent.

The Labor Market

Labor market conditions continued to improve in 2019 and are projected to remain strong over the next few years (see Figure 2-2). Job growth in 2019 maintained a solid pace, on average, particularly in several service-providing industries. The unemployment rate reached its lowest point since the 1960s, and the overall labor force participation rate rose. In addition, wage growth has been increasingly broad-based in recent years, with low-wage earners seeing particularly robust growth in their hourly wages since 2016 and middle-wage earners seeing a moderate acceleration in their hourly wages last year.

Despite the overall strength, some indicators signal that growth of demand for labor is leveling off. The number of job openings has been moderating since early 2019. In addition, after picking up materially in 2018, growth in two key measures of labor compensation—the employment cost index and the average hourly earnings for production and nonsupervisory workers in private industries—has slowed more recently.

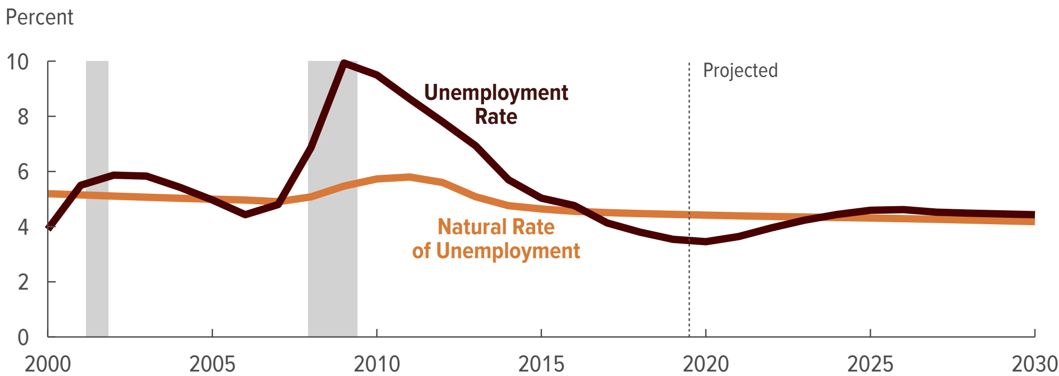
Employment. Job growth slowed somewhat in the middle of 2019 but picked up again in recent months. Growth in nonfarm payroll employment averaged 176,000 jobs per month in 2019, compared with an average monthly gain of 223,000 jobs in 2018. Job growth slowed in the manufacturing sector but remained fairly robust in several service-providing industries, including health care and social services and professional and business services.

In CBO's projections, the current momentum of strong job growth continues in the first half of 2020, aided by the temporary hiring of federal workers for the decennial census. Those workers are expected to be discharged in subsequent quarters, which, combined with a projected slowdown in private-sector job growth, is expected to give rise to sharp declines in monthly employment statistics in the second half of 2020. All told, nonfarm payroll growth is projected to average 215,000 jobs per month in the first half of 2020, 55,000 jobs per month in the second half, and 135,000 jobs per month over the whole year.

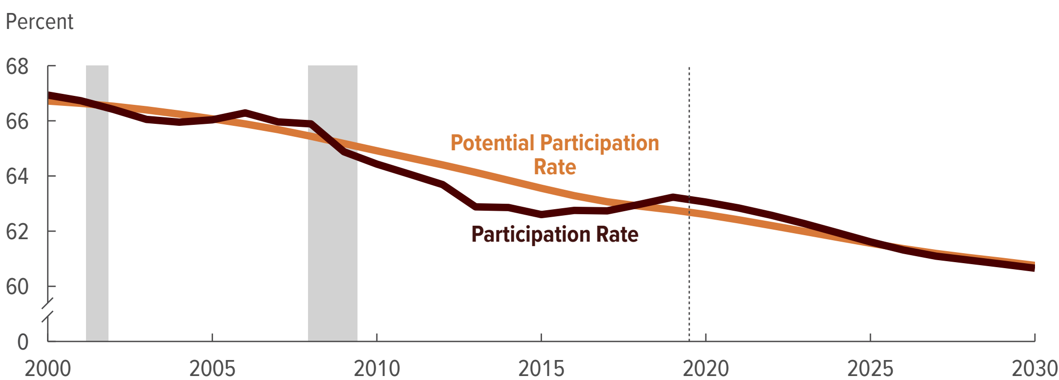
CBO projects that the average pace of job growth will remain subdued after 2020. As labor compensation rises further and output growth falls below its potential, job growth is expected to slow, causing the gap between employment and its potential to narrow. Specifically, in CBO's projections, nonfarm payroll growth averages 28,000 jobs per month between 2021 and 2024, below the agency's estimate of potential job growth of 81,000 jobs per month. Although economic and job

Figure 2-2.

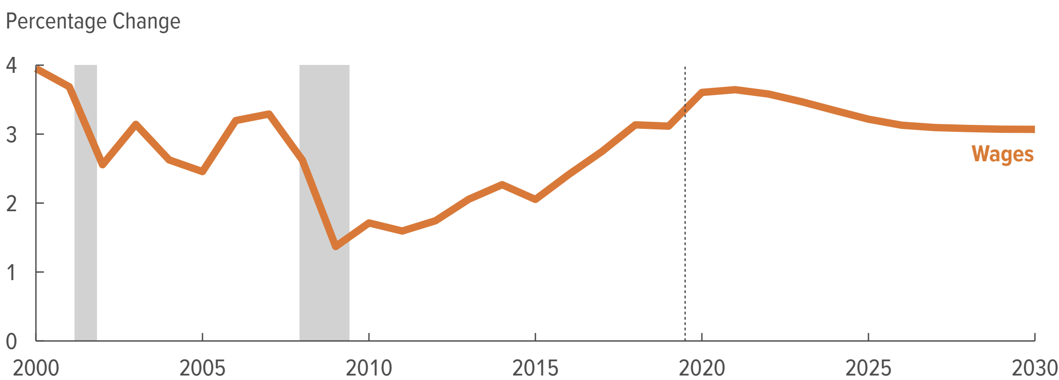
The Labor Market



In CBO's projections, the unemployment rate remains near historic lows throughout 2020. It then rises steadily, mostly because of slower economic growth, and surpasses the natural rate of unemployment in 2024.



The strong labor market keeps the labor force participation rate elevated for much of 2020. Starting in 2021, as economic and job growth slows, participation falls toward its potential rate, which also decreases, largely because of the aging of the population.



Wage growth remains strong over the next several years as employers continue to bid up the price of labor to recruit and retain workers.

Sources: Congressional Budget Office; Bureau of Labor Statistics.

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 rate of unemployment is the rate that results from all sources except fluctuations in aggregate demand, including normal turnover of jobs and mismatches between the skills of available workers and the skills necessary to fill vacant positions.

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 CBO's estimate of the rate that would occur if economic output and other key variables were at their maximum sustainable amounts.

Wages are measured using 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 unemployment rate and labor force participation rate, data are fourth-quarter values.

Values for wages in 2019 are CBO's estimates.

growth slow, employment, which tends to lag behind movements in output, is expected to remain above its maximum sustainable level over the entire 2020–2024 period, supporting relatively robust wage growth during those years.

Unemployment. The unemployment rate, which continued to edge downward in 2019, stood at 3.5 percent at the end of the year, its lowest point since the 1960s and about 0.9 percentage points below CBO's estimate of the natural rate of unemployment. (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 mismatch between the skills that jobs require and those that job seekers possess.)

In CBO's projections, solid economic growth is expected to keep the unemployment rate at about 3.5 percent in 2020. After 2020, as economic growth moderates, the unemployment rate is expected to rise steadily, reaching and surpassing its natural rate of 4.3 percent in 2024 before settling into its long-term path (roughly a quarter of a percentage point higher than the natural rate) in later years.

Labor Force Participation. The labor force participation rate (LFPR) among the civilian noninstitutionalized population (age 16 or older), which has hovered at about 62.8 percent since 2014, showed considerable cyclical strength and edged up over the past year. It stood at 63.2 percent at the end of 2019, roughly 0.5 percentage points higher than CBO's estimate of its current potential rate—that is, the rate that would occur if the economy's output and other key inputs were at their maximum sustainable amounts. In CBO's estimation, the potential LFPR fell from 64.0 percent in 2014 to 62.8 percent in 2019. That decline was driven largely by the aging of the population (because older people tend to participate less in the labor force than younger people do) and, in particular, by the retirement of baby boomers.[9]

The LFPR of people ages 25 to 54, which excludes much of the effect of the aging of the population, has risen in recent years, from 80.9 percent in 2015 to 82.0 percent in 2018 and 82.5 percent in 2019 (see Figure 2-3). Such near-term strength in labor force participation reflects the cumulative benefits of sustained economic growth, which encourages additional workers to enter and existing workers to stay in the labor force.

Cyclical strength in the economy keeps the overall LFPR above 63.0 percent throughout 2020, CBO projects; starting in 2021, as economic and job growth slows, the overall LFPR falls toward its potential. In CBO's projections, the overall LFPR falls from 63.0 percent in early 2021 to 61.9 percent by late 2024, whereas its potential rate falls from 62.6 percent to 61.8 percent during that period. By contrast, the LFPR of people ages 25 to 54 is projected to stay stable, hovering just above 82.8 percent during the 2020–2024 period; that stability is the result, among other things, of the increasing average education level of the workforce offsetting the downward pressure of slowing economic activity.

Labor Compensation. After accelerating in 2018, wage growth by a couple of key aggregate measures—namely, the employment cost index and the average hourly earnings of private-sector workers—stalled during 2019. That development partly reflects a slowdown in wage growth in service-providing industries, particularly the health care and social services industries. Economywide, data from household surveys show that gains in hourly wages have become increasingly broad-based in recent years: They have been especially strong for low-wage earners since late 2016. In 2019, wage growth also picked up notably for middle-wage earners.

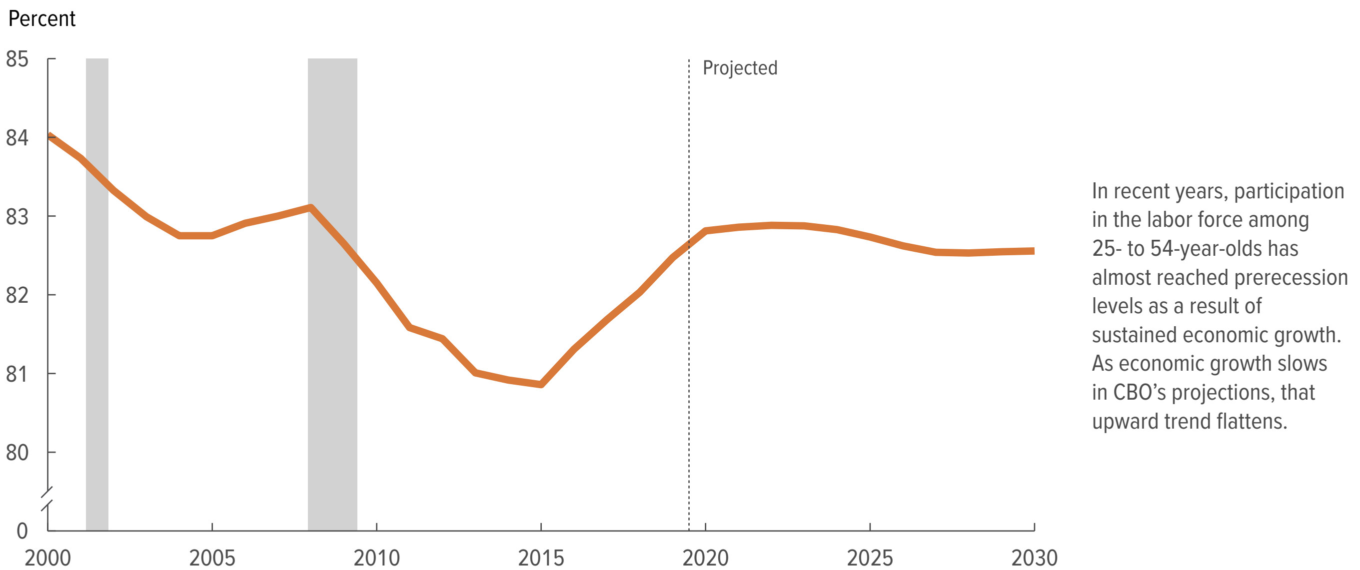
As the labor market remains relatively strong, CBO expects employers to continue to bid up the price of labor to recruit and retain workers, putting further upward pressure on wages and salaries and other forms of labor compensation in the coming years. In CBO's projections, the annual increase in the employment cost index for wages and salaries of workers in private industry rises from 3.1 percent in 2019 to 3.6 percent in 2020, its highest rate since the early 2000s, and then averages 3.5 percent from 2021 to 2024. Other measures of labor compensation, such as the average hourly earnings of production and nonsupervisory workers in private industry, are also expected to pick up further in the next few years. The faster pace of wage growth is expected to restrain the growth in the demand for labor,

9. Baby boomers are people who were born between 1946 and 1964. The retirement of baby boomers is projected to put large downward pressure on the labor force participation rate over the next 10 years. In CBO's projections, the potential labor force participation rate falls from 62.8 percent in 2019 to 60.8 percent in 2030.

CBO has corrected this page since the report was originally published. Corrections are listed at the end of the report.

Figure 2-3.

The Labor Force Participation Rate of People Ages 25 to 54



Sources: Congressional Budget Office; Bureau of Labor Statistics.

The labor force participation rate is the percentage of people in the civilian noninstitutionalized population who are either working or seeking work.

Data are annual average values.

gradually slowing the pace of job and wage growth in later years.

Inflation and Interest Rates

CBO expects strong labor and product market conditions to apply upward pressure on inflation and interest rates over the next few years. That upward pressure is projected to dissipate in later years as the current strength in labor and product markets subsides.

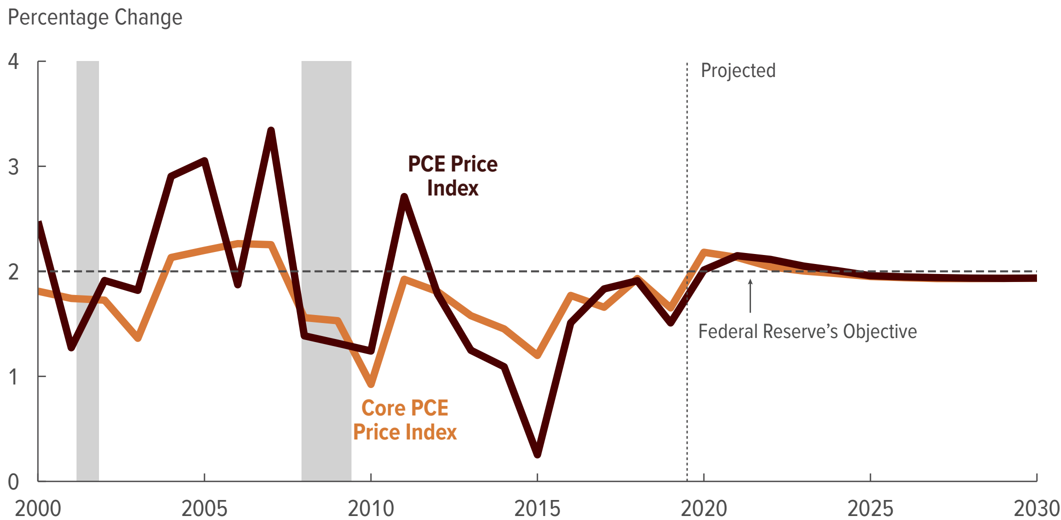
Inflation. The growth rate of the price index for personal consumption expenditures (PCE)—the measure that the Federal Reserve uses to define its 2 percent long-run objective for inflation—was below that objective in 2019. The traditional measure of core PCE price inflation, which excludes food and energy prices because they tend to be volatile, was also below 2 percent in 2019. However, that low inflation was largely driven by declines in particular components, such as financial services prices, that CBO does not expect to occur again in 2020. Alternative measures of core inflation that are designed to eliminate the effects of such short-lived factors (not only food and energy prices) remain close to 2 percent.[10] The evidence as a whole suggests that the current shortfall from the Federal Reserve's long-run objective is probably the result of temporary factors.

In CBO's projections, the effects of those temporary factors wear off, and the core PCE price index increases by 2.2 percent in 2020 and by 2.1 percent in 2021 (see Figure 2-4). Several factors support that increase in the rate of inflation, including strong labor and product market conditions. Growth in the overall PCE price index will also rise, CBO projects, meeting the Federal Reserve's long-run objective in 2020 and then slightly overshooting it in 2021. After 2021, the agency expects growth in both the core and the overall PCE price index to fall gradually to 2.0 percent by 2024 as the strength in labor and product markets subsides. Growth in the consumer price index for urban households (CPI-U), which tends to be faster than growth in the PCE price index, rises to 2.4 percent in 2020 and 2.6 percent in

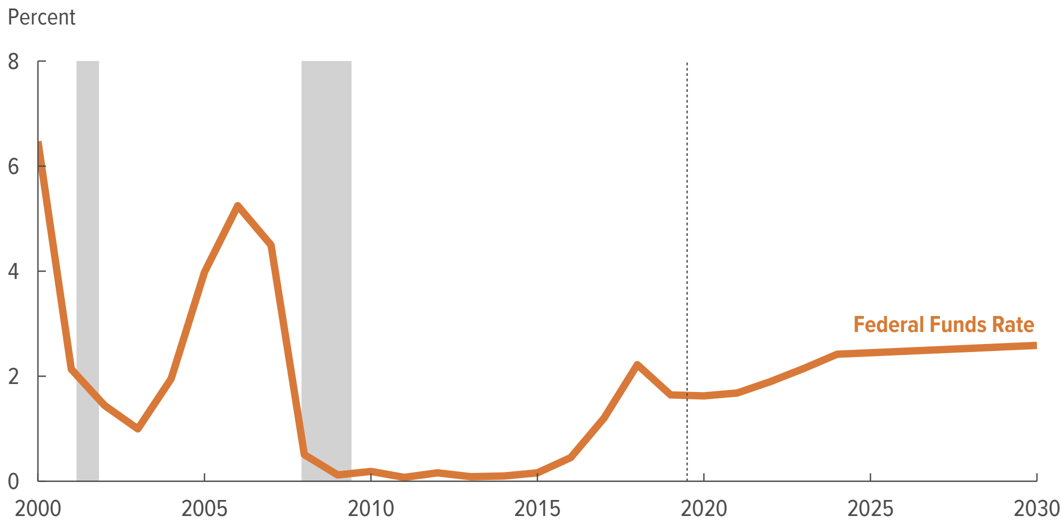
10. For an assessment of the relative strengths of such measures, see Jim Dolmas and Evan F. Koenig, *Two Measures of Core Inflation: A Comparison*, Working Paper 1903 (Federal Reserve Bank of Dallas, February 2019), www.dallasfed.org/research/papers/2019/wp1903.

Figure 2-4.

Inflation and the Federal Funds Rate



In CBO's projections, a number of factors cause inflation to accelerate in 2020, including strong labor and product markets. After 2021, diminishing strength in those markets slows the rate of inflation.



At the end of 2021, the Federal Reserve begins raising the target range for the federal funds rate—which helps reduce inflationary pressures, in line with the Federal Reserve's long-run objectives.

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

The 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.

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

Values for inflation in 2019 are CBO's estimates.

For the federal funds rate, the data are fourth-quarter values.

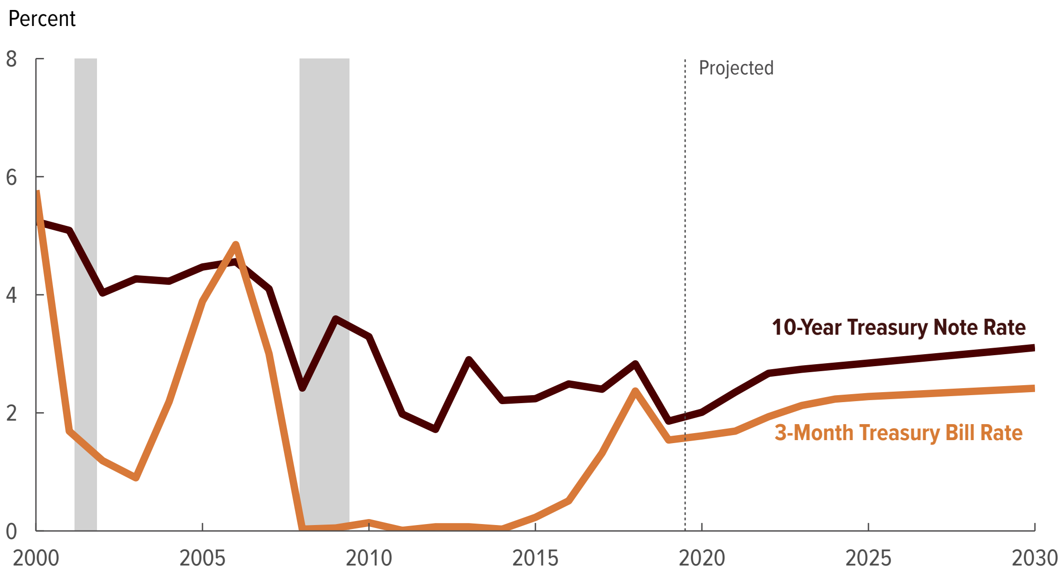
PCE = personal consumption expenditures.

2021 before falling gradually to 2.3 percent in 2024, in CBO's projections.

Interest Rates. CBO expects the Federal Reserve to keep its current target range for the federal funds rate unchanged through late 2021. The agency expects rising inflation and tighter labor and product markets to prompt the Federal Reserve to begin gradually raising interest rates at the end of 2021. In CBO's projections, the Federal Reserve continues to increase the federal

Figure 2-5.

Interest Rates



In CBO's projections, short-term interest rates follow a path similar to that of the federal funds rate over the next several years, and long-term interest rates rise—in part because of investors' expectations about short-term rates.

Sources: Congressional Budget Office; Federal Reserve.

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

Data are fourth-quarter values.

funds target range, reaching an average of 2.4 percent by the end of 2024. CBO expects those rate hikes to slow economic growth, putting downward pressure on inflation in later years.

The interest rate on 3-month Treasury bills is expected to remain near its current rate of 1.6 percent through the first half of 2021 and then begin to rise, partly in response to higher U.S. inflation, improvements in the outlook for the global economy in 2020 and early 2021, and market participants' expectations of future rate hikes by the Federal Reserve. In CBO's projections, the interest rate on 3-month Treasury bills rises from 1.6 percent in the first half of 2021 to 2.2 percent by the end of 2024 (see Figure 2-5).

CBO expects long-term interest rates to rise over the entire 2020–2024 period for two reasons. First, long-term interest rates reflect investors' expectations that short-term interest rates will rise. 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 factors that have recently pushed it to historically low levels dissipate. Two such factors are investors' heightened concerns about relatively weak global economic growth and the increased demand for long-term bonds as a hedge against unexpectedly low inflation.

In CBO's projections, as foreign economic growth improves and the rate of inflation reaches the Federal Reserve's long-run objective of 2 percent, investors' demand for long-term bonds weakens slightly, putting upward pressure on long-term interest rates. CBO also expects faster foreign growth to put upward pressure on the interest rates on foreign governments' debt. (Many of those interest rates were negative for much of 2019.) That would lessen the demand for, and therefore push up the interest rates on, U.S. Treasury securities. The interest rate on 10-year Treasury notes is projected to rise to 2.8 percent by the end of 2024.

The Economic Outlook for 2025 to 2030

CBO's projections of the economy for 2025 through 2030 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 how the federal tax and spending policies—as well as trade and other public policies—embodied in current law would affect those variables.

In CBO's projections, some policies not only affect potential output but also influence overall demand for goods and services, causing the gap between actual output and potential output to change. For example, the scheduled expiration of certain provisions of the 2017 tax act—including the expiration of most of the provisions affecting 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. Changes in law that prevented certain provisions of the 2017 tax act from expiring would affect CBO's forecast and cause the agency's economic projections to change.

Output

In CBO's projections, potential output grows at an average rate of 1.7 percent per year over the 2025–2030 period, driven by average annual growth of about 0.3 percent in the potential labor force and about 1.4 percent in potential labor force productivity (see Table 2-5 and see Box 2-1). That annual 1.7 percent growth of potential output is nearly one-quarter of a percentage point slower than its projected growth of 2.0 percent per year over the earlier 2020–2024 period (see Figure 2-6 on page 47). That slowdown is attributable in approximately equal parts to slower growth of the potential labor force and slower growth in potential labor force productivity.

The slowdown in potential output growth is expected to be slightly more pronounced in the nonfarm business sector, which produces roughly three-quarters of domestic output, than in other sectors of the economy. Annual growth of potential output in that sector is projected to slow by about a quarter of a percentage point, from nearly 2.3 percent over the 2020–2024 period to about 2.0 percent over the 2025–2030 period. The contribution to potential output growth from potential hours worked falls from nearly 0.4 percentage points per year, on average, in the first half of the projection period to 0.2 percentage points in the second half. The contribution from capital services drops from an average of 0.8 percentage points per year to about 0.6 percentage points. (By itself, that reduction would lead to slower growth in labor force productivity.)

The slower growth of potential hours worked and capital services in nonfarm business reflects underlying long-run trends—such as the aging of the population and other demographic shifts—as well as the scheduled increase in taxes under current law. Changes in trade policies and legislation enacted since August 2019 are also expected to have a small negative effect on potential output in the sector, although considerable uncertainty surrounds that assessment.

Unlike the growth of potential hours worked and capital services, the annual growth of potential total factor productivity (TFP)—that is, 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 more than 1.1 percent in the first half of the projection period to nearly 1.2 percent in the second half. That acceleration somewhat offsets the slowdown in the growth of other inputs to production. The increase in potential TFP growth in the nonfarm business sector also plays a key role in making economywide potential output grow faster than its estimated average rate of about 1.6 percent per year since 2007, when the last recession began.

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 projection period, and the level of actual output stays about 0.5 percent below that of potential output, which reflects the agency's consideration of the average effect of recessions from a historical perspective.[12] However, that convergence is interrupted in the current forecast because the expiration of certain provisions of the 2017 tax act not only diminishes the growth of potential output by reducing the supply of labor but also temporarily slows the growth of overall

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.

12. 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, on average, in the latter part of the projection period so that inputs to the budget projections (such as income and interest rates) are consistent with historical averages.

CBO

Table 2-5.

Key Inputs in CBO's Projections of Real Potential GDP

Percent

	Average Annual Growth							Projected Average Annual Growth		
	1950–1973	1974–1981	1982–1990	1991–2001	2002–2007	2008–2019	Total, 1950–2019	2020–2024	2025–2030	2020–2030
Overall Economy										
Real Potential GDP	4.0	3.1	3.4	3.2	2.6	1.6	3.2	2.0	1.7	1.8
Potential Labor Force	1.6	2.5	1.6	1.2	1.0	0.5	1.4	0.5	0.3	0.4
Potential Labor Force Productivity[a]	2.4	0.6	1.7	2.0	1.6	1.1	1.7	1.5	1.4	1.4
Nonfarm Business Sector										
Real Potential Output	4.1	3.5	3.6	3.6	2.9	1.9	3.4	2.3	2.0	2.1
Potential Hours Worked	1.4	2.3	1.8	1.2	0.4	0.5	1.3	0.5	0.3	0.4
Capital Services[b]	3.8	3.8	3.6	3.9	2.8	2.4	3.4	2.4	2.0	2.2
Potential Total Factor Productivity[c]	1.9	0.7	1.3	1.5	1.7	0.7	1.4	1.1	1.2	1.1
Contributions to the Growth of Real Potential Output (Percentage points)										
Potential hours worked	1.0	1.5	1.2	0.8	0.3	0.4	0.9	0.4	0.2	0.3
Capital input	1.2	1.2	1.1	1.2	0.9	0.7	1.1	0.7	0.6	0.7
Potential total factor productivity	1.9	0.7	1.3	1.5	1.7	0.7	1.4	1.1	1.2	1.1
Total Contributions	4.1	3.5	3.5	3.6	2.9	1.8	3.4	2.2	2.0	2.1
Potential Labor Productivity[d]	2.7	1.2	1.8	2.4	2.5	1.3	2.1	1.7	1.7	1.7

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. Those rates were calculated using calendar year data.

GDP = gross domestic product.

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

b. The services provided by capital goods (such as computers and other equipment) that constitute the actual input in the production process.

c. The average real output per unit of combined labor and capital services, excluding the effects of business cycles.

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

demand. As a consequence, actual output temporarily falls relative to potential output. It then rises until the relationship between the levels of actual and potential output reaches its long-run average in the final years of the projection period. Correspondingly, the average growth of actual output during the 2025–2030 period is close to, but slightly slower than, that of potential output.

The Labor Market

CBO expects the natural rate of unemployment to decline slowly over the next decade, from 4.5 percent in 2019 to 4.2 percent by 2030. That slow decline reflects the continuing 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 reaches 4.5 percent by 2025, and the difference between the unemployment rate and the natural rate reaches its long-term average of about 0.25 percentage points.[13] Over time, as the natural rate of unemployment declines, the unemployment rate also falls, except in 2025 and 2026,

13. That projected gap is consistent with the long-term relationship between actual GDP and potential GDP.

Box 2-1.

CBO's Estimates of Potential Output

Although changes in the overall demand for goods and services strongly influence the Congressional Budget Office's economic projections during the first half of the period covered in this outlook, the agency's projections over the entire period are fundamentally determined by its assessment of the prospects for growth of a few key inputs: the potential number of workers in the labor force, capital services (that is, the flow of productive services provided by the available stock of capital), and the potential productivity of those factors. In CBO's assessment, growth of potential output over the entire 2020–2030 period is projected to average 1.8 percent per year, a rate roughly equal to the average over the past 15 years.

In CBO's assessment, growth in potential output continues at its recent trend because the growth of potential total factor productivity (TFP) in nonfarm business is quickly returning to a rate more consistent with longer-term averages than with recent experience. In CBO's projection, potential TFP growth increases from an annual average of 0.7 percent since the beginning of the last recession to an average of 1.1 percent during the forecast period. That projected increase directly adds 0.3 percentage points to the growth of potential output and also indirectly adds to growth by encouraging more investment than would otherwise occur. In addition, the relatively strong projected growth of residential investment yields more rapid growth of capital services from owner-occupied housing than has been typical of the current business cycle. A further contribution comes from a modest acceleration in growth in potential labor productivity outside of nonfarm business.

The projected acceleration of growth in potential TFP more than offsets adverse trends in other fundamental determinants of potential output over the projection period, compared with recent history. In particular, CBO projects an ongoing decline in the growth of the potential labor force from 0.5 percent per year in recent years to 0.3 percent by 2030, a decline that reflects underlying trends, such as the aging of the population and other demographic shifts. Similarly, investment trends in nonfarm business (which accounts for about three-quarters of economic activity and nearly all of the growth in productivity) are expected to yield slightly slower growth in that sector's capital services than has occurred during the current business cycle.

when it rises slightly. That temporary increase occurs because the slowdown in the growth of demand for goods and services caused by the expiration of certain provisions of the 2017 tax act also slows growth in the demand for labor. The projected unemployment rate is 4.4 percent in 2030, slightly below its level of 4.5 percent in 2025.

CBO expects the labor force participation rate to fall below its potential during the second half of the 11-year projection period. Specifically, the overall labor force participation rate is projected to fall from 61.9 percent at the beginning of 2025 to 60.7 percent by the end of 2030. CBO attributes most of that decline to the aging of the population and, in particular, the continued retirement of baby boomers.[14] That rate in 2030 is 0.1 percentage point below the agency's estimate of the potential labor force participation rate, an amount reflecting the average difference over business cycles between the 1950s and the 2000s.

The growth in employment and wages is projected to be moderate over the 2025–2030 period. Nonfarm payroll employment increases by an average of about 50,000 jobs per month during those years, in CBO's projections. 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 1.7 percent from 2025 to 2030—close to the projected average growth in labor productivity in that sector.

Inflation and Interest Rates

Between 2025 and 2030, in CBO's forecast, the overall and core PCE price indexes increase by an average of 1.9 percent per year, which is slightly below the Federal Reserve's long-run objective for inflation. That reflects the likelihood of a business cycle occurring during the projection period. Inflation in the overall and core CPI-U measures averages 2.2 percent annually in those years. Those projections reflect the historical difference between the growth rates of the PCE price index and the CPI-U.

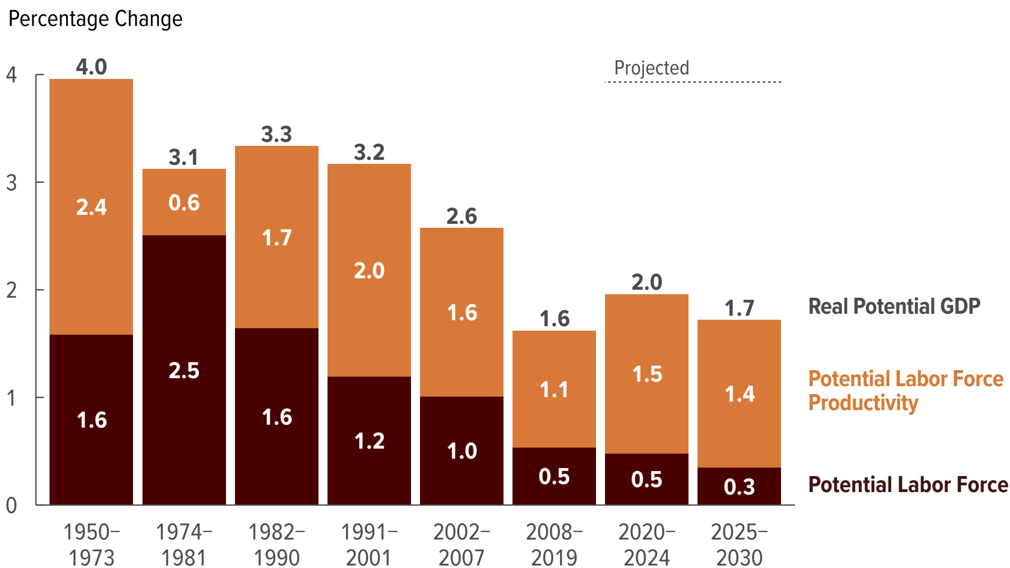
The interest rates on 3-month Treasury bills and 10-year Treasury notes are projected to average 2.3 percent and

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

Figure 2-6.

Composition of the Growth of Real Potential GDP

Percentage Change



Over the next decade, real potential GDP is projected to grow faster than it has since the last recession because of faster growth in potential labor force productivity. However, growth in the potential labor force is projected to be slower than in previous periods, largely because of the aging of the population.

Source: Congressional Budget Office.

Real values are nominal values that have been adjusted to remove the effects of changes in prices. Growth in real potential GDP is the sum of growth in the potential labor force and growth in potential labor force productivity. The potential labor force is CBO's estimate of the size of the labor force that would occur if economic output and other key variables were at their maximum sustainable amounts. Potential labor force productivity is the ratio of real potential GDP to the potential labor force.

The bars show average annual growth rates over the specified periods, calculated using calendar year data.

GDP = gross domestic product.

3.0 percent, respectively, over the 2025–2030 period. Those projected rates are below the securities' average rates from 1990 through 2007, a period that CBO uses for comparison because expectations about inflation during that time were fairly stable and because there were no significant financial crises or severe economic downturns.

In CBO's analysis, a number of factors push interest rates on Treasury securities below that historical average: lower average expected inflation, slower growth of the labor force (which tends to raise the amount of equipment and other capital per worker, reducing both the return on capital and the return on competing investments, such as Treasury securities), slightly slower growth of productivity (which also reduces the return on capital), a greater share of total income among high-income households (which tends to increase saving), and a higher risk premium on risky assets (which reflects increased relative demand for risk-free Treasury securities—including the Federal Reserve's holdings—and boosts their prices, thereby lowering their interest rates). Other factors offset some of that downward pressure on interest rates: a larger amount of federal debt as a percentage of GDP, smaller net inflows of capital from other countries as a percentage of U.S. GDP (which reduce the supply of funds available for borrowing), and a larger share of income going to the owners of capital (which increases the return on capital assets with which Treasury securities compete, reducing the demand for those securities).

Nevertheless, interest rates are projected to rise over the 2025–2030 period. In particular, rising federal debt in relation to GDP and a gradual decline in the premium paid on risky assets are both expected to exert slight upward pressure on short- and long-term interest rates. CBO expects the average federal funds rate to rise from 2.4 percent in 2025 to 2.6 percent in 2030. Similarly, the rates for 3-month Treasury bills and 10-year Treasury notes are expected to rise from 2.3 percent and 2.8 percent to 2.4 percent and 3.1 percent, respectively, over that period.

Projections of Income

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, income from interest and dividends, and other categories. (Labor income includes wages and salaries as well as other forms of compensation, such as employer-paid benefits and a fraction of proprietors' income.) The shares for wages and salaries and for domestic profits are of particular importance in projecting federal revenues because those types of income are taxed at higher rates than others.

Labor income as a share of GDP fell from 58.6 percent in 2008 to a recent low of 57.1 percent in 2010 but partially rebounded to 57.9 percent at the end of 2019. Compared with historical fluctuations in labor income as a share of GDP, little change is expected in the labor share over the projection period. The share reflects CBO's forecasts for employment and compensation as well as a projected fraction of proprietors' income. Labor's share rises slightly, reaching 58.6 percent in 2028, and then remains close to 58.5 percent through the end of 2030. Wages and salaries are expected to grow more quickly than the rest of national income over the next five years as wage growth picks up, but their growth rates are projected to fall slightly in the latter half of the projection period. The wage and salary share of total income rises from 43.4 percent of GDP in 2019 to 43.9 percent in 2024 before falling to 43.7 percent by the end of 2030, in CBO's projections.

Economists have identified some factors that have reduced labor's share of income, especially since 2000, but the relative importance and persistence of those factors remains unclear.[15] In CBO's projections, that combination of long-term factors continues to operate, so that labor's share of GDP does not reach 60.4 percent—its long-run average from 1947 through 2000.

Domestic corporate profits as a share of GDP fell from 2014 through 2019 as the shares of compensation and interest income rose. In CBO's projections, the domestic profit share rebounds in 2020 and then rises only slightly over the remainder of the projection period. Domestic corporate profits as a share of GDP rise from 7.2 percent in 2019 to 7.8 percent by the end of 2020, reaching 7.9 percent by the end of 2030; they average 7.8 percent over the entire projection period.

Some Uncertainties in the Economic Outlook

Even if no changes were made to federal fiscal policies or trade policies, economic outcomes would still probably differ from CBO's projections. For example, a great deal of uncertainty surrounds CBO's estimates of households' and businesses' responses to policies under current law. Changes to trade policies since January 2018 and the prospect of further changes compound that uncertainty because it is particularly difficult to project how businesses will alter their investment activity or adjust their global supply chains in response. If federal fiscal policies or trade policies differed from those underlying CBO's baseline projections, then economic outcomes would probably differ from CBO's economic projections.

Fiscal and Trade Policies

Recent and prospective policy changes add to the uncertainty in CBO's economic outlook. The scheduled expiration of certain 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 slower (or faster) economic growth in the latter years of the projection period than the agency forecasts. In addition, it is difficult to estimate how households and businesses will respond to changes that they expect to occur in federal tax and spending policies.

Recent actions related to trade policies are another source of uncertainty in CBO's projections. A great deal of uncertainty surrounds households' and businesses'

15. Technological change may have induced firms to shift away from the use of labor toward the use of 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. On the role of globalization, see Michael Elsby, Bart Hobijn, and Aysegul Sahin, "The Decline of the U.S. Labor Share," *Brookings Papers on Economic Activity* (Fall 2013), https://brook.gs/2VCVbyx. The returns on intangible assets may have claimed an increasing share of income; see Congressional Budget Office, *How Taxes Affect the Incentive to Invest in New Intangible Assets* (November 2018), www.cbo.gov/publication/54648. Labor income could have been reduced by increases in market power; see Jan De Loecker and Jan Eeckhout, *The Rise of Market Power and the Macroeconomic Implications*, Working Paper 23687 (National Bureau of Economic Research, August 2017), www.nber.org/papers/w23687. But apparent market power could reflect the growth of highly productive superstar 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.

responses to such policies under current law. For example, CBO's estimates of the economic effects of those policy changes may prove too pessimistic. If the foreign demand for U.S. goods was less sensitive to higher tariff rates than CBO projects, then U.S. exports would be higher, and economic growth would be faster than projected.

Conversely, CBO's projections of the economic effects of changes in trade policies may be too optimistic. If domestic businesses were less able to absorb the higher cost of imported products and therefore had to pass a greater share of those costs on to consumers, then U.S. import growth would be slower, domestic inflation would be higher, and economic growth would be slower than CBO currently projects.

Output and Employment

Many developments—such as unexpected changes in the labor market, business confidence, the housing market, and international conditions—could cause output and employment to differ considerably from CBO's projections. In the agency's view, CBO's economic forecast balances the risks of those potential developments, on average, so that outcomes could differ from the forecast in either direction.

On the one hand, the agency's current forecast of output and employment may be too pessimistic. For example, recent data on employment show that hiring remains strong; moreover, many newly hired workers were previously not classified as being in the labor force, so the labor force participation rate has increased without an increase in the unemployment rate. At the same time, inflation has not exceeded the Federal Reserve's 2 percent long-run objective. If the combination of strong hiring, robust wage growth, and subdued inflation continued longer than CBO projects, real income, consumer spending, and output would increase by more than the agency expects.

On the other hand, CBO's forecast may be too optimistic. Some international factors pose significant risks to CBO's economic outlook over the next several years. For instance, a government debt crisis in Europe could weaken the U.S. economic outlook by disrupting the international financial system, interfering with international trade, and reducing domestic business and consumer confidence. In addition, slower-than-expected growth among the United States' leading trading partners could lower export growth and, in turn, U.S. output growth below CBO's forecast.

Since CBO's long-run projections are fundamentally linked to the underlying trends in key variables, such as the size of the potential labor force, the average number of labor hours per worker, capital investment, and productivity, the uncertainty in later years largely reflects the uncertainty surrounding the estimates of those underlying trends. If, for example, the potential labor force grew more quickly than expected—say, because older workers chose to stay in the labor force longer or immigration was greater than anticipated—the economy could grow more quickly than projected.[16] By contrast, if the growth of labor productivity did not exceed 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.

Furthermore, substantial uncertainty exists about the growth of overall total factor productivity and related implications for long-run growth. If the growth of TFP remained close to its estimated trend since the end of the last recession, about 0.7 percent per year, annual growth of economywide output would be about 0.3 percentage points slower than CBO projects. Conversely, if it returned to its more rapid long-run average rate of growth, annual growth of economywide output would be about 0.2 percentage points faster.

Inflation and Interest Rates

The outlook for monetary policy and interest rates is also uncertain, particularly in light of unexpectedly low inflation and interest rates. If the factors holding inflation below the Federal Reserve's 2 percent long-run objective were more persistent than expected, or if expectations about future inflation were to decline, then the Federal Reserve would probably respond by lowering its target range for the federal funds rate further and keeping it lower for longer than expected. Consequently, short- and long-term interest rates would probably be lower than in CBO's projections. Conversely, a sudden jump in inflation would probably prompt the Federal Reserve to increase the target range for the federal funds rate sooner

16. As birth rates in the native-born population have declined over time, immigration has become an increasingly important part of growth in the total U.S. population and labor force. In 2018, immigration accounted for over 40 percent of the growth in the U.S. population and labor force. Foreign-born people accounted for 17.4 percent of the U.S. civilian labor force in 2018, compared with 13.3 percent in 2000.

than CBO currently expects, causing short- and long-term interest rates to be higher than projected.

In the event of an economic downturn, the Federal Reserve could boost the overall demand for goods and services by lowering short-term interest rates and by using unconventional monetary policies, which work in part by lowering long-term interest rates. In CBO's assessment, those policies would be sufficient to restore overall demand following a typical economic downturn. It is unclear how much scope those policies would have to restore demand in a severe downturn.

Estimates of the long-run neutral rate of interest—the rate at which inflation is stable and monetary policy is neither boosting nor constraining economic growth—underpin CBO's projection of interest rates in the latter years of the projection period. Those estimates are highly uncertain. A higher or lower rate would imply higher- or lower-than-projected short- and long-term interest rates.

Forecasts of the term premium, which affects long-term interest rates, are also highly uncertain. For reasons detailed above, CBO expects the term premium to rise from its current historically low level but to remain lower than its level over the previous three decades. A higher or lower term premium would imply higher or lower long-term interest rates than CBO projects.

Risk of a Recession

In CBO's baseline projections, the output gap narrows over the next few years, with 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 now the longest in the post–World War II period (see Figure 2-7). 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; and external shocks, such as unfavorable international events or sudden, large increases in oil prices. Some of those risk factors currently exist or could develop in the next few years.

For example, potential increases in trade barriers contribute to the risk that economic growth could be 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 (that is, large net inflows of capital from abroad), 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. Finally, although unexpected shocks are by definition impossible to predict 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. But 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.

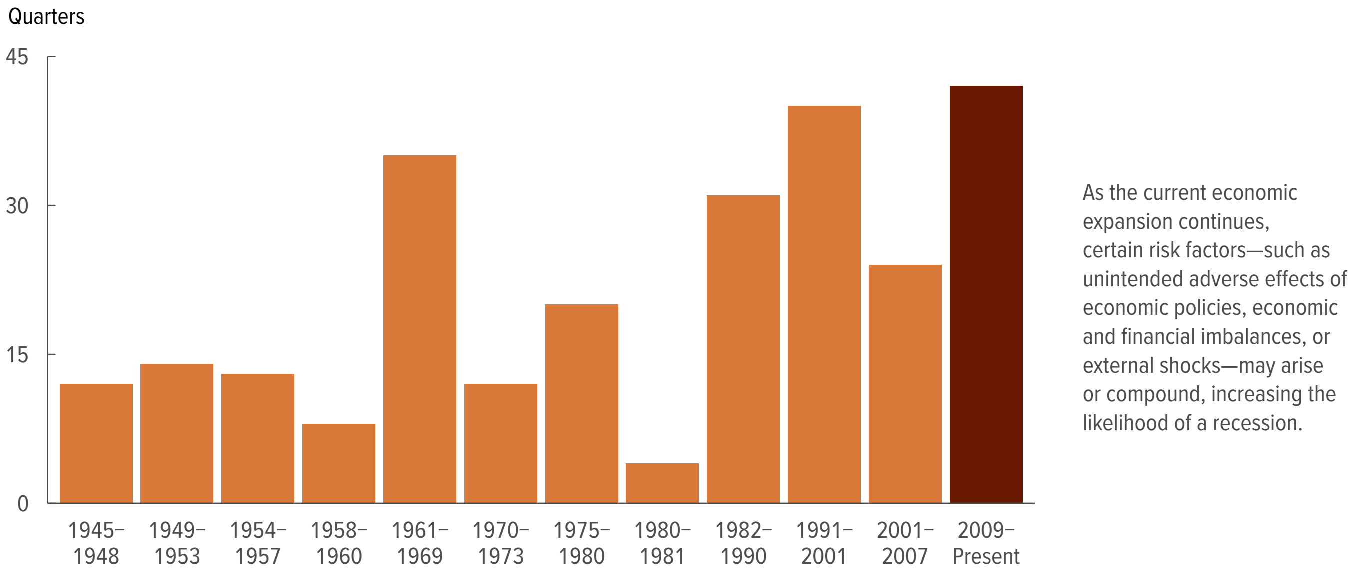
In addition, CBO's projection of a persistent, negative output gap in the long run reflects the agency's consideration of the average effect of recessions from a historical perspective. That is, CBO projects that output will be, on average, half a percent below its potential level, roughly consistent with the average gap over business cycles (measured from trough to trough) that occurred between the 1950s and the 2000s.

Quantifying the Uncertainty in CBO's Projections

To quantify the uncertainty surrounding its projections for the next five years, CBO analyzed its past forecasts of several key macroeconomic variables (see Box 2-2). On the basis of that analysis, CBO estimates that—if the errors in the agency's current economic forecast are similar to those in its previous forecasts—there is approximately a two-thirds chance that the average annual rate of real GDP growth (on a calendar year basis) will be between 0.5 percent and 3.1 percent over the next five years (see Figure 2-8 on page 54). That range encompasses cumulative growth over the five-year

Figure 2-7.

Duration of Economic Expansions 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. The first year in the label of each bar 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.

period ranging between 2.4 percent and 16.5 percent.[17] Similarly, errors in CBO's past forecasts of inflation (as measured with 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.

Comparison With CBO's August 2019 Projections

CBO's current economic forecast is similar to the forecast the agency published in August 2019, but it differs in some ways (see Table 2-6 on page 56).[18] In particular, CBO's current projections of interest rates, inflation, and the unemployment rate over the 2019–2029 period are lower. CBO also reduced its estimates of potential output growth in the latter part of the projection period.

Interest Rates and Inflation

The agency now expects both short- and long-term interest rates over the coming decade to be lower, on average, by 0.3 percentage points per year. CBO lowered its forecast of interest rates over the next few years in response to unexpectedly weak inflation and the continued economic effects associated with uncertainty about trade barriers. CBO's revisions to interest rates were also informed by statements of Federal Reserve officials, as well as changes in financial markets and outside forecasts.

CBO lowered its forecast of both short- and long-term interest rates over the latter years of the projection period, in part because of its forecast of a lower inflation rate. CBO also reassessed some of the factors that affect real interest rates in the long run. In particular, the agency now expects the premium on risky assets, which has been elevated since the 2007–2009 recession, to decline more slowly than previously expected, remaining elevated throughout the coming decade. In general, a higher premium on risky assets implies lower rates of

17. CBO's range for real GDP growth reflects some of the uncertainty inherent in its estimates of the growth in real potential GDP, given that the errors in CBO's longer-horizon forecasts of real GDP growth are partly due to the agency's past underestimates (for example, during the late 1990s) or overestimates (for example, during the early 2010s) of real potential GDP growth.

18. See Congressional Budget Office, *An Update to the Budget and Economic Outlook: 2019 to 2029* (August 2019), www.cbo.gov/publication/55551.

Box 2-2.

CBO's Forecasting Record and the Range of Uncertainty

One of the ways that the Congressional Budget Office quantifies the uncertainty surrounding its economic forecasts is to use past forecast errors. Forecast errors result from developments in the economy that were not anticipated at the time of the forecast and from the enactment of legislation (because CBO's forecast is based on current law). If the size and frequency of such changes in the future are roughly the same as in the past, then it is reasonable to use past errors to assess uncertainty about the future paths of some key macroeconomic variables.

CBO periodically reevaluates its past forecasting record. The agency's most recent reassessment, published in October 2019, analyzed two- and five-year economic forecasts of a number of economic series.[1] The report also compared CBO's forecasts with forecasts made by the Administration and with those of the *Blue Chip* consensus, an average of private-sector forecasts. The main findings of that report are as follows.

Measures of Forecast Quality

CBO focuses on three measures of forecast quality—mean error, root mean square error, and two-thirds spread of errors—that help the agency identify the centeredness (that is, the opposite of statistical bias), accuracy, and dispersion of its forecast errors. CBO's forecasts of most economic variables are, on average, too high by small amounts. As measured by the root mean square error, its two-year forecasts of most variables are not appreciably more accurate than its five-year forecasts.[2] CBO is least accurate in forecasting growth of wages and salaries.

Comparison With Other Forecasts

CBO, the Administration, and the *Blue Chip* consensus all failed to anticipate certain key economic developments, resulting in significant forecast errors. In general, the forecasts display similar error patterns over time. Because all forecasters faced the same challenges, periods in which CBO made large overestimates typically coincide with periods in which other forecasters made similarly large overestimates. For example, the forecast errors for real GDP growth (see the figure) are highly correlated over time (that is, they move up and down together). In addition, all forecasters tended to overestimate growth in gross domestic product during periods when there were economic downturns.

For the 10 variables analyzed, CBO found some similarities and some differences in forecast quality among forecasters. For the most part, CBO's and the Administration's forecasts exhibit similar degrees of centeredness (which indicates how close the average forecast value is to the average actual value over time), but CBO's forecasts are slightly more accurate and have smaller two-thirds spreads. For all three measures of forecast quality that CBO examined—the mean error, the root mean square error, and the two-thirds spread—the agency's forecasts are roughly comparable to those of the *Blue Chip* consensus.

Sources of Forecast Errors

The main sources of those errors are turning points in the business cycle, changes in labor productivity trends and crude oil prices, persistently low interest rates, the decline in labor income as a share of gross domestic product, and data revisions.

1. See Congressional Budget Office, *CBO's Economic Forecasting Record: 2019 Update* (October 2019), www.cbo.gov/publication/55505.

2. The root mean square error is calculated by squaring the forecast errors, averaging those squares, and taking the square root of that average.

Continued

return on Treasury securities. CBO has also lowered its estimate of growth in the labor force over the 2024–2029 period, which tends to reduce both the return on capital and the return on competing investments, such as Treasury securities.

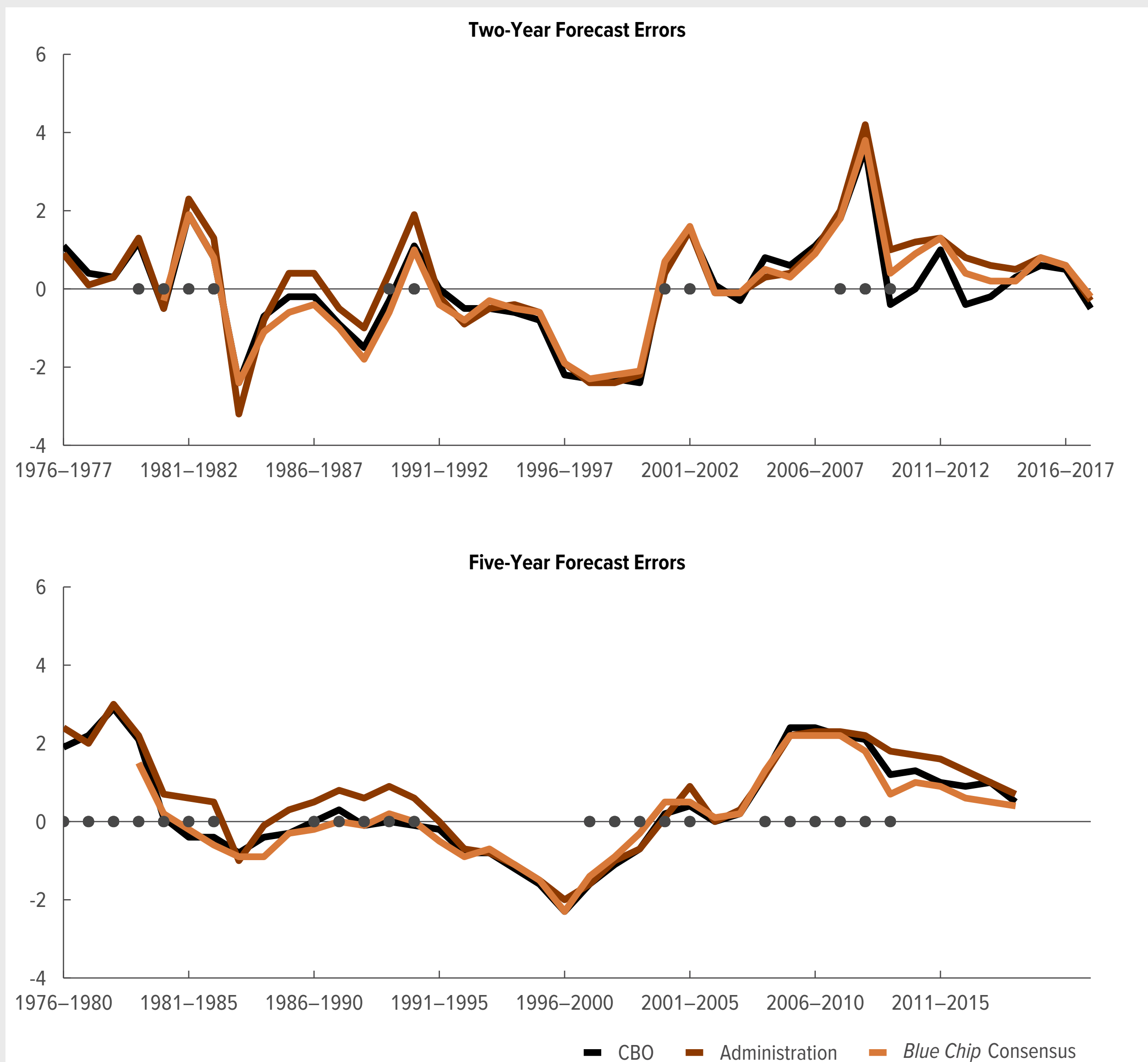
In addition, CBO revised its forecast of long-term interest rates downward by more than it revised its forecast of short-term interest rates downward over that period. The larger revision to long-term interest rates reflects CBO's reassessment of the term premium. The agency expects the factors that have pushed the term premium to historic lows in recent years—investors' heightened concerns about relatively weak global economic growth and the increased demand for long-term bonds as a hedge against unexpectedly low inflation—to dissipate more slowly over the next decade than it previously estimated.

CBO reduced its projection of average PCE price inflation and core PCE price inflation over the latter years of the projection period by slightly less than 0.1 percentage point. Between 2024 and 2029, in CBO's forecast,

Box 2-2. Continued

CBO's Forecasting Record and the Range of Uncertainty

Errors in Forecasts of Real Output Growth

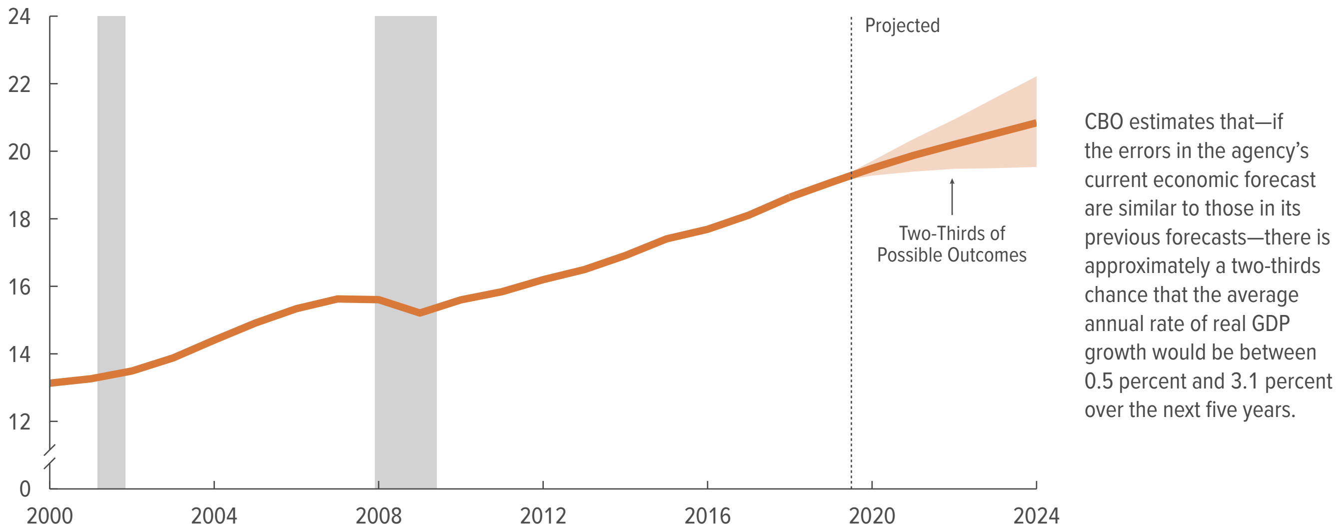


Sources: Congressional Budget Office; Office of Management and Budget; Wolters Kluwer, *Blue Chip Economic Indicators*; Bureau of Economic Analysis.

The measure of real output is gross national product in years before 1992 and gross domestic product in 1992 and later years. Positive errors represent overestimates. The dots shown on the horizontal axis indicate that the forecast period overlapped a recession by six months or more. The years indicate the time span covered by each of the forecast errors shown in the figure.

Figure 2-8.

The Uncertainty of CBO's Projections of Real 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.

The shaded area around CBO's baseline projection of real GDP illustrates the uncertainty of that projection. The area is based on the errors in CBO's one-, two-, three-, four-, and five-year projections of the average annual growth rate of real GDP for calendar years 1976 through 2018.

The value of real GDP for 2019 is CBO's estimate.

GDP = gross domestic product.

the core PCE price index now increases by an average of 1.9 percent per year, which is below the Federal Reserve's 2 percent long-run objective for inflation. The agency's forecast reflects the probability of a business cycle occurring during the 11-year projection period. In CBO's forecast, that probability lowers the average rate of inflation. That is consistent with the projection that the level of actual output stays about 0.5 percent below that of potential output in CBO's forecasts.

The Labor Market

Compared with its previous projections, CBO's current projection of the size of the labor force is slightly larger over the 2019–2023 period and slightly smaller over the 2024–2029 period. In the near term, the projected size of the labor force is larger because the agency raised the labor force participation rate in response to unexpectedly strong incoming data. After 2024, the projected labor force is smaller because the agency lowered the projected size of the civilian noninstitutionalized population (age 16 or older) as a result of higher-than-expected incoming data on mortality rates for the working-age population and lower net flows of immigration. More specifically, recent data show higher mortality rates than CBO expected last year for the working-age population, particularly for people under 45 years of age. Those data led CBO to increase its projection of mortality rates for the working-age population. The agency has also reduced its estimates of net inflows of foreign-born legal permanent residents and of foreign-born people without legal status. CBO revised its estimates of the net inflows of legal permanent residents in response to updated data that show lower net immigration for that group. Estimates of the number of foreign-born people without legal status in recent years have been declining since their peak in 2007 (that is, net inflows have been negative).[19] CBO projects that the net inflow of foreign-born people without legal status will slowly rise and that those net inflows will eventually turn positive in later years.

19. For the most recent estimates, see "Number of Unauthorized Immigrants in the U.S. Declined Over the Past Decade" (Pew Research Center, June 2019), https://tinyurl.com/r5u8vzv.

CBO's downward revision to the unemployment rate over the next decade is largely attributable to the agency's reassessment of the natural rate of unemployment, which reflects updated projections of the labor force. Because the demographic composition of the labor force was revised toward a higher percentage of older workers (largely because the mortality rates for people under the age of 65 are improving more slowly than CBO previously expected), as well as toward a higher percentage of more educated workers, CBO lowered its estimate of the natural rate of unemployment.

Output and Income

CBO now expects average growth in potential output over the 2019–2029 period to be about 0.1 percentage point slower than in the August forecast. About one-third of the decline in projected growth is attributable to slower growth in the potential labor force. The remainder is due to slower projected growth in potential labor force productivity, mainly resulting from weaker investment in response to slower labor force growth and from weaker residential investment in response to slower population growth. Those downward revisions to projected growth in potential labor productivity are partly offset by an upward revision to projected growth in potential TFP, itself a result of revisions to CBO's assessment of potential TFP growth in recent decades.

Projections of national income over the 2019–2029 period are largely unchanged since CBO's August projection, but various components of that income have been revised in offsetting ways. For example, projections for labor compensation and business interest payments were revised upward as shares of national income, but corporate profits were revised substantially downward. Revised national income and product accounts data indicate that labor compensation and interest payments were higher and corporate profits lower than previously reported for the years 2016 through 2018. Because labor compensation was revised upward and is now near the share of income that is consistent with CBO's long-run projections of potential output and potential employment—a share that CBO previously expected to be attained in 2026—labor compensation as a share of income is expected to rise by less over the projection period than it was in the August forecast. Since labor compensation is now closer to that long-run share of income than was previously estimated, the projected growth rates of compensation are lower and compensation as a share of income is higher through 2026 in the agency's new projections than it was in the August forecast. Within labor compensation, the share of compensation paid as nontaxable health benefits is boosted relative to the August forecast as a result of the repeal of the excise tax on high-premium insurance plans (see Appendix A). Interest payments by businesses account for a larger share of income in all years through 2029 than in the agency's previous projections. With higher shares of income going to labor compensation and to interest payments, the estimated share of income flowing into corporate profits is smaller than it was in the agency's August forecast.

Comparison With Other Economic Projections

CBO's projections of the economy for the next two years are generally stronger than the average of about 50 private-sector economists whose forecasts were published in the January 2020 *Blue Chip Economic Indicators* (see Figure 2-9 on page 58).

In particular:

- CBO's projections of real GDP growth are above the middle two-thirds of the range of *Blue Chip* forecasts for 2020 and but are within the middle two-thirds for 2021. CBO's projections of the unemployment rate are within the middle two-thirds of the range of private-sector economists for both 2020 and 2021.

- CBO's projections of GDP price inflation, consumer price inflation (as measured with the CPI-U), and interest rates for 2020 are within the middle two-thirds of the range of the *Blue Chip* forecasts. All of those projections are also within the middle two-thirds for 2021 except for consumer price inflation, which is slightly above the middle two-thirds but within the full range of forecasts.

Compared with the middle two-thirds of the range of forecasts made by Federal Reserve officials and reported at the December 2019 meeting of the Federal Open Market Committee, CBO's projections suggest a slightly stronger outlook for 2020 but a slightly weaker outlook for 2021, 2022, and the longer term (see Figure 2-10 on page 59).[20] The full range of Federal Reserve forecasts 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

20. See Board of Governors of the Federal Reserve System, "Economic Projections of Federal Reserve Board Members and Federal Reserve Bank Presidents, Under Their Individual Assumptions of Projected Appropriate Monetary Policy, December 2019" (December 11, 2019), Table 1, https://go.usa.gov/xpH6Q.

Table 2-6.

CBO's Current and Previous Economic Projections for Calendar Years 2019 to 2029

	2019[a]	2020	2021	Annual Average 2019–2023	Annual Average 2024–2029	Annual Average Total, 2019–2029
	Percentage Change From Fourth Quarter to Fourth Quarter					
Real GDP[b]						
January 2020	2.4	2.2	1.8	1.9	1.7	1.8
August 2019	2.3	2.1	1.8	1.9	1.8	1.8
Nominal GDP						
January 2020	4.2	4.2	3.9	4.0	3.7	3.8
August 2019	3.9	4.0	3.8	3.8	3.9	3.8
PCE Price Index						
January 2020	1.5	2.0	2.1	2.0	2.0	2.0
August 2019	1.8	2.1	2.0	2.0	2.0	2.0
Core PCE Price Index[c]						
January 2020	1.7	2.2	2.1	2.0	1.9	2.0
August 2019	1.9	2.2	2.1	2.0	2.0	2.0
Consumer Price Index[d]						
January 2020	2.0[e]	2.5	2.6	2.4	2.3	2.3
August 2019	2.2	2.4	2.4	2.4	2.3	2.4
Core Consumer Price Index[c]						
January 2020	2.3[e]	2.8	2.6	2.5	2.3	2.4
August 2019	2.3	2.6	2.6	2.5	2.3	2.4
GDP Price Index						
January 2020	1.8	1.9	2.1	2.0	2.0	2.0
August 2019	1.7	1.9	2.0	1.9	2.0	2.0
Employment Cost Index[f]						
January 2020	3.1	3.6	3.6	3.5	3.2	3.3
August 2019	3.3	3.6	3.5	3.4	3.2	3.3
Real Potential GDP[b]						
January 2020	2.1	2.0	2.0	2.0	1.7	1.9
August 2019	2.1	2.1	2.1	2.1	1.8	1.9

Continued

Reserve Banks. CBO's projections of real GDP growth, the unemployment rate, and the federal funds rate are within the full range of the forecasts by Federal Reserve officials for 2020, 2021, 2022, and the longer term. The agency's projections of PCE price inflation are also within the full range for 2020, 2021, and 2022, but the agency's projection for the longer term is lower than the Federal Reserve's 2 percent long-run objective because the agency's forecast reflects the probability of a business cycle occurring during the 11-year projection period. CBO's projection of core PCE price inflation is above the full range of forecasts for 2020 but within the full range for 2021 and 2022. (The Federal Reserve's survey does not collect projections for core PCE inflation for the longer term.)

At least part of the variation between CBO's projections and those of other forecasters is attributable to differences in the economic data available when the forecasts were completed and to differences in the economic and statistical models used to prepare them. In addition, other forecasters may assume that certain changes in federal policies or trade policies will occur, whereas CBO's projections are based on current law and incorporate the assumption that the trade policies in effect when CBO completed its economic projections will remain in place through 2030.

A key difference between CBO's economic projections and those made by Federal Reserve officials is that CBO reports the average of a distribution of possible outcomes under current law. Each individual Federal Reserve official, by contrast, reports the mode—the most likely outcome—of a distribution of possible outcomes under his or her individual assessment of appropriate monetary policy.

Table 2-6. Continued

CBO's Current and Previous Economic Projections for Calendar Years 2019 to 2029

	2019[a]	2020	2021	Annual Average 2019–2023	Annual Average 2024–2029	Annual Average Total, 2019–2029
			Annual Average			
Unemployment Rate (Percent)						
January 2020	3.7[e]	3.5	3.5	3.7	4.5	4.2
August 2019	3.7	3.7	3.9	4.0	4.7	4.4
Interest Rates (Percent)						
Three-month Treasury bills						
January 2020	2.1[e]	1.6	1.7	1.8	2.3	2.1
August 2019	2.2	2.1	2.3	2.3	2.5	2.4
Ten-year Treasury notes						
January 2020	2.1[e]	1.9	2.2	2.3	2.9	2.6
August 2019	2.3	2.2	2.5	2.6	3.1	2.9
Tax Bases (Percentage of GDP)						
Wages and salaries						
January 2020	43.5	43.7	43.8	43.8	43.8	43.8
August 2019	42.7	42.9	43.1	43.1	43.6	43.4
Domestic corporate profits[g]						
January 2020	7.2	7.6	7.7	7.6	7.8	7.7
August 2019	8.4	8.5	8.4	8.3	8.1	8.2

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

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

a. Values for 2019 do not reflect the values for GDP and related series released by the Bureau of Economic Analysis since early January 2020.

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 2019.

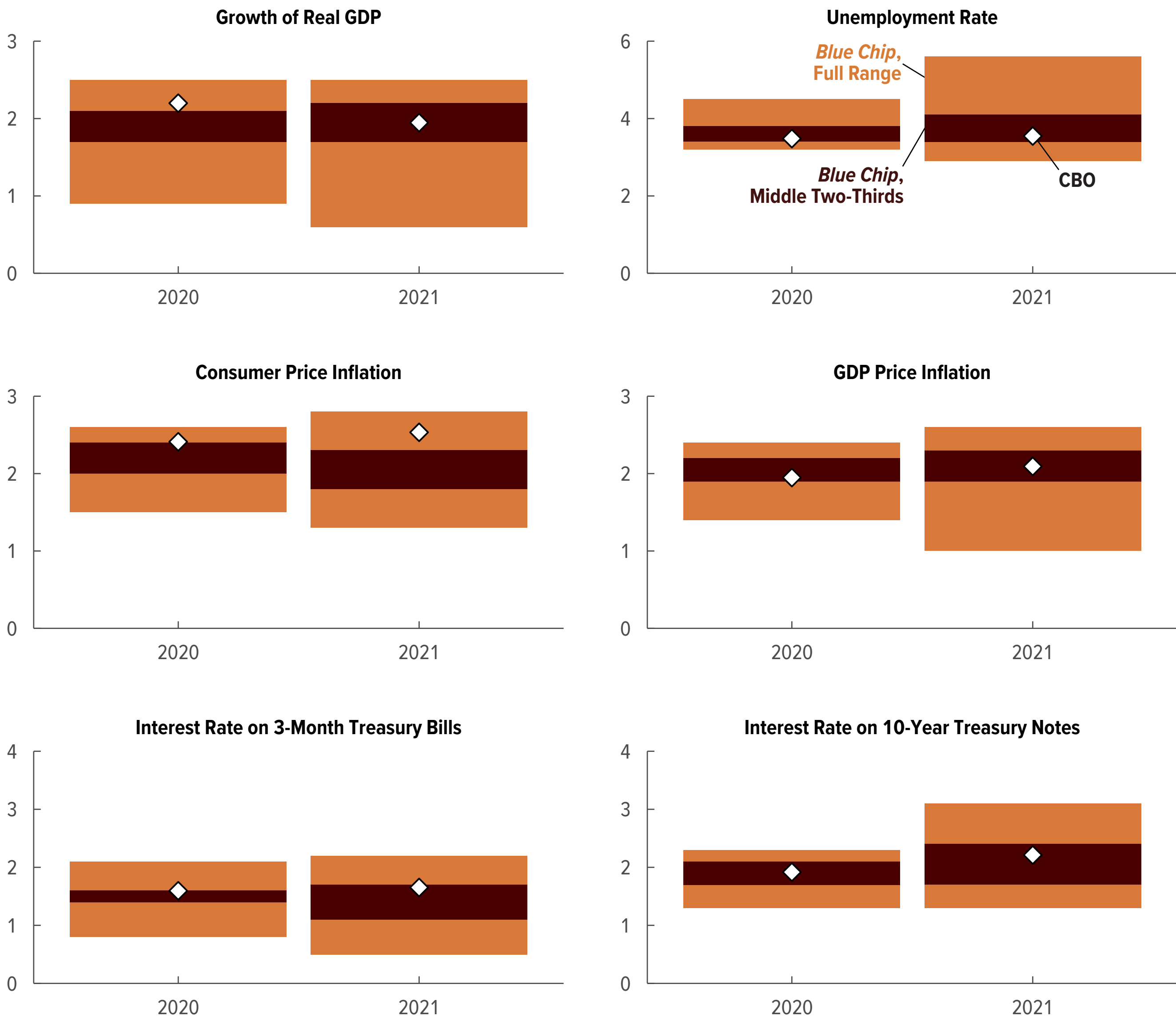
f. The employment cost index for wages and salaries of workers in private industry.

g. 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 2-9.

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

CBO's projections of the economy for the next two years are generally stronger than those in the *Blue Chip* survey.



Sources: Congressional Budget Office; Wolters Kluwer, *Blue Chip Economic Indicators,* vol. 45, no. 1 (January 10, 2020).

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.

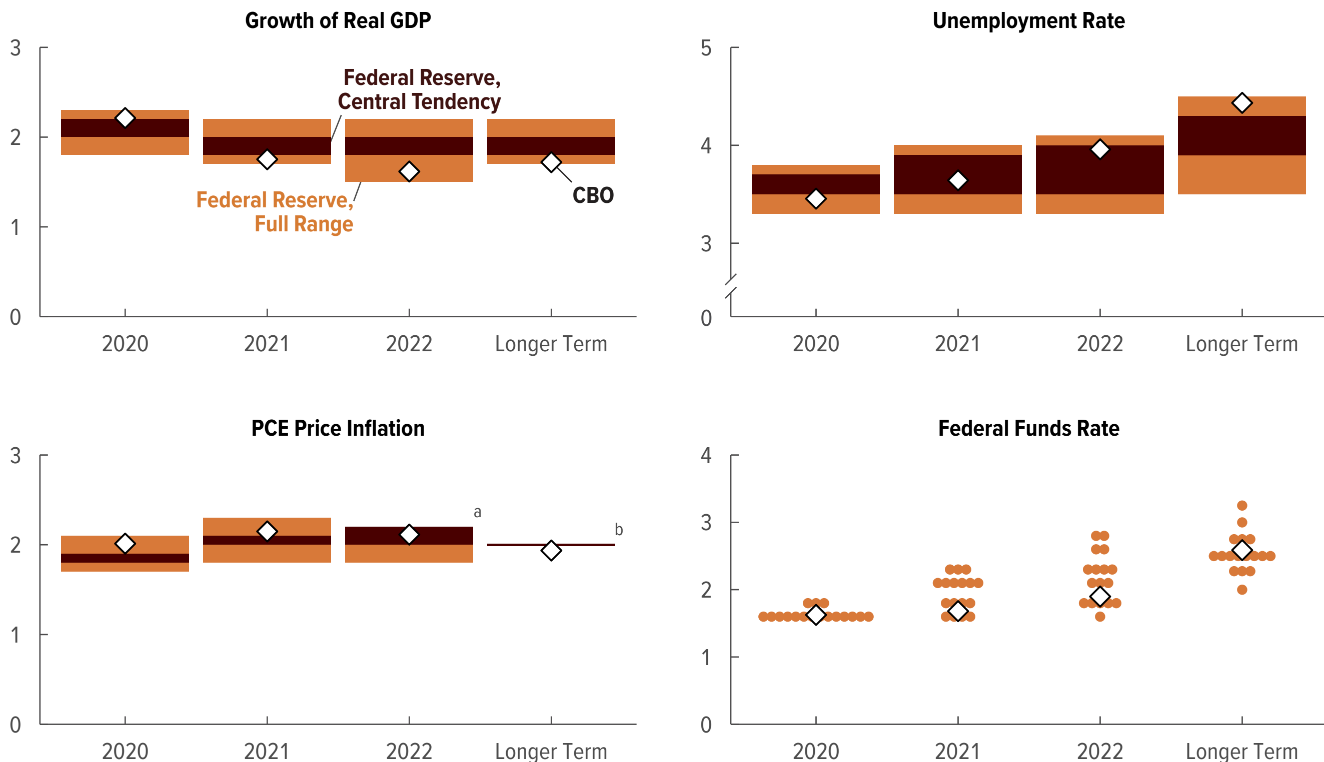
GDP = gross domestic product.

Figure 2-10.

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

Compared with the forecasts made by Federal Reserve officials, CBO's projections suggest a slightly stronger outlook for 2020 but a slightly weaker outlook for 2021, 2022, and the longer term.

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 Assumptions of Projected Appropriate Monetary Policy, December 2019" (December 11, 2019), https://go.usa.gov/xptgY (PDF, 249 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, roughly speaking, the middle two-thirds of the full range, formed by removing the three highest and three lowest projections.

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

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 2019. 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 2030. 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 future shocks to the economy.

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

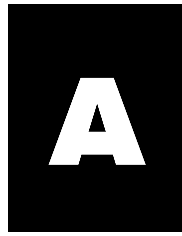
The unemployment rate is the number of jobless people who are available for and seeking work, expressed as a percentage of the labor force.

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 upper 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.



Appendix A: Changes in CBO's Baseline Projections

Overview

The Congressional Budget Office estimates that if no new legislation affecting spending or revenues is enacted, the budget deficit for fiscal year 2020 will total $1,015 billion. That amount is $8 billion (or 0.7 percent) larger than the $1,008 billion deficit the agency estimated in August 2019, when it last updated its baseline budget projections.[1] CBO also now projects that if current laws generally remained in place, the cumulative deficit for the 2020–2029 period would be about $12.4 trillion—$0.2 trillion (or 1.3 percent) more than the $12.2 trillion in the agency's August 2019 baseline projections. CBO's current projections of total outlays over that period changed very little since August, and total revenues are about 0.3 percent smaller.

When CBO updates its baseline budget projections, it groups the revisions it makes into three categories:

- Legislative changes, which result from laws enacted since the agency published its previous baseline projections and which generally reflect the budgetary effects reported in CBO's cost estimates when the legislation was enacted;[2]
- Economic changes, which arise from updates the agency has made to its economic forecast (including those made to incorporate the macroeconomic effects of recently enacted legislation); and
- Technical changes, which are revisions to projections that are neither legislative nor economic.

1. See Congressional Budget Office, *An Update to the Budget and Economic Outlook: 2019 to 2029* (August 2019), www.cbo.gov/publication/55551.

2. The current baseline projections include the effects of legislation passed by the Congress through January 7, 2020. The most recently enacted law with significant budgetary effects reflected in this analysis is the Further Consolidated Appropriations Act, 2020 (Public Law 116-94).

The $8 billion increase in the projected deficit for 2020 is the net result of a $49 billion increase attributable to legislative changes, a $68 billion decrease stemming from economic changes, and a $27 billion increase attributable to technical changes.

The increase in the agency's projection of the cumulative deficit for the 2020–2029 period stems from the following changes (see Figure A-1):

- Legislative changes *increased* projected deficits by $505 billion, primarily because of reductions in revenues resulting from provisions of the Further Consolidated Appropriations Act, 2020 (Public Law 116-94), that totaled $422 billion.
- Economic changes *reduced* deficits by $705 billion. Most significantly, the agency revised its projections of interest costs downward by $441 billion because it lowered its forecasts of interest rates.
- On net, technical updates to the agency's projections of revenues and outlays *increased* projected deficits over the period by a total of $360 billion. The largest technical revision was an increase of $315 billion in CBO's projections of Medicare spending.

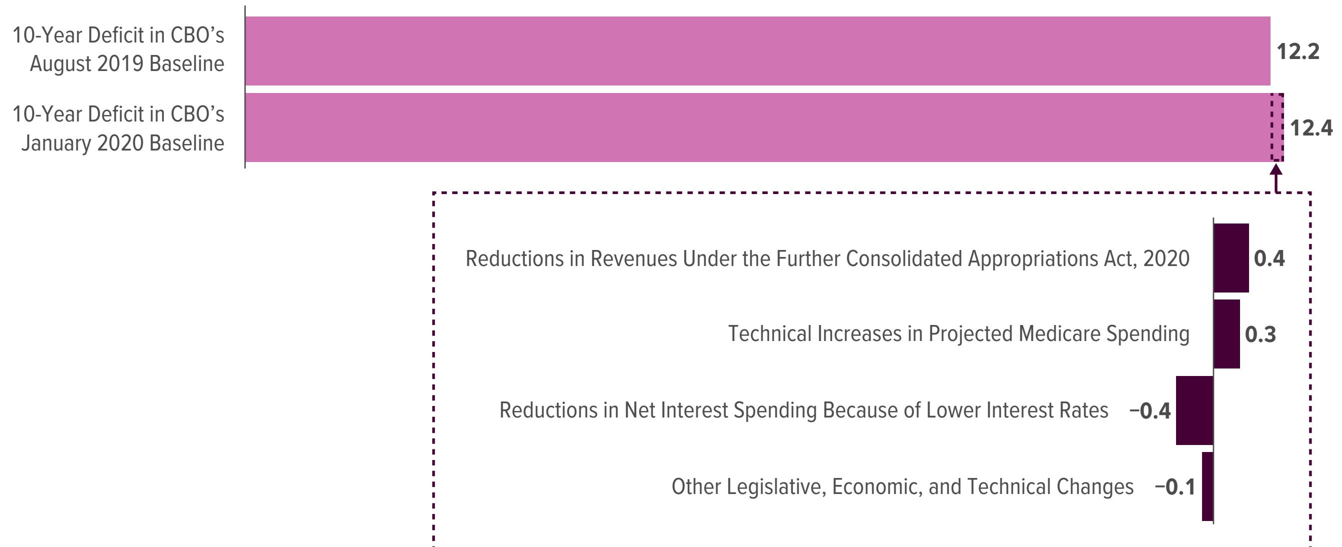
As a result of those changes, over the 2020–2029 period, *primary* deficits—that is, deficits excluding net outlays for interest—are now projected to be a total of $523 billion greater than they were in CBO's August 2019 baseline projections. That increase in projected primary deficits is partially offset by a reduction of $363 billion in the agency's projections of interest costs over that same period.

The agency's projections of federal debt held by the public have increased but by less than they would have if the agency had not lowered its forecasts of interest rates. In August, the agency projected that debt held by the public would be $29.3 trillion (equal to 95 percent of gross

Figure A-1.

Changes in CBO's Baseline Projection of the 10-Year Deficit Since August 2019

Trillions of Dollars



Source: Congressional Budget Office.

domestic product, or GDP) at the end of 2029; CBO now projects that such debt would reach $29.7 trillion (or 96 percent of GDP) that year if current laws generally remained unchanged. (For a discussion of changes made to CBO's long-term projections since they were last updated in June 2019, see Box 1-1 in Chapter 1.)

Legislative Changes

The two pieces of legislation enacted since August that had the most significant effects on CBO's projections were the Consolidated Appropriations Act, 2020 (P.L. 116-93), and the Further Consolidated Appropriations Act, 2020, which together provided annual appropriations for the entire federal government for 2020, amended several tax provisions, and made changes to certain mandatory programs. Most of the $505 billion increase in projected deficits for the 2020–2029 period was driven by a reduction in revenues stemming from the repeal of several taxes related to health care. On net, the changes affecting outlays were relatively small.

Changes in Revenues

CBO reduced its estimate of revenues for 2020 by $34 billion (or 1.0 percent) and its projections for the 2020–2029 period by $422 billion (or 0.9 percent) to account for legislation enacted since August 2019 (see Table A-1). Nearly all of those changes stem from the Further Consolidated Appropriations Act, 2020, which included the temporary extension of several dozen expiring or recently expired tax provisions and the repeal of three excise taxes related to health care. The staff of the Joint Committee on Taxation (JCT) estimated that the temporary extensions will reduce receipts in 2020 by $22 billion. Among the temporarily extended provisions are incentives for investment in biodiesel and renewable fuels and an increase in the amount of medical expenses that can be deducted from income. In addition, the legislation provided tax relief to areas and individuals affected by certain natural disasters in 2018 and 2019; such relief is projected to reduce receipts by $10 billion in 2020.

Most of the reduction in projected revenues over the remainder of the decade results from the repeal of three excise taxes originally enacted in 2010 as part of the Affordable Care Act. From 2020 through 2029, the effects of the repeal of those taxes are as follows:

- A $201 billion reduction in revenues from the repeal of the tax—that had not yet taken effect—on employment-based health insurance plans with premiums exceeding certain thresholds,

- A $151 billion reduction in revenues from the repeal of the annual fee imposed on many health insurers, and
- A $26 billion reduction in revenues from the repeal of the tax on manufacturers and importers of certain medical devices.

All told, repealing those taxes will reduce federal revenues by about $377 billion over the 2020–2029 period, CBO and JCT estimate.

Those estimated reductions in revenues include not only the effects on excise taxes but also the related effects on income and payroll taxes. For example, CBO and JCT projected that if the excise tax on high-premium insurance plans had taken effect in 2022 as previously scheduled, it would have increased revenues in two significant ways. First, some health insurance plans would have paid the excise tax. Second, some employers and workers would have shifted to insurance plans with lower premiums to avoid paying the tax or to reduce their tax liability. Those shifts would have generally increased income tax revenues because affected workers would have received less of their income in nontaxable health benefits and more in taxable wages. Therefore, repealing that tax is projected to reduce collections of excise taxes and collections of income and payroll taxes (because taxable wages are projected to be lower than they would have been if the tax had taken effect). Those revenue reductions rise steadily throughout the period. The effect on wages is reflected in CBO's current economic forecast, but all of the budgetary effects of the repeal of the excise tax are classified as legislative changes.

Changes in Outlays

As a result of legislation enacted since August 2019, CBO has increased its estimate of outlays in 2020 by $14 billion (or 0.3 percent) and its projections of outlays for the 10-year period by a total of $83 billion (or 0.1 percent). The main driver of that change is an increase in projected debt-service costs stemming from the revenue reductions discussed in the previous section.[3]

Mandatory Outlays. Because of recently enacted legislation, CBO made small net changes to its projections of mandatory outlays, increasing its estimate for 2020 by $5 billion (or 0.2 percent) and its projections for the 2020–2029 period by $26 billion (or 0.1 percent).

Patient-Centered Outcomes Research Trust Fund. The Further Consolidated Appropriations Act, 2020, provided additional funding for the Patient-Centered Outcomes Research Trust Fund of the Department of Health and Human Services, and as a result, CBO increased its projections of outlays over the 2020–2029 period by $8 billion.

Benefits for Mine Workers. Enacted as part of the Further Consolidated Appropriations Act, 2020, the Bipartisan American Miners Act of 2019 will increase federal spending on payments to the United Mine Workers of America (UMWA) Health and Retirement Funds over the 2020–2029 period by $6 billion, CBO estimates. Of that amount, $5 billion will go toward UMWA pension benefits, and about $1 billion will pay for retirees' health benefits.

Military Retirement. The Consolidated Appropriations Act, 2020, increased the annuities that spouses of deceased military retirees receive under the Survivor Benefit Plan. That provision is projected to increase outlays over the 10-year period by $5 billion.

Premium Tax Credits and the Basic Health Program. Primarily as a result of the repeal of the excise tax on employment-based health insurance plans with high premiums, CBO has lowered its projections of outlays for premium tax credits and the Basic Health Program over the 2020–2029 period by $4 billion.[4]

Medicaid. CBO raised its projections of federal Medicaid spending over the 2020–2029 period by $4 billion. That adjustment was the net result of several provisions, including one that increased the amount of federal assistance provided to the U.S. territories and one that increased the amount of rebates collected from

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3. Changes in debt-service costs in CBO's baseline are the result of increases or decreases in annual deficits stemming from legislative, economic, or technical changes. Other changes to projected net outlays for interest are the result of economic factors, such as changes in projected interest rates, or technical changes, such as changes in the mix of securities that the Treasury is projected to use in its borrowing. Those changes in net interest outlays are discussed separately in the sections on economic and technical changes.

4. Premium tax credits are federal subsidies for health insurance purchased through the marketplaces established by the Affordable Care Act. The Basic Health Program allows states to establish a coverage program primarily for people with income between 138 percent and 200 percent of the federal poverty guidelines. To subsidize that program, the federal government provides states with funding equal to 95 percent of the subsidies for which those people would have been eligible if they had purchased coverage through a marketplace.

Table A-1.

Changes in CBO's Baseline Projections of the Deficit Since August 2019

Billions of Dollars

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total 2020–2024	Total 2020–2029
Deficit in CBO's August 2019 Baseline	-1,008	-1,034	-1,159	-1,181	-1,151	-1,284	-1,274	-1,260	-1,479	-1,378	-5,533	-12,208
Legislative Changes												
Changes in Revenues	-34	-27	-28	-34	-36	-43	-46	-52	-57	-66	-159	-422
Changes in Outlays												
Mandatory outlays	5	5	1	2	2	3	3	2	2	2	14	26
Discretionary outlays												
Defense	6	5	4	4	4	4	4	4	4	4	23	42
Nondefense	3	-3	1	-4	-5	-4	-5	-5	-6	-8	-8	-37
Subtotal, discretionary	9	3	5	*	-2	-1	-1	-1	-2	-4	15	5
Debt service	*	1	2	3	4	5	7	8	10	12	10	53
Total Change in Outlays	14	9	8	4	4	8	8	9	9	10	39	83
Increase in the Deficit From Legislative Changes	**-49**	**-35**	**-36**	**-38**	**-40**	**-50**	**-54**	**-61**	**-67**	**-75**	**-198**	**-505**
Economic Changes												
Changes in Revenues												
Individual income taxes	36	33	34	32	29	24	17	12	6	*	164	223
Corporate income taxes	-16	-16	-14	-13	-12	-11	-11	-10	-9	-8	-71	-121
Payroll taxes	17	19	18	16	12	10	7	4	2	-1	83	106
Other	8	12	9	5	1	-1	-1	-2	-2	*	35	29
Total Change in Revenues	45	48	48	40	31	22	12	5	-3	-10	211	237
Changes in Outlays												
Mandatory outlays												
Social Security	-1	*	2	4	7	8	10	11	10	9	13	60
Unemployment compensation	-1	-3	-3	-4	-3	-2	-1	-2	-2	-2	-14	-23
Student loans	-1	-1	-1	-2	-2	-2	-1	-1	-1	-1	-7	-14
Earned income and child tax credits	-2	-2	-2	-2	-1	-1	-1	-1	-1	-1	-8	-13
Medicare	-1	-1	-1	-1	-1	*	-1	-1	-2	-3	-5	-12
Other	-1	-1	-1	*	1	2	3	3	2	2	-2	10
Subtotal, mandatory	-8	-8	-6	-3	1	6	8	8	7	4	-23	9
Discretionary outlays	*	3	4	5	6	7	7	7	7	7	18	53
Net interest												
Effect of interest rates and inflation	-15	-29	-38	-41	-44	-48	-52	-55	-58	-60	-168	-441
Debt service	*	-2	-4	-6	-8	-10	-12	-14	-16	-17	-21	-90
Subtotal, net interest	-15	-31	-42	-48	-53	-58	-64	-69	-73	-78	-189	-530
Total Change in Outlays	-23	-36	-44	-45	-45	-46	-49	-53	-59	-67	-194	-468
Decrease in the Deficit From Economic Changes	**68**	**84**	**92**	**85**	**76**	**68**	**62**	**58**	**56**	**57**	**405**	**705**

Continued

Table A-1. Continued

Changes in CBO's Baseline Projections of the Deficit Since August 2019

Billions of Dollars

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total 2020–2024	Total 2020–2029
						Technical Changes						
Changes in Revenues												
Individual income taxes	-28	-20	-18	-11	-20	-25	-31	-29	-28	-26	-98	-237
Customs duties	5	7	11	12	12	11	11	10	10	10	46	98
Payroll taxes	4	5	6	8	9	11	11	12	13	13	32	91
Corporate income taxes	18	9	11	13	4	-3	-13	-5	-8	-9	55	16
Other	3	2	1	15	-8	5	7	8	26	14	12	72
Total Change in Revenues	1	3	11	36	-4	-2	-16	-4	13	1	47	40
Changes in Outlays												
Mandatory outlays												
Medicare	22	21	24	25	25	32	35	30	46	56	117	315
Veterans' benefits and services	2	6	7	7	7	8	8	8	8	6	29	67
Premium tax credits and related spending	-3	-4	-4	-5	-5	-6	-6	-6	-7	-7	-22	-52
Medicaid	6	7	6	5	5	4	3	2	2	1	28	39
PBGC	-3	-3	-3	-4	-4	-4	*	-2	-2	-1	-17	-27
Earned income and child tax credits	2	2	2	2	2	2	2	2	2	2	10	20
Social Security	-1	-2	-2	-2	-2	-2	-2	-2	-1	*	-10	-16
SNAP	-1	-1	-2	-2	-2	-1	-1	-2	-2	-2	-6	-15
Other	1	-7	-12	-15	-6	*	-3	-2	-4	-7	-39	-54
Subtotal, mandatory	24	19	15	12	20	32	35	28	42	48	90	275
Discretionary outlays	-3	-8	2	1	3	3	3	3	3	3	-5	11
Net interest												
Debt service	*	*	*	1	1	3	5	6	8	10	2	33
Other	7	6	7	8	8	8	9	9	9	10	36	81
Subtotal, net interest	7	6	7	8	10	11	13	15	17	20	38	114
Total Change in Outlays	28	18	24	21	33	46	51	46	62	71	123	400
Increase (-) or Decrease in the Deficit From Technical Changes	**-27**	**-15**	**-13**	**15**	**-36**	**-48**	**-67**	**-50**	**-48**	**-70**	**-76**	**-360**
						All Changes						
Increase (-) or Decrease in the Deficit	**-8**	**33**	**43**	**62**	**-1**	**-31**	**-59**	**-53**	**-59**	**-88**	**130**	**-160**
Deficit in CBO's January 2020 Baseline	-1,015	-1,000	-1,116	-1,119	-1,152	-1,315	-1,333	-1,313	-1,538	-1,466	-5,402	-12,368
Memorandum:												
Changes in Revenues	12	24	31	43	-10	-22	-49	-52	-47	-74	99	-145
Changes in Outlays	20	-10	-12	-20	-9	8	10	1	12	14	-31	15
Increase (-) or Decrease in the Primary Deficit[a]	-16	9	10	26	-40	-72	-103	-99	-106	-134	-9	-523
Decrease in Net Interest	8	24	33	36	39	41	44	46	47	46	140	363

Source: Congressional Budget Office.

PBGC = Pension Benefit Guaranty Corporation; SNAP = Supplemental Nutrition Assistance Program; * = between -$500 million and $500 million.

a. Primary deficits exclude net outlays for interest.

manufacturers of brand-name drugs that also sell authorized generic versions of those drugs.

Discretionary Outlays. In response to recently enacted legislation, CBO increased its estimate of discretionary outlays in 2020 by $9 billion and its projections of such outlays for the 2020–2029 period by $5 billion, on net. The agency increased its projections of defense spending over the 10-year period by $42 billion (or 0.5 percent), but it lowered its projections of nondefense spending over that period by $37 billion (or 0.5 percent).

Because most discretionary funding is subject to the caps established by the Budget Control Act of 2011 (P.L. 112-25, as amended), legislative changes to CBO's projections of that funding result chiefly from appropriations for programs and activities that are not constrained by the caps. Discretionary funding for certain activities is not constrained by the caps; the caps are adjusted to accommodate the funding provided for most of those activities. In particular, adjustments are made for all appropriations designated for overseas contingency operations (OCO) and emergency requirements. Subject to certain limits, additional adjustments are made for funding designated for disaster relief activities, some efforts to reduce overpayments in benefit programs, wildfire suppression, and (for this year only) activities related to the 2020 census.[5] The agency's August projections of funding for those activities were made on the basis of 2019 appropriations, so when 2020 funding was provided, CBO adjusted its projections to reflect differences between the actual and projected appropriation amounts.[6]

Defense funding for emergencies in 2020 is $5 billion greater—and funding for OCO $1 billion more—than CBO projected in August. As specified by law, that funding is assumed to grow with inflation over the 10-year projection period. Additionally, defense funding subject to the cap for 2020 was projected to be $2 billion below the cap in August, but the actual appropriation for the year equaled the cap amount. Those changes result in a $42 billion increase in projected defense outlays between 2020 and 2029.

For the nondefense category, funding in 2020 for activities constrained by the caps is $16 billion greater than previously projected, causing an increase in outlays in the short term.[7] That increase in funding in 2020 does not affect projected funding for 2021 and later years. Funding for activities that are not constrained by the caps in 2020 is now estimated to be less, on net, than it was projected to be in August: CBO reduced its estimate of emergency funding by $22 billion and increased funding for disaster relief, the census, wildfire suppression, and nondefense OCO by a total of $10 billion. Extrapolating funding for the 10-year period from that net reduction in funding for the current year, CBO reduced its projections of nondefense outlays for 2020 to 2029 by $37 billion.

Changes in Debt Service. Before debt-service costs are taken into account, the changes that CBO made to its projections to reflect legislation enacted since August 2019 increased the cumulative deficit for the 2020–2029 period by $452 billion. The additional federal borrowing stemming from the larger annual deficits added $53 billion to CBO's projection of total outlays for interest on federal debt over that period.

Economic Changes

The economic forecast that underlies CBO's baseline budget projections includes the agency's projections of GDP, income, the unemployment rate, interest rates, inflation, and other factors that affect federal spending and revenues. The current projections are based on the latest economic forecast, which was completed in January 2020 and reflects the agency's estimates of the effects on the economy of the Consolidated Appropriations Act, 2020, and the Further Consolidated Appropriations Act, 2020. The agency's August 2019 budget projections were based on the economic forecast completed in July 2019.

The changes that CBO has made to its economic forecast have reduced its estimate of the deficit for 2020 by $68 billion and its projections of deficits over the 2020–2029 period by a total of $705 billion. Most of

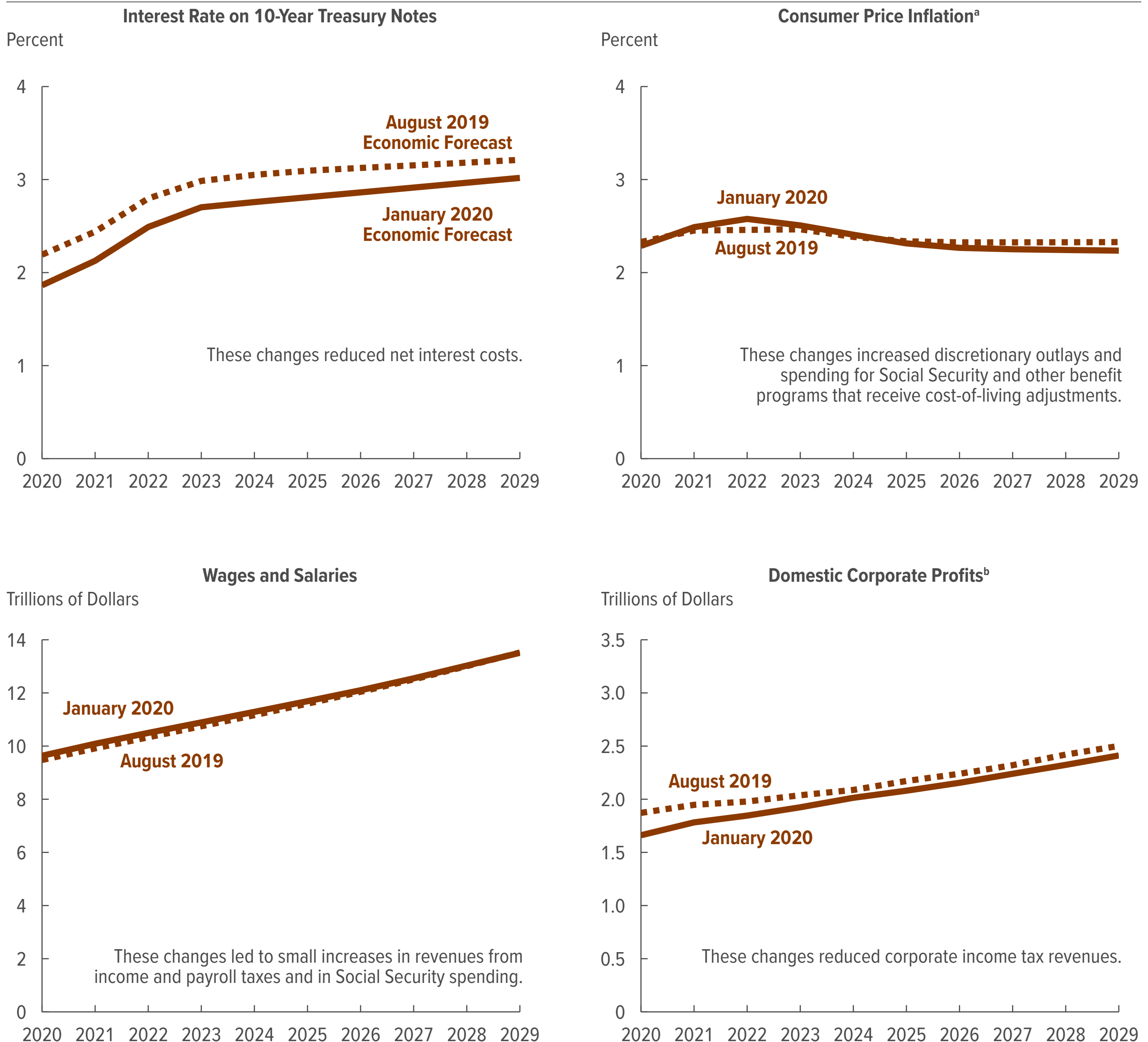
5. Obligation limitations for transportation programs also are not constrained by the caps on discretionary funding and are assumed to grow with inflation. For more information on the discretionary caps, see Congressional Budget Office, *Final Sequestration Report for Fiscal Year 2020* (January 2020), www.cbo.gov/publication/55995.

6. The caps on funding for wildfire suppression and activities related to the 2020 census went into effect in 2020.

7. Included in the enacted appropriation legislation were changes in mandatory programs (often referred to as CHIMPs) that were credited against discretionary budget authority, allowing lawmakers to increase discretionary funding in 2020 by $16 billion.

Figure A-2.

Changes in CBO's Economic Forecast Since August 2019



Source: Congressional Budget Office.

a. The consumer price index for urban wage earners and clerical workers.

b. 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.

that reduction results from a decrease in projected net interest outlays and an increase in projected revenues. Those budgetary effects are driven by changes in CBO's projections of interest rates, wages and salaries, inflation, and corporate profits (see Figure A-2). For further explanation of the revisions to the agency's economic forecast, see "Comparison With CBO's August 2019 Projections" in Chapter 2.

Changes in Outlays

The revisions that CBO made to its economic forecast lowered its estimate of outlays for the current year by $23 billion (or 0.5 percent) and decreased its projections of outlays for the 2020–2029 period by $468 billion (or 0.8 percent). Most of the reduction in outlays projected for that period stems from the downward revision in the agency's forecast of interest rates, which reduced its projections of net interest costs by $441 billion before changes in debt-service costs are taken into account.

Mandatory Outlays. Because of changes the agency made to its economic forecast, CBO decreased its estimate of mandatory spending for 2020 by $8 billion (or 0.3 percent) but increased its projections for the 2020–2029 period by $9 billion (or less than 0.1 percent). The largest economic changes were in CBO's projections of outlays for Social Security.

Social Security. Projected outlays for Social Security over the 2020–2029 period increased by a total of $60 billion (or 0.4 percent) for two economic reasons. First, CBO increased its projections of average wages, which boosted projected Social Security benefits for new recipients over the 2020–2029 period by $39 billion. (That increase in the agency's projections of average wages also increased projected revenues from income taxes and payroll taxes; those increases are discussed below in the section on changes in revenues.) Second, CBO increased its estimates of the cost-of-living adjustments (COLAs) that beneficiaries will receive over the 10-year period, resulting in a $21 billion increase in projected spending. Social Security's COLAs are based on changes in the consumer price index for urban wage earners and clerical workers (CPI-W). To account for changes in its forecast of the CPI-W, CBO increased its projection of the annual COLA that beneficiaries will receive in January 2021 by 0.2 percentage points and each January from 2022 to 2024 by 0.1 percentage point. Those increases were partially offset by reductions of 0.1 percentage point in the COLA for 2028 and 2029.[8]

Unemployment Compensation. CBO lowered its projection of spending on unemployment compensation for the 2020–2029 period by $23 billion (or 4.7 percent), primarily because it reduced its forecast of the unemployment rate for every year of that period.

Student Loans. CBO reduced its projection of the costs of student loans for the 2020–2029 period by a total of $14 billion because it now forecasts lower interest rates on federal borrowing than it did in August. As prescribed by the Federal Credit Reform Act of 1990 (FCRA), CBO estimates the net cost to the federal government of student loans by first discounting the value of expected future payments of principal and interest on those loans to express the value of those payments in today's dollars and then subtracting that present-value amount from the amount of the disbursed loans.[9] Those present values are calculated using interest rates on federal borrowing as the discount rates.[10] When those interest rates are reduced, the present value of future payments to the federal government increases, thus reducing the projected net cost of the loans. That reduction occurs even as the decrease in projected interest rates reduces the interest rates that students pay on their loans.

Earned Income and Child Tax Credits. CBO lowered its projections of outlays for the refundable portions of the earned income and child tax credits for the 2020–2029 period by $13 billion (or 1.5 percent), on net, because the agency increased its forecasts of wages and salaries over most of the projection period. That reduction was partially offset by two other developments. First, upward revisions to the forecast of employment increased the projected number of hours worked, and refunds tend to rise along with hours worked. Second, inflation is now projected to be higher in some years than it was projected to be in August, and the refundable portions of the tax credits rise with inflation.

8. The 2020 COLA for Social Security beneficiaries is 1.6 percent. In CBO's projections, the average annual COLA over the 2020–2029 period is 2.3 percent.

9. See Justin Humphrey, analyst, Congressional Budget Office, "How the Government Budgets for Student Loans" (presentation to the Postsecondary National Policy Institute, January 25, 2018), www.cbo.gov/publication/53511.

10. An alternative method would be to use market-based discount rates; such an approach is referred to as a fair-value method. The discount rate is higher under the fair-value method, so the value of future payments is lower—and the estimated costs of student loans are higher—than under the FCRA method. In CBO's view, fair-value estimates provide a more comprehensive measure of the costs of student loans than do FCRA estimates. See Congressional Budget Office, *Fair-Value Estimates of the Cost of Federal Credit Programs in 2020* (May 2019), www.cbo.gov/publication/55278.

Medicare. CBO decreased its projections of Medicare spending for the 2020–2029 period by $12 billion (or 0.1 percent) because of revisions it made to its economic forecast. Under current law, payment rates for much of Medicare's fee-for-service sector (such as hospital care and services provided by home health agencies and skilled nursing facilities) are updated automatically. Those updates are based on changes in the prices of the labor, goods, and services that health care providers purchase and include an adjustment to account for economywide gains in productivity (the ability to produce the same output using fewer inputs, such as hours of labor) that occur over a 10-year period. As a result of a small downward revision to certain input prices and a small upward revision to productivity, CBO now expects payment rates to increase by slightly smaller amounts between 2020 and 2029 than it had previously projected—a change that decreases projected Medicare outlays.

Other Mandatory Programs. The agency updated its projections of outlays for a number of other mandatory programs to reflect changes it made to its economic forecast; those changes resulted in both upward and downward adjustments to such outlays. On net, those changes increased projected outlays for the 2020–2029 period by a total $10 billion.

Discretionary Outlays. CBO's baseline projections generally reflect the assumption that funding for discretionary programs keeps pace with inflation (unless such funding is constrained by statutory limits). Changes to the forecasts of the measures of inflation that CBO is required to use to develop its baseline projections of discretionary funding drove the economic changes in discretionary outlays. For discretionary funding related to federal personnel, the agency uses the employment cost index for wages and salaries to prepare its projections; for other types of discretionary funding, the agency uses the GDP price index. As a result of increases in the agency's forecasts of those measures, discretionary funding over the 2020–2029 period is now projected to be slightly higher than it was projected to be in August, and outlays for that period are now projected to be $53 billion (or 0.3 percent) greater.

Net Interest. Economic changes have reduced CBO's baseline projections of net interest costs for the 2020–2029 period by $530 billion (or 9.1 percent). The main reason for that reduction is that CBO has lowered its forecasts of both short- and long-term interest rates on Treasury securities since August. CBO decreased its forecasts of interest rates for 2020 to 2029 by an average of 0.3 percentage points (or about 10 percent) each year. As a result of those reductions, CBO now projects that the average interest rate on debt held by the public for the period will be lower by roughly the same amount. Primarily because of the lower projected interest rates, the agency decreased its projections of net interest outlays (and thus of deficits) for the 2020–2029 period by $441 billion (before the resulting change in the amount of federal debt is taken into account).

Those revisions continue the agency's long-term trend of revising its forecast of interest rates downward. Since the early 2000s, CBO's and other forecasters' projections of both short- and long-term interest rates have tended to be significantly higher than the actual rates.[11]

Because of those changes and others stemming from revisions to CBO's economic forecast, deficits in CBO's projections for the 2020–2029 period were reduced by $616 billion before accounting for the resulting changes in the amount of federal debt. The debt-service savings associated with those smaller projected deficits are estimated to total $90 billion.

Changes in Revenues

As a result of revisions the agency made to its economic forecast, CBO increased its estimate of revenues for 2020 by $45 billion (or 1.3 percent) and its projections for 2020 through 2029 by a total of $237 billion (or 0.5 percent). The increases in projected revenues stem primarily from higher estimates of wages and salaries and of proprietors' income, which boosted projections of individual income and payroll taxes. The increases in individual income and payroll taxes were partially offset by decreases in projections of domestic corporate profits, which lowered projections of corporate income taxes.

Those changes attributable to economic factors stem in part from revisions made in July by the Bureau of Economic Analysis (BEA) to the national income and product accounts (NIPAs) for earlier years. Most significantly, BEA revised upward its estimates of wages and proprietors' income for 2018 and 2019 and revised

11. See Congressional Budget Office, *CBO's Economic Forecasting Record: 2019 Update* (October 2019), www.cbo.gov/publication/55505.

downward its estimates of corporate profits for those same years. Because the actual receipts in those years are already known, the changes to estimates of national income also led CBO to revise its estimates of average tax rates on those sources of income; those revisions, which are classified as technical changes and described in the corresponding section below, partially offset the economic changes.

Individual Income Taxes. Economic changes raised CBO's estimate of individual income taxes in 2020 by $36 billion (or 2.0 percent) and its baseline projections of individual income tax revenues for the 2020–2029 period by a total of $223 billion (or 1.0 percent). Those changes result primarily from the agency's raising its projection of wages and salaries for the 2020–2029 period by $968 billion (or 0.8 percent).

Payroll Taxes. To reflect its latest economic projections, CBO raised its estimate of payroll tax revenues for 2020 by $17 billion (or 1.4 percent) and its projections for the 2020–2029 period by $106 billion (or 0.7 percent). Those changes are primarily the result of the increase in projected wages and salaries.

Corporate Income Taxes. CBO lowered its estimate of corporate income tax revenues for 2020 by $16 billion (or 6.5 percent) and its projections for the 2020–2029 period by $121 billion (or 3.4 percent) because of revisions to its economic forecast. The agency now anticipates that domestic corporate profits over the next decade will be $1.1 trillion (or 5.3 percent) lower than they were projected to be in August. Such profits make up most of the corporate income tax base.

Other Revenues. To reflect its latest economic forecast, CBO raised its estimate of revenues from all other sources for 2020 by $8 billion (or 2.8 percent) and its projections for the 2020–2029 period by $29 billion (or 0.9 percent). That revision results mostly from an increase in projections of remittances from the Federal Reserve to the Treasury: The agency added $10 billion (a 16.8 percent increase) to its estimate of such remittances for 2020 and a total of $58 billion (an increase of 9.3 percent) to its projections for 2020 through 2029. That upward revision is the result of two changes to the agency's economic forecast—lower projected interest expenses and an increase in the amount of assets that the central bank is projected to purchase and hold.

Technical Changes

Technical changes—those that are neither legislative nor economic—increased CBO's estimate of the deficit in 2020 by $27 billion and its projections of deficits over the 2020–2029 period by a total of $360 billion. An increase in the agency's projections of Medicare spending accounts for most of that change.

Changes in Outlays

Because of technical updates—largely for mandatory spending programs—CBO increased its estimate of outlays in 2020 by $28 billion (or 0.6 percent) and its projections for 2020 to 2029 by $400 billion (or 0.7 percent).

Mandatory Outlays. Technical changes made by CBO increased its estimate of mandatory outlays in the current year by $24 billion (or 0.9 percent) and its projections of such outlays for the 2020–2029 period by $275 billion (or 0.8 percent).

Medicare. CBO estimates that net Medicare spending in 2020 will exceed the agency's previous projections of such spending by about $22 billion (or 3.2 percent). The projections of net Medicare spending for the 2020–2029 period were revised upward by $315 billion (or 3.3 percent), in part because outlays for fiscal year 2019 were higher than CBO projected and in part because outlays for 2020 are on track to grow faster than previously projected. Most of the increase in projected outlays over the 2020–2029 period results from using the higher 2020 value as the starting point for the 10-year projections of net Medicare spending.

Several factors led CBO to increase its estimate of Medicare spending in 2020. First, actual net outlays for Medicare in 2019 exceeded CBO's projection for the year by about $8 billion (or 1.3 percent); higher spending for Medicare Advantage (MA) accounts for most of that difference.[12] Second, in August 2019, CBO increased its projection of outlays for MA only for 2019 because at the time, the agency thought that the higher-than-expected spending was driven by one-time payments that would not affect spending in future years. On the basis of additional spending data, CBO now anticipates that spending for MA will be higher

12. Medicare Advantage provides combined hospital and medical insurance for beneficiaries. (Traditional Medicare provides those benefits under Parts A and B.)

than previously projected in 2020 and later years. Third, the increase in MA payment rates in 2020 that was announced earlier this year was larger than CBO had projected. Finally, CBO now expects that, on average, MA beneficiaries will be coded as being in poorer health than the agency previously anticipated.

Veterans' Benefits and Services. CBO increased its projections of outlays for mandatory veterans' benefits for the 10-year period by $67 billion (or 4.8 percent); that increase is the net effect of partially offsetting changes in projections of outlays for three types of benefits. First, CBO increased its projections of outlays for veterans' compensation and pensions by $75 billion. That change stems from recent data showing that average payments for disability compensation are rising faster than previously projected and that the number of new veterans qualifying for disability compensation is greater than previously projected. Both the average severity of beneficiaries' disabilities and the number of veterans with disabilities connected to their service have increased at faster rates than CBO had projected. The more severe veterans' injuries and illnesses are, the greater the disability compensation payments.

Second, CBO reduced its projections of spending for educational and vocational benefits for veterans (often referred to as readjustment benefits) for the 2020–2029 period by $15 billion, primarily because the agency reduced its estimates of the number of beneficiaries of the Post-9/11 GI Bill to account for recent trends in that beneficiary population.

Third, projected outlays on home loan guarantees provided by the Department of Veterans Affairs (VA) over the next decade were revised upward by $7 billion because CBO has increased its projections of the future volume of such loans. The volume of loans has consistently been higher than projected since the housing recovery began in 2012, and in response CBO has boosted its loan-volume projections. In addition, because CBO now anticipates that more veterans will have disabilities connected to their service and because veterans with such disabilities are exempt from the fees that VA charges to guarantee loans, CBO projects that a greater proportion of future loans will be exempt from those fees, increasing projected outlays for the program.

Premium Tax Credits and Related Spending. CBO and JCT reduced their projections of outlays for premium tax credits and related spending over the 2020–2029 period by $52 billion (or 8.1 percent), on net.[13] The current projections reflect lower projected premiums for health insurance purchased through the marketplaces established by the Affordable Care Act. The projection of premiums was revised downward because actual premiums for 2020 were about 10 percent lower than anticipated, and CBO expects that premiums will continue to be lower than previously projected by about the same percentage.

Medicaid. CBO's 10-year projection of federal spending for Medicaid is $39 billion (or 0.7 percent) higher than it was in August 2019, primarily because actual spending in 2019 was greater than anticipated and CBO expects that spending will be higher by a similar percentage in future years.

Pension Benefit Guaranty Corporation. CBO decreased its projections of outlays for the Pension Benefit Guaranty Corporation (PBGC) over the next decade by $27 billion, primarily because of an increase in projected receipts from variable-rate premiums. (Variable-rate premiums are charged to single-employer pension plans that are considered underfunded; such premiums increase as the amount of underfunding increases.) Premium payments are classified as offsetting receipts and have the effect of reducing outlays. That revision was made because the actual October 2019 premium payments, which make up the bulk of fiscal year 2020 receipts, were substantially higher than projected, and CBO expects that those receipts will be higher throughout the 2020–2029 period.

Earned Income and Child Tax Credits. Projected outlays for the earned income and child tax credits for the 10-year period were increased by $20 billion (or 2.3 percent), primarily because actual outlays for those tax credits were higher in 2019 than projected and CBO expects outlays in future years to exceed its previous projections by a similar percentage.

Social Security. Projected outlays for Social Security over the 2020–2029 period were revised downward by $16 billion (or 0.1 percent), on net, because of two partially offsetting revisions. CBO decreased its projections of Disability Insurance benefits by $47 billion

13. Related spending consists almost entirely of outlays for risk adjustment and the Basic Health Program.

(or 2.6 percent) to reflect reductions in the projected number of recipients and in the projected average benefit amount; those reductions were made on the basis of an analysis of recent trends. Partially offsetting the decrease in projected Disability Insurance benefits was an upward revision of $30 billion in CBO's projections of Old-Age and Survivors Insurance benefits, which reflects an increase in the projected number of beneficiaries. Most of that increase stems from CBO's revising upward its projection of the growth rate of the elderly population.

Supplemental Nutrition Assistance Program. CBO reduced its projections of outlays for the Supplemental Nutrition Assistance Program (SNAP, which helps people in low-income households purchase food) over the 10-year period by $15 billion, in large part because the Administration finalized one rule and proposed two additional rules that CBO projects would reduce outlays for the program. CBO's baseline projections incorporate the full estimated effects of the final rule, which CBO expects will reduce eligibility for SNAP by limiting states' ability to grant waivers from work requirements for able-bodied adults who do not have dependents. CBO's baseline projections also incorporate a 50 percent probability that the two proposed rules—which would reduce eligibility for the program and average benefits for SNAP recipients—will be finalized in their proposed form. One of those rules would limit states' ability to raise income and asset thresholds through broad-based categorical eligibility, and the other would establish a consistent method for calculating the standard utility allowances used to determine SNAP benefits.[14]

Other Mandatory Programs. Smaller technical changes decreased CBO's projections of outlays for other mandatory programs over the 2020–2029 period by $54 billion.

Discretionary Outlays. Technical updates reduced CBO's estimate of discretionary outlays in 2020 by $3 billion (or 0.2 percent) and increased its projections of such outlays over the 2020–2029 period by $11 billion (or 0.1 percent). Those changes stem from adjustments made to better reflect the recent rates at which funding for various discretionary programs has been spent.

Net Interest. Technical changes increased CBO's projections of net interest outlays for the 2020–2029 period by $114 billion (or 2.0 percent), on net. That increase stems largely from three sources. First, on the basis of recent debt issuance, CBO increased its projection of the average maturity of newly issued debt. Because longer-term debt carries higher interest rates, that change added $66 billion to the agency's projections of interest costs over the 10-year period. Second, technical changes to revenues and other outlays boosted projected deficits by $327 billion, and the resulting increase in debt-service costs added a total of $33 billion to projected deficits over the period. Third, CBO reduced its estimate of interest earnings from credit-financing accounts by $17 billion to better reflect recent trends in actual earnings. Credit-financing accounts, which are not included in the federal budget, track the cash flows of the federal government's various loan programs. To provide loans to borrowers, the accounts often borrow from the Treasury and then pay interest back to the Treasury. Those interest earnings are classified as offsetting receipts, or negative outlays; thus, a decrease in earnings is classified as an increase in outlays.

Changes in Revenues

Technical changes increased CBO's estimate of revenues in 2020 by $1 billion (or less than 0.1 percent) and its projections for the entire 2020–2029 period by $40 billion (or 0.1 percent).

Individual Income Taxes. Technical revisions reduced the agency's estimate of individual income tax receipts in 2020 by $28 billion (or 1.6 percent) and its projections of such receipts for the 2020–2029 period by $237 billion (or 1.0 percent). The most significant reason for that reduction is that the agency revised downward its projections of high-wage earners' share of total wages and salaries on the basis of data for recent years that continue to show a smaller-than-expected share of earnings accruing to high-wage earners. When that share is smaller, individual income tax revenues fall because people with less income are subject to lower income tax rates. To account for that revision, CBO lowered its projections of individual income tax receipts over the next decade by about $180 billion.

In addition, recent revisions made by BEA to past years' NIPAs resulted in technical revisions to projections of

14. After the final version of a rule is promulgated, CBO incorporates the full effects of the final rule in subsequent cost estimates and baseline projections. For a discussion of how CBO accounts for anticipated administrative actions in its baseline projections, see Congressional Budget Office, letter to the Honorable John M. Spratt Jr. (May 2, 2007), www.cbo.gov/publication/18615.

individual income tax receipts for the first few years of the period. BEA revised upward its estimates of wages and proprietors' income for 2018 and 2019, which boosted CBO's projections of those sources of income in future years and resulted in the economic revisions reported above. However, because actual receipts of individual income taxes in those past years were already known, the revisions to income imply that average tax rates in those years were lower than previously estimated, leading CBO to revise downward its estimates of average tax rates on those two sources of income over the next several years.

Customs Duties. The agency increased its projections of customs duties over the next decade by a total of $98 billion for technical reasons. That change reflects actions that the Administration took to impose tariffs on a broader range of imports from China.[15] In addition, new tariffs went into effect on civilian aircraft and certain other products imported from certain European Union countries. CBO's projections incorporate the assumption that the tariffs in place as of January 7, 2020 (the day that the economic forecast was completed), will continue permanently, without any changes.

Payroll Taxes. Technical revisions increased CBO's estimate of payroll tax revenues in 2020 by $4 billion (or 0.3 percent) and its projections of such taxes for the 2020–2029 period by $91 billion (or 0.6 percent). As with individual income taxes, the change largely stems from the downward revision in high-wage earners' projected share of total wages and salaries. Because the share of wages and salaries going to high-wage earners is projected to be smaller, the share going to people whose annual earnings are below the maximum amount subject to Social Security payroll taxes (currently $137,700) is now projected to be larger. The resulting increase in projected payroll taxes for the next decade totals about $130 billion, partially offsetting the corresponding $180 billion reduction in projected individual income taxes.

Additionally, to account for BEA's upward revisions to its estimates of wages and proprietors' income in past years, CBO revised downward its estimates of average payroll tax rates on those two sources for the next several years, partially offsetting the economic revisions to payroll taxes discussed above.

Corporate Income Taxes. CBO raised its estimate of corporate income tax revenues in 2020 by $18 billion (or 7.4 percent) and its projections for the 2020–2029 period by $16 billion (or 0.4 percent) for technical reasons. Those increases reflect the offsetting effects of changes stemming from updated historical tax and economic data and new information about some changes enacted in the 2017 tax act.

Revised Average Tax Rates. CBO revised upward its estimates of average corporate tax rates for the next several years, increasing projected receipts for the 2020–2029 period by roughly $150 billion (or 4.3 percent). The upward revision in rates results from new information that helps explain the lower-than-projected corporate tax receipts in recent years. Most significantly, in late July, BEA revised downward its estimate of domestic corporate profits for calendar year 2017 by 6 percent, its estimate for 2018 by 12 percent, and its estimate for the first half of 2019 by 14 percent. Because those revisions do not change actual tax receipts for those years, CBO revised upward its estimates of the average tax rates on corporate profits to account for BEA's lower estimates of domestic corporate profits. (That revision partially offsets the downward economic revisions resulting from lower projected corporate profits that were discussed above.)

Revised Effects of the 2017 Tax Act. The increase in CBO's projections of corporate tax revenues resulting from the revised estimates of average tax rates was largely offset by revisions to projected revenues related to certain provisions of the 2017 tax act, which reduced projected receipts for the 2020–2029 period by roughly $110 billion (or 3.2 percent), on net.[16] Most significantly, CBO reduced its projection of the amount of income subject to tax under certain provisions related to international business activities. Those changes, which lowered corporate receipts, reflect the implementation of the law (including regulations announced by the Internal Revenue Service over the past year), new tax and

15. On September 1, 2019, the Administration imposed tariffs at a rate of 15 percent on approximately $120 billion of Chinese imports. On January 15, 2020, the United States and China signed a new trade agreement, and the Administration announced that those tariffs will be reduced to 7.5 percent on February 14, 2020. Neither the planned changes to trade policy included in that agreement nor changes to tariffs imposed after January 7, 2020, are included in CBO's current baseline projections.

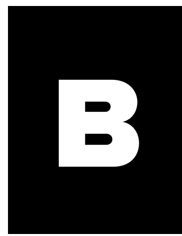
16. For a discussion of the tax provisions included in the 2017 tax act, see Congressional Budget Office, *The Budget and Economic Outlook: 2018 to 2028* (April 2018), pp. 108–110, www.cbo.gov/publication/53651.

financial reporting data, and updated information on taxpayers' responses.[17]

The technical changes also include modeling adjustments made to better reflect the agency's updated economic projections. For example, to better align its revenue projections with expectations for future business investment, CBO improved its modeling related to the rule in the 2017 tax act requiring that research and experimentation expenditures be capitalized and amortized over five years; that change in the agency's model raised corporate receipts in CBO's projections beginning in 2022. As new information becomes available, CBO continues to revisit its estimates of the corporate tax base since the changes made by the 2017 tax act took effect.

Other Revenues. CBO increased its projections of other revenues over the next decade by $72 billion because of technical changes. That increase is primarily the result of larger remittances paid by the Federal Reserve to the Treasury. CBO raised its projections of such remittances over the next decade by $52 billion. That technical change included a modeling adjustment to better reflect the interest earnings on Treasury securities with longer maturities held by the Federal Reserve.

17. For an overview of the changes in the international tax system, see Jane G. Gravelle and Donald J. Marples, *Issues in International Corporate Taxation: The 2017 Revision (P.L. 115-97)*, Report for Congress R45186 (Congressional Research Service, August 23, 2019), https://go.usa.gov/xdYC8. For the announcement of the new regulations, see Department of the Treasury, "Treasury and IRS Issue Proposed and Final Guidance on Foreign Tax Credits and the Base Erosion and Anti-Abuse Tax to Continue Modernizing the US Tax System" (press release, December 2, 2019), https://home.treasury.gov/news/press-releases/sm840. For a discussion of new tax and financial reporting data, see Molly Saunders-Scott and Jennifer Shand, analysts, Congressional Budget Office, "Reconciling Data on Transition Tax Payments: An Examination of Tax, Economic, and Financial Sources" (presentation at the 112th Annual Conference on Taxation, National Tax Association, November 21, 2019), www.cbo.gov/publication/55873. For information on how taxpayers may respond to the international changes, see Michael Donohoe, University of Illinois at Urbana-Champaign; Gary McGill, University of Florida; and Edmund Outslay, Michigan State University, "Has TCJA Changed the Geometry of International Tax Planning: A Riff on Circles, Squares, and Triangles" (presentation at the 49th Annual Spring Symposium Program, National Tax Association, May 16, 2019), https://tinyurl.com/sfa2kq9.



Appendix B: CBO's Economic Projections for 2020 to 2030

The tables in this appendix show the Congressional Budget Office's economic projections for each year from 2020 to 2030. For the projections by calendar year, see Table B-1; for the projections by fiscal year, see Table B-2.

Table B-1.

CBO's Economic Projections, by Calendar Year

	Estimated, 2019[a]	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
					Percentage Change From Year to Year							
Gross Domestic Product												
Real[b]	2.3	2.2	1.9	1.7	1.6	1.6	1.5	1.6	1.7	1.7	1.7	1.7
Nominal	4.2	4.2	4.1	3.8	3.7	3.7	3.6	3.6	3.8	3.8	3.7	3.7
Inflation												
PCE price index	1.4	1.9	2.1	2.1	2.1	2.0	2.0	2.0	1.9	1.9	1.9	1.9
Core PCE price index[c]	1.6	2.0	2.2	2.1	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9
Consumer price index[d]	1.8[e]	2.4	2.5	2.6	2.5	2.4	2.3	2.3	2.2	2.2	2.2	2.2
Core consumer price index[c]	2.2[e]	2.7	2.6	2.5	2.4	2.4	2.3	2.2	2.2	2.2	2.2	2.2
GDP price index	1.8	1.9	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0
Employment Cost Index[f]	3.0	3.5	3.6	3.6	3.5	3.4	3.3	3.2	3.1	3.1	3.1	3.1
					Calendar Year Average							
Unemployment Rate (Percent)	3.7[e]	3.5	3.5	3.8	4.1	4.4	4.5	4.6	4.6	4.5	4.5	4.4
Payroll Employment (Monthly change, in thousands)[g]	181[e]	135	59	17	15	18	19	34	63	69	64	57
Interest Rates (Percent)												
Three-month Treasury bills	2.1[e]	1.6	1.7	1.8	2.1	2.2	2.3	2.3	2.3	2.3	2.4	2.4
Ten-year Treasury notes	2.1[e]	1.9	2.2	2.6	2.7	2.8	2.8	2.9	2.9	3.0	3.0	3.1
Tax Bases (Percentage of GDP)												
Wages and salaries	43.5	43.7	43.8	43.9	43.9	43.9	43.8	43.8	43.8	43.8	43.8	43.7
Domestic corporate profits[h]	7.2	7.6	7.7	7.7	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.9
Tax Bases (Billions of dollars)												
Wages and salaries	9,324	9,753	10,192	10,595	10,989	11,388	11,790	12,209	12,666	13,149	13,629	14,107
Domestic corporate profits[h]	1,551	1,697	1,796	1,866	1,947	2,032	2,098	2,174	2,263	2,342	2,440	2,558
Nominal GDP (Billions of dollars)	21,440	22,340	23,251	24,139	25,035	25,955	26,888	27,867	28,924	30,010	31,135	32,297

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 2019 do not reflect the values for GDP and related series that the Bureau of Economic Analysis has released since early January 2020.

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 2019.

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

g. The average monthly change in the number of employees on nonfarm payrolls, calculated by dividing the change from the fourth quarter of one calendar year to the fourth quarter of the next by 12.

h. 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 B-2.

CBO's Economic Projections, by Fiscal Year

	Actual, 2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
	Percentage Change From Year to Year											
Gross Domestic Product												
Real[a]	2.4	2.2	2.1	1.7	1.6	1.6	1.5	1.6	1.7	1.8	1.7	1.7
Nominal	4.3	4.2	4.2	3.9	3.7	3.7	3.6	3.6	3.8	3.8	3.7	3.7
Inflation												
PCE price index	1.5	1.8	2.1	2.1	2.1	2.0	2.0	2.0	1.9	1.9	1.9	1.9
Core PCE price index[b]	1.7	1.9	2.2	2.1	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9
Consumer price index[c]	1.9	2.3	2.5	2.6	2.5	2.4	2.3	2.3	2.3	2.2	2.2	2.2
Core consumer price index[b]	2.2	2.6	2.7	2.5	2.4	2.4	2.3	2.3	2.2	2.2	2.2	2.2
GDP price index	1.9	1.9	2.0	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0
Employment Cost Index[d]	3.0	3.4	3.6	3.6	3.5	3.4	3.3	3.2	3.1	3.1	3.1	3.1
	Fiscal Year Average											
Unemployment Rate (Percent)	3.7	3.5	3.5	3.8	4.1	4.3	4.5	4.6	4.6	4.5	4.5	4.5
Payroll Employment (Monthly change, in thousands)[e]	185	169	65	25	14	18	18	28	57	69	66	57
Interest Rates (Percent)												
Three-month Treasury bills	2.2	1.6	1.6	1.8	2.0	2.2	2.3	2.3	2.3	2.3	2.4	2.4
Ten-year Treasury notes	2.5	1.9	2.1	2.5	2.7	2.8	2.8	2.9	2.9	3.0	3.0	3.1
Tax Bases (Percentage of GDP)												
Wages and salaries	43.4	43.6	43.8	43.9	43.9	43.9	43.9	43.8	43.8	43.8	43.8	43.7
Domestic corporate profits[f]	7.3	7.5	7.7	7.7	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.9
Tax Bases (Billions of dollars)												
Wages and salaries	9,207	9,636	10,087	10,496	10,890	11,288	11,689	12,101	12,548	13,028	13,510	13,986
Domestic corporate profits[f]	1,545	1,661	1,782	1,846	1,924	2,014	2,080	2,155	2,239	2,323	2,411	2,529
Nominal GDP (Billions of dollars)	21,220	22,111	23,029	23,916	24,809	25,724	26,653	27,615	28,653	29,737	30,850	32,003

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.

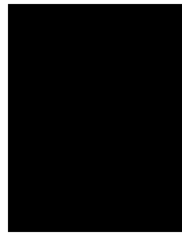
b. Excludes prices for food and energy.

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 in the number of employees on nonfarm payrolls, calculated by dividing the change from the fourth quarter of one fiscal year to the fourth quarter of the next by 12.

f. 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.



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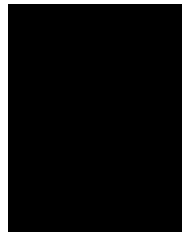

About This Document

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, Seth Carpenter, Steven Davis, Kathryn Dominguez, Robert Hall, Jan Hatzius, Donald Kohn, Nellie Liang, Gregory Mankiw, Emi Nakamura, Jonathan Parker, James Poterba, Valerie Ramey, Brian Sack, Robert Shimer, James Stock, Kevin Warsh, and Mark Zandi. Jason Furman, Brent Neiman, Marc Sumerlin, and David Wilcox attended the panel's meeting as guests. 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/56020); and providing other support.

CBO continually seeks feedback to make its work as useful as possible. Please send any comments to communications@cbo.gov.

Phillip L. Swagel
Director
January 2020

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, John Kitchen, and Robert Arnold.

Aaron Betz—Effects of fiscal policy

Yiqun Gloria Chen—Labor markets

Erin Deal—Housing, research assistance

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—Effects of fiscal policy

Michael McGrane—Financial markets

Sarah Robinson—Motor vehicle sector, model and data management

Jeffrey Schafer—Inflation, house prices

John Seliski—Federal, state, and local government spending and revenues

Robert Shackleton—Potential output, productivity

Delaney Smith—Financial markets

Christopher Williams—Consumer spending, income

Revenue Projections

The revenue projections were prepared by the Tax Analysis Division, supervised by John McClelland, Joseph Rosenberg, Joshua Shakin, and Edward Harris. In addition, the staff of the Joint Committee on Taxation provided valuable assistance.

Seth Bertolucci—Excise taxes

Kathleen Burke—Individual income taxes, wage distribution

Paul Burnham—Retirement income

Dorian Carloni—Business taxation

Madeleine Fox—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

James Pearce—Capital gains realizations, tax modeling

Kevin Perese—Tax modeling

Revenue Projections (Continued)

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

James Williamson—Business taxation

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 (formerly of CBO), Megan Carroll, Kim Cawley, Chad Chirico, Sheila Dacey, Paul Masi, Sarah Masi, and David Newman of the Budget Analysis Division, as well as by David Weaver (formerly of CBO) and Alexandra Minicozzi 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)

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)

Aldo Prosperi—Defense (cybersecurity, military construction, and military family housing)

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

Kate Fritzsche—Health insurance marketplaces, other programs

Sofia Guo—Workplace safety programs

Stuart Hammond—Medicare, Federal Employees Health Benefits program

Health (Continued)

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Lori Housman—Medicare

Jamease Kowalczyk—Medicare, Public Health Service

Kevin McNellis—Health insurance marketplaces, other programs

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

Rebecca Yip—Medicare, Public Health Service

Katherine Young—Medicaid, prescription drugs

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Tia Caldwell—Child Care and Development Block Grant

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

Arin Kerstein—Refugee assistance

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, 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

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Tiffany Arthur—Agriculture

Kathleen Gramp—Energy, Outer Continental Shelf receipts, spectrum auction receipts, Orderly Liquidation Fund

Natural and Physical Resources (Continued)

Evan Herrnstadt—Spectrum auction receipts

David Hughes—Recreational resources, commerce, Small Business Administration, Universal Service Fund

Wendy Kiska—Federal Deposit Insurance Corporation, Orderly Liquidation Fund

Aaron Krupkin—Energy, air and water transportation

Michael McGrane—Fannie Mae and Freddie Mac

Erik O'Donoghue—Agriculture

Jeffrey Perry—Student loans, Fannie Mae and Freddie Mac, Federal Housing Administration

Matthew Pickford—General government, legislative branch

Stephen Rabent—Deposit insurance, credit unions, pollution control and abatement, Postal Service

Robert Reese—Federal Housing Administration, other natural resources, highways, mass transit, Amtrak

Mitchell Remy—Fannie Mae and Freddie Mac, Federal Housing Administration

Janani Shankaran—Science and space exploration, conservation and land management

Delaney Smith—Federal Housing Administration

Jon Sperl—Community and regional development, Federal Emergency Management Agency, Bureau of Indian Affairs, judicial branch, administration of justice

Aurora Swanson—Water resources, Fannie Mae and Freddie Mac

Other Areas and Functions

Shane Beaulieu—Computer applications and data systems

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)

Other Areas and Functions (Continued)

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—Computer applications and data systems

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, Yiqun Gloria Chen, Edward Gamber, Kyoung Mook Lim, Xiaotong Niu, Charles Pineles-Mark, and Robert Shackleton prepared the projections.

Writing

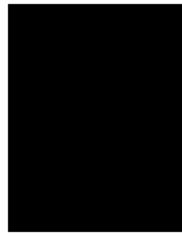
Barry Blom prepared the visual summary, with assistance from Jeffrey Schafer. Barry Blom also wrote Chapter 1, with assistance from Nathaniel Frentz, Avi Lerner, Amber Marcellino, and Julie Topoleski. John Seliski wrote Chapter 2. Aaron Feinstein wrote Appendix A, with assistance from Jennifer Shand. Sarah Robinson compiled Appendix B.

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, and Benjamin Plotinsky were the editors; Casey Labrack, Robert Rebach, and Jorge Salazar were the graphics editors; and Annette Kalicki, Adam Russell, Simone Thomas, and Maria Thomason published the report on CBO's website.

Seth Bertolucci, Susan Yeh Beyer, Tia Caldwell, Erin Deal, Meredith Decker, Ann Futrell, Raymond Hall, Paul Holland, Justin Latus, William Ma, Bayard Meiser, Aldo Prosperi, Sarah Robinson, Mark Sanford, and Logan Smith fact-checked the report. Lara Robillard coordinated the preparation of tables of baseline projections, with assistance from Kate Kelly; Jeffrey Schafer coordinated the preparation of figures related to economic projections. Seth Bertolucci, Erin Deal, Bayard Meiser, Dan Ready, and Sarah Robinson compiled data and supplemental information. Christine Browne and Simone Thomas coordinated the presentation of those materials.



Corrections

The Congressional Budget Office has corrected this report since its original publication. Both the PDF and online versions were corrected, but for ease of reference, this list indicates the locations of the corrections in the PDF.

The following changes were made on February 4, 2020:

Page 40, footnote 9: "1950 and 1965" was changed to "1946 and 1964" in the first sentence; next sentence ("The oldest baby boomers . . .") was deleted; "continued" was deleted in the next sentence.