

Congressional Budget Office

Nonpartisan Analysis for the U.S. Congress

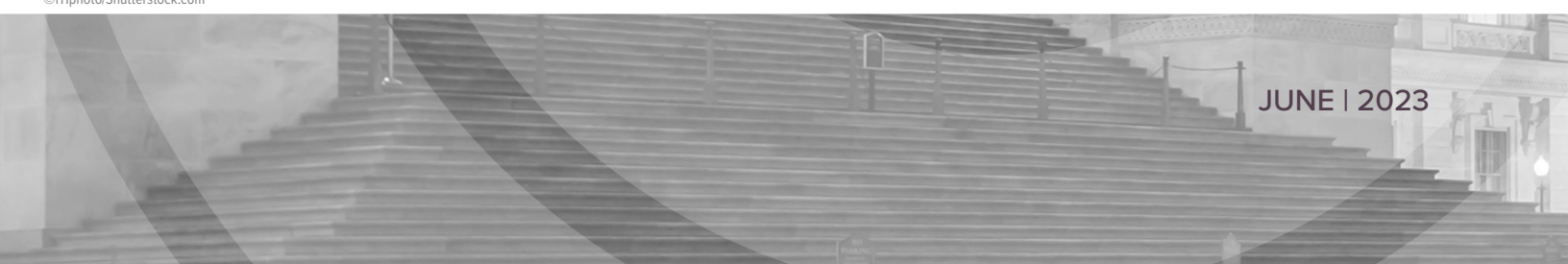


The 2023 Long-Term Budget Outlook



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At a Glance

Each year, the Congressional Budget Office publishes a report presenting its projections of what the federal budget and the economy would look like over the next 30 years if current laws generally remained unchanged. The long-term budget projections typically follow CBO's 10-year baseline budget projections and then extend most of the concepts underlying them for an additional 20 years. This year, the long-term projections are based on CBO's May 2023 baseline projections but also reflect the estimated budgetary effects of the Fiscal Responsibility Act of 2023 (Public Law 118-5), which was enacted on June 3, 2023.

Deficits. In CBO's projections, the deficit equals 5.8 percent of gross domestic product (GDP) in 2023, declines to 5.0 percent by 2027, and then grows in every year, reaching 10.0 percent of GDP in 2053. Over the past century, that level has been exceeded only during World War II and the coronavirus pandemic. The increase in the total deficit results from faster growth in spending than in revenues. The primary deficit, which excludes interest costs, equals 3.3 percent of GDP in both 2023 and 2053, but the total deficit is boosted by rising interest costs.

Debt. By the end of 2023, federal debt held by the public equals 98 percent of GDP. Debt then rises in relation to GDP: It surpasses its historical high in 2029, when it reaches 107 percent of GDP, and climbs to 181 percent of GDP by 2053. Such high and rising debt would slow economic growth, push up interest payments to foreign holders of U.S. debt, and pose significant risks to the fiscal and economic outlook; it could also cause lawmakers to feel more constrained in their policy choices.

Spending. In 2023, outlays fall to 24.2 percent of GDP as federal spending in response to the pandemic diminishes. Outlays continue to decline through 2026 but increase thereafter, reaching 29.1 percent of GDP in 2053. (By comparison, from 1993 to 2022, outlays averaged 21.0 percent of GDP.) Rising interest rates and persistently large primary deficits cause interest costs to almost triple in relation to GDP between 2023 and 2053. Spending on the major health care programs and Social Security—driven by the aging of the population and growing health care costs—also boosts federal outlays significantly over the next 30 years.

Revenues. Revenues fall to 18.4 percent of GDP in 2023 and continue to drop until 2026, when the scheduled expiration of certain provisions of the 2017 tax act causes tax receipts to increase. Revenues generally rise thereafter, reaching 19.1 percent of GDP in 2053, as an increasing share of income is pushed into higher tax brackets. (By comparison, from 1993 to 2022, revenues averaged 17.2 percent of GDP.)

Changes From Previous Projections. Measured as a percentage of GDP, federal debt is now projected to be 2 percentage points higher in 2023 and 9 percentage points lower in 2052 than it was in last year's report. Overall, CBO's projections of debt have increased through 2042 and decreased in later years.

By the Numbers

Long-Term Budget Outlook, June 2023, by Fiscal Year

Percentage of Gross Domestic Product

	Average, 1993–2022	Actual, 2022	2023	2033	2043	2053
Revenues, Total	17.2	19.6	18.4	18.1	18.6	19.1
Individual income taxes	8.0	10.5	9.6	9.7	10.1	10.7
Payroll taxes	6.1	5.9	6.0	5.9	5.8	5.8
Corporate income taxes	1.7	1.7	1.8	1.4	1.4	1.4
Other	1.4	1.4	1.0	1.1	1.2	1.3
Outlays, Total	21.0	24.8	24.2	24.4	26.7	29.1
Mandatory, subtotal	12.0	16.3	15.1	15.3	16.5	16.9
Social Security	4.5	4.8	5.1	6.0	6.2	6.2
Major health care programs	4.3	5.6	5.8	6.6	8.0	8.6
Medicare, net of offsetting receipts	2.6	2.8	3.1	4.0	5.1	5.5
Medicaid, CHIP, and marketplace subsidies	1.7	2.8	2.7	2.6	2.9	3.1
Other	3.3	5.8	4.2	2.6	2.4	2.1
Discretionary	7.1	6.6	6.5	5.6	5.4	5.4
Net interest	1.8	1.9	2.5	3.6	4.8	6.7
Deficit, Total	-3.7	-5.2	-5.8	-6.4	-8.1	-10.0
Deficit, Primary	-1.9	-3.3	-3.3	-2.8	-3.4	-3.3
Debt Held by the Public	57	97	98	115	144	181

See [Chapter 1](#) and [Chapter 2](#). Deficits and outlays have been adjusted to exclude the effects of shifts in the timing of certain payments when October 1, the first day of the fiscal year, falls on a weekend.

Long-Term Economic Outlook, June 2023, by Calendar Year

Percent

	Average, 1993–2022	Actual, 2022	2023	2033	2043	2053
Growth of Real (Inflation-Adjusted) GDP	2.4	2.1	0.3	1.7	1.5	1.5
Inflation						
PCE price index	2.0	6.3	3.8	1.9	1.9	1.9
Consumer price index	2.5	8.0	4.8	2.3	2.2	2.3
Labor Force Participation Rate	65.0	62.2	62.2	61.3	60.7	60.3
Unemployment Rate	5.7	3.6	4.7	4.5	4.2	4.1
Interest Rates						
On 10-year Treasury notes	3.9	3.0	3.9	3.8	4.1	4.5
On all federal debt held by the public (By fiscal year)	4.0	2.1	2.7	3.3	3.5	4.0

See [Chapter 3](#) and [Appendix C](#).

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The Congressional Budget Office's long-term budget projections, referred to as the extended baseline, typically follow the agency's 10-year baseline budget projections and then extend most of the concepts underlying those projections for an additional 20 years. This year, however, the long-term projections are based on the agency's May 2023 baseline projections but also reflect the estimated budgetary effects of the Fiscal Responsibility Act of 2023 (FRA, Public Law 118-5), enacted on June 3, 2023. Other legislation enacted between March 30, 2023 (when CBO finalized its May baseline), and June 3, 2023, did not have significant budgetary effects.

Those projections are consistent with the demographic projections that the agency published on January 24, 2023, and the economic forecast that it published on February 15, 2023. They do not reflect the economic effects of administrative actions, regulatory changes, legislation, or economic developments after December 6, 2022, when that forecast was finalized. Nor do they reflect the budgetary effects of any developments after March 30, 2023, except for the enactment of the FRA.

In accordance with statutory requirements, CBO's projections reflect the assumptions that current laws generally remain unchanged, that some mandatory programs are extended after their authorizations lapse, and that spending on Medicare and Social Security continues as scheduled even if their trust funds are exhausted.

Unless this report indicates otherwise, all years referred to in describing budget projections 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 economic projections are calendar years.

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

Unless this report notes otherwise, Medicare outlays are presented net of premiums paid by beneficiaries and other offsetting receipts, which reduce outlays for the program.

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

Supplemental information files—the data underlying the tables and figures in this report, supplemental budget projections, and the economic variables underlying those projections—are posted on CBO's website at www.cbo.gov/publication/59014#data. Previous editions of this report are available at <https://go.usa.gov/xmezZ>.

Visual Summary

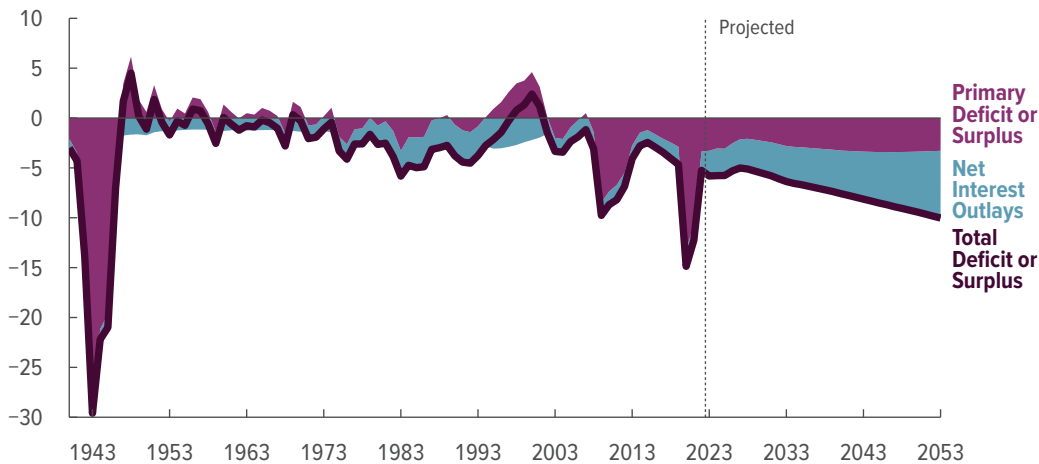
The United States faces a challenging fiscal outlook. If current laws generally remained unchanged, budget deficits and federal debt would grow in relation to gross domestic product (GDP) over the next three decades, according to the Congressional Budget Office's projections. The figures below present highlights from those projections and the economic forecast underlying them.

Deficits and Debt

In CBO's projections, federal deficits increase from 6 percent of GDP in 2023 to 10 percent in 2053. Such persistently large deficits cause federal debt, which is already high, to rise even further: Debt held by the public reaches 181 percent of GDP in 2053.

Deficits

Percentage of GDP

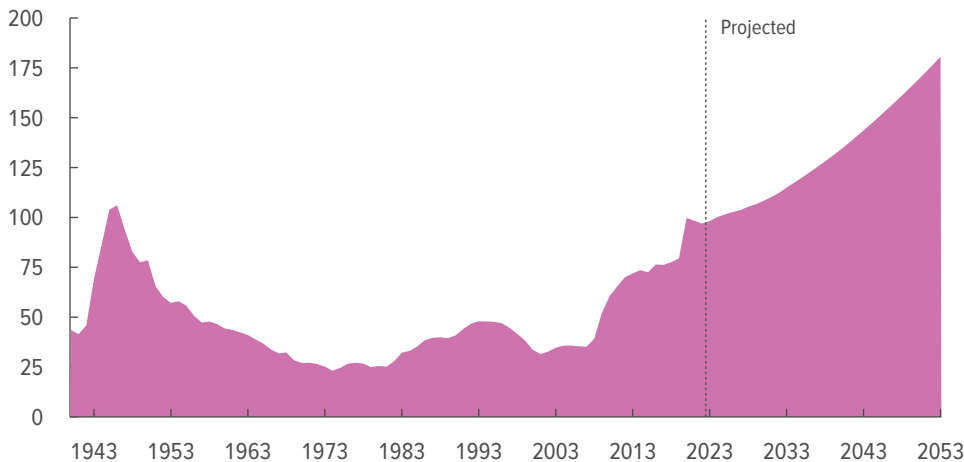


Primary deficits, which exclude interest costs, equal 3.3 percent of GDP in both 2023 and 2053. Combined with rising interest rates, those large and sustained primary deficits cause net outlays for interest to almost triple in relation to GDP.

See Figure 1-1 on page 6.

Federal Debt Held by the Public

Percentage of GDP



Debt rises in relation to GDP over the next three decades, exceeding any previously recorded level—and it is on track to continue growing after 2053.

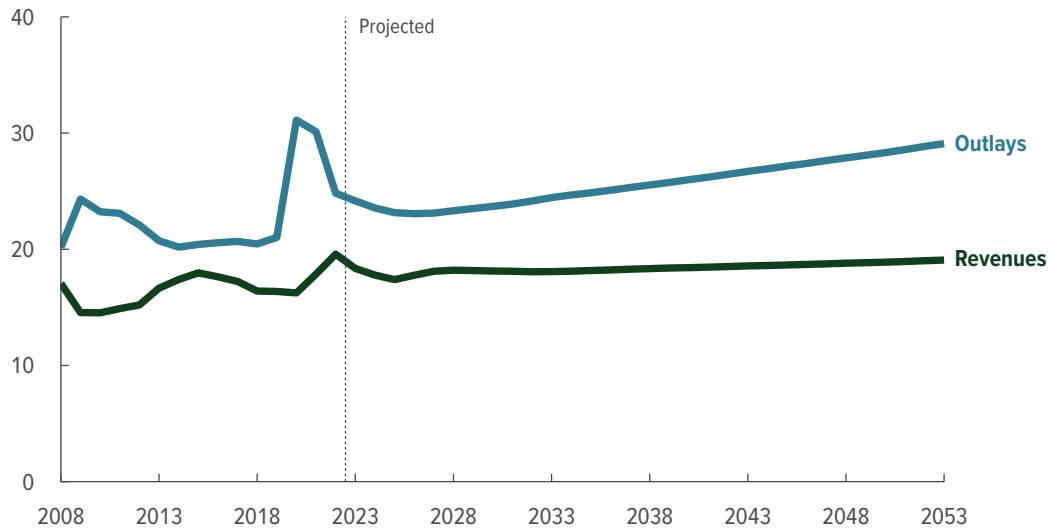
See Figure 1-1 on page 6.

Spending and Revenues

Federal spending grows from 24 percent of GDP in 2023 to 29 percent of GDP in 2053. Federal revenues increase less over that period—from 18 percent to 19 percent of GDP.

Total Outlays and Revenues

Percentage of GDP

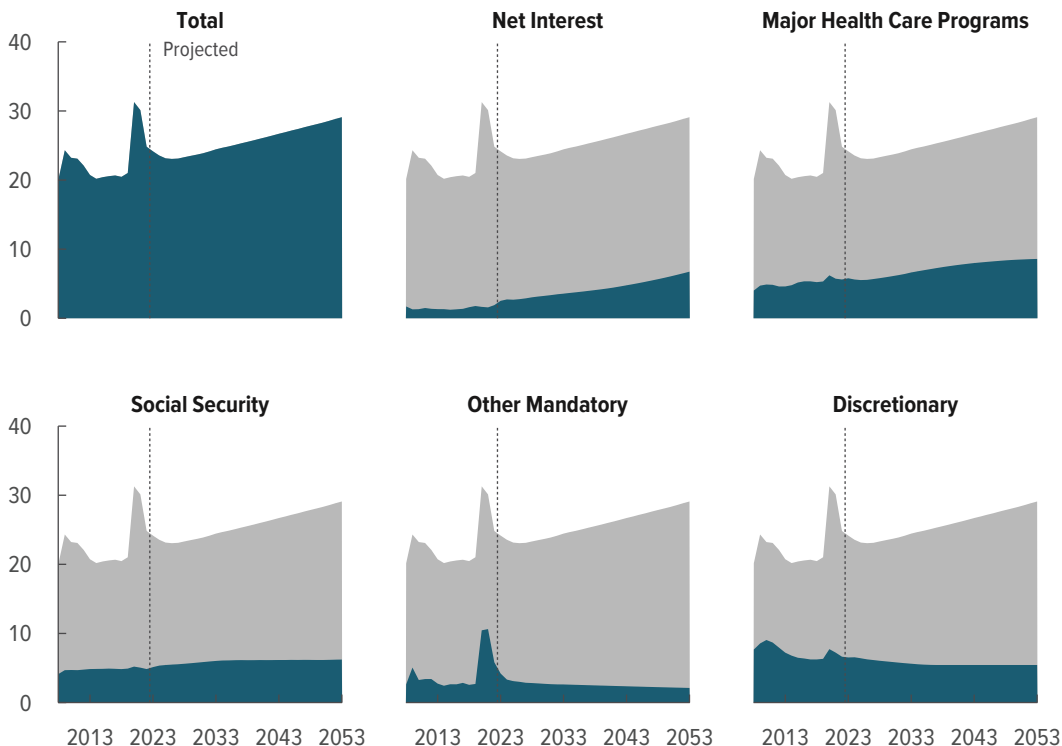


Outlays increase faster than revenues—mainly because of rising interest costs and growth in spending on the major health care programs and Social Security. The result is ever-larger budget deficits over the long term.

See Figure 2-1 on page 14.

Outlays, by Category

Percentage of GDP



Rising interest rates and mounting debt cause net outlays for interest to increase from 2.5 percent of GDP in 2023 to 6.7 percent in 2053.

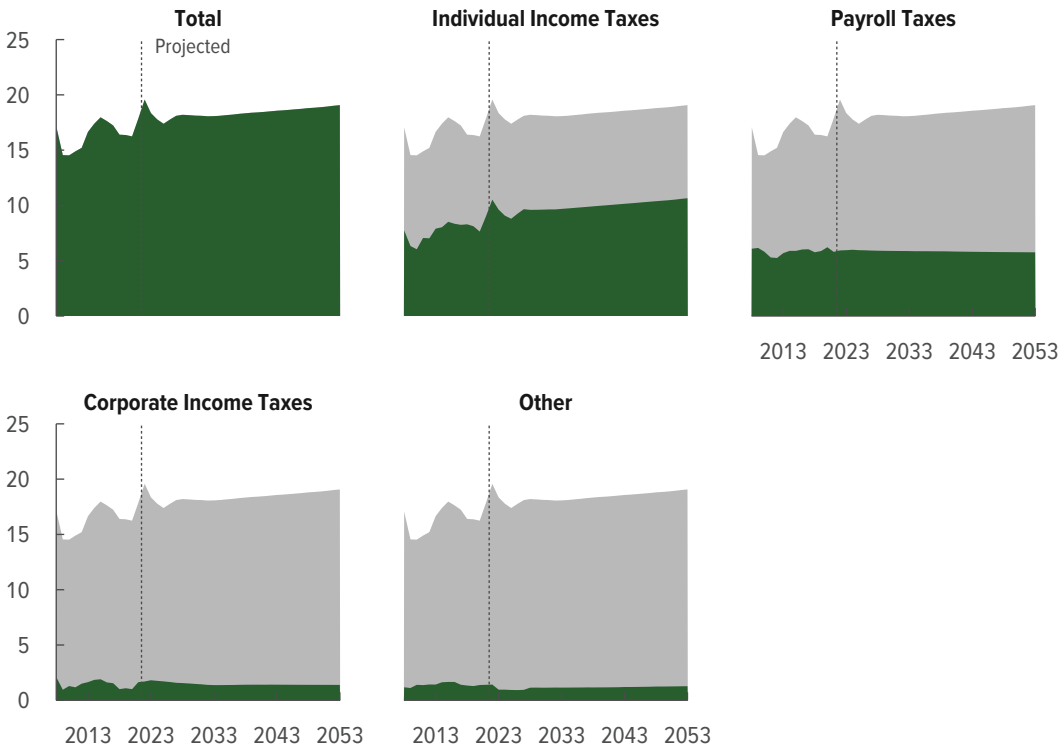
Outlays for the major health care programs rise from 5.8 percent of GDP to 8.6 percent as the average age of the population increases and health care costs grow.

The aging of the population also pushes up outlays for Social Security, which increase from 5.1 percent of GDP to 6.2 percent.

See Figure 2-2 on page 15.

Revenues, by Source

Percentage of GDP



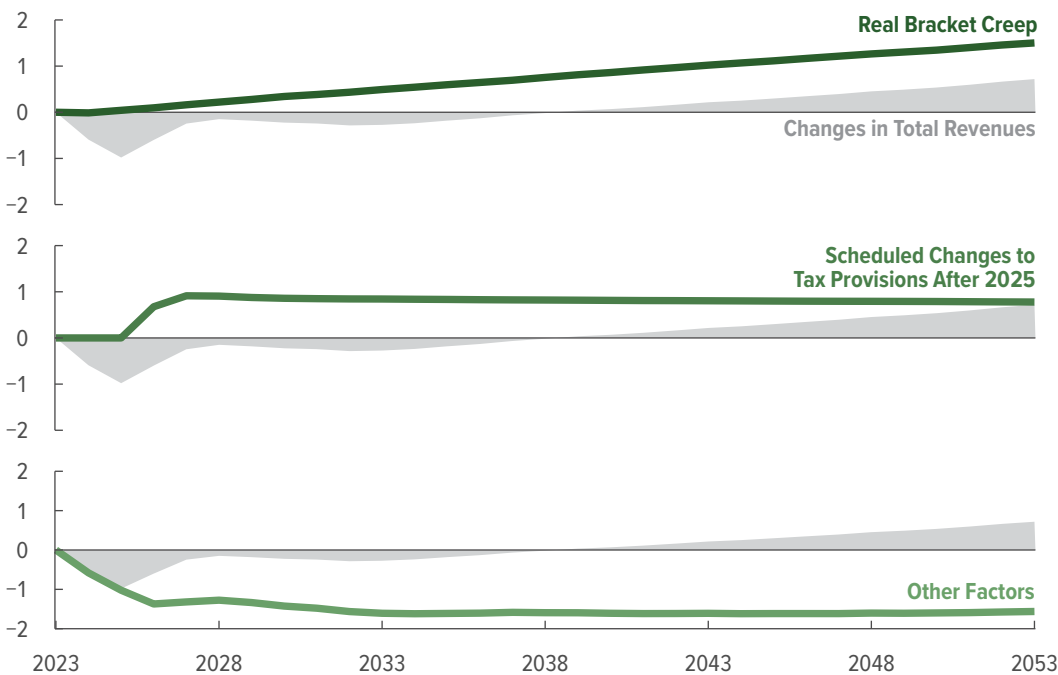
From 2023 to 2053, total revenues, measured as a percentage of GDP, grow by about 1 percentage point. Individual income taxes account for nearly all of that growth.

Receipts from payroll and corporate taxes decline by small amounts in relation to GDP over the 30-year period.

See Figure 2-6 on page 21.

Key Factors Contributing to Changes in Revenues

Percentage of GDP



Over the long term, the largest source of growth in revenues is real bracket creep: As income rises faster than prices, a larger proportion of income becomes subject to higher tax rates.

After 2025, another significant source of growth in revenues is the scheduled expiration of certain provisions of the 2017 tax act.

Other factors partially offset those effects. In 2023 and 2024, for example, revenues fall in relation to GDP as a temporary boost to tax receipts observed in recent years abates.

See Figure 2-7 on page 22.

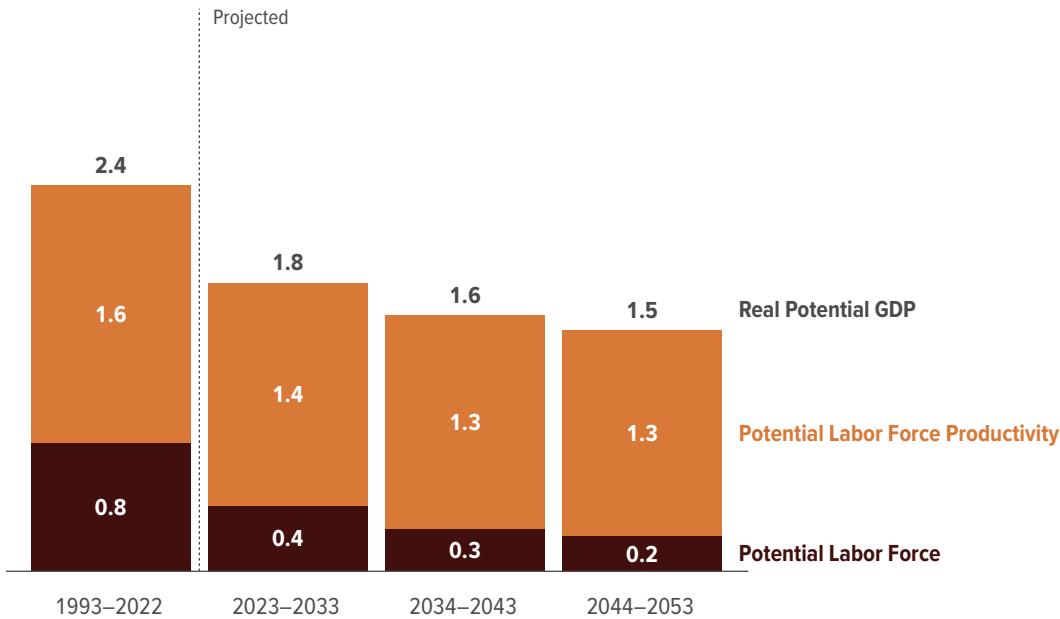


The Economy

The state of the U.S. economy in coming decades will affect the federal government’s budget deficits and debt. Key components of CBO’s long-term economic forecast are its projections of real potential GDP—the maximum sustainable output of the economy, adjusted to remove the effects of inflation—and interest rates.

Average Annual Growth of Real Potential GDP and Its Components

Percent



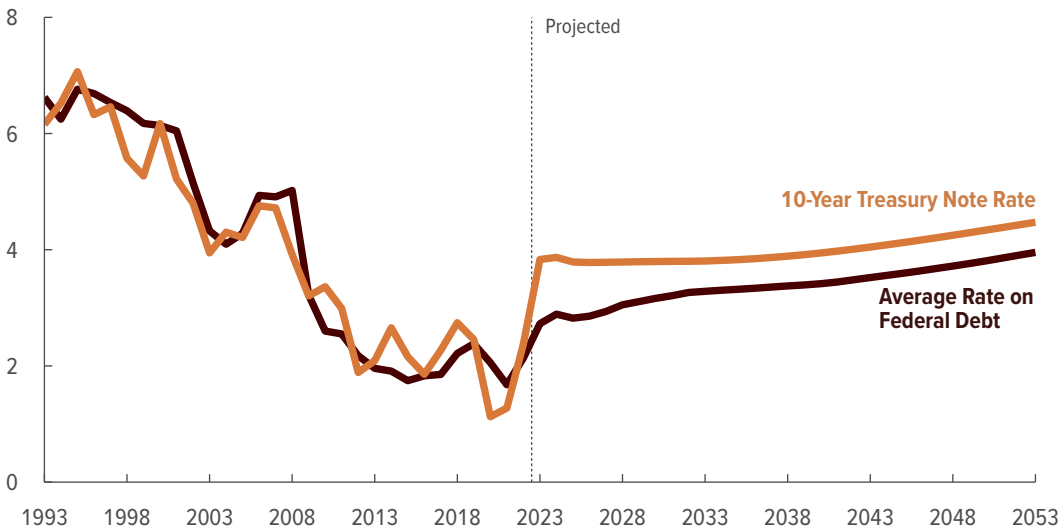
Real potential GDP grows more slowly throughout the 2023–2053 period than it has, on average, over the past 30 years.

That slower growth is explained by slower growth in the potential labor force and in potential labor force productivity.

See Figure 3-3 on page 29.

Average Interest Rates on Federal Debt and on 10-Year Treasury Notes

Percent



Interest rates—which, along with primary deficits, help determine net outlays for interest—rise through 2053 but remain lower than they have been, on average, over the past three decades.

Projected interest rates remain below that average for several reasons, including slower growth of the labor force, an increase in savings available for investment, and slower growth of total factor productivity.

See Figure 3-4 on page 32.



Chapter 1: Deficits and Debt

Overview

If current laws governing taxes and spending generally remained unchanged, the federal budget deficit would increase significantly in relation to gross domestic product (GDP) over the next 30 years, the Congressional Budget Office projects. Those growing deficits are projected to drive up federal debt held by the public. In 2053, such debt would exceed any previously recorded level—and would be on track to increase further (see Figure 1-1).

Measured in relation to the size of the economy, this year's budget deficit is comparable to last year's deficit and smaller than the shortfalls recorded in 2020 and 2021, when federal spending spiked in response to the coronavirus pandemic. Nevertheless, in CBO's projections, federal deficits are large by historical standards: From 2023 to 2053, deficits average 7.3 percent of GDP, more than double their average over the past half-century. And deficits are projected to grow almost every year over the next three decades, reaching 10.0 percent of GDP in 2053.¹ In the past 100 years, deficits have been that large only during World War II and the pandemic. The growth in deficits over the next three decades occurs as increases in spending—especially spending on interest, the major health care programs, and Social Security—outpace increases in revenues.

Persistently large deficits would lead to substantial increases in federal debt. In CBO's projections, federal debt held by the public, measured in relation to GDP, surpasses its highest level in history in 2029, reaching

107 percent. Debt continues to climb thereafter and reaches 181 percent of GDP at the end of 2053.

Such high and rising debt would have significant economic and financial consequences. It would, among other things, slow economic growth, drive up interest payments to foreign holders of U.S. debt, elevate the risk of a fiscal crisis, increase the likelihood of other adverse effects that could occur more gradually, and make the nation's fiscal position more vulnerable to an increase in interest rates. In addition, it could cause lawmakers to feel more constrained in their policy choices.

Budgetary outcomes are hard to predict, particularly over the long run. Even if federal laws remained unchanged, CBO's budget projections would be subject to considerable uncertainty. If developments in the economy, demographics, or other factors that affect revenues and outlays diverged from the agency's projections, budgetary outcomes would diverge as well. That uncertainty increases over time because changes in factors that affect the budget are difficult to anticipate over long time horizons.

Deficits and Debt Through 2053

In CBO's projections, deficits generally rise through 2053. As deficits grow in relation to the size of the economy, so does federal debt.

Deficits

The total deficit—including net outlays for interest—is estimated to be 5.8 percent of GDP in 2023, comparable to what it was in 2022. In CBO's projections, the deficit declines through 2027 before increasing steadily through 2053. At that point, the deficit—equal to 10.0 percent of GDP—is significantly larger than the 3.6 percent of GDP that deficits averaged over the past 50 years (see Table 1-1). Moreover, in years in the past half-century when unemployment was relatively low, as it is in CBO's projections, the average deficit was even smaller.

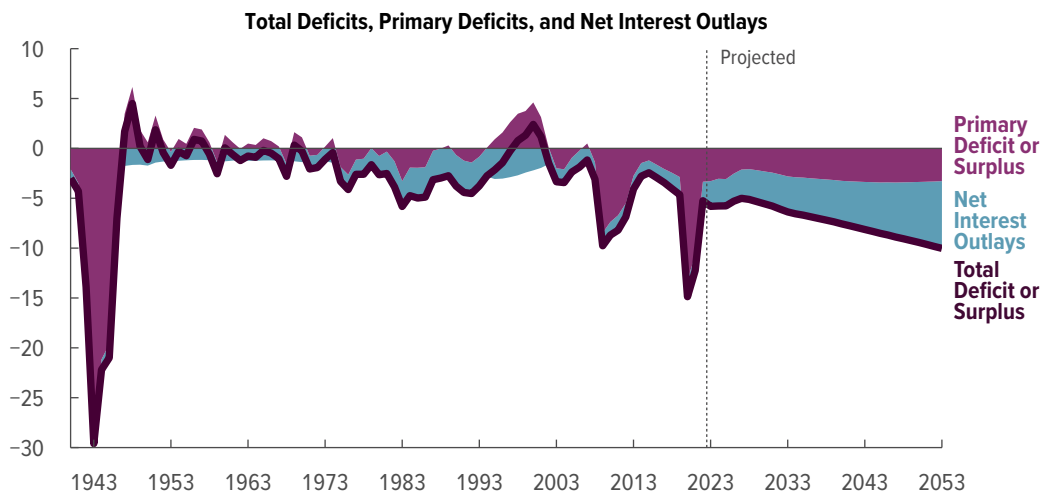
Primary deficits exclude net outlays for interest, reflecting the difference between noninterest spending and revenues—the main mechanisms through which lawmakers can directly influence the trajectory of the federal debt

1. The long-term budget projections in this report are based on CBO's May 2023 baseline projections but also reflect the estimated budgetary effects of the Fiscal Responsibility Act of 2023 (Public Law 118-5), enacted on June 3, 2023. See Congressional Budget Office, *How the Fiscal Responsibility Act of 2023 Affects CBO's Projections of Federal Debt* (June 2023), www.cbo.gov/publication/59235; letter to the Honorable Kevin McCarthy providing CBO's estimate of the budgetary effects of H.R. 3746, the Fiscal Responsibility Act of 2023 (May 30, 2023), www.cbo.gov/publication/59225; and *An Update to the Budget Outlook: 2023 to 2033* (May 2023), www.cbo.gov/publication/59096.

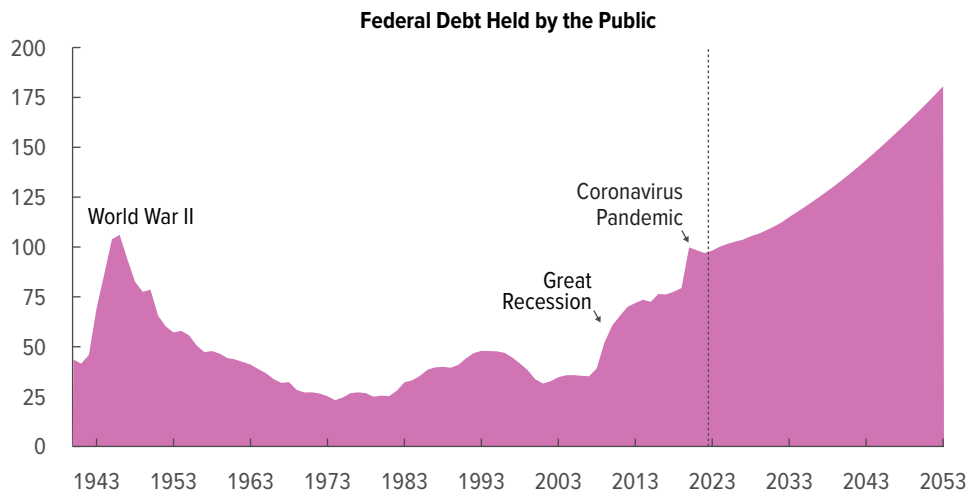
Figure 1-1.

Deficits and Debt

Percentage of GDP



In CBO's projections, primary deficits exceed their historical 50-year average of 1.5 percent of GDP throughout the projection period. In 2053, the primary deficit equals 3.3 percent of GDP. Driven up by large and sustained primary deficits and by rising interest rates, net interest outlays reach 6.7 percent of GDP in 2053.



Growing deficits push federal debt held by the public, which is already high, further up throughout the 30-year period. Such debt reaches 181 percent of GDP in 2053—and would continue to rise thereafter.

Data source: Congressional Budget Office. See www.cbo.gov/publication/59014#data.

Primary deficits exclude net outlays for interest.

GDP = gross domestic product.

and interest costs. In CBO's projections, primary deficits exceed their historical 50-year average of 1.5 percent of GDP in every year. In both 2023 and 2053, the primary deficit equals 3.3 percent of GDP, though such deficits vary in the interim; they generally decline through 2028, when the primary deficit drops to 2.1 percent of GDP, before increasing in most subsequent years. That later growth in primary deficits occurs because increases in noninterest spending—chiefly increases in spending on the major health care programs and Social Security

attributable to the aging of the population and rising health care costs—outstrip increases in revenues.

Combined with rising interest rates, large and sustained primary deficits cause net outlays for interest to increase significantly in relation to the size of the economy, from 2.5 percent of GDP in 2023 to 6.7 percent of GDP in 2053. On average, primary deficits account for about one-third of the projected rise in net interest costs over the 2023–2053 period; higher interest rates account for the rest.

Table 1-1.

Key Projections for Selected Years

Percentage of Gross Domestic Product

	2023	2033	2043	2053
Revenues				
Individual income taxes	9.6	9.7	10.1	10.7
Payroll taxes	6.0	5.9	5.8	5.8
Corporate income taxes	1.8	1.4	1.4	1.4
Other ^a	1.0	1.1	1.2	1.3
Total Revenues	18.4	18.1	18.6	19.1
Outlays				
Mandatory				
Social Security	5.1	6.0	6.2	6.2
Major health care programs ^b	5.8	6.6	8.0	8.6
Other	4.2	2.6	2.4	2.1
Subtotal	15.1	15.3	16.5	16.9
Discretionary	6.5	5.6	5.4	5.4
Net interest	2.5	3.6	4.8	6.7
Total Outlays	24.2	24.4	26.7	29.1
Deficit	-5.8	-6.4	-8.1	-10.0
Debt Held by the Public at the End of the Period	98	115	144	181
Memorandum:				
Social Security				
Revenues ^c	4.5	4.6	4.5	4.5
Outlays ^d	5.1	6.0	6.2	6.2
Contribution to the Federal Deficit^e	-0.6	-1.4	-1.6	-1.7
Medicare				
Revenues ^c	1.6	1.7	1.7	1.8
Outlays ^d	3.8	5.0	6.4	7.0
Offsetting receipts	-0.7	-1.0	-1.4	-1.6
Contribution to the Federal Deficit^e	-1.5	-2.4	-3.4	-3.7
Gross Domestic Product at the End of the Period (Trillions of dollars)	26.2	39.3	56.1	79.5

Data source: Congressional Budget Office. See www.cbo.gov/publication/59014#data.

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

CBO's long-term budget projections, referred to as the extended baseline, typically follow the agency's 10-year baseline budget projections and then extend most of the concepts underlying those projections for an additional 20 years. This year, however, the long-term projections are based on the agency's May 2023 baseline projections but also reflect the estimated budgetary effects of the Fiscal Responsibility Act of 2023 (Public Law 118-5), enacted on June 3, 2023.

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

- Consists of excise taxes, remittances to the Treasury from the Federal Reserve System, customs duties, estate and gift taxes, and miscellaneous fees and fines.
- Consists of outlays for Medicare (net of premiums and other offsetting receipts), Medicaid, and the Children's Health Insurance Program, as well as subsidies for health insurance purchased through the marketplaces established under the Affordable Care Act and related spending.
- Includes payroll taxes other than those paid by the federal government on behalf of its employees; those payments are intragovernmental transactions. Also includes income taxes paid on Social Security benefits, which are credited to the Social Security trust funds.
- 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.
- The net increase in the deficit shown here differs from the change in the trust fund balance for the program. It does not include intragovernmental transactions, interest earned on balances, or outlays related to the administration of the program.

Federal Debt Held by the Public

Debt held by the public rises from 97 percent of GDP at the end of 2022 to 98 percent of GDP in 2023 in CBO's projections.² By 2029, debt held by the public climbs to 107 percent of GDP, exceeding the historical peak of 106 percent reached in 1946, immediately after World War II. In 2053, debt reaches 181 percent of GDP and is on track to rise higher still.

Consequences of High and Rising Federal Debt

If federal debt continued to rise in relation to GDP at the pace that CBO projects it would under current law, it would have far-reaching implications for the fiscal and economic outlook.³ The consequences of that high and rising debt would include the following:

- Borrowing costs throughout the economy would rise, reducing private investment and slowing the growth of economic output.
- Rising interest costs associated with that debt would drive up interest payments to foreign holders of U.S. debt, decreasing the nation's net international income.
- There would be an elevated risk of a fiscal crisis—that is, a situation in which investors lose confidence in the U.S. government's ability to service and repay its debt, causing interest rates to increase abruptly, inflation to spiral upward, or other disruptions to occur.
- The likelihood of other adverse effects would also increase. For example, expectations of higher rates of inflation could become widespread, which could erode confidence in the U.S. dollar as the dominant international reserve currency.
- The United States' fiscal position would be more vulnerable to an increase in interest rates, because the higher debt is, the more an increase in interest rates raises debt-service costs.
- Lawmakers might feel constrained in using fiscal policy to respond to unforeseen events or for other purposes,

such as to promote economic activity or strengthen national defense.

Nevertheless, policies that drive up debt by increasing spending or reducing revenues can benefit people and provide support to the economy, especially during challenging times. And federal investment—including investment financed by deficits—can boost private-sector productivity and output (although that increased output would only partially mitigate the adverse fiscal consequences of increased federal borrowing).

Higher debt itself can also have beneficial consequences. Higher interest rates on Treasury securities can help workers save for retirement by increasing the return they can earn on those assets. Similarly, higher interest rates on Treasury securities can help businesses by increasing their return on a liquid asset that can be used to cover payroll and other expenses (though their borrowing costs would be higher, and an increase in the rate of return on newly issued Treasury securities would reduce the value of existing securities of the same maturity).

Slower Economic Growth

High and rising federal debt would, over time, push up the cost of borrowing, reduce private investment, and slow the growth of GDP, all else being equal.

Higher debt tends to increase borrowing costs in both the public and private sectors by driving up interest rates. As a result, investment in productive capital, such as housing and commercial structures, decreases. That reduction in private investment would slow economic growth: As investment in capital goods declined, workers would, on average, have fewer resources to do their jobs; as a result, they would be less productive, their compensation would be lower, and they would therefore be less inclined to work. Those effects would increase over time as federal borrowing grew.

In CBO's projections, the reduction in private investment stemming from higher debt is partially offset by at least three effects. First, additional government borrowing strengthens people's incentive to save, partly by driving up interest rates.⁴ Second, higher interest rates tend to attract more foreign capital to the United

2. Debt held by the public is a measure that indicates the extent to which federal borrowing affects the availability of private funds for other borrowers. All else being equal, an increase in government borrowing reduces the amount of money available to other borrowers, putting upward pressure on interest rates and reducing private investment. It is the measure of debt that CBO uses most often in its reports on the budget.

3. For more details on federal debt and the consequences of its growth, see Congressional Budget Office, *Federal Debt: A Primer* (March 2020), www.cbo.gov/publication/56165.

4. Some people might also expect policymakers to raise taxes or cut spending to cover the cost of the additional debt, and they might increase their saving to prepare for paying higher taxes or receiving less in benefits. See Jonathan Huntley, *The Long-Run Effects of Federal Budget Deficits on National Saving and Private Domestic Investment*, Working Paper 2014-02 (Congressional Budget Office, February 2014), www.cbo.gov/publication/45140.

States, and some of those funds become available for private investment. And third, federal borrowing that supports effective federal investment typically increases private-sector productivity and, therefore, private investment.⁵ (However, spending on such investment accounts for little of the increasing deficits and debt in CBO's projections.) In CBO's assessment, the increase in private investment stemming from those three factors would not be as large as the reduction in private investment resulting from higher debt.

Increased Interest Payments to Foreign Holders of U.S. Debt

If federal debt held by the public continued to rise, the government would spend more on interest payments—including payments to foreign investors, who currently hold roughly one-third of that debt overall (and 41 percent of such debt not held by the Federal Reserve). Increases in interest payments to foreign investors would, in turn, reduce the nation's net international income—the difference between the nation's income (as measured by its gross national product, or GNP) and its total output (as measured by GDP)—by reducing national income.⁶ When net international income declines, national income also declines, all else being equal.⁷

Greater Risk of a Fiscal Crisis

The likelihood of a fiscal crisis would increase as federal debt continued to rise, because mounting debt could erode investors' confidence in the U.S. government's fiscal position. Such an erosion of confidence would undermine the value of Treasury securities and would drive up interest rates on federal debt as investors demanded higher yields to purchase those securities. Concerns about the government's fiscal position could lead to a sudden and potentially spiraling increase in people's expectations for inflation, a large drop in the value of the

dollar, or a loss of confidence in the government's ability or commitment to repay its debt in full, all of which would make a fiscal crisis more likely.

A fiscal crisis could lead to a financial crisis. In a fiscal crisis, dramatic increases in Treasury rates would reduce the market value of outstanding government securities, and the resulting losses incurred by institutions and businesses that held those securities—including mutual funds, pension funds, insurance companies, and banks—could be large enough to cause some financial institutions to fail. Because the United States plays a central role in the international financial system, such a crisis could spread globally.

Risk Factors. The risk of a fiscal crisis depends on more than the amount of federal debt. Ultimately, it is the cost of servicing the debt and the ability to refinance it as needed that matter. Among the factors affecting those two things are investors' expectations—about the outlook for the budget and the economy and about domestic and international financial conditions, including interest rates and exchange rates.

CBO does not have sufficient information to reliably quantify the probability of a fiscal crisis. In CBO's assessment, no tipping point can be identified at which the debt-to-GDP ratio would become so high that it made a crisis likely or imminent, nor is there a fixed point at which interest costs would become so high in relation to GDP that they were unsustainable.

Risk of a Crisis in the Near Term. The risk of a fiscal crisis in the near term appears to be low despite the current large amount of federal debt. The near-term risk is mitigated by certain characteristics of the U.S. financial system that tend to sustain demand for Treasury securities. For example, the Federal Reserve conducts independent monetary policy, government debt is issued in U.S. dollars, the dollar holds a central place in the global financial system, and few investments can provide returns comparable to those of Treasury securities at similarly low levels of credit risk.

In addition, concern about a fiscal crisis in the near term is not currently apparent in financial markets. However, financial markets do not always fully reflect risks on the horizon, and the risk of a fiscal crisis could change suddenly in the wake of unexpected events. For example, a sudden rise in interest rates that persists for an extended period could cause investors to become concerned about the government's fiscal position over the long term.

5. See Congressional Budget Office, *Effects of Physical Infrastructure Spending on the Economy and the Budget Under Two Illustrative Scenarios* (August 2021), www.cbo.gov/publication/57327, and *The Macroeconomic and Budgetary Effects of Federal Investment* (June 2016), www.cbo.gov/publication/51628.

6. Whereas GDP is the value of all final goods and services produced within U.S. borders (whether the labor and capital used to produce them are supplied by residents or nonresidents), GNP is the value of all final goods and services produced with U.S. residents' labor and capital (either domestically or abroad).

7. The net effect on national income of a reduction in purchases of federal debt by foreign investors is unclear. When foreign holdings of U.S. debt decline, interest payments to foreign investors decrease. That leads to an increase in net international income as national income rises. However, that increase in net international income is offset by decreases resulting from higher interest rates.

Increased Likelihood of Other Adverse Effects

Even in the absence of an abrupt fiscal crisis, high and rising debt could have adverse effects on the economy beyond those incorporated into CBO's projections, including a gradual decline in the value of Treasury securities and other domestic assets, heightened expectations of inflation, and a loss of confidence in the U.S. dollar as the dominant international reserve currency. Such developments would, among other things, make it more difficult to finance public and private activity.

Greater Vulnerability of U.S. Fiscal Position to an Increase in Interest Rates

Higher debt makes the United States' fiscal position more vulnerable to an increase in interest rates. Debt of the amounts in CBO's projections increases the risk that interest costs would be substantially greater than projected—even without a fiscal crisis—if interest rates were higher than projected. (The average interest rate on federal debt in CBO's projections increases from 2.7 percent in 2023 to 3.3 percent in 2033 and to 4.0 percent in 2053. If, for example, that average rate followed CBO's projections through 2052 but was 1 percentage point higher in 2053, net interest costs measured as a percentage of GDP would be 1.7 percentage points higher in that year, all else being equal.) Conversely, lower interest rates would result in lower-than-projected interest costs.

Increased Perception of Fiscal Constraints Among Policymakers

The size of budget deficits and debt could influence policymakers' choices. If debt was already high, policymakers might feel constrained from using deficit-financed fiscal policy to respond to unforeseen events, promote economic activity, or further other goals. High debt could also undermine the international geopolitical role of the United States if policymakers were reluctant to increase spending to prepare for or respond to an international crisis.

Uncertainty of CBO's Long-Term Projections

CBO's long-term budget projections give lawmakers a point of comparison from which to measure the effects of policy options or proposed legislation; they are not predictions of budgetary outcomes. Moreover, the budget projections are uncertain because they depend on the agency's economic and demographic projections, which are themselves uncertain. Developments that differ from

the historical experiences on which the projections are based could significantly increase or decrease federal debt in relation to CBO's projections.

Uncertainty About Budgetary Outcomes

CBO's budget projections are intended to show what would happen to federal spending, revenues, deficits, and debt if current laws governing spending and taxes generally remained the same. But even if federal laws remained unchanged over the next three decades, actual budgetary outcomes would differ from CBO's projections because of unanticipated changes in economic conditions and in other factors that affect federal spending and revenues. Moreover, those outcomes will depend on future legislative action, which could increase or decrease budget deficits.

The uncertainty in CBO's budget projections increases in later years of the projection period because changes in the economy, demographics, and a variety of other factors are more difficult to anticipate over longer time horizons.

Uncertainty About the Economic Outlook

CBO's economic projections are subject to a high degree of uncertainty. For instance, the possibility that growth in the labor force or in productivity could be faster or slower than expected makes CBO's projections of labor market conditions and economic output uncertain. Other key sources of uncertainty are future monetary policy and the path of interest rates. For example, uncertainty about the path of interest rates contributes to uncertainty about the impact that higher deficits and debt would have on the economy. And geopolitical events, such as the war in Ukraine, add to the uncertainty of the economic outlook.

Uncertainty About the Demographic Outlook

CBO's long-term demographic projections are subject to significant uncertainty because, compounded over many years, even small changes in rates of fertility, mortality, or net immigration could greatly affect outcomes later in the projection period.⁸ For example, because many immigrants are of working age, higher-than-projected net immigration would result in a larger-than-projected labor force, and lower-than-projected net immigration would have the opposite effect. Changes in fertility rates would have larger effects once members of the affected generations reached working age. Changes in mortality

8. For the agency's latest demographic projections, see Congressional Budget Office, *The Demographic Outlook: 2023 to 2053* (January 2023), www.cbo.gov/publication/58612.

rates, which would probably most affect the size of the older population, would cause outlays for the major health care programs and Social Security to diverge from CBO's projections.

Uncertainty About Other Potential Developments

Because CBO's projections are based on historical trends, developments that have few historical precedents or are otherwise difficult to predict constitute a significant source of uncertainty. Such developments—for example, a severe economic downturn, unexpectedly strong and sustained economic growth, the discovery or development of natural resources, or unanticipated effects of climate change—could lead to budgetary outcomes that are much better or worse than CBO projects.

A Severe Economic Downturn. CBO's long-term projections of output and unemployment reflect trends from the end of World War II to the present—a period that included several economic downturns that were not fully offset by upturns of similar magnitude. But particularly severe and protracted economic downturns are rare.

If such a downturn occurred, budgetary outcomes could significantly diverge from CBO's projections. Economic downturns can reduce revenues and raise outlays for unemployment insurance, nutrition assistance, or other programs that provide support to people and businesses. In addition, downturns have historically prompted policymakers to enact legislation that further reduces revenues and increases federal spending—to increase people's incomes, bolster the financial position of state and local governments, and stimulate economic activity and employment. Such developments can lead to substantial increases in federal debt. For example, in the aftermath of the 2007–2008 financial crisis, federal debt held by the public rose from 39 percent of GDP at the end of fiscal year 2008 to 70 percent of GDP at the end of 2012.

Unexpectedly Strong Economic Growth. Likewise, a source of uncertainty in CBO's projections is the possibility that economic growth could be much stronger than the agency expects on the basis of historical trends. A substantial increase in productivity—for example,

because of technological advances—could cause such a development. As a result, revenues could be higher than CBO projects, and outlays, including those for support programs, could be lower.

The Discovery and Development of Natural Resources. CBO's projections reflect the effects of previous advances in the development of natural resources—for example, increases in federal tax revenues that stemmed from an increase in the production of oil and natural gas from shale. However, it is impossible to predict the discovery of natural resources or new ways to extract them, and the effects of any such discovery on the federal budget would depend on private investment, government regulations, the infrastructure necessary to access and transport those resources, and other factors.

Unanticipated Effects of Climate Change. On net, CBO expects climate change to reduce economic growth and increase budget deficits. The budgetary effects of climate change are expected to increase over time, but because climate change is an evolving phenomenon, the nature and extent of those changes are uncertain. (For a discussion of the effects of climate change on CBO's projections of economic growth, see Appendix C.)

In CBO's projections, revenues fall as climate change reduces output. The effects on spending are more complex. For instance, spending on Medicare and other health programs is expected to rise amid an increase in climate-related health conditions, such as illnesses related to heat exposure or air pollution and injuries related to storms, floods, and wildfires. Conversely, spending on health care programs would decline to the extent that participants died at younger ages than they otherwise would have or illnesses related to cold exposure decreased.⁹ Climate change could also prompt lawmakers to increase spending on discretionary programs, such as programs that provide disaster relief or repair and rebuild military facilities that would be damaged by increasingly frequent or severe storms.

9. See Congressional Budget Office, *Budgetary Effects of Climate Change and of Potential Legislative Responses to It* (April 2021), www.cbo.gov/publication/57019.

Chapter 2: Spending and Revenues

Overview

Under current law, federal spending is projected to represent a larger percentage of the nation's gross domestic product (GDP) in coming years than it did, on average, during the past 50 years. From 1973 to 2022, total federal outlays averaged 21.0 percent of GDP; over the 2023–2053 period, projected outlays average 25.7 percent of GDP (see Figure 2-1).

In the Congressional Budget Office's projections, outlays amount to 24.2 percent of GDP in 2023—less than the 24.8 percent recorded in 2022—as federal spending in response to the coronavirus pandemic continues to wane.¹ Outlays continue to decrease through 2026 but steadily increase thereafter for three reasons: Rising interest rates and growing federal debt boost net interest costs; the growing cost of health care and the increase in the average age of the population boost spending on the major health care programs; and that same demographic trend increases spending on Social Security. Total spending reaches 24.4 percent of GDP in 2033 and continues to rise to 29.1 percent in 2053. Spending in the United States has exceeded that level in only two periods—for a three-year span during World War II and for two years amid the coronavirus pandemic. From 1943 to 1945, when defense expenditures increased sharply, total federal spending topped 40 percent of GDP. In 2020 and 2021, pandemic-related spending boosted total outlays to roughly 31 percent of GDP.

1. The long-term budget projections in this report are based on CBO's May 2023 baseline projections but also reflect the estimated budgetary effects of the Fiscal Responsibility Act of 2023 (FRA, Public Law 118-5), enacted on June 3, 2023. Other legislation enacted between March 30, 2023 (when CBO finalized its May baseline), and June 3, 2023, did not have significant budgetary effects. The projections are consistent with the demographic projections that the agency published on January 24, 2023, and the economic forecast that it published on February 15, 2023. They do not reflect the economic effects of administrative actions, regulatory changes, legislation, or economic developments after December 6, 2022, when that economic forecast was finalized. Nor do they reflect the budgetary effects of any developments after March 30, 2023, except for the enactment of the FRA.

Over the 2023–2053 period, revenues measured as a percentage of GDP are projected to be higher than they have been, on average, in recent decades. Revenues averaged 17.4 percent of GDP over the past 50 years. Over the next 30 years, projected revenues average 18.4 percent of GDP.

CBO develops its extended baseline projections according to certain assumptions, some of which are specified in law. For a description of the assumptions underlying the projections, see Appendix A.

Spending

Total spending comprises mandatory and discretionary spending, as well as net outlays for interest.² In CBO's projections:

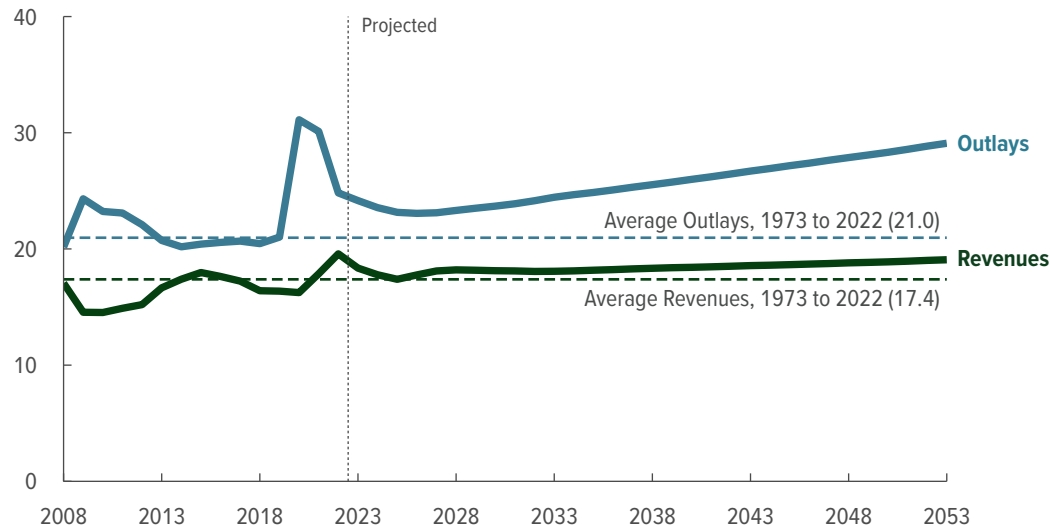
- Mandatory spending measured in relation to the size of the economy initially decreases through 2026 (to 14.0 percent of GDP) as pandemic-related mandatory outlays continue to decline. Mandatory spending then rises steadily to 16.9 percent of GDP in 2053, largely driven by growth in outlays for the major health care programs.
- Discretionary outlays amount to 6.5 percent of GDP in 2023, decline to 5.4 percent by 2037, and then are assumed to remain constant (as a percentage of GDP) through 2053 (see Figure 2-2).
- Net outlays for interest increase significantly during that period—from 2.5 percent of GDP in 2023 to

2. Mandatory spending includes outlays for most federal benefit programs and for certain other payments to people, businesses, nonprofit institutions, and state and local governments. Such outlays are generally governed by statutory criteria and are not normally constrained by the annual appropriation process. Discretionary spending encompasses an array of federal activities funded through or controlled by appropriations. That category includes most defense spending and spending for many nondefense activities, such as elementary and secondary education, housing assistance, international affairs, the administration of justice, and highway programs. In the federal budget, net outlays for interest consist of the government's interest payments on federal debt, offset by interest income that the government receives.

Figure 2-1.

Total Outlays and Revenues

Percentage of Gross Domestic Product



In most years, growth in outlays is projected to outpace growth in revenues, resulting in widening budget deficits.

Data source: Congressional Budget Office. See www.cbo.gov/publication/59014#data.

6.7 percent in 2053. If such outlays followed their projected path, they would exceed all mandatory spending other than that for the major health care programs and Social Security by 2027, all discretionary outlays by 2047, and all spending on Social Security by 2051.

CBO projects that by 2053, growth in outlays for the major health care programs and for interest would reshape the spending patterns of the U.S. government (see Figure 2-3). Net interest costs would account for a much greater portion of total federal spending in 2053 than in 2023, as would spending on the major health care programs.

Mandatory Spending

In CBO's extended baseline projections, the growth in mandatory spending is driven by increased spending on the major health care programs and, especially in the first decade, on Social Security. Other mandatory spending declines in relation to GDP over the next 30 years, particularly in the first decade of the period.³ Spending on the major health care programs climbs largely because, in

CBO's estimation, health care costs per person will continue to rise. The aging of the population also contributes to growth in spending on health care programs and on Social Security. In 2023, outlays for Social Security, Medicare, and Medicaid, for people age 65 or older, amount to less than 30 percent of all federal noninterest spending; but in 2053, such outlays amount to more than 40 percent of all noninterest spending.

Major Health Care Programs. The major health care programs consist of Medicare, Medicaid, the Children's Health Insurance Program (CHIP), and subsidies for health insurance purchased through the marketplaces established under the Affordable Care Act.⁴ Spending on Medicare, which provides health insurance to roughly 65 million people (86 percent of whom are at least 65 years old), will account for over half of all spending on those programs in 2023 and over 60 percent of it in 2053, CBO projects.

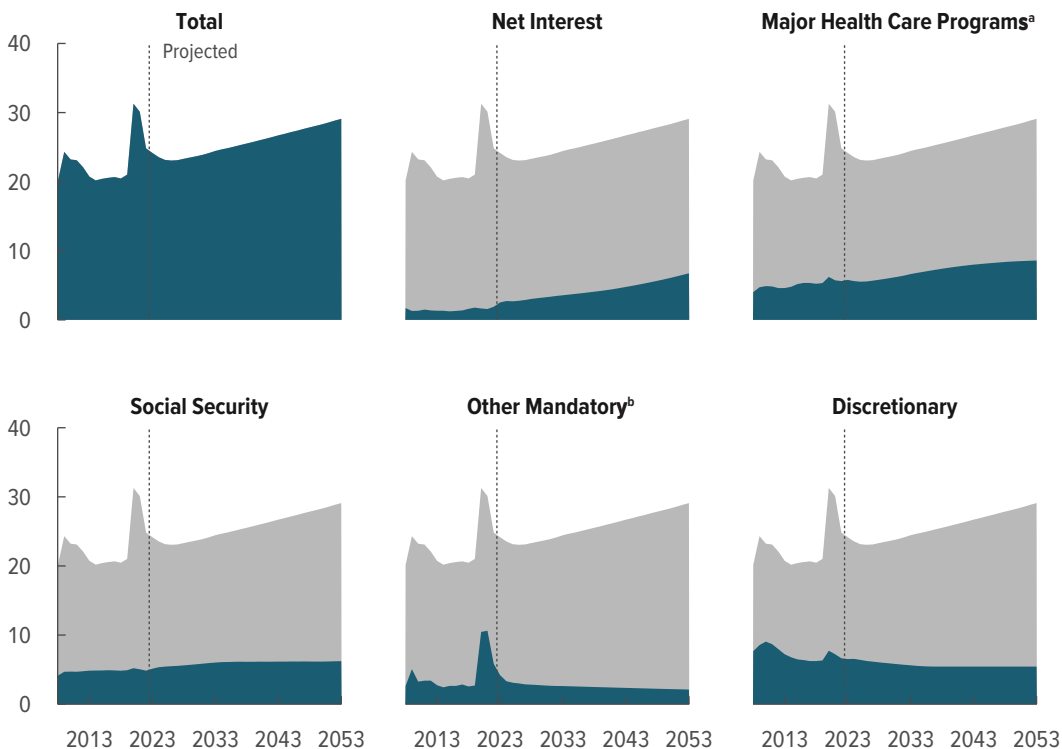
3. For a more detailed discussion of outlays from 2023 to 2033, see Congressional Budget Office, *An Update to the Budget Outlook: 2023 to 2033* (May 2023), www.cbo.gov/publication/59096, *The Budget and Economic Outlook: 2023 to 2033* (February 2023), www.cbo.gov/publication/58848, and *How the Fiscal Responsibility Act of 2023 Affects CBO's Projections of Federal Debt* (June 2023), www.cbo.gov/publication/59235.

4. Federal subsidies for health insurance for low- and moderate-income households account for most of the outlays for subsidies for insurance purchased through the marketplaces and related spending. The related spending consists almost entirely of payments for risk adjustment (which are financed by funds collected from insurers with healthier enrollees and made to health insurers whose enrollees are in poorer health) and spending for the Basic Health Program (an optional state program that covers low-income residents outside the health insurance marketplaces).

Figure 2-2.

Outlays, by Category

Percentage of GDP



Over the long term, net outlays for interest and spending on the major health care programs and Social Security are projected to rise in relation to GDP; other spending, in total, is projected to decline.

Data source: Congressional Budget Office. See www.cbo.gov/publication/59014#data.

GDP = gross domestic product.

- Consists of spending on Medicare (net of premiums and other offsetting receipts), Medicaid, and the Children's Health Insurance Program, as well as outlays to subsidize health insurance purchased through the marketplaces established under the Affordable Care Act and related spending.
- Consists of all mandatory spending other than that for Social Security and the major health care programs. "Other Mandatory" includes the refundable portions of the earned income tax credit, the child tax credit, and the American Opportunity Tax Credit.

Over the past five decades, spending on the major health care programs has grown faster than the economy—a trend that persists in CBO's projections. Net federal spending on those programs amounts to 5.8 percent of GDP in 2023 and increases to 8.6 percent in 2053.

The primary driver of that increase is spending on Medicare. Such spending (net of offsetting receipts, which are mostly premiums paid by enrollees) grows as a share of GDP by 2.4 percentage points during the period, reaching 5.5 percent of GDP in 2053 (see Figure 2-4). The growth in Medicare spending over the next three decades stems largely from rising health care costs per person and demographic trends. As a share of GDP, spending on the other major health care programs—Medicaid and CHIP, combined with subsidies for health insurance purchased through the marketplaces established under the Affordable Care Act and related

spending—grows by 0.4 percentage points over the next three decades, reaching 3.1 percent of GDP in 2053.

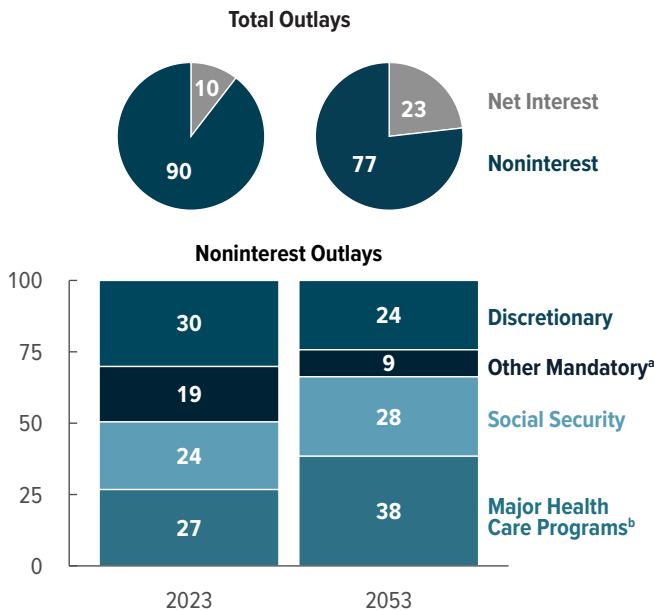
The Hospital Insurance (HI) Trust Fund is used to pay for benefits under Medicare Part A, which covers inpatient hospital services, care provided in skilled nursing facilities, home health care, and hospice care.⁵ The HI trust fund derives income from several sources but

5. Medicare's second trust fund, the Supplementary Medical Insurance (SMI) Trust Fund, is used to pay for outpatient services (including physicians' services) and prescription drugs under Parts B and D of the program. The SMI Trust Fund differs from the HI Trust Fund in that most of its income does not come from a specified set of revenues collected from the public. Rather, most of the SMI fund's income is in the form of transfers from the general fund of the Treasury, which are automatically adjusted to cover the differences between the program's spending and specified revenues. Thus, the balance in the SMI fund cannot be exhausted.

Figure 2-3.

Composition of Outlays, 2023 and 2053

Percent



Under current law, net outlays for interest would account for a greater portion of total federal outlays in 2053 than they will in 2023, and spending on the major health care programs would account for a much larger share of all federal noninterest spending.

Data source: Congressional Budget Office. See www.cbo.gov/publication/59014#data.

- a. Consists of all mandatory spending other than that for Social Security and the major health care programs. “Other Mandatory” includes the refundable portions of the earned income tax credit, the child tax credit, and the American Opportunity Tax Credit.
- b. Consists of spending on Medicare (net of premiums and other offsetting receipts), Medicaid, and the Children’s Health Insurance Program, as well as outlays to subsidize health insurance purchased through the marketplaces established under the Affordable Care Act and related spending.

mainly from the Medicare payroll tax. One measure of the sustainability of Part A is the projected timing of the HI trust fund’s exhaustion. In CBO’s projections, the fund’s balance generally increases through 2029, after which time expenditures begin to outstrip income. As a result, the HI trust fund would be exhausted in 2035.

Once the HI trust fund was exhausted, total payments to health plans and providers for services covered under Part A would be limited to the amount of revenues

subsequently credited to the fund. It is unclear what changes the Centers for Medicare & Medicaid Services could make in order to operate the Part A program under those circumstances.⁶

Another measure of the sustainability of the HI trust fund is its actuarial balance, which summarizes the fund’s current balance and annual future streams of revenues and outlays as a single number.⁷ (A negative actuarial balance is called an actuarial deficit.) In CBO’s projections, the HI trust fund’s 25-year actuarial deficit amounts to 0.6 percent of taxable payroll (or 0.3 percent of GDP). In other words, the government could pay for the services prescribed by current law and maintain the necessary trust fund balance through 2047 if the HI payroll tax rate, which is currently 2.9 percent, was raised immediately and permanently by 0.6 percentage points. Other ways to maintain the necessary trust fund balance include reducing payments by an amount equivalent to 0.6 percent of taxable payroll, combining tax increases with payment reductions, or transferring money to the trust fund.

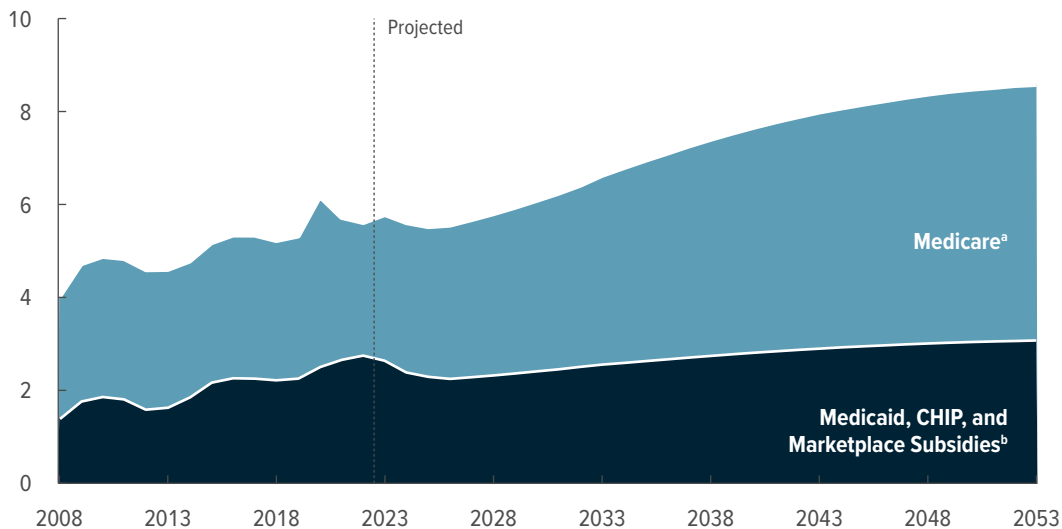
Social Security. In CBO’s projections, spending on Social Security generally increases as a percentage of GDP over the next 30 years, continuing the trend of the past five decades. The number of Social Security beneficiaries rises from 67 million (or about 20 percent of the population) in 2023 to 79 million in 2033 and then to 97 million (or over 25 percent of the projected population) in 2053. Spending on the program increases from 5.1 percent of GDP in 2023 to 6.0 percent in 2033. That growth continues but slows along with the pace of the aging of the population, as members of the large baby-boom generation die and people from younger and smaller generations

- 6. CBO’s projections reflect the assumption that Medicare and Social Security will continue to pay benefits as scheduled under current law, regardless of the status of the programs’ trust funds. That approach is consistent with a statutory requirement that CBO’s 10-year baseline projections reflect the assumption that funding for such programs is adequate to make all payments required by law. See sec. 257(b)(1) of the Balanced Budget and Emergency Deficit Control Act of 1985, P.L. 99-177 (codified at 2 U.S.C. §907(b)(1) (2016)).
- 7. The actuarial balance is the sum of the present value of projected income and the current trust fund balance minus the sum of the present value of projected outlays and a year’s worth of benefits at the end of the period. (The present value expresses a flow of current and future income or payments in terms of an equivalent lump sum received or paid today.) For the HI trust fund, that difference is presented in this report as a percentage of the present value of taxable payroll or of GDP over 25 years.

Figure 2-4.

Composition of Outlays for the Major Health Care Programs

Percentage of Gross Domestic Product



Spending on Medicare is projected to account for more than four-fifths of the increase in spending on the major health care programs over the next 30 years.

Data source: Congressional Budget Office. See www.cbo.gov/publication/59014#data.

CHIP = Children's Health Insurance Program.

a. Net of premiums and other offsetting receipts.

b. "Marketplace Subsidies" refers to outlays to subsidize health insurance purchased through the marketplaces established under the Affordable Care Act and related spending.

become eligible for Social Security; spending on Social Security reaches 6.2 percent of GDP in 2053.⁸

The Social Security program is funded by dedicated tax revenues from two sources. Currently, 96 percent of the funding comes from a payroll tax on earnings up to a certain limit; the rest is collected from an income tax on Social Security benefits. Revenues from the payroll tax and the income tax on benefits are credited to the Old-Age and Survivors Insurance (OASI) Trust Fund and the Disability Insurance (DI) Trust Fund, which finance the program's benefits. In CBO's extended baseline projections, dedicated tax revenues for the combined trust funds decline from 4.6 percent of GDP in 2023 to 4.4 percent in 2053. The decline occurs in part because projected earnings grow faster for high earners than for low earners, so a larger share of earnings exceeds the maximum taxable amount for Social Security and a smaller share is taxable.

8. In CBO's projections, spending on Social Security continues as scheduled regardless of the amounts in the program's trust funds. The baby-boom generation comprises people born between 1946 and 1964.

A commonly used measure of Social Security's financial position is the dates by which the trust funds would be exhausted.⁹ CBO projects that the OASI trust fund would be exhausted in fiscal year 2032 and the DI trust fund would be exhausted in calendar year 2052. If their balances were combined, the Old-Age, Survivors, and Disability Insurance (OASDI) trust funds would be exhausted in fiscal year 2033. CBO estimated the amounts by which annual benefits would have to be reduced for the trust funds' outlays to match their revenues in each year after the combined trust funds were exhausted. Benefits would need to be reduced (in relation to CBO's baseline projections) by 25 percent in 2034, an amount that would climb to 28 percent in 2053.

Other Mandatory Programs. Before the pandemic, mandatory spending excluding outlays for the major health care programs and Social Security had generally

9. Another commonly used measure of Social Security's financial position is the program's actuarial balance, often measured over 75 years. See Congressional Budget Office, *CBO's 2023 Long-Term Projections for Social Security* (forthcoming, June 2023), www.cbo.gov/publication/59184.

remained between 2 percent and 4 percent of GDP since the mid-1960s (it was 2.7 percent of GDP in 2019, for example). Such spending includes outlays for the Supplemental Nutrition Assistance Program (SNAP), unemployment compensation, retirement programs for federal civilian and military employees, certain programs for veterans, Supplemental Security Income, and certain refundable tax credits.¹⁰ That spending increased significantly in 2020 and 2021—to 10.4 percent and 10.6 percent of GDP, respectively—mainly because of policies enacted in response to the pandemic and related economic downturn. As spending associated with those policies decreased, outlays for the category “other mandatory programs” fell to 5.8 percent of GDP in 2022.

In CBO’s projections, spending on other mandatory programs totals 4.2 percent of GDP in 2023. It then declines as a share of the economy, falling to 2.6 percent of GDP in 2033 and 2.1 percent in 2053.¹¹ The projected decline through 2033 occurs in part because the amounts of benefits for many of the programs are adjusted for inflation each year—and in CBO’s economic forecast, inflation is projected to be less than the rate of growth in nominal GDP (that is, GDP measured in current-year dollars). The decline from 2033 to 2053 is partly attributable to rising income, which decreases the number of people who qualify for refundable tax credits (in turn decreasing the government’s outlays for those credits). Over that period, outlays for the remainder of other mandatory programs are assumed to decline as a percentage of GDP at roughly the same annual rate at which they are projected to decline between 2030 and 2033.

Causes of Growth in Mandatory Spending. Rising health care costs per person and the aging of the population are the main reasons for the sharp increase in projected spending on the major health care programs over the next 30 years. The aging of the population also leads to an increase in spending on Social Security.

CBO assessed the combined effects of those two factors by projecting what would occur over the 2023–2053 period if health care costs per person (adjusted for demographic changes) grew at the rate of potential GDP per person—which would mean that costs grew more slowly than the agency currently projects—and the average age of the population was not increasing. Under those scenarios, spending on the major health care programs would be 5.9 percent of GDP in 2053, or 0.6 percentage points lower than the agency currently projects for 2023.¹² And if the effects of the aging of the population alone were excluded, then spending on Social Security would be 4.9 percent of GDP in 2053, 0.2 percentage points lower than the agency projects for 2023 (see Figure 2-5).¹³

Rising Health Care Costs per Person. The average growth rate of federal health care spending per beneficiary has slowed in recent years, from 5.6 percent over the 1988–2005 period to 2.2 percent from 2007 to 2019. However, over the second and third decades of the projection period, such costs (adjusted for demographic changes) continue to increase faster than the 3.3 percent growth rate of potential GDP per person—1.0 percent faster for Medicare and 1.1 percent faster for Medicaid, on average. That growth in health care costs per person accounts for over two-thirds of the increase in spending, measured as a percentage of GDP, on the major health care programs between 2023 and 2053.

10. Refundable tax credits reduce a filer’s overall income tax liability; if the credit exceeds the filer’s income tax liability, the government pays all or some portion of that excess to the taxpayer (and the payment is treated as an outlay in the budget). For more information, see Congressional Budget Office, *Refundable Tax Credits* (January 2013), www.cbo.gov/publication/43767.

11. Sec. 257(b)(2) of the Balanced Budget and Emergency Deficit Control Act of 1985, which governs CBO’s baseline projections, makes exceptions regarding current law for some programs, such as SNAP, that have expiring authorizations but that are assumed to continue as currently authorized.

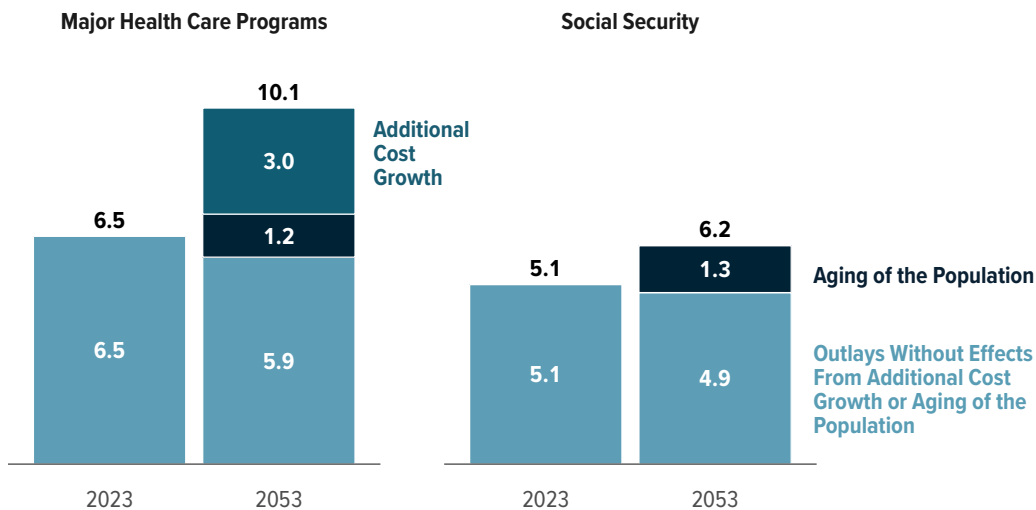
12. Potential GDP is the maximum sustainable output of the economy. The analysis of the causes of the growth in spending on the major health care programs encompasses gross spending on Medicare and does not reflect receipts credited to the program from premiums and other sources.

13. In this report, the term “additional cost growth” describes the amount by which the growth rate of nominal health care spending per person (adjusted to remove the effects of demographic changes) exceeds the growth rate of potential GDP per person. To assess how additional cost growth would affect spending on the major health care programs and how the aging of the population would affect such spending as well as outlays for Social Security, CBO produced estimates using three scenarios: In the first scenario, the age distribution of the population matched that in 2023 and additional cost growth was held at zero. In the second scenario, the agency projected the effect of the aging of the population while holding additional cost growth at zero. And in the third scenario, it projected the effects of the aging of the population and additional cost growth. To determine how the aging of the population would affect projected outlays for the major health care programs and Social Security, CBO then compared the result of the second scenario with that of the first scenario; and to determine how additional cost growth would affect projected spending on the major health care programs, the agency compared the result of the third scenario with that of the second scenario.

Figure 2-5.

Composition of Growth in Outlays for the Major Health Care Programs and Social Security, 2023 to 2053

Percentage of GDP



Growth in spending on the major health care programs is largely driven by cost growth above and beyond that accounted for by demographic changes or the growth of potential GDP per person. Spending on those programs, as well as spending on Social Security benefits, is also boosted by the aging of the population.

Data source: Congressional Budget Office. See www.cbo.gov/publication/59014#data.

The spending on the major health care programs examined here consists of gross spending on Medicare (which does not account for premiums or other offsetting receipts), Medicaid, and the Children's Health Insurance Program, as well as outlays to subsidize health insurance purchased through the marketplaces established under the Affordable Care Act and related spending.

Additional cost growth is the extent to which the growth rate of nominal health care spending per person (adjusted for demographic changes) exceeds the growth rate of potential GDP per person. Potential GDP is the maximum sustainable output of the economy.

GDP = gross domestic product.

Aging of the Population. Over the 2023–2053 period, about one-third of the projected increase in total spending on the major health care programs, measured as a percentage of GDP, is attributable to the aging of the population. The lion's share of the increase results from greater spending on Medicare because Medicare is the largest of those programs and most beneficiaries qualify for it at age 65. (See Figure 3-2 on page 27 for CBO's projections of the population by age group.)¹⁴ As the group of people who qualify for Medicare becomes larger and, on average, older, Medicare spending will grow, not only because of the greater number of beneficiaries but also because spending on health care tends to increase as people age.

14. In this report, population refers to the Social Security area population, which includes all residents of the 50 states and of the District of Columbia, as well as civilian residents of U.S. territories. It also includes federal civilian employees and members of the U.S. armed forces living abroad and their dependents, U.S. citizens living abroad, and noncitizens living abroad who are eligible for Social Security benefits on the basis of their earnings while in the United States.

From 2023 to 2053, all of the projected increase in spending on Social Security, measured as a percentage of GDP, is attributable to the aging of the population. The effects of that aging, which push spending on Social Security up, are partially offset by scheduled increases in the full retirement age for Social Security, which reduce the lifetime benefits for affected beneficiaries and thus push spending down.¹⁵ (In fact, if the population was not aging, then outlays for Social Security over the 2023–2053 period would decrease as a percentage of GDP.)

Discretionary Spending

In CBO's long-term projections, discretionary outlays through 2033 follow the agency's 10-year baseline projections adjusted to reflect the estimated budgetary effects of the Fiscal Responsibility Act of 2023 (Public Law 118-5).

15. For more details about the full retirement age for Social Security, see Zhe Li, *The Social Security Retirement Age*, Report R44670, version 14 (Congressional Research Service, July 6, 2022), <https://tinyurl.com/yndurmpa>.

From 2023 to 2033, in CBO's projections, about 49 percent of all discretionary outlays, on average, are dedicated to national defense. The rest are for nondefense discretionary spending, which comprises outlays for an array of federally funded activities and programs.

After 2033, discretionary outlays are assumed to transition (over a five-year period) to grow at the rate of nominal GDP. As a result, such outlays generally decrease as a percentage of GDP—falling from 6.5 percent in 2023 to 5.4 percent in 2037 and remaining at that level through 2053.

Net Outlays for Interest

Over the past 50 years, the government's net interest costs have ranged from 1.2 percent of GDP to 3.2 percent, averaging 2.0 percent of GDP. In CBO's projections, such costs amount to 2.5 percent of GDP in 2023. By 2033, those costs increase to 3.6 percent of GDP, as federal debt grows and interest rates rise. Net outlays for interest continue to increase thereafter, reaching 6.7 percent of GDP in 2053. They would be higher (as a percentage of GDP) in that year than spending on Social Security, discretionary outlays, or all mandatory spending other than that for the major health care programs and Social Security—and more than twice the highest amount observed since at least 1940 (the first year for which the Office of Management and Budget reports such data).

The projected increase in net outlays for interest is the result of escalating interest rates and the rising amount of debt. On average, in CBO's projections, increases in the average interest rate account for about two-thirds of the rise in net interest costs over the 2023–2053 period.¹⁶

16. To determine the change in net interest costs separately attributable to primary deficits (that is, deficits excluding net outlays for interest) and to changes in the average interest rate, CBO started with a benchmark scenario. In that scenario, after 2022, the average interest rate did not change and there were no primary deficits adding to the amount of debt. The agency then estimated the effect on net interest costs from primary deficits (by estimating those deficits without a change in the average interest rate) and from the change in the average interest rate (by estimating those rates without primary deficits). The relative size of those estimates was then used to calculate the percentage of the total increase in net interest costs attributable to the increase in the average interest rate and to primary deficits by proportionally allocating the interaction between the average interest rate and the primary deficit.

Revenues

In CBO's projections, revenues measured as a percentage of GDP fluctuate over the next decade, declining through 2025 but increasing thereafter because of scheduled changes to tax provisions. Revenues rise steadily from 2033 to 2053, mainly because growth in income boosts receipts from the individual income tax. Measured in relation to the size of the economy, revenues are higher in each year of the next three decades than their average over the past 50 years.¹⁷

Projected Revenues

In CBO's projections, total revenues amount to 18.4 percent of GDP in 2023, down from 19.6 percent last year. Revenues continue to decline through 2025 as the effects of temporary factors that boosted tax receipts in 2021 and 2022 (such as strong collections of taxes on capital gains realizations) subside. In 2026 and 2027, by contrast, revenues rise in relation to GDP because of changes to provisions governing the individual income tax that are scheduled to occur at the end of calendar year 2025.

From 2023 to 2053, total revenues measured as a percentage of GDP grow by nearly one percentage point in CBO's projections, reaching 19.1 percent of GDP by the end of the period. That growth is mainly driven by an increase in individual income tax receipts that is partially offset by decreases in other revenues. Although receipts of individual income taxes initially fall, they resume their growth after 2025 and amount to 10.7 percent of GDP in 2053—one percentage point higher than their value in 2023 (see Figure 2-6). That growth in receipts from individual income taxes is partially offset by declining receipts from corporate income taxes and payroll taxes over the next three decades (by 0.4 percentage points and 0.2 percentage points, respectively).

Factors Affecting Revenues

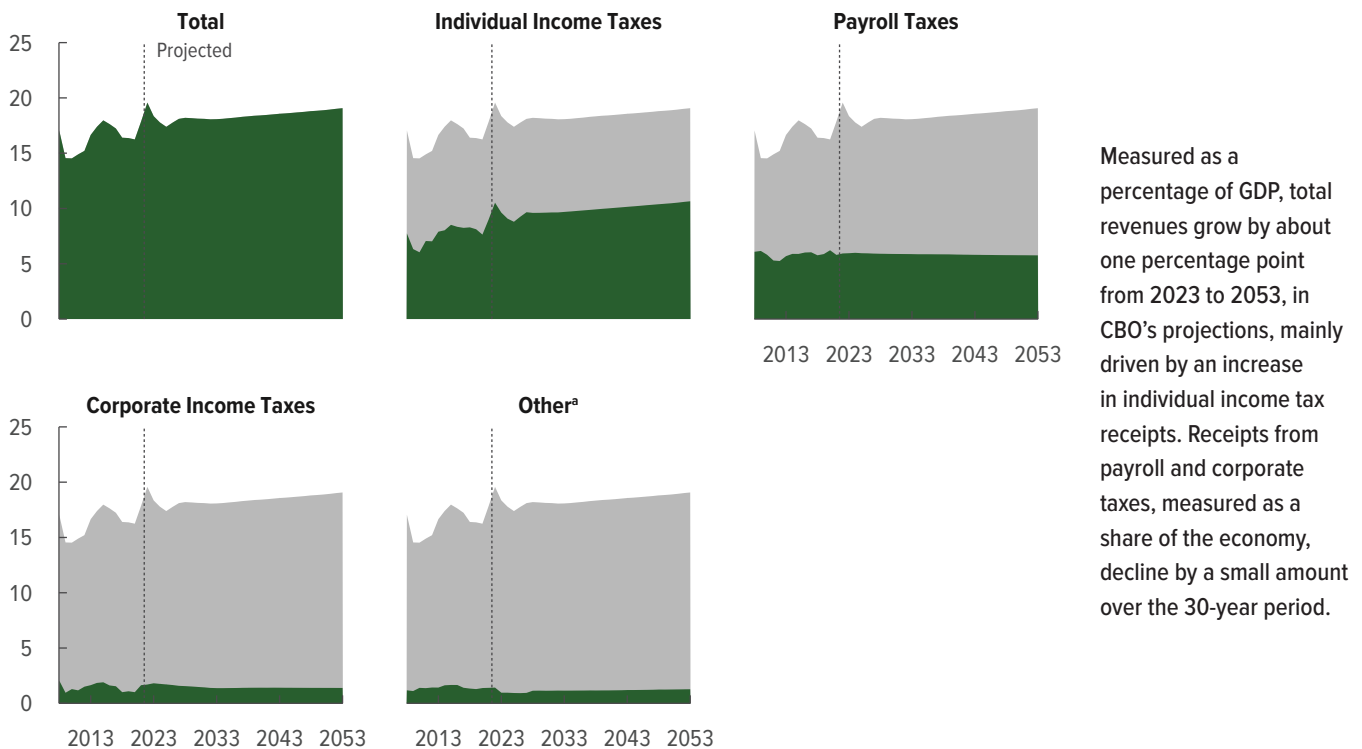
The projected increase in total revenues, measured as a percentage of GDP, over the next 30 years stems from several factors, including real bracket creep and scheduled

17. CBO's revenue projections are based on the assumption that the rules for all tax sources (individual income taxes, corporate income taxes, payroll taxes, and other taxes) will change as scheduled under current law. The sole exception is expiring excise taxes dedicated to trust funds. The Balanced Budget and Emergency Deficit Control Act of 1985 requires that CBO's baseline reflect the assumption that those taxes would be extended at their current rates. That law does not stipulate that the baseline include the extension of other expiring tax provisions, even if lawmakers have routinely extended them in the past.

Figure 2-6.

Revenues, by Source

Percentage of GDP



Data source: Congressional Budget Office. See www.cbo.gov/publication/59014#data.

GDP = gross domestic product.

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

changes to tax provisions. Those factors are partially offset by others that cause revenues to decrease, including the end of a temporary boost to tax receipts, growing health care costs, and a decline in receipts from the corporate income tax (see Figure 2-7). Faster earnings growth for higher-earning people increases individual income taxes but decreases payroll taxes by nearly the same amount, affecting net revenues little over the long term.

Real Bracket Creep. The income thresholds for the various tax rate brackets in the individual income tax are indexed to increase with inflation (as measured by the chained consumer price index for all urban consumers, published by the Bureau of Labor Statistics). In CBO's projections, nominal income grows faster than prices, so more income is pushed into higher tax brackets even when the underlying distribution of income remains unchanged. That process is known as real bracket creep

and is the largest source of growth in total projected revenues over the next three decades.

If current laws generally remained unchanged, real bracket creep would continue to gradually boost taxes in relation to income through 2053, CBO projects, thereby increasing tax receipts. From 2033 to 2053, the share of income in the highest income bracket (taxed at the top rate of 39.6 percent) would rise by 2 percentage points, and the share of income excluded from taxation (mostly because of exemptions and deductions) would fall by 3 percentage points—because of real bracket creep (see Figure 2-8).¹⁸

Scheduled Changes to Tax Provisions After 2025.

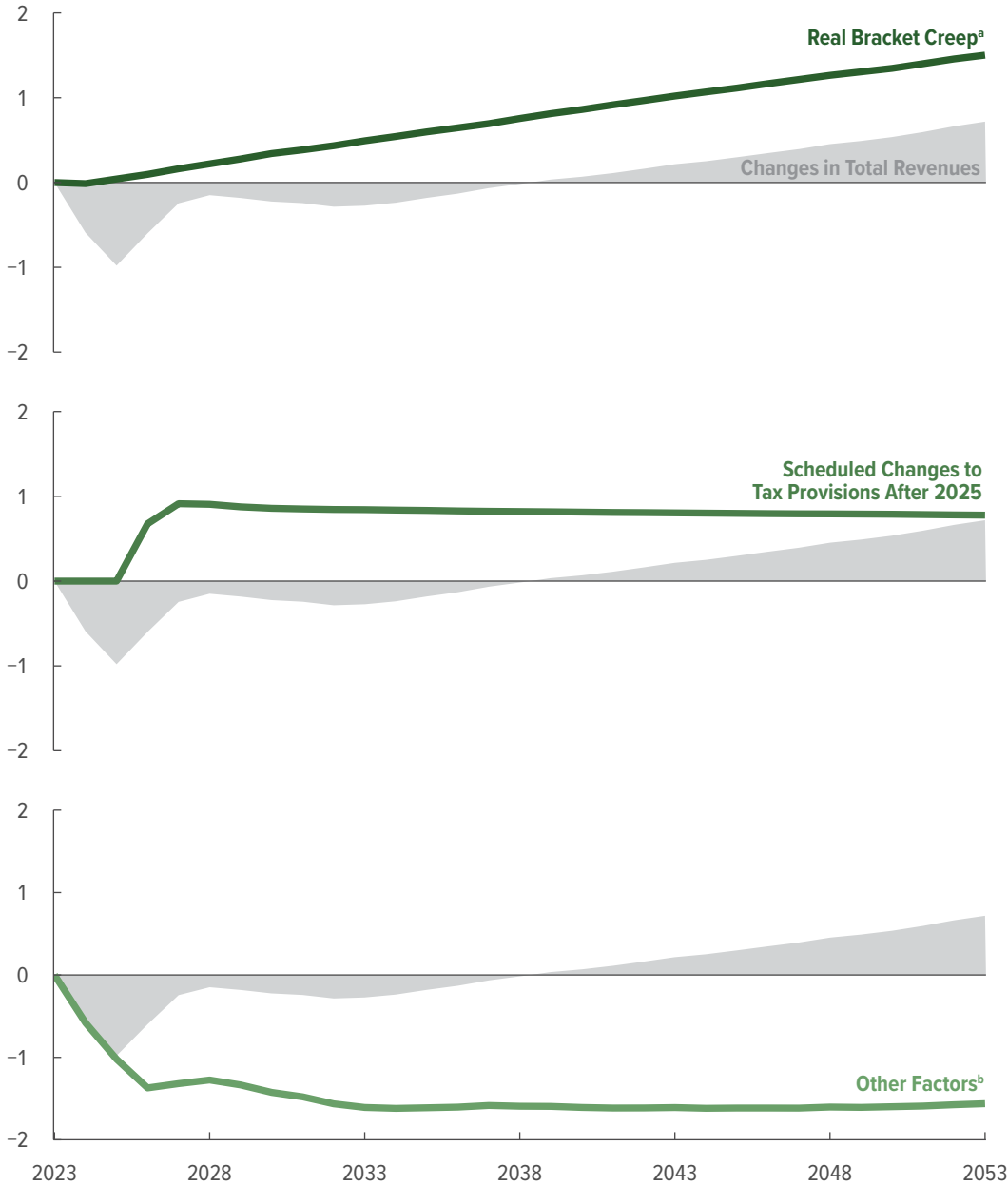
Under current law, nearly all the provisions of the 2017 tax

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

Figure 2-7.

Key Factors Contributing to Changes in Revenues

Percentage of GDP



The largest source of growth in tax revenues over the long term is real bracket creep—the process in which, as income rises faster than prices, a larger proportion of income becomes subject to higher tax rates.

After 2025, another significant source of growth in revenues is the scheduled expiration of certain provisions of the 2017 tax act.

Several other factors affect projected revenues. In 2023, for example, revenues fall as a percentage of GDP as the temporary boost to tax receipts observed in 2021 and 2022 ends.

Data source: Congressional Budget Office. See www.cbo.gov/publication/59014#data.

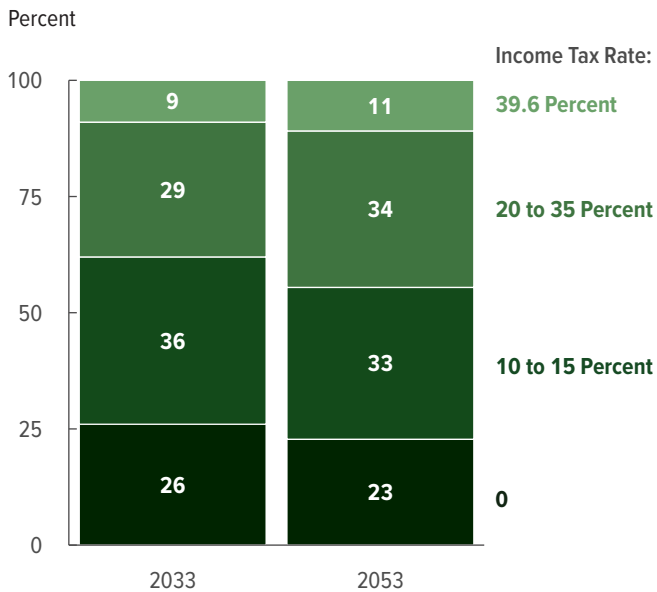
GDP = gross domestic product.

- a. Real bracket creep is the process in which, as income rises faster than inflation, a larger proportion of income becomes subject to higher tax rates, even when the underlying distribution of income remains unchanged.
- b. Other factors include an end to the temporary boost to tax receipts as recent strength in collections dissipates, as well as factors that affect revenues over the longer term, such as changes in the distribution of wages and growth in nontaxable compensation resulting from rising health care costs.



Figure 2-8.

Shares of Income Taxed at Different Rates Under the Individual Income Tax System



The largest contributor to growth in projected revenues over the long term is real bracket creep—the process in which, as income rises faster than prices, a larger proportion of income becomes subject to higher tax rates. As the share of income taxed at higher rates grows, the share exempt from taxation shrinks.

Data source: Congressional Budget Office. See www.cbo.gov/publication/59014#data.

In this figure, income refers to adjusted gross income—that is, income from all sources not specifically excluded by the tax code, minus certain deductions. The income tax rate is the statutory rate specified under the individual income tax system. The lowest statutory tax rate is zero (because of deductions and exemptions).

act (P.L. 115-97) affecting the individual income tax are scheduled to expire at the end of calendar year 2025. In CBO's projections, the resulting changes, taken together, boost tax revenues in relation to income. Once in effect, the scheduled changes would bring about higher statutory tax rates, a smaller standard deduction, the return of personal exemptions, and a reduction in the child tax credit. Those changes would cause tax liabilities (the amounts taxpayers owe) to rise beginning in calendar year 2026, pushing up receipts in fiscal year 2026 and beyond. CBO projects that after 2025, the scheduled changes would boost individual income tax revenues, measured as a share of GDP, by 0.8 percentage points, on average.

Other Factors. Several other factors affect projected revenues. One is the end of a temporary boost to tax receipts observed in 2021 and 2022, which reflects CBO's expectation that the recent strength in tax collections from capital gains realizations and other sources will not continue. In addition, payments of certain taxes deferred during the first two years of the pandemic will mostly have been collected by the end of 2023. Taken together, the end of the temporary boost to tax receipts and the windup of deferred tax payments produce a drop in revenues that persists throughout the projection period.

The second factor is the growth in health care costs, which is projected to reduce revenues as a percentage of GDP over the next three decades. The share of employees' compensation that is paid in the form of spending on fringe benefits, such as employment-based health insurance, is projected to increase, and those benefits are generally not taxable. Correspondingly, the share of employees' compensation that is paid in the form of wages and salaries, which are subject to income and payroll taxes, is projected to decline. That shift in compensation would decrease taxable income—and thus revenues from both income and payroll taxes—in relation to GDP.

The third factor is the change in the distribution of earnings. Earnings are projected to continue to grow faster for higher-earning people than for other people in the long term. That trend would cause a larger share of individual earnings to be taxed at higher rates. However, the resulting increase in individual income tax revenues would be largely offset by a decrease of nearly the same amount in payroll tax receipts, CBO projects, because the share of earnings above the maximum amount subject to Social Security payroll taxes would grow.¹⁹

A final factor is a decline in corporate income tax receipts, which fall in relation to the size of the economy between 2023 and 2033. That decline reflects the varying effects, over time, of provisions of the 2017 tax act and the 2022 reconciliation act (P.L. 117-169). Those provisions include the end of payments for a onetime tax on certain foreign profits, changes to the treatment of certain expenditures for research and experimentation, and new credits that can be used to reduce liability in excess of a new minimum tax on certain corporations.

19. For additional information, see Brooks Pierce, *How Changes in the Distribution of Earnings Affect the Federal Deficit*, Working Paper 2021-12 (Congressional Budget Office, October 2021), www.cbo.gov/publication/57217.

Chapter 3: Long-Term Demographic and Economic Projections

Overview

Demographic and economic trends are key determinants of the long-term budget outlook. By the Congressional Budget Office's estimate, the population will grow more slowly over the next 30 years than it did over the past 30 years, and it will get older, on average. In CBO's economic projections, over the next three decades, the nation's output grows more slowly than it did over the past three, the labor force participation rate drops, inflation returns in a few years to a rate that is consistent with the Federal Reserve's long-term objective, and interest rates continue to rise. Those projections account for the effects on the economy of projected deficits and of changes in taxes and spending scheduled under current law.

Demographic Projections

The size and age profile of the U.S. population affects the nation's economy and the federal budget. For example, those two factors help determine the number of people in the labor force and thus affect both gross domestic product (GDP) and federal tax receipts. Those factors also help determine the number of beneficiaries of Social Security and other federal programs and thus federal outlays.

To estimate the population in future years, CBO projects rates of fertility, net immigration, and mortality. In the agency's projections, the population increases from 336 million people at the beginning of 2023 to 373 million people at the beginning of 2053—an average expansion of 0.3 percent per year.¹ That rate is one-third the average annual rate of growth over the past 30 years (0.9 percent). Moreover, as fertility rates remain below the rates necessary for a generation to replace itself, population growth is increasingly driven by immigration. Starting in 2042, immigration accounts for all population growth in CBO's projections (see Figure 3-1).

The proportion of the population that is age 65 or older expands over the coming decades in CBO's projections, continuing a long-standing historical trend (see Figure 3-2). From 2010 to 2019, the percentage of the population age 65 or older rose from 13.0 percent to 16.0 percent, driven largely by the aging of members of the baby-boom generation (comprising people born between 1946 and 1964), who started to turn 65 in the early 2010s. That percentage continues to increase in CBO's projections, rising from 17.5 percent in 2023 to 20.6 percent in 2033 and 22.5 percent in 2053.

Economic Projections

The state of the U.S. economy in coming decades will affect the federal government's budget deficits and debt. Key to CBO's long-term budget projections are its long-term projections of GDP, labor force participation, inflation, and interest rates. Among the factors incorporated in the agency's long-term economic forecast are the effects of projected deficits on private investment and the effects of marginal tax rates on the supply of labor and private saving.²

Real Potential GDP

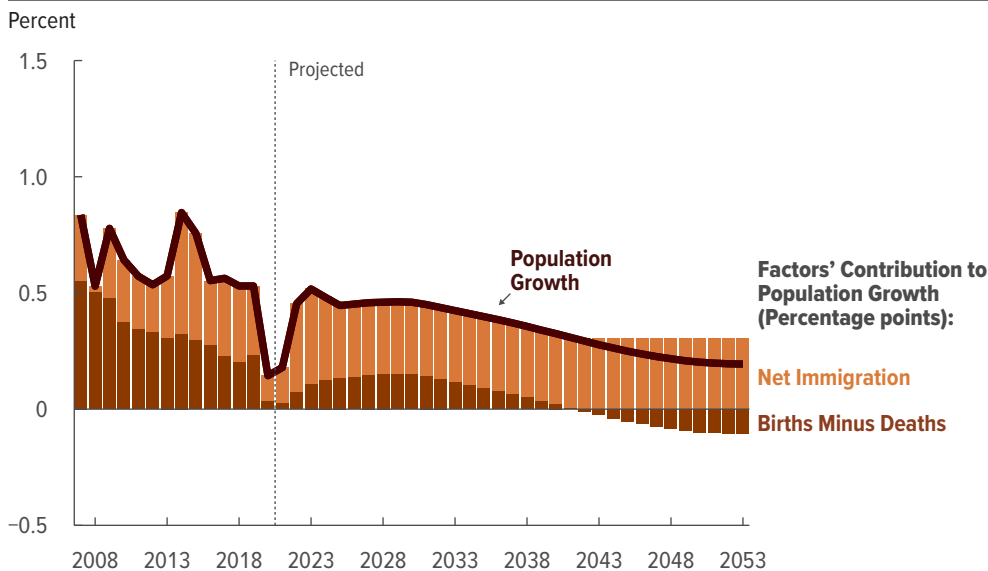
In CBO's extended baseline projections, growth of real potential GDP (the maximum sustainable output of the economy, adjusted to remove the effects of inflation) slows, falling from an annual average of 1.8 percent over the 2023–2033 period to an average of 1.5 percent over the 2044–2053 period (see Table 3-1 on page 28). Over the entire 2023–2053 period, real potential GDP increases at an average rate of 1.6 percent per year. That projection represents a slowdown in the annual growth

1. Congressional Budget Office, *The Demographic Outlook: 2023 to 2053* (January 2023), www.cbo.gov/publication/58612.

2. The economic projections underlying this analysis are extended versions of the 10-year economic projections described in Congressional Budget Office, *The Budget and Economic Outlook: 2023 to 2033* (February 2023), www.cbo.gov/publication/58848. For a discussion of changes to CBO's economic projections since July 2022, when the agency last published its extended baseline projections, see Appendix B. For a discussion of projections of additional economic factors, see Appendix C.

Figure 3-1.

Population Growth and the Demographic Factors That Contribute to It



Deaths exceed births beginning in 2042 in CBO's projections, largely because of the aging of the population. Thereafter, population growth is driven entirely by immigration.

Data source: Congressional Budget Office. See www.cbo.gov/publication/59014#data.

The population referred to in this figure is the Social Security area population, which includes all residents of the 50 states and of the District of Columbia, as well as civilian residents of U.S. territories. It also includes federal civilian employees and members of the U.S. armed forces living abroad and their dependents, U.S. citizens living abroad, and noncitizens living abroad who are eligible for Social Security benefits on the basis of their earnings while in the United States.

of real potential GDP relative to such growth from 1993 to 2022, when it averaged 2.4 percent. That slowdown in the growth of real potential GDP is attributable to slowing growth in both the potential labor force (an estimate of how big the labor force would be if GDP equaled potential GDP) and potential labor force productivity (that is, potential output per member of the potential labor force) over the period (see Figure 3-3 on page 29).

Potential Labor Force. In CBO's projections, the expansion of the potential labor force slows, averaging 0.4 percent annually from 2023 to 2033 and 0.2 percent from 2044 to 2053. Over the entire 2023–2053 period, the potential labor force grows by an average of 0.3 percent per year. That growth is slower than over the past 30 years, when the potential labor force grew by an average of 0.8 percent per year. Slowing population growth and the aging of the population account for most of that slowdown.

Potential Labor Force Productivity. Like the growth of the potential labor force, the growth of potential labor force productivity is projected to slow over the next three decades. In CBO's projections, potential labor force

productivity grows by an average of 1.4 percent per year from 2023 to 2033 and by an average of 1.3 percent per year from 2044 to 2053. Over the entire 30-year projection period, potential labor force productivity grows at an average annual rate of 1.3 percent—slower than the 1.6 percent annual growth it averaged over the past 30 years.

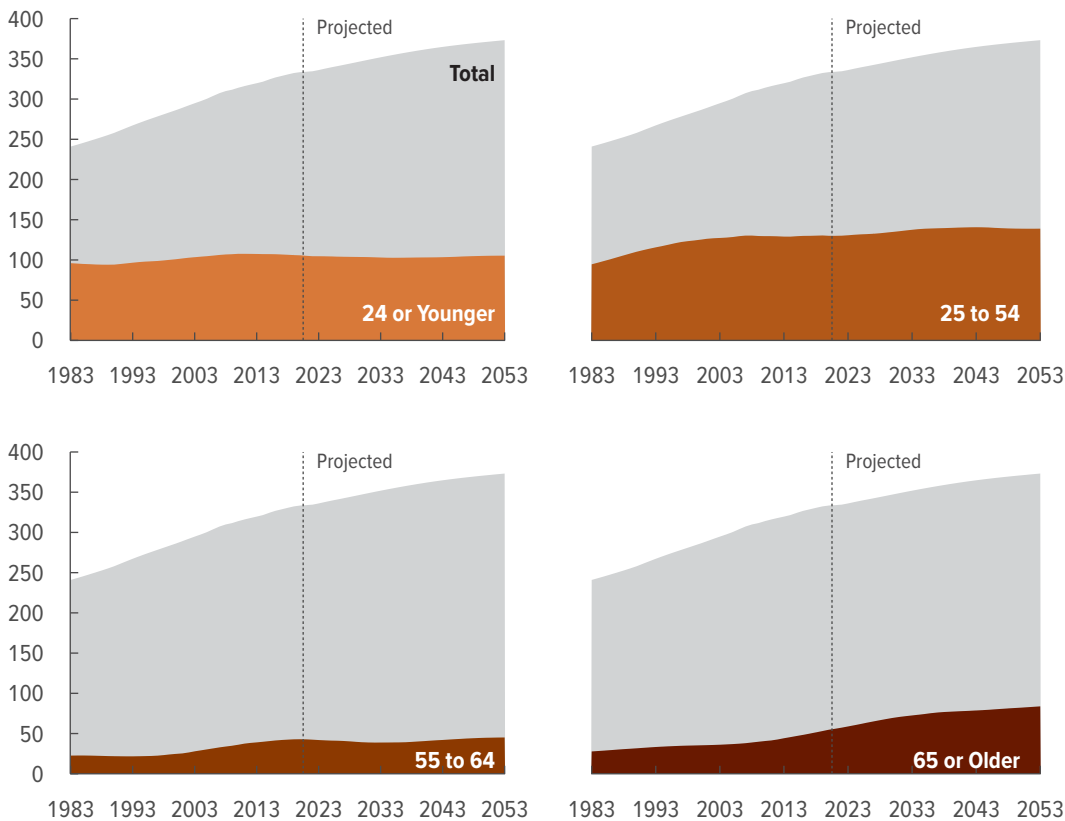
Two key factors drive the slower growth in potential labor force productivity. First, measured per worker, the accumulation of capital—structures and equipment, intellectual property products (such as computer software), and residential housing, for example—is projected to be slower over the next three decades than it has been in the past, in part because increased federal borrowing is projected to reduce private investment. (See Chapter 1 for details.)

Second, total factor productivity (TFP)—that is, the real output per unit of combined labor and capital in the nonfarm business sector—is also expected to increase more slowly over the next 30 years than it did over the past 30 years (although the growth of TFP is projected to accelerate from its historically slow rate in recent years). Whereas TFP grew by an average of 1.2 percent annually from 1993 to 2022, CBO projects that it will grow at an

Figure 3-2.

Population, by Age Group

Millions of People



In CBO's projections, the number of people ages 25 to 54 (the ages at which people are most likely to work) grows more slowly than the number of people age 65 or older, who are less likely to work and who are generally eligible for Social Security and Medicare.

Data source: Congressional Budget Office. See www.cbo.gov/publication/59014#data.

The population referred to in this figure is the Social Security area population, which includes all residents of the 50 states and of the District of Columbia, as well as civilian residents of U.S. territories. It also includes federal civilian employees and members of the U.S. armed forces living abroad and their dependents, U.S. citizens living abroad, and noncitizens living abroad who are eligible for Social Security benefits on the basis of their earnings while in the United States.

average rate of 1.1 percent over the next 30 years. That slower growth in TFP is attributable to several factors, including a slowdown in the growth of workers' educational attainment, declining federal investment measured in relation to the size of the economy, and the effects of climate change on production factors (such as crop yields and outdoor labor).³

Real GDP

In CBO's projections, real GDP grows at an average rate of 1.7 percent per year from 2023 to 2053—slightly faster than real potential GDP grows over that period. The growth rates of real GDP and real potential GDP

converge in the second half of the first decade of the projection period. At that point, the *level* of real GDP is about 0.5 percent below that of real potential GDP. That output gap remains through the end of the projection period, reflecting CBO's assessment that during and after economic downturns, real GDP falls short of real potential GDP by a larger amount and for longer than it exceeds potential GDP by during economic expansions.⁴

3. Evan Herrstadt and Terry Dinan, *CBO's Projection of the Effect of Climate Change on U.S. Economic Output*, Working Paper 2020-06 (Congressional Budget Office, September 2020), www.cbo.gov/publication/56505.

4. One recent study explains the existence of an average negative output gap by examining asymmetric fluctuations in the noncyclical rate of unemployment (that is, the rate that results from all sources except fluctuations in aggregate demand). See Stéphane Dupraz, Emi Nakamura, and Jón Steinsson, *A Plucking Model of Business Cycles*, Working Paper 748 (Banque de France, January 2020), <https://tinyurl.com/1njkmzfk>. See also Congressional Budget Office, *Why CBO Projects That Actual Output Will Be Below Potential Output on Average* (February 2015), www.cbo.gov/publication/49890.

Table 3-1.

Average Annual Values for Key Economic Variables That Underlie CBO's Extended Baseline Projections

Percent

	1993–2022	2023–2033	2034–2043	2044–2053	Overall, 2023–2053
Growth of GDP					
Real potential GDP	2.4	1.8	1.6	1.5	1.6
Potential labor force	0.8	0.4	0.3	0.2	0.3
Potential labor force productivity	1.6	1.4	1.3	1.3	1.3
Real GDP	2.4	1.9	1.6	1.5	1.7
Real GDP per person	1.6	1.4	1.2	1.2	1.3
Nominal GDP (Fiscal year)	4.6	4.2	3.6	3.5	3.8
Labor Force Participation Rate	65.0	61.8	61.0	60.5	61.1
Labor Force Growth	0.8	0.5	0.3	0.2	0.3
Inflation					
Growth of the PCE price index	2.0	2.3	1.9	1.9	2.0
Growth of the CPI-U	2.5	2.5	2.3	2.3	2.3
Growth of the GDP price index	2.1	2.2	2.0	2.0	2.1
Interest Rates					
On 10-year Treasury notes					
Nominal rate	3.9	3.8	3.9	4.3	4.0
Real rate	1.4	1.3	1.7	2.0	1.7
On all federal debt held by the public ^a	4.0	3.0	3.4	3.7	3.4

Data sources: Congressional Budget Office; Bureau of Economic Analysis; Bureau of Labor Statistics; Federal Reserve. See www.cbo.gov/publication/59014#data.

CBO's long-term budget projections, referred to as the extended baseline, typically follow the agency's 10-year baseline budget projections and then extend most of the concepts underlying those projections for an additional 20 years. This year, however, the long-term projections are based on the agency's May 2023 baseline projections but also reflect the estimated budgetary effects of the Fiscal Responsibility Act of 2023 (Public Law 118-5), enacted on June 3, 2023.

Real values are nominal values that have been adjusted to remove the effects of inflation. Potential GDP is the maximum sustainable output of the economy. The potential labor force is an estimate of how big the labor force (that is, the number of people in the civilian noninstitutionalized population who have jobs or who are available for work and are either seeking work or expecting to be recalled from a temporary layoff) would be if GDP equaled potential GDP. (The civilian noninstitutionalized population excludes people who are younger than age 16, members of the armed forces on active duty, and people in penal or mental institutions or in homes for the elderly or infirm.) Potential labor force productivity is the ratio of real potential GDP to the potential labor force. The sum of growth in the potential labor force and growth in potential labor force productivity is equal to growth in real potential GDP. The labor force participation rate is the percentage of people in the civilian noninstitutionalized population who are in the labor force.

CPI-U = consumer price index for all urban consumers; GDP = gross domestic product; PCE = personal consumption expenditures.

a. The interest rate on all federal debt held by the public equals net interest payments in the current fiscal year divided by debt held by the public at the end of the previous fiscal year.

Real GDP per Person

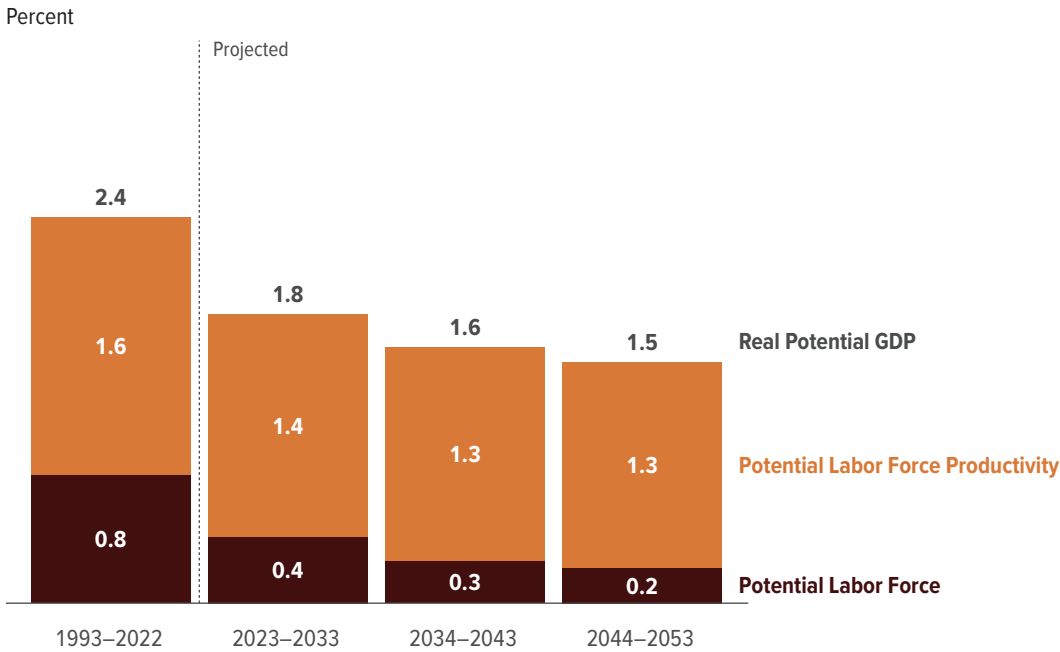
Real GDP per person is expected to increase at an average annual rate of 1.3 percent over the 2023–2053 period—slower than the average annual growth of 1.6 percent experienced over the past 30 years. In the agency's projections, the average annual growth of real GDP per person falls from 1.4 percent in the first decade of the projection period to 1.2 percent in the second decade as growth in real GDP slows more than does growth in the population. In the third decade, average annual growth in real GDP per person remains at 1.2 percent.

Nominal GDP

Nominal GDP grows by 4.0 percent this year in CBO's projections. From 2024 to 2026, the annual growth of nominal GDP rises to an average of 4.6 percent because of stronger growth in real GDP. As is the case with real GDP, the growth rate of nominal GDP converges with the growth rate of nominal potential GDP in the second half of the first decade of the projection period. Over the last two decades of the projection period, the projected growth rate of nominal GDP reflects the projected growth in real potential GDP and projected inflation as measured by the GDP price index.

Figure 3-3.

Average Annual Growth of Real Potential GDP and Its Components



In CBO’s projections, the growth of real potential GDP is slower over the next three decades than it was over the past three. That slowdown results from slowing growth in both the potential labor force and potential labor force productivity over the 2023–2053 period.

Data source: Congressional Budget Office. See www.cbo.gov/publication/59014#data.

Real values are nominal values that have been adjusted to remove the effects of inflation. Potential GDP is the maximum sustainable output of the economy. The potential labor force is an estimate of how big the labor force (that is, the number of people in the civilian noninstitutionalized population who have jobs or who are available for work and are either seeking work or expecting to be recalled from a temporary layoff) would be if GDP equaled potential GDP. (The civilian noninstitutionalized population excludes people who are younger than age 16, members of the armed forces on active duty, and people in penal or mental institutions or in homes for the elderly or infirm.) Potential labor force productivity is the ratio of real potential GDP to the potential labor force. The sum of growth in the potential labor force and growth in potential labor force productivity is equal to growth in real potential GDP.

GDP = gross domestic product.

Labor Force

CBO’s projections of the labor force participation rate and the size of the labor force affect the agency’s other economic projections.⁵ For example, when the potential labor force grows faster, potential GDP rises faster than it otherwise would. As the labor force grows, investment rises to equip the new workers with capital, which causes private capital to accumulate more quickly than it otherwise would, further boosting the growth of potential GDP.

Labor Force Participation Rate. In CBO’s projections, the labor force participation rate drops over the next

three decades: It averages 61.8 percent over the 2023–2033 period, 61.0 percent over the 2034–2043 period, and 60.5 percent over the 2044–2053 period. That decline continues the downward trend that began in the mid-2000s—a trend that has been driven mostly by the aging of the population.

The aging of the population continues to be the main driver of the decline in labor force participation in CBO’s projections, but it is not the only factor affecting those projections. Some factors, such as increases in educational attainment and life expectancy, tend to increase labor force participation and thus partially offset the effects of the aging of the population. But other factors, along with aging, push down CBO’s projections of labor force participation. For instance, members (especially men) of the generations that have followed the baby-boom generation have generally participated in the labor force at lower rates than their predecessors did at the

5. The labor force participation rate is the percentage of people in the civilian noninstitutionalized population who have jobs or who are available for work and either seeking work or expecting to be recalled from a temporary layoff. The civilian noninstitutionalized population excludes people who are younger than age 16, members of the armed forces on active duty, and people in penal or mental institutions or in homes for the elderly or infirm.

same ages.⁶ In addition, the marriage rate is projected to continue to fall, and unmarried men tend to participate in the labor force at lower rates than married men. Also, many workers are projected to earn less return on their labor, primarily because they are projected to face higher tax rates, and thus to have less incentive to work. Those projected higher tax rates are the result of two factors: the expiration of certain provisions of the 2017 tax act at the end of 2025, which will raise tax rates on individual income, and real bracket creep—the process by which, as people’s income rises faster than inflation, more of their income is pushed into higher tax brackets, raising their effective tax rates. In addition, increases in federal borrowing are projected to reduce private investment in capital, leading to lower wages (see the discussion below in the section “Effects of Fiscal Policy on CBO’s Economic Projections”).

To assess the importance of aging in its projections of the labor force participation rate, CBO calculated what the rate would be if in each year of the projection period the age-and-sex composition of the population remained the same as it was in 2023; the agency then compared the outcomes under that hypothetical scenario with its projections.⁷ Under the hypothetical scenario, the labor force participation rate would *increase* from 61.9 percent in 2023 to 63.7 percent in 2053—3.4 percentage points higher than the labor force participation rate in that year in CBO’s projections. Thus, CBO estimates that aging causes the labor force participation rate to drop by 3.4 percentage points over the 2023–2053 period—double the 1.7 percentage-point decline in the rate over that period in CBO’s projections.

Labor Force Growth. The size of the labor force depends on the rates at which people in different demographic groups participate in the labor market and on the number of people in those groups. In CBO’s projections, the labor force expands from 165 million people in 2023 to 182 million people in 2053. That growth slows over the projection period, averaging 0.5 percent per year from

2023 to 2033 and 0.2 percent per year from 2044 to 2053. Those growth rates mark a significant slowdown from the pace of growth over the past 30 years: From 1993 to 2022, the labor force expanded at an average rate of 0.8 percent per year.

Inflation

CBO projects rates of inflation in the prices of goods and services in two categories: consumer goods and services and all goods and services included in GDP. Those rates affect interest rates and, consequently, interest payments on federal debt. The inflation rates also affect income and the indexation of income tax brackets, thereby influencing tax revenues and federal expenditures.

Personal Consumption Expenditures Price Index.

One measure of consumer price inflation is the personal consumption expenditures (PCE) price index, which encompasses a broad range of goods and services. The Federal Reserve sets an explicit goal for the long-term average rate of inflation, as measured by the PCE price index, of 2 percent. From 2025 to 2053, the PCE price index is projected to grow at rates that are consistent with that goal.

Consumer Price Index. A second measure of consumer price inflation is the consumer price index for all urban consumers (CPI-U). Over the 2023–2053 period, inflation in that index averages 2.3 percent per year in CBO’s projections. That average rate is consistent with the historical relationship between the CPI-U and PCE price index since 1992.

GDP Price Index. Over the 2023–2053 period, inflation in the GDP price index is projected to average 2.1 percent annually. Like the projected rate of inflation in the CPI-U, that average rate is consistent with the historical relationship between the GDP and PCE price indexes over the past 30 years. In CBO’s projections, annual growth in the GDP price index averages 2.2 percent over the next 10 years and then falls to an average of 2.0 percent in the second and third decades of the projection period.

Differences in CBO’s Projections of Inflation.

In the long term, inflation in the CPI-U returns to a rate slightly higher than that in the PCE price index in CBO’s projections, and inflation in the GDP price index roughly equals that in the PCE price index. Over the 2023–2029 period, inflation in the PCE price index outpaces inflation in both the CPI-U and GDP price index, in part because the prices of consumer services are weighted more heavily in the PCE price index than they are in the other two indexes.

6. One notable exception is women age 34 or younger in post-baby-boom generations, who participate in the labor force at higher rates than women in earlier generations did at the same ages. However, as women in those later generations have aged, their participation rates have fallen below those of their predecessors.

7. Because the sex composition of the population is projected to change only slightly over the next three decades, the effect of the aging of the population accounts for nearly all of the difference between the labor force participation rate under the hypothetical scenario in which the age-and-sex composition of the population remains constant and the rate in CBO’s projections.

Interest Rates

CBO projects a set of interest rates that affect the budget, including the interest rates on various debt instruments issued by the Treasury Department and on special-issue Social Security bonds. Those interest rates are affected by many factors. In CBO's assessment, structural factors—demographics, attitudes toward saving and investment, and the amount of federal debt, for example—largely determine interest rates in the long term. The agency forecasts the values of those underlying factors and examines how they differ from the average values observed over the 1995–2004 period.⁸ CBO uses economic models, findings from the research literature, and information from financial markets to estimate the effect that a change in each factor would have on interest rates. The agency then multiplies the estimated effect for each factor by the difference between the forecast value of the factor and its average historical value.

In CBO's projections for the 2023–2053 period, interest rates on government securities remain below their 1995–2004 averages.⁹ The agency expects several factors—including slower growth of the labor force, more private foreign and domestic savings available for investment, and slower growth of TFP than in that historical period—to continue to put downward pressure on interest rates through 2053. Slower growth of the labor force and an increase in the total amount of savings available for investment tend to increase the amount of capital per worker in the long term, thereby reducing the return on capital and, thus, the return on government bonds and other investments.¹⁰ Slower growth of productivity reduces the return on capital and results in lower interest rates, all else being equal.

That downward pressure is expected to be partly mitigated by upward pressure on interest rates from other factors, such as federal debt that is rising in relation to GDP. When federal debt rises, interest rates tend to go up, raising the cost of borrowing and, in turn, lowering private investment. That reduction in private investment tends to reduce the amount of capital per worker and further increase interest rates and the return on capital over time.

CBO expects interest rates to generally rise throughout the projection period but to remain below the average rates recorded over the past three decades (see Figure 3-4). In CBO's projections, the interest rate on 10-year Treasury notes rises to 3.9 percent this year and changes little for more than a decade. It then begins to rise slowly and reaches 4.5 percent in 2053—about one percentage point less than the 5.4 percent average recorded over the 1995–2004 period.

The real interest rate on 10-year Treasury notes (calculated by subtracting the percentage increase in the consumer price index from the nominal yield on those notes) follows the same pattern. In CBO's projections, that rate is 1.5 percent in 2033 and rises thereafter. In 2053, it reaches 2.2 percent—0.8 percentage points less than the average real interest rate on 10-year Treasury notes over the 1995–2004 period. (That rate has averaged 0.1 percent since 2009.)

The average interest rate on all federal debt held by the public tends to be lower than the rate on 10-year Treasury notes. That is because the average term to maturity for federal debt has been less than 10 years since the 1950s and interest rates on shorter-term debt (which is less risky for investors than longer-term debt) are generally lower than those on longer-term debt. In CBO's projections, the average interest rate on federal debt is 3.3 percent in 2033 and climbs to 4.0 percent in 2053. Over the 30-year projection period, that rate is 0.6 percentage points lower than the interest rate on 10-year Treasury notes, on average. The gap between the two rates is projected to be larger over the first decade of the projection period—0.8 percentage points—because federal debt in that first decade includes more Treasury securities that were issued in the wake of the 2020 recession, when the Federal Reserve kept interest rates low to support the economic recovery.

The two Social Security trust funds (the Old-Age and Survivors Insurance Trust Fund and the Disability Insurance Trust Fund) hold special-issue bonds. In CBO's projections, the interest rate on those bonds averages 2.6 percent from 2023 to 2033—the year that

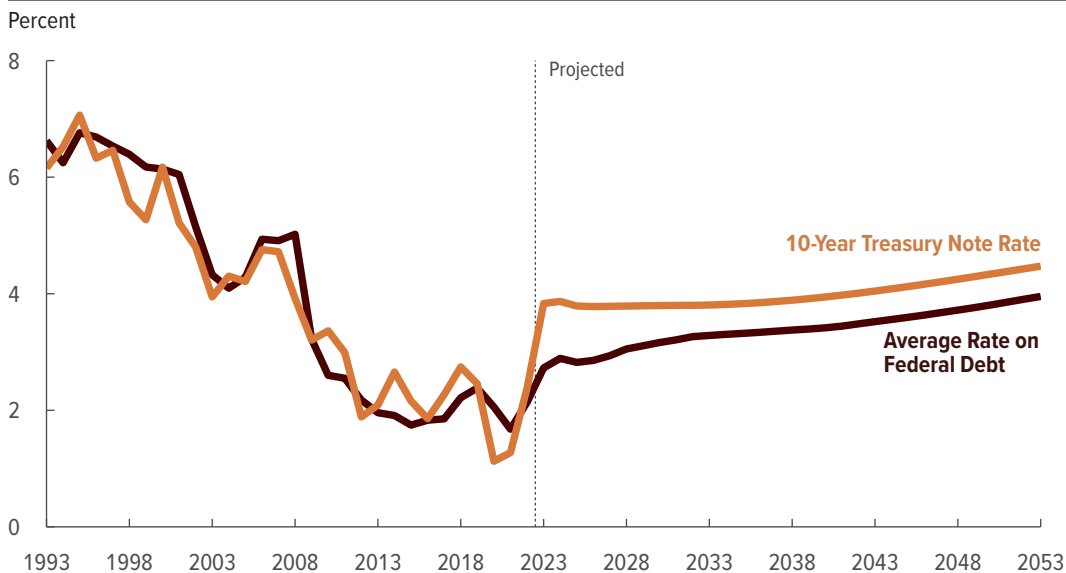
8. The 1995–2004 period was chosen for comparison for several reasons. In those years, expectations for inflation were stable, there were no severe economic downturns or significant financial crises, and monetary policy was, according to CBO's estimates, neutral, on average—that is, the real federal funds rate (the interest rate that financial institutions charge each other for overnight loans of their monetary reserves) was, on average, at a level that neither restrained nor stimulated economic activity.

9. Edward N. Gamber, *The Historical Decline in Real Interest Rates and Its Implications for CBO's Projections*, Working Paper 2020-09 (Congressional Budget Office, December 2020), www.cbo.gov/publication/56891.

10. For more information about the relationship between the growth of the labor force and interest rates, see Congressional Budget Office, *How Slower Growth in the Labor Force Could Affect the Return on Capital* (October 2009), www.cbo.gov/publication/41325.

Figure 3-4.

Average Interest Rates on Federal Debt and on 10-Year Treasury Notes



In CBO's projections for the 2023–2053 period, interest rates on government securities remain below their averages over the past 30 years. The agency expects several factors—including slower growth of the labor force and productivity than in that historical period—to continue to put downward pressure on interest rates through 2053.

Data sources: Congressional Budget Office; Federal Reserve. See www.cbo.gov/publication/59014#data.

Data are on a fiscal year basis. The average interest rate on all federal debt held by the public equals net interest payments in the current year divided by debt held by the public at the end of the previous year.

the combined Social Security trust funds are projected to be exhausted. Because interest rates have been low for most of the past decade and are expected to rise, that projected average rate, which is for all bonds held by the Social Security trust funds, is lower over the next decade than the average interest rate on newly issued bonds is projected to be.

Effects of Fiscal Policy on CBO's Economic Projections

CBO's economic projections incorporate the effects of the federal deficits projected under current law. Deficits grow in the agency's budget projections, and as a result, the federal government borrows more each year. That increase in federal borrowing pushes up interest rates and thus reduces private investment in capital, causing output to be lower in the long term than it would be otherwise, especially in the last two decades of the projection period. Less private investment reduces the amount of capital per worker, making workers less productive and leading to lower wages. Those lower wages reduce people's incentive to work and, consequently, lead to a smaller supply of labor.

The agency's baseline projections also incorporate the economic effects of changes in federal tax policies scheduled under current law, including the expiration

of certain provisions of the 2017 tax act. Under current law, tax rates on individual income will rise at the end of 2025 when those provisions are scheduled to expire. Moreover, as income rises faster than inflation, more income is pushed into higher tax brackets over time. That real bracket creep results in higher effective marginal tax rates on labor income and capital income.¹¹ Higher marginal tax rates on labor income would reduce people's after-tax wages and weaken their incentive to work. Likewise, an increase in the marginal tax rate on capital income would lower people's incentives to save and invest, thereby reducing the stock of capital and, in turn, labor productivity. That reduction in labor productivity would put downward pressure on wages. All told, less private investment and a smaller labor supply decrease economic output and income in CBO's extended baseline projections.

11. The effective marginal tax rate is the percentage of an additional dollar of income from labor or capital that is paid in taxes. For more information about the effects of real bracket creep on CBO's long-term projections, see Congressional Budget Office, "How Income Growth Affects Tax Revenues in CBO's Long-Term Budget Projections" (June 2019), www.cbo.gov/publication/55368.

Appendix A: Assumptions Underlying CBO’s Long-Term Budget Projections

The Congressional Budget Office’s long-term budget projections are consistent with the demographic projections the agency published this past January and the economic forecast published in February.¹ The long-term budget projections, referred to as the extended baseline, typically follow the agency’s 10-year baseline budget projections (which conform to a set of assumptions specified in law) and then extend most of the concepts underlying those projections for an additional 20 years. This year, however, the long-term projections are based on the agency’s May 2023 baseline projections but also reflect the estimated budgetary effects of the Fiscal Responsibility Act of 2023 (FRA, Public Law 118-5).²

CBO’s extended baseline projections give lawmakers a point of comparison from which to measure the effects of policy options or proposed legislation. The projections are not predictions of budgetary outcomes. Rather, they represent the agency’s assessment of future spending, revenues, deficits, and debt under these assumptions:

- Current laws affecting revenues and spending generally remain unchanged;
- Some programs—for example, the Supplemental Nutrition Assistance Program—are nevertheless extended after their authorizations lapse;

- Spending on Medicare and Social Security continues as scheduled regardless of the amounts in those programs’ trust funds; and
- Through 2033, discretionary spending follows the agency’s baseline projection adjusted to include the effects of the FRA, after which time it transitions (over a five-year period) to grow at the rate of nominal gross domestic product (that is, GDP measured in current-year dollars). (For a summary of the assumptions about outlays and revenues that underlie CBO’s extended baseline projections, see Table A-1.)

To develop the extended baseline projections and analyze how deviations from them would affect the economy and the federal budget, the agency uses a modeling approach that combines the following components.³

- A *demographic model* used to project the size of the population by age and sex;
- A set of *economic forecasting models* used to make baseline projections of economic variables;

1. Congressional Budget Office, *The Demographic Outlook: 2023 to 2053* (January 2023), www.cbo.gov/publication/58612, and *The Budget and Economic Outlook: 2023 to 2033* (February 2023), Chapter 2, www.cbo.gov/publication/58848.

2. For details about the estimated budgetary effects of the FRA, which was enacted on June 3, 2023, see Congressional Budget Office, *How the Fiscal Responsibility Act of 2023 Affects CBO’s Projections of Federal Debt* (June 2023), www.cbo.gov/publication/59235, and Congressional Budget Office, letter to the Honorable Kevin McCarthy providing CBO’s estimate of the budgetary effects of H.R. 3746, the Fiscal Responsibility Act of 2023 (May 30, 2023), www.cbo.gov/publication/59225. Other legislation enacted between March 30, 2023 (when CBO finalized its May baseline), and June 3, 2023, did not have significant budgetary effects. For the May 2023 baseline projections, see Congressional Budget Office, *An Update to the Budget Outlook: 2023 to 2033* (May 2023), www.cbo.gov/publication/59096.

3. For information about CBO’s demographic model, see Congressional Budget Office, *The Demographic Outlook: 2023 to 2053* (January 2023), www.cbo.gov/publication/58612. For details about modeling the baseline projections of economic variables, see Robert Arnold, *How CBO Produces Its 10-Year Economic Forecast*, Working Paper 2018-02 (Congressional Budget Office, February 2018), www.cbo.gov/publication/53537; and 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. For information about CBO’s method for projecting revenues, see Congressional Budget Office, *CBO Explains How It Develops the Budget Baseline* (April 2023), www.cbo.gov/publication/58916; for long-term projections of spending on Social Security, see Congressional Budget Office, *An Overview of CBOLT: The Congressional Budget Office Long-Term Model* (April 2018), www.cbo.gov/publication/53667; for projecting the average interest rate on federal debt, see Congressional Budget Office, *The 2022 Long-Term Budget Outlook* (July 2022), Appendix D, www.cbo.gov/publication/57971; and for modeling deviations from CBO’s extended baseline projections, see Congressional Budget Office, “CBO’s Policy Growth Model” (April 2021), www.cbo.gov/publication/57017.

Table A-1.

Assumptions About Outlays and Revenues Underlying CBO's Extended Baseline Projections

Assumption	
Outlays	
Social Security	As scheduled under current law ^a
Medicare	As scheduled under current law through 2033; thereafter, projected spending depends on the estimated growth rates of the number of beneficiaries, health care costs per beneficiary, and potential GDP per person, as well as additional cost growth for Medicare (which is projected separately for parts A, B, and D and moves smoothly to a rate of 0.1 percent, 0.2 percent, and 0.6 percent, respectively, by 2053) ^a
Medicaid	As scheduled under current law through 2033; thereafter, projected spending depends on the estimated growth rates of the number of beneficiaries, health care costs per beneficiary, and potential GDP per person, as well as additional cost growth for Medicaid (which is projected to move smoothly to a rate of 0.6 percent by 2053)
Children's Health Insurance Program	As projected in CBO's baseline through 2033; projected spending remains constant as a percentage of GDP thereafter
Subsidies for Health Insurance Purchased Through the Marketplaces	As scheduled under current law through 2033; thereafter, projected spending depends on the estimated growth rates of the number of beneficiaries and potential GDP per person, as well as additional cost growth for private health insurance premiums (which is projected to move smoothly to a rate of 0.6 percent by 2053)
Other Mandatory Spending	As scheduled under current law through 2033; thereafter, refundable tax credits are estimated as part of revenue projections, and the rest of other mandatory spending is assumed to decline as a percentage of GDP at roughly the same annual rate at which it is projected to decline between 2030 and 2033 in the agency's baseline projections published in May 2023
Discretionary Spending	Through 2033, as projected in CBO's baseline and adjusted to reflect the estimated effects of the Fiscal Responsibility Act of 2023 (Public Law 118-5); beyond 2033, CBO assumes that after a five-year transition period, discretionary spending would grow at the rate of nominal GDP
Revenues	
Individual Income Taxes	As scheduled under current law
Payroll Taxes	As scheduled under current law
Corporate Income Taxes	As scheduled under current law
Excise Taxes	As scheduled under current law ^b
Estate and Gift Taxes	As scheduled under current law
Other Sources of Revenues	As scheduled under current law through 2033; constant as a percentage of GDP thereafter

Data source: Congressional Budget Office.

The extended baseline projections typically follow the agency's 10-year baseline budget projections and then extend most of the concepts underlying those projections for an additional 20 years. This year, however, the long-term projections are based on the agency's May 2023 baseline projections but also reflect the estimated budgetary effects of the Fiscal Responsibility Act of 2023 (FRA), enacted on June 3, 2023. Other legislation enacted between March 30, 2023 (when CBO finalized its May baseline), and June 3, 2023, did not have significant budgetary effects. For the May 2023 baseline projections, see Congressional Budget Office, *An Update to the Budget Outlook: 2023 to 2033* (May 2023), www.cbo.gov/publication/59096. For the estimated budgetary effects of the FRA, see Congressional Budget Office, *How the Fiscal Responsibility Act of 2023 Affects CBO's Projections of Federal Debt* (June 2023), www.cbo.gov/publication/59235.

Additional cost growth is the amount by which the growth rate of nominal health care spending per person (adjusted to remove the effects of demographic changes) exceeds the growth rate of potential GDP per person. Potential GDP is the maximum sustainable output of the economy.

GDP = gross domestic product.

- a. Assumes the payment of full benefits as scheduled under current law, regardless of the amounts in the program's trust funds.
- b. The exception to the current-law assumption applies to expiring excise taxes dedicated to trust funds. The Balanced Budget and Emergency Deficit Control Act of 1985 requires CBO's baseline to reflect the assumption that those taxes would be extended at their current rates. That law does not stipulate that the baseline include the extension of other expiring tax provisions, even if they have been routinely extended in the past.

- A set of models for separately *projecting revenues* from each major tax source;
- A *microsimulation model* used to project Social Security outlays beyond CBO's standard 10-year budget period;
- A *long-term budget model* and an *interest rate model* used to project federal outlays (except those for Social Security) and calculate deficits and debt beyond CBO's standard 10-year budget period; and
- A *model of economic growth* that simulates how deviations from CBO's extended baseline projections would affect the U.S. economy and, in turn, the federal budget.

Those models and their results interact in various ways. For example, the economic projections reflect how increases in spending and revenues in the extended baseline projections would affect the economy. In turn, the budget projections in the extended baseline reflect those economic effects.

Appendix B: Changes in CBO’s Long-Term Economic Projections Since July 2022

Overview

Average annual growth of real gross domestic product (GDP) in the Congressional Budget Office’s current extended baseline projections is similar to what it was in the long-term projections that the agency published last July.¹ Likewise, the agency’s current long-term projections of nominal GDP growth, inflation, and labor force participation rates are close to last year’s. Its forecast of interest rates, however, has changed: CBO now projects that long-term interest rates will rise more slowly over the last two decades of the projection period than it projected last year.

Changes in GDP Projections

The projected growth of real potential GDP (the maximum sustainable output of the economy, adjusted to remove the effects of inflation) is unchanged from last year. In both this year’s and last year’s projections, real potential GDP grows by an annual average of 1.8 percent over the 2023–2032 period, 1.6 percent over the 2033–2042 period, and 1.5 percent over the 2043–2052 period.

Unlike its projections of the growth of real *potential* GDP, CBO’s projections of the growth of real GDP over the coming decade have changed since last year, though the agency’s projections of such growth in later decades have not. Whereas annual growth of real GDP over the 2023–2032 period averaged 1.8 percent in last year’s projections, such growth averages 1.9 percent in the current projections. That upward revision results primarily from CBO’s projecting the rebound in economic growth, beginning in 2024, to be faster than it anticipated last year (see Figure B-1).

Average annual growth in real GDP per person is roughly the same in this year’s projections as it was in last year’s. In addition to projecting slightly faster growth in real GDP over the next decade, the agency now projects

that the population will grow more quickly than it forecast last year. Those two revisions offset each other.

Average annual growth of nominal GDP from 2023 to 2052 is now projected to be slightly faster than it was projected to be last July. Whereas nominal GDP grew by an average of 4.0 percent per fiscal year from 2023 to 2032 in last year’s projections, it grows by an average of 4.2 percent annually over that period in the current projections. That difference is attributable primarily to CBO’s revising upward its projections of inflation in the GDP price index over the next 10 years. (To project nominal GDP growth, CBO first projects real GDP growth and then adjusts those values by using its projections of inflation in the GDP price index to incorporate the effects of inflation.)

Changes in Labor Force Projections

The labor force participation rate from 2023 to 2037 is higher, on average, in CBO’s current projections than it was in last year’s projections because CBO revised upward its projections of the percentage of the population ages 25 to 54 (the ages at which people are most likely to work) in that period.² By contrast, CBO’s current projections of the labor force participation rate over the second half of the 2023–2052 period are lower, on average, than the July 2022 projections because of downward revisions to the agency’s projections of educational attainment.

As a result of those revisions to the agency’s projections of the population ages 25 to 54 and of labor force participation rates, the size of the labor force in CBO’s current

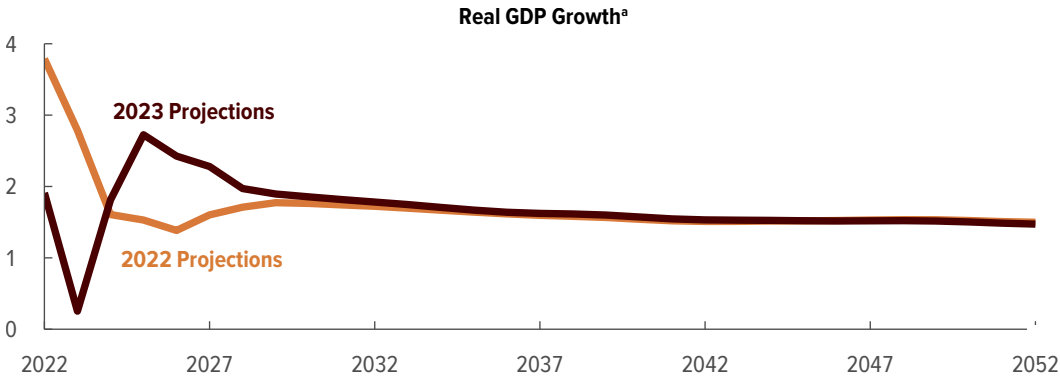
1. Congressional Budget Office, *The 2022 Long-Term Budget Outlook* (July 2022), www.cbo.gov/publication/57971.

2. Congressional Budget Office, *The Demographic Outlook: 2023 to 2053* (January 2023), www.cbo.gov/publication/58612. The labor force participation rate is the percentage of people in the civilian noninstitutionalized population who have jobs or who are available for work and either seeking work or expecting to be recalled from a temporary layoff. The civilian noninstitutionalized population excludes people who are younger than age 16, members of the armed forces on active duty, and people in penal or mental institutions or in homes for the elderly or infirm.

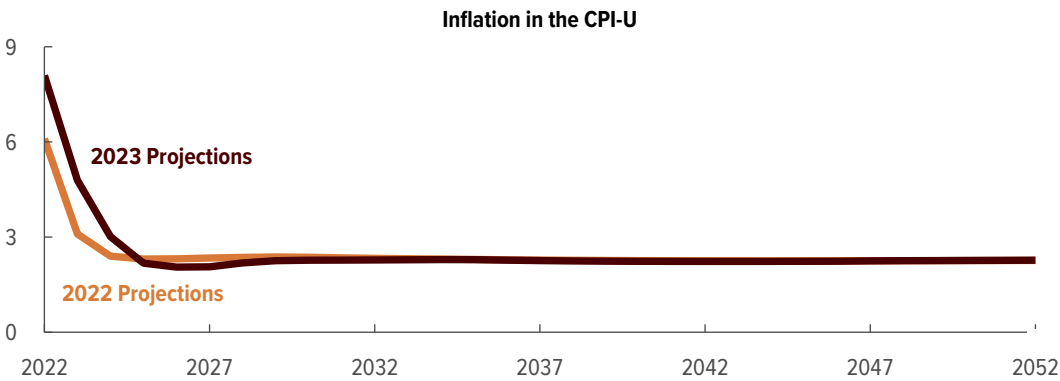
Figure B-1.

CBO’s 2022 and 2023 Projections of Selected Economic Variables

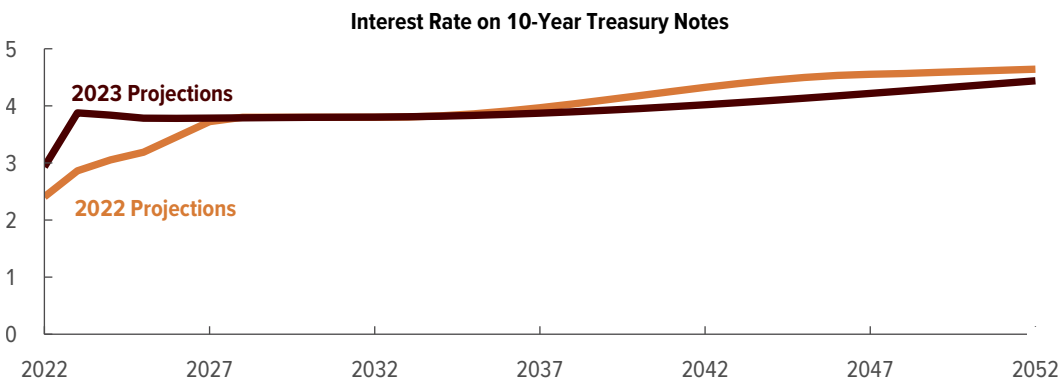
Percent



CBO’s long-term projections of real GDP growth—which affect its projections of revenues from income, payroll, and corporate taxes—are roughly unchanged from last year.



The agency’s long-term projections of inflation in the CPI-U—which affect its projections of spending on Social Security and other benefit programs with cost-of-living adjustments—are also roughly the same as they were last year.



The agency has lowered its long-term projections of the interest rate on 10-year Treasury notes, primarily to reflect downward revisions to its projections of labor force growth over that period. Those decreases in projected interest rates reduced the agency’s projections of net outlays for interest.

Data source: Congressional Budget Office. See www.cbo.gov/publication/59014#data.

CPI-U = consumer price index for all urban consumers; GDP = gross domestic product.

a. Real GDP is GDP that has been adjusted to remove the effects of inflation.

projections is about 0.5 percent larger, on average, from 2023 to 2052 than it was in last year’s projections.

Changes in Inflation Projections

Inflation, whether measured by growth in the consumer price index for all urban consumers (CPI-U), personal

consumption expenditures (PCE) price index, or the GDP price index, is now projected to be considerably higher in 2023 and 2024 than CBO projected last year. New data suggest that inflation in many sectors of the economy has been more persistent than CBO anticipated it would be last July. From 2025 to 2052, inflation in the



CPI-U and in the PCE and GDP price indexes in CBO's current projections is roughly the same as the agency projected last year.

Changes in Interest Rate Projections

The average nominal interest rates on 10-year Treasury notes and on newly issued bonds held in the two Social Security trust funds over the 2023–2052 period are the same in CBO's current projections as they were in the July 2022 projections—4.0 percent—but the contour of those projections has changed.

The agency has increased its projections of interest rates over the next decade. The average interest rate on 10-year Treasury notes from 2023 to 2032 is now projected to be 3.8 percent—0.2 percentage points higher than it was projected to be last year. CBO revised its projections of that rate upward because the agency now anticipates that, in response to recent persistent high inflation, the Federal Reserve will further raise the target range for the federal funds rate and maintain that higher target range for longer than CBO previously projected. Short-term

interest rates are now projected to be higher because of that anticipated change in monetary policy. Likewise, long-term rates, which partly reflect the expected path of short-term rates, are higher in CBO's current projections.

By contrast, the agency has lowered its projections of interest rates for 2034 to 2052. The average rate on 10-year Treasury notes over that period is 4.1 percent in CBO's current projections—0.2 percentage points lower than it was in last year's projections. That difference largely reflects downward revisions to the agency's projections of the growth of the labor force over that period.

The real interest rate on 10-year Treasury notes is also lower in this year's projections. Whereas that rate averaged 2.0 percent over the 2034–2052 period in last year's projections, it now averages 1.8 percent in those years.

The projected average nominal interest rate on all federal debt held by the public over the second and third decades of the projection period—3.6 percent—is about the same as it was last year.

Appendix C: CBO's Projections of Additional Economic Factors

Overview

The Congressional Budget Office develops its assessment of the long-term outlook for the federal budget on the basis of its projections of economic factors over the next three decades.¹ The projections presented in this report are consistent with the economic forecast for 2023 to 2033 that CBO published in February 2023.² Those projections reflect the assumption that current laws governing federal taxes and spending generally remain unchanged.

Projections of federal budgetary outcomes depend on many economic factors, some of which were not included in the discussion of CBO's economic projections in Chapter 3. In this appendix, CBO describes its long-term projections of those additional economic factors, most of which have secondary effects on the agency's projections of federal spending and revenues but contribute directly to its projections of gross domestic product (GDP), inflation, and interest rates. Those additional factors include several labor market outcomes (unemployment, average weekly hours worked, total hours worked, earnings as a share of compensation, inflation-adjusted earnings per worker, and the distribution of earnings among workers) as well as a number of factors related to capital accumulation and productivity.

CBO's projections of those factors reflect the agency's assessment of various economic and demographic developments as well as its estimates of the effects of monetary and fiscal policy on economic activity.

Labor Market Outcomes

In addition to the rate of labor force participation and the size and growth of the labor force, CBO projects the unemployment rate, the average and total number of

hours that people work, and various measures of workers' earnings. The agency regularly updates those projections to account for revisions in historical data, reassessments of economic and demographic trends, and changes to its analytic methods.

Unemployment

The unemployment rate generally declines over the 2023–2053 period in CBO's projections. The unemployment rate averages 4.6 percent over the next decade and falls to 4.1 percent in the third decade (see Table C-1).³ From 2029 to 2053, the unemployment rate remains roughly one-quarter of one percentage point above the noncyclical rate of unemployment, a difference that is consistent with both the average historical relationship between the two measures and the projected gap of 0.5 percent between actual and potential GDP (that is, the maximum sustainable output of the economy).⁴

In CBO's projections, the noncyclical rate of unemployment declines in most years in the 30-year projection period—from an average of 4.3 percent over the first decade to 3.9 percent over the third decade. That slow decline reflects the continuing shifts in the composition of the workforce toward older workers, for whom (when they participate in the labor force) unemployment rates tend to be lower, and away from less-educated workers, for whom unemployment rates tend to be higher.

1. Those long-term economic projections are included in the supplemental data posted along with this report at www.cbo.gov/publication/59014#data.

2. Congressional Budget Office, *The Budget and Economic Outlook: 2023 to 2033* (February 2023), www.cbo.gov/publication/58848.

3. The unemployment rate is the number of people not working who are available for work and are either seeking work or expecting to be recalled from a temporary layoff, expressed as a percentage of the labor force. The labor force is the number of people in the civilian noninstitutionalized population (which excludes people who are younger than age 16, members of the armed forces on active duty, and people in penal or mental institutions or in homes for the elderly or infirm) who have jobs or who are available for work and are either seeking work or expecting to be recalled from a temporary layoff.

4. The noncyclical 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.

Table C-1.

Average Annual Values for Additional Economic Variables That Underlie CBO's Extended Baseline Projections

Percent

	1993–2022	2023–2033	2034–2043	2044–2053	Overall, 2023–2053
Unemployment					
Unemployment rate ^a	5.7	4.6	4.3	4.1	4.4
Noncyclical rate of unemployment ^b	4.9	4.3	4.1	3.9	4.1
Growth of Average Weekly Hours Worked	*	*	*	*	*
Growth of Total Hours Worked	0.9	0.5	0.3	0.2	0.3
Earnings as a Share of Compensation	81.3	81.8	80.9	80.1	81.0
Growth of Real Earnings per Worker	1.1	1.2	0.9	1.0	1.0
Growth of Total Factor Productivity ^c	1.2	1.1	1.1	1.1	1.1
Growth of Labor Productivity (Real GDP per hour worked)	1.5	1.4	1.3	1.3	1.3

Data sources: Congressional Budget Office; Bureau of Labor Statistics. See www.cbo.gov/publication/59014#data.

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

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

- a. The unemployment rate is the number of people not working who are available for work and are either seeking work or expecting to be recalled from a temporary layoff, expressed as a percentage of the labor force.
- b. The noncyclical 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.
- c. Total factor productivity is the average real output per unit of combined labor and capital in the nonfarm business sector.

Average Weekly Hours Worked

Given economic trends and current laws, CBO expects the average number of hours worked per week to decline slightly over the next 30 years. In 2053, the average worker is projected to work roughly half an hour less per week than he or she does today.

In CBO's projections, the scheduled expiration of certain provisions of the 2017 tax act at the end of 2025 increases tax rates on individual income and slightly reduces the average number of hours worked beginning in 2026. In addition, effective tax rates on individual income rise because of real bracket creep—the process by which, as people's income rises faster than inflation, more of their income is pushed into higher tax brackets.

The average number of hours worked each week tends to vary by industry: For example, workers in manufacturing put in more than 40 hours per week, on average, whereas those in service industries typically work about 32 hours per week. During the past decade, the percentages of workers in the manufacturing and service industries have been largely stable. In CBO's assessment, changes in the percentages of workers employed in different industries

are unlikely to substantially affect the economywide average number of hours worked over the next 30 years.

Total Hours Worked

CBO projects that the total number of hours worked will increase at an average annual rate of 0.3 percent over the entire 30-year projection period—one-third of the average annual increase in total hours worked over the past three decades (0.9 percent). The slower projected growth of total hours worked occurs mainly because the number of people ages 25 to 54 is expected to grow more slowly in the future than it did over the past 30 years. (The total number of hours worked is calculated on the basis of projections of the growth of the labor force, average weekly hours worked, and unemployment.)

Earnings as a Share of Compensation

Workers' total compensation consists of earnings (that is, wages and salaries) and nonwage compensation (such as employers' contributions for health insurance, pensions, and government social insurance). Since 1960, the share of total compensation paid in the form of wages and salaries has declined—from 91 percent that year to 83 percent in 2022—mainly because health insurance

premiums have risen more quickly than total compensation.⁵ Because CBO anticipates that the cost of health insurance will continue to rise faster than wages and salaries, the portion of compensation that workers receive as earnings is projected to generally decline over the 30-year projection period and to reach 80 percent in 2053.

Real Earnings per Worker

Real earnings per worker (that is, earnings per worker adjusted to remove the effects of inflation) are projected to grow by an average of 1.0 percent annually over the 2023–2053 period—less than the 1.1 percent annual growth they averaged over the past 30 years. That decline is primarily due to slower growth in total factor productivity (TFP, real output per unit of combined labor and capital in the nonfarm business sector) and capital per worker. CBO's projections of real earnings per worker are also based on the agency's projections of prices, the amount of nonwage compensation, and the average number of hours worked.

Distribution of Earnings

The distribution of earnings affects revenues from income taxes and payroll taxes (particularly Social Security taxes). Income taxes are affected by the earnings distribution because of the progressive rate structure of the individual income tax: People with lower income pay a smaller percentage of their earnings in taxes than people with higher income.

In CBO's projections, earnings grow faster for high earners than for low earners, but the rate of growth for high earners is slower than it was in the past. The share of earnings accruing to workers in the top 10 percent of the earnings distribution, for example, increases at an average rate of 0.1 percentage point per year from 2023 to 2053. That growth is less than it was from 1978 to 2021 (the most recent year for which data are available), when the share of earnings accruing to workers in the top 10 percent of the distribution increased by an average of 0.2 percentage points per year.

Social Security payroll taxes are levied only on covered earnings up to a certain annual amount (called the taxable maximum, which is \$160,200 in 2023), so projections of such taxes are affected by projected changes in the

distribution of earnings.⁶ Because earnings have grown more for higher earners than for others, the portion of covered earnings on which Social Security payroll taxes are paid has fallen from 90 percent in 1983 to 83 percent in 2020. In CBO's projections, the portion of covered earnings subject to Social Security taxes is 82 percent in 2023 and falls to 81 percent in 2053. That decline in the share of covered earnings below the taxable maximum reduces CBO's projections of Social Security payroll taxes.

Changes in Projections of Those Labor Market Outcomes Since Last Year

Some of this year's projections of labor market outcomes are close to last year's. Real earnings per worker, for example, grow at roughly the same rate over the 2023–2052 period in CBO's current projections as they did in the agency's previous long-term projections, which were published last July.⁷

Other projections differ. CBO's current projections of the unemployment rate, for example, are substantially higher over the next five years than last year's projections. The agency made that near-term revision to its projections of the unemployment rate mainly because it now projects economic growth in 2023 to be slower than it forecast last year. Earnings as a share of compensation are also generally higher over the 30-year period in CBO's current projections than they were in last year's. The higher projection reflects the agency's revising upward its projections of taxable earnings by more than it increased its projections of nontaxable benefits.

Capital Accumulation and Productivity

Like labor market factors, capital accumulation and total factor productivity directly affect CBO's projections of output growth. The accumulation of productive capital contributes to growth in production from one year to the next. In the nonfarm business sector, growth in TFP contributes directly to output growth. TFP growth has been the biggest contributor to potential output growth

5. For more discussion about how CBO projects income, see Congressional Budget Office, *How CBO Projects Income* (July 2013), www.cbo.gov/publication/44433.

6. Covered earnings are those received by workers in jobs subject to Social Security payroll taxes. Most workers pay payroll taxes on their earnings, although a small number of workers—mostly in state and local government jobs or in the clergy—are exempt. Earnings above the taxable maximum are also exempt from payroll taxes, and no additional Social Security benefits accrue to people who have those excess earnings.

7. Congressional Budget Office, *The 2022 Long-Term Budget Outlook* (July 2022), www.cbo.gov/publication/57971.

over past decades, and it continues to be the main driver of such growth in CBO's projections.

The productivity of labor is measured by real GDP per hour worked. It measures the growth in real GDP that is not attributable to growth in total hours worked; thus, it captures the combined effect on real GDP of capital accumulation and productivity growth.

Capital Accumulation

In CBO's projections, the accumulation of capital is slower over the next 30 years than it was over the previous 30 years. The accumulation of private capital depends primarily on the growth of the labor force, private saving, international flows of capital, and federal borrowing. As the growth of the labor force slows over the next 30 years, there is less demand for capital to equip new workers, slowing capital accumulation. Over that same period, private saving as a percentage of GDP generally rises, increasing the speed of capital accumulation, but that increase is more than offset by an increase in federal borrowing as a percentage of GDP. Increased federal borrowing pushes up interest rates, reduces growth in private investment, and slows the growth of the stock of private capital.

Total Factor Productivity

The annual growth of TFP is projected to average 1.1 percent from 2023 to 2053. That projected growth rate is 0.3 percentage points slower than the average annual rate of growth since 1950 and 0.1 percentage point slower than the average rate since 1990.

Recent analysis of historical trends in TFP growth suggests that projections for the next few decades should place greater weight on the slower growth of recent years than on the faster growth of the more distant past. Thus, although CBO projects that growth in TFP will accelerate from its unusually slow recent rate, the rate of growth in the agency's projections is less than its long-term historical average.

Labor Productivity

Given the projected slowdown in the growth of the capital stock and TFP, average annual growth in real GDP per hour worked falls in CBO's projections—from 1.4 percent over the first decade of the projection period to 1.3 percent over the second and third decades. Potential labor force productivity (real potential GDP

per member of the potential labor force) is projected to follow a similar trajectory over the next 30 years.⁸

Changes in Projections of Capital Accumulation and Productivity Since Last Year

CBO's current projections of capital accumulation over the 2023–2052 period are similar to last year's, though capital accumulates slightly faster over the 2024–2032 period in the current projections. That change is due to CBO's projecting stronger economic growth in 2024 and 2025 this year. CBO's long-term projections of TFP growth and real GDP per hour worked are about the same as they were last year.

Factors Affecting Capital Accumulation and Productivity

Over the long term, in CBO's view, the growth of the nation's stock of private capital (which results from private investment) will be driven by the growth of the labor force, private saving, international flows of direct foreign investment and financial capital, and federal borrowing. Private saving tends to move in the same direction as growth in the labor force, and both private saving and international capital flows tend to move in tandem with the rate of return on investment—a rate that measures the extent to which investment in the stock of capital results in a flow of income.

In the agency's view, increased federal borrowing reduces the amount of funds available for private investment and puts upward pressure on interest rates. Higher interest rates reduce the growth of business investment by making it more costly to borrow money to expand productive capacity, and they reduce the growth of residential investment by raising mortgage rates. Consistent with its projections of federal borrowing, CBO's projections of interest rates on 10-year Treasury notes generally increase over the 30-year period.

Annual growth in TFP is projected to be slower over the next 30 years (at an average rate of 1.1 percent) than it was, on average, over the past 30 years (1.3 percent) for several reasons. One is that CBO expects the improvement in labor quality—an aggregate measure of workers' skills that accounts for educational attainment and work

8. The potential labor force is an estimate of how big the labor force (the number of people in the civilian noninstitutionalized population who have jobs or who are available for work and are either seeking work or expecting to be recalled from a temporary layoff) would be if GDP equaled potential GDP.

experience—to slow over the next three decades, on net. Although the workforce is likely to become more experienced as improvements in health and increases in life expectancy lead people (particularly highly educated people) to continue working past the ages at which previous generations retired, slowing increases in overall educational attainment are projected to offset those gains in experience. Improvement in labor quality is implicitly included in CBO's measure of TFP.

Another factor that reduces TFP growth in CBO's projections is that federal investment in physical capital (such as transportation infrastructure and water and power projects), education and training, and research and development is projected to decline in relation to the size of the economy. Such investment produces income and other benefits (higher productivity and greater efficiency, for example) for private businesses. In CBO's projections, over the next decade, federal discretionary spending measured as a percentage of GDP falls below the levels recorded in past decades. If federal investment generally remained unchanged as a share of discretionary spending and discretionary spending declined as a percentage of GDP, federal investment would also fall as a share of GDP. In CBO's assessment, such a reduction in federal investment would dampen TFP growth.⁹

9. For more details about how CBO estimates the macroeconomic effects of federal investment, see Congressional Budget Office, *Effects of Physical Infrastructure Spending on the Economy and the Budget Under Two Illustrative Scenarios* (August 2021), www.cbo.gov/publication/57327, and *The Macroeconomic and Budgetary Effects of Federal Investment* (June 2016), www.cbo.gov/publication/51628.

Climate change also contributes to the slower growth in CBO's projections of TFP. In at least two ways, climate change affects the agency's projections of economic growth in future decades. First, in CBO's assessment, climate change has affected recent productivity trends. Because CBO's projections are based in part on those recent trends, they implicitly account for a portion of the future effects of climate change: The level of GDP is 0.6 percent less in 2053 in the agency's projections than it would have been without those effects. Second, the agency explicitly estimates a certain amount of additional impact on the growth of TFP from future changes in the climate. In CBO's projections, TFP growth over the 2023–2053 period is 0.02 percentage points lower per year, on average, to account for that additional impact of climate change; as a result, in 2053 TFP is about 0.6 percent less and GDP about 0.4 percent less than they would have been if CBO did not incorporate those additional effects of climate change into its projections. In all, climate change reduces CBO's projection of GDP in 2053 by 1.0 percent.¹⁰

10. CBO has drawn on studies that relate differences in regional economic activity and growth to differences in regional weather patterns, as well as on studies of the economic effects of increasingly intense storms and rising sea levels. For more information, see Evan Herrnstadt and Terry Dinan, *CBO's Projection of the Effect of Climate Change on U.S. Economic Output*, Working Paper 2020-06 (Congressional Budget Office, September 2020), www.cbo.gov/publication/56505.

Appendix D: Changes in CBO’s Long-Term Budget Projections Since July 2022

Overview

The Congressional Budget Office’s current budget projections for the 2023–2052 period differ from the projections it published in July 2022.¹ The differences are attributable to changes in law, changes to the agency’s projections of demographic and economic factors, and the availability of more recent data.²

In CBO’s current projections:

- Spending as a percentage of gross domestic product (GDP) is higher through 2029 and lower thereafter than it was in last year’s projections.
- Revenues as a percentage of GDP are lower throughout most of the 2023–2052 period than they were in last year’s projections.
- Total deficits as a percentage of GDP are larger through 2027 and generally smaller thereafter than they were in last year’s projections (see Figure D-1). Primary deficits (that is, total deficits excluding net outlays for interest) as a percentage of GDP are now larger through 2026 and smaller thereafter.

1. See Congressional Budget Office, *The 2022 Long-Term Budget Outlook* (July 2022), www.cbo.gov/publication/57971. Because most of last year’s projections ended in 2052, this appendix generally makes comparisons only through that year. This year’s long-term budget projections are based on CBO’s May 2023 baseline projections but also reflect the estimated budgetary effects of the Fiscal Responsibility Act of 2023 (FRA, Public Law 118-5), which was enacted on June 3, 2023. For information about the May 2023 baseline projections, see Congressional Budget Office, *An Update to the Budget Outlook: 2023 to 2033* (May 2023), www.cbo.gov/publication/59096. For information about the budgetary effects of the FRA, see Congressional Budget Office, *How the Fiscal Responsibility Act of 2023 Affects CBO’s Projections of Federal Debt* (June 2023), www.cbo.gov/publication/59235.

2. For changes in projections of economic factors since 2022, see Appendix B of this report. For changes in projections of demographic factors since 2022, see Congressional Budget Office, *The Demographic Outlook: 2023 to 2053* (January 2023), www.cbo.gov/publication/58612.

- Debt held by the public rises from 98 percent of GDP in 2023 to 177 percent in 2052. Such debt is 2 percentage points higher in 2023 and 9 percentage points lower in 2052 than the agency projected last year.

CBO also changed its projections of amounts in the two Social Security trust funds—the Old-Age and Survivors Insurance (OASI) Trust Fund and the Disability Insurance (DI) Trust Fund. In CBO’s current projections, the OASI trust fund is exhausted in fiscal year 2032, one year earlier than the agency projected last year. The exhaustion date for the DI trust fund is extended by four years, to calendar year 2052. The exhaustion date for the combined Old-Age, Survivors, and Disability Insurance (OASDI) Trust Funds occurs in fiscal year 2033, unchanged from what was estimated last year.³

CBO’s current budget projections for the 2023–2053 period also differ from the long-term projections it published in February 2023, which were constructed using a simplified approach to project spending. The differences reflect reductions in CBO’s projections of outlays—particularly discretionary outlays, which the agency projects to decline in part because of the effects of the Fiscal Responsibility Act of 2023 (Public Law 118-5). In CBO’s current long-term projections, federal debt held by the public reaches 181 percent of GDP in 2053; in its February 2023 projections, debt reached 195 percent of GDP in that year. The projected exhaustion dates for the OASI and OASDI trust funds are the same as they were in February.

Changes in Projected Spending

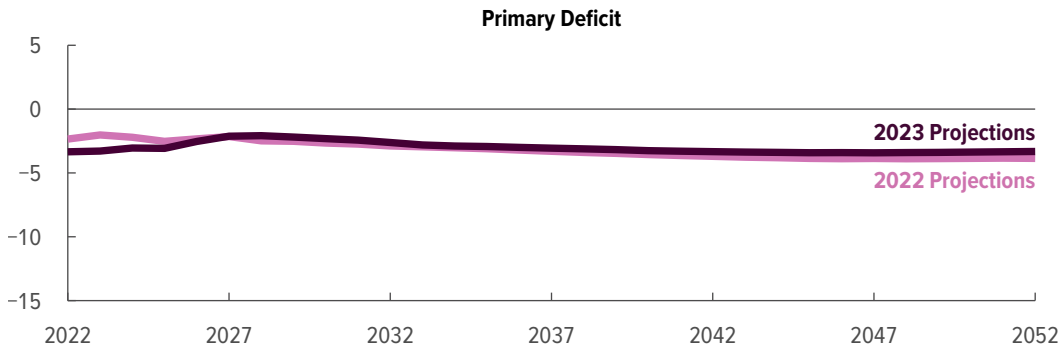
In the current projections, total spending is higher as a percentage of GDP in 2023 than it was in last year’s projections; it remains higher through 2029 but is lower

3. The projected exhaustion dates for the OASI and OASDI funds are drawn from CBO’s 10-year baseline projections for fiscal years 2023 to 2033. The projected exhaustion date for the DI trust fund occurs outside of that 10-year period and was estimated on a calendar year basis.

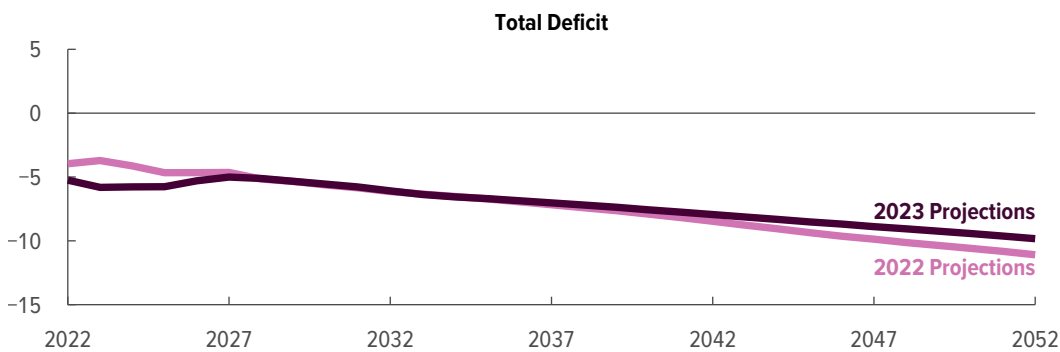
Figure D-1.

CBO's 2022 and 2023 Projections of Deficits and Federal Debt Held by the Public

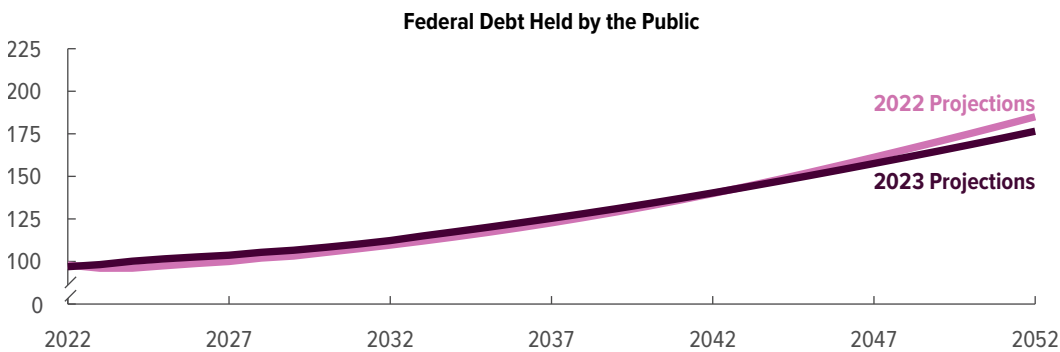
Percentage of GDP



In CBO's current projections, primary deficits as a percentage of GDP are 0.2 percentage points smaller, on average, over the 2023–2052 period than they were in last year's projections.



CBO's projections of total deficits are larger through 2027 but are generally smaller in subsequent years.



Measured as a percentage of GDP, federal debt is now projected to be higher through 2042 but lower in subsequent years than CBO previously projected.

Data source: Congressional Budget Office. See www.cbo.gov/publication/59014#data.

CBO's long-term budget projections, referred to as the extended baseline, typically follow the agency's 10-year baseline budget projections and then extend most of the concepts underlying those projections for an additional 20 years. This year, however, the long-term projections are based on the agency's May 2023 baseline projections but also reflect the estimated budgetary effects of the Fiscal Responsibility Act of 2023 (Public Law 118-5), enacted on June 3, 2023.

Primary deficits exclude net outlays for interest.

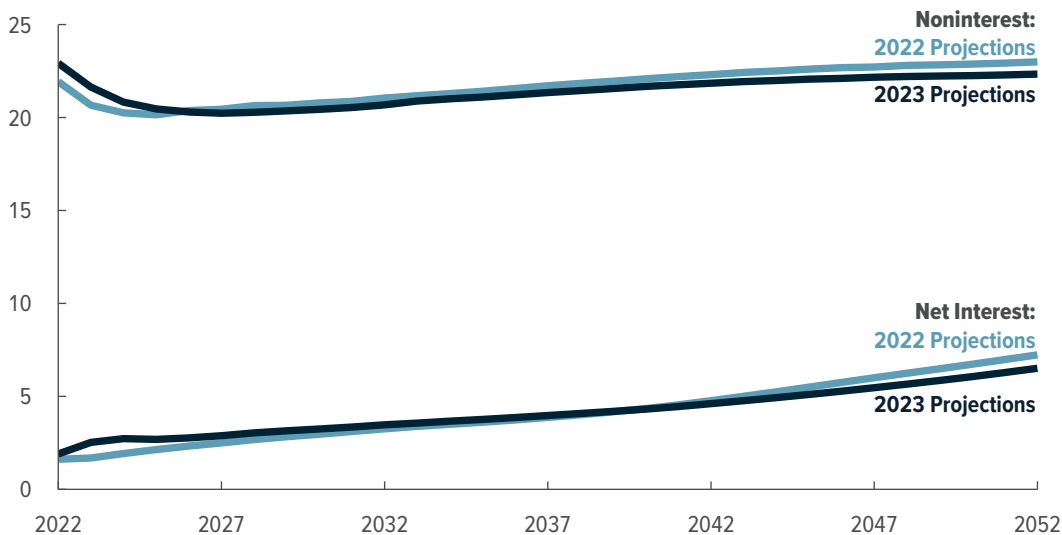
GDP = gross domestic product.



Figure D-2.

CBO's 2022 and 2023 Projections of Outlays

Percentage of GDP



In CBO's current projections, noninterest spending as a percentage of GDP is higher in 2023 than it was in last year's projections. It remains higher through 2025 and is lower thereafter.

Net outlays for interest, measured as a percentage of GDP, are higher through 2039 and lower thereafter.

Data source: Congressional Budget Office. See www.cbo.gov/publication/59014#data.

CBO's long-term budget projections, referred to as the extended baseline, typically follow the agency's 10-year baseline budget projections and then extend most of the concepts underlying those projections for an additional 20 years. This year, however, the long-term projections are based on the agency's May 2023 baseline projections but also reflect the estimated budgetary effects of the Fiscal Responsibility Act of 2023 (Public Law 118-5), enacted on June 3, 2023.

GDP = gross domestic product.

from 2030 to 2052.⁴ Noninterest spending as a percentage of GDP is higher from 2023 through 2025 and lower thereafter; net outlays for interest are higher than previously estimated through 2039 and lower thereafter (see Figure D-2).

The increase in projected noninterest spending as a percentage of GDP through 2025 is mostly explained by increases in projected spending for mandatory programs other than Social Security and the major health care programs (referred to as other mandatory spending); the later reduction is mostly explained by an increase in projected nominal GDP.⁵ (See Appendix B for details on changes in CBO's projections of nominal GDP.)

Projections of other mandatory spending as a percentage of GDP are now higher than they were last year for two main reasons (see Table D-1). First, the enactment of the Honoring our PACT Act (P.L. 117-168) increased projected mandatory outlays for a variety of benefits for veterans exposed to toxic substances. Second, projections of mandatory outlays for veterans' benefits have increased because of higher cost-of-living adjustments (COLAs) for veterans' compensation and pensions.

As a percentage of GDP, spending on Social Security is higher through 2038 than it was in last year's projections and is lower thereafter, when the percentage increases in GDP are greater than the percentage increases in

4. For details on how CBO's budget projections for 2023 to 2033 have changed since last year, see Congressional Budget Office, *The Budget and Economic Outlook: 2023 to 2033* (February 2023), pp. 67–83, www.cbo.gov/publication/58848. For details on how those projections have changed since February 2023, see Congressional Budget Office, *An Update to the Budget Outlook: 2023 to 2033* (May 2023), www.cbo.gov/publication/59096.

5. Other mandatory spending comprises outlays for retirement programs for federal civilian and military employees, certain

programs for veterans, certain refundable tax credits, the Supplemental Nutrition Assistance Program, and all other mandatory programs aside from Social Security and the major health care programs. In the current projections, excluding those refundable tax credits, such spending changes between 2034 and 2053 at roughly the same annual rate at which it changes between 2030 and 2033. By contrast, in last year's long-term projections, such spending changed between 2033 and 2052 at roughly the same rate at which it changed between 2026 and 2030 in CBO's March 2020 baseline projections (the last projections that did not reflect the effects of the coronavirus pandemic).

Table D-1.

CBO's 2022 and 2023 Projections of Revenues, Outlays, Deficits, and Federal Debt Held by the Public in Selected Years

Percentage of Gross Domestic Product

	2023	2034	2044	2052
Revenues				
Individual income taxes				
2022 projections	9.8	9.9	10.3	10.7
2023 projections	9.6	9.7	10.2	10.6
Payroll taxes				
2022 projections	6.0	5.9	5.8	5.7
2023 projections	6.0	5.9	5.8	5.8
Corporate income taxes				
2022 projections	1.7	1.4	1.3	1.3
2023 projections	1.8	1.4	1.4	1.4
Other ^a				
2022 projections	1.1	1.2	1.3	1.3
2023 projections	1.0	1.1	1.2	1.3
Total Revenues				
2022 projections	18.6	18.3	18.7	19.1
2023 projections	18.4	18.1	18.6	19.0
Outlays				
Mandatory				
Social Security				
2022 projections	5.0	6.0	6.2	6.4
2023 projections	5.1	6.1	6.2	6.2
Major health care programs ^b				
2022 projections	5.8	7.1	8.3	8.8
2023 projections	5.8	6.8	8.1	8.6
Other ^c				
2022 projections	3.1	2.1	2.0	1.9
2023 projections	4.2	2.6	2.3	2.1
Subtotal, Mandatory				
2022 projections	14.0	15.3	16.5	17.0
2023 projections	15.1	15.5	16.6	16.9
Discretionary				
2022 projections	6.7	6.0	6.0	6.0
2023 projections	6.5	5.5	5.4	5.4
Net interest				
2022 projections	1.7	3.5	5.2	7.2
2023 projections	2.5	3.7	4.9	6.5
Total Outlays				
2022 projections	22.3	24.8	27.7	30.2
2023 projections	24.2	24.7	26.9	28.8

Continued

benefit payments. In nominal dollars, spending on Social Security is higher throughout the 2023–2052 period because of larger COLAs in the near term and higher average wages through 2052. The upward revisions are moderated by reductions in the projected number of DI beneficiaries.

Net outlays for interest in the current projections total 2.5 percent of GDP in 2023—0.8 percentage points more

than was estimated last year. The change in that estimate stems from higher projected interest rates and inflation, which increase the interest that the government must pay to investors who hold Treasury inflation-protected securities. Net outlays for interest remain higher than previously estimated through 2039, but in later years, they are lower. The later reductions reflect lower long-term projections of the average interest rate on federal debt and of federal debt held by public as a percentage of GDP. (For a

Table D-1.

Continued

CBO's 2022 and 2023 Projections of Revenues, Outlays, Deficits, and Federal Debt Held by the Public in Selected Years

Percentage of Gross Domestic Product		2023	2034	2044	2052
Deficit					
2022 projections		-3.7	-6.5	-9.1	-11.1
2023 projections		-5.8	-6.6	-8.3	-9.8
Federal Debt Held by the Public					
2022 projections		96	114	148	185
2023 projections		98	117	147	177
Memorandum:					
Noninterest Outlays					
2022 projections		20.7	21.3	22.5	23.0
2023 projections		21.6	21.0	22.0	22.3
Primary Deficit ^d					
2022 projections		-2.0	-3.0	-3.8	-3.9
2023 projections		-3.3	-2.9	-3.4	-3.3

Data source: Congressional Budget Office. See www.cbo.gov/publication/59014#data.

CBO's long-term budget projections, referred to as the extended baseline, typically follow the agency's 10-year baseline budget projections and then extend most of the concepts underlying those projections for an additional 20 years. This year, however, the long-term projections are based on the agency's May 2023 baseline projections but also reflect the estimated budgetary effects of the Fiscal Responsibility Act of 2023 (Public Law 118-5), enacted on June 3, 2023.

- Consists of excise taxes, remittances to the Treasury from the Federal Reserve System, customs duties, estate and gift taxes, and miscellaneous fees and fines.
- Consists of spending on Medicare (net of premiums and other offsetting receipts), Medicaid, and the Children's Health Insurance Program, as well as outlays to subsidize health insurance purchased through the marketplaces established under the Affordable Care Act and related spending.
- Includes the refundable portions of the earned income tax credit, the child tax credit, and the American Opportunity Tax Credit.
- Excludes net outlays for interest.

discussion of the changes in the long-term projections of interest rates, see Appendix B.)

Outlays for discretionary programs, measured as a percentage of GDP, are now projected to be lower throughout the next three decades than CBO estimated last year. The reduction in discretionary outlays stems from CBO's assumption that statutory caps established by the Fiscal Responsibility Act will limit discretionary funding in 2024 and 2025.⁶ Those caps affect projected spending not only in 2024 and 2025 but also in later years because of the way that CBO is required to project discretionary funding in future years. In CBO's projections, discretionary funding in a future year is generally based on the amount of funding provided or projected for the previous year, adjusted for inflation. Because the caps reduce

projected funding for 2025, projections for the following year—and each year thereafter—are also reduced.

Projected spending on the major health care programs, measured as a percentage of GDP, is also lower throughout most of the next three decades than CBO estimated last year, mainly because of lower projected spending on Medicare. Those decreases are partially offset by increases in total spending on Medicaid, the Children's Health Insurance Program, and subsidies for health insurance purchased through the marketplaces established under the Affordable Care Act.

Changes in Projected Revenues

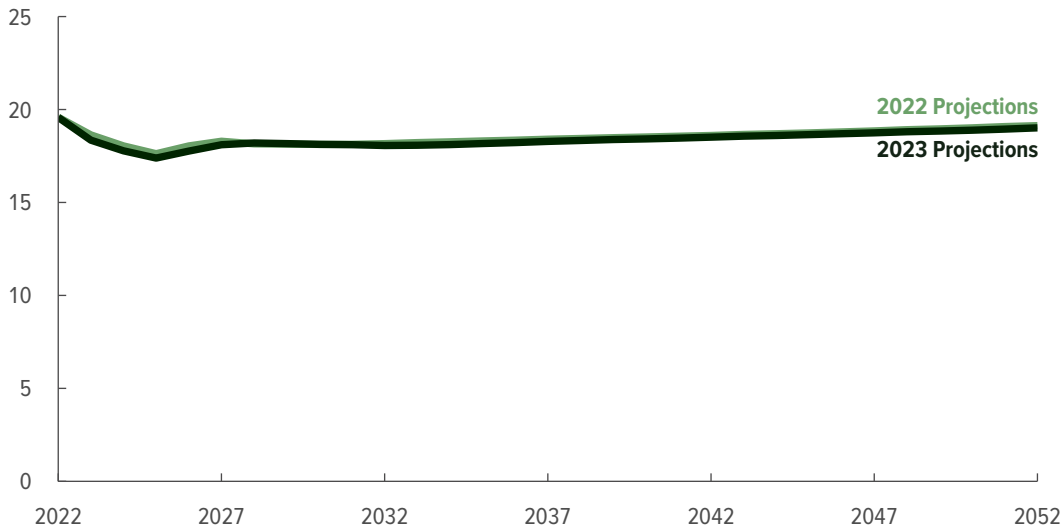
Since last year, CBO's projections of federal revenues as a percentage of GDP have decreased for much of the 2023–2052 period—by 0.3 percentage points in 2023 and 0.1 percentage point in 2052 (see Figure D-3). That overall decrease is mostly explained by lower receipts from individual income taxes—the largest source of revenues—in the current projections. The other two major

6. The Fiscal Responsibility Act also established annual funding limits from 2026 through 2029 that can be enforced using the Congress's procedures for considering budgetary legislation. The effects of those limits are not included in this analysis.

Figure D-3.

CBO's 2022 and 2023 Projections of Revenues

Percentage of GDP



In CBO's current projections, federal revenues as a percentage of GDP are generally lower throughout the 2023–2052 period than they were in last year's projections.

Data source: Congressional Budget Office. See www.cbo.gov/publication/59014#data.

CBO's long-term budget projections, referred to as the extended baseline, typically follow the agency's 10-year baseline budget projections and then extend most of the concepts underlying those projections for an additional 20 years. This year, however, the long-term projections are based on the agency's May 2023 baseline projections but also reflect the estimated budgetary effects of the Fiscal Responsibility Act of 2023 (Public Law 118-5), enacted on June 3, 2023.

GDP = gross domestic product.

sources of revenues, corporate income tax receipts and payroll tax receipts, are marginally higher as a percentage of GDP throughout the projection period.

Projected receipts of individual income taxes are lower in the near term because of reduced projections of capital gains realizations, which result from lower asset values. In the current projections, the longer-term reduction in those receipts as a share of GDP is attributable to downward revisions to CBO's estimates of distributions from pensions and individual retirement accounts.

Measured in nominal dollars, individual income tax receipts are higher in the longer term because of increases in estimates of factors that contribute to the size of the economy, including wages and salaries. Because those factors affect GDP as well as revenues, they have less of an impact on receipts as a percentage of GDP.

Changes in Projected Deficits and Debt

As a result of the changes to CBO's projections of spending and revenues, projections of total deficits, measured as a percentage of GDP, have increased through 2027 and decreased thereafter. In the current projections, the

total deficit for 2023 equals 5.8 percent of GDP, 2.1 percentage points more than was projected last year. By 2052, the total deficit is 9.8 percent of GDP—1.3 percentage points less than last year's projection. The larger total deficits in earlier years are attributable to larger primary deficits and higher interest costs in this year's projections. In later years, primary deficits are smaller and interest costs are lower than CBO previously projected, leading to smaller total deficits.

Primary deficits, measured as a percentage of GDP, are now projected to be larger through 2026 and smaller thereafter. In the current projections, the primary deficit equals 3.3 percent of GDP in both 2023 and 2052, but the estimate for 2023 is 1.3 percentage points higher than in last year's projections, whereas the estimate for 2052 is 0.5 percentage points lower. The larger primary deficits in earlier years reflect greater reductions in projected revenues than in projected noninterest spending. In later years, by contrast, the reductions in projected noninterest spending are greater than the reductions in projected revenues. As a result, primary deficits are smaller.

The same factors underlying the changes in projected deficits from 2023 to 2052 also affected CBO's projections of debt held by the public. Measured as a percentage of GDP, such debt is projected to be higher through 2042 and lower thereafter than the agency estimated last year. In the current projections, debt held by the public rises from 98 percent of GDP in 2023 to 177 percent in 2052; last year, CBO projected that it would rise from 96 percent of GDP in 2023 to 185 percent in 2052.

Changes in Projected Amounts in the Social Security Trust Funds

CBO projects that if current laws governing the Social Security program's taxes and benefits did not change, the OASI trust fund would be exhausted in fiscal year 2032, one year earlier than the agency projected last year. The DI trust fund would be exhausted in calendar year 2052, four years later than the agency projected last year.⁷ And if the balances of the OASI and DI trust funds were combined, the funds would be exhausted in fiscal year 2033, which is what CBO previously projected.

Since last year, CBO has increased its estimates of income credited to the OASI trust fund from 2023 until the fund's projected exhaustion in 2032 by 2.3 percent. That increase is mainly attributable to higher revenues from payroll taxes associated with higher nominal GDP. However, the agency also increased its estimates of expenditures from the fund by 3.9 percent. Those increases stem primarily from increases in the projected number of OASI beneficiaries through 2032, higher projections of average wages throughout the projection period, and slightly higher estimates of COLAs in 2023 and 2024. Because the increases in projected income to the fund are smaller than the increases in projected expenditures, the estimated exhaustion date is now earlier.

In this year's projections, income credited to the DI trust fund from 2023 until the fund's exhaustion in 2052 is 3.9 percent higher than CBO estimated last year, mainly because of greater revenues from payroll taxes. Expenditures from the trust fund are higher through 2034 but are lower in most years thereafter; over the full 2023–2052 period, they are 1.6 percent lower than the

agency estimated last year. That decrease mostly reflects reductions in the projected number of people receiving disability benefits. Specifically, CBO lowered its projection of the long-run age- and sex-adjusted rate of disability incidence from 5.2 per 1,000 insured workers to 4.7 per 1,000 insured workers.⁸ The effects on DI expenditures are partially offset by higher projections of average wages and higher estimates of COLAs in 2023 and 2024. Taken together, the increased income and decreased expenditures are responsible for the DI trust fund's later exhaustion date.

All told, CBO's projections of income credited to the combined OASDI trust funds are 2.4 percent higher over the 2023–2032 period than they were last year, and projections of expenditures from the trust funds are 3.7 percent higher. Even though the increases in estimated income are smaller than the increases in estimated expenditures, the projected year of the combined trust funds' exhaustion remains the same.

Changes in Long-Term Budget Projections Since February 2023

CBO last published long-term budget projections in February 2023. Those projections and the ones presented here are based on CBO's economic and budget projections for 2023 to 2033 and incorporate the agency's long-term projections of the population, the economy, and revenues. But the long-term spending projections released in February were prepared using a simplified approach that the agency regularly uses between full updates. The projections in the current report, by contrast, constitute a full update. Those projections are based on CBO's May 2023 baseline projections; they also reflect the estimated budgetary effects of the Fiscal Responsibility Act.

In February, CBO projected that federal debt held by the public would reach 195 percent of GDP in 2053. Such debt is now projected to reach 181 percent of GDP in that year—mostly because CBO has reduced its projections of total outlays throughout the 2023–2053 period. The reduction in total outlays mainly reflects lower projections of discretionary spending (largely attributable

7. For CBO's projections of outlays and income for Social Security over the next 75 years, see Congressional Budget Office, *CBO's 2023 Long-Term Projections for Social Security* (forthcoming, June 2023), www.cbo.gov/publication/59184. For last year's long-term projections for Social Security, see Congressional Budget Office, *CBO's 2022 Long-Term Projections for Social Security* (December 2022), www.cbo.gov/publication/58564.

8. The rate of disability incidence is the share of workers who are awarded disability benefits in each year out of all workers who are insured under DI but not receiving benefits at the start of the year. For more details, see Congressional Budget Office, *CBO's 2023 Long-Term Projections for Social Security* (forthcoming, June 2023), www.cbo.gov/publication/59184.

to the effects of the Fiscal Responsibility Act); that reduction also reflects lower projections of Social Security outlays after 2035, spending for mandatory programs other than Social Security and the major health care programs after 2036, and net outlays for interest through most of the projection period. Those reductions are partially offset by increases in projected spending on the major health care programs after 2035.

The agency's current projections of the exhaustion dates for the OASI trust fund and the combined OASDI trust funds—in fiscal years 2032 and 2033, respectively—are the same as they were in February. (CBO did not project an exhaustion date for the DI trust fund in February because the simplified approach used to produce the February 2023 projections did not allow for a projection of the trust fund's exhaustion beyond a 10-year period.)

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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. CBO's long-term budget projections, referred to as the extended baseline, typically follow the agency's 10-year baseline budget projections and then extend most of the concepts underlying those projections for an additional 20 years. This year, however, the long-term projections are based on the agency's May 2023 baseline projections but also reflect the estimated budgetary effects of the Fiscal Responsibility Act of 2023 (FRA, Public Law 118-5), enacted on June 3, 2023. Other legislation enacted between March 30, 2023 (when CBO finalized its May baseline), and June 3, 2023, did not have significant budgetary effects.

Those projections are consistent with the demographic projections that the agency published on January 24, 2023, and the economic forecast that it published on February 15, 2023. They do not reflect the economic effects of administrative actions, regulatory changes, legislation, or economic developments after December 6, 2022, when that forecast was finalized. Nor do they reflect the budgetary effects of any developments after March 30, 2023, except for the enactment of the FRA.

In keeping with CBO's mandate to provide objective, impartial analysis, the report makes no recommendations.

Overseen by Molly Dahl and prepared with guidance from Richard DeKaser, Devrim Demirel, Edward Harris, John McClelland, and Julie Topoleski, the report is the work of many analysts at CBO. Lucy Yuan prepared the visual summary. Molly Dahl wrote Chapter 1 with contributions from Daniel Crown, Devrim Demirel, Daniel Fried, Evan Herrstadt, and Joseph Kile. Daniel Crown wrote Chapter 2 in collaboration with Kathleen Burke and with contributions from Xinzhe Cheng. Aaron Betz wrote Chapter 3 with contributions from Daniel Crown, Edward Gamber, Chandler Lester, and Jeffrey Schafer. Lucy Yuan compiled Appendix A. Aaron Betz authored Appendix B and Appendix C with contributions from Daniel Crown, Edward Gamber, Evan Herrstadt, Chandler Lester, and Jeffrey Schafer. Kyoung Mook Lim prepared Appendix D with contributions from Kathleen Burke, Xinzhe Cheng, and Edward Harris.

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Mark Doms, Jeffrey Kling, and Robert Sunshine reviewed the report. Christine Bogusz, Christine Browne, Scott Craver, and Bo Peery edited it, and R. L. Rebach prepared the text for publication and created the graphics. Nicholas Abushacra, Grace Berry, Daniel Crown, Kyoung Mook Lim, Jordan Trinh, and Lucy Yuan prepared the supplemental information files. The report is available at www.cbo.gov/publication/59014.

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



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