CBO’s 2022 Long-Term Projections for Social Security

Percentage of Gross Domestic Product

Outlays With Scheduled Benefits

Outlays With Payable Benefits

Projected

Revenues

Outlays

1995 2005 2015 2025 2035 2045 2055 2065 2075 2085 2095
At a Glance

In this report, the Congressional Budget Office describes its long-term projections for Social Security. One set of projections reflects a scenario in which the program continues to pay benefits as scheduled under current law, regardless of whether the program’s trust funds have sufficient balances to cover those payments. If the gap between the trust funds’ outlays and income occurs as CBO projects, then the balance in the trust funds will decline to zero in 2033 and the Social Security Administration will no longer be able to pay full benefits when they are due. Therefore, another set of projections reflects a scenario in which Social Security outlays are limited to what is payable from annual revenues (from payroll taxes and from income taxes on benefits) after the trust funds are exhausted.

- **Social Security’s Finances, With Scheduled Benefits.** CBO projects that if Social Security paid benefits as scheduled, spending on the program would increase from 5.0 percent of gross domestic product (GDP) in 2022 to 7.0 percent in 2096, and revenues would remain around 4.6 percent of GDP over the same period. The Old-Age and Survivors Insurance Trust Fund would be exhausted in 2033, and the Disability Insurance Trust Fund would be exhausted in 2048. If the trust funds were combined, their exhaustion date would be in 2033.

In CBO’s projections, Social Security’s actuarial deficit over the next 75 years is equal to 1.7 percent of GDP, or 4.9 percent of taxable payroll. That is, the federal government could maintain the necessary trust fund balances through 2096 if it immediately, and permanently, raised payroll tax rates by about 4.9 percentage points (or implemented an equivalent reduction in benefits or combination of tax increases and benefit reductions). After 2096, however, the gap between revenues and outlays would widen, and shortfalls would continue to increase.

- **Distribution of Scheduled Benefits and Payroll Taxes.** In CBO’s projections, average retirement and disability benefits in the first full year of claiming increase over time because of growth in average earnings. For example, initial benefits for retired workers born in the 1990s (who turn 65 beginning in 2055) are larger, on average and after adjusting for the effects of inflation, than for earlier cohorts. However, initial benefits replace a similar share of past earnings for successive cohorts. Payroll taxes paid over the lifetime, measured as a percentage of lifetime earnings, also do not change much for successive cohorts. Within cohorts, people with higher earnings generally receive larger benefits and pay a smaller share of lifetime earnings as payroll taxes than people with lower earnings.

- **Social Security’s Finances, With Payable Benefits.** CBO projects that if Social Security outlays were limited to what is payable from annual revenues after the trust funds’ exhaustion in 2033, Social Security benefits would be about 23 percent smaller than scheduled benefits in 2034. They would be 35 percent smaller by 2096, and the gap would remain stable thereafter.

- **Distribution of Payable Benefits.** After the trust funds’ exhaustion in the payable-benefits scenario, average retirement benefits in the first year of claiming resume their growth, but those benefits are smaller than scheduled benefits for people born after 1968 (that is, those who turn 65 after 2033).
Contents

Background 1

The Outlook for Social Security: 2022 to 2096 2

Social Security’s Finances, With Scheduled Benefits 3
Actuarial Balance 3
Sustainability 4
Trust Fund Ratios 4

The Distribution of Scheduled Benefits and Payroll Taxes 5
Benefits for Retired Workers 5
Replacement Rates for Retired Workers 6
Benefits and Replacement Rates for Disabled Workers 7
Social Security Payroll Taxes Over People’s Lifetimes 8

Social Security’s Finances, With Payable Benefits 9

The Distribution of Payable Benefits 10

Appendix A: Definitions 11

Appendix B: Changes to CBO’s Projections of the 75-Year Actuarial Balance Since Last Year 13

Appendix C: Scheduled Benefits and Payable Benefits 14

About This Document 15
The Congressional Budget Office's long-term projections for Social Security follow the agency’s 10-year baseline budget projections and then extend most of the concepts underlying those projections. The projections in this report are based on CBO’s economic projections that were issued in May 2022. They reflect economic developments through March 2, 2022, and also include the effects of legislation enacted through April 8, 2022. The projections do not include budgetary or economic effects of subsequent legislation, economic developments, administrative actions, court rulings, or regulatory changes. Through 2052, CBO’s projections incorporate the macroeconomic effects of fiscal policy; after 2052, the projections do not account for such effects.

Some projections in this report are based on a scheduled-benefits scenario in which Social Security continues to pay benefits as scheduled under current law, regardless of the status of the program's trust funds. That approach is consistent with statutory requirements governing CBO’s baseline projections and reflects the assumption that funding for such programs will be adequate to make all payments required by law. See section 257(b)(1) of the Balanced Budget and Emergency Deficit Control Act of 1985, Public Law 99-177 (codified at 2 U.S.C. §907(b)(1) (2016)).

Other projections in this report reflect a payable-benefits scenario. In the years after the trust funds’ exhaustion, revenues would be insufficient to pay benefits specified in law, and the Social Security Administration would no longer be able to pay beneficiaries the full amounts to which they were entitled. In that scenario, CBO assumes that annual outlays would be limited to annual revenues credited to the program once the trust funds were exhausted.

Birth cohorts are groups of Social Security participants who were born in the same decade.

Projections of the distribution of initial benefits and initial replacement rates in this report exclude disabled workers born in the 1950s because no data are available for people who died before 1984, which means the data for that cohort are incomplete.

All years referred to in this report are calendar years.

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

Supplemental data for this analysis are available on CBO’s website (www.cbo.gov/publication/58564).
CBO’s 2022 Long-Term Projections for Social Security

**Background**

Social Security—the largest single program in the federal budget—has two components. Old-Age and Survivors Insurance (OASI) provides benefits to retired workers, their eligible dependents, and some survivors of deceased workers. Disability Insurance (DI) provides benefits to disabled workers and their dependents.

The program is financed by payroll taxes and income taxes on benefits that are credited to the OASI and DI trust funds. The payroll tax is generally 12.4 percent of earnings up to a maximum annual amount ($147,000 in 2022). Workers and their employers each pay half; self-employed people pay the entire amount. In addition to tax revenues, the trust funds also receive intragovernmental interest payments on the Treasury securities they hold. Although the two trust funds are legally separate, CBO generally follows the common analytical convention of considering them as combined trust funds, known as the Old-Age, Survivors, and Disability Insurance (OASDI) trust funds.

Outlays for Social Security consist of retirement and disability benefits and the program’s administrative costs.

As discussed in this report, the program’s revenues consist of receipts from the payroll tax, the income tax on benefits, and transfers from the general fund of the Treasury. Revenues do not include interest credited to the Social Security trust funds.

**Social Security Outlays and Revenues in 2021**

<table>
<thead>
<tr>
<th>Trust Fund</th>
<th>Outlays</th>
<th>Revenues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Old-Age and Survivors Insurance</td>
<td>4.4</td>
<td>3.8</td>
</tr>
<tr>
<td>Disability Insurance</td>
<td>0.6</td>
<td>0.6</td>
</tr>
</tbody>
</table>

In 2021, outlays from the OASI fund were greater than revenues. For the DI fund, outlays were similar to revenues.
The Outlook for Social Security: 2022 to 2096

CBO’s long-term projections of Social Security’s finances under a scheduled-benefits scenario reflect the assumption that benefits will be paid as scheduled under the provisions of the Social Security Act, regardless of balances in the Social Security trust funds. (See Notes for more details.)

In those projections, spending for Social Security increases rapidly in relation to gross domestic product (GDP) over the next decade as the large baby-boom generation retires. That growth then slows as members of that generation die, but spending continues to rise throughout the 75-year projection period because of increases in life expectancy. Increases in spending for Social Security relative to GDP would continue after 2096.

Unlike outlays, revenues for Social Security remain stable in relation to the size of the economy. Payroll tax revenues decrease slightly, and receipts from income taxes on Social Security benefits increase slightly. Those changes offset each other, so the amount of tax revenues credited to the trust funds remains roughly unchanged as a percentage of GDP.

CBO’s projections of Social Security’s spending and revenues are subject to considerable uncertainty. If the population or economy differ from the agency’s projections, then spending and revenues will differ as well. Those differences could be especially large in the later years of the projection period, because differences in the underlying projections would compound over time.

Social Security Outlays and Revenues, With Scheduled Benefits

In CBO’s projections, the gap between Social Security’s outlays and revenues widens over the long term. Total spending on the program in 2022 is equal to 5.0 percent of GDP; by 2096, spending on the program reaches 7.0 percent of GDP. Over the same period, revenues remain around 4.6 percent of GDP.
Social Security’s Finances, With Scheduled Benefits

Two measures are commonly used to assess Social Security’s finances. The program’s actuarial balance, often measured over 75 years, summarizes Social Security’s current trust fund balance and annual future streams of revenues and outlays as a single number. (A negative actuarial balance is called an actuarial deficit.) The trust fund ratio, or the ratio of the balance of a trust fund to its expected outlays in that year, indicates how much of recipients’ annual benefit amounts could be paid from the balance at the beginning of a given year. (See Appendix A for definitions of these and other terms.)

Actuarial Balance

In CBO’s projections, the program’s 75-year actuarial deficit is equal to 1.7 percent of GDP, or 4.9 percent of taxable payroll, which is similar to what CBO projected last year. (See Appendix B for more information.) In other words, the federal government could pay the benefits prescribed by current law and maintain the necessary trust fund balances through 2096 if payroll tax rates were raised immediately, and permanently, by about 4.9 percentage points—from 12.4 percent of taxable payroll under current law to 17.3 percent of taxable payroll. Other ways to maintain the necessary trust fund balances include reducing scheduled benefits by an amount equivalent to 4.9 percent of taxable payroll or combining tax increases with benefit reductions. (This analysis excludes the effects of changes in taxes or spending on people’s behavior and the economy, which would depend on the specifics of the policy change and would change the required tax increase or benefit reduction.)

Summarized 75-Year Financial Measures for Social Security, With Scheduled Benefits

<table>
<thead>
<tr>
<th>Trust Fund</th>
<th>Financial Measures as a Percentage of GDP or Taxable Payroll</th>
<th>Percentage of GDP</th>
<th>Percentage of Taxable Payroll</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Income Rate</td>
<td>Cost Rate</td>
</tr>
<tr>
<td>Old-Age and Survivors Insurance</td>
<td></td>
<td>4.1</td>
<td>5.7</td>
</tr>
<tr>
<td>Disability Insurance</td>
<td></td>
<td>0.6</td>
<td>0.8</td>
</tr>
<tr>
<td>Old-Age, Survivors, and Disability Insurance</td>
<td></td>
<td>4.7</td>
<td>6.4</td>
</tr>
</tbody>
</table>

The income rate for Social Security measures income to the program from taxes as a percentage of GDP or taxable payroll; the cost rate measures the program’s cost as a percentage of GDP or taxable payroll. (For more details, see Appendix A.)
Sustainability
A policy that increased revenues or reduced outlays by the same percentage of taxable payroll each year (or made an equivalent combination of such changes) to eliminate the 75-year shortfall would not ensure Social Security’s solvency after 2096. Estimates of the actuarial deficit do not account for revenues or outlays after the 75-year projection period ends, but CBO projects that the gap between revenues and outlays would widen thereafter. Although such a policy would create annual surpluses in the next two decades, it would result in growing annual deficits later and would not leave Social Security on a sustainable financial path after 2096.

Trust Fund Ratios
In CBO’s projections, the amount in the OASI trust fund continues to steadily decline in relation to outlays as expenditures outpace income to the fund.

By contrast, the amount in the DI trust fund increases in relation to outlays in each of the next 15 years as income to the fund exceeds expenditures. Thereafter, the DI trust fund ratio declines.

Because the balance of the OASI trust fund comprised 97 percent of the total balance of the combined OASDI trust funds at the beginning of 2022, the ratio for the combined trust funds tends to follow trends in the ratio for the OASI trust fund.

Social Security Trust Fund Ratios

Ratio of Trust Fund Balance to Scheduled Payments

A trust fund is exhausted when its balance reaches zero. In CBO’s projections, the OASI trust fund is exhausted in 2033 and the DI trust fund is exhausted in 2048. If their balances were combined, the OASDI trust funds would be exhausted in 2033.
The Distribution of Scheduled Benefits and Payroll Taxes

Benefits for Retired Workers

Initial Social Security benefits—that is, benefits in the first full year of claiming—are larger, on average, for retired workers with higher lifetime earnings because people’s Social Security benefits are based on their earnings history. Because real (inflation-adjusted) earnings are expected to continue to rise, CBO projects that initial benefits, adjusted for inflation, would grow over time in a scheduled-benefits scenario. That growth would be partly offset for some birth cohorts because the increase in the full retirement age from 65 (for people born before 1938) to 67 (for people born after 1959) will reduce their initial benefits. (This analysis reflects the assumption that all eligible beneficiaries would claim benefits at age 65.)

Average Initial Annual Benefits for Retired Workers, by Birth Cohort

In CBO’s projections, average initial scheduled benefits for retired workers increase over time, even after adjusting for inflation. For example, initial benefits are larger, on average, for people born in the 1990s (who turn 65 beginning in 2055) than for older beneficiaries.

Average Initial Annual Benefits for Retired Workers, by Birth Cohort and Earnings Quintile

Within a given cohort, retired workers with higher lifetime household earnings generally receive larger initial benefits. Across cohorts, average initial benefits are projected to increase for all earnings quintiles (or fifths of the distribution), three of which are shown here.
Replacement Rates for Retired Workers

In CBO’s projections, Social Security benefits for retired workers grow with average earnings in the economy. As a result, the share of preretirement earnings that those benefits replace generally remains stable over time.

Social Security’s benefit formula is designed to be progressive: People who have lower lifetime earnings receive benefits that are larger, as a percentage of their lifetime average earnings, than those received by higher-earning beneficiaries. (For more details, see Appendix A.) Accordingly, initial replacement rates are higher, on average, for retired workers with lower earnings—that is, initial benefits replace a larger share of past earnings for those workers.

**Average Initial Replacement Rates for Retired Workers, by Birth Cohort**

<table>
<thead>
<tr>
<th>Percent</th>
<th>1950s</th>
<th>1960s</th>
<th>1970s</th>
<th>1980s</th>
<th>1990s</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>35</td>
<td>35</td>
<td>35</td>
<td>40</td>
<td>45</td>
</tr>
<tr>
<td>5</td>
<td>35</td>
<td>35</td>
<td>35</td>
<td>40</td>
<td>45</td>
</tr>
<tr>
<td>10</td>
<td>35</td>
<td>35</td>
<td>35</td>
<td>40</td>
<td>45</td>
</tr>
<tr>
<td>15</td>
<td>35</td>
<td>35</td>
<td>35</td>
<td>40</td>
<td>45</td>
</tr>
<tr>
<td>20</td>
<td>35</td>
<td>35</td>
<td>35</td>
<td>40</td>
<td>45</td>
</tr>
<tr>
<td>25</td>
<td>35</td>
<td>35</td>
<td>35</td>
<td>40</td>
<td>45</td>
</tr>
<tr>
<td>30</td>
<td>35</td>
<td>35</td>
<td>35</td>
<td>40</td>
<td>45</td>
</tr>
<tr>
<td>35</td>
<td>35</td>
<td>35</td>
<td>35</td>
<td>40</td>
<td>45</td>
</tr>
<tr>
<td>40</td>
<td>35</td>
<td>35</td>
<td>35</td>
<td>40</td>
<td>45</td>
</tr>
<tr>
<td>45</td>
<td>35</td>
<td>35</td>
<td>35</td>
<td>40</td>
<td>45</td>
</tr>
</tbody>
</table>

In CBO’s projections, initial benefits replace similar shares of average lifetime earnings for successive cohorts of retired workers.

**Average Initial Replacement Rates for Retired Workers, by Birth Cohort and Earnings Quintile**

<table>
<thead>
<tr>
<th>Percent</th>
<th>Lowest Quintile</th>
<th>Middle Quintile</th>
<th>Highest Quintile</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>5</td>
<td>55</td>
<td>55</td>
<td>55</td>
</tr>
<tr>
<td>10</td>
<td>60</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>15</td>
<td>65</td>
<td>65</td>
<td>65</td>
</tr>
<tr>
<td>20</td>
<td>70</td>
<td>70</td>
<td>70</td>
</tr>
<tr>
<td>25</td>
<td>70</td>
<td>70</td>
<td>70</td>
</tr>
<tr>
<td>30</td>
<td>70</td>
<td>70</td>
<td>70</td>
</tr>
<tr>
<td>35</td>
<td>70</td>
<td>70</td>
<td>70</td>
</tr>
<tr>
<td>40</td>
<td>70</td>
<td>70</td>
<td>70</td>
</tr>
<tr>
<td>45</td>
<td>70</td>
<td>70</td>
<td>70</td>
</tr>
</tbody>
</table>

Initial replacement rates are higher for later cohorts than for earlier cohorts in the lowest quintile (or fifth) of lifetime household earnings, whereas they change only slightly for those in the middle and highest earnings quintiles. That is because earnings for low earners are projected to grow more slowly than average wages.
Benefits and Replacement Rates for Disabled Workers

If benefits are paid as scheduled, then initial benefits for disabled workers, adjusted for inflation, will be larger in the future than they are today, CBO projects, because real earnings will continue to rise. The average initial replacement rates for disabled workers are projected to increase slightly over time.

Average Initial Annual Benefits for Disabled Workers, by Birth Cohort

Average Initial Replacement Rates for Disabled Workers, by Birth Cohort

In CBO’s projections, average DI benefits, adjusted for inflation, in the first full year of claiming increase over time. For example, initial benefits for disabled workers born in the 1990s are larger, on average, than for earlier cohorts.

Over time, initial DI benefits replace slightly larger shares of disabled workers’ previous earnings because the earnings of disabled workers tend to be low, and earnings for low earners grow more slowly than average wages.
Social Security Payroll Taxes Over People’s Lifetimes
Social Security payroll taxes are generally higher for people with higher earnings. However, those taxes tend to make up a smaller share of lifetime earnings for people with higher earnings than for people with lower earnings. That is because annual earnings in excess of a maximum taxable amount ($147,000 in 2022) are not subject to the tax.

Average Lifetime Social Security Taxes as a Percentage of Lifetime Earnings, by Birth Cohort

In CBO’s projections, about 10 percent of people’s lifetime earnings go toward Social Security payroll taxes. Those amounts are less than the current payroll tax rate because some people have earnings above the maximum annual amount that is subject to the tax and because payroll tax rates were lower in the past.

Average Lifetime Social Security Taxes as a Percentage of Lifetime Earnings, by Birth Cohort and Earnings Quintile

Because earnings over a certain threshold are not taxed, people with high lifetime earnings tend to pay a smaller share of their earnings in payroll taxes. In CBO’s projections, that pattern does not change much over time.
Social Security's Finances, With Payable Benefits

Like CBO’s baseline budget projections, the projections above reflect the assumption that Social Security will continue to pay benefits as scheduled under the provisions of the Social Security Act, regardless of the balances in the Social Security trust funds. To show how the exhaustion of the trust funds might affect benefits, CBO also projects Social Security benefits under the assumption that they would be limited to the amounts payable from dedicated funding sources. (See Appendix C for more information.)

If the gap between outlays and income occurs as CBO projects, then the balance in the trust funds will decline to zero and the Social Security Administration will no longer be able to pay full benefits when they are due (though beneficiaries will remain legally entitled to full benefits). In the years after the trust funds’ exhaustion, annual outlays would be limited to annual revenues, and payments to beneficiaries would need to be reduced (although the method for reducing payments is not prescribed under current law). Therefore, in CBO’s projections, payable benefits would equal scheduled benefits until the combined trust funds are exhausted in 2033; after that, payable benefits are the same as the program’s annual revenues.

In 2034, Social Security revenues are projected to equal 77 percent of the program’s scheduled outlays, resulting in a 23 percent shortfall. Thus, CBO estimates that Social Security benefits would need to be reduced by 23 percent in 2034. The gap between scheduled and payable benefits would widen to 35 percent by 2096 and would remain stable thereafter.

Social Security Outlays and Revenues, With Scheduled and Payable Benefits

In CBO’s projections, outlays in a payable-benefits scenario are about 4.6 percent of GDP in 2096, lower than the 7.0 percent projected in a scheduled-benefits scenario.
The Distribution of Payable Benefits

In CBO’s projections for the payable-benefits scenario, Social Security benefit payments need to be reduced after the trust funds’ exhaustion in 2033. Therefore, initial benefits for people who begin collecting benefits after the exhaustion are smaller than they would be under the scheduled-benefits scenario. Beneficiaries in earlier cohorts who start claiming benefits before 2034 see no change to their initial benefits. However, because they receive smaller benefits after the trust funds’ exhaustion, their lifetime benefits are smaller than they would be under the scheduled-benefits scenario.

Reductions in Average Initial Benefits for Retired Workers Under a Payable-Benefits Scenario, by Birth Cohort

In CBO’s projections, payable benefits fall short of scheduled benefits beginning in 2034, when workers born in 1969 turn 65. As a result, average payable benefits fall by a small amount for the 1960s cohort and more for later cohorts.

Reductions in Average Lifetime Benefits for All Social Security Beneficiaries Under a Payable-Benefits Scenario, by Birth Cohort

For all cohorts, average lifetime Social Security benefits are smaller in the payable-benefits scenario than in the scheduled-benefits scenario, because at least some members of all cohorts experience benefit reductions in some years. That decline in lifetime benefits is smaller for earlier cohorts, who begin collecting benefits before the trust funds are exhausted.
Appendix A: Definitions

The actuarial balance is a common measure of the sustainability of a program that has a trust fund and a dedicated revenue source. 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 Social Security, that difference is traditionally presented as a percentage of the present value of gross domestic product (GDP) or of taxable payroll over 75 years.

The actuarial balance is also the difference between the income rate and the cost rate. (The income rate is the present value of annual income plus the initial trust fund balance, divided by the present value of GDP or of taxable payroll, over the 75-year period. The cost rate is the present value of annual outlays plus the present value of a year’s worth of benefits at the end of the period, divided by the present value of GDP or of taxable payroll over the same period.) A negative actuarial balance is called an actuarial deficit.

The Social Security Administration calculates the benefit paid to a retired worker who claims benefits at the full retirement age or to a disabled worker using its benefit formula. That formula is applied to retired workers’ average indexed monthly earnings (AIME)—a measure of their average taxable monthly earnings over their 35 highest-earning years. AIMEs are separated into three brackets using two threshold amounts, or bend points. In calendar year 2022, the first bend point is $1,024 and the second is $6,172. AIMEs in the three brackets are multiplied by 90 percent, 32 percent, and 15 percent, respectively, to calculate the primary insurance amount (PIA), with the largest factor applying to the lowest AIME bracket. The benefit formula is thus progressive; that is, because PIA factors are larger for lower earnings brackets, the benefit is larger as a share of lifetime earnings for someone with a lower AIME than it is for someone with a higher AIME.

Initial annual benefits for retired workers are the benefits people receive the first year they claim them. For this report, the Congressional Budget Office computed such benefits for all people who are eligible and who have not yet claimed any other Social Security benefits. All workers are assumed to claim benefits at age 65, and all amounts are net of income taxes paid on benefits.

The initial replacement rate for retired workers is the initial annual benefit amount measured as a percentage of workers’ preretirement earnings. For this report, preretirement earnings are defined as the average of the last five years of substantial earnings before age 62. (Substantial earnings are annual earnings amounting to at least half of a worker’s average indexed annual earnings—that is, average annual earnings over that person’s lifetime, adjusted for changes in average wages.) The preretirement earnings are adjusted to account for price increases and thus reflect the purchasing power of earnings over time. Replacement rates are computed for all individuals who are eligible to claim retirement benefits at age 62 and who have not yet claimed any other benefit. To capture only those individuals with significant attachment to the labor force, workers with fewer than 20 years of earnings that are above 10 percent of average wages in the total economy in each year are excluded. All workers are assumed to claim benefits at age 65. All amounts are net of income taxes paid on benefits.

Initial annual benefits for disabled workers are the benefits people receive in the first year after being awarded Disability Insurance benefits. All amounts are net of income taxes paid on benefits.

The initial replacement rate for disabled workers is a worker’s initial annual benefit amount measured as a percentage of the average of that worker’s last five years of substantial earnings. Those past earnings are adjusted to account for growth in prices and reflect the purchasing power of earnings over time.
Lifetime earnings are the present value of real (inflation-adjusted) earnings over a person’s lifetime at age 65, including earnings above the taxable maximum. For someone who is single in all years, lifetime household earnings are the present value of inflation-adjusted earnings over a lifetime. In any year in which a person is married, the measure of that person’s earnings is the average of the couple’s earnings, with adjustments to account for economies of scale in household consumption. CBO used lifetime earnings to estimate shares of earnings paid in taxes among cohorts, or groups of people born in the same decade. To examine differences across the distribution of earnings, CBO used lifetime household earnings to rank people in each cohort and sort them into quintiles, or fifths.

Lifetime Social Security benefits include the present value of all Social Security benefits (except those received by young widows, young spouses, and children), net of income taxes that some recipients pay on their benefits. (Those benefits received by young widows, young spouses, and children are excluded from this measure because of insufficient data for years before 1984.)

Lifetime Social Security taxes consist of the present value of the employer’s and employee’s combined payroll taxes.

The trust fund ratio is the balance in a trust fund at the beginning of the year divided by outlays (benefits and administrative costs) for that year. Trust fund exhaustion occurs when a fund’s balance, and thus its trust fund ratio, reaches zero. Under current law, a Social Security trust fund cannot incur negative balances.
Appendix B: Changes to CBO’s Projections of the 75-Year Actuarial Balance Since Last Year

The Congressional Budget Office’s current projections of Social Security’s 75-year actuarial deficit are similar to last year’s projections. CBO projects that over the next 75 years, if current laws remained in place, the program’s actuarial deficit would be 1.7 percent of gross domestic product (GDP), or 4.9 percent of taxable payroll—the same amount that CBO estimated last year.

The current projections of the actuarial deficit reflect several developments since last year, some of which increased the projected 75-year actuarial deficit and some of which decreased it. The effects from both sides offset each other.

Several factors increased the actuarial deficit:

- CBO lowered its projections of fertility rates. Lower fertility rates result in fewer births throughout the projection period and, eventually, fewer working-age people paying Social Security payroll taxes.
- CBO raised its projections of interest rates for most of the next 25 years and steadily lowered projected interest rates thereafter. As a result, the discount rates used to calculate the actuarial deficit are slightly higher for the next 50 years but lower after that. The later years in the projection period have larger financial shortfalls, and the lower discount rates projected for those years place more weight on them. The early years in the projection period have smaller financial shortfalls, and the higher discount rates projected for those years place less weight on them. The effect of the lower discount rates in later years outweighs the effect of the higher discount rates in the early years, so overall, these revisions increased the actuarial deficit.
- CBO increased its projections of cost-of-living adjustments to reflect upward revisions in projections of inflation. As a result, projected spending on Social Security increased.
- The projection period included an additional year with a relatively large deficit (2096).

Other factors decreased the actuarial deficit:

- CBO raised its projections of taxable payroll in relation to GDP over the long run, which increased projected revenues to Social Security’s trust funds. Those revisions reflect higher projected earnings in relation to GDP, which are partly offset by a decrease in the share of earnings below the maximum amount subject to Social Security payroll taxes.
- CBO revised its projections of real (inflation-adjusted) GDP upward. As a result, projected Social Security revenues from payroll taxes increased. Partly offsetting that increase in revenues is a gradual increase in outlays driven by the growth in GDP. That increase is gradual because future beneficiaries would only gradually begin to receive larger benefits—on the basis of higher earnings—than they would otherwise have received. Because earlier years—which are projected to have smaller financial shortfalls—receive more weight in the calculation of the actuarial balance, the overall effect of the increased GDP and taxable payroll is a decrease in the actuarial deficit.
- CBO increased its projections of mortality rates over the next two decades to reflect the effects of the coronavirus pandemic. That revision especially increased mortality rates for older people, who are more likely to die from COVID-19 and related complications. As a result, CBO reduced its projections of the number of people age 65 or older and the number of Old-Age and Survivors Insurance beneficiaries, lowering Social Security’s projected outlays and, in turn, its actuarial deficits.
Appendix C: Scheduled Benefits and Payable Benefits

In accordance with statutory requirements, the Congressional Budget Office produces its baseline budget projections under the assumption that funding for entitlement programs will be adequate to make all payments required by law. Likewise, in this report, CBO’s projections with scheduled benefits reflect the assumption that the Social Security Administration will pay benefits as scheduled under current law regardless of the status of the program’s trust funds.¹

Without legislative action, the combined Old-Age, Survivors, and Disability Insurance trust funds are projected to be exhausted in calendar year 2033. Beyond that point, the trust fund balances would no longer be sufficient to make up the gap between benefits specified in current law and annual trust fund receipts.

If a trust fund was depleted and its expenditures continued to exceed its receipts, two federal laws would come into conflict. Under the Social Security Act, beneficiaries would remain legally entitled to full benefits. However, the Social Security Administration would not have legal authority to pay those benefits on time under the terms of the Antideficiency Act, which prohibits government spending in excess of available funds.

There are many ways to restore Social Security’s solvency after the trust funds’ projected exhaustion. For example, benefits could be reduced to decrease expenditures from the trust funds, or payroll tax rates could be raised or funds transferred from the Treasury’s general fund to increase Social Security’s income. It is unclear what specific actions the Social Security Administration would take if a trust fund was insolvent.²

In CBO’s projections under the payable-benefits scenario, benefits are limited to the amounts payable from dedicated funding. That is, payable benefits are calculated as under the provisions of the Social Security Act, which specifies that benefit payments shall be made only from the trust funds, reduced as necessary to ensure that outlays do not exceed the Social Security system’s revenues once the balances in the combined trust funds are exhausted. Under this scenario, the trust funds’ annual income and expenditures are equal and there are no trust fund assets.

How outlays would be reduced is not specified in law. For this report, CBO assumed that once the combined trust funds were exhausted, Old-Age and Survivors Insurance benefits and Disability Insurance benefits paid to all existing and new beneficiaries would be reduced by the percentage necessary to make the program’s total annual outlays equal its total available revenues.

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

Xinzhe Cheng prepared the report with guidance from Molly Dahl and Julie Topoleski. Damir Cosic, Daniel Crown, Kyoung Mook Lim, Noah Meyerson, Charles Pineles-Mark, Emily Stern, and Jordan Trinh contributed to the analysis in this report. Jordan Trinh and Lucy Yuan fact-checked the report and the supplemental data. Christina Hawley Anthony, Joseph Kile, Justin Latus, John McClelland, Noah Meyerson, and Emily Stern provided comments on an earlier draft.

Mark Doms, Jeffrey Kling, and Robert Sunshine reviewed the report. Christine Browne edited it, and Jorge Salazar created the graphics and prepared the text for publication. Xinzhe Cheng prepared the supplemental data. The report is available at www.cbo.gov/publication/58564.

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

Phillip L. Swagel
Director
December 2022