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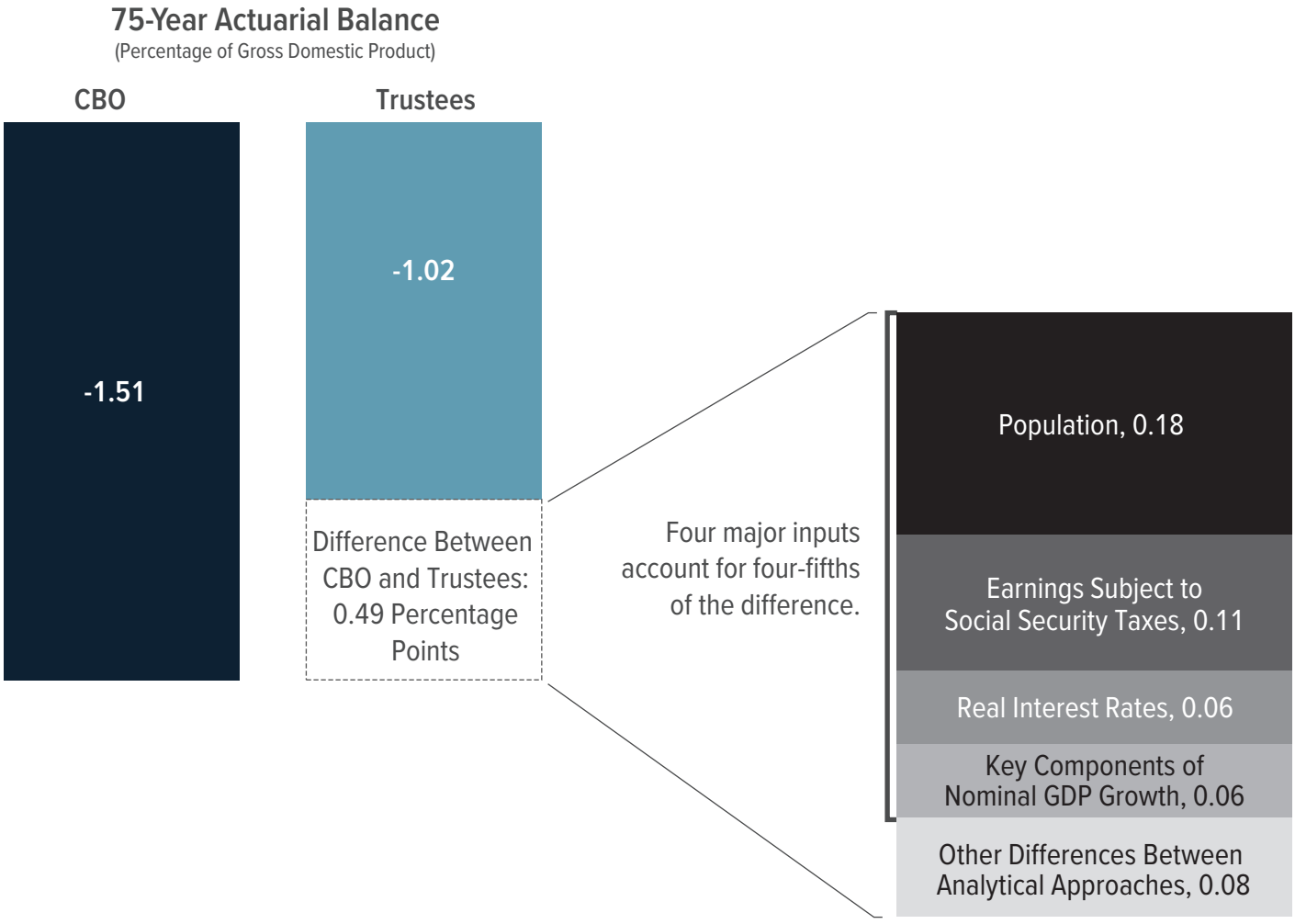
CBO

CBO's Long-Term Social Security Projections: Changes Since 2017 and Comparisons With the Social Security Trustees' Projections



DECEMBER 2018

Notes

Unless otherwise indicated, all years referred to in this report are calendar years.

Numbers may not sum to totals because of rounding.

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CBO's Long-Term Social Security Projections: Changes Since 2017 and Comparisons With the Social Security Trustees' Projections

Summary

Each year, the Congressional Budget Office updates its projections of the Social Security system's finances to incorporate newly available data and information from the research community. The agency also updates its models to incorporate improvements in methods and feedback on its analytical approach. CBO's latest long-term budget projections were published in June 2018.

Comparison With CBO's Previous Projections

CBO's June 2018 projections indicate a slight improvement in the Social Security system's financial outlook compared with the previous year's projections:

- The projected 75-year actuarial balance, a commonly used measure of the system's financial condition, has not changed as a percentage of gross domestic product (GDP) since last year, remaining at –1.5 percent of GDP (that is, a deficit of 1.5 percent). As a percentage of taxable payroll, the projected 75-year actuarial balance has improved slightly from –4.5 percent to –4.4 percent (see Table 1).

- Changes to projections of three key inputs have improved the Social Security system's projected finances: the share of earnings that is subject to Social Security payroll taxes, the labor force participation rate, and interest rates.

- Those improvements have been partially offset by including an additional year of deficit, 2092, in the calculation of the actuarial balance. Technical changes also collectively worsen the 75-year outlook.

Comparison With the Social Security Trustees' Projections

CBO projects larger deficits in Social Security's finances than do the Social Security Trustees. That difference is largely explained by CBO's and the trustees' different projections of several key inputs into estimates of the system's finances: the population, earnings subject to Social Security payroll taxes, real interest rates (that is, interest rates adjusted to remove the effects of inflation), and components of GDP growth (see Table 2).

Changes to CBO's Projections Since Last Year

Created in 1935, Social Security is the largest single program in the federal budget. The Social Security system pays benefits to retired workers, their eligible dependents, and some survivors of deceased workers from the Old-Age and Survivors Insurance (OASI) Trust Fund, and it makes payments to disabled workers and their dependents through the Disability Insurance (DI) Trust Fund. Although the two trust funds are legally separate, in this report, CBO generally follows the common analytical convention of considering them as combined.

A common measure of the sustainability of a program that has a trust fund and a dedicated revenue source is its estimated actuarial balance over a given period—that is, the sum of the present value of projected tax revenues 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.[1] For Social Security, that difference is traditionally presented as a percentage of the present value of GDP or taxable payroll over 75 years.

1. A present value expresses a flow of past and future revenues or outlays as a single amount received or paid at a specific time. The value depends on the rate of interest, known as the discount rate, used to translate past and future cash flows into a single number.

Table 1.

Changes to the 75-Year Actuarial Balance

	As a Percentage of	
	GDP	Taxable Payroll
March 2017 Projection	-1.5	-4.5
Estimated Effects of Revisions to Factors Improving the Actuarial Balance		
Taxable share	*	0.1
Labor force participation rate	*	0.1
Interest rates	*	*
Total	*	0.2
Estimated Effects of Revisions to Factors Worsening the Actuarial Balance		
Valuation period	*	-0.1
Technical changes	*	-0.1
Total	*	-0.1
Overall Improvement	*	*
June 2018 Projection	-1.5	-4.4

Source: Congressional Budget Office.

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

The current 75-year projection period for the financial measures reported here begins in 2018 and ends in 2092. The 75-year projection period for the March 2017 projection began in 2017 and ended in 2091. These projections incorporate the assumption that spending for Social Security continues as scheduled even if its trust funds are exhausted.

The actuarial balance is the sum of the present value of projected tax revenues 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 a given period, divided by the present value of GDP or taxable payroll. (A present value expresses a flow of past and future revenues or outlays as a single amount received or paid at a specific time. The value depends on the rate of interest, known as the discount rate, used to translate past and future cash flows into a single number.)

Some of the changes that CBO has made since last year improved the projected financial outlook for Social Security, and some worsened it.[2] The agency's projections of the share of earnings that is taxable for Social Security, the labor force participation rate, and interest rates improved the projected financial outlook for Social Security. An additional year of deficit in the calculation of the actuarial balance and technical changes partially offset those improvements.

Change in the Projected Share of Earnings That Is Taxable for Social Security

CBO's projection of the share of earnings that is subject to the Social Security payroll tax, which is the main source of funding for the program, has increased since last year, improving the projected actuarial balance by less than 0.05 percent of GDP, or 0.1 percent of taxable payroll. Each person working in a job covered by Social Security pays 6.2 percent of his or her wages up to a cap (the taxable maximum, equal to $128,400 in 2018); that amount is matched by the worker's employer (self-employed people pay the combined 12.4 percent). If a larger share of earnings is taxable, revenues will increase, but spending will also increase eventually because future beneficiaries will receive greater benefits. Because earlier years receive more weight than later years in the calculation of the system's actuarial balance, and only spending and revenues over the next 75 years are included, the increased revenues early on outweigh the greater benefits paid in the future, and the actuarial balance improves.

Because, on average, earnings have grown faster for people earning more than the taxable maximum than for those earning less, the portion of covered earnings that is taxable fell from 89 percent in 1984 to 83 percent in 2016.[3] Both this year and last year, CBO projected that the share of earnings below the taxable maximum would continue to decline, but the anticipated rate of that decline has slowed (see Figure 1). That revision was in response to smaller-than-expected increases in the share of wages and salaries received by higher earners in recent years. Although CBO expects that the unequal growth in earnings will continue, the agency now projects a slower decline in the share of earnings below the taxable maximum.

In last year's projections, the share of earnings below the taxable maximum declined to 79 percent in 2027 and

2. For the current projections and additional information, see Congressional Budget Office, *The 2018 Long-Term Budget Outlook* (June 2018), www.cbo.gov/publication/53919, and "CBO's 2018 Long-Term Projections for Social Security: Additional Information" (September 2018), www.cbo.gov/publication/54428. For the 2017 projections and additional information, see Congressional Budget Office, *The 2017 Long-Term Budget Outlook* (March 2017), www.cbo.gov/publication/52480, and "CBO's 2017 Long-Term Projections for Social Security: Additional Information" (October 2017), www.cbo.gov/publication/53245.

3. 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.

Table 2.

Differences Between CBO's and the Social Security Trustees' Projections of the 75-Year Actuarial Balance

	As a Percentage of GDP		As a Percentage of Taxable Payroll	
	Percentage-Point Change	Difference Explained (Percent)	Percentage-Point Change	Difference Explained (Percent)
Changes to CBO's Projections That Would Result From Adopting Each of the Trustees' Major Inputs to the Projections				
Population	0.18	36	0.53	33
Earnings subject to Social Security taxes	0.11	22	0.52	32
Real interest rates	0.06	13	0.20	12
Key components of nominal GDP growth[a]	0.06	13	0.18	11
Other[b]	-0.01	-1	-0.09	-6
Subtotal	0.40	82	1.33	83
Differences Between Analytical Approaches	0.09	18	0.27	17
Total Difference	**0.49**	**100**	**1.60**	**100**

	As a Percentage of GDP	As a Percentage of Taxable Payroll
Memorandum:		
Published Projections of the 75-Year Actuarial Balance		
CBO	-1.51	-4.44
Trustees	-1.02	-2.84
Difference between the projections	0.49	1.60

Sources: Congressional Budget Office; Social Security Trustees.

GDP = gross domestic product.

The 75-year projection period for the financial measures reported here begins in 2018 and ends in 2092. These projections incorporate the assumption that spending for Social Security continues as scheduled even if its trust funds are exhausted.

The actuarial balance is the sum of the present value of projected tax revenues 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 a given period, divided by the present value of GDP or taxable payroll. (A present value expresses a flow of past and future revenues or outlays as a single amount received or paid at a specific time. The value depends on the rate of interest, known as the discount rate, used to translate past and future cash flows into a single number.)

a. The key components of nominal GDP growth are the labor force participation rate, the unemployment rate, the rate of productivity growth, and the inflation rate.

b. Other changes include the differences in estimated income taxes paid on Social Security benefits and the interactions among the four major inputs: population, earnings subject to Social Security taxes, real (inflation-adjusted) interest rates, and key components of nominal GDP growth.

then remained at roughly that level thereafter. In this year's projections, the share of earnings below the taxable maximum declines more gradually, reaching 79 percent in 2048 and remaining at roughly that level thereafter. Over the following 30 years, that share is about a half percentage point higher, on average, than CBO estimated last year.

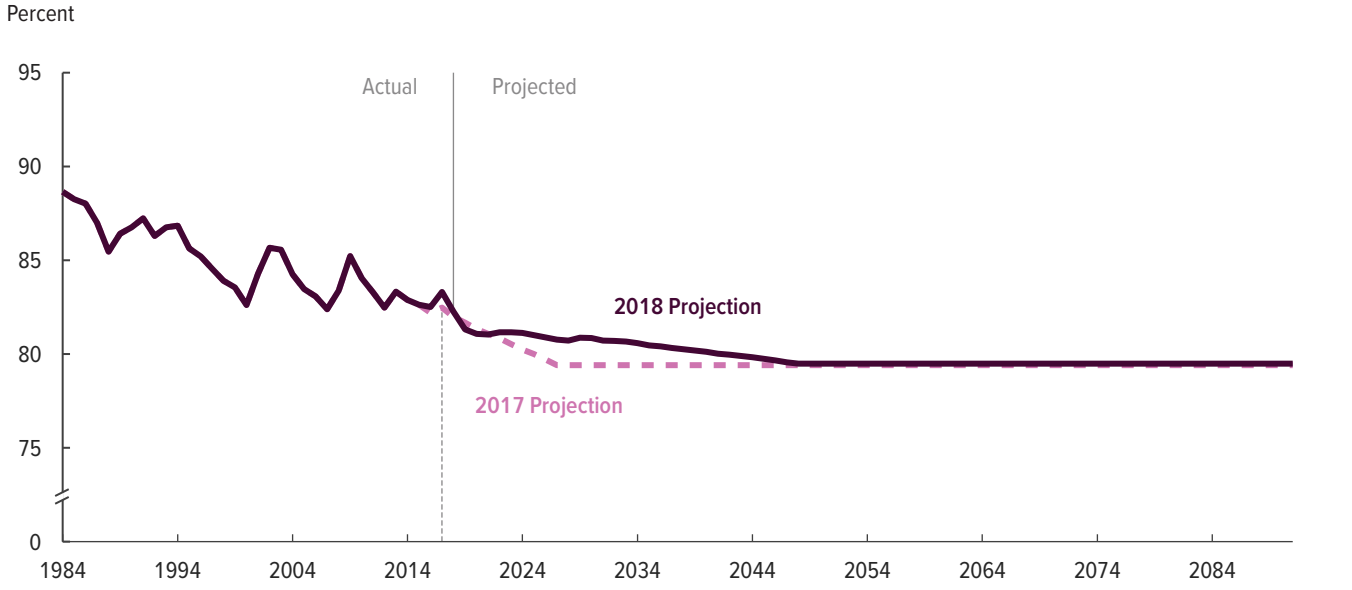
Change in the Projected Labor Force Participation Rate

CBO's projection of the labor force participation rate is slightly higher than it was last year, which improves the projected actuarial balance by less than 0.05 percent of GDP, or by 0.1 percent of taxable payroll. A higher labor force participation rate—which represents the share of people age 16 or older in the civilian, noninstitutionalized population who are employed or actively seeking jobs—means that more people are working and paying payroll taxes and then eventually receiving benefits.

CBO's projection of the labor force participation rate for 2028 has increased by 0.3 percentage points since last year; the agency's projection of the labor force participation rate for 2048 has increased by 0.1 percentage point (see Figure 2). Most of the increase

Figure 1.

The Share of Earnings That Is Taxable for Social Security



Source: Congressional Budget Office.

Social Security payroll taxes are levied only on earnings up to a maximum amount ($128,400 in 2018), which increases annually with the national average wage index except in years when there is no cost-of-living adjustment to benefits. Covered earnings are those received by workers in jobs subject to Social Security payroll taxes. The government collects payroll taxes on the earnings of most workers, although a small group of workers—mostly in state and local government or the clergy—are exempt. The taxable share of covered earnings affects revenues of the Social Security system as well as benefits paid in future years (because taxable earnings are used to calculate benefits).

since last year in CBO's projections of that rate occurs through 2025 because of the enactment of individual income tax provisions that will raise after-tax wages over the next several years and thereby encourage people to work. After the scheduled expiration of many of those provisions at the end of 2025, CBO projects that, on balance, the labor force participation rate will be slightly higher through 2028 than projected last year because of the remaining permanent changes to the tax code. A slightly higher labor force participation rate is projected to persist throughout the rest of the projection period.

Over the full projection period, a higher labor force participation rate leads to increased receipts from payroll taxes. Over time, however, those additional workers will retire and become eligible for Social Security benefits. Thus, a higher labor force participation rate initially increases revenues but later increases both revenues and spending, with some of that spending occurring more than 75 years from now. In the calculation of the system's actuarial balance, earlier years receive greater weight than later years, and only spending and revenues over the next 75 years are included, so the larger amount of projected revenues outweighs the effect of greater spending on future benefits and improves the projected actuarial balance.

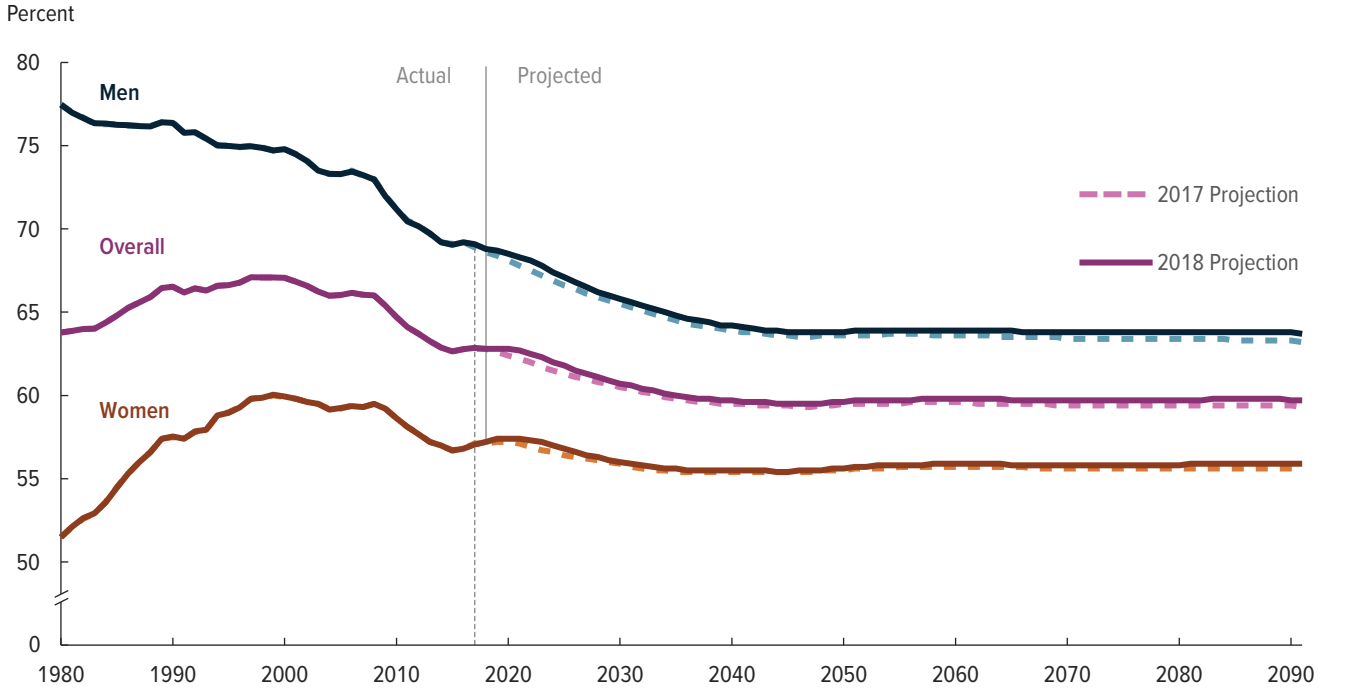
Change in Projected Interest Rates

CBO has increased its projections of interest rates, which improves the projected actuarial balance by less than 0.05 percent of GDP and taxable payroll. In the calculation of the actuarial balance, the discount rate, which is based on projected interest rates, determines how much weight is given to each year's outcomes in the calculation of the present values of revenues and outlays; higher rates decrease the weight of future income and payments.

To calculate the Social Security system's actuarial balance, CBO uses a discount rate based on the average interest rate on all bonds held by the Social Security trust funds in years before the combined trust funds are projected

Figure 2.

Labor Force Participation Rates



Source: Congressional Budget Office.

The labor force participation rate is the percentage of people in the civilian, noninstitutionalized population who are age 16 or older and either working or actively seeking work.

to be exhausted in 2031.[4] That rate is currently lower than the rate on new special-issue Treasury bonds because many of the outstanding bonds were issued at very low rates.[5] After the trust funds are projected to be exhausted, the agency uses a discount rate based on the projected rate for 10-year Treasury notes, equivalent to the projected interest rate on new special-issue Treasury bonds.

The interest rate CBO uses for the discount rate in its current estimates is higher by about 0.1 percentage point, on average, over the next 30 years than it was in last year's projection and is similar thereafter (see Figure 3). In CBO's projection, long-term interest rates are higher, on average, primarily because the greater federal borrowing in the current long-term projections pushes up interest rates by a larger amount, particularly over the next decade.[6]

In CBO's projections, the difference between Social Security's outlays and revenues generally widens over time, leading to larger deficits over the longer term than over the shorter term. Because a higher interest rate puts less weight on those larger future deficits, it has the effect of improving the actuarial balance.

Change in the Valuation Period

The change in the valuation period for the 75-year actuarial balance, which ended in 2091 in last year's projections and ends in 2092 in this year's projections,

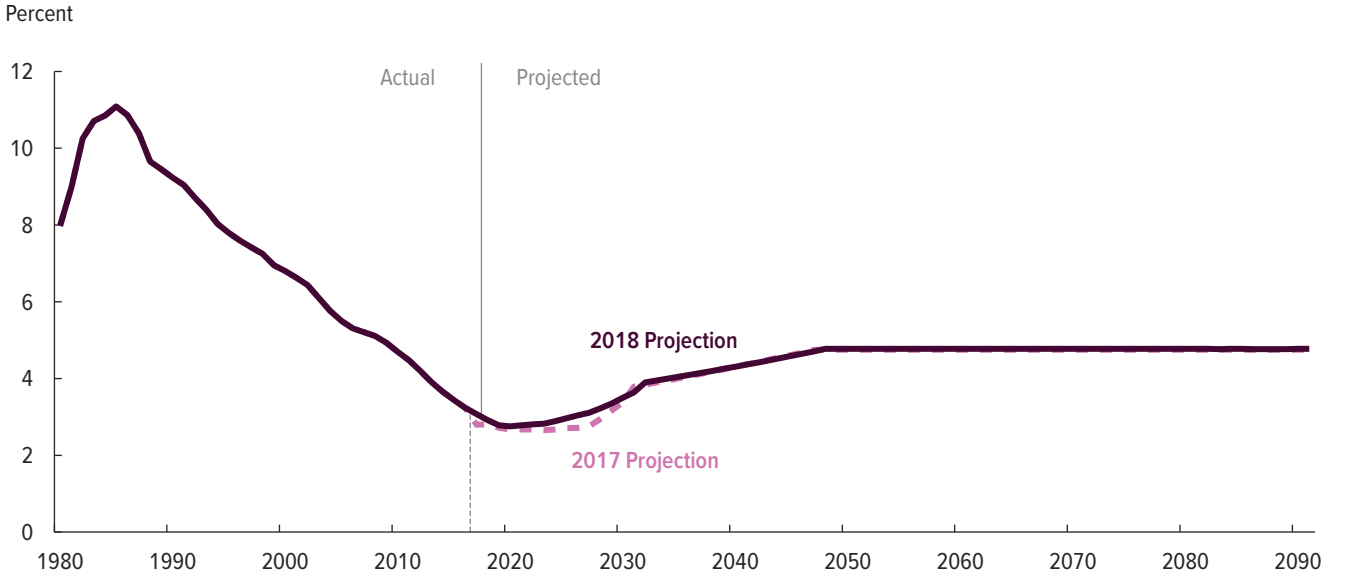
4. If the combined trust fund's balance declined to zero and current revenues were insufficient to cover benefits specified in law, the Social Security Administration would no longer be permitted to pay full benefits when they were due. In the years after a trust fund was exhausted, annual outlays would be limited to annual revenues: All receipts to the trust fund would be used, and the trust fund's balance would remain essentially at zero.

5. In CBO's projection, the average rate on all outstanding bonds moves toward the new issue rate in the last few years before exhaustion of the trust funds.

6. See Congressional Budget Office, *The 2018 Long-Term Budget Outlook* (June 2018), Appendix A, www.cbo.gov/publication/53919.

Figure 3.

Interest Rate Used in the Calculation of the Actuarial Balance



Source: Congressional Budget Office.

The interest rate used in the calculation of the actuarial balance is the average rate on all bonds held by the Social Security trust funds until their exhaustion in 2031. After projected trust fund exhaustion, the interest rate equals the rate on 10-year Treasury notes, equivalent to the projected rate on new special-issue Treasury bonds.

worsens the projected actuarial balance because the calculation includes an additional year of deficit (2092).[7] In CBO's estimation, the addition of that year worsens the projected actuarial balance by less than 0.05 percent of GDP, or by 0.1 percent of taxable payroll.

Technical Changes

CBO made several small technical changes to its long-term projection methods, including improvements in analytical methods, data revisions, and updates to its 10-year projections. Those technical changes, on balance, worsened CBO's estimate of the 75-year actuarial balance by less than 0.05 percent of GDP, or by about 0.1 percent of taxable payroll.

CBO improved its analytical methods by refining its projections of Social Security benefits received by children, improving projections of unreported earnings, and updating its projections of marriage rates. The agency also updated the historical data used in creating the representative sample that forms the basis of the main analytical tool that the agency uses to make long-term budget and economic projections. Those data include counts of the population by age and sex as well as counts of workers and beneficiaries. Together, those changes worsened the projected actuarial balance.[8]

CBO's projections of spending for Social Security were also updated to match CBO's most recently published 10-year projections.[9] That change slightly improved the actuarial balance because CBO lowered its 10-year projections of Social Security outlays.

7. The calculation of the actuarial balance includes the current value of the trust funds, which reflects all deficits or surpluses to date. Thus, the change in the valuation period adds a year at the end but does not drop any previous year. In this year's projections, that value includes the deficit the system ran in 2017; in last year's projections, the current value of the trust funds included the deficit the system ran only through 2016. Thus, this year's calculation includes an additional year of deficits.

8. See Congressional Budget Office, *An Overview of CBOLT: The Congressional Budget Office Long-Term Model* (April 2018), www.cbo.gov/publication/53667.

9. See Congressional Budget Office, *The Budget and Economic Outlook: 2018 to 2028* (April 2018), www.cbo.gov/publication/53651.

Previously Important Factors That Did Not Change This Year

Last year, changes to CBO's projections of productivity in the economy and of the population were important in explaining changes in Social Security outcomes. Changes to those inputs did not significantly affect this year's revisions. CBO projects roughly the same average total factor productivity growth that it projected last year.[10] Similarly, the agency's projections of population growth in most years are very similar to those published in last year's report.

How CBO's Projections Compare With Those of the Social Security Trustees

Both CBO and the Social Security Trustees project that, if current laws remained in place, Social Security spending would grow substantially in coming decades as the population continues to age, outpacing the program's revenues.[11] The two projections differ, however, in their assessment of the magnitude of the financial shortfall. The trustees' projection of the 75-year actuarial balance is –1.0 percent of GDP, representing a deficit that is 0.5 percentage points smaller than CBO projects. As a percentage of taxable payroll, the trustees' projection of the 75-year actuarial balance is –2.8 percent, representing a deficit that is 1.6 percentage points smaller than CBO projects.

Much of the difference between CBO's projection of the actuarial balance and that of the trustees is explained by differences in projections of four major inputs into estimates of the system's finances (see Figure 4):

- The population;
- The earnings subject to the Social Security payroll tax;
- Real interest rates; and
- The key components of nominal GDP growth—labor force participation rates, productivity growth, inflation, and the unemployment rate. [12]

Each of those inputs is subject to much uncertainty over the next 75 years. CBO estimated how its projections of Social Security finances would change if it adopted the trustees' projections for each input instead of using the agency's projections. If CBO adopted the trustees' projections of those four major inputs, as well as income taxes on benefits and the interactions among the four major inputs, about 82 percent of the difference between CBO's projections of the actuarial balance as a percentage of GDP and those of the trustees would be eliminated. The remaining 18 percent is attributable to differences between CBO's and the trustees' analytical approaches.

Although this analysis focuses on differences in the projected actuarial balance, it is also helpful to consider differences in annual revenues and outlays (see Figure 5). CBO's projections of outlays as a percentage of GDP are higher than the trustees' projections (by 4 percent in 2092, for example), and its projections of revenues as a percentage of GDP are below the trustees' projections (by 5 percent in 2092). If CBO adopted the trustees' projections for the four major inputs, the difference in projected revenues as a percentage of GDP would be largely eliminated, and the difference in projected outlays as a percentage of GDP would be largely eliminated through about 2060. But CBO's outlay projections would still be higher, by increasing amounts, after that.

CBO's and the trustees' projections of Social Security's long-term finances are slightly closer now than they were in 2017. In relation to last year, the difference between the two projections of the actuarial balance as a share of taxable payroll has shrunk by less than 0.1 percentage point; the difference between the two projections of the 75-year actuarial balance as a share of GDP has not changed.

10. Total factor productivity is the growth of real output per unit of combined labor and capital services—that is, the growth of output that is not explained by the growth of labor and capital.

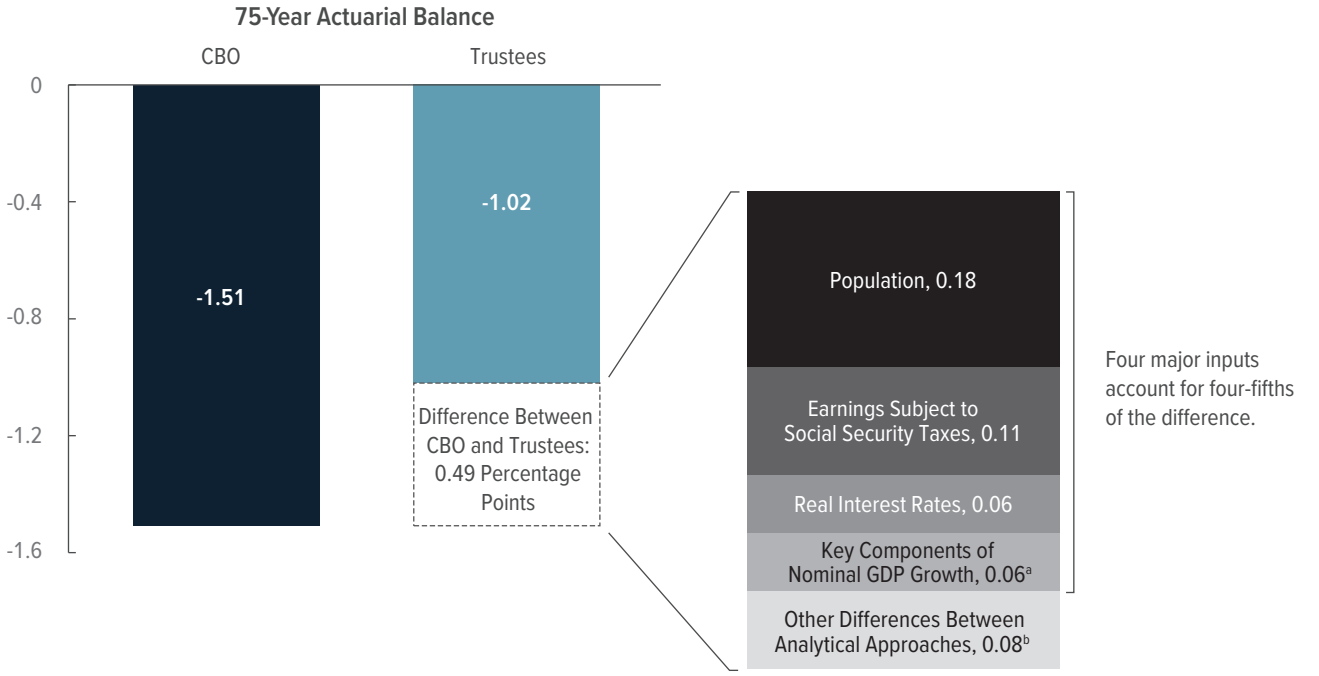
11. For details on the trustees' projections, see Social Security Administration, *The 2018 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds* (June 2018), www.ssa.gov/oact/tr/2018.

12. For CBO's previous analysis of differences between projections, see the testimony of Keith Hall, Director, Congressional Budget Office, before the Subcommittee on Social Security of the House Committee on Ways and Means, *Comparing CBO's Long-Term Projections With Those of the Social Security Trustees* (September 21, 2016), www.cbo.gov/publication/51988. The differences between CBO's and the trustees' projections of the 75-year actuarial balance have shrunk since that testimony was published.

Figure 4.

Differences Between CBO's and the Social Security Trustees' Projections of the Actuarial Balance

Percentage of Gross Domestic Product



Sources: Congressional Budget Office; Social Security Trustees.

GDP = gross domestic product.

These projections incorporate the assumption that spending for Social Security continues as scheduled even if its trust funds are exhausted.

The actuarial balance is the sum of the present value of projected tax revenues 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 a given period, divided by the present value of GDP or taxable payroll. (A present value expresses a flow of past and future revenues or outlays as a single amount received or paid at a specific time. The value depends on the rate of interest, known as the discount rate, used to translate past and future cash flows into a single number.)

a. The key components of nominal GDP growth are the labor force participation rate, the unemployment rate, the rate of productivity growth, and the inflation rate.

b. Other differences include the estimated income taxes paid on Social Security benefits and the interactions among the four major inputs—population, earnings subject to Social Security taxes, real (inflation-adjusted) interest rates, and key components of nominal GDP growth—and differences that arise mainly because CBO's and the trustees' approaches to making estimates differ in various ways, even when the major inputs are the same.

Population Size and Composition

The trustees expect more working-age people and fewer elderly people in the future than CBO does (see Figure 6). If CBO adopted the trustees' projections of the population but did not allow those changes to affect projections of other factors, then the actuarial balance would improve by 0.18 percent of GDP, accounting for 36 percent of the difference between the trustees' and CBO's projections.

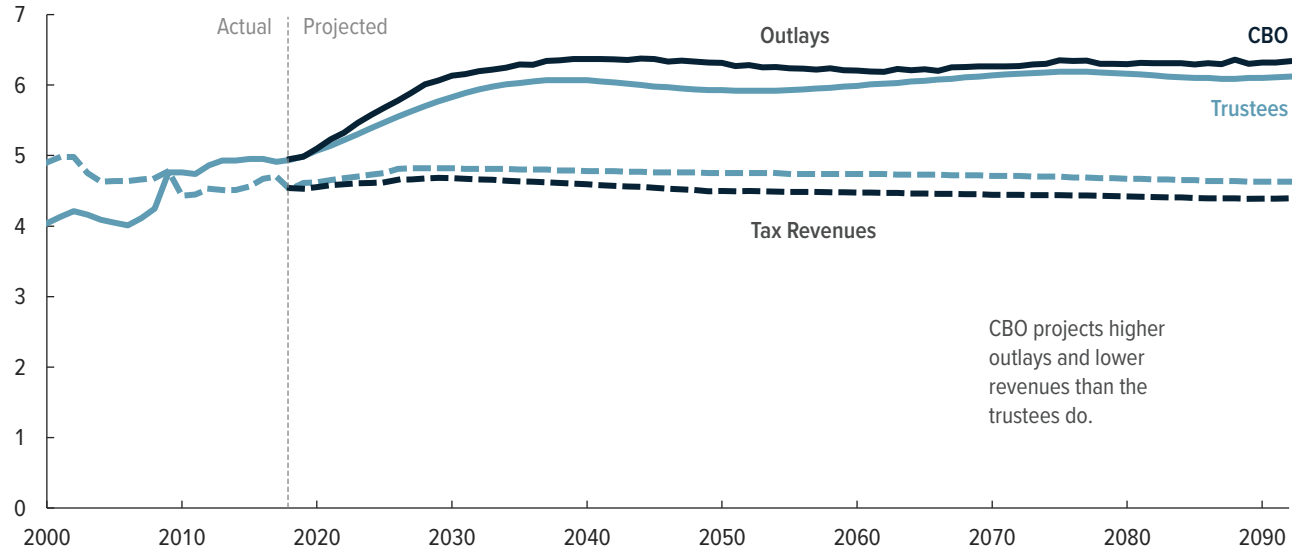
Social Security's revenues largely depend on the size of the labor force, which is related to the number of adults between the ages of 20 and 64, and its outlays are closely linked to the size of the nation's population age 65 or older. The actuarial balance improves when a larger segment of the population pays into the trust funds that support Social Security and when a smaller portion receives benefits from the program.

The trustees project a 35 percent increase in the size of the 20–64 age group over the next 75 years, whereas CBO projects a 29 percent increase. Moreover, between now and 2092, the trustees project a 116 percent increase in the number of people age 65 or older,

Figure 5.

CBO's and the Social Security Trustees' Projections of Social Security Tax Revenues and Outlays

Percentage of Gross Domestic Product



Sources: Congressional Budget Office; Social Security Trustees.

These projections incorporate the assumption that spending for Social Security continues as scheduled even if its trust funds are exhausted.

Tax revenues generally consist of payroll taxes and income taxes paid on benefits. Outlays consist of benefits and administrative costs, which typically account for less than 1 percent of program costs.

which is nearly 10 percentage points less than CBO's projection.

CBO bases its population estimates on demographic projections that incorporate recent population data and estimates of future rates of fertility, mortality, and net immigration.[13] The trustees project a slightly higher total fertility rate and a slightly slower decline in the mortality rate than CBO does. The trustees' projected rate of net immigration is initially higher than CBO's rate. Because the trustees project that net immigration will remain roughly flat over the long term, their projection of the net immigration rate decreases over the 75-year period, whereas CBO's projection of that rate increases slightly over that period.

Earnings Subject to the Social Security Payroll Tax

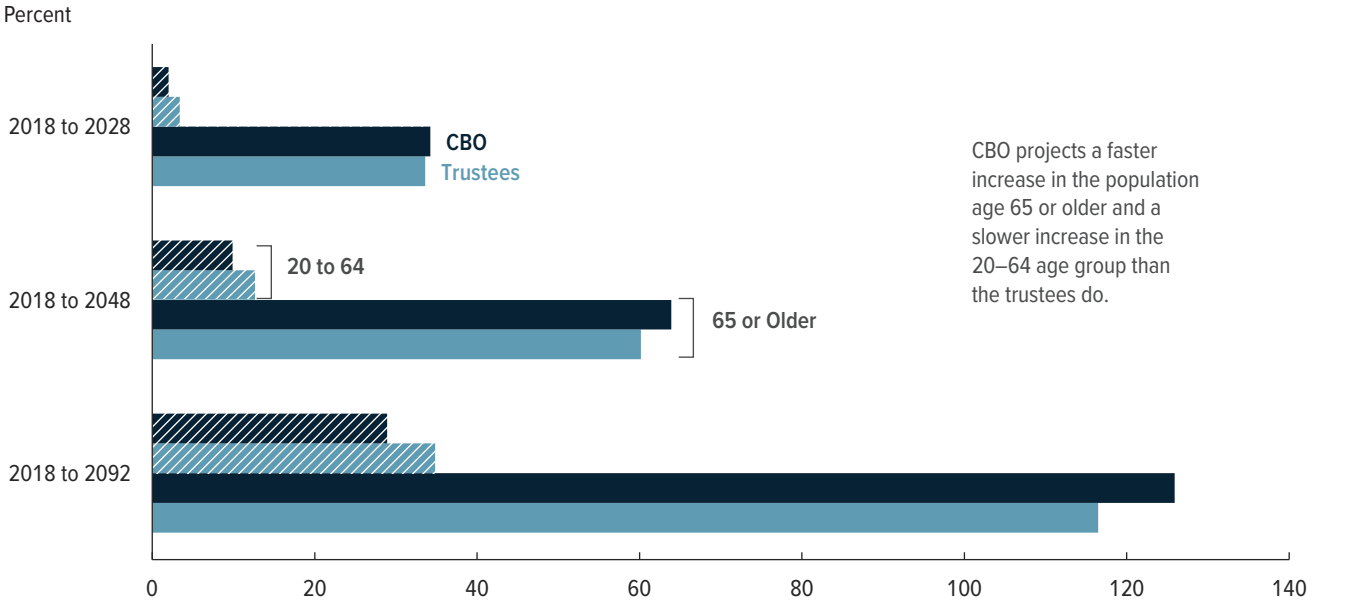
The trustees' estimates of earnings subject to the Social Security payroll tax, as a percentage of GDP, are higher than CBO's. If CBO adopted the trustees' projections of taxable earnings but did not allow those changes to affect projections of other factors, then its estimates of payroll tax receipts and eventually benefits paid also would be higher.[14] CBO's resulting projection of the 75-year actuarial balance would improve by 0.11 percent of GDP, accounting for 22 percent of the difference between CBO's and the trustees' projections.

13. The total fertility rate is the average number of children that a woman would have if, in each year of her life, she experienced the birth rates observed or assumed for that year and if she survived her entire childbearing period. Mortality rates measure the number of deaths per thousand people in the population. The net immigration rate accounts for anyone who either enters or leaves the United States per thousand people in the U.S. population. For details about CBO's projections of those factors, see Congressional Budget Office, *The 2018 Long-Term Budget Outlook* (June 2018), Appendix A, www.cbo.gov/publication/53919.

14. Although adopting that projection would improve the outlook for Social Security's finances, other aspects of the federal budget would be affected. For example, individual income tax receipts would decrease more than payroll tax receipts would increase because a smaller share of income would be subject to higher income tax rates.

Figure 6.

CBO's and the Social Security Trustees' Projections of the Increase in Population in Different Age Groups



Sources: Congressional Budget Office; Social Security Trustees.

In CBO's projections, taxable earnings fall from 36.1 percent of GDP in 2017 to 35.6 percent by 2028 and to 32.1 percent by 2092. The trustees' estimates rise to 36.6 percent of GDP in the mid-2020s before falling to 34.6 percent by 2092.

Taxable earnings as a share of GDP depend largely on three factors: the share of total earnings that are at or below the maximum taxable amount ($128,400 in 2018); the share of total compensation that is paid as earnings; and total compensation as a share of GDP. The amount of earnings subject to the Social Security payroll tax also depends to a lesser extent on the ratio of covered earnings to total earnings and other factors.

The trustees' estimates of overall taxable earnings as a share of GDP are higher than CBO's for two main reasons:

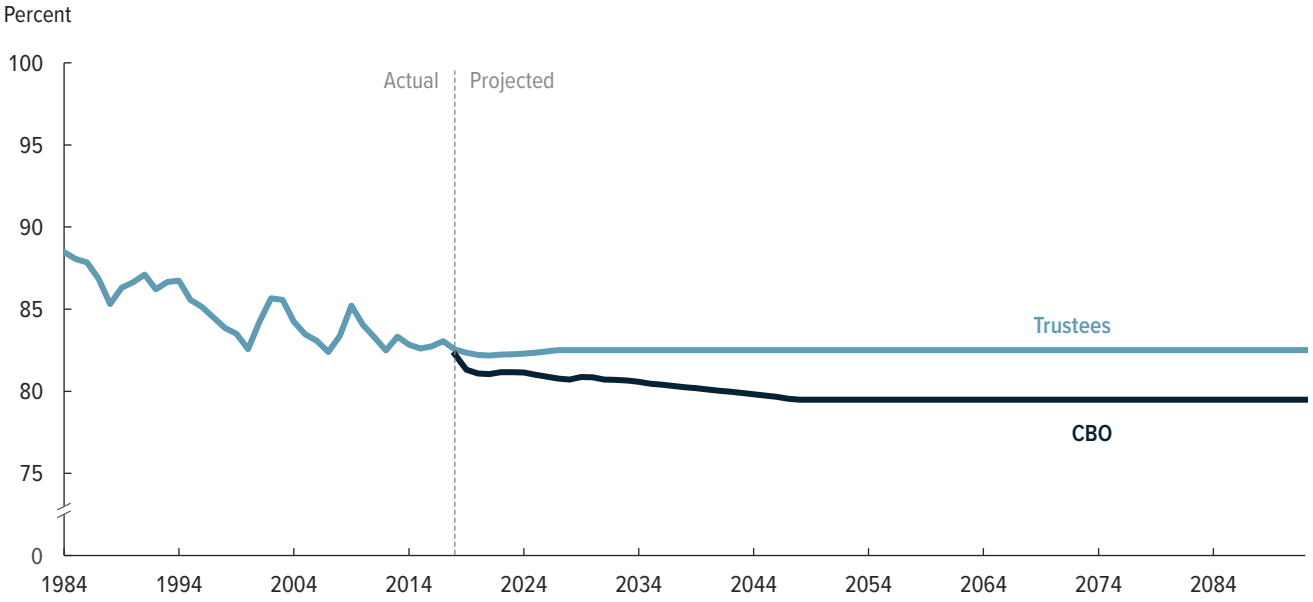
- The trustees estimate that the portion of earnings covered by Social Security on which payroll taxes are collected will decline slightly from 83.0 percent in 2017 to 82.5 percent in 2027 and remain constant thereafter (see Figure 7). Those projections suggest that the trustees anticipate a similar growth rate of earnings for workers who earn more than the taxable maximum and those who earn less. In CBO's projections, the portion of earnings subject to the Social Security payroll tax falls by more, to below 81 percent by 2028. It continues to decline to 79 percent by 2048 and remains near that level thereafter—reflecting CBO's assessment that, in the next few decades, earnings will continue to grow faster for people who earn more than the taxable maximum than for those who earn less, as they generally have in recent decades.

- The trustees' projections of compensation as a share of GDP rise more than CBO's over the next decade, from 60.8 percent of GDP in 2016 to 63.1 percent in 2027, after which that share remains unchanged. CBO projects that total compensation will rise to 62.2 percent of GDP in 2028 and remain near that level in later years.

The trustees' estimate of the share of compensation that will be paid as earnings is similar to what CBO projects.

Figure 7.

CBO's and the Social Security Trustees' Projections of the Share of Earnings That Is Taxable for Social Security



Sources: Congressional Budget Office; Social Security Trustees.

Social Security payroll taxes are levied only on earnings up to a maximum amount ($128,400 in 2018), which increases annually with the national average wage index except in years when there is no cost-of-living adjustment to benefits. Covered earnings are those received by workers in jobs subject to Social Security payroll taxes. The government collects payroll taxes on the earnings of most workers, although a small group of workers—mostly in state and local government or the clergy—are exempt. The taxable share of covered earnings affects revenues of the Social Security system as well as benefits paid in future years (because taxable earnings are used to calculate benefits).

Real Interest Rates

The trustees project that real interest rates will be slightly lower than what CBO projects through 2027 and higher thereafter. If CBO adopted the trustees' projections of real interest rates but did not allow those changes to affect projections of other factors, then the actuarial balance would improve by 0.06 percent of GDP, accounting for 13 percent of the difference between the trustees' and CBO's projections.[15]

Interest rates affect measures of the system's finances in two related ways. First, they determine the interest received on balances in the Social Security trust funds—and thus affect the exhaustion of the trust funds. Second, in the calculation of the actuarial balance, they are used to compute the present values of future cash flows. (Present values depend on an interest rate, the discount rate, that is used to translate past and future income or payments into a single number.)

Both CBO and the trustees use the average interest rate on special-issue bonds held in the trust funds as the discount rate.[16] In the trustees' projections, according to CBO's calculations, the real rate—that is, the nominal rate minus the inflation rate as measured by the consumer price index—is 0.7 percent in 2018, increases from 0.4 percent in 2019 to 2.7 percent in 2033, and then remains at that level thereafter.[17] By contrast, CBO's projections show slightly higher rates until the late 2020s and lower rates thereafter (see Figure 8).

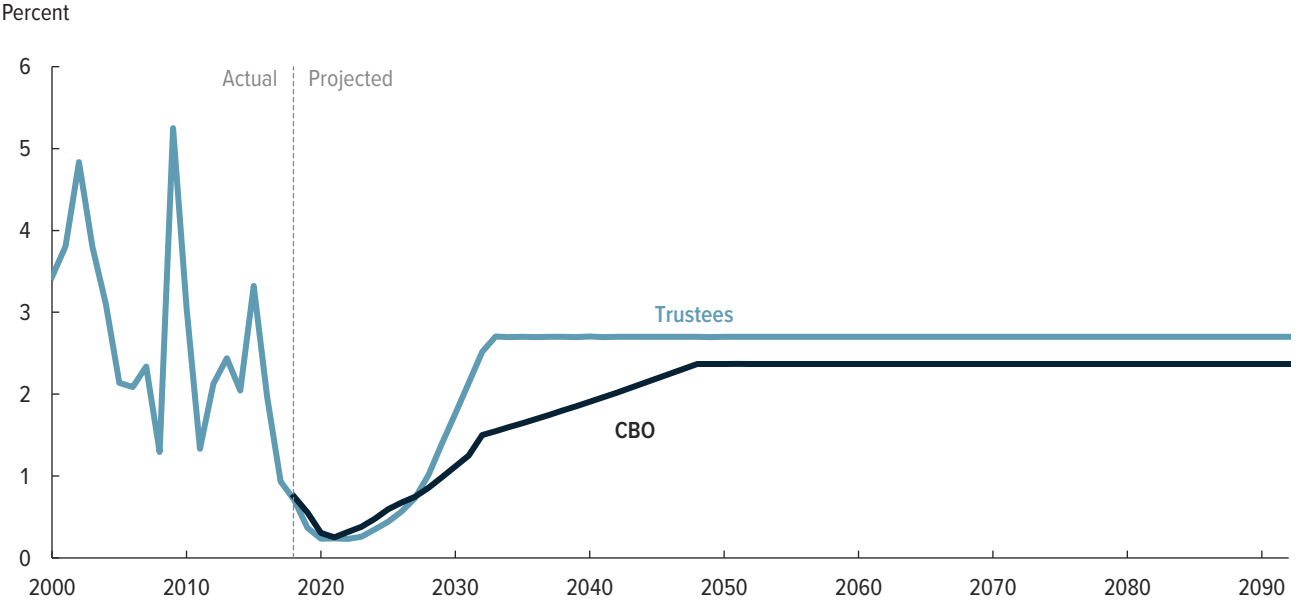
15. Higher interest rates are not favorable for the federal budget as a whole, however, because they raise the cost of federal borrowing and add to federal budget deficits.

16. After the combined trust funds are projected to be exhausted, both CBO and the trustees use a discount rate based on the interest rate on new special-issue Treasury bonds, which CBO takes to equal the rate on 10-year Treasury notes.

17. The analysis in this section focuses on real interest rates because the effects of inflation were included in the analysis of the key components of nominal GDP growth.

Figure 8.

CBO's and the Social Security Trustees' Projections of the Real Interest Rate Used to Calculate the 75-Year Actuarial Balance



Sources: Congressional Budget Office; Social Security Trustees.

The actual and projected rates are the average real interest rate on special bonds held in the trust funds until the trust funds are exhausted; thereafter, the projections are for the real interest rate on 10-year Treasury notes, equivalent to the projected rate on special-issue Treasury bonds each year. That rate plus the rate of inflation as measured by the consumer price index equals the nominal interest rate used in the calculation of the actuarial balance.

The actuarial balance is the sum of the present value of projected tax revenues 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 a given period, divided by the present value of gross domestic product or taxable payroll. (A present value expresses a flow of past and future revenues or outlays as a single amount received or paid at a specific time. The value depends on the rate of interest, known as the discount rate, used to translate past and future cash flows into a single number.)

Key Components of Growth in Nominal GDP

The trustees project average annual growth in nominal GDP to be higher than CBO does. If CBO adopted the trustees' projections for rates of labor force participation, unemployment, and inflation and also set the rate of productivity growth so that its projection of nominal GDP matched that of the trustees, but the agency did not allow those changes to affect projections of other factors, then the actuarial balance would improve by 0.06 percent of GDP, accounting for 13 percent of the difference between CBO's and the trustees' projections.[18]

The size of the economy significantly affects Social Security's revenues and spending. When nominal GDP is larger, Social Security revenues are initially higher; later, when beneficiaries retire, Social Security benefits are higher. Higher nominal GDP improves Social Security's actuarial balance because earlier years receive greater weight in the calculation of that balance.

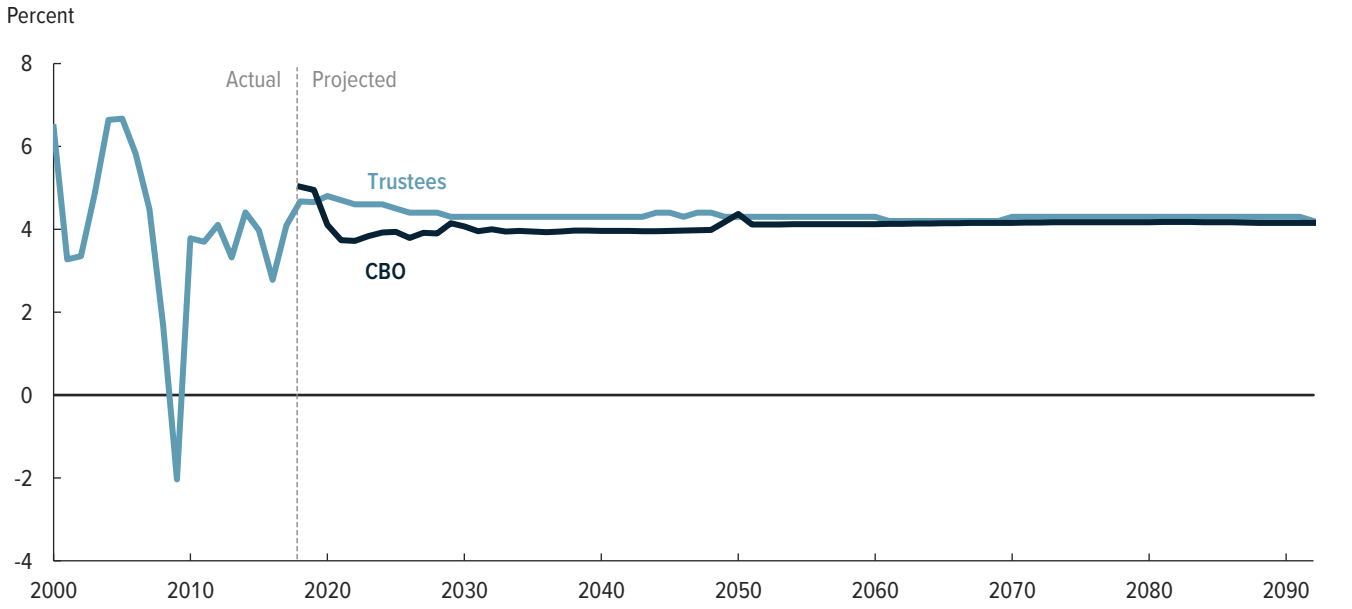
In CBO's projections, nominal GDP growth averages 4.0 percent over the 2018–2048 period. The trustees project average annual growth in nominal GDP to be 0.5 percentage points faster than CBO does through 2028 and 0.3 percentage points faster over the subsequent two decades; after that, the trustees' projections average 0.1 percentage point faster (see Figure 9).[19] The faster growth through 2048 is the result of several factors:

18. The analysis in this section includes the effects of higher inflation on nominal interest rates.

19. Through 2048, CBO's projections incorporate the adverse economic effects of rising federal debt and rising marginal tax rates. After 2048, they do not account for such effects.

Figure 9.

CBO's and the Social Security Trustees' Projections of the Growth of Nominal Gross Domestic Product



Sources: Congressional Budget Office; Social Security Trustees.

Through 2048, CBO's gross domestic product (GDP) projections reflect the effects of rising federal debt. After 2048, they do not account for that effect. The transition from accounting for that effect to not accounting for it results in a short-term increase in GDP growth.

- In the trustees' projection, the labor force participation rate rises until 2021 before slowly declining; in CBO's projection, that rate remains stable over the next few years and then declines (see Figure 10). That decline is largely attributable to projected changes in demographics.

- The trustees project stronger growth in labor productivity (the ratio of real GDP to hours worked by all workers) than CBO does for most years. The trustees project growth of nearly 1.7 percent per year in the long run, whereas CBO projects an average increase of 1.6 percent.

- The trustees project faster growth in prices than CBO does. In the trustees' projection, the consumer price index for urban wage earners and clerical workers grows by 2.6 percent per year in 2020 and beyond; in CBO's projection, that growth settles at 2.4 percent per year starting in 2023.

The trustees also project that the unemployment rate will stabilize at 5.5 percent in 2021 and later—a level notably higher than the 4.7 percent that CBO projects. That higher unemployment rate in the trustees' projections slightly offsets the other factors that raise nominal GDP relative to CBO's estimates, because a higher unemployment rate implies that a smaller portion of the labor force is employed.

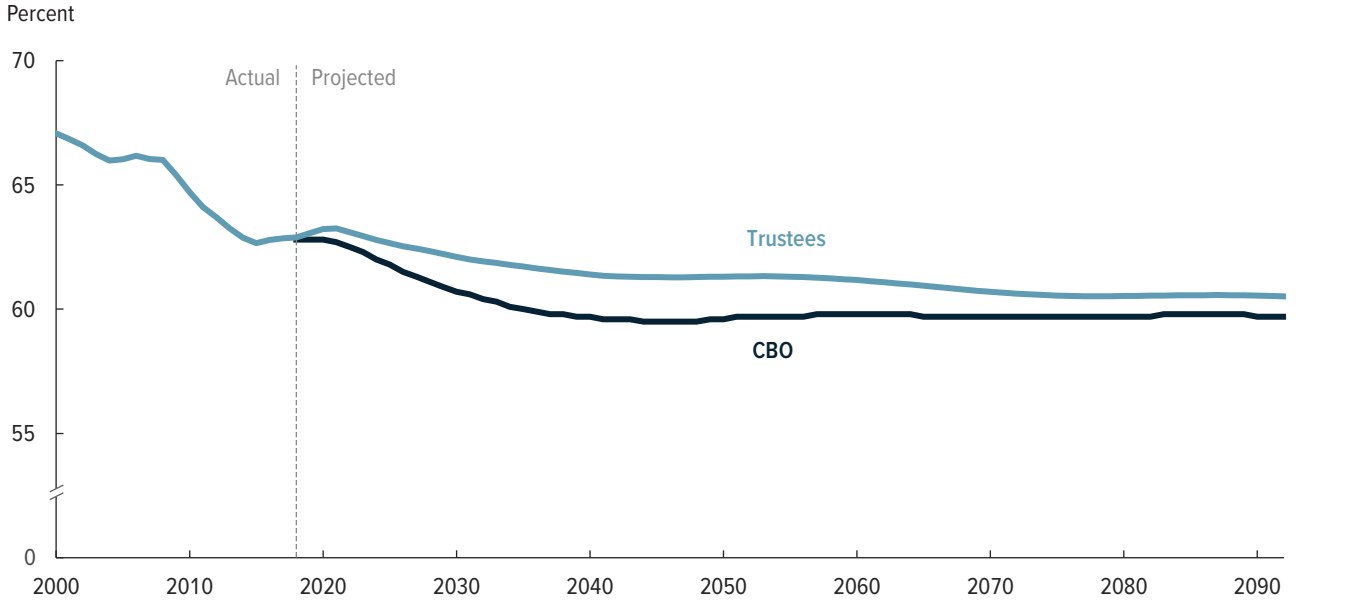
As a result of the trustees' projection of faster GDP growth, the trustees project total economic output that is 6 percent higher after a decade and 14 percent higher by 2048 than CBO does; that difference increases to 23 percent by the end of the 75-year projection period.

Other Specific Factors

Other factors affect CBO's and the trustees' projections, including the projected income taxes paid on Social Security benefits and interactions among the four major inputs. On balance, if CBO adopted the trustees'

Figure 10.

CBO's and the Social Security Trustees' Projections of the Labor Force Participation Rate



Sources: Congressional Budget Office; Social Security Trustees.

The labor force participation rate is the percentage of people in the civilian, noninstitutionalized population who are age 16 or older and either working or actively seeking work.

projections of the four major inputs and accounted for the resulting effects on those other factors, about 82 percent of the difference between CBO's projection of the actuarial balance as a percentage of GDP and that of the trustees would be eliminated.

Analytical Approaches

The remaining 18 percent of the difference between CBO's and the trustees' projections arises from the different approaches they use, even when major inputs are the same. For example, the main analytical tool CBO uses to make its long-term projections, the Congressional Budget Office Long-Term model (known as CBOLT), consists of four integrated components: a demographic model, a microsimulation model, a long-term budget model, and a macroeconomic growth model.[20] The trustees use their own, different models.[21]

20. For more information about how CBO makes long-term projections, see Congressional Budget Office, *An Overview of CBOLT: The Congressional Budget Office Long-Term Model* (April 2018), www.cbo.gov/publication/53667.

21. For more information about how the trustees make long-term projections, see Social Security Administration, *Long-Range OASDI Projection Methodology: Intermediate Assumptions of the 2018 Trustees Report* (June 2018), https://go.usa.gov/xPD77 (PDF, 2.3 MB).

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About This Document

This Congressional Budget Office report was prepared at the request of the Chairman of the Subcommittee on Social Security of the House Committee on Ways and Means. In keeping with CBO's mandate to provide objective, impartial analysis, the report makes no recommendations.

Stephanie Hugie Barello and Charles Pineles-Mark prepared the report, with guidance from Julie Topoleski and David Weaver. Robert Arnold, Gloria Chen, Ed Harris, John McClelland, and Noah Meyerson provided useful comments on various drafts of the report. Jimmy Chin fact-checked it.

Wendy Edelberg, Mark Hadley, Jeffrey Kling, and Robert Sunshine reviewed the report. Rebecca Lanning edited it, and Jorge Salazar prepared it for publication. An electronic version is available on CBO's website (www.cbo.gov/publication/54711).

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

Keith Hall
Director
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