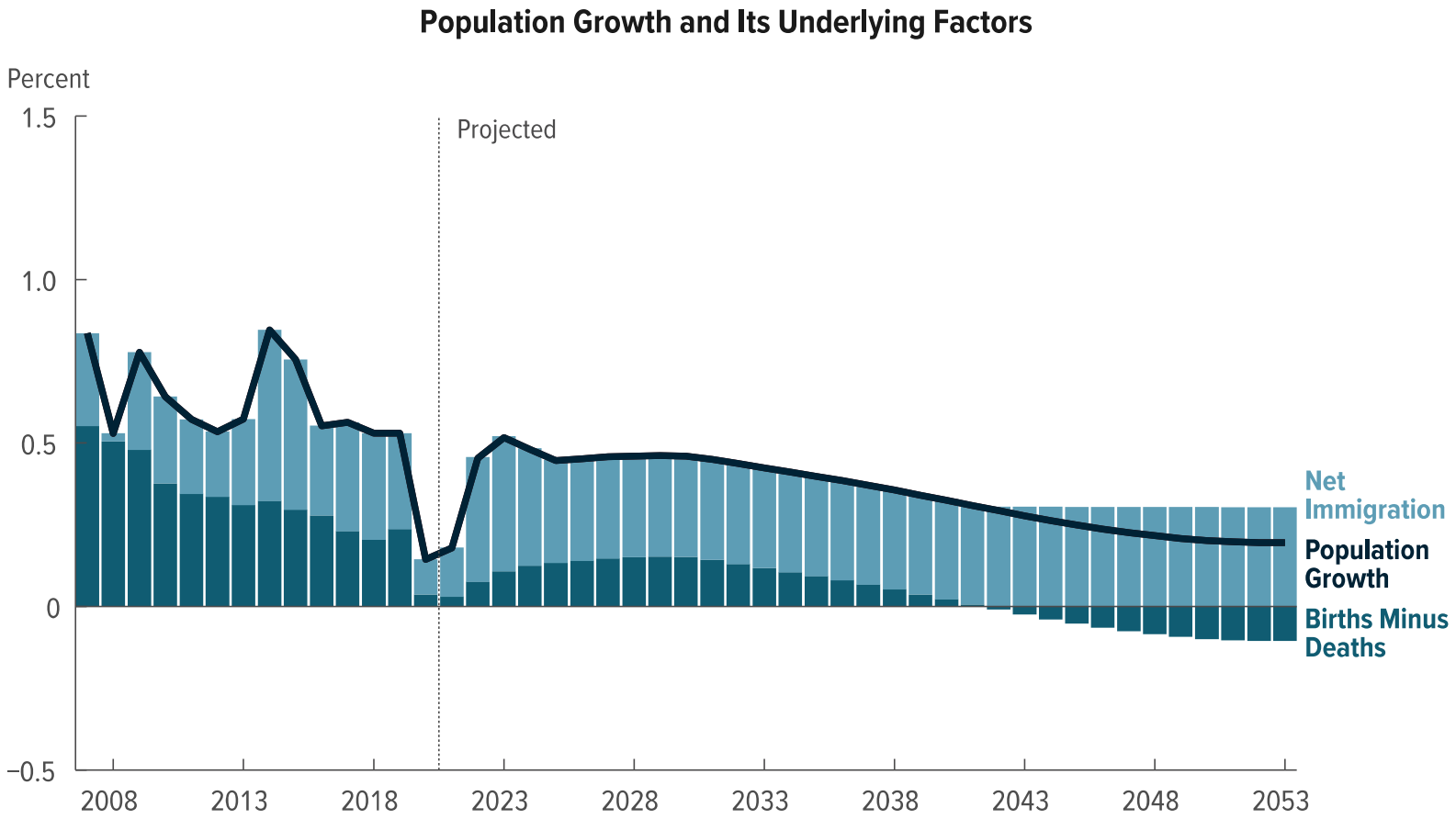
Congressional Budget Office
Nonpartisan Analysis for the U.S. Congress

The Demographic Outlook: 2023 to 2053



JANUARY | 2023

At a Glance

The size of the U.S. population, as well as its age and sex composition, affects the economy and the federal budget. For example, the size of the population ages 25 to 54 affects the number of people employed; likewise, the size of the population age 65 or older affects the number of beneficiaries of federal programs such as Social Security and Medicare. In this report, the Congressional Budget Office describes its population projections, which underlie the agency's baseline budget projections and economic forecast that will be published later this year.

- **Population.** In CBO's projections, the Social Security area population—the relevant population for calculating Social Security payroll taxes and benefits and the measure of population used in this report—increases from 336 million people in 2023 to 373 million people in 2053. As growth of the population age 65 or older outpaces growth of younger age groups, the population is projected to continue to become older.
- **Population Growth.** Population growth is generally projected to slow between 2023 and 2053, averaging 0.3 percent per year over that period. That growth will be increasingly driven by immigration as fertility rates remain below the rate that would be required for a generation to exactly replace itself in the absence of immigration.
- **Civilian Noninstitutionalized Population.** The civilian noninstitutionalized population grows from 266 million people in 2023 to 301 million people in 2053, in CBO's projections, expanding by 0.4 percent per year, on average. That measure, which CBO uses to project the size of the labor force, is composed of people age 16 or older. The subgroup of people ages 25 to 54 (adults in their prime working years) grows at an average annual rate of 0.2 percent over that period—more slowly than in recent decades. (Over the past 40 years, the civilian noninstitutionalized population as a whole grew at a rate of 1.1 percent, and the prime working-age population grew at a rate of 0.9 percent.)
- **Changes Since Last Year.** The population is projected to be larger (by 0.8 percent in 2052, the final year of the projections that CBO released last year) and to grow slightly faster, on average, in this year's projections, for two main reasons. First, net immigration is projected to be higher, boosting the size and growth of the working-age population over the 2023–2053 period. Second, mortality rates for people age 65 or older are projected to be lower over the first two decades of the projection period; that decline stems from fewer deaths in 2022 due to COVID-19 infections than CBO previously projected.

CBO's projections of the rates of fertility, mortality, and net immigration are uncertain. Small differences between CBO's projections of those rates and actual outcomes could compound over many years and significantly alter demographic outcomes by the end of the projection period.

Contents

Notes and Definitions

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. The Congressional Budget Office's estimate of the Social Security area population on January 1 of a given year is based on the population on January 1 of the previous year and the projected numbers of people who are born in or immigrate to the United States and who die in or emigrate from the United States during that year.

The **civilian noninstitutionalized population** includes individuals who are 16 years of age or older. It excludes members of the armed forces on active duty and people in penal or mental institutions or in homes for the elderly or infirm.

The **total fertility rate** represents 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 (ages 14 through 49).

CBO uses the term **foreign-born people without legal status** to refer to foreign-born people who entered the United States illegally or who entered legally with a temporary status and then remained after that legal status expired; generally, such people are not authorized to work in the United States. Foreign-born people without legal status also include beneficiaries under Temporary Protected Status, beneficiaries under policies whereby the executive branch does not seek their immediate deportation (such as Deferred Action for Childhood Arrivals), and people who are paroled and allowed into the country while awaiting deportation proceedings in immigration courts. Many of those people are authorized to work in the United States.

Life expectancy is the amount of time that a person in a given year would expect to survive on the basis of that year's mortality rates for people of various ages, sometimes referred to as period life expectancy. (Cohort life expectancy, by contrast, incorporates projected changes in mortality rates and better reflects a person's actual life expectancy.)

The **mortality rate adjusted for age and sex** represents the rate that would be observed if the projected mortality rates by age and sex occurred in a population that had the same age and sex composition as the population in a reference year. For its reference population, CBO uses the population in 2010 (the latest year for which the necessary decennial census data were available when the projections in this report were made).

The population projections in this report reflect developments through September 30, 2022.

When comparing the current projections with previously published values, CBO analyzes differences for the years spanned by the projections that were previously published.

All figures in this report are CBO's projections using data from the Social Security Administration. The underlying data for those figures, as well as supplemental population projections, are posted along with the report on CBO's website (www.cbo.gov/publication/58612#data).

CBO has corrected this report since its original publication. The correction is listed at the end.

The Demographic Outlook: 2023 to 2053

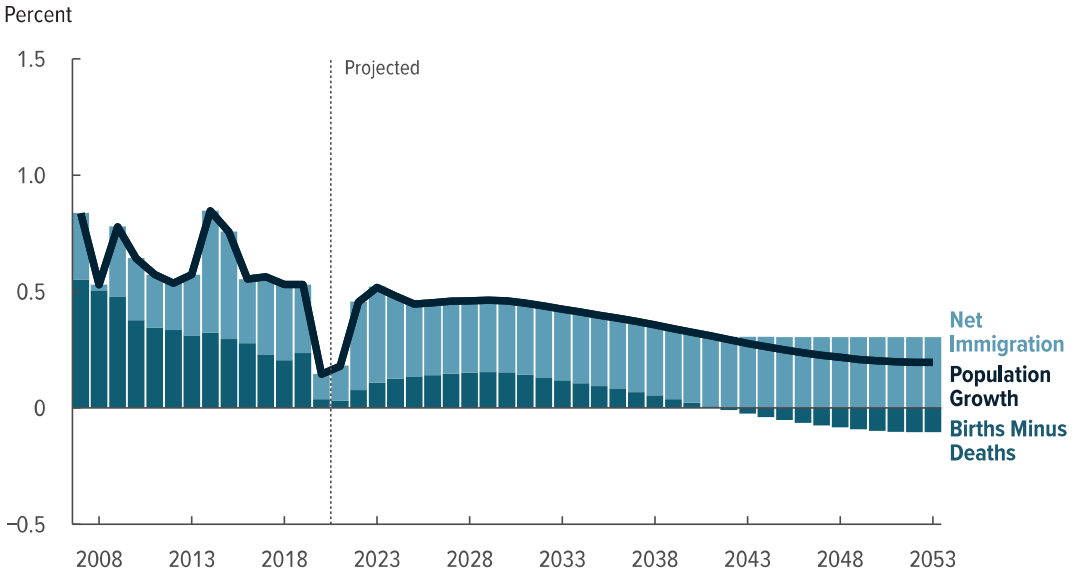
The size of the U.S. population, as well as its age and sex composition, affects the economy and the federal budget. For example, the number of people who are employed depends on the size of the working-age population, and the number of beneficiaries of federal programs (including Social Security and Medicare) depends on the size of the elderly population.

To project the population in future years, the Congressional Budget Office starts with the most recent available historical data and then projects rates of fertility, mortality, and net immigration. The population as it is defined in this report is the relevant population for calculating Social Security payroll taxes and benefits, known as the Social Security area population.

In CBO's projections, the population increases from 336 million people in 2023 to 373 million people in 2053, growing by 0.3 percent per year, on average, about one-third the pace experienced from 1983 to 2022 (0.8 percent). Over the next decade, immigration accounts for about three-quarters of the overall increase in the size of the population, and the greater number of births than deaths accounts for the remaining one-quarter. After 2033, population growth is increasingly driven by net immigration, which accounts for all population growth beginning in 2042.

CBO's projections of the population over the 2023–2053 period are highly uncertain, especially in later years. If rates of fertility, mortality, or net immigration were higher or lower than in the agency's projections, then the resulting population would differ from the amounts shown here. The effects would be larger in later years of the projection period than in the earlier years because differences in those rates compound in each year of the period.

Demographic Factors That Determine Population Growth

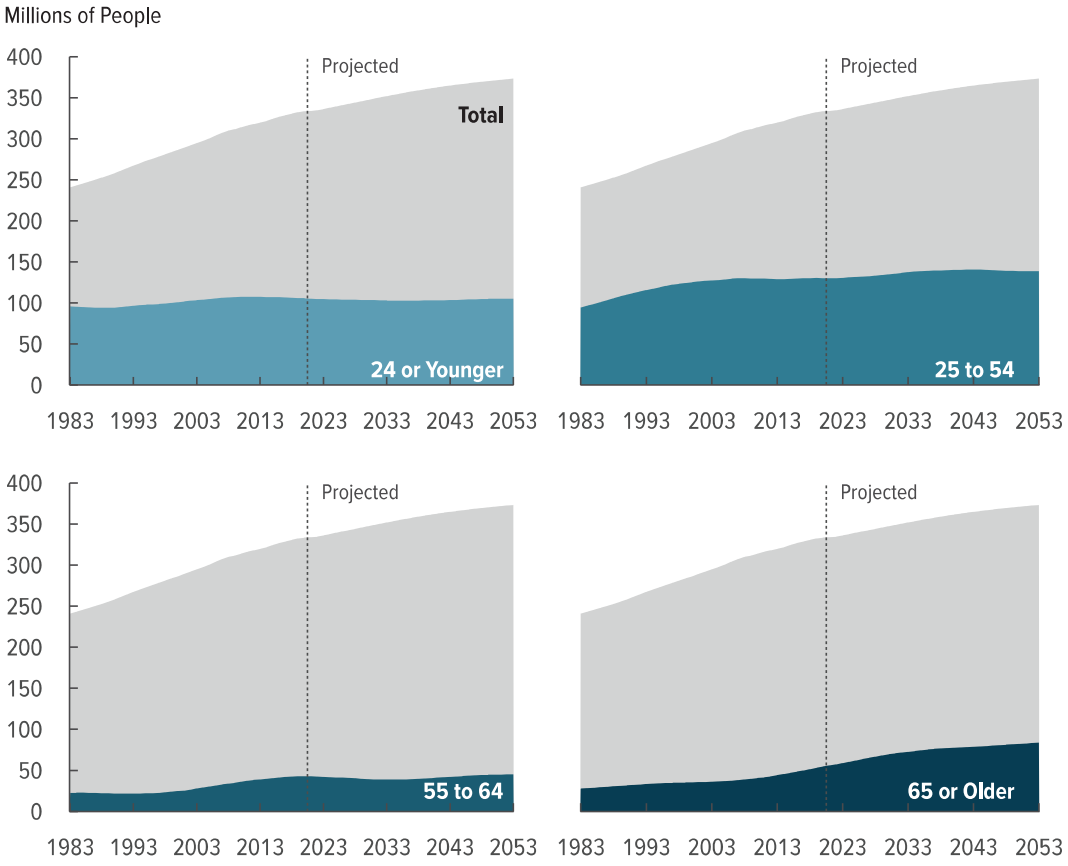


By 2042, with the aging of the population, deaths exceed births in CBO's projections. As a result, population growth after that point is driven entirely by immigration.

The Size and Age Composition of the Population

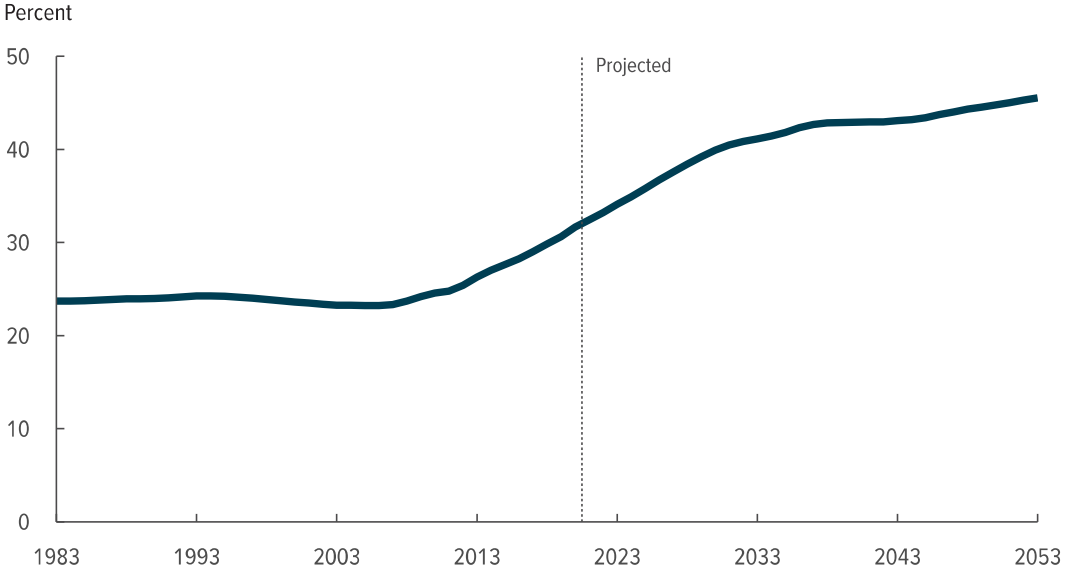
The population is projected to become older, on average, over the 2023–2053 period. In CBO's projections, the share of people age 65 or older rises as growth of that group outpaces growth of younger age groups.

Population, by Age Group



In the agency's projections, the number of people ages 25 to 54, which partially determines the number of people employed, 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.

Population Age 65 or Older as a Share of the Population Ages 25 to 64



The percentage of people age 65 or older relative to the number of people ages 25 to 64 is projected to rise from 34 percent in 2023 to 46 percent in 2053.

Components of Total Population Growth

Population growth is determined by births, deaths, and net immigration. In CBO's projections, fertility rates remain low, mortality rates generally continue to decline, and immigration becomes an increasingly important part of overall population growth.

Fertility

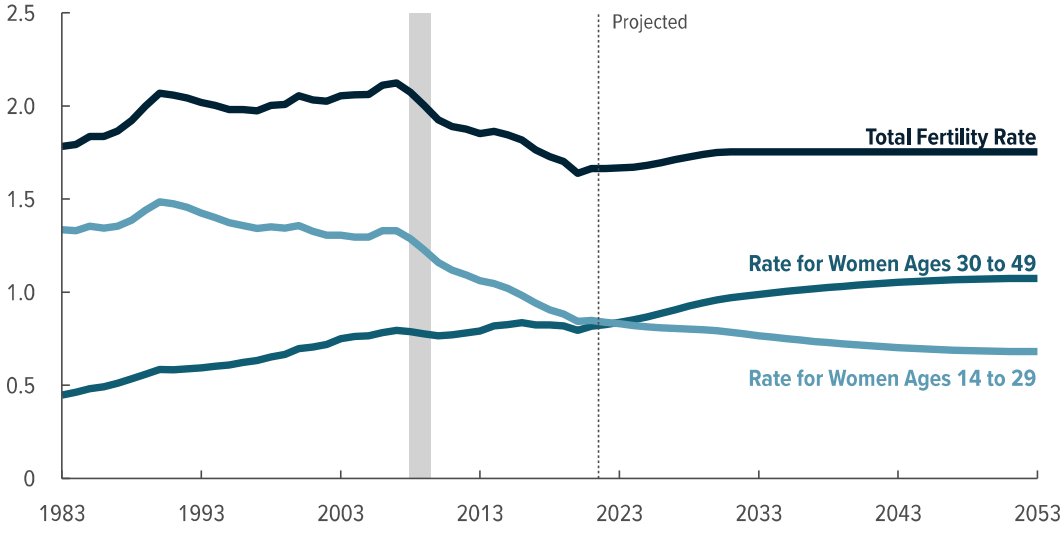
CBO projects fertility on the basis of its assessment of historical trends and other factors. For the 20 years before the 2007–2009 recession, the total fertility rate was 2.02 children per woman, on average. After peaking at 2.12 in 2007, the rate generally fell, largely because of lower fertility rates among women age 24 or younger.[1] The rate equaled 1.64 births per woman in 2020 and rose slightly to 1.66 in 2021 (the most recent year for which data were available when the projections were made).

In CBO's projections, the total fertility rate remains at 1.66 births per woman through 2023 and then rises as fertility rates among women ages 30 to 49 increase. By 2030, the fertility rate is projected to be 1.75 births per woman, where it remains through 2053. That rate is below the replacement rate of 2.1 births per woman—the fertility rate required for a generation to exactly replace itself in the absence of immigration.

Two key sources of uncertainty affect CBO's projections of fertility. First, if trends in fertility, such as the rising age of mothers and the delay of childbearing, differed from CBO's projections, then the agency's projections of overall fertility rates and the age distribution of mothers would change. Second, significant uncertainty remains about the long-term effects of the coronavirus pandemic on fertility rates.

Fertility Rates

Births per Woman



In CBO's projections, fertility rates rise for women of relatively older childbearing ages and fall for women of relatively younger childbearing ages. That pattern is consistent with the trends of delayed childbearing and rising average age of mothers.

Mortality

Until recently, mortality rates in the United States have generally declined (meaning that life expectancy has generally risen) since at least the early 20th century. For the most part, mortality rates have decreased more quickly for younger people than for older people. In recent years, though, the rate of decline has slowed, and mortality rates have increased for some groups, particularly younger people. For people ages 15 to 44, those increases have been driven primarily by deaths from suicide and drug overdoses (particularly opioids).[2]

As a result of rising mortality rates, life expectancy at birth declined between 2015 and 2017, the first decreases in that metric since 1993.[3] After increasing slightly from 2018 to 2019, life expectancy fell again in 2020, largely because of increases in mortality from COVID-19, unintentional injuries (including drug overdoses), heart disease, homicide, and diabetes.[4]

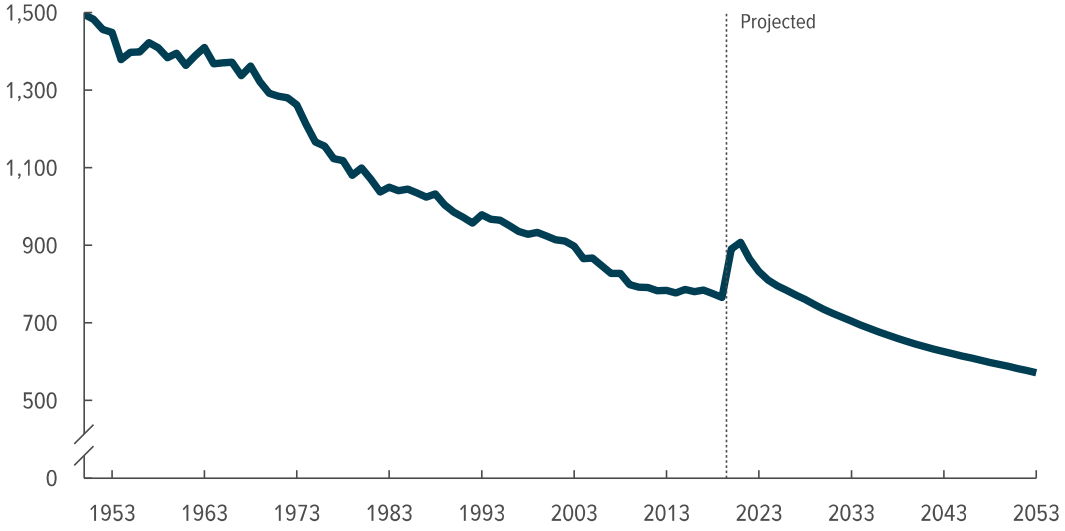
CBO projects mortality rates on the basis of its assessment of historical trends and then accounts for the effects of COVID-19. To account for recent trends in the rate of decline in mortality, CBO projects that those rates will decrease from 2020 to 2024 at roughly the same average rate as they did between 2010 and 2019. After 2024, mortality rates are projected to return to longer-term trends, declining at the average pace experienced between 1950 and 2019. The agency incorporated the effects of COVID-19 on mortality rates through 2043 by increasing those rates for older people, who are more likely to die from that illness.

Because projected mortality rates decline from 2023 to 2053, life expectancies at birth and at age 65 are projected to increase from 77.8 years and 18.9 years in 2023 to 82.3 years and 21.8 years, respectively, in 2053.

The evolving effects of the pandemic on mortality are a significant source of uncertainty in CBO's projections of mortality rates. Changes in the total number of deaths from COVID-19 or their age composition could affect outcomes significantly.

Mortality Rate, Adjusted for Age and Sex

Deaths per 100,000 People



In CBO's estimate, mortality rates increase in 2020 and 2021—largely among people age 65 or older—because of additional deaths attributable to COVID-19. After 2021, mortality rates decline but remain higher through 2043 than they would have been in the absence of COVID-19.

CBO has corrected this page since the report was originally published. The correction is listed at the end.

Net Immigration

To develop its projections of net immigration (the number of people who enter the United States in a given year minus the number who leave in that year), CBO groups people into three categories: lawful permanent residents, who are authorized to work, responsible for paying taxes, and eligible for most federal programs; foreign-born people without legal status, who are generally not eligible for federal programs; and legal temporary residents, whose eligibility for federal programs is limited.

For the first two decades of the projection period (from 2023 to 2043), CBO's estimates of net immigration are based on the agency's economic projections and assessment of recent trends. For each year of the third decade (2044 to 2053), net immigration is projected to grow at roughly the same rate as overall population growth in the previous year—0.2 percent per year, on average.

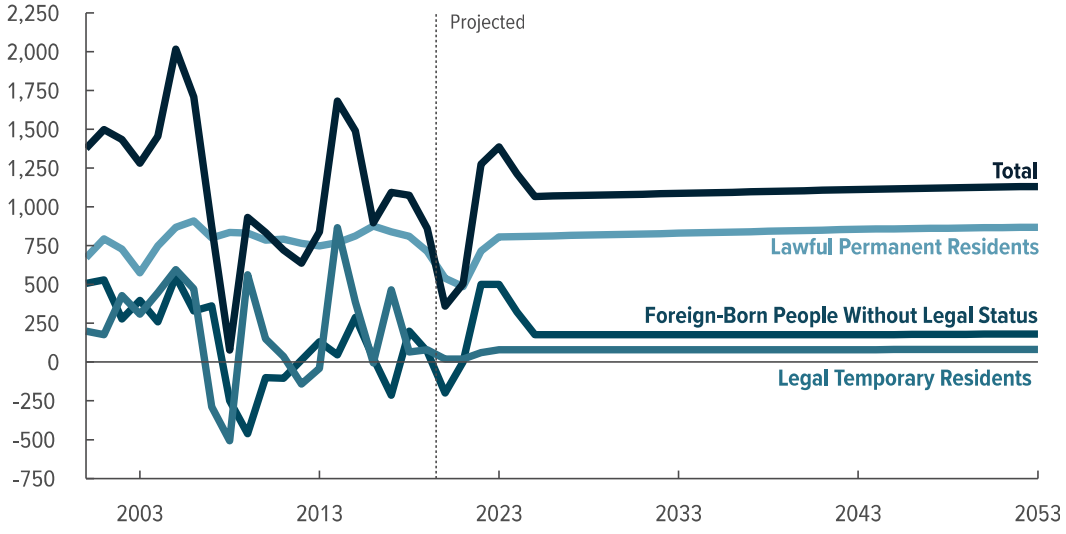
Between 2000 and 2006, net immigration averaged 1.5 million people per year. It decreased considerably during the 2007–2009 recession and remained low through 2019, averaging 1.0 million people per year. In 2020, net immigration declined further, to 350,000 people, in CBO's assessment, because of increased travel restrictions related to the pandemic and the U.S. government's reduced capacity to process visas.

Annual net immigration to the United States is projected to average 1.1 million people per year over the 2023–2053 period. The net number of new lawful permanent residents increases from an average of 820,000 people per year in the first decade to 860,000 people per year in the third decade. Net immigration of foreign-born people without legal status averages 220,000 people per year in the first decade, falling to 180,000 people per year in the third decade. Net immigration of legal temporary residents is projected to average 80,000 people per year over the period.

CBO's projections of net immigration are subject to several key sources of uncertainty. For example, changing conditions in immigrants' countries of origin, future domestic legislation, and the evolving effects of the pandemic could affect outcomes significantly.

Net Immigration, by Legal Status

Thousands of People



As the effects of the pandemic wane and economic conditions in the United States improve, net immigration is projected to rise and stabilize over the 2023–2053 period.

Population Used to Project the Labor Force

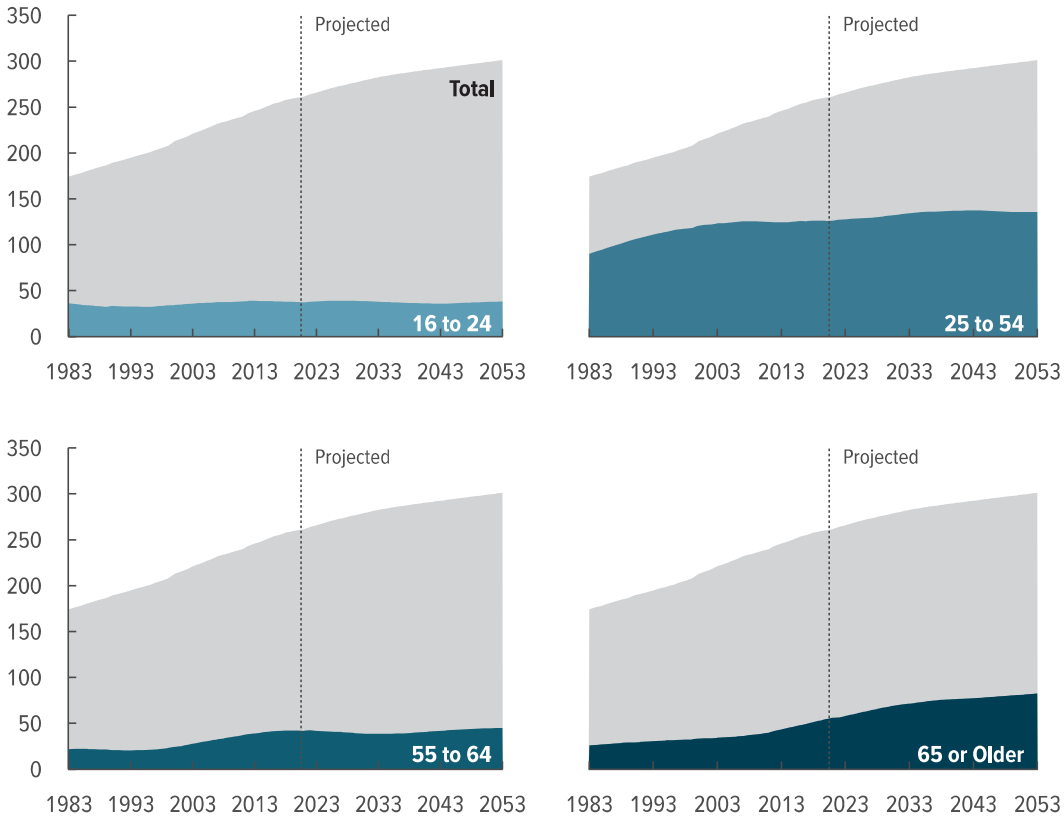
To estimate the size of the labor force, CBO uses the civilian noninstitutionalized population. That measure comprises people age 16 or older who are not in penal or mental institutions or in homes for the elderly or infirm or on active duty in the armed forces. To project the civilian noninstitutionalized population, CBO uses the historical ratio of the Social Security area population to the civilian noninstitutionalized population, by sex and age group.

In CBO's projections, the civilian noninstitutionalized population rises from 266 million in 2023 to 301 million in 2053, or at an average rate of 0.4 percent per year. The number of people age 65 or older grows at an average annual rate of 1.2 percent, which is faster than the rate for people ages 25 to 54 (an increase of 0.2 percent per year). The number of people ages 16 to 24 remains essentially unchanged, on average, over the projection period.

Uncertainty in projections of the civilian noninstitutionalized population stems from uncertainty in the flows of the underlying variables. If the rates of fertility, mortality, and net immigration diverged from those in CBO's projections, then measures of the population used to project the labor force would differ as well.

Civilian Noninstitutionalized Population, by Age Group

Millions of People



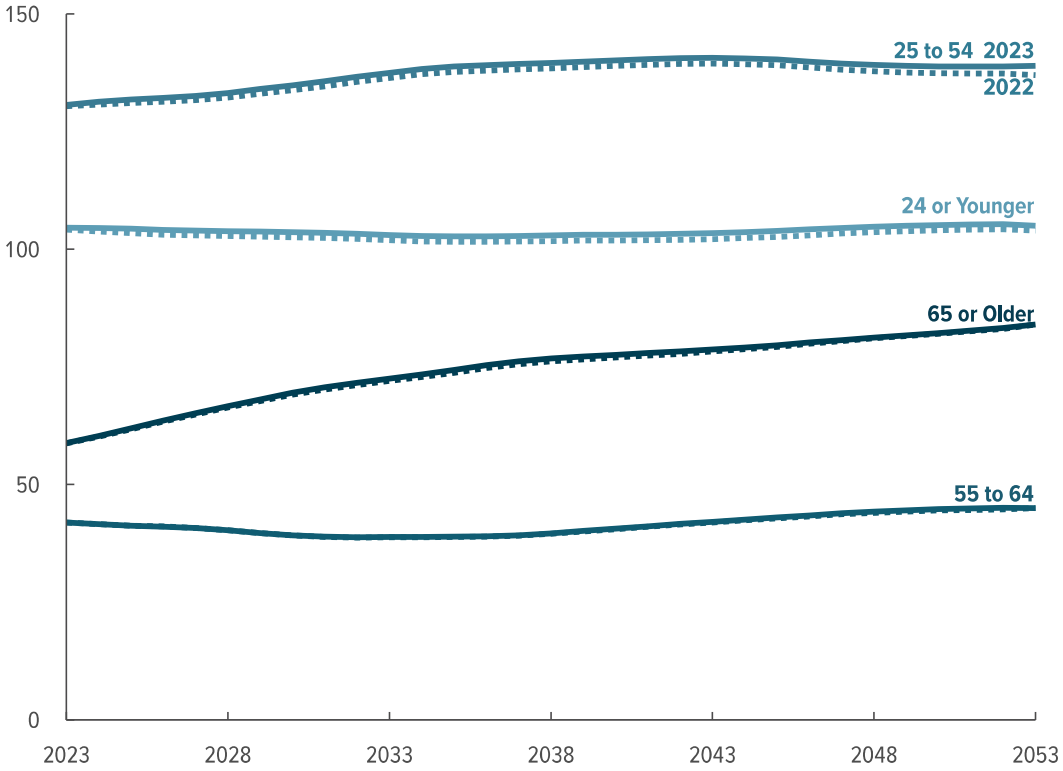
People ages 25 to 54 (adults of prime working age) are most likely to participate in the labor force. Growth in the number of people in that age group from 2023 to 2053 is projected to be slower than it was from 1983 to 2022. CBO projects that over the 2023–2053 period, 73 million people, on average, will be age 65 or older, and thus generally eligible for Social Security and Medicare and less likely to work. That number is about twice the average number of people in that group from 1983 to 2022.

Changes to CBO's Population Projections Since Last Year

Changes to projected rates of fertility, mortality, and net immigration mean that CBO now anticipates that the population will be larger and grow slightly faster, on average, than the agency projected last year. In 2052 (the final year covered in last year's report), the population is projected to be 0.8 percent larger (comprising 3.1 million more people) in this year's projections.

Upward revisions to the size of the population ages 25 to 54—stemming from higher projected net immigration—account for 41 percent of the overall increase in the annual population estimates from 2023 to 2052. Changes to the number of people age 24 or younger, ages 55 to 64, and age 65 or older account for 41 percent, 4 percent, and 14 percent, respectively, of the overall increase. Those changes are the result of slightly higher rates of fertility and lower rates of mortality from COVID-19 (relative to the rates in last year's projections) and the effect of a larger population that is subject to those fertility and mortality rates.

Population in CBO's 2022 and 2023 Projections, by Age Group



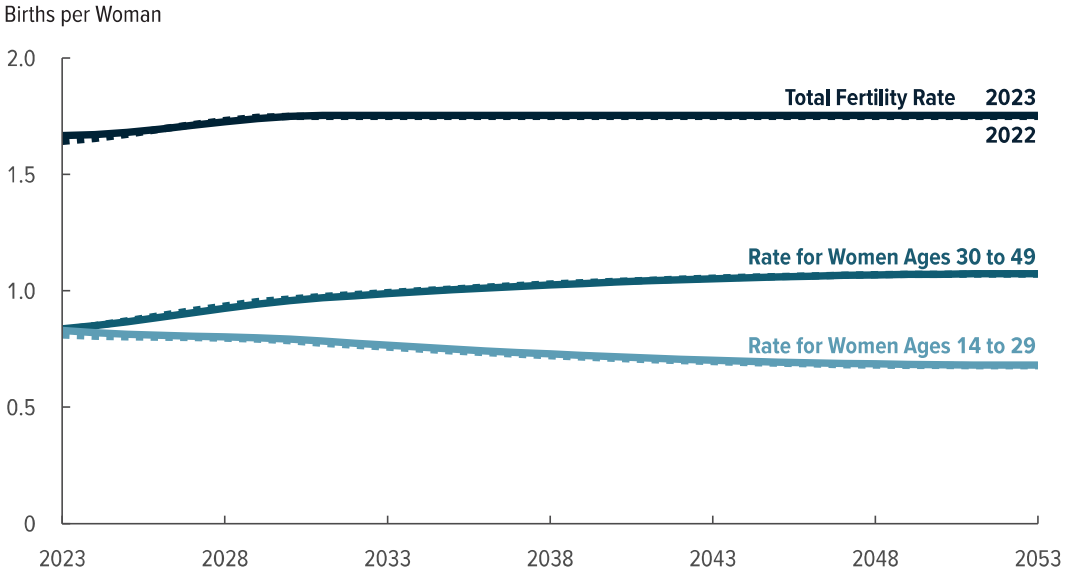
Increased net immigration means that there will be more people ages 25 to 54 in each year from 2023 to 2052 than in CBO's projections last year. Lower mortality rates (reflecting revised estimates of the number of deaths attributable to COVID-19) mean that there will be slightly more people age 65 or older, on average, over the 2023–2052 period than the agency projected last year.

Changes to Projected Fertility Rates

The total fertility rate after 2022 is projected to be just slightly higher, on average, than CBO anticipated last year. Because the population is now projected to be larger in most years of the 30-year period than CBO projected last year, the number of births is expected to rise—by 40,000 per year from 2023 to 2032 and 50,000 per year from 2043 to 2052, on average. Each of those amounts represents an increase of 1.2 percent relative to last year's projections of the annual number of births.

CBO revised its projections of fertility in this year's report in response to the Supreme Court's decision in *Dobbs v. Jackson Women's Health Organization*, which held that the U.S. Constitution does not confer a right to abortion, returning greater authority to regulate abortion to individual states.[5] In CBO's assessment, reduced access to abortion resulting from states' regulations will result in more births; other factors, however, such as changes to the way in which people access abortion services and changes in sexual behavior and contraception use, will largely offset that increase.

Fertility Rates in CBO's 2022 and 2023 Projections



Consistent with the agency's projections last year, CBO's projections for this year reflect higher rates of fertility for older mothers and lower rates of fertility for younger mothers over the 2023–2053 period.

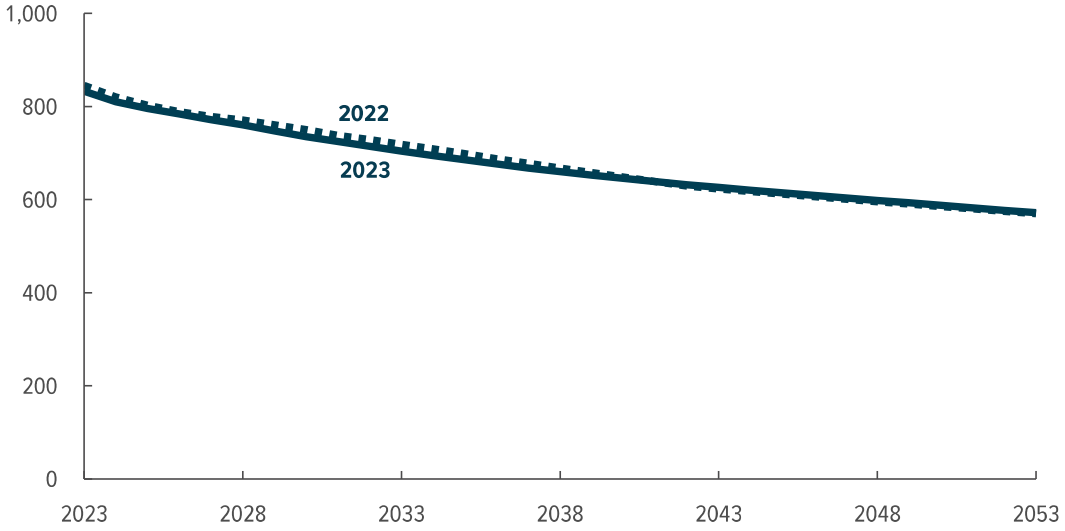
Changes to Projected Mortality Rates

Because of downward revisions to the projected number of deaths attributable to COVID-19, CBO currently projects 20,000 (or 0.7 percent) fewer deaths per year, on average, from 2023 to 2032 than it projected last year. By the end of the second decade, though, mortality rates generally return to previously projected levels. Largely because the population is bigger in this year's projections than it was in last year's, the number of deaths is now projected to increase by 40,000 (or 1.1 percent) per year, on average, from 2033 to 2052.

Life expectancies at birth and at age 65 are projected to average 78.8 and 19.5 years, respectively, from 2023 to 2032. Those projections are essentially unchanged from the agency's estimates last year (78.9 and 19.3 years). For the third decade of the period (2043 to 2052), average life expectancies at birth and at age 65 are 81.8 years and 21.5 years in CBO's projections—basically identical to those from last year (81.9 and 21.4 years, respectively).

Mortality Rates in CBO's 2022 and 2023 Projections, Adjusted for Age and Sex

Deaths per 100,000 People

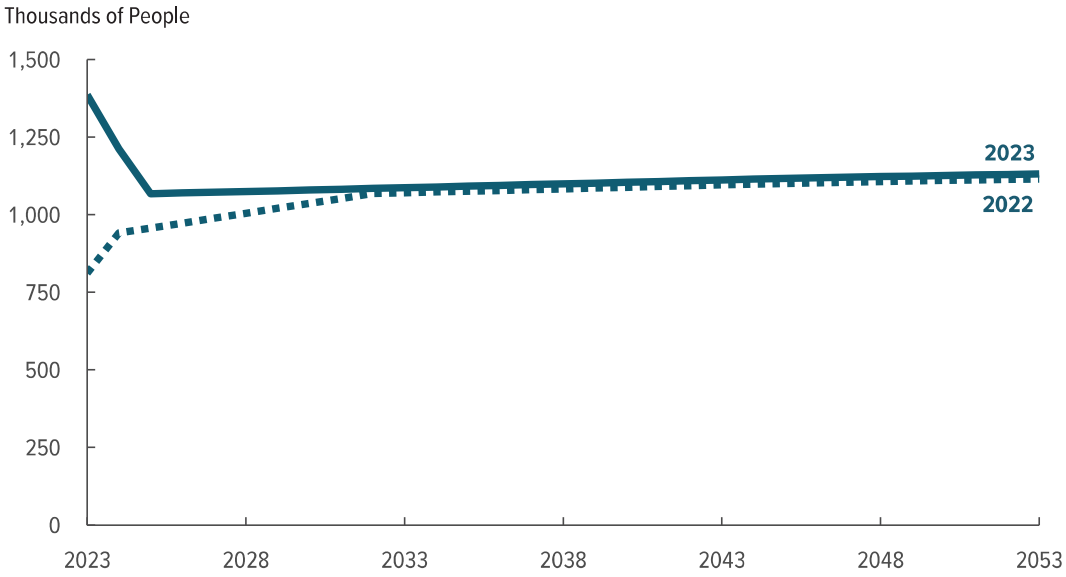


Through 2041, the mortality rate is lower in CBO's current projections than in last year's because the agency reduced its projections of deaths attributable to COVID-19. Starting in 2042, technical changes result in a slightly higher projected mortality rate in this year's estimates.

Changes to Projected Net Immigration

In CBO's assessment, the easing of pandemic-related travel restrictions and improved visa-processing capabilities boosted net immigration by 600,000 people in 2022 relative to last year's projected amount, largely because of increased net immigration of foreign-born people without legal status. Compared with last year's projections, annual net immigration is higher by 140,000 people (or 15.1 percent), on average, from 2023 to 2032 and by 20,000 people (or 1.5 percent), on average, from 2033 to 2052. As a result, the net immigration rate is projected to be 3.1 per 1,000 people over the entire 2023–2052 period, slightly higher than last year's projected net immigration rate of 3.0 per 1,000 people.

Net Immigration in CBO's 2022 and 2023 Projections



CBO's current projection of net immigration over the 2023–2052 period is slightly higher than its projection last year because of updated information on historical immigration and economic conditions.

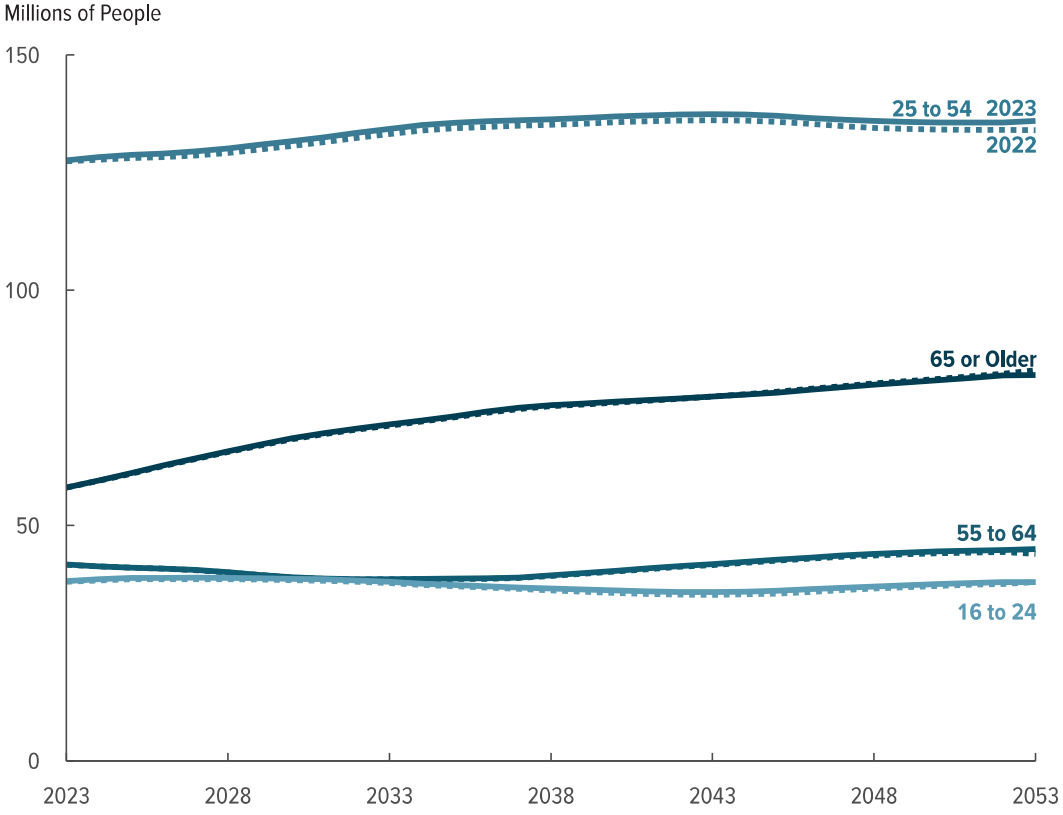
Changes Since Last Year in the Population Projections CBO Uses to Estimate the Size of the Labor Force

In CBO's current projections, the civilian noninstitutionalized population (the measure CBO uses to estimate the size of the labor force) is projected to be 0.7 percent larger (equaling 2.0 million more people) in 2052 than the agency projected last year.

From 2023 to 2052, CBO's projection of the civilian noninstitutionalized population ages 25 to 54 is larger by 1.1 million people (or 0.9 percent) per year, and the population ages 16 to 24 is larger by 380,000 people (or 1.0 percent) per year, on average, than in the agency's projections last year. Those differences stem mostly from revisions to CBO's projections of net immigration and, to a lesser extent, changes to CBO's projections of fertility.

The agency's projections of the average annual population ages 55 to 64 and age 65 or older are slightly higher than last year, by 150,000 people (or 0.3 percent) and 40,000 people (or 0.1 percent), respectively. Those differences mainly result from reduced mortality attributable to COVID-19 and changes to the agency's projections of net immigration.

Civilian Noninstitutionalized Population in CBO's 2022 and 2023 Projections, by Age Group



In this year's projections, the largest changes since last year are in the number of people ages 25 to 54, who are likely to be in the labor force. Those revisions stem mostly from increased net immigration.

1. Michelle J. K. Osterman and others, "Births: Final Data for 2020," *National Vital Statistics Reports*, vol. 70, no. 17 (National Center for Health Statistics, February 2022), https://tinyurl.com/muju38jy (PDF).
2. For more information about the opioid crisis and recent federal legislation in response to it, see Congressional Budget Office, *The Opioid Crisis and Recent Federal Policy Responses* (September 2022), www.cbo.gov/publication/58221.
3. Sherry L. Murphy and others, "Mortality in the United States, 2017," *NCHS Data Brief*, no. 328 (National Center for Health Statistics, November 2018), https://tinyurl.com/bddcv28n (PDF).
4. Sherry L. Murphy and others, "Mortality in the United States, 2020," *NCHS Data Brief*, no. 427 (National Center for Health Statistics, December 2021), https://tinyurl.com/4eakmrsf (PDF).
5. *Dobbs v. Jackson Women's Health Organization*, No. 19-1392, 597 U.S. ___ (2022).

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.

Daniel Crown prepared the report with guidance from Molly Dahl and Julie Topoleski. Lucy Yuan fact-checked the report. Stuart Hammond, Nianyi Hong, Sarah Masi, Rachel Matthews, and David Rafferty contributed to the analysis in this report. Christina Hawley Anthony, Elizabeth Cove Delisle, Stuart Hammond, Joseph Kile, John McClelland, Noah Meyerson, Samantha Riley, and Emily Stern provided comments on an earlier draft.

Comments on CBO's analysis of the projected effect on fertility of the Supreme Court's decision in *Dobbs v. Jackson Women's Health Organization* were provided by John Fisher (Lozier Institute), Joshua Goldstein (University of California, Berkeley), Ronald Lee (University of California, Berkeley), Caitlin Myers (Middlebury College), and James Studnicki (Lozier Institute). Caitlin Myers also provided assistance with CBO's modeling of the impact of that decision. The assistance of external reviewers implies no responsibility for the final product; that responsibility rests solely with CBO.

Mark Doms, Jeffrey Kling, and Robert Sunshine reviewed the report. Christine Bogusz edited it, and R. L. Rebach created the graphics and prepared the text for publication. The report is available at www.cbo.gov/publication/58612.

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

Phillip L. Swagel
Director
January 2023

Correction

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

The following change was made on January 26, 2023.

Page 4: In the fourth paragraph of text, “2022” was changed to “2023.”