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Projections overview and highlights, 2020–30

Employment and real output are projected to grow faster during the 2020–30 decade than in previous projection periods. This expectation largely reflects growth associated with the recovery from the 2020 recession, which was caused by the coronavirus disease 2019 (COVID-19) pandemic. About one-fourth of the population will be age 65 or older in 2030, contributing to slow projected growth in the labor force and a continued decline in the labor force participation rate. The aging population is also expected to continue to drive strong demand for a variety of healthcare services, with 3.3 million jobs projected to be added in the healthcare and social assistance sector through 2030.

This article presents an overview of the 2020–30 projections. Highlights include the following:

- Labor force growth is projected to be slower (0.5 percent per year) than the growth in much of recent history, partly because of an aging population and slower population growth among Hispanics.
- The labor force participation rate is projected to continue to trend down, declining from 61.7 percent in 2020 to 60.4 percent in 2030.
- Gross domestic product (GDP) is projected to continue to grow, at 2.3 percent annually. This growth is relatively faster than that in recent history because of recovery growth starting from a low base-year level in 2020.
- Most employment gains over the 2020–30 period are expected to occur in the service-providing sectors and to be led by strong growth in the healthcare and social assistance sector. An aging population will continue to create strong demand for industries and occupations that provide healthcare and related services.

- The recovery from the COVID-19 recession will accelerate growth in many industries and occupations that lost jobs in 2020. In addition, some structural changes induced by the pandemic—such as higher demand for information technology (IT) services to support expanded telework—are expected, although the pandemic's long-term structural impact remains uncertain.

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Compared with the prior decade, the 2020–30 decade is expected to see slower population growth.[3] The median age of the population will continue to rise, with all baby boomers reaching ages 66 and older by 2030. (See publication table 3.4.) This increase in the share of people of traditional retirement age is expected to contribute to a decline in the labor force participation rate through 2030.

Real output is projected to increase by $7.9 trillion from 2020 to 2030, and most of this growth is expected to occur in the service-providing sectors. The 2.2-percent annual output growth projected for the total economy is faster than the 1.6-percent annual growth from 2010 to 2020.

Total employment is projected to grow 0.7 percent annually from 2020 to 2030.[4] Because of a low employment level in 2020, the projected 10-year employment growth is faster than that which would be expected in a period starting with a full-employment year. Service-providing sectors are expected to account for most of the jobs added from 2020 to 2030.

Of the 11.9 million jobs projected to be added to the economy, over one-quarter (3.3 million) will be in the healthcare and social assistance sector. Employment increases in this sector are expected to stem from greater demand for a variety of healthcare services—demand driven by continued population aging and increasing rates of chronic disease. Among all sectors, the leisure and hospitality sector is projected to see the fastest annual employment growth—2.2 percent. This rapid growth is driven primarily by recovery growth expected for the decade following the sector's employment losses in 2020. Professional and business services are projected to add 2.0 million jobs over the projections period, an increase including strong growth in computer systems design and related services; employment services; and management, scientific, and technical consulting services.

Slower employment growth is projected in the goods-producing sectors, with the manufacturing sector seeing the slowest growth among them. Increasing automation, combined with international competition, is expected to limit employment demand in the manufacturing sector and in many of the production occupations concentrated in this sector. Changing consumer preferences and increases in the use of technology are expected to lead to declines in employment in the postal service and retail trade industries, as well as in several information-related industries.

Effects of the COVID-19 pandemic on the 2020–30 projections

The COVID-19 pandemic caused a short but severe economic recession. The recession, which lasted from February to April 2020,[5] led to substantial declines in output and employment. Because 2020 serves as the base year for the 2020–30 projections, these impacts translate into base-year employment and output values that are lower than those seen in previous projection sets. This fact, coupled with the assumption that the economy will reach full employment in the target year of 2030 (see methodology section below), suggests that the projected average growth rates for output and employment in the 2020–30 projections are relatively high. These faster rates reflect recovery growth from the macroeconomic trough of 2020 to the assumed full-employment economy of 2030.

Many industries are expected to experience cyclical recoveries early in the projections decade, with industry output and employment normalizing and returning to their long-term growth patterns. Because of pandemic-related lockdowns and hampered economic activity, some industries saw substantial employment declines in 2020. These industries, and the occupations within them, are expected to experience robust growth over the projections period.

In addition, structural demand in some industries and occupations is expected to shift as a result of economic changes driven by the pandemic. For instance, many computer-related occupations are expected to see elevated long-term demand, partly because of rising demand for telework computing infrastructure and IT security. Conversely, retail trade is expected to see a greater long-term employment decline, with brick-and-mortar retail losing further market share to e-commerce as a result of long-term changes to spending habits driven by the pandemic. However, the pandemic's long-term economic impact remains highly uncertain, and any such impact is only one factor (among many) considered in developing the target-year employment projections for a given industry or occupation.

Therefore, data users should note that the fast growth rates projected for 2020–30 can generally be categorized as predominantly cyclically driven, predominantly structurally driven (in the long term), or driven by a combination of cyclical and structural factors. To distinguish between cyclical and structural factors, readers should consider the uneven labor market impacts of the COVID-19 recession across industries, the low employment base for 2020, and the overall employment size and prerecession employment of a given industry or occupation.

In early 2021, BLS also developed alternate scenarios for the 2019–29 employment projections in order to capture possible impacts from the pandemic.[6] The projections based on these scenarios, which used alternate assumptions about demand patterns in the target year of 2029, are distinct from the 2020–30 baseline projections in that they aimed to estimate relative levels of uncertainty for occupations and industries in the 2019–29 projections set. The 2020–30 baseline figures, however, use the standard BLS projections methodology (discussed below). In an upcoming article slated for publication in fall 2021, BLS will provide a followup analysis comparing the alternate projections with the 2020–30 baseline projections.

Preparing the projections—a methodological overview

BLS prepares projections in four areas: population and labor force, aggregate demand, industry output and employment, and occupational employment. Each step in the projections process affects subsequent steps. The projections for the population affect those for the labor force, which in turn affect those for productivity and GDP

growth. These projections further affect industry output and employment, which then feed into the occupational employment projections.

In the BLS labor force model, population growth and changes in participation rates are the main factors driving labor force growth. However, most changes in labor force growth are due to changes in the population. The labor force projections incorporate mortality rates of the U.S. population and assumptions about immigration, an important but uncertain factor affecting the size of the future labor force (projections about immigration and future mortality rates are from the U.S. Census Bureau).

Because labor force growth is one of the major determinants of long-term economic growth, the labor force projections describe the future path of the economy and its capacity to create goods and services. The long-term gradual slowdown in labor force growth continues to be key in determining the growth of the economy and of employment.

BLS develops macroeconomic projections with a model licensed from Macroeconomic Advisers (MA) by IHS Markit.[7] The MA model assumes full employment in the target year. Data for energy prices come from the U.S. Energy Information Administration, and BLS determines other critical variables and supplies them to the MA model exogenously.[8] The MA model then projects economic aggregates, including total employment, output, productivity, prices, interest rates, and many other variables for the U.S. economy. These variables—most importantly nonfarm payroll employment, labor productivity, and GDP—serve as constraints for the industry output and employment projections.

BLS produces model-based projections for hundreds of detailed industries, and these projections are then summed to arrive at aggregate values for subsectors and sectors. Macroeconomic factors, such as the labor force, GDP and its components, and labor productivity, affect the growth in total employment. These factors, along with the projection models for individual industries, determine the final projections of industry employment and output.

BLS produces occupational employment projections by analyzing current and projected future staffing patterns (the distribution of occupations within an industry) in an industry–occupation matrix. Changes in the staffing pattern for each industry are projected and applied to the final industry projections, yielding detailed occupational projections by industry. This projected employment matrix includes estimates for 790 occupations across 295 industries.[9]

Population and labor force

In 2020, the COVID-19 pandemic affected nearly every aspect of the U.S. economy, including the labor force. While the U.S. population grew by 1.2 million from 2019 to 2020, the labor force fell by a considerable 2.8 million over the same period, with many restaurant, retail, and other establishments providing in-person services being forced to shut down. As a result, Congress provided individual stimulus checks, increased unemployment insurance benefits, and took a historic step by authorizing unemployment compensation to individuals not in the labor force.[10]

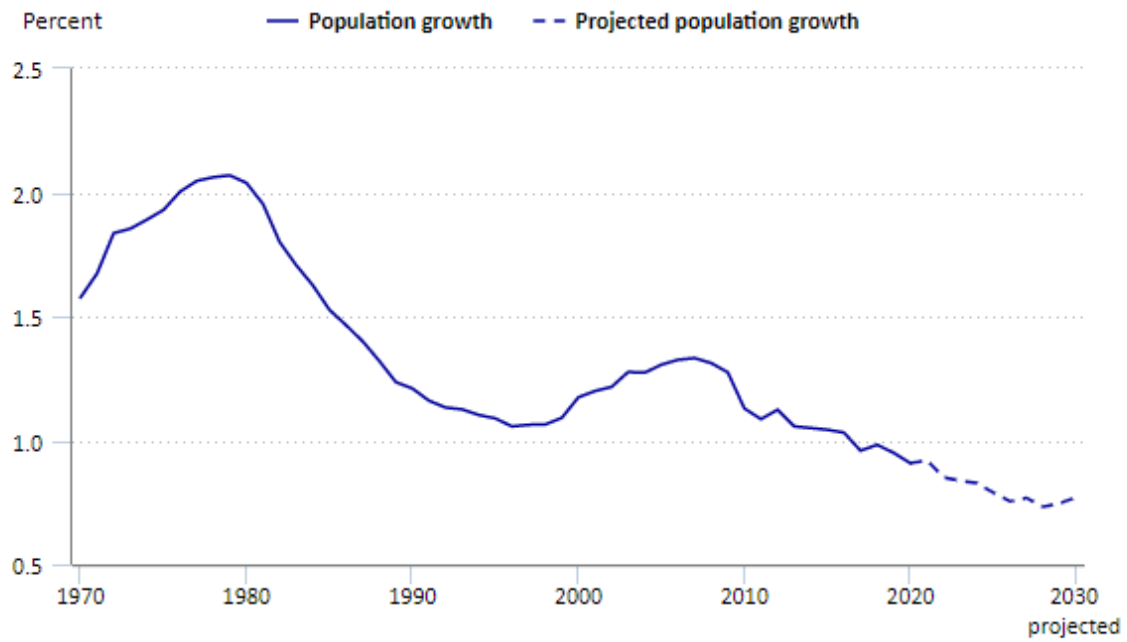
Despite a depressed labor force level in 2020, labor force growth is projected to continue to trail population growth over the projections period. In recent decades, the U.S. population has grown faster than the labor force, primarily because of population aging. Over the next 10 years, this trend is projected to continue. The labor force is projected to grow 0.5 percent annually, slower than the 0.8-percent annual growth projected for the population.

This difference in rates results in a declining labor force participation rate, which is projected to fall from 61.7 percent in 2020 to 60.4 percent in 2030.

Population

Apart from experiencing a short-lived reversal in the 2000s, population growth has been slowing since 1980. (See chart 1.) Over the next 10 years, this trend is projected to continue: the population is expected to grow at an annual rate of 0.8 percent, slower than the rate for any other 10-year period over the past 50 years. Population growth is largely affected by historical fertility rates and immigration. Fertility rates, which had been stagnant for decades, declined over the past decade.[11] Moreover, COVID-19, along with the uncertainty associated with it, appears to have lowered fertility rates further.[12] This pandemic-induced "baby bust" is expected to continue to negatively influence population growth, but the impact will be realized outside the timeframe of the 2020–30 projections. BLS develops projections for the civilian noninstitutional population, which includes only people ages 16 and older. Therefore, current changes in the fertility rate will not influence population trends before the end of the 10-year projections period.

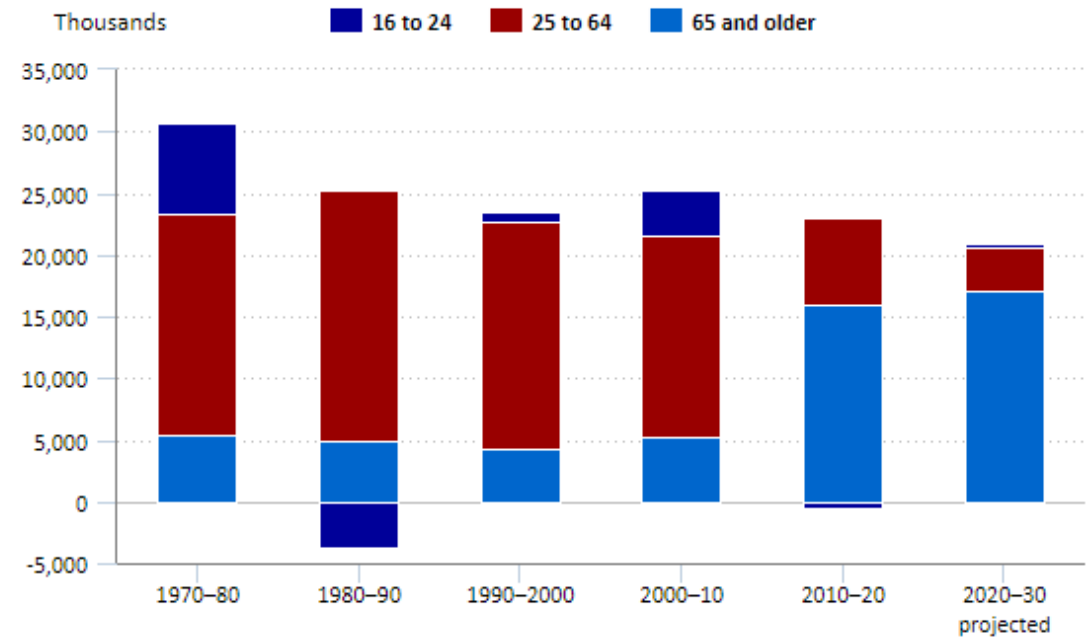
Chart 1. Population growth rates, 10-year compound annual average, 1970–2020 and 2020–30 projected



Click legend items to change data display. Hover over chart to view data.
Source: U.S. Bureau of Labor Statistics.

The last time the fertility rate considerably exceeded 2.0 percent was in the 1970s.[13] For this reason, most population growth during the projections period is expected to be driven by the oldest age groups. While the population is projected to grow by 20.8 million over the 2020–30 decade, more than 80 percent of that growth (17.1 million) is accounted for by people ages 65 and older. (See chart 2.) For those ages 65 and older, most growth (11.2 million) is projected to occur among those ages 75 and older. (See publication table 3.2.)

Chart 2. Population change, by age group, for selected periods and 2020–30 projected



Click legend items to change data display. Hover over chart to view data.
Source: U.S. Bureau of Labor Statistics.

Unlike fertility rates, whose contribution to population growth can be predicted accurately after a set period (16 years), net immigration inflows are more uncertain over the long term. Legislation can have large, abrupt impacts on immigration inflows. Net international immigration to the United States has been averaging around 1 million annually since 2000, slightly over half of the 1.8 million it averaged annually in the mid-1990s.[14] Immigrants tend to be of prime working age, which offsets some of the labor force effects of an aging domestic population.[15]

Labor force and participation rate

The labor force is the subset of the population that is working or actively seeking work. The labor force participation rate (hereafter referred to as “participation rate”) is the percentage of the population that is in the labor force. Labor force growth stems from both population growth and changes to the participation rate.

BLS focuses on long-term structural trends rather than short-term cyclical fluctuations. However, it is worth noting that the participation rate fell 1.4 percentage points in a single year, from 63.1 percent in 2019 to 61.7 percent in 2020. This compares with an average annual decline of 0.3 percentage point since 2000, when the participation rate stood at 67.1 percent. Much of the 1.4-percentage-point decline for 2019–20 should be considered cyclical, because the size of the labor force during that time was lower than it would have been under full employment.[16]

The participation rate is projected to continue its downward trend, but relatively slowly. This is because the rate’s starting point in 2020 was lower than it would have been in the absence of the COVID-19 pandemic. From 2020 to 2030, the participation rate is projected to decline by 1.4 percentage points, to 60.4 percent. This decline is roughly the same as the single-year decline that took place from 2019 to 2020 (1.4 percentage points).

The participation rates of older age groups (55 to 59, 60 to 64, 65 to 69, 70 to 74, and 75 and older) have been trending upward for the past two decades and are projected to continue to do so. (See table 1 and publication table 3.3.) This is due, in part, to substantial changes to Social Security and private pensions.[17] The upward trend for older age groups contrasts with that for the rest of the population, whose participation rate has been declining and is projected to continue to decline through 2030.

Table 1. Labor force participation rates of people ages 55 and older, 2000, 2010, 2020, and 2030 projected

Age group	Labor force participation rate				Difference		
	2000	2010	2020	2030 projected	2000–10	2010–20	2020–30
55 and older	32.4	40.2	39.2	38.6	7.8	-1.0	-0.6
55 to 59	68.9	73.3	72.1	74.9	4.4	-1.2	2.8
60 to 64	47.2	55.2	57.1	62.5	8.0	1.9	5.4
65 to 69	24.5	31.5	33.0	39.6	6.9	1.6	6.6
70 to 74	13.5	18.0	18.9	23.8	4.5	0.9	4.9
75 and older	5.3	7.4	8.9	11.7	2.1	1.5	2.8

Note: Because of rounding, historical data may not match U.S. Bureau of Labor Statistics Current Population Survey data.

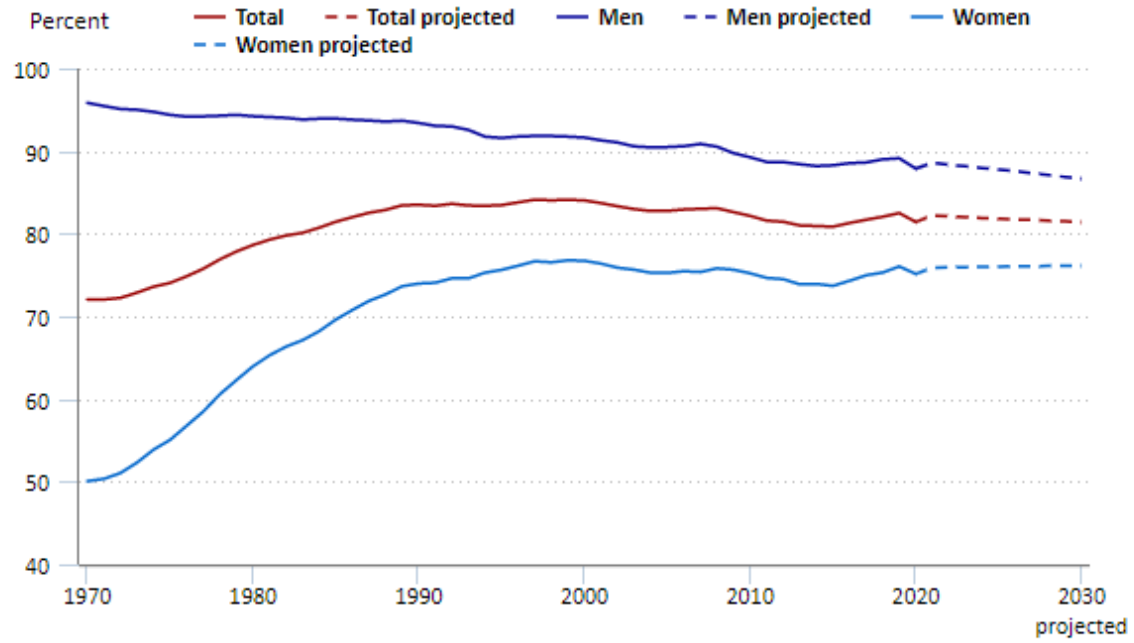
Source: U.S. Bureau of Labor Statistics.

The overall participation rate is a composition of each individual demographic group's participation rate. The effect of each detailed group is weighted by the relative size of the group's population. As the size of one group increases, so does its contribution to the overall participation rate. This results in an interesting dynamic: although the participation rates of all older detailed age groups are projected to increase, the rate for the aggregate 55-and-older group is projected to decrease. This projection is based on the expectation that, as the baby-boom generation ages, the population of people ages 75 and older will grow the fastest. This group has a much lower participation rate than the rate of people ages 55 to 74. (See table 1 and publication table 3.3.)

While the participation rates of older age groups have been increasing, those of younger and middle-age groups have been declining or staying flat. The rates of younger age groups have been steadily declining over the past couple of decades and are projected to continue to do so from 2020 to 2030. (See publication table 3.3.) Much of this decline is due to increased college attendance, which delays entry into the workforce.[18] However, people who have a high school diploma but do not attend college are also increasingly more likely to remain out of the labor force.[19]

The participation rate of the prime-age population, which is composed of people ages 25 to 54, has been slowly trending down, declining from a high of 84.1 percent in the late 1990s to 81.4 percent in 2020. This rate increased rapidly until the 1990s, as more women entered the workforce. Throughout the 1990s, the participation rate remained relatively flat, but it started to decline in 2000. Over the past decade, the decline in the participation rate of the overall prime-age population flattened; the rate increased from 80.9 in 2015 to 82.5 in 2019, before falling in 2020 as a result of the COVID-19 pandemic. (See chart 3.) The participation rate of the prime-age population is projected to hold steady, at 81.4 percent, through 2030.

Chart 3. Labor force participation rate of prime-age population (ages 25 to 54), total, men, and women, 1980–2020 and 2020–30 projected



Click legend items to change data display. Hover over chart to view data.
Source: U.S. Bureau of Labor Statistics.

The participation rate of the prime-age population can be further examined by looking at the rates of men and women separately. Although the overall participation rate for this group is projected to remain flat, the men's rate is projected to decline while the women's rate is projected to increase. The men's rate declined by 1.4 percentage points between 2010 and 2020 (from 89.3 percent to 87.9 percent) and is projected to decline by an additional 1.2 percentage points over the next decade, down to 86.6 percent in 2030. The women's participation rate remained flat over the 2010–20 period (75.2 percent in 2010 and 75.1 percent in 2020) and is projected to increase by 1.0 percentage point over the projections period, reaching 76.1 percent in 2030.

A decreasing fertility rate over the past decade is one possible explanation for the flattening of the labor force participation rate of women.[20] Among women of prime working age, the youngest age groups (25 to 29, 30 to 34, and 35 to 39) saw increases in their participation rate over the last decade. (See table 2.) Compared with women in older age groups, women in the youngest groups are more likely to have children needing care.[21] Having fewer children means fewer parents leaving the labor force to care for a child, and the leavers are more likely to be women than men.

Table 2. Labor force participation rates of prime-age women, 2000, 2010, 2020, and 2030 projected

Age group	Labor force participation rate, prime-age women				Difference		
	2000	2010	2020	2030 projected	2000–10	2010–20	2020–30
25 to 54	76.7	75.2	75.1	76.1	-1.5	-0.1	1.0
25 to 29	76.7	75.6	76.8	78.1	-1.1	1.2	1.3

See footnotes at end of table.

Table 2. Labor force participation rates of prime-age women, 2000, 2010, 2020, and 2030 projected

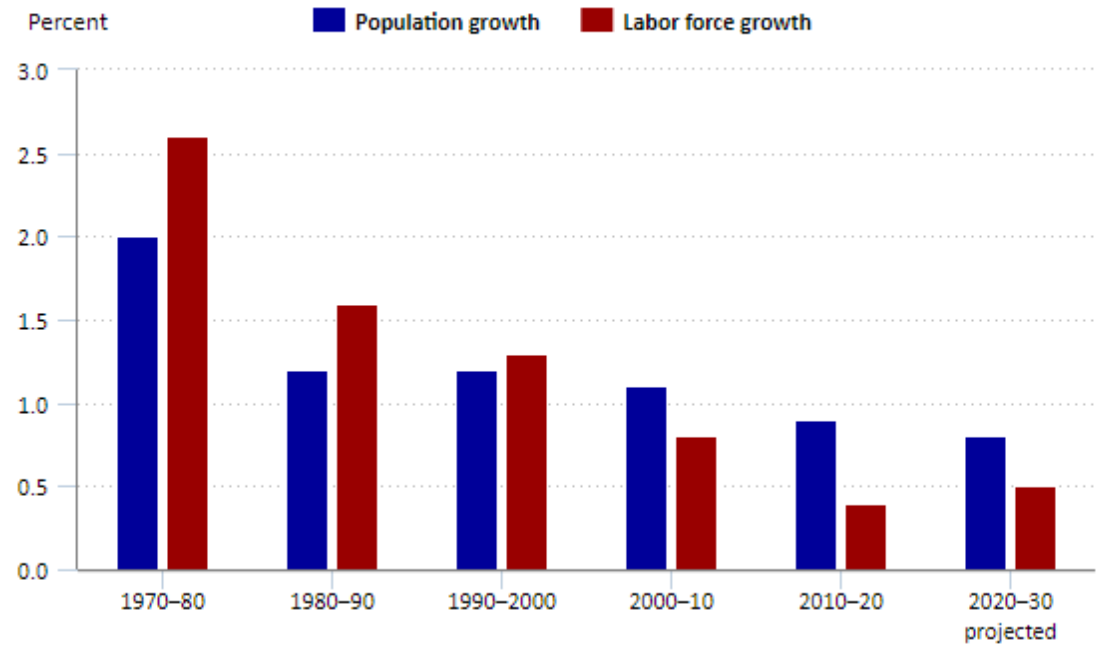
Age group	Labor force participation rate, prime-age women				Difference		
	2000	2010	2020	2030 projected	2000–10	2010–20	2020–30
30 to 34	75.5	73.7	74.6	75.6	-1.8	0.9	1.0
35 to 39	75.7	74.1	74.3	74.6	-1.6	0.2	0.3
40 to 44	78.7	76.2	75.7	75.5	-2.5	-0.5	-0.2
45 to 49	79.1	76.8	76.0	76.9	-2.3	-0.8	0.9
50 to 54	74.1	74.6	73.4	76.3	0.5	-1.2	2.9

Note: Because of rounding, historical data may not match U.S. Bureau of Labor Statistics Current Population Survey data.

Source: U.S. Bureau of Labor Statistics.

The labor force is an important source of economic growth. A larger labor force translates into more hours worked, and more hours worked mean higher GDP. Over the projections period, labor force growth is expected to be constrained by slower population growth and a declining participation rate. Although the labor force is expected to grow more slowly in the 2020s than in the 1980s, 1990s, and early 2000s, it is projected to grow slightly faster than in the preceding 10 years. (See chart 4.) The labor force grew 0.4 percent annually from 2010 to 2020, which compares with 0.5-percent projected annual growth for the 2020–30 decade. When the first year of a projections period is a recession year (in this case, 2020), the labor force (and GDP) has a low starting point and, hence, is expected to grow faster.

Chart 4. Population and labor force growth, 10-year compound annual average rates, for selected periods and 2020–30 projected

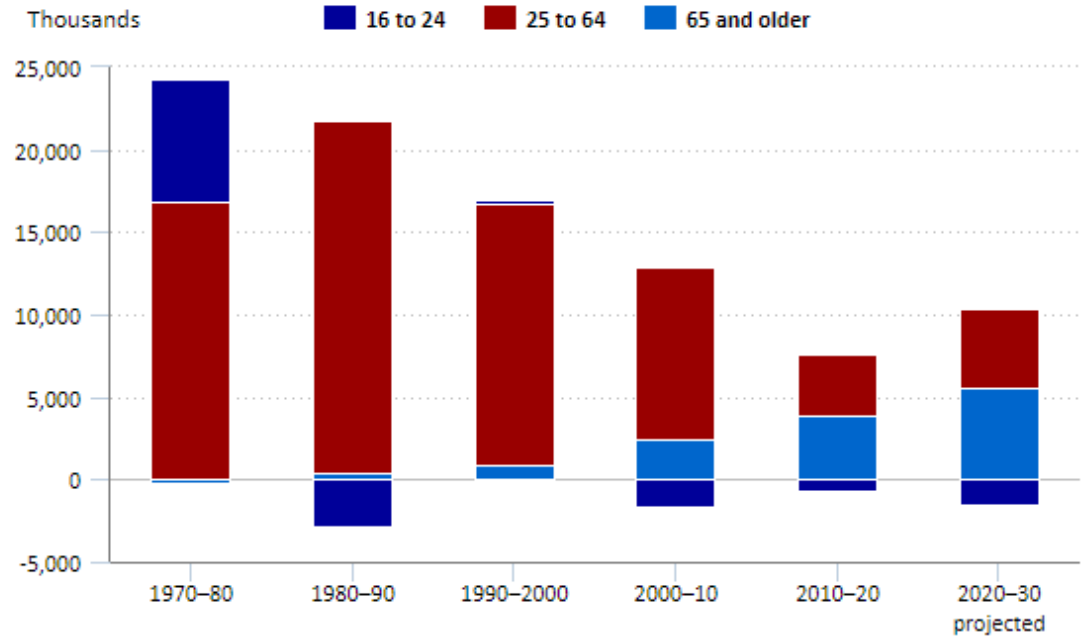


Click legend items to change data display. Hover over chart to view data.
Source: U.S. Bureau of Labor Statistics.

Generally, the labor force is considered mildly cyclical, although cyclical fluctuations have become more pronounced recently.[22] Individuals who lose their jobs tend to stay in the labor force, searching for a new job. However, the COVID-19 recession differed from past recessions, because much of government policy associated with it encouraged social distancing, thereby hindering access to many prepandemic work arrangements. In some cases, Congress authorized unemployment compensation for people not in the labor force.[23]

Despite starting from a lower point in 2020, the labor force is projected to grow more slowly than the population. (See chart 4.) As noted previously, over 80 percent of population growth will be driven by people ages 65 and older, and this group has a lower propensity to work than does the prime-age group. Despite this lower propensity, the 65-and-older group's population growth is sizable enough to account for more than 60 percent of the projected labor force growth over the 2020–30 decade. This is a substantial change in growth trends. Before 2010, almost all labor force growth was driven by those ages 25 to 64. (See chart 5.)

Chart 5. Labor force growth, by age group, for selected periods and 2020–30 projected



Click legend items to change data display. Hover over chart to view data.
Source: U.S. Bureau of Labor Statistics.

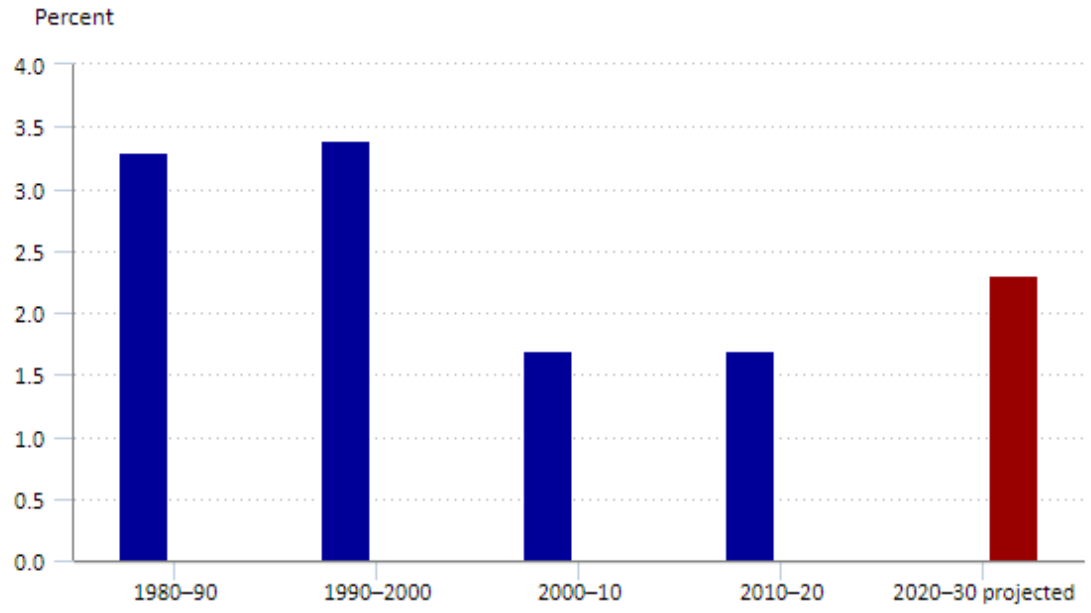
The three primary trends highlighted previously—an aging population, a declining participation rate, and slow labor force growth—are interrelated and influence one another. These trends are projected to continue over the next 10 years.

Macroeconomic projections

Over the next 10 years, GDP is projected to grow by 2.3 percent annually, relatively fast compared with the 1.7-percent annual growth recorded in the previous two decades. (See chart 6.) This faster growth is largely due to a low starting GDP in 2020. Because of the COVID-19 pandemic, GDP fell 3.5 percent in 2020. In July 2021, the

National Bureau of Economic Research declared that a recession began in February and ended in April 2020,[24] and this recession followed the longest expansion in the history of U.S. business cycles dating back to 1854.[25] BLS assumes that, in the target year of 2030, the economy is at full employment, which means that the economy is operating at a high rate of resource utilization while GDP growth is sustainable (this condition tends to coincide with the latter part of an economic expansion). While the economy is assumed to be at full employment in 2030, it was well below full employment in 2020. Therefore, the projected growth rate for 2020–30 includes some cyclical recovery growth.

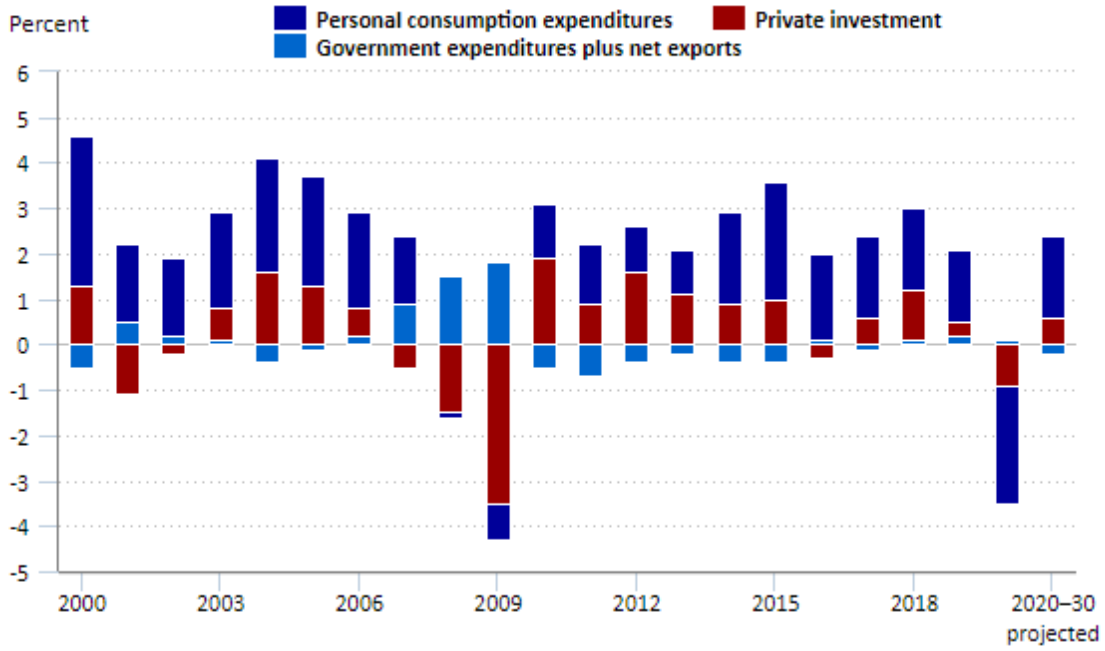
Chart 6. Gross domestic product, 10-year compound annual growth rates, for selected periods and 2020–30 projected



Hover over chart to view data.
Source: U.S. Bureau of Labor Statistics.

GDP can be examined by its components—consumption, investment, net exports, and government spending. Personal consumption expenditures are projected to be the primary driver of GDP, contributing 1.8 percentage points to GDP growth. Private investment is projected to account for another 0.6 percentage point. Over the next 10 years, net exports are projected to reduce GDP growth by 0.3 percentage point, with imports outpacing exports. This can partly be attributed to net exports of oil (and its byproducts) flattening over the next decade after growing substantially in the previous 10 years.[26] Government expenditures, which include spending by federal, state, and local governments, are projected to play a minimal role in GDP growth over the projections period, contributing only 0.1 percentage point to that growth. (See chart 7 and publication table 4.2.)

Chart 7. Contributions to growth in gross domestic product, 2000–20 and 2020–30 projected

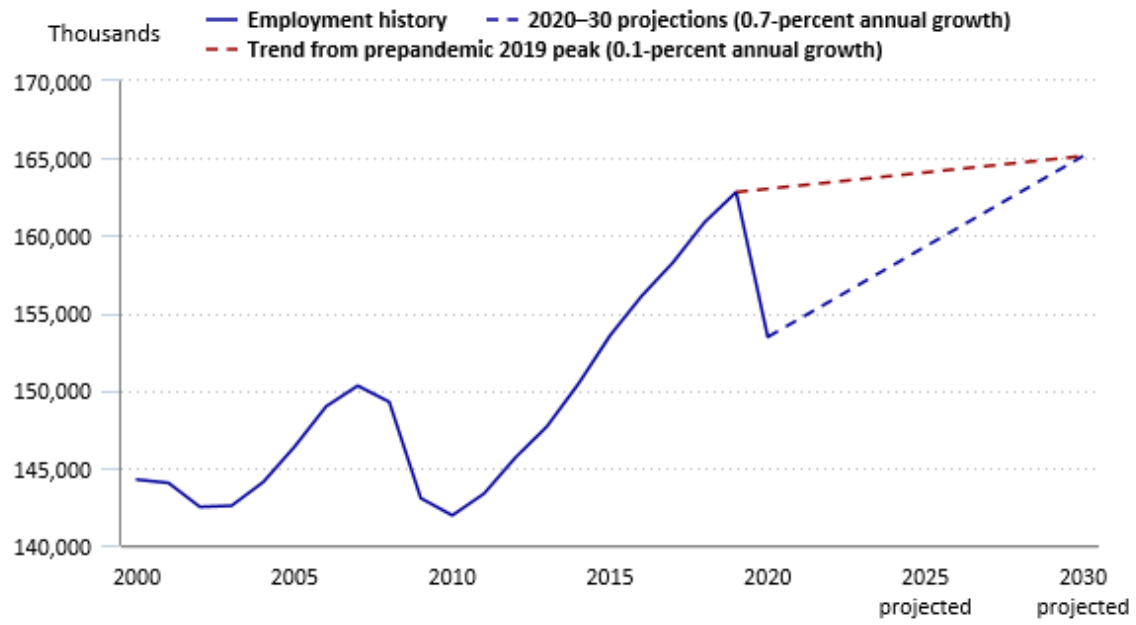


Click legend items to change data display. Hover over chart to view data.
Source: Historical data are from the U.S. Bureau of Economic Analysis. Projected data are from the U.S. Bureau of Labor Statistics.

Employment, unemployment, and nonaccelerating inflation rate of unemployment

Employment, one of the major inputs into GDP, declined by almost 10 million in 2020, as the COVID-19 recession took hold. As a result, employment is projected to grow rapidly (faster than it does typically) over the next 10 years, at an annual rate of 0.7 percent. Chart 8 shows that this rate would have been only 0.1 percent if the projections period started in 2019, before the pandemic hit.

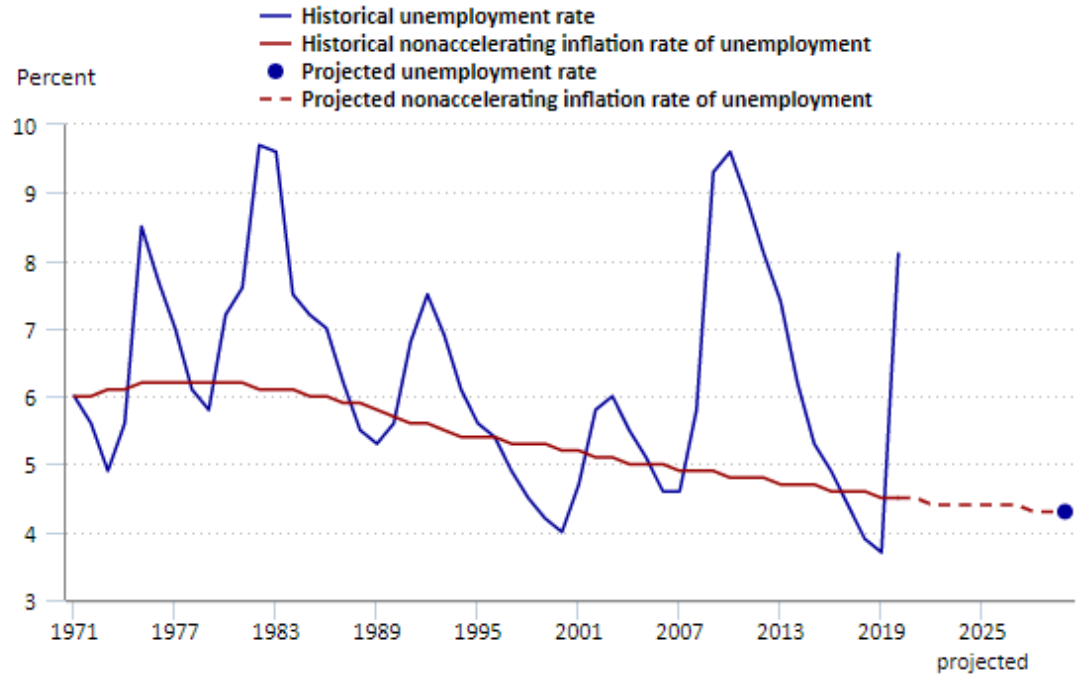
Chart 8. Industry employment, all jobs, 2000–20 and 2020–30 projected (in thousands)



Click legend items to change data display. Hover over chart to view data.
Note: Industry employment is the sum of the employment figures for nonagricultural wage and salary workers; agricultural, forestry, fishing, and hunting workers; and self-employed workers. Dashed lines represent a flat growth rate between a starting point and a 2030 projected value, not actual projections. The U.S. Bureau of Labor Statistics does not publish inter-year employment data. Annual growth refers to a compound average annual growth rate.
Source: U.S. Bureau of Labor Statistics.

The labor force includes both the employed and the unemployed. Unemployment, often expressed as a percentage of the total labor force, is highly cyclical, often increasing during a recession. This happened in 2020, with the unemployment rate jumping to 8.1 percent.[27] Although the unemployment rate had surpassed 8.0 percent in previous recessions, its 2020 value was high by historical standards. (See chart 9.)

Chart 9. Unemployment rate and estimated nonaccelerating inflation rate of unemployment, 1971–2020 and 2030 projected



Click legend items to change data display. Hover over chart to view data.
Source: Historical and projected data for the unemployment rate are from the U.S. Bureau of Labor Statistics. Historical and projected data for the nonaccelerating inflation rate of unemployment are from the Congressional Budget Office.

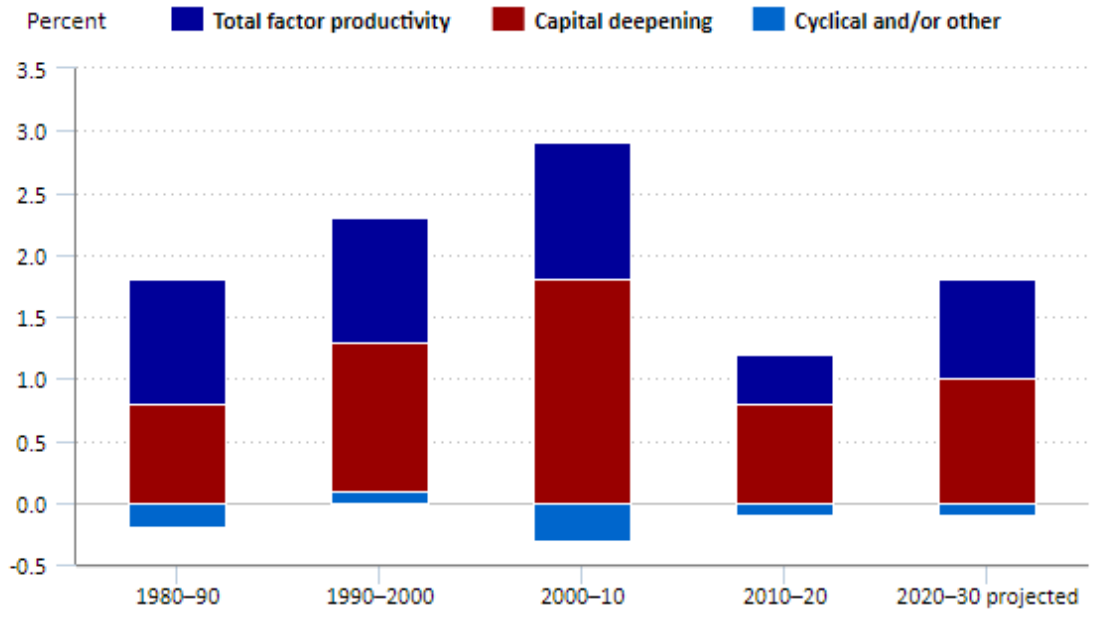
As noted previously, the BLS projections assume full employment in the target year of 2030. The unemployment rate at full employment is referred to as the nonaccelerating inflation rate of unemployment (NAIRU). Currently, NAIRU is 4.5 percent, and it is expected to fall to 4.3 percent by 2030. (See chart 9.) Over the last few decades, NAIRU has been trending down. This trend, as well as NAIRU's expected decline over the projections period, reflects both the continuing aging of the labor force (older workers tend to have lower rates of unemployment when they participate in the labor force) and the labor force's shift away from less educated and less experienced workers (who tend to have higher unemployment rates).[28]

Productivity

Productivity, measured as total output divided by employment,[29] is influenced by capital deepening and total factor productivity (TFP). Capital deepening is an increase in the ratio of capital to labor. Greater investment increases this ratio, although capital depreciates over time in the absence of further investment. TFP is often associated with technological improvements, increases in the education or quality of the workforce, improvements in management practices, and economies of scale.

Productivity is projected to grow at an annual rate of 1.7 percent over the next 10 years. This rate is greater than the 1.1-percent annual growth rate seen in the preceding decade. Productivity growth between 2010 and 2020 was more subdued than in earlier decades. (See chart 10.) Capital deepening traditionally accounts for most of productivity growth, and the next 10 years are no exception. Capital deepening and TFP are projected to account for, respectively, 1.0 and 0.8 percentage points of productivity growth.

Chart 10. Growth in labor productivity and its components, 10-year compound annual average rate, for selected periods and 2020–30 projected



Click legend items to change data display. Hover over chart to view data.
Source: U.S. Bureau of Labor Statistics.

Fiscal and monetary policy

To alleviate the economic downturn in 2020, Congress authorized multiple rounds of fiscal stimulus. In addition, the Federal Reserve (hereafter, the Fed) pursued an "easy money" policy by slashing its target federal funds rate from a range of 1.50–1.75 percent to a range of 0.00–0.25 percent.[30] The Fed also resumed, among other actions, purchasing massive amounts of securities—a policy known as quantitative easing—and direct lending to businesses and state and municipal governments.[31]

The low federal funds rate has contributed to low interest rates within the bond market. For most of 2020, 10-year treasury yields were under 1.00 percent while 3-month treasury yields were under 0.25 percent.[32] While there are some concerns that this "easy money" policy may lead to rising inflation,[33] the Fed has noted that it can tighten monetary policy if inflation exceeds its target rate.[34]

The COVID-19 recession produced large decreases in output and employment. Prior recessions have resulted in hysteresis that structurally lowered the economy's long-term growth trend.[35] However, the 2020–30 projections assume that the potential output of the economy remains intact. The fast and sizeable fiscal and monetary responses by Congress and the Fed appear to be partly responsible for maintaining the economy's long-term growth potential. Therefore, the pandemic's main impact on the 2020–30 output projections is the low output in the base year, which results in a higher growth rate.

Assumptions about fiscal policy, including tax policy and government spending, substantially affect expectations for government revenue, national debt, and economic growth. BLS generally assumes no major changes to current

tax laws or other major legislation over the projections decade. Effective marginal tax rates also are held constant at their current levels.

Industry output and employment projections to 2030

BLS projects that, from 2020 to 2030, output will grow faster than it did during the previous decade, whereas employment growth will be slightly slower. Industry output and employment projections were prepared by using the 2017 North American Industry Classification System (NAICS). Major sectors (hereafter referred to as "sectors") are aggregations of NAICS industries.

Industry output projections

BLS projects that real output will increase from nearly $33.0 trillion in 2020 to roughly $40.9 trillion in 2030.[36] This increase of just under $8.0 trillion over the projections period is larger than the increase of $4.9 trillion during the previous decade. Most of the increase in real output (76.2 percent) is projected to come from nonagricultural sectors, specifically service-providing sectors.

Sector output

Real output in the service-providing sectors is projected to grow at an annual rate of 2.4 percent from 2020 to 2030, faster than the 1.7-percent growth experienced from 2010 to 2020. This projected growth in output for service-providing sectors is slightly faster than the 2.2-percent projected growth for the entire U.S. economy. All service-providing sectors are projected to experience real output growth over the projections period, including the federal government sector, whose output is expected to increase slightly, at an annual rate of 0.3 percent. Unlike the past two projection periods, the leisure and hospitality sector is projected to see the fastest output growth among service-providing sectors in 2020–30, with its output increasing at an annual rate of 4.5 percent. This growth is largely recovery driven.

Real output in the goods-producing sectors (excluding agriculture) is projected to grow at an annual rate of 1.7 percent from 2020 to 2030, slower than the expected growth rate of 2.2 percent for the overall economy. However, the projected 1.7-percent growth rate is faster than the 1.4-percent rate experienced by the nonagricultural goods-producing sectors from 2010 to 2020. The mining sector is expected to have the fastest output growth (2.6 percent annually) among these sectors over the next decade.

Real output in the agriculture, forestry, fishing, and hunting sector is projected to grow at an annual rate of 2.3 percent from 2020 to 2030, slightly faster than the annual rate of 2.0 percent experienced during the 2010–20 decade. (See table 3.)

Table 3. Output by major industry sector, 2010, 2020, and 2030 projected

Industry sector	Output (billions of chained 2012 dollars)			Compound annual rate of change (percent)		Output (billions of dollars)			Percent distribution		
	2010	2020	2030	2010–20	2020–30	2010	2020	2030	2010	2020	2030
Total	28,101.0	32,971.1	40,902.6	1.6	2.2	26,485.0	36,715.1	47,872.2	100.0	100.0	100.0
Goods producing, excluding agriculture	7,113.3	8,184.8	9,686.0	1.4	1.7	6,548.7	8,185.1	10,466.6	24.7	22.3	21.9
Mining	514.5	651.9	844.6	2.4	2.6	499.3	474.8	860.1	1.9	1.3	1.8
Construction	1,075.4	1,425.4	1,578.8	2.9	1.0	1,016.7	1,736.5	2,007.1	3.8	4.7	4.2
Manufacturing	5,525.9	6,063.8	7,236.0	0.9	1.8	5,032.7	5,973.8	7,599.4	19.0	16.3	15.9
Service providing, excluding special industries	19,242.6	22,772.3	28,813.6	1.7	2.4	18,323.5	26,240.3	34,551.5	69.2	71.5	72.2
Utilities	502.9	447.3	491.7	-1.2	1.0	494.5	495.1	572.1	1.9	1.3	1.2
Wholesale trade	1,430.4	1,874.9	2,522.7	2.7	3.0	1,359.2	2,039.8	2,770.3	5.1	5.6	5.8
Retail trade	1,357.8	1,855.2	2,491.2	3.2	3.0	1,299.7	1,964.6	2,797.5	4.9	5.4	5.8
Transportation and warehousing	975.1	1,080.5	1,420.7	1.0	2.8	856.3	1,211.5	1,641.1	3.2	3.3	3.4
Information	1,277.7	1,998.9	2,713.7	4.6	3.1	1,268.9	1,935.6	2,700.6	4.8	5.3	5.6
Financial activities	3,578.9	4,205.8	4,908.6	1.6	1.6	3,405.4	5,548.7	6,777.4	12.9	15.1	14.2
Professional and business services	2,829.7	3,606.9	4,550.8	2.5	2.4	2,722.0	4,155.7	5,370.4	10.3	11.3	11.2
Educational services	321.2	283.5	336.2	-1.2	1.7	292.9	353.6	442.4	1.1	1.0	0.9
Healthcare and social assistance	1,865.8	2,292.0	3,183.1	2.1	3.3	1,799.6	2,552.8	3,694.5	6.8	7.0	7.7
Leisure and hospitality	1,028.8	1,055.2	1,643.9	0.3	4.5	979.2	1,242.2	2,023.3	3.7	3.4	4.2
Other services	561.2	565.4	716.7	0.1	2.4	535.4	680.5	883.4	2.0	1.9	1.8
Federal government	1,161.9	1,160.7	1,198.8	0.0	0.3	1,118.7	1,313.6	1,395.1	4.2	3.6	2.9
State and local government	2,350.3	2,402.9	2,815.0	0.2	1.6	2,191.7	2,746.7	3,483.5	8.3	7.5	7.3
Agriculture, forestry, fishing, and hunting	467.2	570.0	715.9	2.0	2.3	375.7	474.0	683.2	1.4	1.3	1.4
Special industries[1]	1,278.6	1,439.1	1,648.8	1.2	1.4	1,237.1	1,815.7	2,170.9	4.7	4.9	4.5
Residual[2]	-0.7	4.9	38.3	—	—	—	—	—	—	—	—

[1] Consists of nonproducing accounting categories to reconcile the input–output system with National Income and Product Accounts.

[2] Residual is shown for the first level only. Subcategories do not necessarily add to higher categories as a byproduct of chain-weighting.

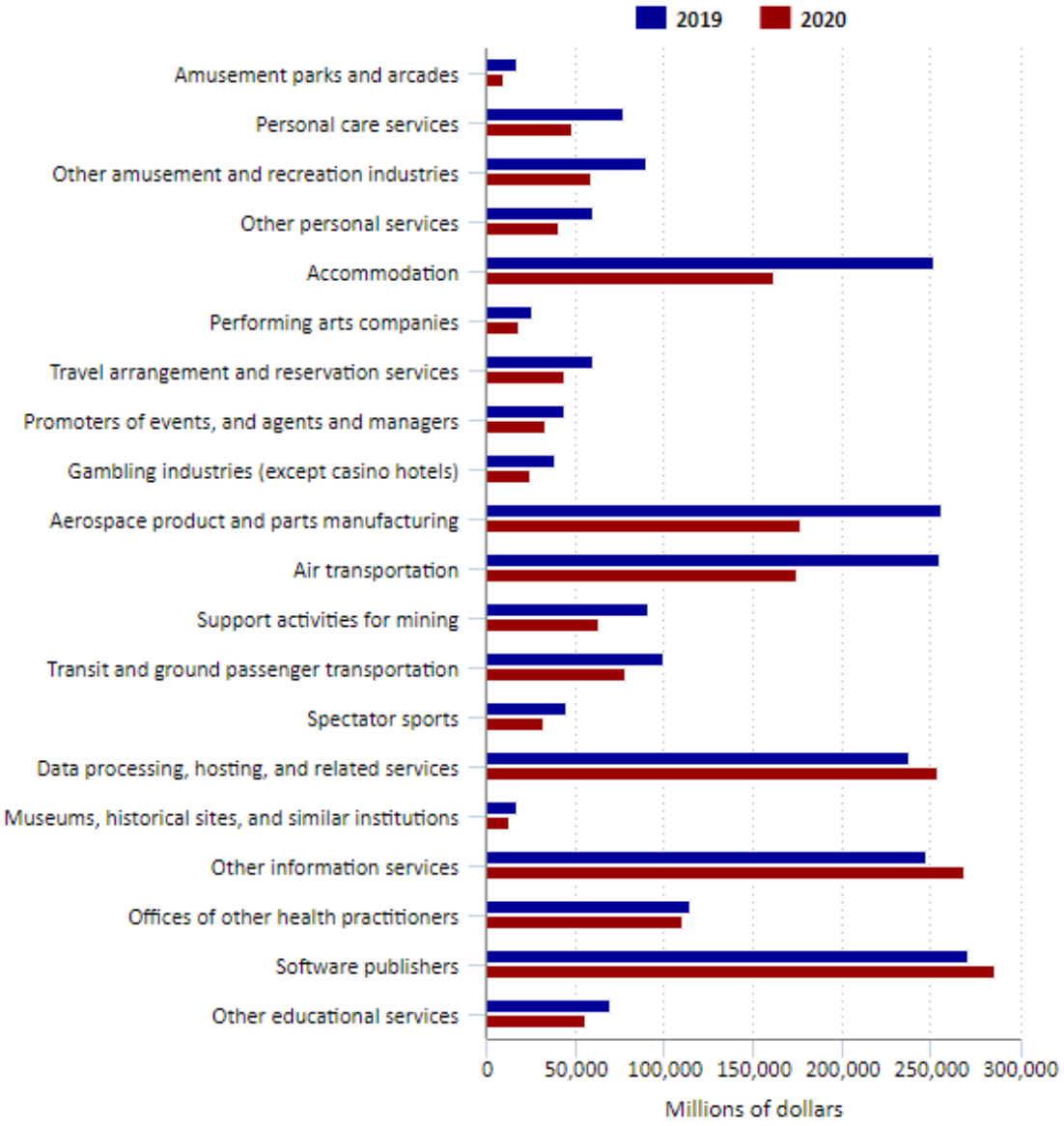
Source: U.S. Bureau of Labor Statistics.

Industries with fastest growing output

Of the 20 industries expected to have the fastest growing real output over the 2020–30 projections period, 8 industries are in the leisure and hospitality sector. (See publication table 2.7.) Output in the amusement parks and arcades industry and in the other amusement and recreation industries is projected to grow by, respectively, 7.1 and 7.0 percent annually, and output in the accommodation industry is expected to grow at an annual rate of 6.1 percent. (See chart 11.) In the last three sets of projections, most of the fastest growing industries in terms of

output were in the information sector and in the healthcare and social assistance sector. Leisure and hospitality industries are among those with the fastest growing output because of their expected recovery from pandemic lows.

Chart 11. Output for 20 industries with fastest projected output growth for 2020–30, 2019 (prepandemic) and 2020



Click legend items to change data display. Hover over chart to view data.
Source: U.S. Bureau of Labor Statistics.

Within healthcare, offices of other health practitioners are projected to have the fastest output growth, at an annual rate of 4.3 percent. Personal care services and other personal services industries also are projected to be among the industries with the fastest output growth over the next decade, with respective growth rates of 7.0 percent and 6.5 percent.

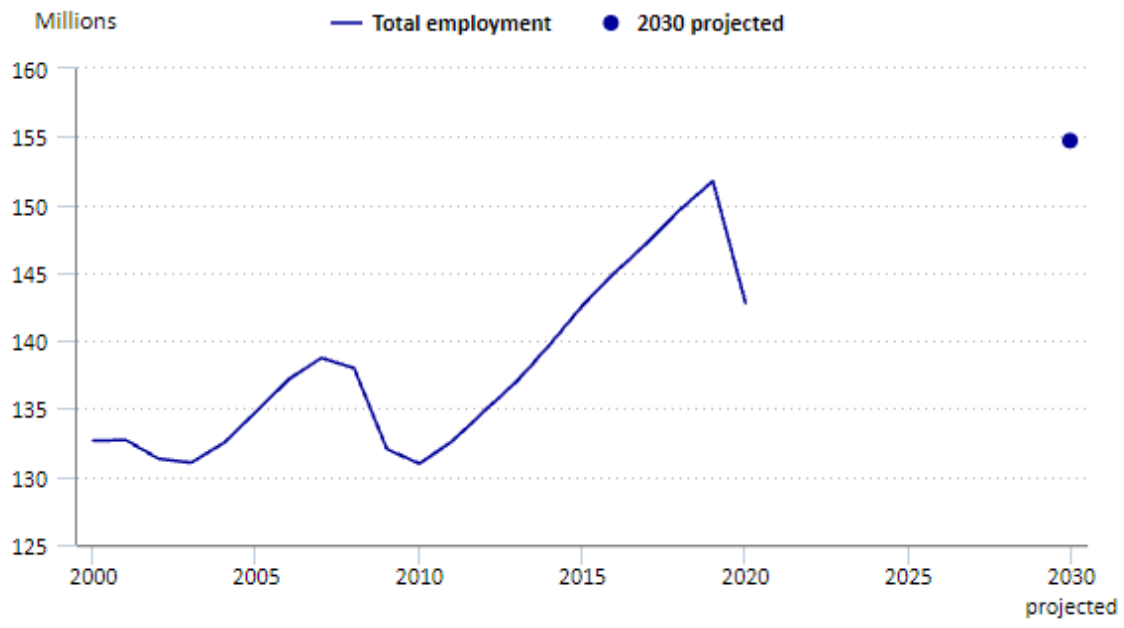
Industries with most rapidly declining output

Of the seven industries projected to decline in real output over the 2020–30 projections period, five are in manufacturing. (See publication table 2.8.) Within manufacturing, the tobacco manufacturing industry is projected to have the fastest annual rate of output decline, 3.8 percent. This expectation is due to a decades-long trend of continued decline in the number of people who use tobacco products.[37] Apparel, leather, and allied product manufacturing, whose output is projected to decline at an annual rate of 2.7 percent, is the second fastest declining industry, followed by coal mining, whose output is projected to decline at an annual rate of 2.0 percent.

Industry employment projections

BLS projects that total employment will reach 165.4 million in 2030, an increase of about 11.9 million from 2020. This increase represents an annual growth rate of 0.7 percent, slightly lower than the 0.8-percent growth rate experienced from 2010 to 2020. Most of the increase in employment, 93.5 percent, stems from nonagricultural wage and salary workers. The number of nonagricultural wage and salary jobs is projected to rise from 142.8 million in 2020 to 154.7 million in 2030, an increase of 11.9 million jobs. (See chart 12.) This increase is about the same as that recorded from 2010 to 2020. The 2020–30 employment increase for nonagricultural wage and salary workers (0.8 percent per year) is projected to be slightly slower than the increase experienced from 2010 to 2020 (0.9 percent per year).[38]

Chart 12. Total nonagricultural wage and salary employment, 2000–20 and 2030 projected



Click legend items to change data display. Hover over chart to view data.
Note: Total nonagricultural wage and salary employment is the sum of private household employment data from the Current Population Survey and nonagricultural wage and salary employment data, excluding data for logging, from the Current Employment Statistics survey.
Source: U.S. Bureau of Labor Statistics.

Sector employment

Employment in the service-providing sectors is projected to reach about 134.1 million in 2030, an increase of roughly 11.3 million jobs. This increase represents just over 95 percent of all jobs added from 2020 to 2030. Employment in the service-providing sectors is expected to grow by 0.9 percent annually over the next decade, slightly faster than both the rate experienced from 2010 to 2020 (0.8 percent) and the rate projected for the overall economy for 2020–30 (0.7 percent). (See table 4.)

Table 4. Employment by major industry sector, 2010, 2020, and 2030 projected

Industry sector	Employment (thousands of jobs)			Employment change (thousands of jobs)		Percent distribution			Compound annual rate of change (percent)	
	2010	2020	2030	2010– 20	2020– 30	2010	2020	2030	2010–20	2020–30
Total[1]	141,926.7	153,533.8	165,413.7	11,607.1	11,879.9	100.0	100.0	100.0	0.8	0.7
Nonagriculture wage and salary[2]	130,964.0	142,795.2	154,693.1	11,831.2	11,897.9	92.3	93.0	93.5	0.9	0.8
Goods producing, excluding agriculture	17,702.2	20,021.6	20,578.5	2,319.4	556.9	12.5	13.0	12.4	1.2	0.3
Mining	654.8	573.1	671.3	-81.7	98.2	0.5	0.4	0.4	-1.3	1.6
Construction	5,518.3	7,269.4	7,584.4	1,751.1	315.0	3.9	4.7	4.6	2.8	0.4
Manufacturing	11,529.1	12,179.1	12,322.8	650.0	143.7	8.1	7.9	7.4	0.5	0.1
Services providing, excluding special industries	113,261.8	122,773.6	134,114.6	9,511.8	11,341.0	79.8	80.0	81.1	0.8	0.9
Utilities	552.8	541.9	502.9	-10.9	-39.0	0.4	0.4	0.3	-0.2	-0.7
Wholesale trade	5,386.6	5,639.8	5,780.8	253.2	141.0	3.8	3.7	3.5	0.5	0.2
Retail trade	14,446.3	14,853.1	14,266.3	406.8	-586.8	10.2	9.7	8.6	0.3	-0.4
Transportation and warehousing	4,179.2	5,555.1	6,189.2	1,375.9	634.1	2.9	3.6	3.7	2.9	1.1
Information	2,707.2	2,694.4	2,977.2	-12.8	282.8	1.9	1.8	1.8	0.0	1.0
Financial activities	7,694.8	8,723.7	9,027.1	1,028.9	303.4	5.4	5.7	5.5	1.3	0.3
Professional and business services	16,782.9	20,245.7	22,265.6	3,462.8	2,019.9	11.8	13.2	13.5	1.9	1.0
Educational services	3,155.1	3,459.4	3,983.6	304.3	524.2	2.2	2.3	2.4	0.9	1.4
Healthcare and social assistance	16,820.0	19,776.2	23,092.6	2,956.2	3,316.4	11.9	12.9	14.0	1.6	1.6
Leisure and hospitality	13,048.7	13,326.7	16,566.3	278.0	3,239.6	9.2	8.7	10.0	0.2	2.2
Other services	5,997.7	6,048.8	6,804.9	51.1	756.1	4.2	3.9	4.1	0.1	1.2
Federal government	2,977.0	2,929.0	2,860.9	-48.0	-68.1	2.1	1.9	1.7	-0.2	-0.2
State and local government	19,513.5	18,979.8	19,797.1	-533.7	817.3	13.7	12.4	12.0	-0.3	0.4
Agriculture, forestry, fishing, and hunting[3]	2,102.9	2,241.3	2,296.3	138.4	55.0	1.5	1.5	1.4	0.6	0.2
Agriculture wage and salary	1,282.3	1,500.8	1,579.1	218.5	78.3	0.9	1.0	1.0	1.6	0.5
Agriculture self-employed	820.6	740.5	717.3	-80.1	-23.2	0.6	0.5	0.4	-1.0	-0.3
Nonagriculture self-employed	8,859.8	8,497.3	8,424.3	-362.5	-73.0	6.2	5.5	5.1	-0.4	-0.1

See footnotes at end of table.

[1] Employment data for wage and salary workers are from the U.S. Bureau of Labor Statistics Current Employment Statistics (CES) survey, which counts jobs. Employment data for the self-employed and for agriculture, forestry, fishing, and hunting are from the Current Population Survey (CPS) (household survey), which counts workers.

[2] Includes wage and salary data from the CES survey, except for private households, whose data are from the CPS. Logging workers are excluded.

[3] Includes data for agriculture, forestry, fishing, and hunting from the CPS, except for logging, whose data are from the CES survey. Government wage and salary workers are excluded.

Source: U.S. Bureau of Labor Statistics.

As in the last six projection sets, the healthcare and social assistance sector is projected to add the most jobs over the next 10 years. Employment in healthcare and social assistance is projected to increase by 3.3 million over the projections period, reaching a level of 23.1 million in 2030. This sector is projected to grow at an annual rate of 1.6 percent, the same as in 2010–20 but more than twice as fast as the projected annual growth for the overall economy. An aging population and longer life expectancies are expected to continue to drive strong demand for healthcare services.

Like in the last projections set, the retail trade industry is projected to have the largest employment decline among all service-providing industries. Employment in retail trade is projected to decline by 586,800 from 2020 to 2030, sharply contrasting its increase of 406,800 jobs during the previous decade. The declining trend in retail trade employment is driven by several factors, including a consumer behavioral shift toward e-commerce that has led to bankruptcy and consolidation of big-box stores.[39]

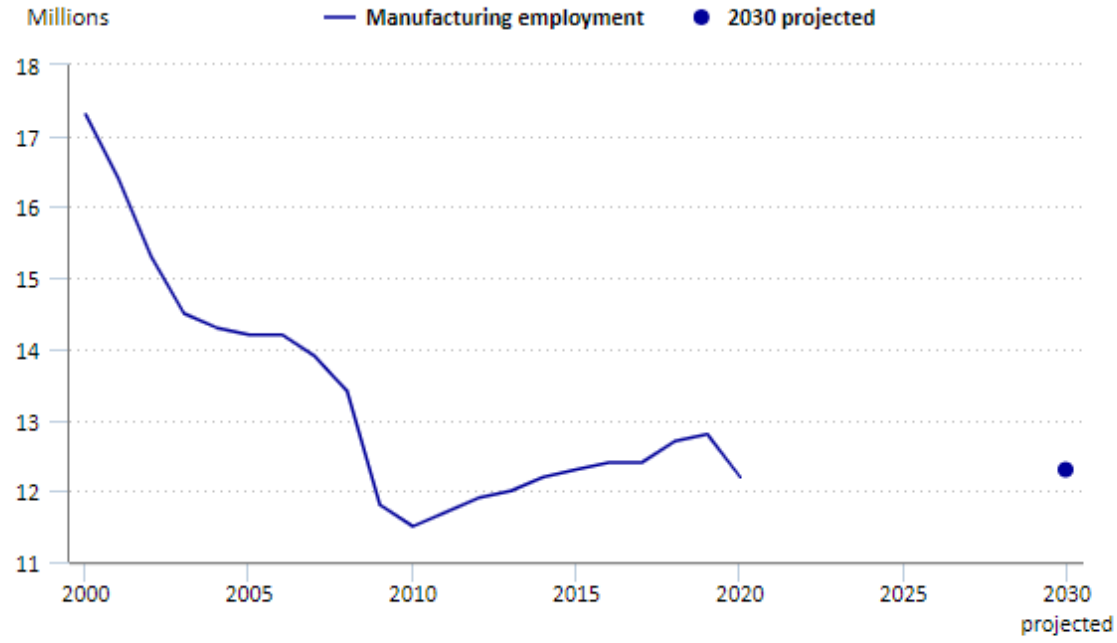
Employment in the goods-producing sectors (excluding agriculture) is projected to increase by 556,900 over the projections period, reaching about 20.6 million in 2030. In the previous decade, these sectors experienced much larger employment gains (2.3 million). Of the projected job gains over the next decade, 315,000 jobs are expected to be added in construction, at an annual rate of 0.4 percent. This increase is much smaller than that experienced by the sector during the previous decade, when construction added about 1.8 million jobs. In the previous decade, employment growth in construction was driven by the recovery from the housing market crash of 2008 and the Great Recession of 2007–09, in which the residential construction industry experienced particularly large employment declines. (See chart 13.)

Chart 13. Construction wage and salary employment, 2000–20 and 2030 projected

Click legend items to change data display. Hover over chart to view data.
Source: U.S. Bureau of Labor Statistics.

Employment in manufacturing—the largest sector among the goods-producing sectors (excluding agriculture), accounting for about 61 percent of total employment in these sectors in 2020—is projected to increase by 143,700 over the next decade. During the previous decade, manufacturing added 650,000 jobs. (See chart 14.) The projected slower employment growth in manufacturing reflects automation-driven productivity gains, which are expected to limit employment demand for low-skilled labor in the sector over the projections period.[40]

Chart 14. Manufacturing wage and salary employment, 2000–20 and 2030 projected



Click legend items to change data display. Hover over chart to view data.
Source: U.S. Bureau of Labor Statistics.

Mining is projected to add 98,200 jobs over the next decade, more than offsetting its loss of 81,700 jobs from 2010 to 2020. The projected growth in mining is primarily due to expected recovery growth, particularly in the support activities for mining industry, which saw a large employment drop in 2020.

The agriculture, forestry, fishing, and hunting sector is projected to add 55,000 jobs from 2020 to 2030, less than half the number of jobs it added from 2010 to 2020. Although agriculture wage and salary employment is projected to increase by 78,300 over the next decade, a continued decline in agriculture self-employment (−23,200) is expected to stymie the overall employment recovery from the previous decade. This decline is due, in part, to a declining number of small farms, to the emergence of large farming operations, and to older workers being more likely to be self-employed than any other working-age group in this industry.[41]

Industries with fastest growing employment

The COVID-19 pandemic substantially affected industries with the fastest growing and most rapidly declining employment. Because the pandemic lowered employment levels in the base year (2020) relative to 2019, several industries that would not have fallen in any of these two categories under normal (prepandemic) conditions did so in the 2020–30 projections.

Among all sectors, leisure and hospitality is projected to see the fastest employment growth over the next decade, comprising 7 of the 20 fastest growing industries. (See publication table 2.3.) Employment of promoters of events, and agents and managers, is expected to grow the fastest, at an annual rate of 6.4 percent. Following this industry are independent artists, writers, and performers, with an expected annual growth rate of 5.0 percent, and motion picture, video, and sound recording industries in the information sector, whose employment is projected to grow by

4.9 percent annually. The projected employment increase in the overall leisure and hospitality sector is due, in part, to businesses making up for losses suffered as a result of the pandemic and to the general public's desire to resume recreational activities. The leisure and hospitality sector is projected to return to its prepandemic employment trend over the 2020–30 period.

Within healthcare, the individual and family services industry is projected to grow the fastest, at an annual rate of 3.3 percent, about the same as in the 2019–29 projections. Demand for healthcare services is expected to continue to increase because of an aging baby-boom generation, longer life expectancies, and continued growth in the number of patients with chronic conditions.[42] Employment in healthcare industries has trended up in the last four projection periods.

Industries with most rapidly declining employment

Although the manufacturing sector is projected to experience employment growth over the next decade, many manufacturing industries are expected to see employment declines. The large manufacturing sector includes 11 of the 20 industries projected to experience the most rapid job declines from 2020 to 2030. (See publication table 2.4.) These expected declines are due, in part, to growing international competition and continued productivity gains driven by automation.[43] Employment in the tobacco manufacturing industry is projected to decline most rapidly, by 5.5 percent annually. A continued decline in tobacco use is one of the primary reasons for this expected drop.

Other industries projected to be among those with the most rapidly declining employment over the next decade include consumer goods rental and general rental centers, an industry within the financial activities sector expected to see an annual employment decline of 2.7 percent, and wired telecommunications carriers, an industry within the information sector projected to experience an annual employment decline of 1.9 percent.

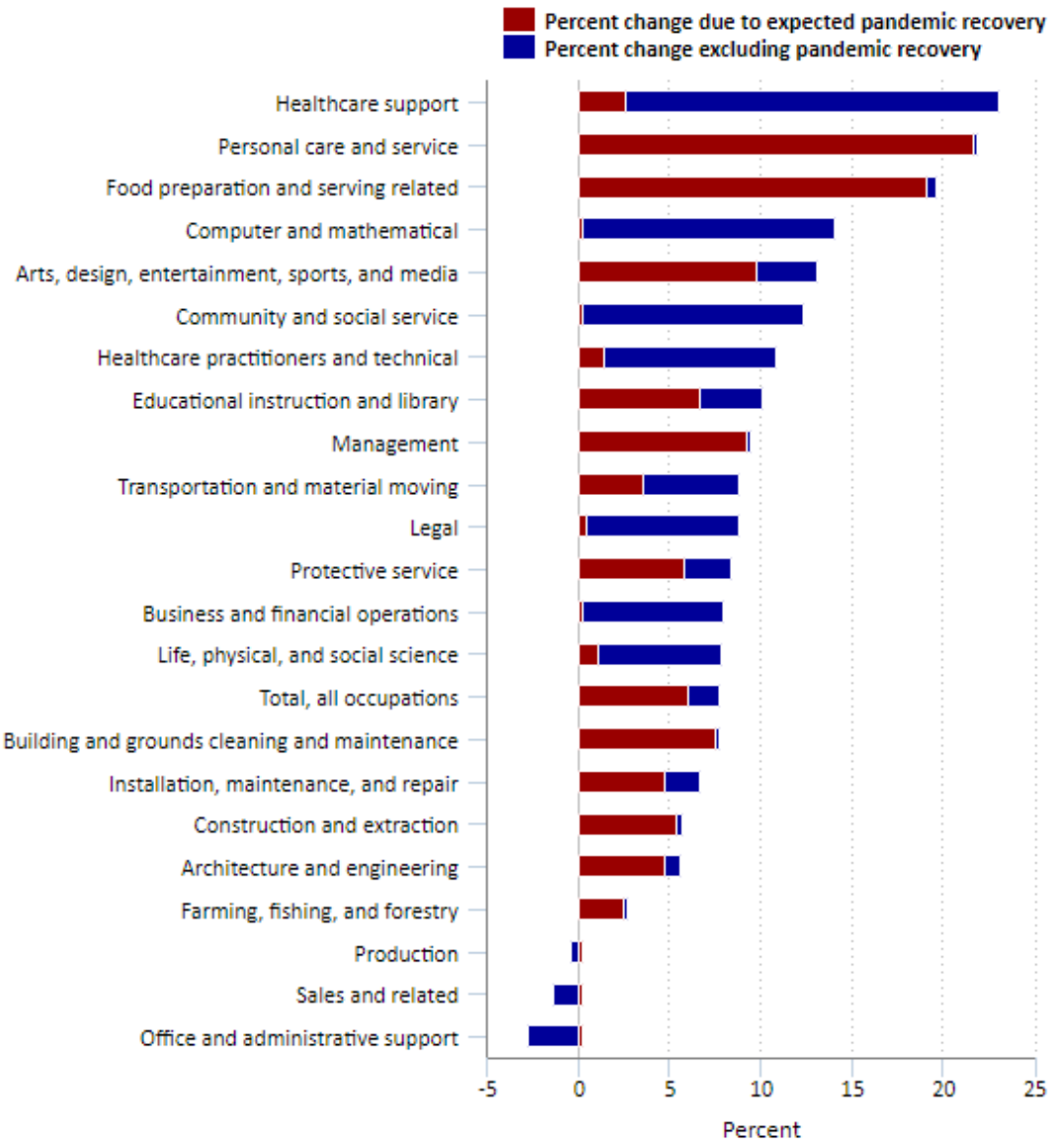
Occupational employment projections to 2030

This section presents BLS occupational employment projections by major occupational group and identifies detailed occupations expected to experience the fastest or most employment growth from 2020 to 2030, as well as occupations whose employment is projected to decline over the period.

Occupational projections of major groups

BLS develops employment projections for 22 major occupational groups.[44] Chart 15 shows those groups' projected percent changes in employment for 2020–30, including growth due to an expected recovery from the COVID-19 pandemic. Of the 22 major groups, all but 3 are expected to experience employment growth over the next decade.

Chart 15. Projected percent change in employment, by major occupational group, 2020–30



Click legend items to change data display. Hover over chart to view data.
Note: Pandemic recovery is defined as a reversal of declines in employment between 2019 and 2020 for occupational groups that experienced declines during that period.
Source: U.S. Bureau of Labor Statistics.

As seen in chart 15, the impact of the COVID-19 recession on occupational employment was uneven. For many occupations, the 2020–30 projections reflect considerable cyclical recovery from the recession, as well as expected long-term structural changes in labor demand. (See publication table 1.1A.)

Nineteen of the 22 major occupational groups experienced a drop in employment between 2019 and 2020. The average employment change for all occupations over this period was about −5.7 percent. The occupational groups with the sharpest employment losses during the COVID-19 recession may have higher projected growth rates for 2020–30 than groups less affected by the pandemic, and these rates may also be higher than those projected for 2019–29. However, most of the occupational groups with a long-term trend of declining employment are projected

to remain on a downward trajectory over the 2020–30 decade. These include the production, sales and related, and office and administrative support occupational groups, which were also projected to see employment declines in the 2019–29 projections.[45]

Three occupational groups—business and financial operations occupations, computer and mathematical occupations, and community and social service occupations—grew from 2019 to 2020 and thus have no projected growth attributable to the expected recovery of jobs lost between 2019 and 2020.

Occupations with fastest growing employment

Over the projections period, the healthcare support occupational group is expected to see the fastest employment growth, 23.1 percent. (See chart 15.) This group includes home health and personal care aides, nursing assistants, and various other healthcare support workers. Healthcare support occupations are poised to benefit from expected stronger demand for healthcare services—demand due largely to an aging population.[46]

Personal care and service occupations and food preparation and serving-related occupations are the second- and third-fastest-growing occupational groups, with projected employment growth of 21.7 percent and 19.6 percent, respectively. However, these figures reflect mainly a recovery of pandemic-related job losses incurred in 2020. By comparison, in the last set of projections, these two occupational groups were projected to be the fifth and sixth fastest growing.

On the other hand, expected strong employment growth for computer and mathematical occupations is due mostly to long-term economic changes driving up demand for workers in those occupations. A growing digital economy, partly accelerated by a continued deployment of Internet of Things (IoT) in consumer products and industrial applications, is a driving force behind this projected growth.[47] In addition, as the volume of sensitive data collected and stored by businesses expands with increasing online traffic and IoT applications, so does the need for cybersecurity. Big data also underpins expected demand for mathematical occupations, which will play an important role in the analysis and interpretation of large datasets.[48]

In about two-thirds of the top 30 fastest growing detailed occupations, employment growth can largely be attributed to cyclical recovery effects rather than expected long-term structural changes in labor demand. (See publication table 1.3.) Workers in these occupations are employed in industries that were hit the hardest by pandemic mitigation measures. As noted previously, these industries, which include leisure and hospitality, personal care services, and entertainment-related industries, are projected to experience strong cyclical recoveries over the projections period, and so are the occupations within them.

For example, employment of motion picture projectionists is expected to grow by 70.5 percent from 2020 to 2030, the fastest growth among all 790 detailed occupations. (See publication table 1.3.) This growth is expected to be entirely driven by an employment recovery in motion picture and video industries, which employ 69.9 percent of all motion picture projectionists. The motion picture and video exhibition industry lost just over 60 percent of its workforce in 2020, as movie theaters nationwide shut down because of pandemic-related lockdown mandates.[49] The projected employment growth for motion picture projectionists, then, is expected to be driven by a cyclical recovery and does not entail a long-term structural increase in demand for this occupation. In fact, the occupation's employment has been projected to decrease in the previous four projection sets, reflecting a decline in long-term

structural demand that is expected to result from digital film projectors requiring less manual operation and routine monitoring than traditional film projectors.[50]

However, some occupations are expected to see higher long-term structural growth because of pandemic-driven economic changes. For example, employment of epidemiologists is projected to grow 29.6 percent from 2020 to 2030, reflecting rising demand for infectious disease research.[51] In addition, because of expected increases in the use of telework, hybrid work arrangements, and telehealth medical services, many computer occupations may benefit from greater demand for IT services.[52]

The BLS employment projections identify structural changes in the labor market and do not predict business cycle fluctuations. Consequently, one of the fundamental assumptions of the employment projections is a full-employment economy in the target year of 2030. To provide information on the structural labor market changes expected over the next decade, the BLS Employment Projections program has created an alternate list of fastest growing occupations that excludes occupations largely expected to experience cyclical growth.[53] The top 10 occupations composing this list are shown in table 5. Nine of these occupations were also featured in the top 10 list in the 2019–29 projections.[54]

Table 5. Ten occupations with fastest projected employment growth for 2020–30, excluding occupations with above-average cyclical recovery

Occupation	Employment (thousands)		Change (2020–30)	
	2020	2030	Percent	Level
All occupations	153,533.8	165,413.7	7.7	11,879.9
Wind turbine service technicians	6.9	11.7	68.2	4.7
Nurse practitioners	220.3	335.2	52.2	114.9
Solar photovoltaic installers	11.8	17.9	52.1	6.1
Statisticians	42.0	56.9	35.4	14.9
Physical therapist assistants	93.8	126.9	35.4	33.2
Information security analysts	141.2	188.3	33.3	47.1
Home health and personal care aides	3,470.7	4,600.6	32.6	1,129.9
Medical and health services managers	429.8	569.4	32.5	139.6
Data scientists and mathematical science occupations, all other	63.2	83.0	31.4	19.8
Physician assistants	129.4	169.5	31.0	40.1

Note: Occupations whose decline in wage and salary employment from 2019 to 2020 was greater than that for all occupations (approximately 6 percent) are excluded. These excluded occupations may have fast growth rates that are predominantly driven by cyclical recovery rather than structural growth.

Source: U.S. Bureau of Labor Statistics.

Five of the 10 occupations listed in table 5 are in the healthcare sector. An increasing use of team-based healthcare models, an aging baby-boom population, and a rise in the number of individuals with chronic health conditions are expected to continue to drive demand for these healthcare occupations.[55] In addition, swelling demand for primary care services, paired with a shortage of physicians, has led to increased delegation of physician responsibilities to nurse practitioners and physician assistants.[56] Employment of nurse practitioners is projected to increase by 52.2 percent in the next decade, generating about 114,900 new positions. Employment of physician assistants is expected to grow 31.0 percent, adding roughly 40,100 new jobs. Similarly, physical therapy

service providers will likely continue to hire more assistants as a cost-saving measure and to meet growing demand from aging baby boomers for these services.[57] As a result, employment of physical therapist assistants is expected to grow 35.4 percent.

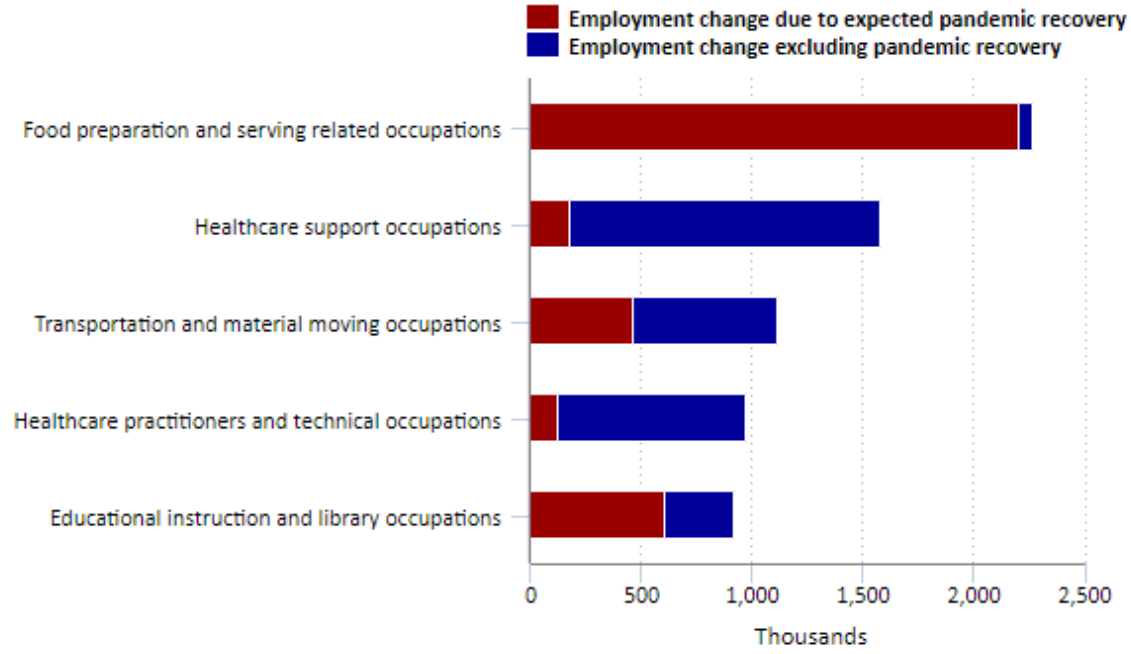
The occupation of home health and personal care aides, already among the top 10 fastest growing occupations (excluding those with above-average cyclical recovery), is expected to add the most jobs over the next decade. (See publication table 1.3A and table 1.4.) Employment in this occupation is projected to grow by about 1.1 million from 2020 to 2030, an increase of 32.6 percent. Home health and personal care aides assist the elderly or those with disabilities with daily living activities, provide nonmedical care services, and, in some cases, deliver basic medical care services.[58] An aging population is expected to drive stronger demand for elderly care and social assistance services, including in-home assistance or care in retirement communities, assisted living facilities, nursing homes, and other facilities.

Two of the top three occupations—wind turbine service technicians and solar photovoltaic (PV) installers—are related to renewable energy. (See publication table 1.3A.) The main driver of employment growth in these occupations is the expected continued expansion and adoption of alternative energy sources such as wind and solar energy over the next decade.[59] These sources are becoming more cost competitive with traditional energy sources such as coal, and their expansion should create new jobs in the installation and maintenance of the infrastructure required to harness them. Employment of wind turbine service technicians is projected to grow 68.2 percent from 2020 to 2030. However, this occupation is relatively small, having a 2020 employment level of approximately 6,900, and its fast growth will account for only about 4,700 new jobs over the next 10 years. Similarly, PV installers are expected to see rapid job growth over the next decade (52.1 percent), but because of the occupation's relatively small size, this growth will translate into only about 6,100 new jobs.

Occupations with largest job creation

Rapid employment growth does not necessarily result in many new jobs. Three occupational groups—food preparation and serving-related occupations, healthcare support occupations, and transportation and material-moving occupations—are each projected to add more than 1.0 million new jobs over the next decade. (See chart 16.) Together, these groups are expected to add roughly 4 out of every 10 new jobs by 2030. The food preparation and serving-related occupational group is expected to add the most jobs—approximately 2.3 million; however, as mentioned previously, most of these jobs will offset pandemic-related job losses in the leisure and hospitality sector. Three detailed occupations within this group are among the top 10 occupations with the largest expected job increases: restaurant cooks, fast food counter workers, and waiters and waitresses. (See publication table 1.4.)

Chart 16. Projected change in employment levels, by selected occupational groups, 2020–30



Click legend items to change data display. Hover over chart to view data.
Note: Pandemic recovery is defined as a reversal of declines in employment between 2019 and 2020 for occupational groups that experienced declines during that period.
Source: U.S. Bureau of Labor Statistics.

Healthcare-related occupations are expected to experience not only rapid employment growth but also notable gains in employment levels. Healthcare support occupations are expected to add about 1.6 million new jobs over the next decade, while healthcare practitioners and technical occupations are projected to add about 974,600 new jobs. Four of the top 10 largest job increases that exclude the effects of the pandemic recovery are projected to occur in healthcare-related occupations, including home health and personal care aides and registered nurses. (See table 6.)

Table 6. Ten occupations with largest projected employment growth for 2020–30, excluding occupations with above-average cyclical recovery

Occupation	Employment (thousands)		Change (2020–30)	
	2020	2030	Percent	Level
All occupations	153,533.8	165,413.7	7.7	11,879.9
Home health and personal care aides	3,470.7	4,600.6	32.6	1,129.9
Software developers and software quality assurance analysts and testers	1,847.9	2,257.4	22.2	409.5
Registered nurses	3,080.1	3,356.8	9.0	276.8
Laborers and freight, stock, and material movers, hand	2,821.7	3,077.5	9.1	255.8
General and operations managers	2,411.9	2,638.2	9.4	226.3
Market research analysts and marketing specialists	740.9	904.5	22.1	163.6

See footnotes at end of table.

Table 6. Ten occupations with largest projected employment growth for 2020–30, excluding occupations with above-average cyclical recovery

Occupation	Employment (thousands)		Change (2020–30)	
	2020	2030	Percent	Level
Medical and health services managers	429.8	569.4	32.5	139.6
Medical assistants	720.9	853.5	18.4	132.6
Management analysts	907.6	1,032.0	13.7	124.4
Heavy and tractor-trailer truck drivers	1,951.6	2,073.6	6.3	122.1

Note: Occupations whose decline in wage and salary employment from 2019 to 2020 was greater than that for all occupations (approximately 6 percent) are excluded. These excluded occupations may have fast growth rates that are predominantly driven by cyclical recovery rather than structural growth.

Source: U.S. Bureau of Labor Statistics.

Transportation and material-moving occupations are projected to add roughly 1.1 million new jobs by 2030, at a rate about as fast as the average rate for the total economy. A little less than half of these additions are expected to represent a recovery of jobs lost during the COVID-19 pandemic. (See publication table 1.1A.) The projected job gains are largely concentrated in various motor vehicle operator occupations and in material-moving occupations. An expected increase in online shopping, app-based ordering, and the use of delivery services is expected to create more opportunities for light truck drivers, driver/sales workers, and stockers and order fillers.[60]

Finally, educational instruction and library occupations are projected to add roughly 920,500 jobs by 2030. However, about two-thirds of these gains are expected to represent a recovery of jobs lost because of school closures during the pandemic. (See publication table 1.1A.) The pandemic led to the temporary closure of 120,000 schools nationwide in 2020.[61]

Occupations with declining employment

Three occupational groups—office and administrative support occupations, sales and related occupations, and production occupations—are projected to lose jobs over the next decade. (See table 7.) Between 2019 and 2020, these groups experienced notable declines in employment because of the COVID-19 recession.

Table 7. Occupational groups with projected declines in employment, 2020–30

Occupational group	Change (2020–30)	
	Percent	Level (thousands)
Office and administrative support	-2.8	-539.2
Sales and related	-1.4	-202.9
Production	-0.4	-39.0

Source: U.S. Bureau of Labor Statistics.

Employment in the office and administrative support occupational group is expected to fall by 2.8 percent from 2020 to 2030. This group is also projected to shed the most jobs over the next decade, losing about 539,200 positions. Automation of administrative and clerical tasks through software programs and systems is expected to

reduce demand for office and administrative support occupations.[62] For example, software tools for scheduling meetings and appointments reduce the need for secretaries and administrative assistants, and digital data collection and handwriting recognition software can now perform work previously done by data entry keyers.[63] Of the 30 occupations with the steepest projected declines in employment, 9 are office and administrative support occupations. (See publication table 1.5.) Job declines in these nine occupations constitute over half of all projected job losses in the office and administrative support occupational group.

The continued displacement of brick-and-mortar retail by e-commerce,[64] paired with the automation of checkout positions,[65] is expected to drive the decline in sales and related occupations; about half of all sales occupations are held by retail salespersons and cashiers. These occupations may see additional downward pressure on employment from the strengthening of online shopping trends caused by behavioral changes during the pandemic—changes that are expected to persist.[66] Sales and related occupations are projected to lose about 202,900 jobs over the next decade, a 1.4-percent drop in employment. The occupation of cashiers, the fourth largest in 2020, is projected to lose the most jobs of any occupation. (See publication table 1.6.) Employment of cashiers is projected to drop by about 336,400 over the projections period, which would make them the sixth-largest occupation by 2030.

Likewise, manufacturing automation through increased use of robotics and other productivity-enhancing technologies is expected to drive the employment decline in production occupations.[67] Employment in these occupations is projected to decline 0.4 percent over the next decade, a loss of about 39,000 jobs. Of the 30 occupations with the sharpest employment declines, 12 are in the production occupational group and include various machine and tool setters, assemblers, and operators. (See publication table 1.5.)

Conclusions

Because of an aging population and slower population growth, labor force growth is expected to be slower in 2020–30 than in previous decades. Older people participate in the labor force less than younger people do, so an aging population shrinks the pool of workers available for employment. However, because the base year of the projections (2020) is a recession year, economic growth rates over the next decade are expected to be higher than those in previous projection periods. Total employment is projected to grow 7.7 percent from 2020 to 2030.

Over the projections period, employment is projected to grow faster in the service-providing sector than in the goods-producing sector. Occupations that provide healthcare or services related to healthcare are projected to be among those with the fastest employment growth. An aging population is projected to drive demand for more healthcare and related services. In addition, the number of people with chronic health conditions is expected to continue to grow, adding to the demand for services provided by healthcare-related occupations. Other occupations projected to grow rapidly include those involving computers, math, and alternative energy. Fast growth is also projected for many occupations concentrated in industries expected to recover from pandemic-induced declines, namely those in the hospitality and entertainment sectors.

Although the extent of structural economic change arising from the COVID-19 pandemic remains uncertain, some industries and occupations are expected to see altered long-term growth trajectories because of pandemic impacts. These include computer-related industries and occupations, which are expected to see higher demand

due to expanded telework, and retail trade, which is expected to decline faster as a result of an accelerated shift from brick-and-mortar retail to e-commerce.

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NOTES

1 Annual growth refers to a compound annual growth rate.

2 In this discussion, cyclical change refers to short-term business cycle fluctuations around a trend. For example, employment may decline in a particular industry during a recession (cyclical decline) and grow during the recovery immediately following the recession (cyclical growth), eventually returning to the long-term trend. Structural change refers to the long-term trend and, in the case of employment, reflects changes in the allocation of employment by industry and occupation. Structural changes in industry or occupational employment are based on factors such as changes in consumer preferences that affect the demand for goods and services or new technology that affects production practices.

3 Population refers to the civilian noninstitutional population ages 16 and older, excluding “active duty members of the U.S. Armed Forces, people confined to, or living in, institutions or facilities such as prisons, jails, and other correctional institutions and detention centers, and residential care facilities such as skilled nursing homes” (https://www.bls.gov/cps/definitions.htm#population).

4 Total employment is the sum of the employment figures for nonagricultural wage and salary workers; agricultural, forestry, fishing, and hunting workers; and self-employed workers. Nonagricultural wage and salary employment data are from the U.S. Bureau of Labor Statistics (BLS) Current Employment Statistics (CES) survey, excluding data for logging, and include private household employment data, which are provided by the Current Population Survey (CPS). The CPS also provides data for self-employed workers and agricultural, forestry, fishing, and hunting workers, except data for logging workers, which are provided by the CES survey.

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