ECONOMIC OUTLOOK

The longest economic expansion in U.S. history ended in March 2020 with the onset of the COVID-19 pandemic. Just one month earlier, both the U.S. and California were at historic low unemployment rates, at 3.5 percent and 3.9 percent, respectively. California in particular had an extraordinarily strong economy with a nominal Gross Domestic Product of $3.1 trillion in 2019, and employment growth rates that had consistently outpaced the rest of the nation.

The first U.S. case of COVID-19 was confirmed on January 20, 2020 and on January 26, 2020 in California. California immediately began implementing its pandemic plan, which had been developed over the last 10 years to ensure that public health would be protected in the case of a pandemic. This planning included implementing policies necessary to protect the public health, such as stay-at-home orders—first for the most vulnerable and then the general population, social distancing guidelines for when Californians had to leave their home and the closure of non-essential businesses. These policies resulted in a COVID-19 incidence that was lower in California than the rest of the United States. As of May 1, over 1 million cases and 67,000 deaths were reported in the nation. In California, 55,000 cases had been reported by May 1 (5 percent of the nation's total cases), and over 2,000 deaths (or 3 percent of all U.S. deaths). The public health measures put in place to slow the spread of the pandemic also had an immediate impact on the state's economy. And, the continuing pandemic—with no treatment or vaccine currently available—will have an ongoing impact on California's economic outlook.

Over 30 million Americans filed an initial unemployment claim from mid-March through early May. This includes 4.0 million claims from California—one out of every five California workers has filed an unemployment claim since mid-March. California's economic outlook has been affected dramatically by the pandemic.

California unemployment rate is expected to peak at 24.5 percent in the second quarter of 2020, before slowly decreasing to 10.6 percent by the fourth quarter of 2023. California personal income and construction permits are expected to decrease by around 9 percent and 21 percent, respectively in 2020, while inflation is projected to decelerate from 3 percent in 2019 to 1 percent in 2020.

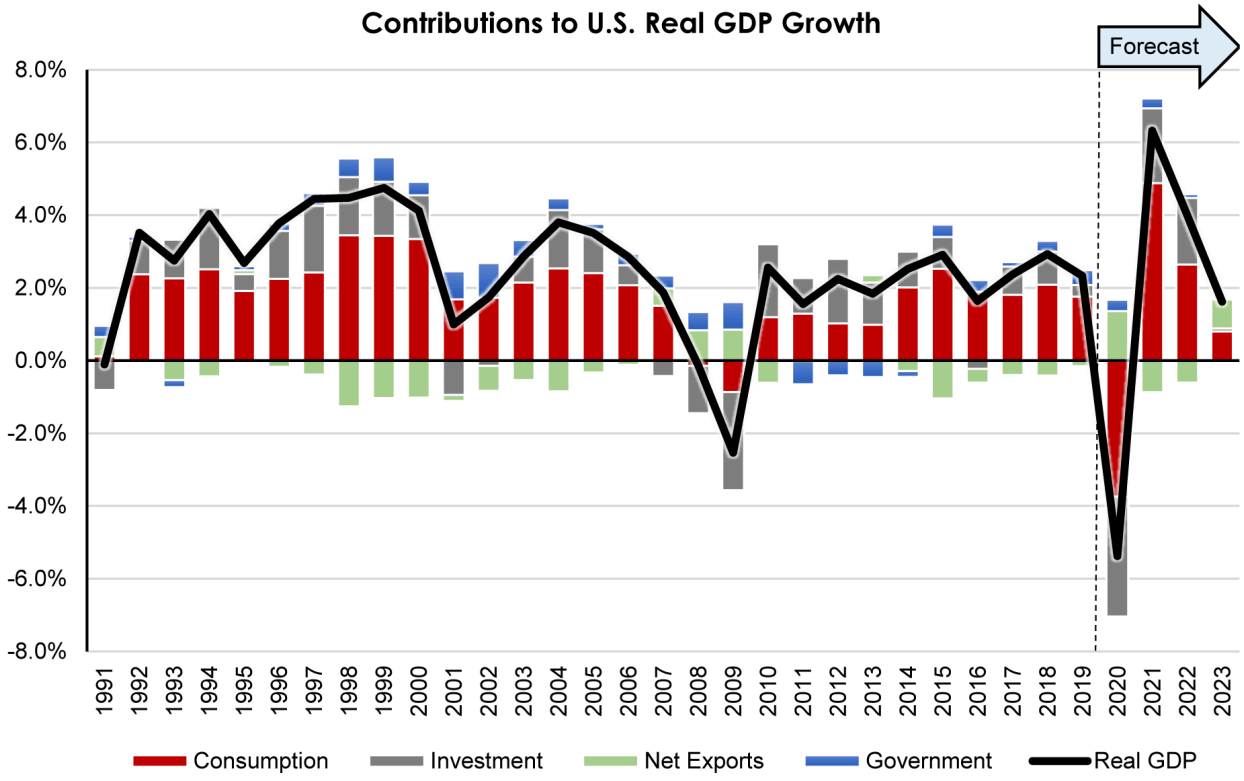
Economic recovery from the COVID-19 Recession is projected to be only slightly faster than during the Great Recession. Recognizing uncertainty around current unprecedented events and subsequent policy actions, an extended disruption scenario was modeled to illustrate how the pace and type of recovery may vary given different policy environments, business choices, and consumer behaviors.

THE NATION

After a growth of 2.3 percent in 2019, the May Revision assumes U.S. real GDP will contract by 5.4 percent in 2020—a drop more than twice the 2.5-percent decrease in 2009 at the height of the Great Recession. GDP growth is projected to begin to rebound starting in 2021, growing at 4 percent on average through 2023. The U.S. forecast was finalized based on data available in early April; unlike the California outlook, it does not incorporate data from the rest of April and early May.

U.S. real GDP contracted by 4.8 percent on a seasonally adjusted annualized rate basis in the first quarter of 2020. Household consumption saw its highest quarterly decline since 1980, reflecting the introduction of stay-at-home orders and business closures throughout the country. Second-quarter real GDP is expected to fall by 26.5 percent on a seasonally adjusted annualized rate basis due to the continuation of widespread stay-at-home orders and various non-essential business closures. Consumption, which makes up about two-thirds of GDP, is expected to be the primary drag on growth as households stop spending money on goods and services as a result of business closures, rising unemployment, ongoing public health concerns, and lower consumer confidence. (See figure on Contributions to U.S. Real GDP Growth.) Investment, imports, and exports, are also projected to decline sharply in 2020; as a result, U.S. real GDP will fall by 5.4 percent within one year after the longest period of economic expansion in U.S. history. During the Great Recession, U.S. real GDP fell by 4.0 percent over seven

quarters from its peak in the fourth quarter 2007 to its trough in the second quarter of 2009.

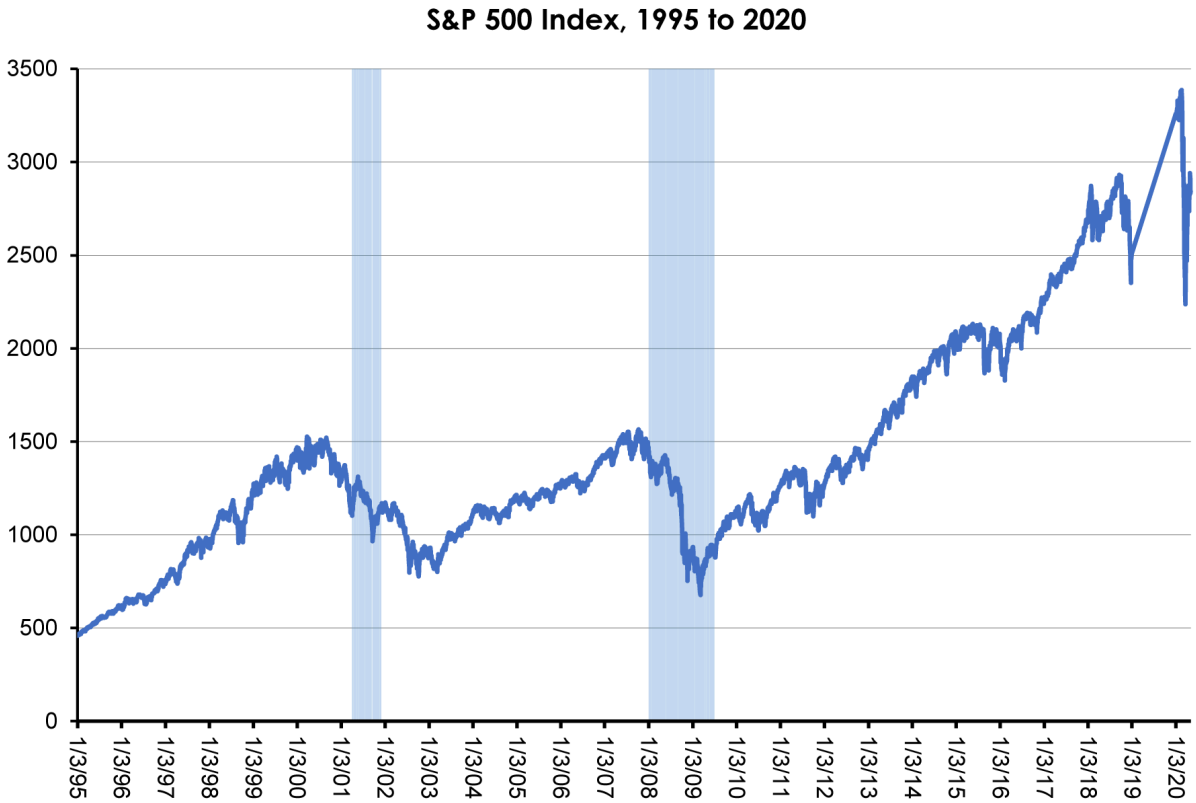


Source: U.S. Bureau of Economic Analysis; CA Department of Finance, May Revision Forecast.

The U.S. unemployment rate rose from 3.5 percent in February 2020 to 4.4 percent in March 2020, with the number of employed decreasing from 158.8 million to 155.8 million. At the same time, the labor force - those employed or actively looking for work - fell from 164.5 million to 162.9 million. The unemployment rate rose to 14.7 percent in April, with the number of employed decreasing to 133.4 million. The number of people actively looking for work rose to 23.1 million, bringing the labor force to 156.5 million.

In the second quarter of 2020, the U.S. unemployment rate is projected to average 8.4 percent, only four months after averaging around 3.5 percent from September 2019 to February 2020—its lowest rate since December 1969. (See figure on Selected Economic Indicators.) Compared to the Great Recession, from the point unemployment began to rise in the third quarter of 2007, it took almost two years for the unemployment rate to reach 8.7 percent before eventually peaking at 10.0 percent in October 2009. Unemployment claims data since early April, that are not incorporated

in the U.S. forecast, suggests the U.S. unemployment rate will be much higher than the 8.4 percent forecast in the second quarter.



Shaded areas indicate U.S. recession.
Source: S&P Dow Jones Indices.

The stock market was especially volatile in early 2020. With record intra-day swings, single-day gains, and the largest point drops in history, along with business and political uncertainty, several companies temporarily suspended dividend payouts. The Standard and Poor's 500 index (S&P 500) fell almost one third from almost 3,400 to 2,300 in just over four weeks through February and March. (See figure on S&P 500 Index.)

In response to the economic fallout from COVID-19, Congress passed a series of measures to alleviate some of the negative impacts. The most significant of which was the CARES Act, which made over $2 trillion available for relief, including direct stimulus checks for individuals, expanding the scope and benefit amount of unemployment insurance, loans for large businesses, some direct aid for state and local governments and forgivable Paycheck Protection Program (PPP) loans for small businesses, designed to encourage worker retention. Uptake of PPP loans was so rapid that funds were quickly exhausted and Congress authorized an additional $310 billion for the program in April.

Selected Economic Indicators

				Forecast			
	2017	2018	2019	2020	2021	2022	2023
United States							
Nominal gross domestic product, $ billions	$ 19,519	$ 20,580	$ 21,428	$ 20,578	$ 22,181	$ 23,413	$ 24,259
Real gross domestic product, percent change	2.4%	2.9%	2.3%	-5.4%	6.3%	4.0%	1.6%
Contributions to real GDP growth							
Personal consumption expenditures	1.8%	2.1%	1.8%	-3.7%	4.9%	2.6%	0.8%
Gross private domestic investment	0.8%	0.9%	0.3%	-3.3%	2.1%	1.8%	0.1%
Net exports	-0.3%	-0.3%	-0.2%	1.4%	-0.9%	-0.6%	0.8%
Government purchases of goods and services	0.1%	0.3%	0.4%	0.3%	0.3%	0.1%	-0.1%
Personal income, $ billions	$ 16,879	$ 17,819	$ 18,602	$ 18,913	$ 19,494	$ 20,406	$ 21,176
Corporate profits, percent change	0.7%	-3.3%	0.2%	-20.3%	50.6%	2.4%	1.8%
Housing permits, thousands	1,282	1,329	1,386	--	--	--	--
Housing starts, thousands	1,209	1,250	1,298	1,077	1,121	1,259	1,244
Median sales price of existing homes	$ 248,800	$ 261,600	$ 274,600	--	--	--	--
Federal funds rate, percent	1.0%	1.8%	2.2%	0.4%	0.1%	0.1%	0.1%
Consumer price index, percent change	2.1%	2.4%	1.8%	0.7%	2.3%	2.6%	2.7%
Unemployment rate, percent	4.4%	3.9%	3.7%	8.0%	7.9%	4.3%	3.6%
Civilian labor force, millions	160.3	162.1	163.5	163.6	163.1	165.4	167.2
Nonfarm employment, millions	146.6	148.9	150.9	144.1	142.7	150.9	154.1
California							
Personal income, $ billions	$ 2,370	$ 2,514	$ 2,634	$ 2,400	$ 2,402	$ 2,510	$ 2,647
Exports of goods, percent change	5.3%	3.6%	-2.7%	--	--	--	--
Housing permits, thousands	114	117	113	89	95	104	118
Housing unit net change, thousands	85	78	95	--	--	--	--
Median sales price of existing homes	$ 537,860	$ 569,480	$ 592,450	--	--	--	--
Consumer price index, percent change	2.9%	3.7%	3.0%	1.0%	2.9%	3.5%	3.4%
Unemployment rate, percent	4.8%	4.3%	4.1%	18.0%	17.6%	15.6%	12.1%
Civilian labor force, millions	19.2	19.3	19.4	19.4	19.5	19.5	19.6
Nonfarm employment, millions	16.8	17.2	17.4	14.9	15.0	15.5	16.1
Percent of total nonfarm employment							
Mining and logging	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Construction	4.8%	5.0%	5.1%	5.2%	4.2%	4.5%	4.6%
Manufacturing	7.8%	7.7%	7.6%	7.5%	7.6%	7.5%	7.5%
Trade, transportation, and utilities	17.9%	17.7%	17.5%	16.0%	16.3%	16.6%	17.1%
Information	3.1%	3.2%	3.3%	3.6%	3.7%	3.8%	3.9%
Financial activities	4.9%	4.9%	4.7%	4.8%	4.8%	4.7%	4.7%
Professional and business services	15.3%	15.5%	15.6%	14.7%	15.0%	15.1%	15.1%
Educational and health services	15.8%	15.9%	16.1%	19.4%	19.7%	19.4%	19.0%
Leisure and hospitality	11.6%	11.6%	11.7%	8.5%	8.5%	8.7%	8.8%
Other services	3.4%	3.3%	3.3%	2.4%	2.4%	2.5%	2.5%
Government	15.2%	15.0%	15.0%	17.7%	17.6%	17.1%	16.6%

Forecast based on data available as of April 2020.
Percent changes calculated from unrounded data.

In mid-March, the Federal Reserve cut the benchmark interest rates to a range of 0 to 0.25 percent from a range of 1.0 to 1.25 percent, and has signaled that interest rates will remain in this range for the foreseeable future. Benchmark interest rates were set to the same range during the Great Recession although the magnitude of the cut was much greater—falling from a target of 5.25 percent in August 2008, and then interest rates remained near zero for several years until December 2015. In addition to cutting interest

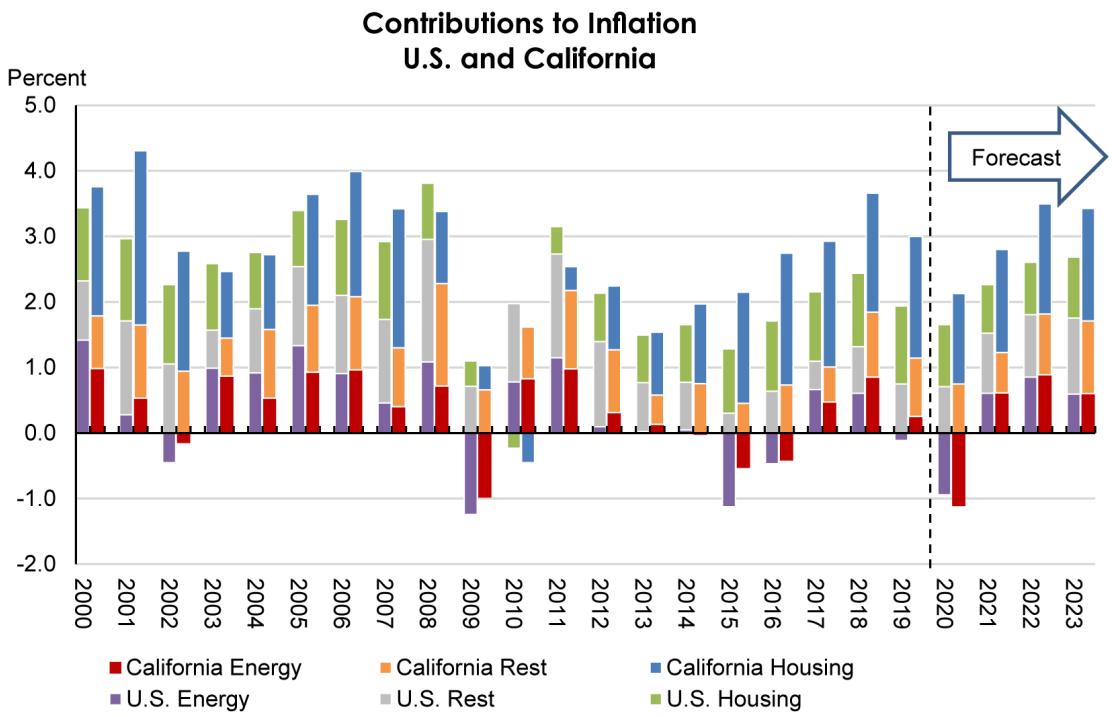
rates, the Federal Reserve also announced its commitment to using unconventional monetary policy to support the economy. This included announcing unlimited use of quantitative easing to support financial markets by buying government and corporate bonds as well as engaging in a main street lending program by purchasing loans made to main street businesses from banks. These federal measures were factored into the U.S. and California inflation forecast as well as in the California economic outlook.

Headline inflation, which is the rate of change in the price of all goods and services, is expected to slow in 2020 as demand for goods and services is drastically reduced with stay-at-home orders (except for essential needs) and social distancing measures in place. The headline Consumer Price Index (CPI) is a weighted average of the prices of a market basket of consumer goods and services. A surge in demand for goods and services can cause inflation to rise as consumers are willing to pay more for the goods or services. Conversely, a drop in demand for goods and services can cause inflation to slow as producers or service providers are willing to charge less for their goods or services to clear inventory or spare capacity. In March 2020, U.S. inflation already showed signs of deceleration, slowing to 1.5 percent following 2.4 percent on average in January and February 2020. U.S. headline inflation is expected to turn negative in the second quarter of 2020 (-3.7 percent), and to rebound in the second half of 2020 to an average of 2.2 percent, bringing annual 2020 U.S. headline inflation to 0.7 percent, following 1.8 percent in 2019. U.S. headline inflation is expected to gradually rise to 2.3 percent in 2021 and to firm up to around 2.7 percent on average in 2022 and 2023 as economic recovery gets underway and consumer confidence strengthens. (See figure on Contributions to Inflation U.S. and California.)

CALIFORNIA

The state's unemployment rate rose to 5.3 percent in March following six consecutive months at a record low 3.9 percent. The number of initial unemployment claims filed since then suggests that unemployment will rise rapidly in the short-term. Initial unemployment claims data show that 4.0 million Californians, or one in five workers, applied for unemployment insurance in mid-March through early May. Independent contractors and self-employed workers have also been able to claim benefits under the federally-funded Pandemic Unemployment Assistance program launched on April 28, 2020.

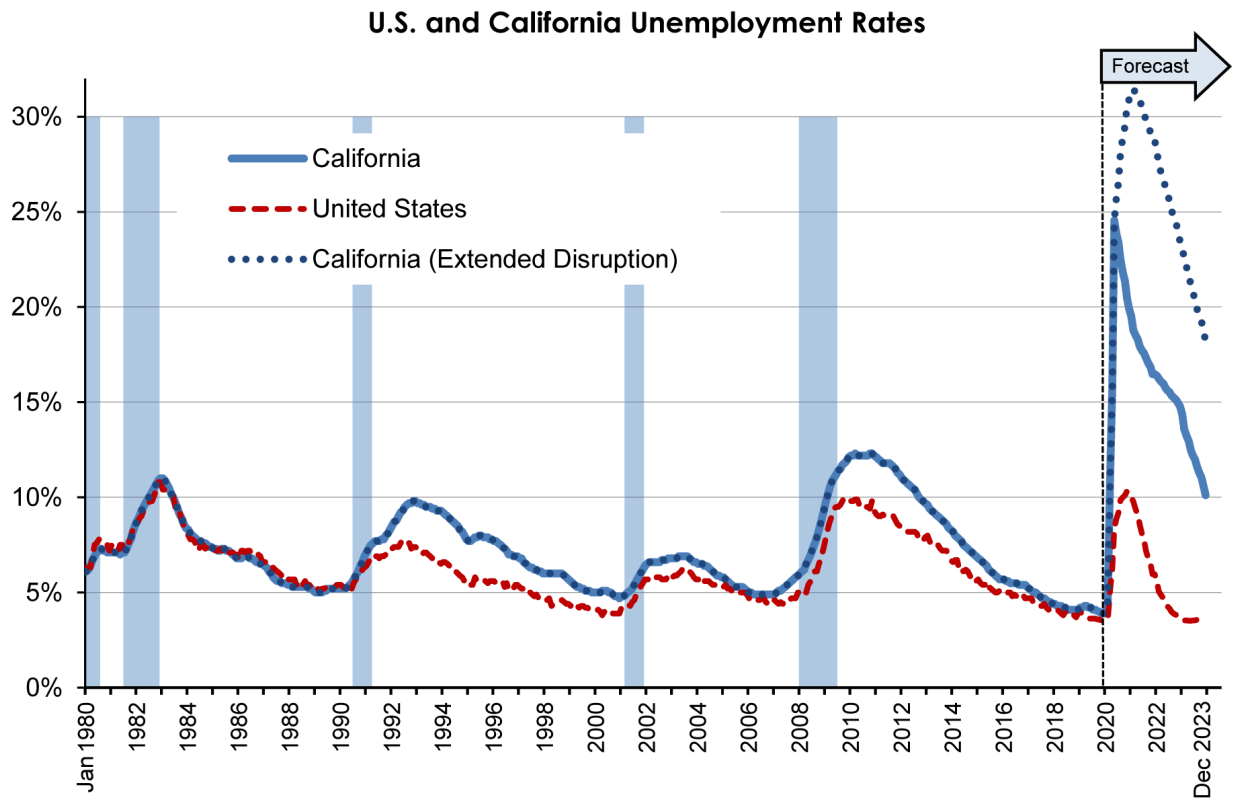
The May Revision forecast projects the negative economic impacts due to the pandemic to be largest in the second quarter of 2020 and to persist throughout the forecast. A slow recovery is projected as restrictions gradually begin to ease.



Source: U.S. Bureau of Labor Statistics; CA Department of Finance, May Revision Forecast.

The unemployment rate is projected to reach 24.5 percent in the second quarter of 2020, meaning that one in four California workers will be out of work, or around 4.8 million people. This is more than twice the 2.2 million Californians unemployed during the height of the Great Recession in the fourth quarter of 2010— with a peak unemployment rate of 12.3 percent. Following this peak, the unemployment rate is expected to gradually decline, reaching 10.6 percent in the fourth quarter of 2023. (See figure on U.S. and California Unemployment Rates.)

Around 3.7 million nonfarm jobs are expected to be lost over the first two quarters of 2020, around one in five of the jobs that existed in 2019. While job losses are expected to occur in most sectors, the most severe losses will fall disproportionately on lower-income workers. The number of jobs in the leisure and hospitality sector is expected to decrease by 53 percent in the first two quarters of 2020 or by around 1.1 million jobs. Similarly, nonfarm employment in administrative, waste, and remediation services is expected to contract by 52 percent or by 590,000 jobs, retail trade by 39 percent or by 655,000 jobs, and other services by 54 percent or by 314,000 jobs. These sectors are not as adaptable to teleworking as other affected industries such as information or professional, scientific, and technical services. While the forecast projects 3.6 million nonfarm jobs lost in the second quarter, the total number of unemployed Californians will reach 4.8 million due to self-employed and independent contractors who will lose

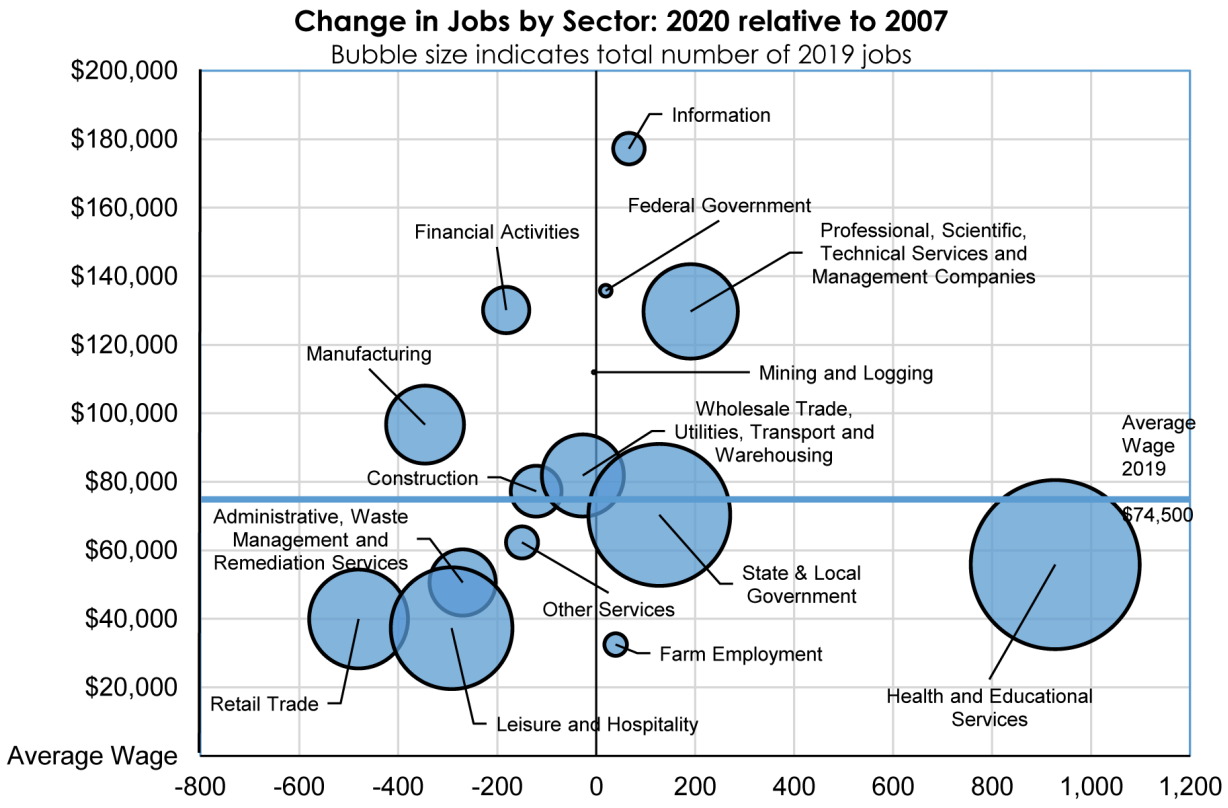


Shaded areas indicate U.S. recessions.
Source: U.S. Bureau of Labor Statistics; CA Employment Development Department, Labor Market Information Division; CA Department of Finance, May Revision Forecast.

work, and to account for the additional 750,000 Californians who were already seeking work in early 2020.

The sudden job losses in 2020 are expected to largely undo a decade of job growth in many sectors since the Great Recession, and to exacerbate ongoing job losses in some others. (See figure on Change in Jobs by Sector: 2020 Relative to 2007.) For example, between 2007 and 2019, the leisure and hospitality sector added 473,000 jobs to reach 2 million jobs. In 2020, the sector is projected to contract by around 765,000 jobs, meaning that the sector will average almost 300,000 fewer jobs this year than in 2007 just prior to the onset of the Great Recession. An exception to this is the educational and health services sector, which is expected to continue to grow slightly in 2020 as demand for services in this sector remains high. This was also the only sector that continued to add jobs throughout the Great Recession and recovery, adding 835,000 jobs from 2007 to reach 2.8 million jobs in 2019.

After falling by 14.3 percent in 2020, nonfarm employment is expected to grow by 0.6 percent in 2021. Job growth is expected to accelerate to 3.2 percent in 2022 and 3.8 percent in 2023; however, the level of nonfarm jobs in 2023 is still expected to remain 8 percent lower than the 2019 level. The May Revision forecast projects that it will take

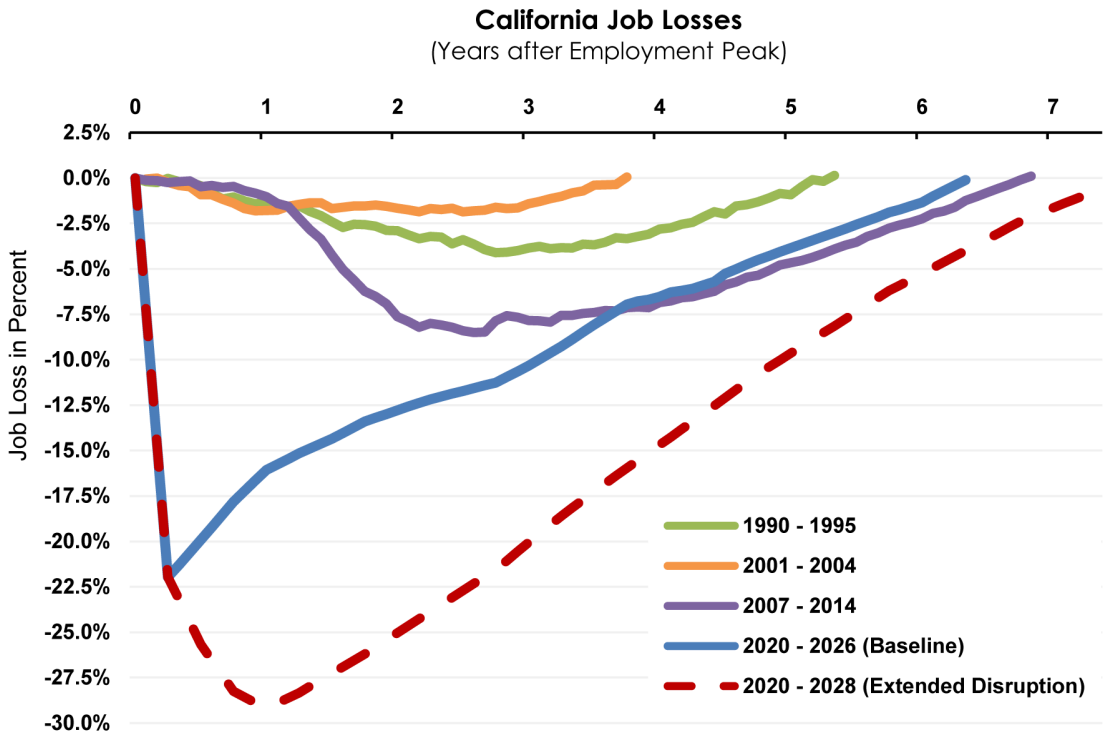


Source: CA Employment Development Department, Labor Market Information Division; CA Department of Finance, May Revision Forecast.

six years to return to the level of jobs California had before the outbreak of COVID-19, one year faster than the recovery from the Great Recession. (See figure on California Job Losses.)

This forecast assumes that the public health crisis of the pandemic will be controlled and economic activity will increase as statewide stay-at-home orders are modified and eased. The recovery is expected to be gradual, fairly measured, and restrained as firms repair business ties, and consumers and businesses slowly regain the confidence to spend money. The ongoing risks of potential future outbreaks are also expected to cause businesses to make fundamental changes in their operations, such as reducing restaurant capacity, implementing temperature checks and/or health screenings, and purchasing personal protective equipment for their employees. This also includes increasing adoption of automation and online sale channels which are expected to permanently lower the number of jobs from 2019 levels in public-serving sectors such as retail, administration, and leisure and hospitality. Other sectors, including information, transportation and warehousing, professional, scientific and technical services, and management of companies, are expected to have more jobs in the long run as

demand for services in these industries increases in the near future. For example, regular teleworking may become a permanent arrangement for some industries.



Source: U.S. Bureau of Labor Statistics; CA Employment Development Department, Labor Market Information Division; CA Department of Finance, May Revision Forecast.

While the state will experience an unprecedented increase in unemployment and loss of jobs, the average wage per job in California is projected to grow slightly by 1.4 percent in 2020 after growing by 3.9 percent in 2019. Average wage growth is then expected to rise gradually each year—by 2.6 percent in 2021, 3.1 percent in 2022 and 3.4 percent in 2023. By comparison, during the Great Recession, wage growth slowed to 0.4 percent in 2009, before rising each year to reach a growth of 4.2 percent by 2012. The slight positive wage growth in 2020 largely reflects the changing composition of jobs, as businesses in higher-paying sectors are more likely to retain staff due to the ability to telework, while job losses will be greater in lower-paying sectors.

Average wages in most sectors are projected to decline as firms freeze hiring, postpone bonus and salary increases, and cut hours for hourly wage earners. In 2020, the average leisure and hospitality job is expected to lose around $1,800 or 5 percent of its 2019 average yearly wage of around $37,000. By comparison, during the Great Recession in 2009, leisure and hospitality jobs lost around 1.5 percent of their average yearly wage.

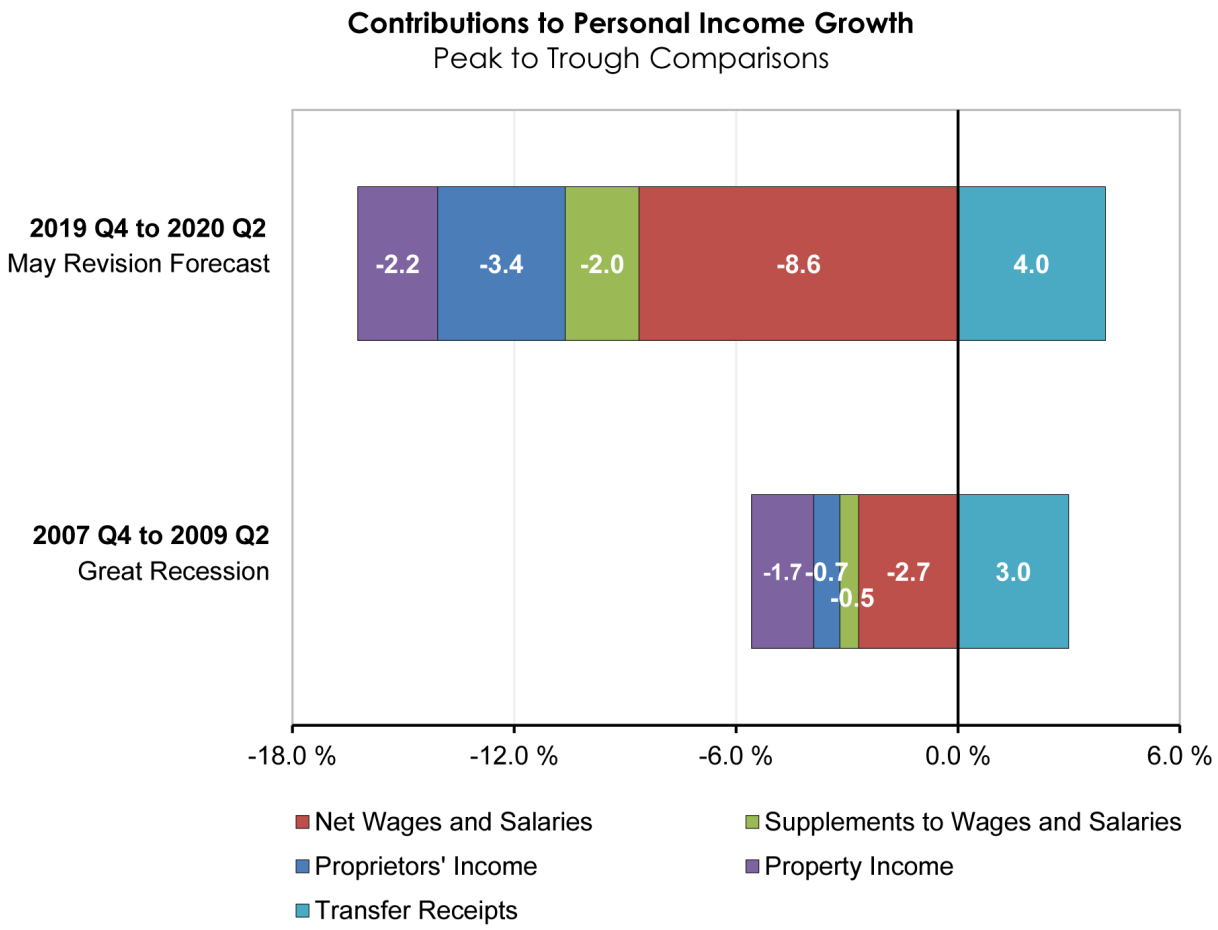
The forecast assumes that the minimum wage will continue to rise progressively by $1 each year until it reaches $15 an hour. Further, it assumes the minimum wage increases to $14 an hour for large employers and $13 an hour for small employers, with up to 25 employees, on January 1, 2021, despite meeting the criteria for job losses and sales tax revenue declines that would allow the minimum wage increases to be paused for a year.

Under the assumption of continued increases, the average wage in leisure and hospitality—a sector with one in five workers earning the state minimum wage— is expected to recover to 2019 levels by 2022. Salaries in high-paying sectors are also expected to fall in 2020. For example, the average wage in professional, scientific, technical and management services is projected to fall by $2,200 or 1.7 percent of the 2019 yearly average wage of $131,000. This is also more than the Great Recession, when salaries in the sector fell by only 0.1 percent. Despite wages falling in most sectors, the state average wage is projected to rise in 2020, reflecting the fact that job losses are expected to be more severe in lower-paying sectors while employers in higher-paying sectors are more likely to retain staff.

The economic consequences of the pandemic are also expected to negatively impact other sources of income beyond wages and salaries. California personal income, which includes income from wages and salaries, businesses ownership, property ownership, and government transfers, grew by 4.8 percent in 2019 but is expected to decrease by 9 percent or $230 billion in 2020. Personal income is expected to gradually recover starting in 2021 and return to pre-pandemic levels in 2023. (See figure on Contributions to California Personal Income Growth.)

As Californians have stayed home due to the COVID-19 pandemic, there has been an unprecedented decline in business sales and revenues. Many companies have furloughed or laid off workers, and otherwise tried to navigate the current pandemic environment. Following a growth of 5.2 percent in 2019, total wages and salaries are projected to decrease in 2020 by 12.8 percent or $170 billion, greater than the 6-percent peak-to-trough decline in the Great Recession. As firms begin to recall or re-hire workers in mid-2020, total wages and salaries are projected to increase by 3.2 percent in 2021 and to reach a growth of 7.2 percent by 2023.

Californians who own their own businesses are also expected to see their income decrease in 2020. Reductions in consumer spending and restrictions on non-essential activities will disrupt proprietors' business activity resulting in loss of income. Businesses not able to successfully navigate the pandemic environment will have to shut down or declare bankruptcy. As a result, proprietorship income is projected to decrease by



Source: U.S. Bureau of Economic Analysis; CA Department of Finance, May Revision Forecast.

26 percent or by $66 billion in 2020 and to continue shrinking by 8 percent in 2021 before rebounding and reaching a 6-percent growth rate by 2023. Proprietorship income increased by 4.9 percent in 2019.

Property income includes income received from corporate dividend payouts, interest income, and rental value of property. Following a growth of 2.2 percent in 2019, property income is projected to decrease by 9 percent or by $50 billion in 2020. Due to the sharp drops in the stock market early in the year, and due to ongoing uncertainties impacting business income and decisions, dividend income is expected to decrease by 27 percent or by $46 billion in 2020. Dividend income is expected to continue shrinking in 2021, by 11 percent, before recovering in 2022 and reaching a 12-percent growth rate by 2023. In line with the Federal Reserve's interest rate decisions, interest income is expected to decrease by about 7 percent in 2020 and to grow slowly through 2023.

Housing costs have been historically higher in California than for the nation. The share of households that were homeowners in the state decreased from 58 percent in 2007 to

55 percent in 2018. The median renting household in California paid around $17,000 in rent in 2018—about 32 percent of median household income for renters. In 2007, just before the Great Recession, the median renting household paid around $14,200 in 2018 dollars—about 29 percent of median household income for renters. With unprecedented job and income losses across almost all sectors, a shrinking share of Californians will be able to purchase new homes and keep up with mortgage payments, leading to even more Californians becoming renters, resulting in increased pressures on the rental market. As a result, rental income is expected to increase by 7 percent or by $12 billion in 2020. Rental income is expected to remain around that level in 2021 before slowing to 3.6 percent by 2023.

Transfer payments are expected to rise due to increased unemployment insurance payouts as well as other forms of government assistance. The federal CARES Act provided many Californians with one-time direct payments and temporarily expanded the state's unemployment insurance program in 2020. After increasing by 7.9 percent in 2019, transfer payments are expected to increase by 17 percent or by $64 billion in 2020 before gradually decreasing through 2023 as government assistance ends and unemployed Californians reintegrate into the job market.

Personal income is not expected to return to 2019 levels until 2023. In comparison, personal income fell by 3.3 percent during the Great Recession and recovered to 2007 levels by 2011. The forecast projects the impacts of the pandemic on personal income and its components to be larger in magnitude and in percentages compared to the Great Recession.

The forecast projects that California permits for residential single-family and multi-family units will decrease by 21 percent or 24,000 units to around 90,000 in 2020. In comparison, during the housing shock associated with the Great Recession, residential permits decreased by 44 percent or 29,000 units in 2009. The state has built far fewer units than implied by population growth over the last ten years, and pent-up demand is expected to continue to support the housing sector despite the recession. California authorized the construction of around 113,400 units in 2019 and homebuilding activity in the first two months of 2020 was exceptionally strong, averaging 133,700 units annually. However, the number of authorized units decreased in March by 30 percent from February to only 87,700 units. Permits are expected to grow by 6 percent in 2021 and to reach a growth of 14 percent by 2023.

With the state's ongoing housing imbalance and climate change regulations, California's overall inflation will remain higher than the nation's over the forecast period. California inflation reflects the rate of change in the Consumer Price Index

(CPI) for the metropolitan areas of Los Angeles, Riverside-San Bernardino, San Diego, and San Francisco. In March 2020, headline inflation in the Los Angeles metropolitan area slowed to 1.9 percent following 3.2 percent average growth in January and February 2020 and 3.1 percent annual growth in 2019; in Riverside-San Bernardino, headline inflation slowed to 2.3 percent in March 2020 following 3.0 percent in January 2020 and 2.9 percent annual growth in 2019; and in San Diego, headline inflation slowed to 1.8 percent in March 2020 following 2.3 percent in January 2020 and 2.4 percent annual growth in 2019. The CPI for San Francisco for March 2020 is not available.

Assuming statewide that the stay-at-home order is in place through most of the second quarter of 2020, California headline inflation is expected to turn negative in the second quarter (-2 percent) and in the third quarter (-0.6 percent). As consumer demand ramps up in the fourth quarter 2020, California headline inflation is expected to rise to around 2.1 percent in the fourth quarter bringing annual 2020 inflation to 1 percent, following 3 percent in 2019.

Driving slower headline inflation in 2020 are lower prices for gasoline, dining-out, apparel, household furnishings and appliances, and other discretionary goods (e.g. televisions, new cars, jewelry) and discretionary services and services that require close contact with customers (e.g. hair and nail salons and fitness centers). However, prices for some essential goods and services (e.g. groceries, housekeeping supplies, medical care) are expected to rise in 2020 due to increased demand. In 2021, consumer demand is expected to remain subdued as economic uncertainties remain. California headline inflation is expected to remain slow through the first half of 2021 before rebounding in the second half bringing the annual average headline inflation to 2.9 percent in 2021. As economic growth returns and consumer demand recovers going forward, California headline inflation is expected to rise to around 3.5 percent on average in 2022 and 2023.

During the Great Recession, California's annual headline inflation turned negative for the first time on record in 2009 (-0.3 percent). This negative inflation was driven by a sharp and sustained drop in energy prices and a rapid deceleration in shelter inflation. The May Revision expects energy prices to rebound in early 2021 and shelter inflation to remain relatively stable throughout the forecast period.

CONTINUING RISKS

The Governor's Budget noted economic risks from a U.S. recession, stock market volatility, a global economic slowdown, federal policy, a housing shortage, and an aging population. Several of these risks have materialized, and the economic disruptions of the COVID-19 pandemic have exacerbated these pre-existing risks.

The initial outbreak of COVID-19 in China led to some supply chain disruptions as the Chinese government closed factories and quarantined workers. Additionally, ports closed and cargo ships stopped traveling to China, creating logistical bottlenecks in international shipping. Initially, the U.S. was positioned to draw down domestic inventories and find secondary sources for manufacturing components and finished products that were no longer being exported from China.

As COVID-19 spread throughout the world, uncertainties grew around the availability of secondary sources and the reliability of shipping between countries. With these challenges looming, domestic manufacturers leaned more heavily on domestic inventories, causing a decline in international trade volume. In March, U.S. exports of goods and services fell by 9.6 percent to $188 billion from February, the largest monthly decrease on record. U.S. imports of goods and services fell 6.2 percent to $232 billion in March, the largest monthly decrease since January 2009. The March 2020 levels of U.S. exports and imports were the lowest since November 2016. Exports of goods also decreased in California, down 4.3 percent in March to $14 billion. Imports of goods into the state increased by 8.4 percent to $29 billion, as importers were able to source supplies from Thailand, Taiwan, and Japan to offset impacts of China's lockdown. The duration of lockdowns in countries around the world and the uncertainty surrounding the effects on the supply chain of a possible second wave of COVID-19 pose ongoing risks to U.S. and California trade and ability to maintain a steady flow of components needed for manufacturing, construction, and retail sales.

Along with supply chain disruptions, oil markets have suffered from both supply and demand side issues. Early in March, a dispute between oil producers in Saudi Arabia and Russia led to an unprecedented price war. Combined with the producers' price cuts was a large decrease in the demand for oil driven by COVID-19 stay-at-home orders and business closures. While the price war has ended, oil demand remains low. The oil industry is now in a position where storage is near capacity. In April, this predicament led to the first negative oil futures price in history, large losses of earnings, abandonment of exploration projects, and subsequent bankruptcies of oil companies. Questions surrounding the future of small domestic oil companies and the

imminent restructuring of the domestic oil industry has implications for oil and gas prices as well as California's oil industry. The oil industry had a total economic impact of $152 billion in 2019, or roughly 5 percent of the state's current dollar GDP.

Climate change and extreme weather events continue to affect California. Increasing temperatures and possible drought conditions will exacerbate wildfire risks throughout the state. Housing and business location decisions may be affected by threats of wildfire and economic growth in certain regions of the state will be impacted. Rising sea levels also present a challenge to coastal communities.

The state continues to face a critical housing shortage. With fewer permits issued, an unprecedented increase in unemployment and the reluctance of builders to build homes during an economic downturn, will worsen the housing shortage. Californians will face increasing affordability issues which will affect their decisions about where to live. Businesses will also base location decisions on the ability of their employees and customers to live nearby.

Other demographic challenges—aging population, lower fertility rates, and lower migration rates—persist in spite of the global pandemic. These challenges will persist and may be exacerbated as the state recovers from the economic and public health consequences of COVID-19.

EXTENDED DISRUPTION SCENARIO

If protecting public health requires extended restrictions to remain in place and lift more gradually, economic disruptions will continue. Under this scenario, there are likely to be more bankruptcies and job losses. The unemployment rate would peak at 31.2 percent in the first quarter of 2021, and nonfarm job losses from peak to trough would surpass 5 million. As more businesses close, the ability of the economy to bounce back is reduced, causing slower job growth in the medium term across all sectors and especially lower wage sectors. In this scenario, recovery to 2019 pre-crisis levels of employment would not occur until 2027. By 2023, the unemployment rate would remain at a high of 20.7 percent, and nonfarm payroll employment would be about 1.5 million below the baseline scenario.

Widespread business closures and sustained job loss would lead to extended contractions in wages and proprietorship income. Persistent low demand for business' products and services would lead to more companies suspending dividend payouts. While transfer payments will remain high because more Californians would remain unemployed, they will not be high enough to offset the substantial loss of income.

Personal income and most of its components would not return to positive growth until 2022, and would not recover to 2019 levels within the forecast period. Under this scenario, total personal income would be $219 billion below the baseline scenario in 2023. Wages and salaries would be the largest drag on personal income, remaining $163 billion below the baseline scenario in 2023, but proprietorship income and property income also lag below baseline.

Due to lower demand, residential units authorized by permits would not begin growing until 2022, and would not recover to 2019 levels within the forecast period. By 2023, total residential permits would be about 28,000 units below the baseline scenario.