

Review of Colorado and United States Economy

Based on June Employment Data



cber.co
Colorado-based Business and Economic Research
Prepared
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Overview

This analysis of the most recent U.S. and Colorado economic data shows how the U.S. and state economies have transitioned from the lockdown in March and April to the reopening of the economy in May and June.

The difference in leadership, policies, business mix, and business environment have caused the reopening to be uneven across industries and geographies.

In the process, business and government leaders are learning how to more effectively manage the risk associated with COVID-19 in a way that appropriately balances the health of the country with its economic vitality.

GDP and Labor Data

- Real GDP Forecast -- United States
- Initial and Continuing Unemployment Claims – United States and Colorado
- Unemployment Rate, Labor Force Participation Rate, and Unemployment by State – United States and Colorado
- Change in Employment During the Reopening by Sector and by State – United States and Colorado
- Colorado Revised Employment Forecast

Other Metrics

- Major Sentiment Indices – United States
- Production and Income – United States
- Housing – United States and Colorado
- Other Industry Metrics – United States and Colorado
- Other Key Metrics – United States and Colorado

Summary – United States and Colorado

Real Gross Domestic Product Forecast

United States

Key Points

Severe decline in real GDP in Q2 2000 followed by strong growth in Q3 and weak growth in Q4.

Annual real GDP rate for 2020 will be -7.0% and personal consumption will be -6.7%.

Annual real GDP rate for 2021 will be 1.0% with personal consumption of 1.9%.

U.S. Real GDP Growth

The Conference Board Forecast

2020

The Conference Board July 8 base scenario projects a decline in real GDP of nearly 40% in Q2 2020. This will be followed by an increase of about 21% in Q3 and about 1% in Q4. Real GDP growth for 2020 will be -7.0% with personal consumption of -6.7%.

2021

Barring major lockdowns, the U.S. will see positive annual growth again in 2021. Real GDP growth will be 1.0% and personal consumption will be 1.9%. Unemployment will remain high.

Conference Board 2020 US Real GDP Growth Forecast (July 8, 2020)

| | Q1 2020 | Q2 2020 | Q3 2020 | Q4 2020 | 2018 | 2019 | 2020 | 2021 |
|----------------------------------|---------|---------|---------|---------|-------|-------|---------|--------|
| Real GDP | - 5.0% | - 38.9% | 20.6% | 0.8% | 2.9% | 2.3% | - 7.0% | 1.0% |
| Personal Consumption | - 6.8% | - 37.4% | 20.8% | 2.6% | 3.0% | 2.6% | - 6.7% | 1.9% |
| Residential Investment | 18.2% | - 34.0% | - 5.0% | 5.0% | -1.5% | -1.5% | - 2.2% | 0.2% |
| Nonresidential Investment | - 6.4% | - 31.7% | -1.7% | 2.6% | 6.4% | 2.1% | - 9.1% | 0.2% |
| Total Government Spending | 1.1% | -9.2% | - 3.6% | -1.2% | 1.7% | 2.3% | -1.1% | - 0.5% |
| Exports | - 9.0% | - 56.2% | 30.2% | 5.0% | 3.0% | 0.0% | - 12.9% | 2.4% |
| Unemployment Rate | 3.8% | 13.0% | 10.6% | 10.8% | 3.9% | 3.7% | 9.6% | 9.4% |
| CPI Inflation | 1.2% | - 4.0% | 2.0% | 1.3% | 2.4% | 1.8% | 0.7% | 1.0% |

Source: The Conference Board and cber.co.

Unemployment Initial and Continuing Claims

United States and Colorado

Key Points

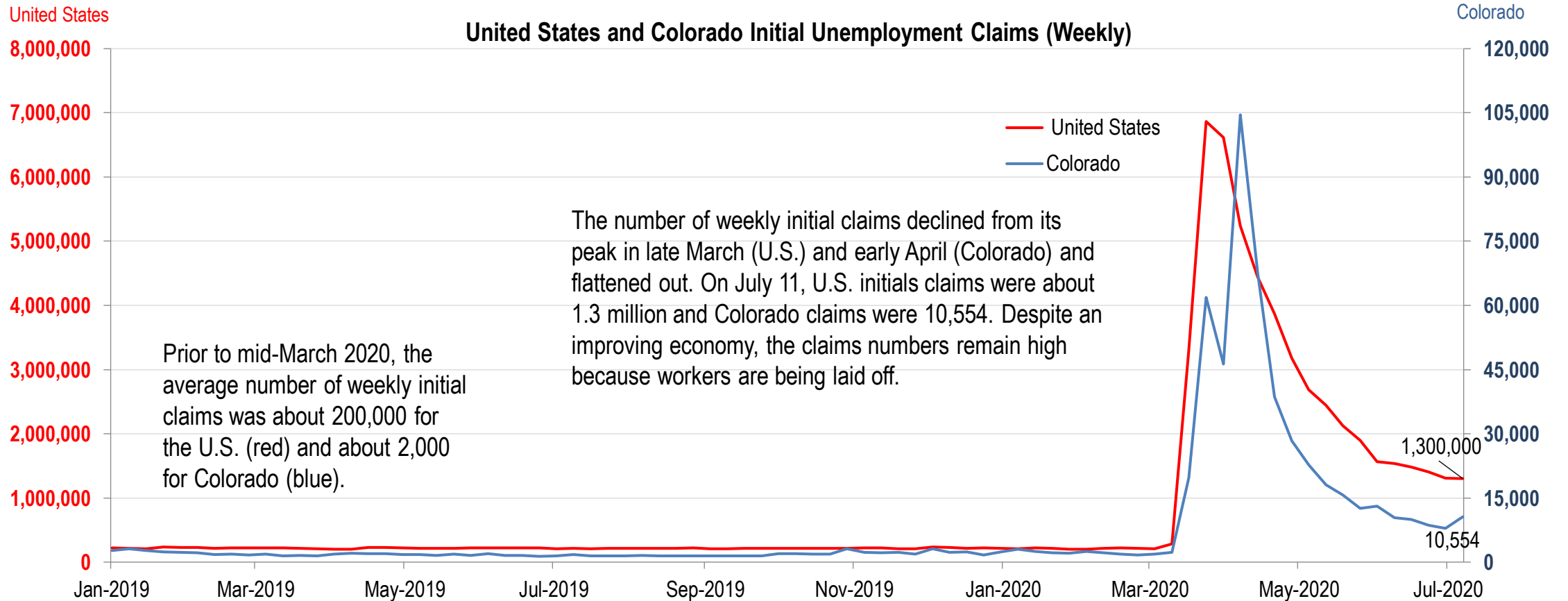
At the outset of the pandemic, unemployment initial and continuing claims were the best source of data to measure the impact of the lockdown on employment.

After rising quickly, the number of initial and continuing claims has declined as the economy has transitioned from the lockdown phase.

The rate of employment growth in May and June will taper off significantly. The number of initial and continuing claims must return to pre-pandemic levels to allow further recovery of the economy.

Initial Unemployment Claims (Weekly)

United States And Colorado 2019 to Current

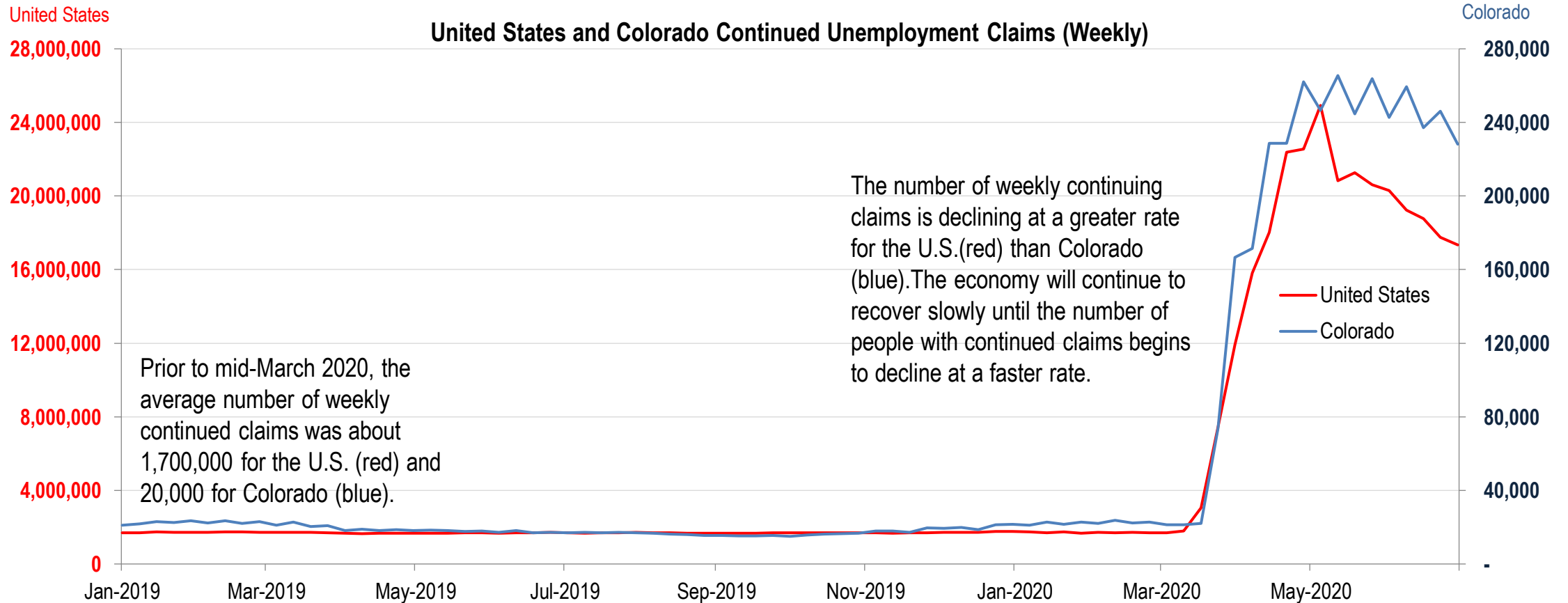


Source: FRED, Department of Labor, SA, cber.co.

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Continued Unemployment Claims (Weekly)

United States and Colorado 2019 to Current



Source: FRED, Department of Labor, SA, cber.co.

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Unemployment Rate, Labor Force Participation Rate, and Unemployment Rate by State United States and Colorado

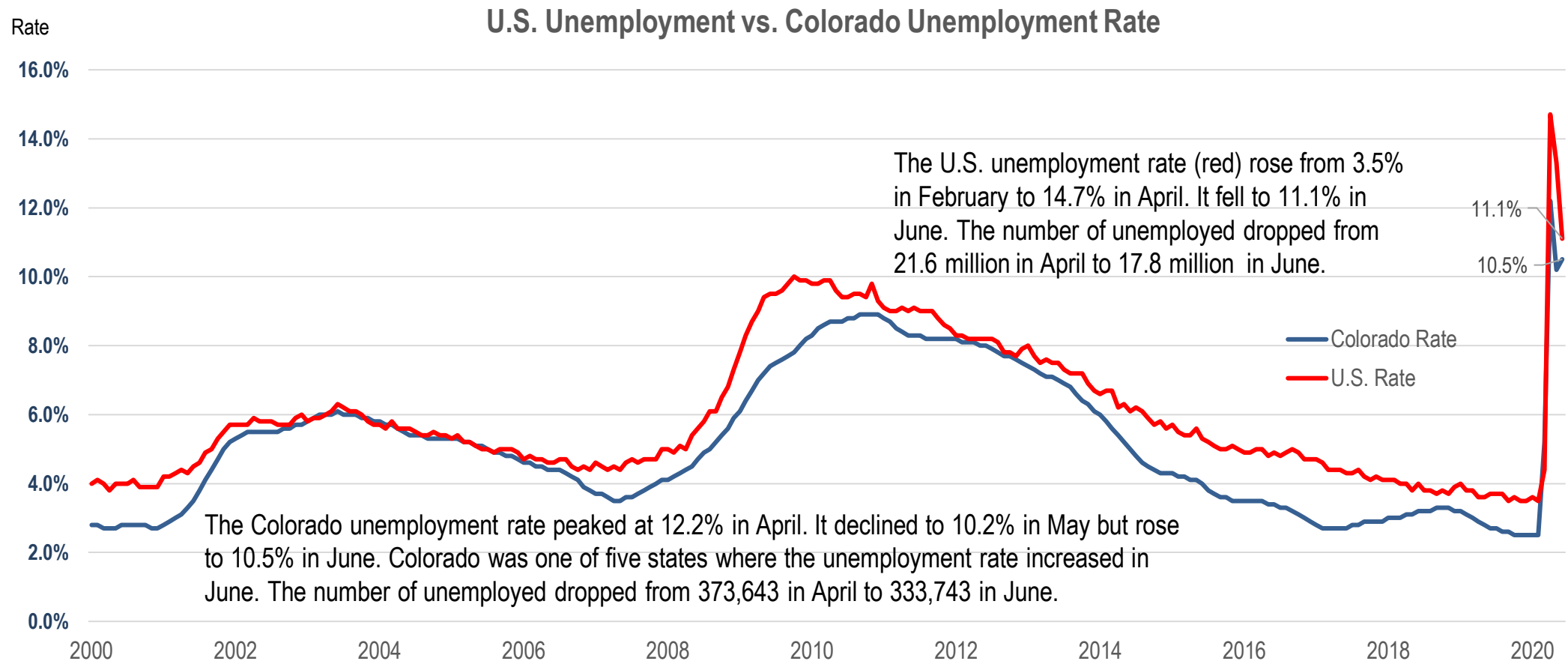
Key Points

In June, the U.S. unemployment rate continued to drop. The rate declined in 42 states, while Colorado was one of five states where the rate increased.

The unemployment rates have often been lower for states with smaller labor forces or fewer large metropolitan areas.

The increase in the U.S. and Colorado labor force participation rates are an indication that people are actively seeking employment.

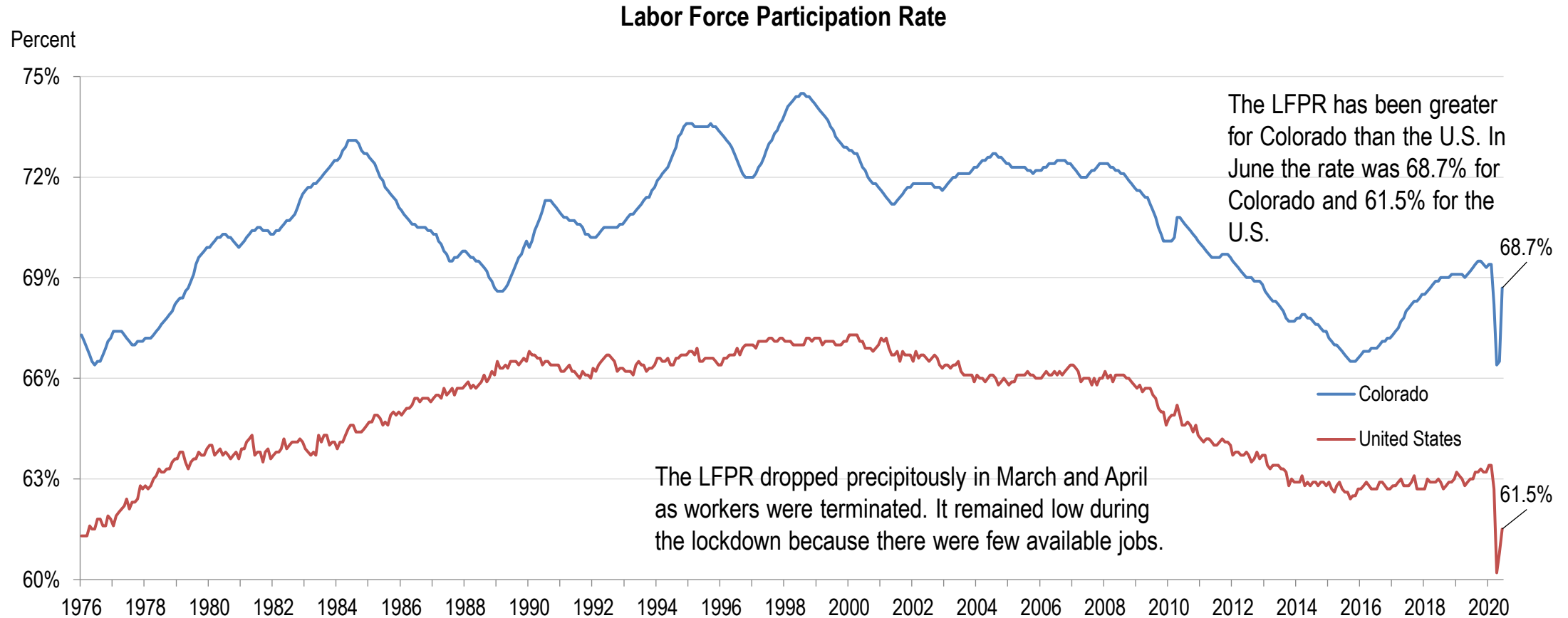
U.S. and Colorado Unemployment Rate



Source: Bureau of Labor Statistics and cber.co.

Labor Force Participation Rate (LFPR)

United States and Colorado



Source: FRED, BLS, cber.co.

Unemployment Rates by States

June 2020

| Unemployment Rate < 8.0% | | |
|--------------------------|----------------|------|
| Rank | State | June |
| 1 | Kentucky | 4.3% |
| 2 | Utah | 5.1% |
| 3 | Idaho | 5.6% |
| 4 | North Dakota | 6.1% |
| 5 | Maine | 6.6% |
| 6 | Oklahoma | 6.6% |
| 7 | Nebraska | 6.7% |
| 8 | Montana | 7.1% |
| 9 | South Dakota | 7.2% |
| 10 | Alabama | 7.5% |
| 11 | Kansas | 7.5% |
| 12 | Georgia | 7.6% |
| 13 | North Carolina | 7.6% |
| 14 | Wyoming | 7.6% |
| 15 | Missouri | 7.9% |

States with labor forces less than 3.0 million tend to have lower unemployment rates than states with larger labor forces.

| Unemployment Rate Between 7.9% and 10.0% | | |
|--|----------------------|------|
| Rank | State | June |
| 16 | Arkansas | 8.0% |
| 17 | Iowa | 8.0% |
| 18 | Maryland | 8.0% |
| 19 | New Mexico | 8.3% |
| 20 | Virginia | 8.4% |
| 21 | Wisconsin | 8.5% |
| 22 | District of Columbia | 8.6% |
| 23 | Minnesota | 8.6% |
| 24 | Texas | 8.6% |
| 25 | Mississippi | 8.7% |
| 26 | South Carolina | 8.7% |
| 27 | Vermont | 9.4% |
| 28 | Louisiana | 9.7% |
| 29 | Tennessee | 9.7% |
| 30 | Connecticut | 9.8% |
| 31 | Washington | 9.8% |

In June, the U.S. unemployment rate dropped to 11.1%. Thirty states and the District of Columbia (DC) had unemployment rates less than 10% (green). In May there were only 17 states plus DC with rates less than 10%.

About 60% of the U.S. labor force resides in the thirty-five states and DC that have an unemployment rate below the U.S. rate (11.1%).

About 16% of the U.S. labor force is located in the 15 states with unemployment rates less than 8.0% (column 1).

About 29% of the U.S. labor force is located in the 15 states and the District of Columbia with unemployment rates between 7.9% and 10.0% (column 2).

About 55% of the U.S. labor force is located in the 19 states with unemployment rates of 10% or greater (column 3).

| Unemployment Rate is 10% or Greater | | |
|-------------------------------------|---------------|-------|
| Rank | State | June |
| 32 | Arizona | 10.0% |
| 33 | Florida | 10.4% |
| 34 | West Virginia | 10.4% |
| 35 | Colorado | 10.5% |
| 36 | Ohio | 10.9% |
| 37 | Indiana | 11.2% |
| 38 | Oregon | 11.2% |
| 39 | New Hampshire | 11.8% |
| 40 | Alaska | 12.4% |
| 41 | Rhode Island | 12.4% |
| 42 | Delaware | 12.5% |
| 43 | Pennsylvania | 13.0% |
| 44 | Hawaii | 13.9% |
| 45 | Illinois | 14.6% |
| 46 | Michigan | 14.8% |
| 47 | California | 14.9% |
| 48 | Nevada | 15.0% |
| 49 | New York | 15.7% |
| 50 | New Jersey | 16.6% |
| 51 | Massachusetts | 17.4% |

Source: Bureau of Labor Statistics, cber.co.

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Change in Employment During the Reopening by Sector and State

United States and Colorado

Key Points

The recovery in employment is occurring unevenly across all sectors and geographies.

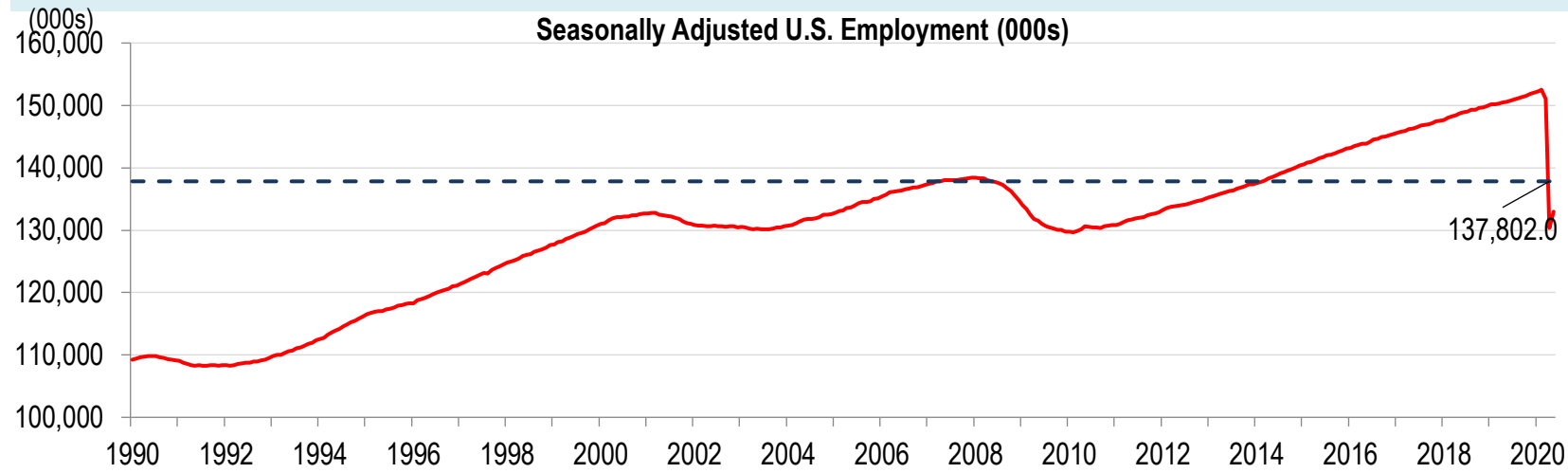
Smaller states have generally fared better in the recovery.

Generally, the sectors that lost the greatest number of jobs have added the greatest number of jobs.

Colorado employment is recovering at a faster pace than U.S. employment.

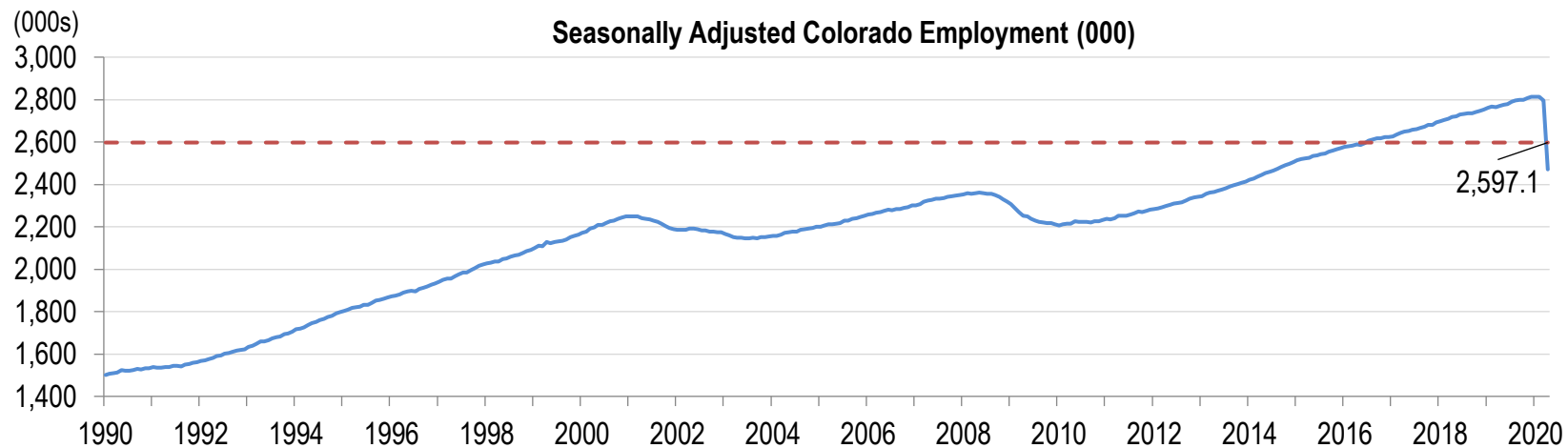
Seasonally Adjusted Wage and Salary Employment

United States vs. Colorado



United States

U.S. seasonally adjusted wage and salary employment for June was almost 137.8 million (blue dotted line). June employment is 90.7% of the December 2019 total; there were 14.2 million fewer jobs in June. As a point of reference, U.S. employment in April (the trough) was 85.7% of December 2019 employment.



Colorado

Colorado seasonally adjusted wage and salary employment for June was about 2.6 million (red dotted line). June employment is 92.3% of the December 2019 total. There were 215,600 fewer jobs in June. By comparison, Colorado employment in April (the trough) was 87.8% of December 2019 employment.

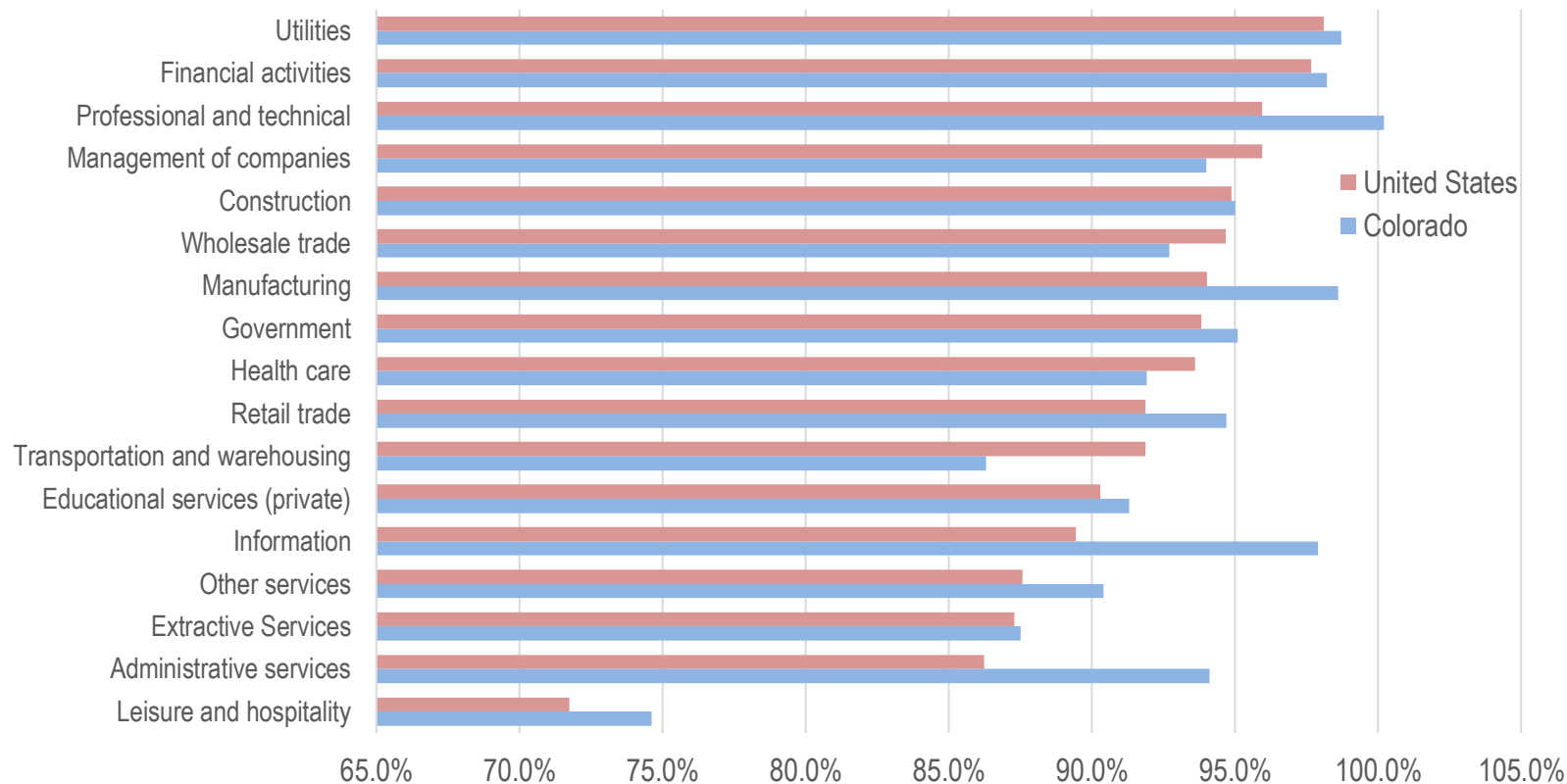
Source: Bureau of Labor Statistics and cber.co.

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Percentage Employment Recovery by Sector

June 2020 as Percent of December 2019

June 2020 as a Percent of December 2019 Recovery by Sector



June/December Recovery

This chart shows June 2020 employment as a percentage of December 2019 employment to illustrate the rate at which the sectors are recovering.

Key Take-aways

The U.S. sectors with the greatest percent of recovery are utilities, financial activities, PTS, and MCE.

The Colorado sectors with the greatest percent of recovery are PTS, financial activities, manufacturing, and information.

The sectors that are a drag on the recovery are leisure and hospitality, retail, administrative and other services.

Source: Bureau of Labor Statistics and cber.co.

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Percentage Employment Recovery by State

June 2020 as Percent of December 2019

June vs. December % Change Greater Than or Equal to 90.7%

| Rank | State | June/December | Rank | State | June/December |
|------|----------------|---------------|------|----------------------|---------------|
| 1 | Utah | 95.7% | 19 | Wyoming | 92.9% |
| 2 | Idaho | 95.7% | 20 | Missouri | 92.8% |
| 3 | Mississippi | 95.1% | 21 | Iowa | 92.4% |
| 4 | Arizona | 95.0% | 22 | District of Columbia | 92.3% |
| 5 | Montana | 94.4% | 23 | New Mexico | 92.3% |
| 6 | Arkansas | 94.3% | 24 | Colorado | 92.3% |
| 7 | Tennessee | 94.3% | 25 | North Carolina | 92.2% |
| 8 | Nebraska | 94.2% | 26 | Virginia | 91.7% |
| 9 | Georgia | 94.2% | 27 | Louisiana | 91.3% |
| 10 | Kansas | 94.1% | 28 | North Dakota | 91.3% |
| 11 | Oklahoma | 94.0% | 29 | Kentucky | 91.1% |
| 12 | South Dakota | 93.9% | 30 | Minnesota | 90.7% |
| 13 | Alabama | 93.7% | 31 | Oregon | 90.7% |
| 14 | Indiana | 93.6% | | | |
| 15 | West Virginia | 93.4% | | | |
| 16 | Texas | 93.3% | | | |
| 17 | South Carolina | 93.2% | | | |
| 18 | Florida | 93.0% | | | |

As a point of reference, June employment was 90.7% of the December 2019 total for the U.S. There were 14.2 million fewer jobs in June than December. April U.S. employment was 85.7% of December 2019 employment

June vs. December % Change Less than 90.7%

| Rank | State | June/ December |
|------|---------------|----------------|
| 32 | Illinois | 90.3% |
| 33 | Wisconsin | 90.2% |
| 34 | Washington | 90.0% |
| 35 | Ohio | 90.0% |
| 36 | Maryland | 90.0% |
| 37 | Pennsylvania | 89.4% |
| 38 | California | 89.3% |
| 39 | Delaware | 89.3% |
| 40 | Connecticut | 89.2% |
| 41 | New Hampshire | 89.0% |
| 42 | Nevada | 88.9% |
| 43 | Alaska | 88.7% |
| 44 | Maine | 88.7% |
| 45 | Rhode Island | 87.7% |
| 46 | Vermont | 87.2% |
| 47 | Michigan | 86.8% |
| 48 | New Jersey | 85.9% |
| 49 | Massachusetts | 85.5% |
| 50 | New York | 84.6% |
| 51 | Hawaii | 83.2% |

Many Smaller States Fare Better

Fifteen of the states in the first column have employment less than 3 million workers. The exceptions are Georgia, Texas, and Florida. These 18 states account for 36% of U.S. employment.

The 13 states in the second column account for 18% of U.S. employees. Eleven states have employment less than 3 million. The exceptions are Virginia and North Carolina.

The 19 states in the third column account for 46% of U.S. employment. Nine of the states have employment greater than 3 million workers and eight states have less than 3 million workers.

Colorado Revised Employment Forecast for 2020

Key Points

January 2020 Forecast
Colorado would add 50,000 jobs

July 2020 Revision Scenarios
Best case recovery – average annual employment will decrease by 105,000 in 2020.
There will be a return to the 2019 level in 2021 or 2022.

Modest improvement scenario – average annual employment will decrease by 125,000 in 2020. There will be a return to the 2019 level in 2022 or 2023.

2020 Colorado Employment Forecast Revision Background, Assumptions, and Scenarios

Best Case Recovery Scenario

This scenario projects average 2020 YOY employment will be 105,000 less than 2019. Annual job growth will occur in 2021 or 2022.

COVID-19 flareups are expected and will be managed on a targeted basis. There will be a limited return of spectator sports and arts activities. There will be good snow for the winter ski season. In addition, K-12 and higher education will operate with limited problems related to the virus. In addition, the presidential election and its outcome will not impact the health of the public and economic vitality.

Short-term Growth Sectors

Professional, scientific, and technical; manufacturing; information; management of companies (headquarters); financial activities; construction; and warehousing.

Background for Forecast Revision

In early January the 2020 Colorado economic forecast for cber.co projected Colorado employment would increase by 50,000. All bets were off when the COVID-19 pandemic and subsequent lockdown was put in place.

In late March, it was thought the state employment might decline by 350,000 in 2020. Six weeks later, informal projections lowered the amount of decline to 250,000. On June 19, the Governor's Office of State Planning and Budgeting forecasted the state's 2020 employment would decline by 152,900. That would follow with an increase of 47,300 in 2021.

There have been a lot of moving pieces that have made it difficult to understand changes in the economy. This revision to the cber.co Colorado employment forecast provides two scenarios for employment growth for 2020. They are based on analysis and year-over-year (NSA) data that shows the average change in employment through June was -95,400. Solid growth is projected for Q3 and weak growth for Q4.

Modest Growth Recovery Scenario

This scenario projects average 2020 YOY employment will be 125,000 less than 2019. Annual job growth will occur in 2022 or 2023.

COVID-19 flareups will occur and may result in targeted lockdowns. Spectator sports and arts activities will return with some problems. There will be challenges with the winter ski season. In addition, the return to school for K-12 and higher education will not go as well as anticipated. In addition, the presidential election and its outcome will disrupt the management of COVID-19 and economic vitality.

Lagging Sectors

Leisure and hospitality, retail, state and local government, transportation, extractive industries (oil and gas), wholesale trade, other services, and administrative services.

Major Sentiment Indices

Business Applications, Consumer Sentiment Index, NFIB Small Business Optimism Index, and ISM PMI and NMI Indices

Key Points

The number of business applications increased through early July.

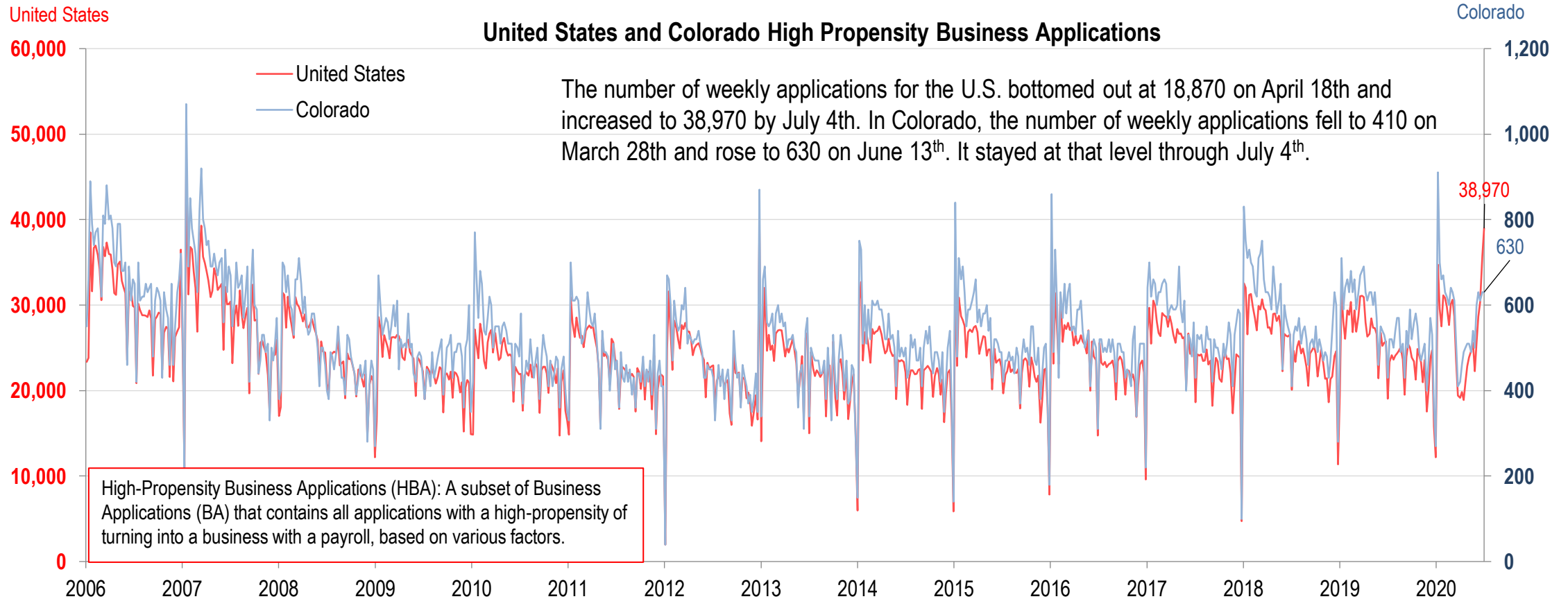
The Michigan Consumer Sentiment Index slipped because of the increase in positive COVID-19 tests.

The small business optimism index increased in anticipation of stronger sales.

Manufacturing and nonmanufacturing purchasing managers indicated their industries had re-entered expansionary territory.

Weekly High Propensity Business Applications

United States And Colorado Not Seasonally Adjusted 2019 to Current



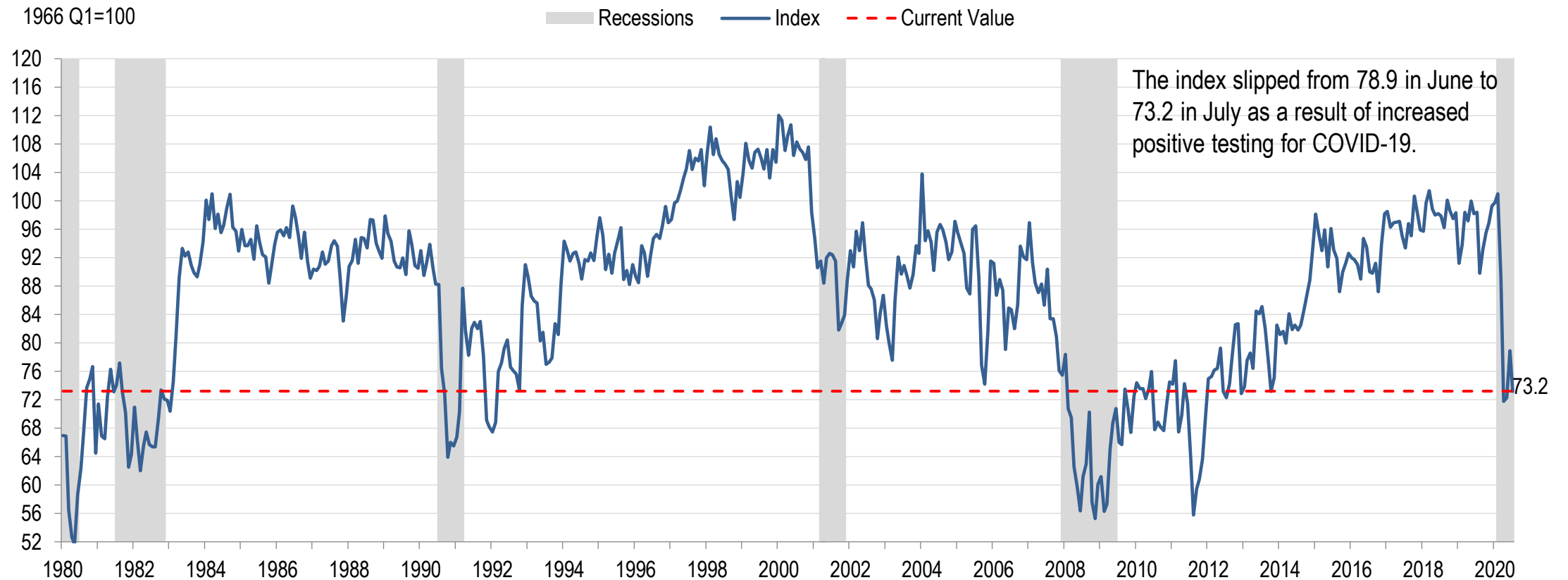
Source: FRED, Federal Reserve Bank of St. Louis, NSA, cber.co.

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Consumer Sentiment Index

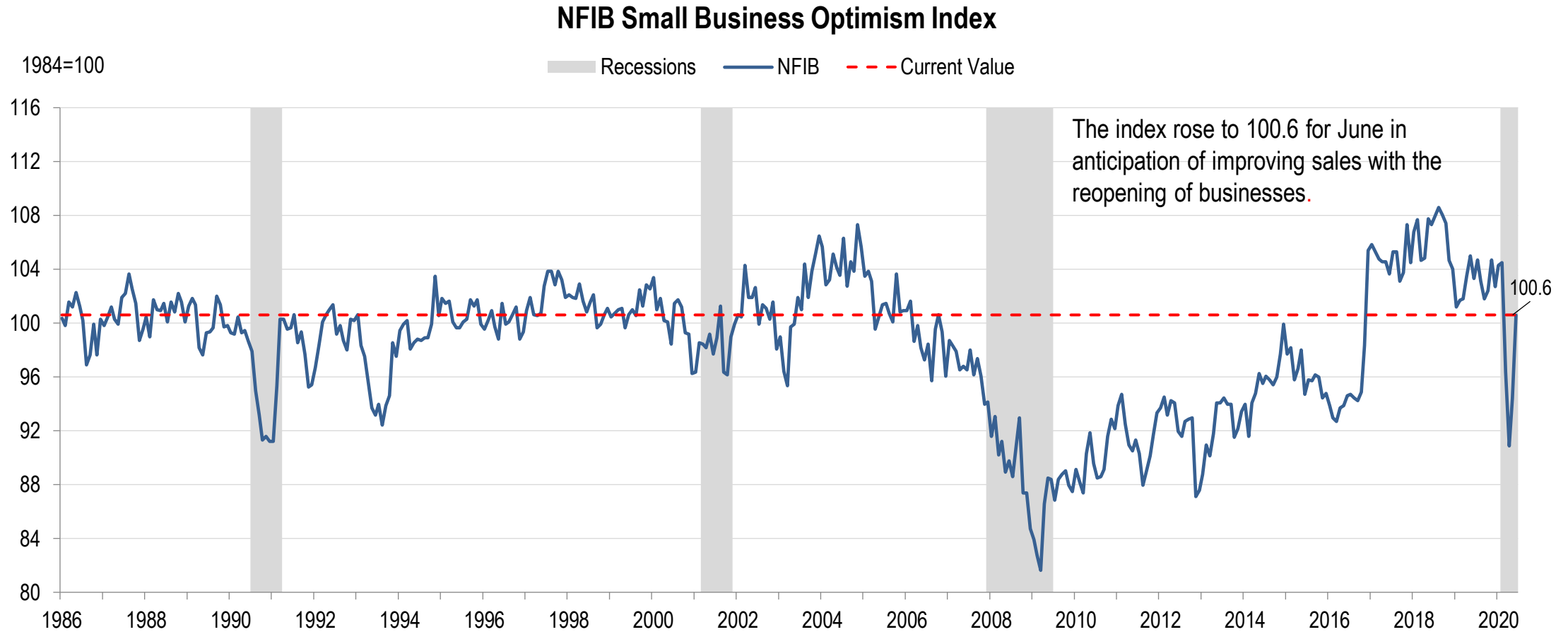
University of Michigan

Michigan Consumer Sentiment Index



Source: University of Michigan, cber.co.

NFIB Small Business Optimism Index

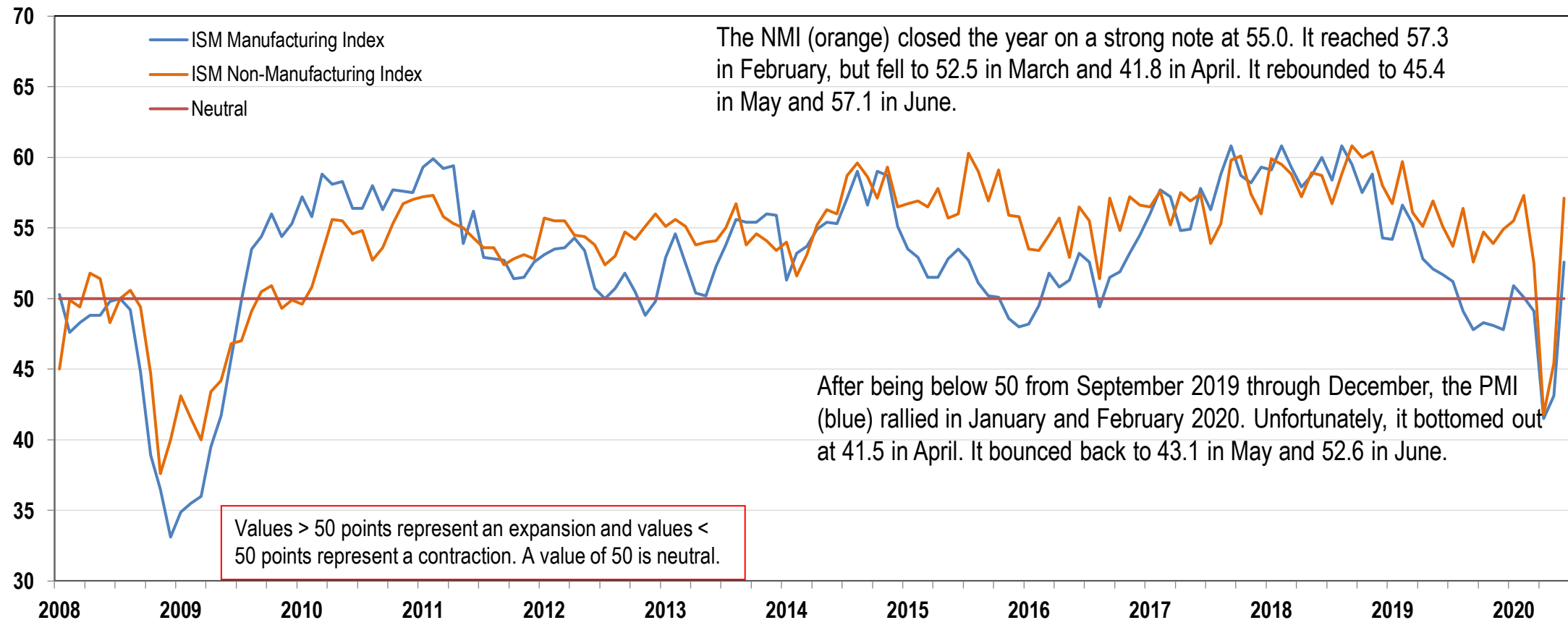


Source: NFIB, cber.co.

ISM PMI Composite Indices

Manufacturing vs. Non-manufacturing

ISM Manufacturing (PMI) vs. Non-Manufacturing (NMI) Composite Indices



Source: FRED, ISM, cber.co

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Production and Income

Industrial Production and Change in Real Disposable Personal Income

Key Points

Industrial production has rebounded as businesses have opened.

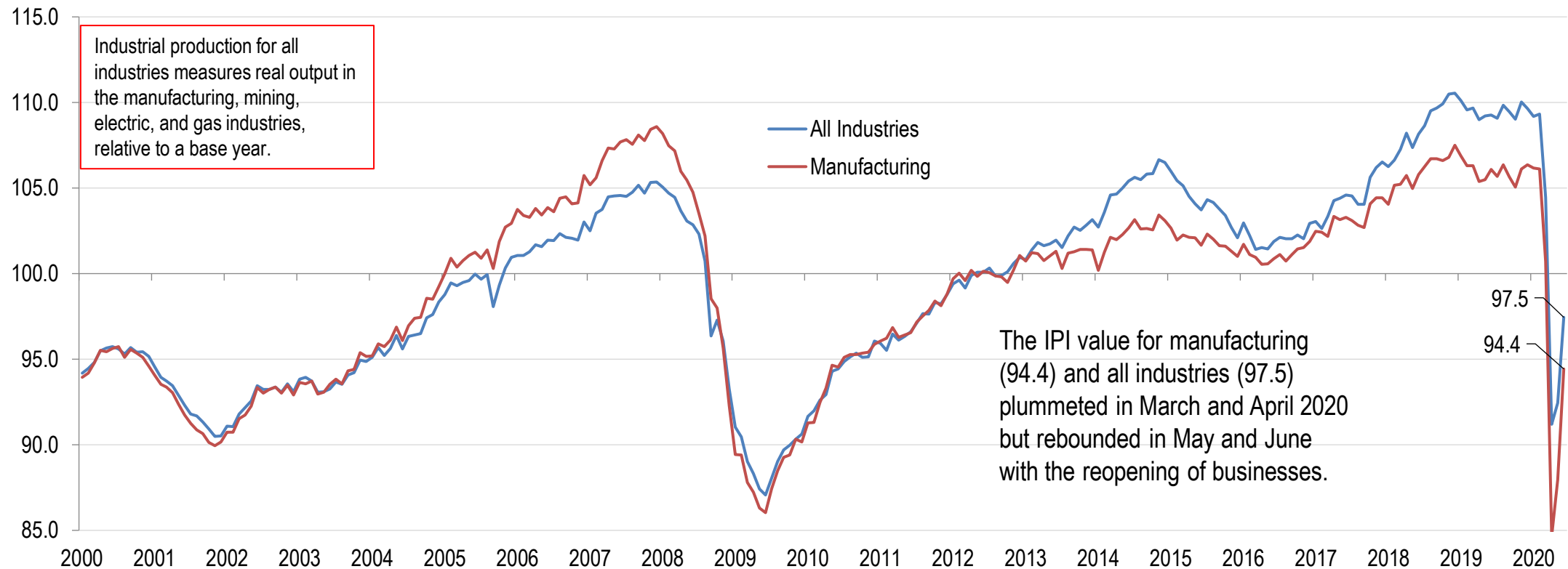
Real disposable income is greater than normal as a result of the federal relief programs in response to COVID-19.

Industrial Production Index

All Industries and Manufacturing

Industrial Production, All Industries and Manufacturing

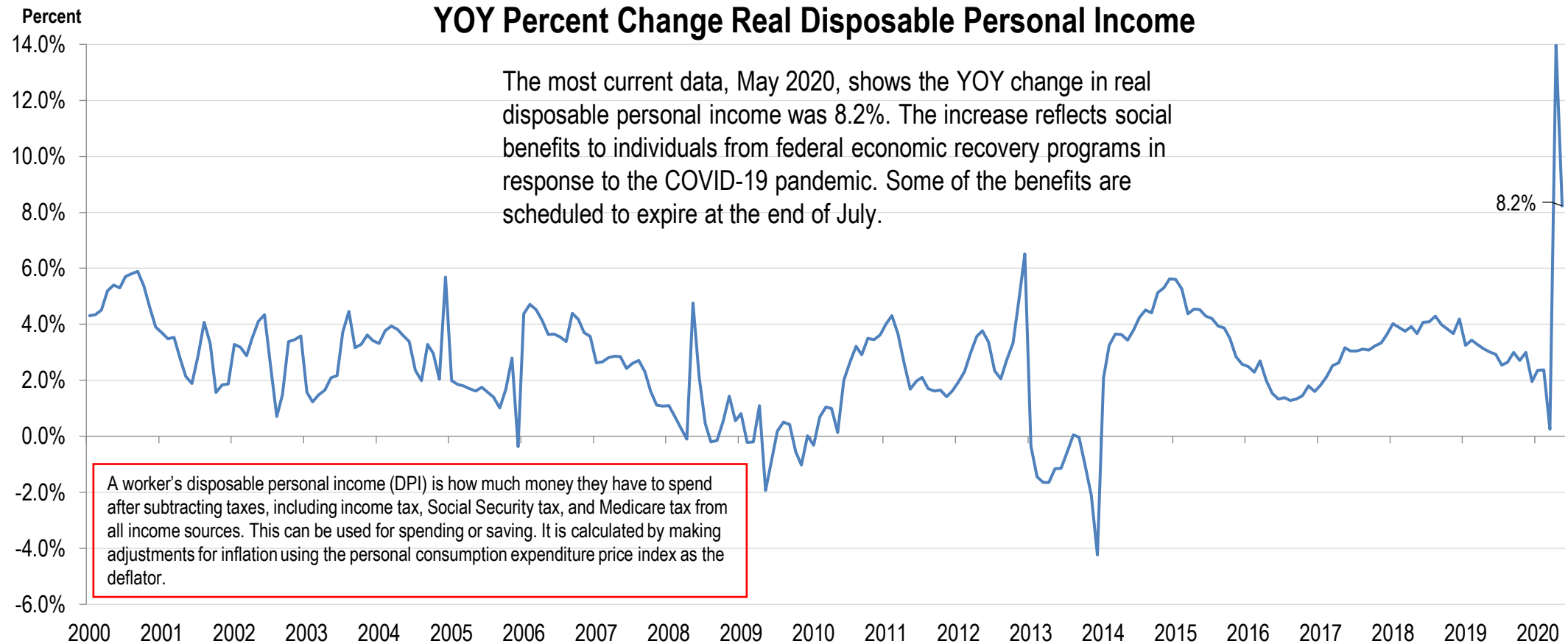
Index, 2012 = 100



Source: FRED, Federal Reserve, SA, cber.co.

Real Disposable Personal Income

Percent Change Prior Year



Source: BEA, FRED, SA.

Housing

Inventory and Median Listing Prices

Key Points

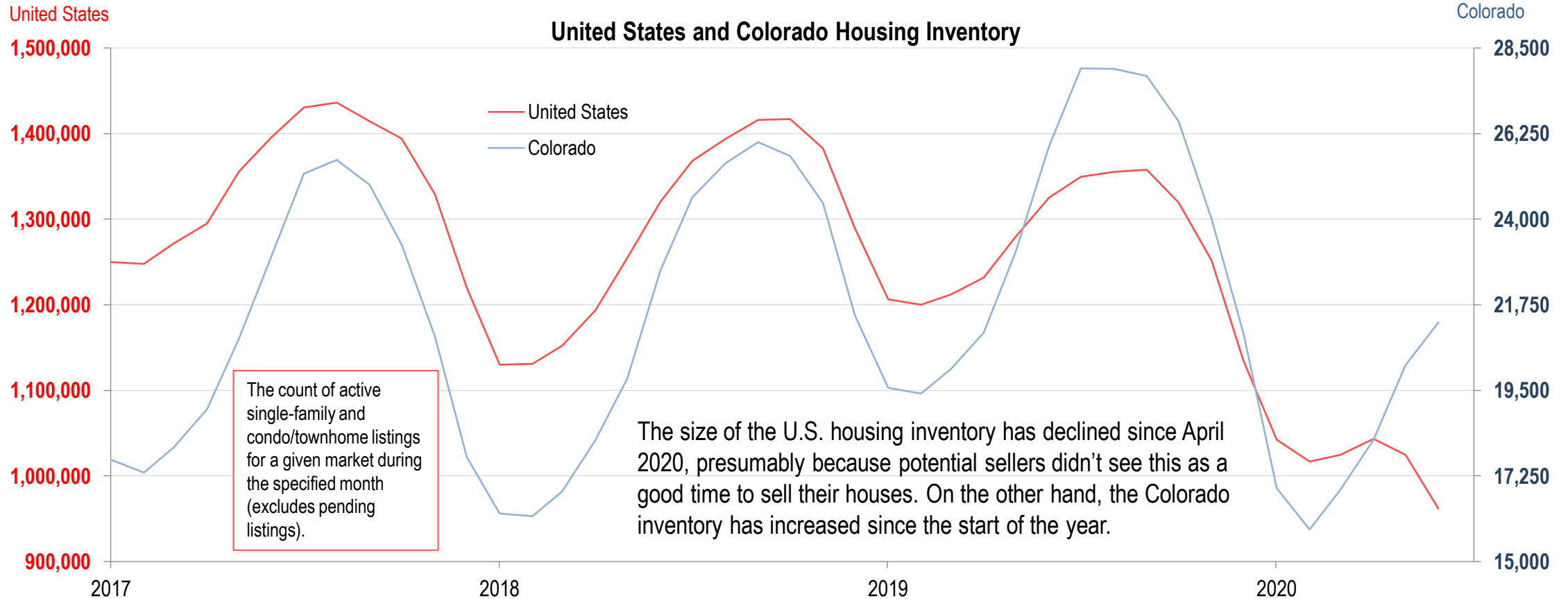
Housing inventories are increasing in Colorado, but decreasing in the U.S.

The median listing prices in Colorado and the U.S. are rising.

The mix of affordable and attainable housing is critical in many parts of the country, particularly Colorado.

U.S. and Colorado Monthly Housing Inventory

Active Listing Count 2017 to Current

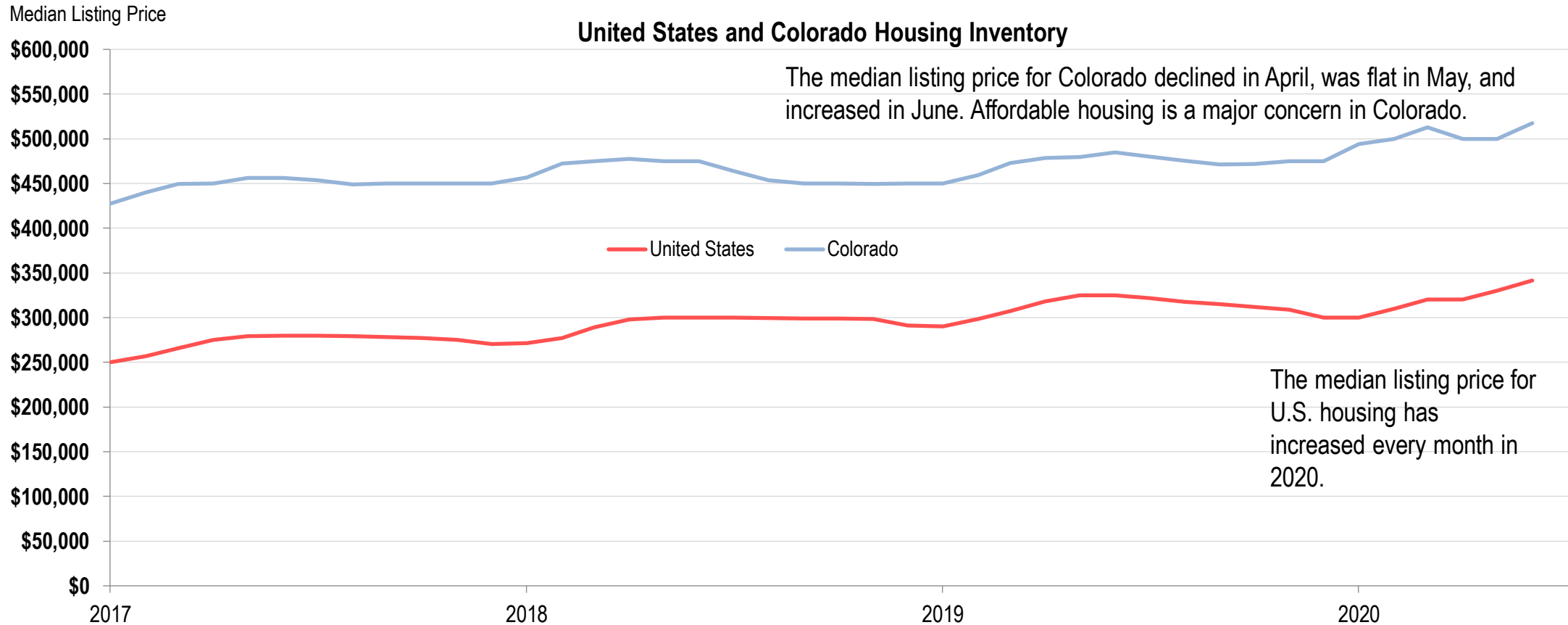


Source: FRED, Realtor.com, NSA, cber.co.

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U.S. and Colorado Monthly Housing Inventory

Median Listing Price 2017 to Current



Source: FRED, Realtor.com, NSA, cber.co.

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Other Industry Metrics

U.S. Light Truck and Auto Sales, Advanced Retail Sales,
and Denver International Airport (DIA) Passengers

Key Points

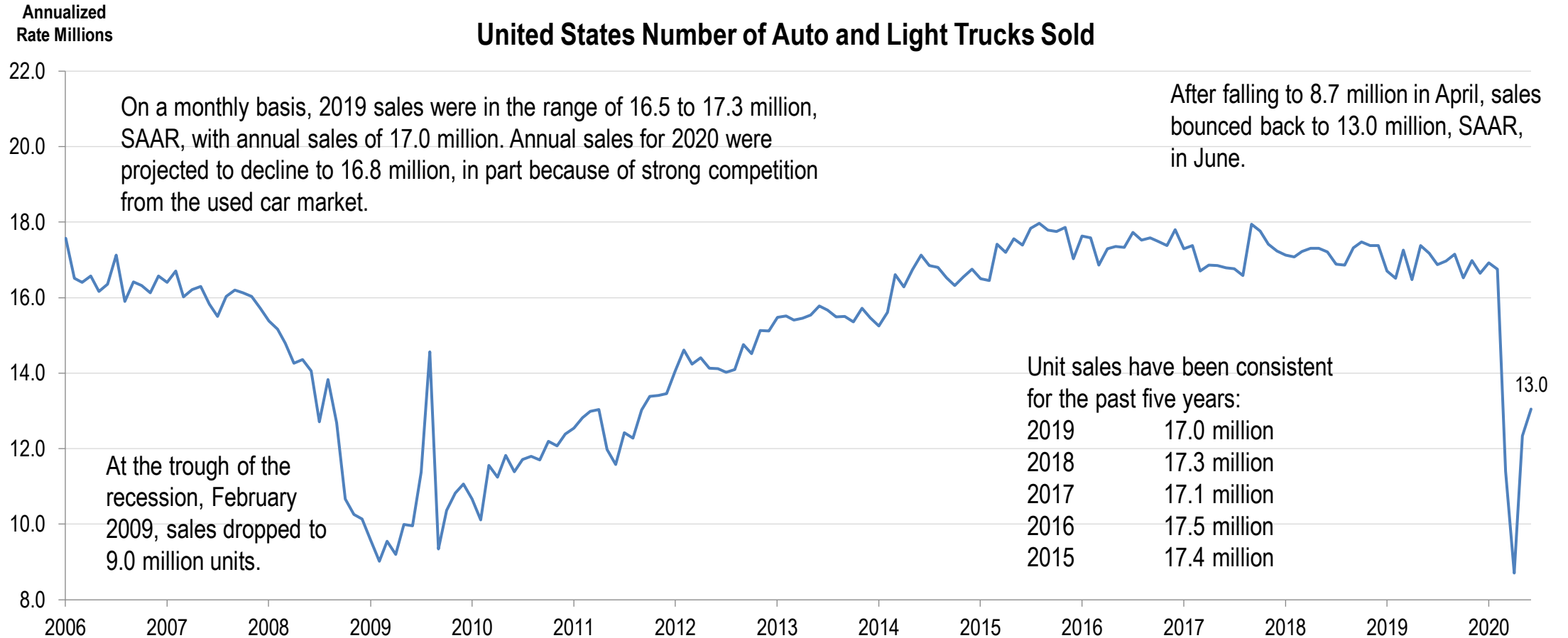
Auto and light truck sales have rebounded quicker than anticipated.

The retail industry has been evolving for several years. Sales rebounded quickly in Q2 2020, in part because of the federal support programs. Additional support may be necessary to stimulate consumption in the second half of the year.

The sharp decline and slow recovery of passengers at DIA is an indication that Americans are not comfortable traveling. The economy will not fully recover until that confidence is regained.

U.S. Auto and Light Truck (ALT) Sales

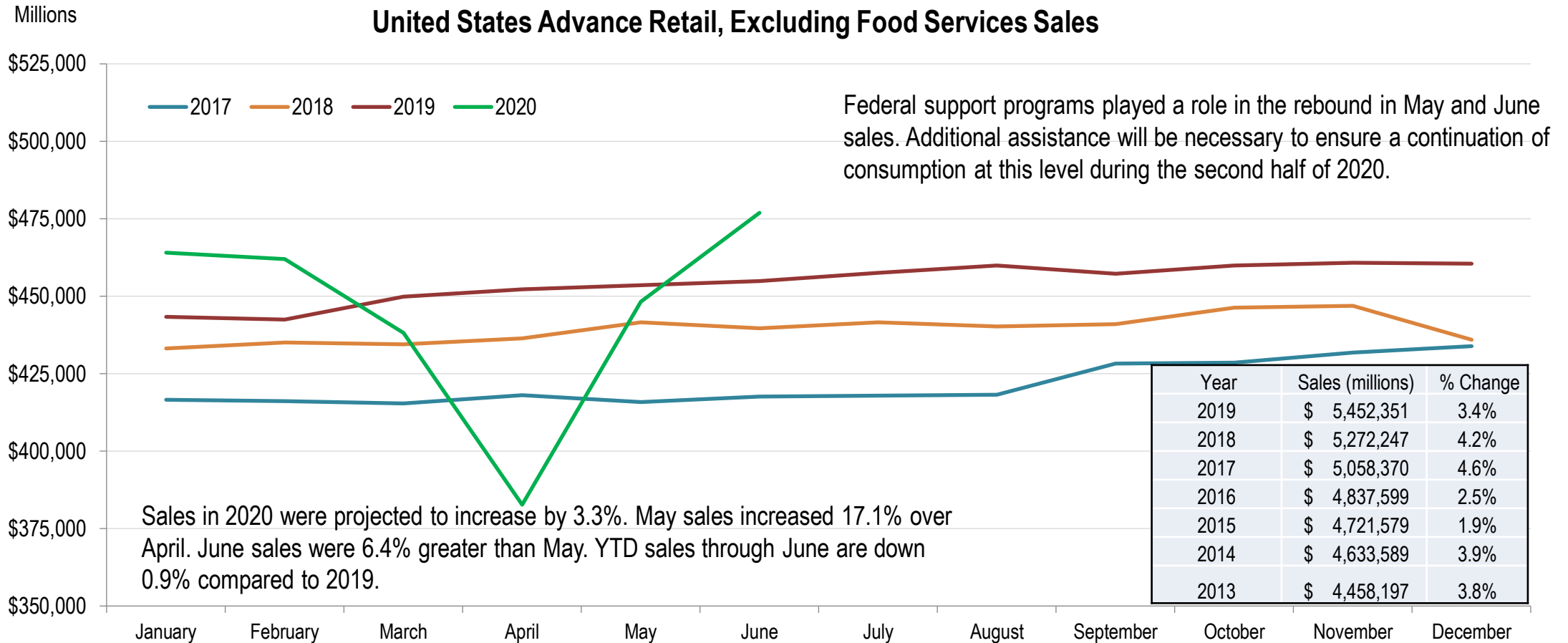
Monthly (Annualized Rate Millions)



Source: FRED, Federal Reserve Bank of St. Louis, Seasonally Adjusted Annualized Rates (SAAR), cber.co.

Advance Retail, Excluding Food Services Sales

Monthly

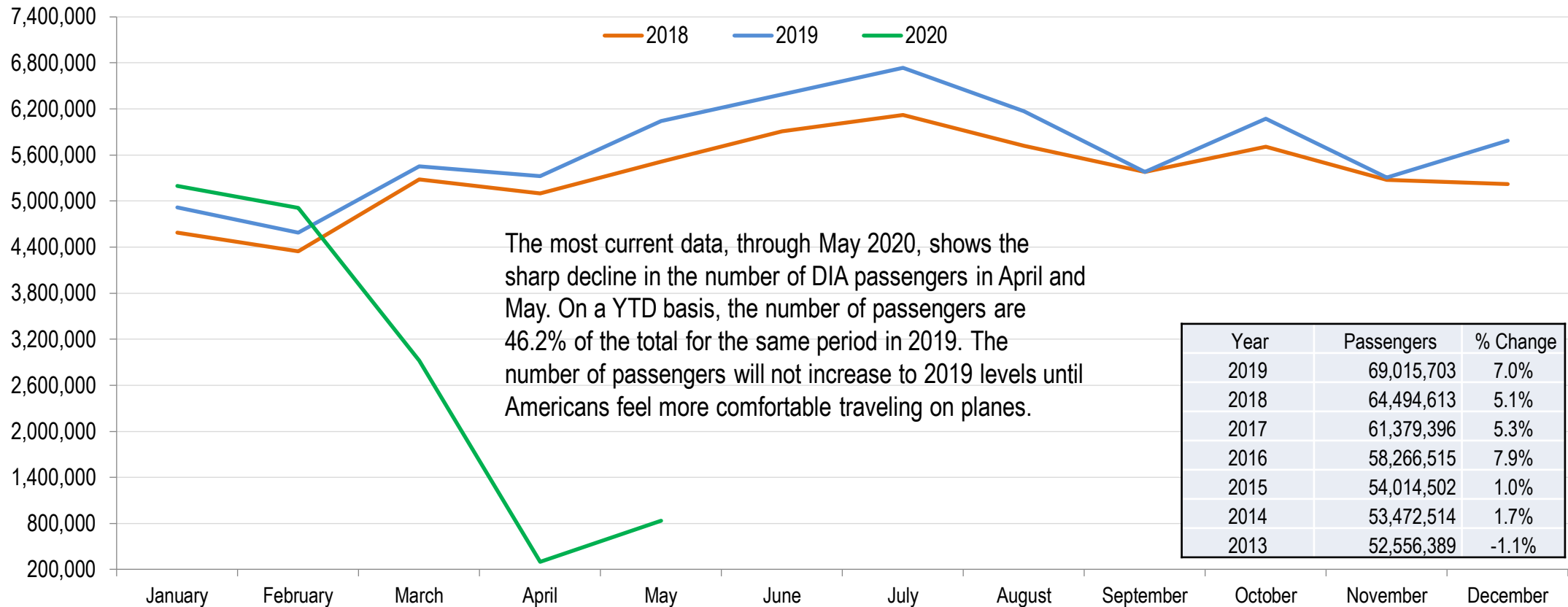


Source: U.S. Census Bureau, FRED, cber.co. Note: Not adjusted for inflation.

Denver International Airport Passengers

Monthly

DIA Passengers



The most current data, through May 2020, shows the sharp decline in the number of DIA passengers in April and May. On a YTD basis, the number of passengers are 46.2% of the total for the same period in 2019. The number of passengers will not increase to 2019 levels until Americans feel more comfortable traveling on planes.

| Year | Passengers | % Change |
|------|------------|----------|
| 2019 | 69,015,703 | 7.0% |
| 2018 | 64,494,613 | 5.1% |
| 2017 | 61,379,396 | 5.3% |
| 2016 | 58,266,515 | 7.9% |
| 2015 | 54,014,502 | 1.0% |
| 2014 | 53,472,514 | 1.7% |
| 2013 | 52,556,389 | -1.1% |

Source: Fly-Denver.com, cber.co.

Other Key Metrics

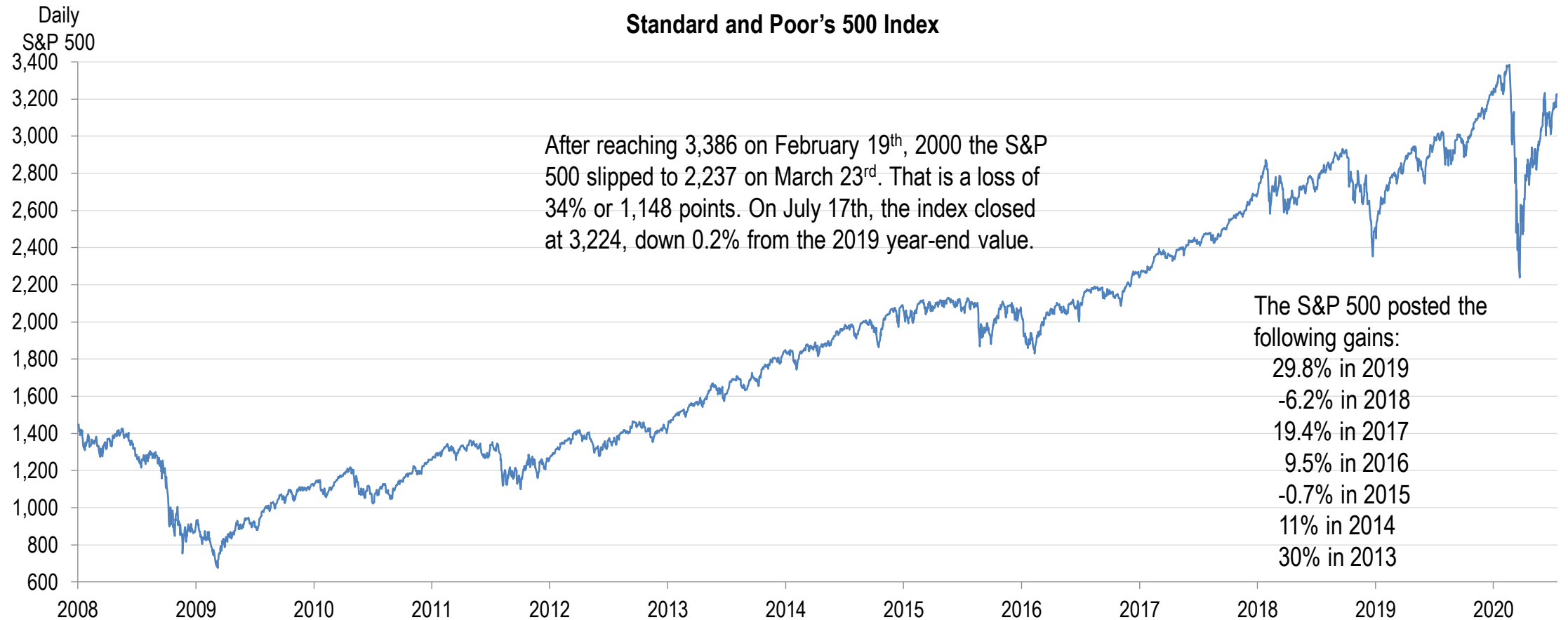
S&P 500 Index, WTI Crude Oil Prices and Colorado Oil Production

Key Points

The S&P Index fell 34%. It has rebounded to the December 31 closing level.

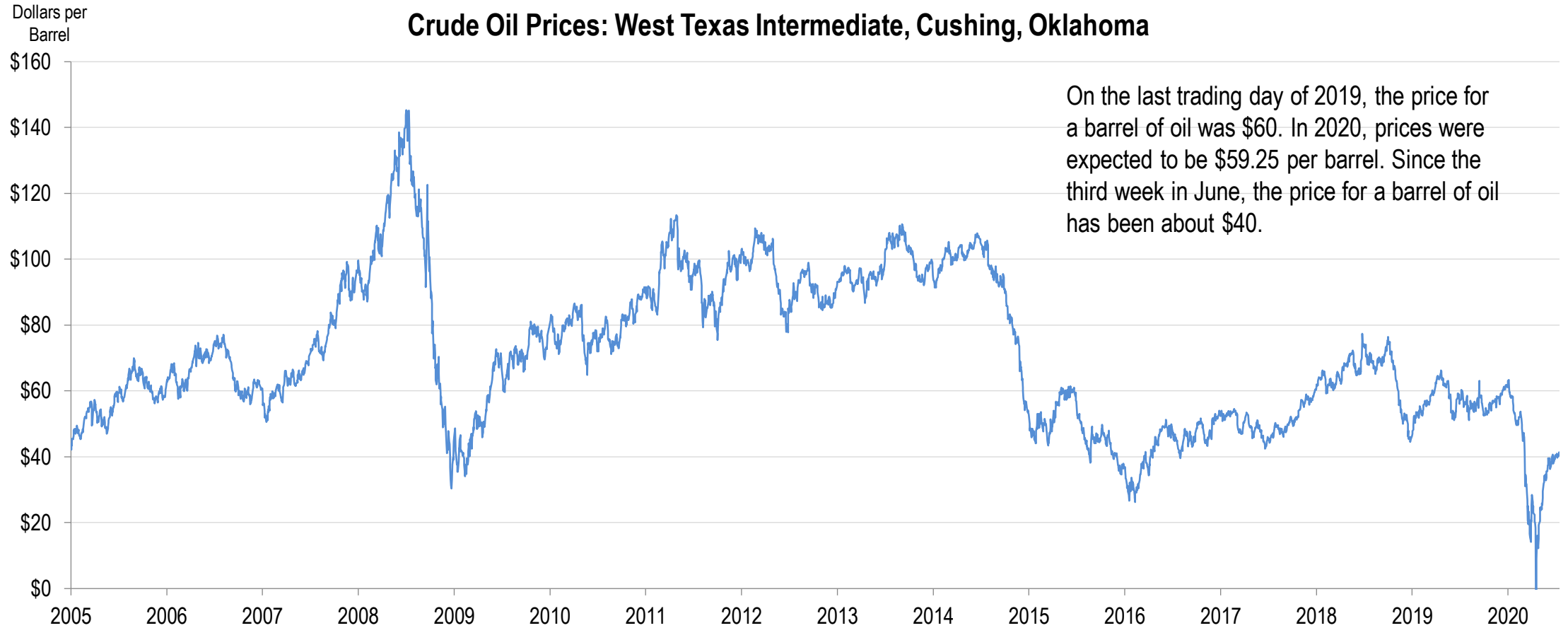
The lower demand for oil has played havoc with the price of oil and the level of oil production in Colorado and other states.

Standard and Poor's 500 Index



Crude Oil Prices

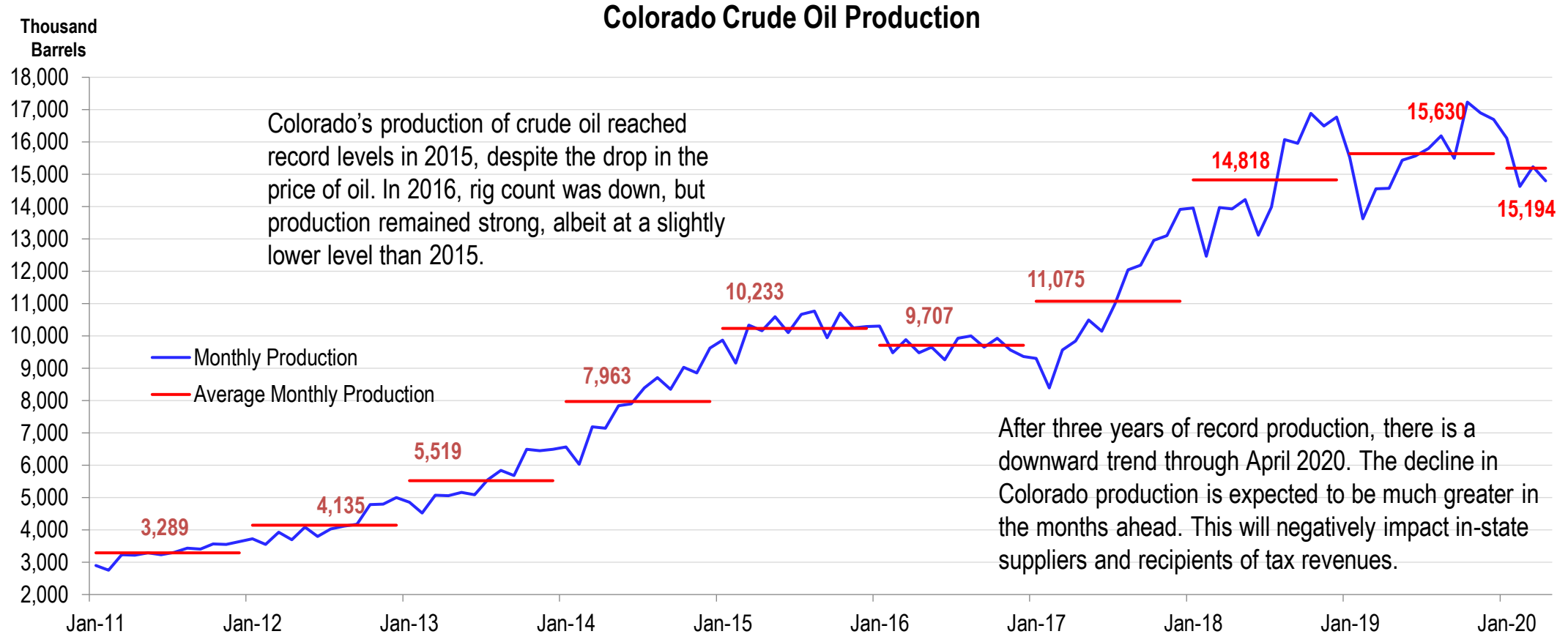
West Texas Intermediate



Source: FRED, EIA, cber.co.

Colorado Field Production of Crude Oil

2011 to 2020 (Thousand Barrels)



Source: EIA, cber.co.

Additional Resources

Brookings Metro Recovery Index

On July 10th, Brookings published the Metro Recovery Index.

The MRI is an interactive dashboard with metrics for the labor market, economic activity, and real estate markets. It is useful for comparing the impact of the recession and the current trajectory of small, large, and extra-large metro areas.

A short article about the MRI can be found at https://www.brookings.edu/blog/the-avenue/2020/07/09/the-metro-recovery-index-tracking-metropolitan-economies-through-the-covid-19-crisis/?utm_campaign=Brookings%20Brief&utm_medium=email&utm_content=91230346&utm_source=hs_email

A link to the MRI interactive dashboard can be found in the article or go to <https://www.brookings.edu/interactives/metro-recovery-index/>.

Summary

Key Points

The most recent data shows the United States and Colorado have transitioned from the lockdown to reopening. The rate of recovery is different by state for reasons such as policies, leadership, resources, number of COVID-19 cases. In the process, business and government leaders are learning how to more effectively manage the risk associated with COVID-19 in a way that more appropriately balances the health of their state with its economic vitality.

Reasons to be Optimistic

- Many smaller states appear to have faster recovery rates based on lower unemployment rates.
- There was strong business formation as the country exited the lockdown.
- There is optimism among small businesses, consumers, manufacturers, and non-manufacturers.
- The addition of employment in the following sectors is essential for a timely recovery: professional, scientific, and technical; management of corporations (headquarters), information, manufacturing, health care, and warehousing.
- Construction and financial activities are bellwether sectors that indicate growth. Both are pointed in a positive direction.

Reasons for Concern

- Some larger states are recovering slower than smaller states.
- The high number of unemployment claims (initial and continuing) is an indication that people are re-entering the workforce at a slow rate.
- Transportation is a bellwether sector, particularly air transportation. It measures the confidence consumers have in traveling by air. The confidence is weak but improving.
- Retail trade and other services measure personal consumption. Additional stimulus may be necessary to support personal consumption and prevent some companies from going out of business.
- The following sectors will be a drag on the recovery: leisure and hospitality, state and local government, extractive industries wholesale trade, other services, and administrative services.

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Horvath was the principal investigator for a state and federally funded project to prepare a nanotechnology roadmap for Colorado. As well, he was a co-founder of the Colorado Photonics Industry Association, a trade group for Colorado's Photonics cluster. Horvath has been an active board member of the group since its inception.

Horvath has also served on the Board of Directors for the Economic Development Council of Colorado, Northwest Denver Business Partnership, Adams County Economic Development, and Broomfield Economic Development Corporation. Horvath has also been the chair of the photonics/electronics committee in the Governor's Office of Economic Development and International Trade early stage and proof of concept grant program.