

Review of Colorado and United States Economy

Based on November Employment Data



cber.co

Colorado-based Business and Economic Research

Prepared

December 21, 2020

Overview

The slower rates of real GDP growth in Q4 2020 and Q1 2021 foretell a significant slowdown in the U.S. economy.

The November Colorado employment report produced by the Bureau of Labor Statistics shows the Colorado economy has stalled. It was like running in a marathon and hitting the wall at mile 21.

The November decline in the Colorado seasonally adjusted employment will be followed by further deterioration in December, January, and February.

This analysis of the economy looks at both traditional metrics and data from the Opportunity Insights project, <https://opportunityinsights.org/>. The OI project has created data from alternate sources to provide a different look at the recovery.

The combination of the traditional metrics and the OI data shows there are many reasons the recovery will take longer than expected.

United States and Colorado

- Real GDP -- United States
- Unemployment Rate, Unemployment Rate by State. Labor Force Participation Rate, Share of Work from Home
- Business Applications – United States and Colorado
- Industrial Production and Major Indices – United States
- S&P 500 and WTI Prices – United States

Colorado

- Colorado Unemployment Claims, Colorado Unemployment by Major MSA Counties, Shortfall and Time to Recover Employment
- Colorado Metrics

Opportunity Insights – United States and Colorado

Summary – United States and Colorado

Real Gross Domestic Product

United States

Key Points

There will be a lull in real GDP growth in the second half of Q4 2020 and the first two months of Q1 2021.

Real GDP will return to pre-COVID levels in Q2 or Q3 of 2021. It will take employment much longer to return to pre-COVID levels, possibly 2023 or 2024.

U.S. Real GDP Growth

The Conference Board Forecast (December 9, 2020)

Base Case and Upside Scenario Results and Forecast

The Conference Board December 9 base scenario forecast shows an increase in real GDP of 2.8% in Q4 2020. A slower rate of growth, 0.7%, is expected in Q1 2021. The contraction for 2020 will be 3.6%. This scenario assumes the number of C-19 cases will cause lockdowns, the vaccine will not be widely distributed until Q2 2021, there will be a limited impact from stimulus in Q1 2021, and little improvement in consumption and labor markets. U.S. monthly economic output will not return to pre-COVID-19 levels until the fall of 2021.

Upside Forecast

The upside forecast will see economic growth of 4.0% in Q4 2020. Growth will accelerate through 2021 and be 6.1% for the year. The number of C-19 cases will level off, there will be no lockdowns, there will be strong growth in employment accompanied by consumption growth, there will be a large stimulus in Q1, and vaccines will be approved in Q4 2020 and made available in Q1 2021, and the political transition will not deter business and consumer confidence.

Conference Board 2020 US Real GDP Growth Forecast

	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021	Q4 2021	2019	2020	2021
Real GDP	- 5.0%	- 31.4%	33.1%	2.8%	0.7%	3.5%	6.0%	4.5%	2.2%	- 3.6%	3.6%
Personal Consumption	- 6.9%	- 33.2%	40.6%	2.3%	1.0%	3.9%	7.1%	4.9%	2.4%	- 3.9%	4.3%
Residential Investment	19.0%	- 35.5%	62.3%	15.0%	7.0%	6.0%	5.0%	5.0%	-1.7%	4.5%	9.7%
Real Capital Spending	- 6.7%	- 27.2%	21.6%	6.1%	3.5%	3.7%	4.5%	4.8%	2.9%	- 4.7%	3.8%
Exports	- 9.5%	- 64.4%	60.5%	8.6	3.0%	5.1%	7.1%	5.1%	-0.1%	- 13.6%	3.5%

Source: The Conference Board and cber.co.

Source: The Conference Board, <https://www.conference-board.org/publications/Economic-Forecast-US>, cber.co.

Colorado-based Business and Economic Research <https://cber.co>

Unemployment Rate, Unemployment Rate by State, LFPR, Share of Work From Home United States and Colorado

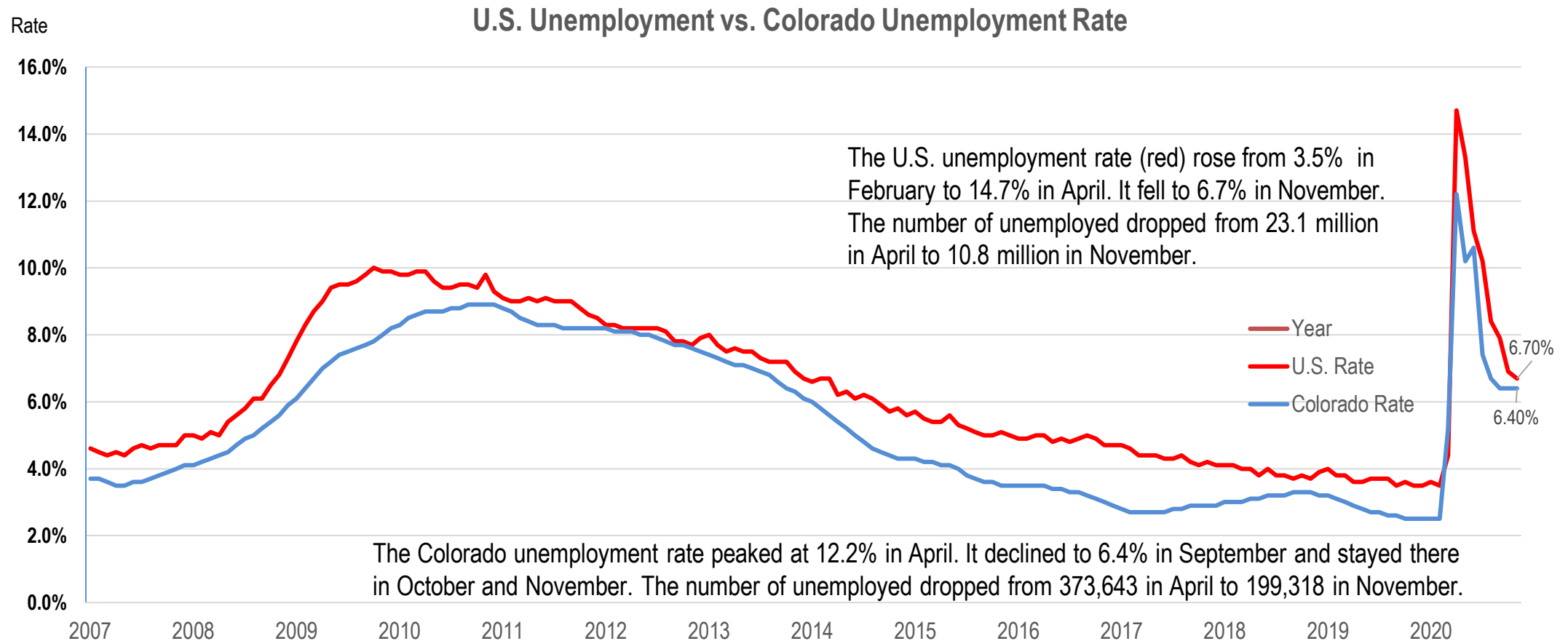
Key Points

In November, the U.S. unemployment rate fell to 6.7%. The Colorado rate stalled at 6.4% for three months (September, October, November).

In October, 34 states had unemployment rates below the U.S. rate (6.7%). Only three states had double-digit unemployment rates.

The U.S. men's and women's labor force participation rates have trended upward after bottoming out in April.

U.S. and Colorado Unemployment Rate



Source: Bureau of Labor Statistics and cber.co.

Unemployment Rates by States

November 2020

Unemployment Rate < 5.1%			Unemployment Rate Between 5.1% and 6.6%		
Rank	State	November	Rank	State	November
1	Nebraska	3.1%	18	Delaware	5.1%
2	Vermont	3.1%	19	Wyoming	5.1%
3	South Dakota	3.5%	20	Tennessee	5.3%
4	Iowa	3.6%	21	Kansas	5.6%
5	New Hampshire	3.8%	22	Kentucky	5.6%
6	Utah	4.3%	23	Georgia	5.7%
7	Alabama	4.4%	24	Ohio	5.7%
8	Minnesota	4.4%	25	Oklahoma	5.9%
9	Missouri	4.4%	26	Oregon	6.0%
10	South Carolina	4.4%	27	Washington	6.0%
11	North Dakota	4.5%	28	Arkansas	6.2%
12	Idaho	4.8%	29	North Carolina	6.2%
13	Montana	4.9%	30	West Virginia	6.2%
14	Virginia	4.9%	31	Colorado	6.4%
15	Indiana	5.0%	32	Florida	6.4%
16	Maine	5.0%	33	Mississippi	6.4%
17	Wisconsin	5.0%	34	Pennsylvania	6.6%

In November, the U.S. unemployment rate dropped to 6.7%. Thirty-four states had unemployment less than 6.7% (green).

Seventeen states had an unemployment rate of 5.0% or less. Only three states have unemployment rates in double digits.

About 18% of the U.S. labor force is in the 17 states with unemployment rates less than 5.0% (column 1).

About 34% of the U.S. labor force is in the 17 states with unemployment rates between 5.1% and 6.6% (column 2).

About 48% of the U.S. labor force is in the 16 states and DC with unemployment rates greater than 6.6% (column 3).

The states with the largest labor forces are CA, TX, FL, NY, PA, IL, OH, GA, NC, and MI. About 53% of the U.S. labor force resides in these 10 states.

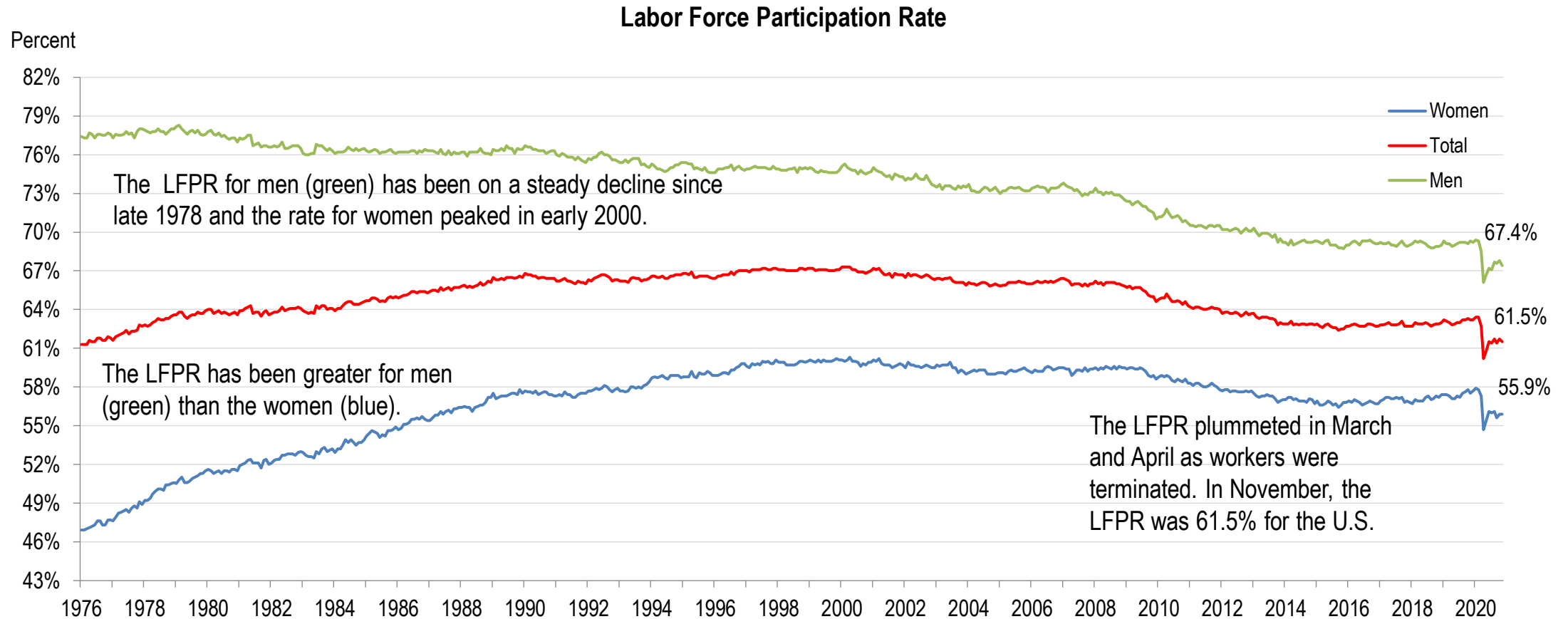
Unemployment Rate is > 6.6%		
Rank	State	November
35	Massachusetts	6.7%
36	Maryland	6.8%
37	Illinois	6.9%
38	Michigan	6.9%
39	Rhode Island	7.3%
40	District of Columbia	7.5%
41	New Mexico	7.5%
42	Arizona	7.8%
43	Alaska	8.1%
44	Texas	8.1%
45	California	8.2%
46	Connecticut	8.2%
47	Louisiana	8.3%
48	New York	8.4%
49	Hawaii	10.1%
50	Nevada	10.1%
51	New Jersey	10.2%

Source: Bureau of Labor Statistics, cber.co.

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Labor Force Participation Rate (LFPR)

United States Men and Women



Source: FRED, BLS, cber.co.

Share of Jobs That Can be Done at Home

United States

Share of Jobs that can be Done at Home		
Sector	Unweighted	Weighted by Wage
Educational Services	83%	71%
Professional, Scientific, and Technical	80%	86%
Management of Companies	79%	86%
Finance and Insurance	76%	86%
Information	72%	80%
Wholesale Trade	52%	67%
Real Estate and Rental and Leasing	42%	54%
Federal, State, and Local Government	41%	47%
Utilities	37%	41%
Other Services	31%	43%
Administrative Services	31%	43%
Arts, Entertainment, and Recreation	30%	36%
Extractive Industries	25%	37%
Health Care	25%	24%
Manufacturing	22%	36%
Transportation and Warehousing	19%	25%
Construction	19%	22%
Retail Trade	14%	22%
Agriculture	8%	13%
Accommodation and Food	4%	7%

Source: Dingel and Neiman and cber.co.

Colorado-based Business and Economic Research <https://cber.co>

Which Jobs Can be Done at Home?

The impact of the lockdowns last spring varied by industries, occupations, geographic regions, and policy. On June 19, 2020, Jonathan Dingel and Brent Neiman from the University of Chicago published the paper, “How Many Jobs Can be Done at Home?”

The authors identified occupations that could be performed at home. Next, they determined the relationship between the occupations and NAICS codes. The table on the left includes their results.

The right-hand column includes jobs weighted by occupation wages. The unweighted value for the jobs is in the left-hand column.

The table does not consider whether the jobs were classified as essential or nonessential.

Business Applications

United States and Colorado

Key Points

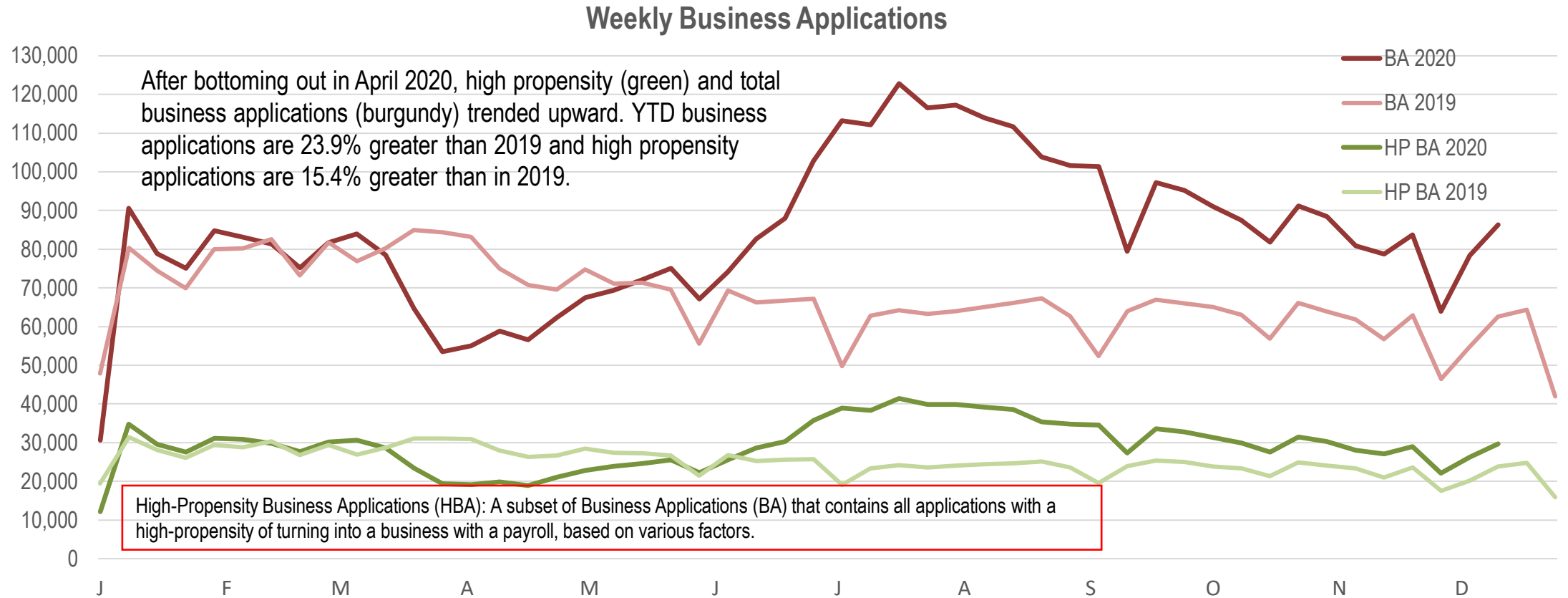
Compared to 2019, U.S. business applications have increased at a faster pace since May. High propensity applications have increased at a greater rate since June.

Compared to 2019, Colorado business applications and high propensity applications increased at a faster rate after June, but they slowed as the year progressed.

U.S. applications have increased at a greater rate than Colorado applications.

U.S. Weekly Business Applications

Total and High Propensity 2019 vs 2020

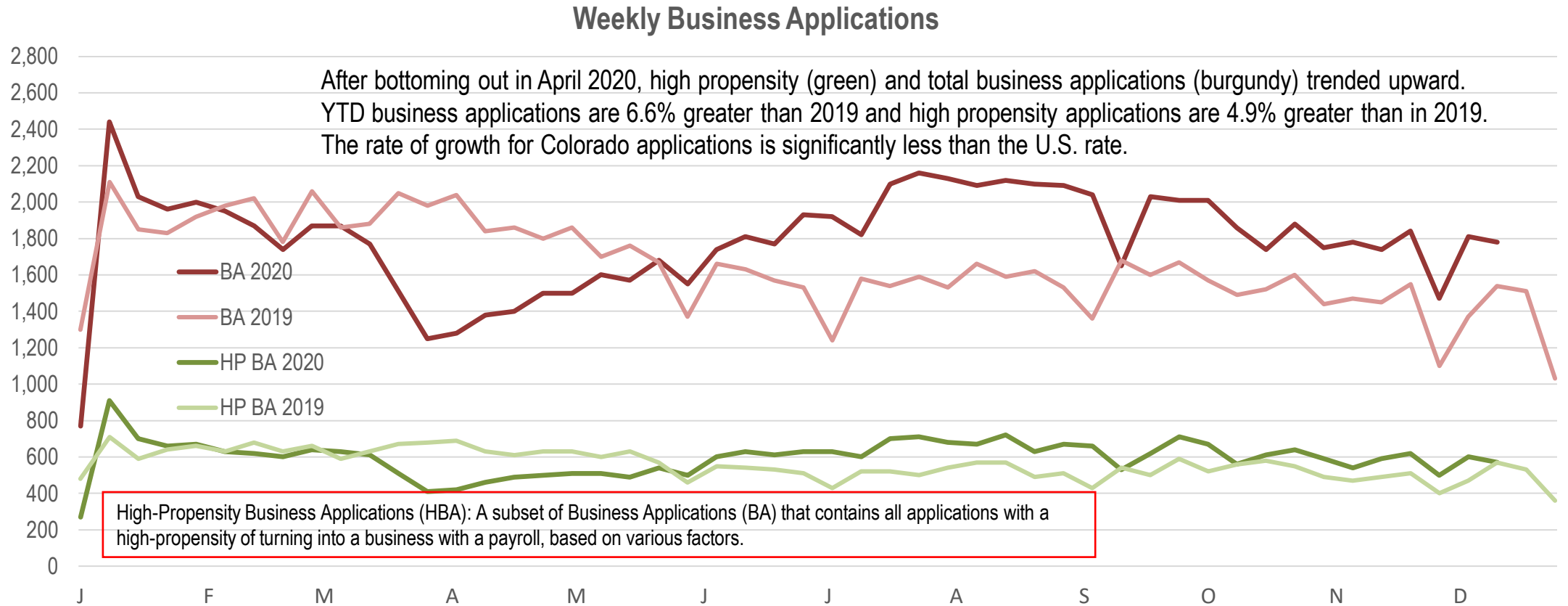


Source: FRED, U.S. Census Bureau, NSA, cber.co.

Colorado-based Business and Economic Research <https://cber.co>

Colorado Weekly Business Applications

Total and High Propensity 2019 vs 2020



Source: FRED, U.S. Census Bureau, NSA, cber.co.

Industrial Production and Major Indices

IPI, Consumer Sentiment Index, NFIB Small Business Optimism Index, and Manufacturing and Services PMI Indices

Key Points

Industrial production increased at a slower rate.

The Michigan Consumer Sentiment Index posted a partisan rebound in December because of the election results.

The Small Business Optimism Index slipped in October.

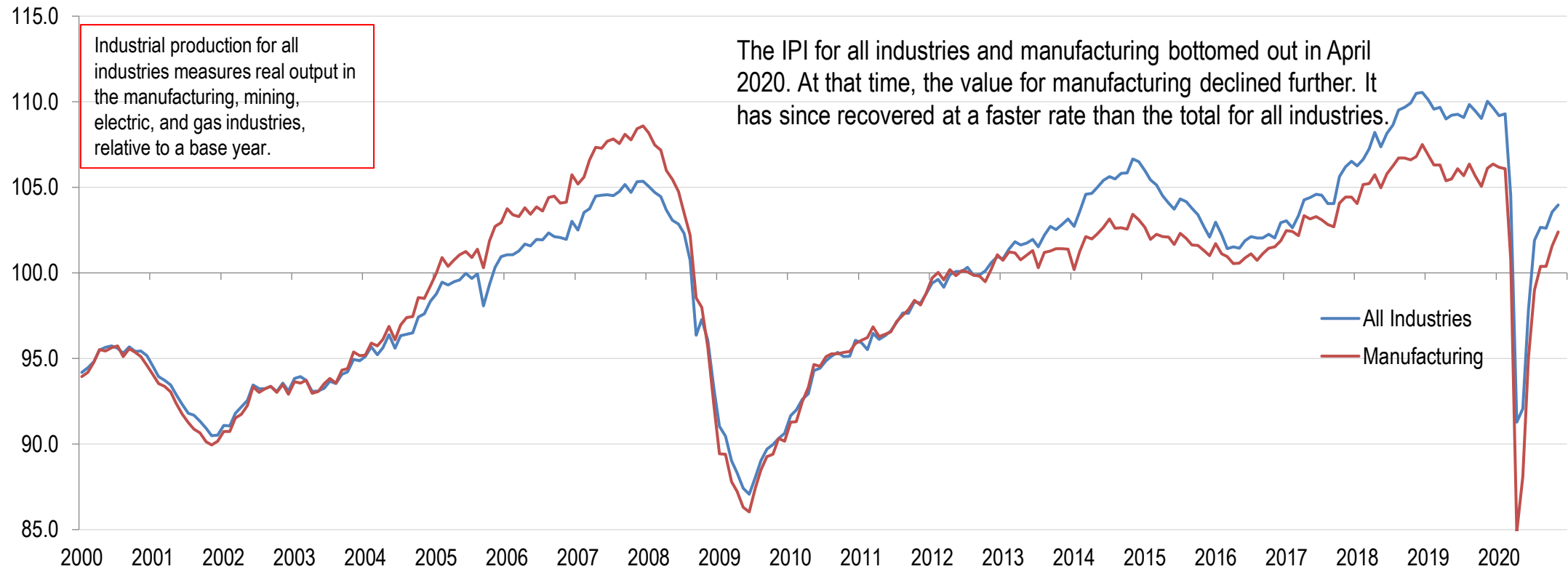
The indices for manufacturing and services slipped in November, but purchasing managers are optimistic about the future. Their industries are in expansionary territory, although manufacturers have been challenged by the pandemic.

Industrial Production Index

All Industries and Manufacturing

Industrial Production, All Industries and Manufacturing

Index, 2012 = 100



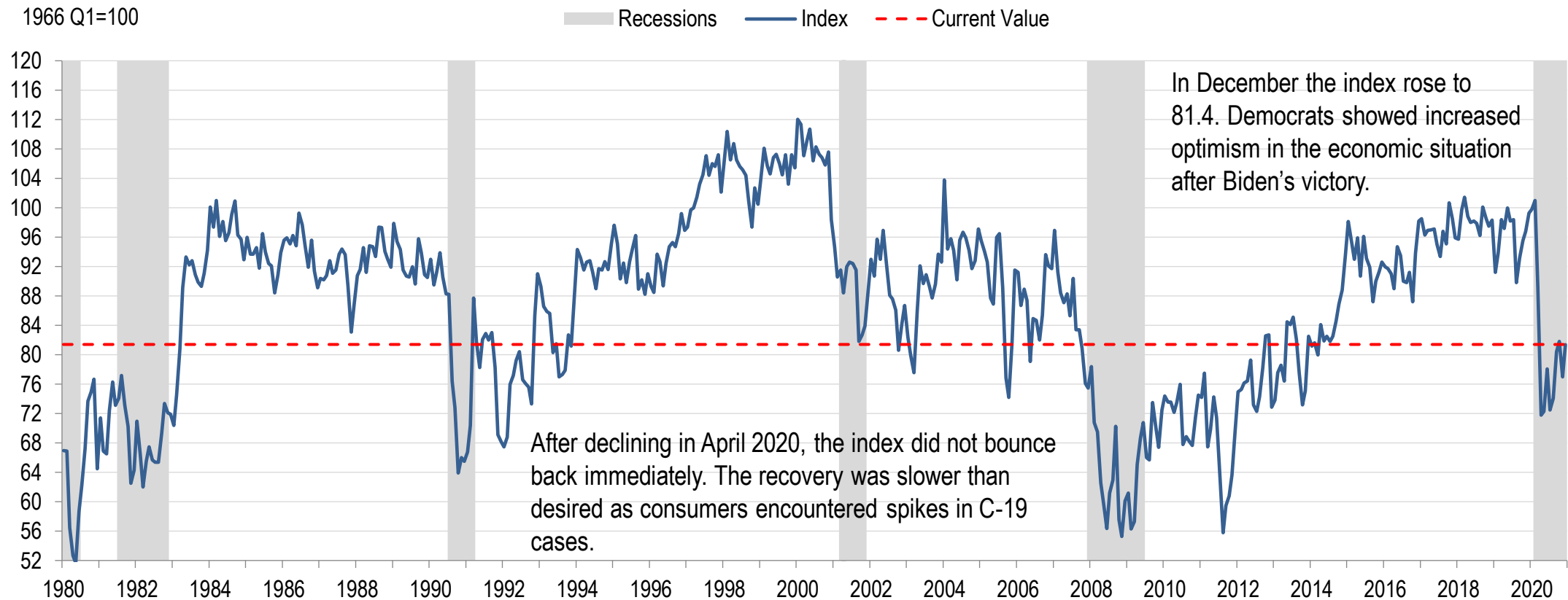
Source: FRED, Federal Reserve, SA, cber.co.

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Consumer Sentiment Index

University of Michigan

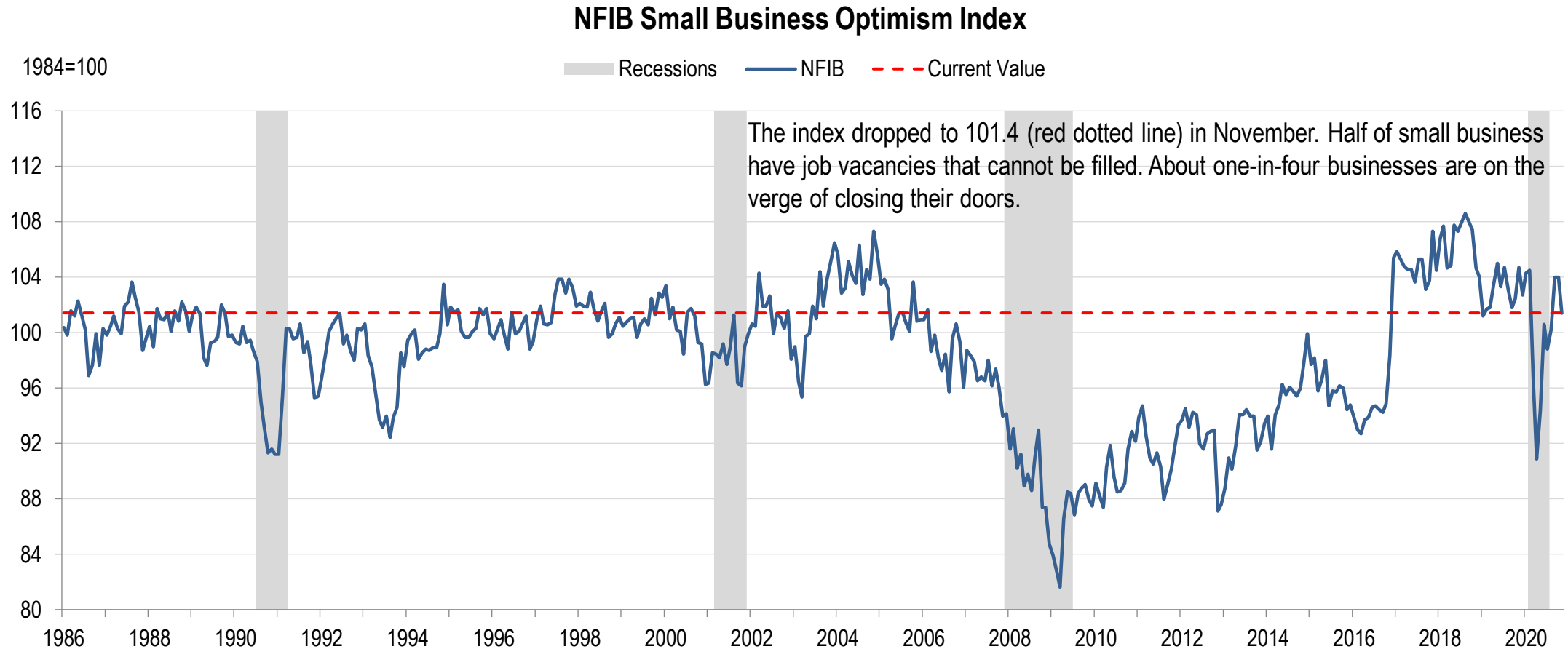
Michigan Consumer Sentiment Index



Source: University of Michigan, cber.co.

NFIB Small Business Optimism Index

United States

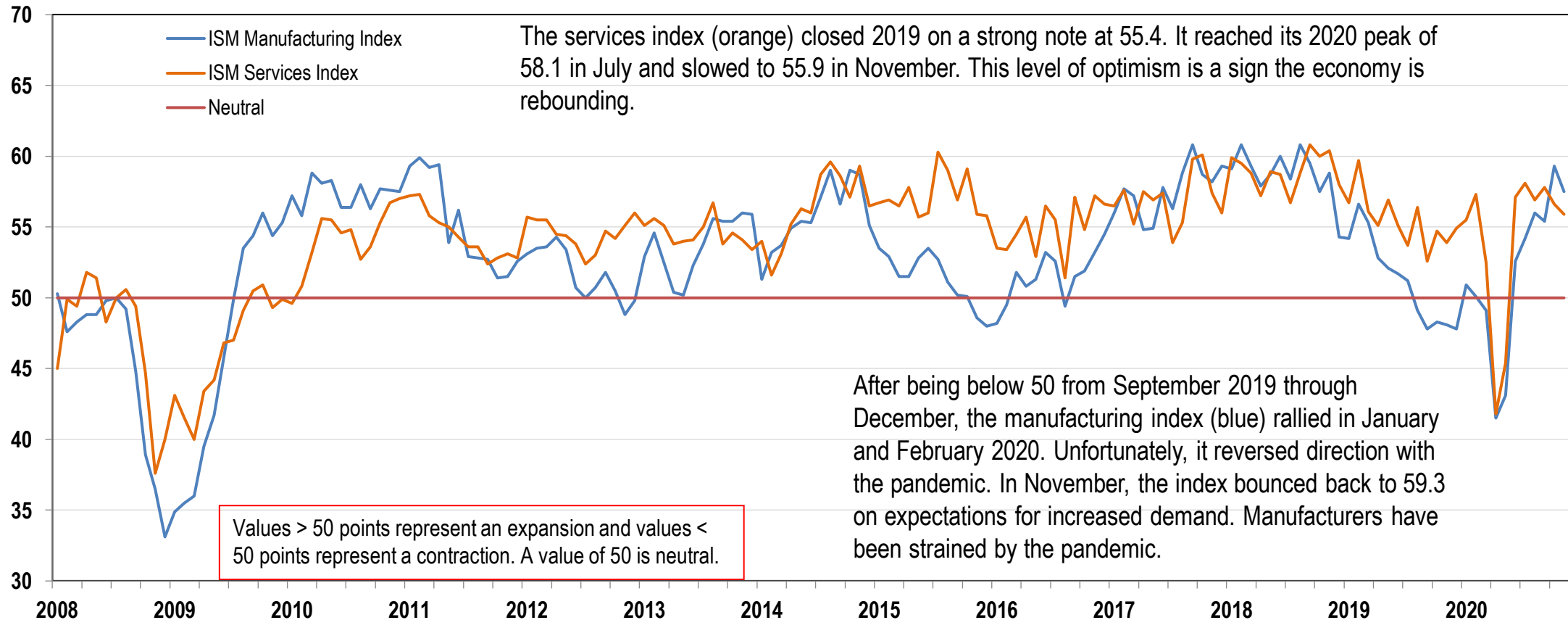


Source: NFIB, cber.co.

ISM PMI Composite Indices

Manufacturing vs. Services

ISM Manufacturing PMI vs. Services PMI Composite Indices



Source: Institute of Supply Management, cber.co

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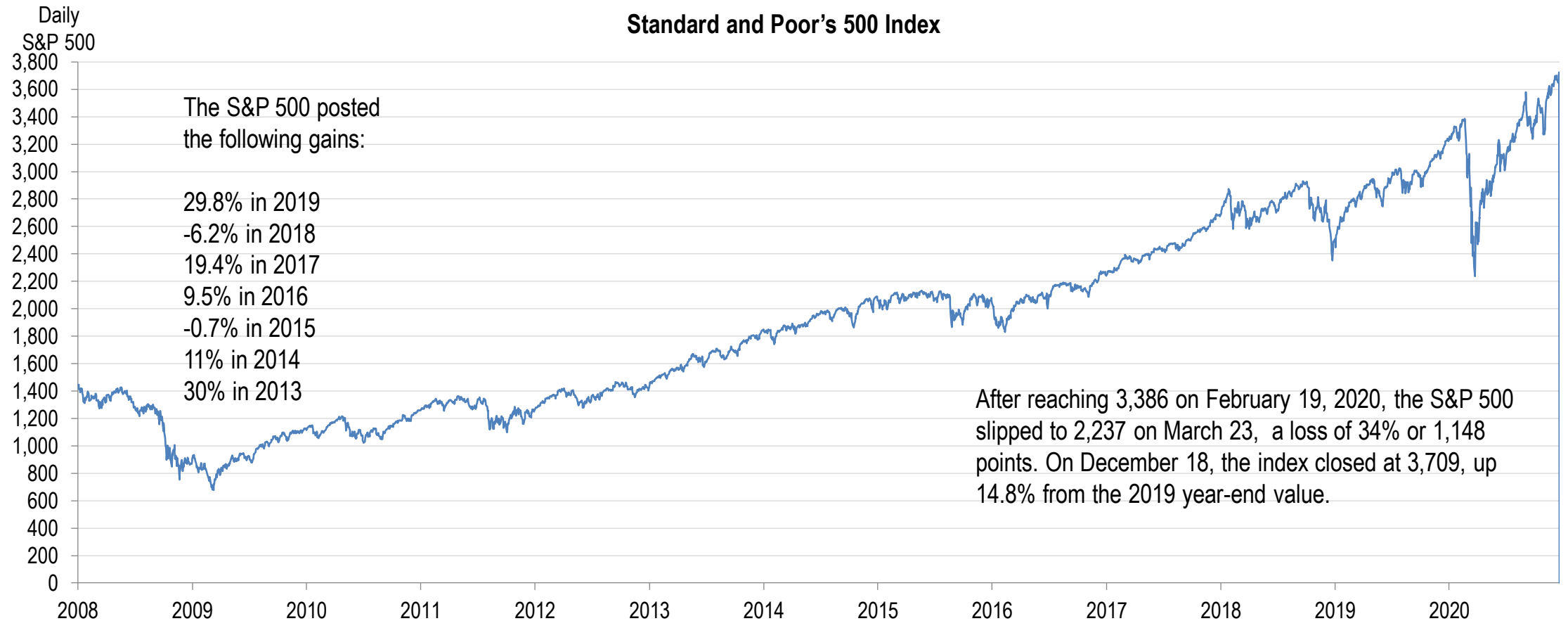
S&P 500 Index and WTI Crude Oil Prices

Key Points

The S&P Index has posted YTD double-digit gains.

The price for a barrel of oil has declined because of lower demand. Oil was in the \$40 range through the second half of the year and approached \$50 near the end of December.

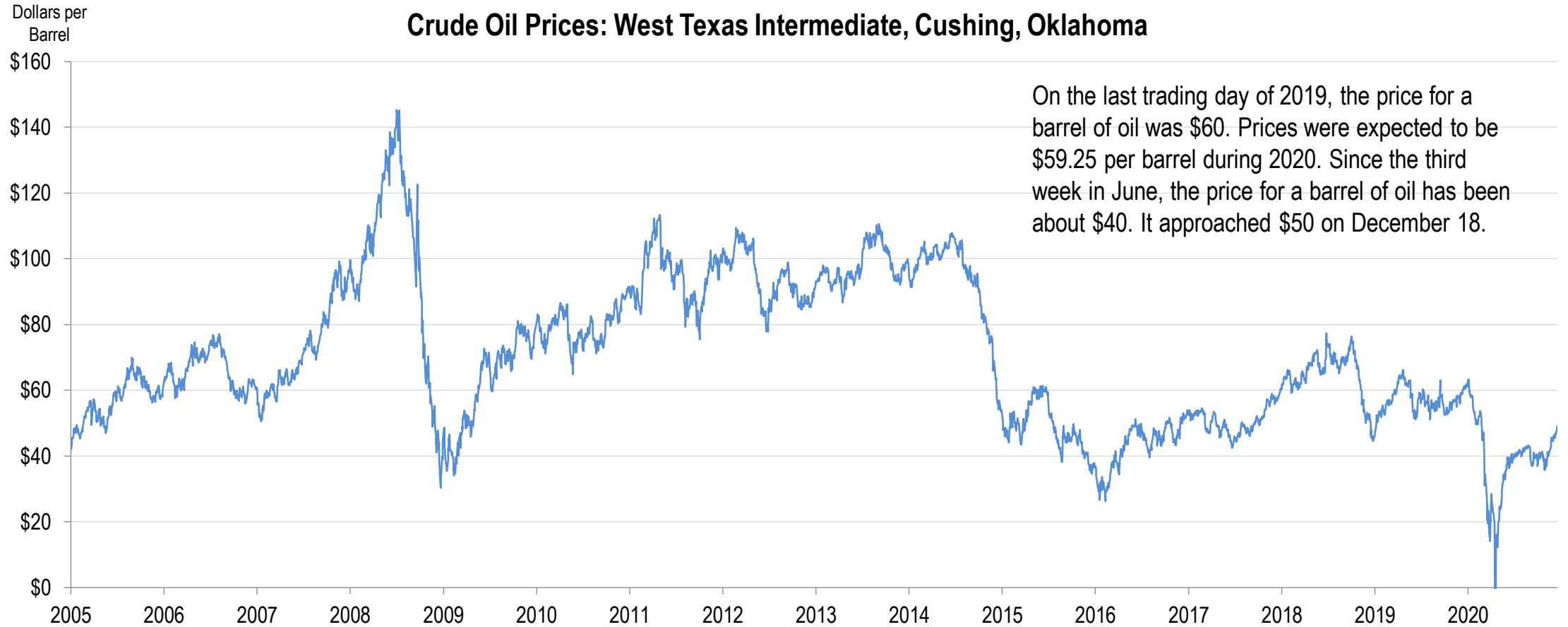
Standard and Poor's 500 Index



Source: FRED, S&P 500, cber.co.

Crude Oil Prices

West Texas Intermediate



Source: FRED, EIA, cber.co.

Colorado Unemployment Claims, Unemployment Rate by County, Employment Recovery

Colorado

Key Points

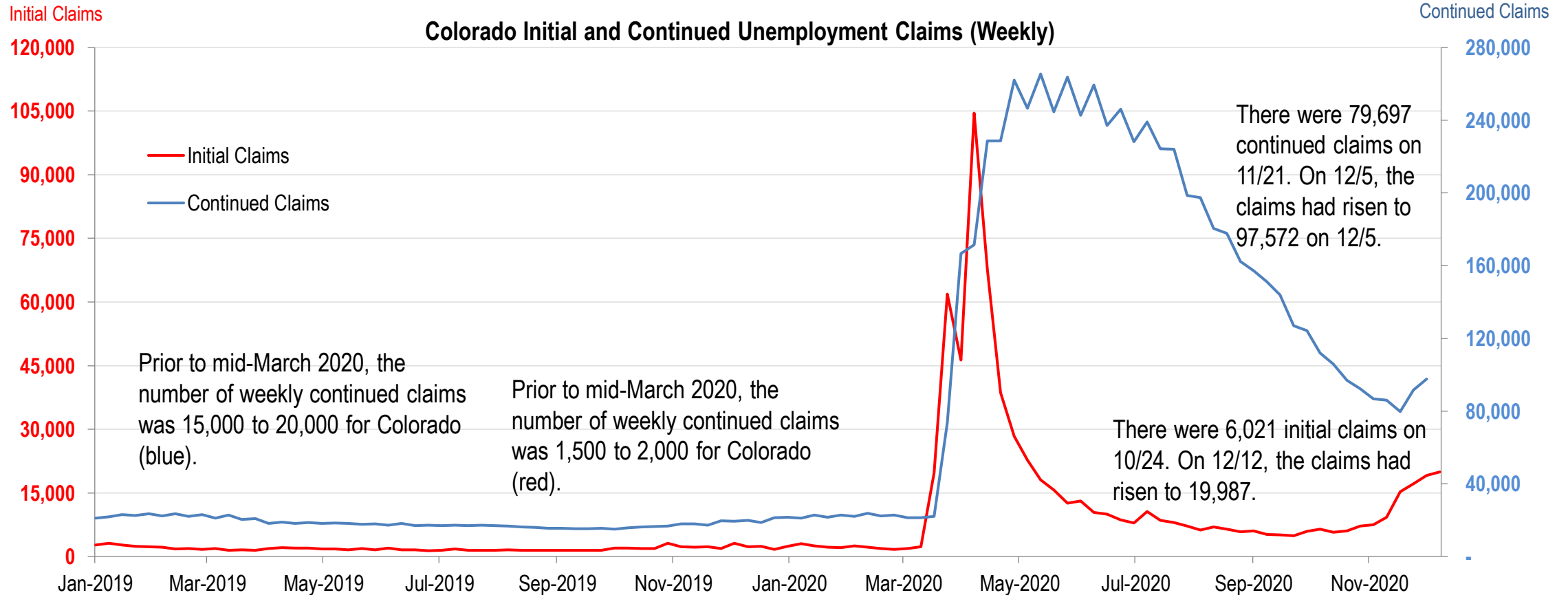
Colorado's initial and continued unemployment claims are on the rise.

Denver, Arapahoe, and Adams County have the highest unemployment rates in the Denver MSA.

The leisure and hospitality, state and local government, and transportation sectors are a drag on the Colorado economy.

Colorado Unemployment Claims (Weekly)

Initial and Continued 2019 to Current



Source: FRED, Department of Labor, cber.co. Note: Does not include Pandemic Unemployment Assistance (PUA).

Colorado Unemployment by Major MSA Counties

In November, the seasonally adjusted Colorado unemployment rate was 6.4%, and the nonseasonally adjusted rate was 6.2%. The BLS only calculates NSA county rates. The unemployment rate is calculated from the “household survey” or the location where the respondent lives. In contrast, the employment survey is calculated based on where a person works.

Colorado

- The Colorado unemployment rate for November was 6.2%.
- The Colorado MSA rate was 6.2% (17 counties). The non-MSA rate was 6.0% (47 counties).
- The range of rates was 8.9%; 2.3% (Kiowa and Baca) to 11.2% (San Miguel).
- 21 counties have rates greater than the state average and 43 have rates less than the state average.
- Small MSAs (Pueblo 8.3%, Grand Junction 6.0%)
- Mid-sized MSAs (Greeley 6.4%, and Colorado Springs 6.0%, Fort Collins 5.2%, Boulder 5.1%)
- Denver MSA 6.4% (The top six counties were 6.4% and the smallest four counties were 4.7%).

Denver MSA (Top Six Counties)

The following table shows the six largest counties in the Denver MSA (highlighted in orange). The state’s other four largest counties are shown. Three of the top five largest counties have unemployment rates greater than 6.8%.

County	Labor Force	Rate
Denver	429,690	7.1%
Arapahoe	374,316	6.8%
El Paso	346,675	6.0%
Jefferson	341,005	5.8%
Adams	279,865	7.0%
Larimer	202,898	5.2%
Douglas	195,414	4.6%
Boulder	192,190	5.1%
Weld	170,016	6.4%
Broomfield	40,620	5.3%

Composition of Shortfall and Time to Recover Employment

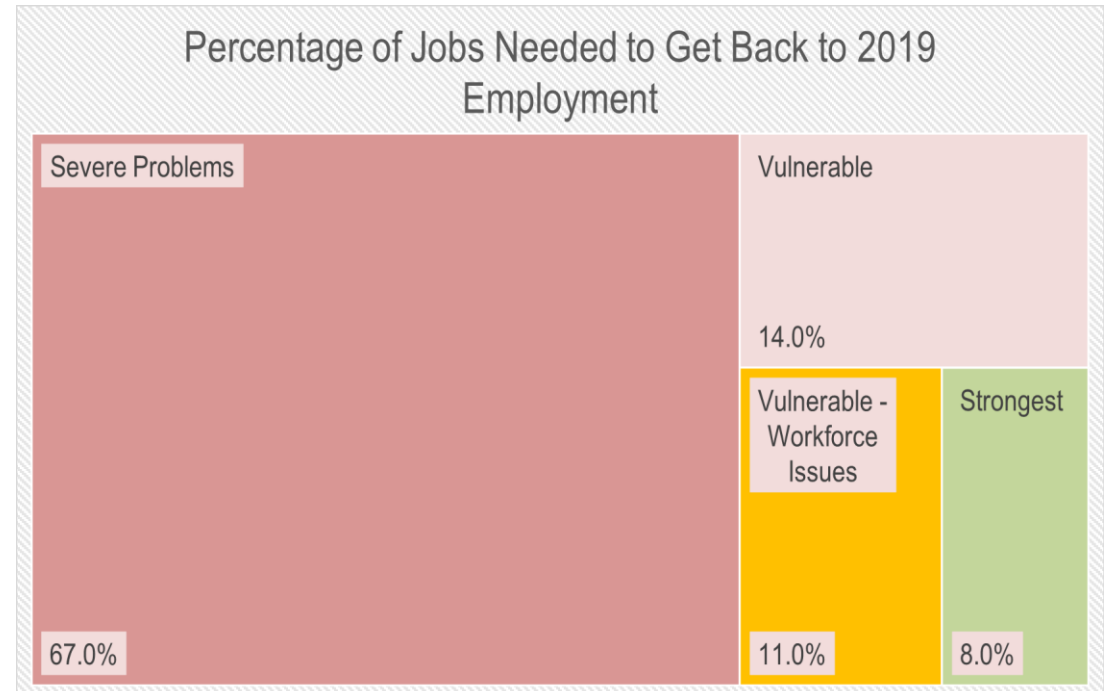
About 8% of employees work in sectors that will return to their 2019 level by mid-2021 and 25% are in industries that are vulnerable and will take longer to recover. Finally, about two-thirds are employed in sectors that will take the longest to recover.

The March 2021 benchmark process will likely state that employment for 2020 declined by 160,000 jobs. The base scenario assumes limited restrictions/lockdowns, slow distribution of the vaccine in Q1, limited impact of the stimulus in Q1, and no interference in the transition. Also, consumption will be modest, and the labor market will struggle, particularly during Q1. The number of employees returns to the 2019 level in Q4 2023.

Scenario	2020	2021	2022	2023	Recovery
Upside		60.0	80.0	70.0	Q2 2023
Base	-160.0	45.0	70.0	65.0	Q4 2023
Downside		35.0	55.0	55.0	Q1 2024

Source: BLS, cber.co.

Colorado-based Business and Economic Research <https://cber.co>



Least Vulnerable - PST, financial, manufacturing, wholesale trade , warehousing, utilities, federal government, management of companies, private education

Vulnerable – Administrative services, other services, information, extractive industries, retail

Workforce Issues - Healthcare and construction

Severe Problems - Leisure and hospitality, state and local government, transportation

Colorado Metrics

Building Permits, DIA Passengers, and Oil Production

Key Points

The number of permits issued for single-family and multifamily housing in 2020 is up slightly compared to 2019.

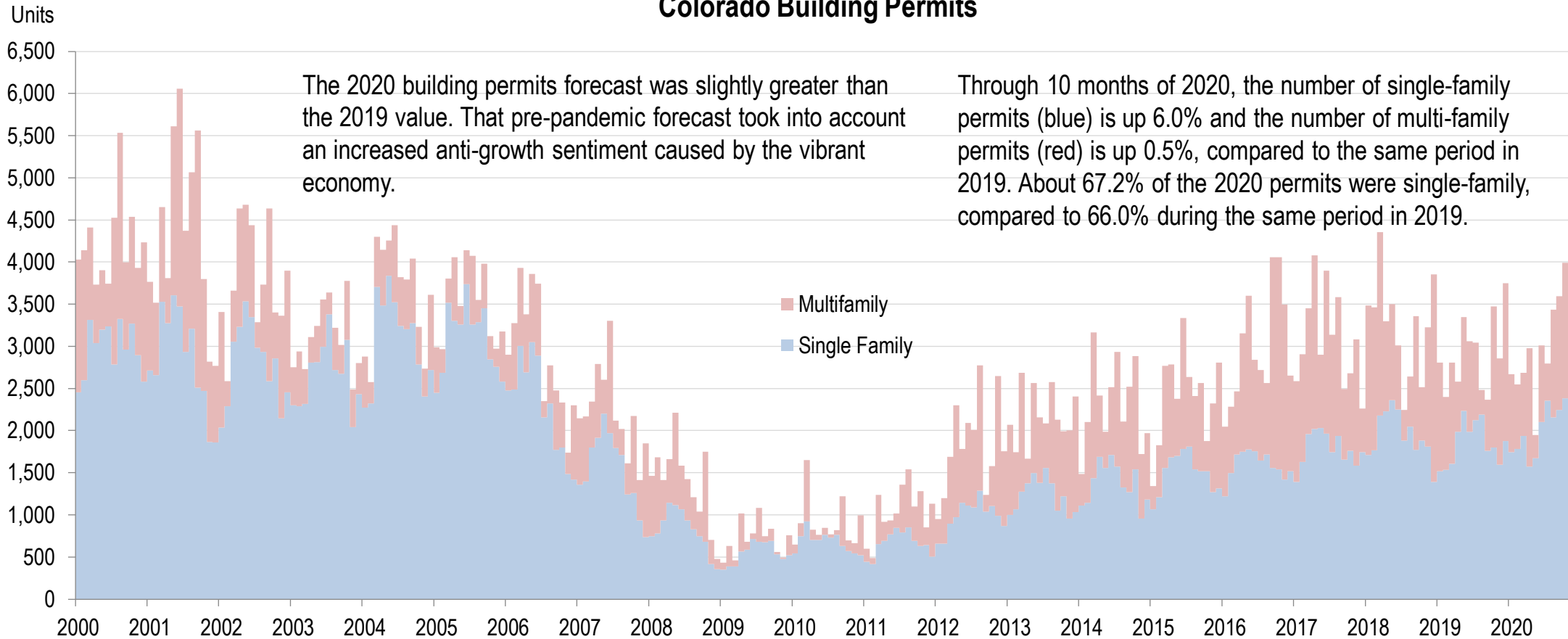
In 2020, the number of passengers at DIA is about half of 2019.

The production of oil has declined because of state regulations and reduced global demand.

Colorado Residential Building Permits

Units

Colorado Building Permits



Source: TAMU Real Estate Center, U.S. Census Bureau, cber.co.

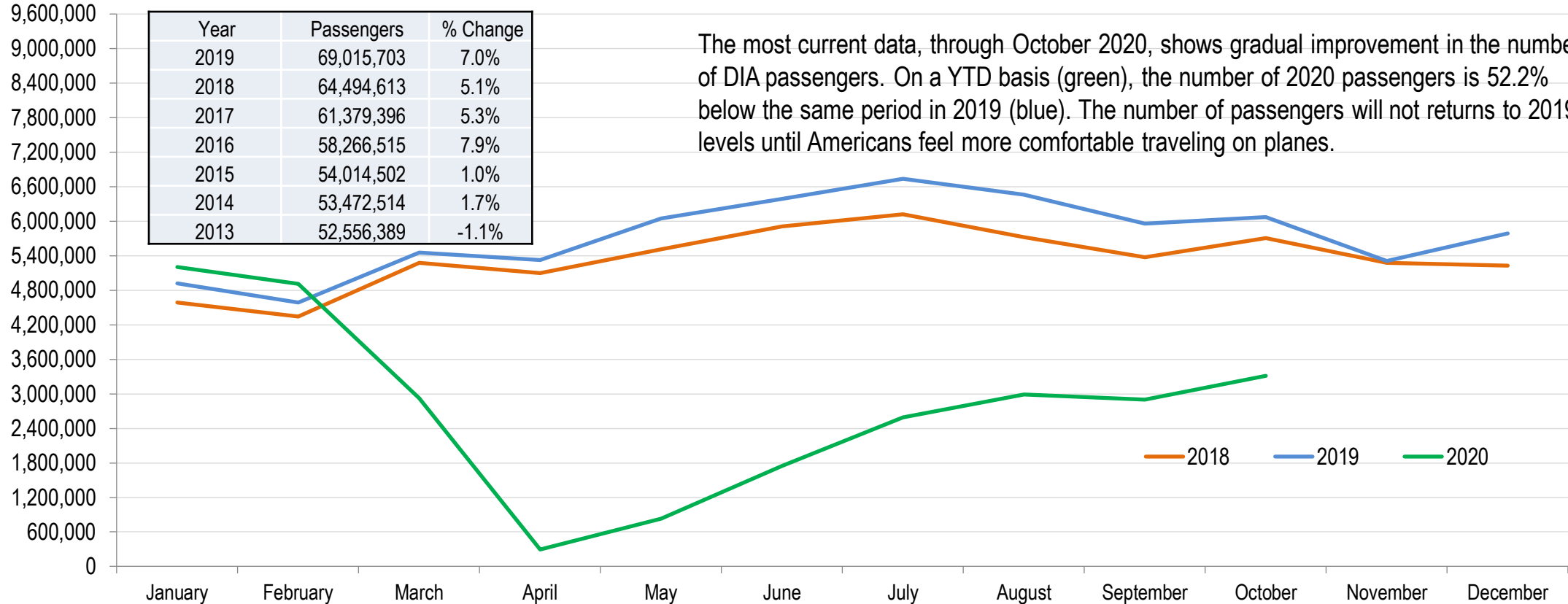
Colorado-based Business and Economic Research <https://cber.co>

Denver International Airport Passengers

Monthly

DIA Passengers

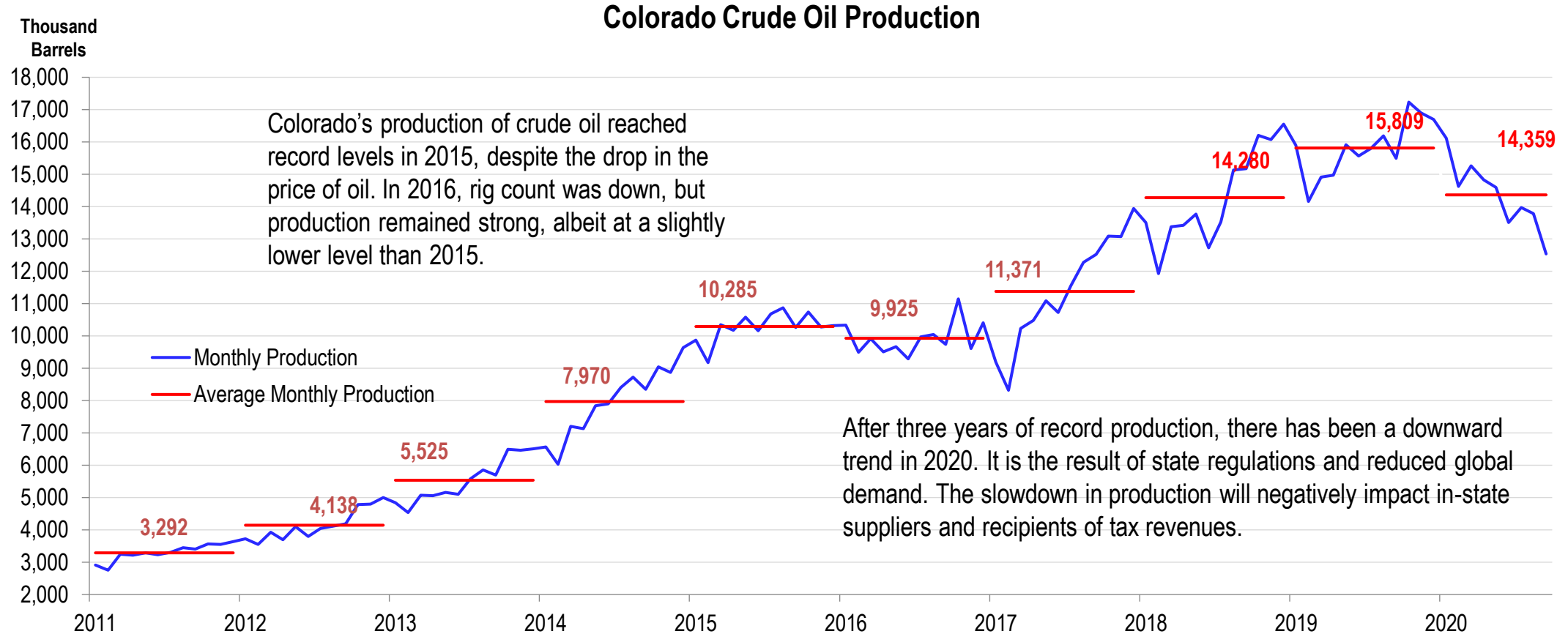
Passengers



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

Colorado Field Production of Crude Oil

2011 to 2020 (Thousand Barrels)



Source: EIA, cber.co.

Opportunity Insights (tracktherecovery.org)
United States and Colorado
Employment Recovery, Recovery by Income, Spending,
Small Businesses

Key Points

Colorado is not a leading state in the U.S. recovery from the recession.

The recession for higher wage earners was less severe than middle or lower wage earners.

Consumption in Colorado has been hit harder than in the U.S.

The rate of decline in small business revenue for Colorado is similar to the U.S. rate.

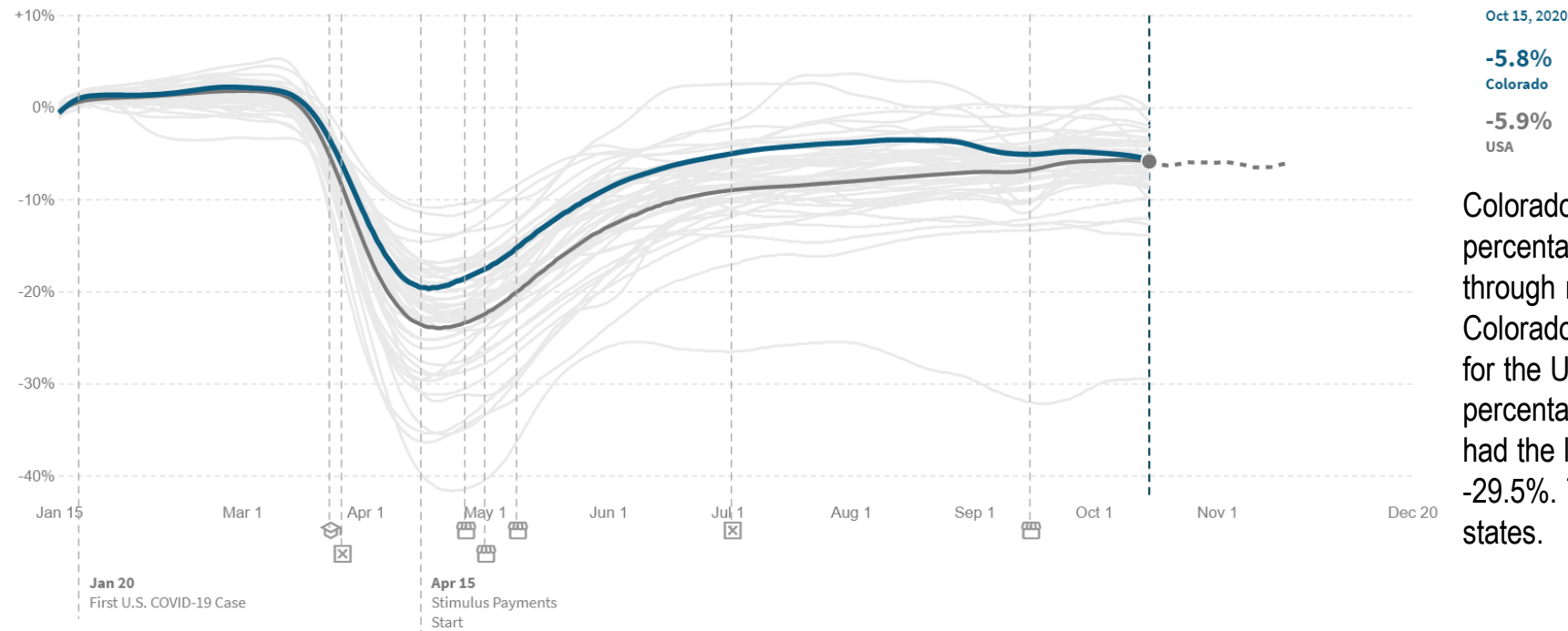
The decline in the rate of job postings is similar for the U.S. and Colorado.

Employment Recovery

U.S. and Colorado

Percent Change in Employment*

In **Colorado**, as of **October 15, 2020**, employment rates **decreased** by **5.8%** compared to January 2020 (not seasonally adjusted).



Colorado outperformed the U.S. in the percentage change in employment through mid-October. On October 15, Colorado was -5.8% compared to -5.9% for the U.S. Alaska had the highest percentage of change at +0.7%. Hawaii had the lowest percentage of change at -29.5%. The grey lines represent all states.

*Change in employment rates (not seasonally adjusted), indexed to January 4-31, 2020. This series is based on payroll data from Paychex and Intuit, worker-level data on employment and earnings from Earnin, and timesheet data from Kronos. The dotted line in the low-wage series is a prediction of employment rates based on Kronos data.

last updated: **December 14, 2020** next update expected: **December 20, 2020**

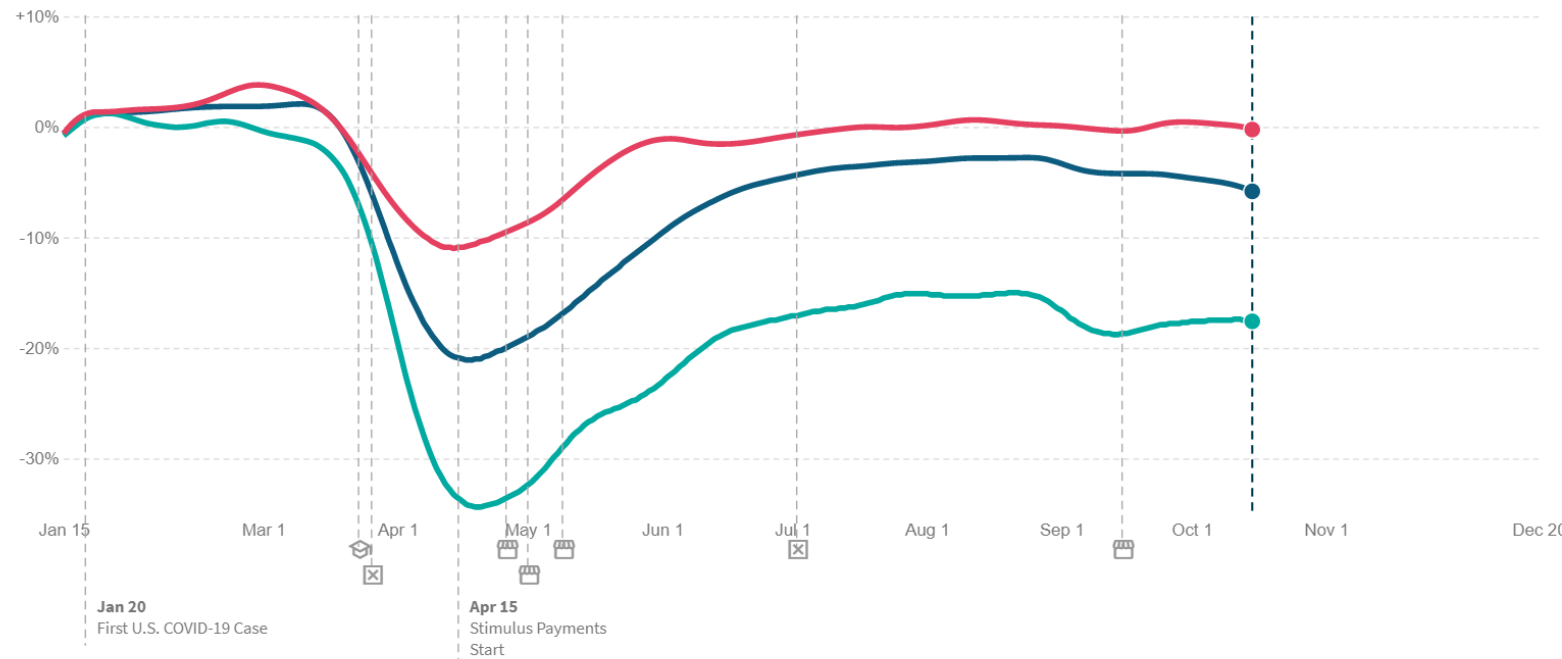
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Employment Recovery

Low, Middle, High Income Employment

Percent Change in Employment*

In **Colorado**, as of **October 15, 2020**, employment rates among workers in the middle wage quartiles **decreased** by **5.8%** compared to January 2020 (not seasonally adjusted).



Oct 15, 2020

-0.2%
High Wage (>\$60K)

-5.8%
Middle Wage (\$27K-\$60K)

-17.6%
Low Wage (<\$27K)

Workers with higher wages have recovered more quickly than middle-wage or lower-wage employees.

The most current rates of change for the U.S. employment are:

- +1.2% High wages (>\$60k)
- -4.0% Middle wages (\$27k to \$60k)
- -19.0% Low wages (<\$27k).

*Change in employment rates (not seasonally adjusted), indexed to January 4-31, 2020. This series is based on payroll data from Paychex and Intuit, worker-level data on employment and earnings from Earmin, and timesheet data from Kronos. The dotted line in the low-wage series is a prediction of employment rates based on Kronos data.

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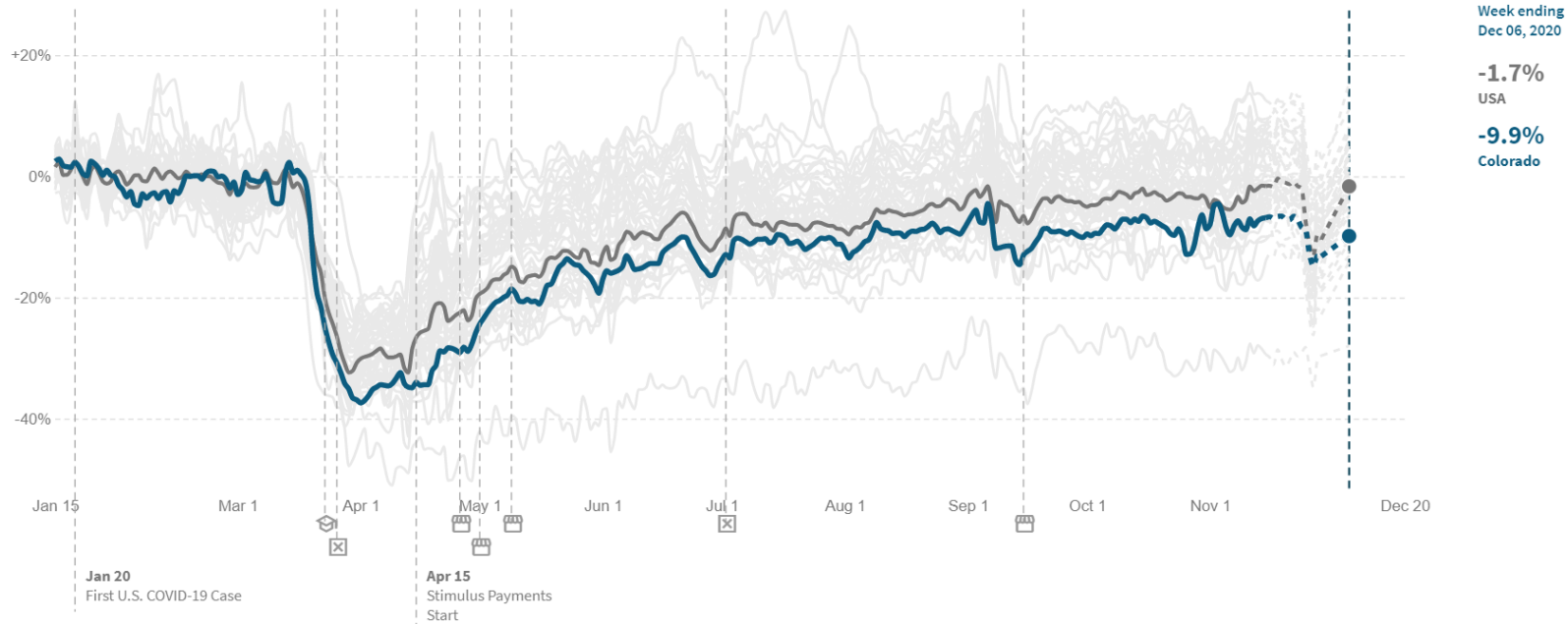
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All Consumer Spending

U.S. vs. Colorado

Percent Change in All Consumer Spending*

In **Colorado**, as of **December 06 2020**, total spending by all consumers **decreased** by **9.9%** compared to January 2020.



*Change in average consumer credit and debit card spending, indexed to January 4-31, 2020 and seasonally adjusted. The dashed segment of the line is provisional data, which may be subject to non-negligible revisions as newer data is posted. This series is based on data from Affinity Solutions.

last updated: December 15, 2020 next update expected: December 30, 2020

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The overall change in Colorado's consumption was lower than the U.S. It was also lower than the U.S. in the six categories measured. Massachusetts had the greatest rate of change, +15.4%, and the District of Columbia had the lowest rate of change at -28.0%. The grey lines represent other states.

All Consumer Spending December 6th

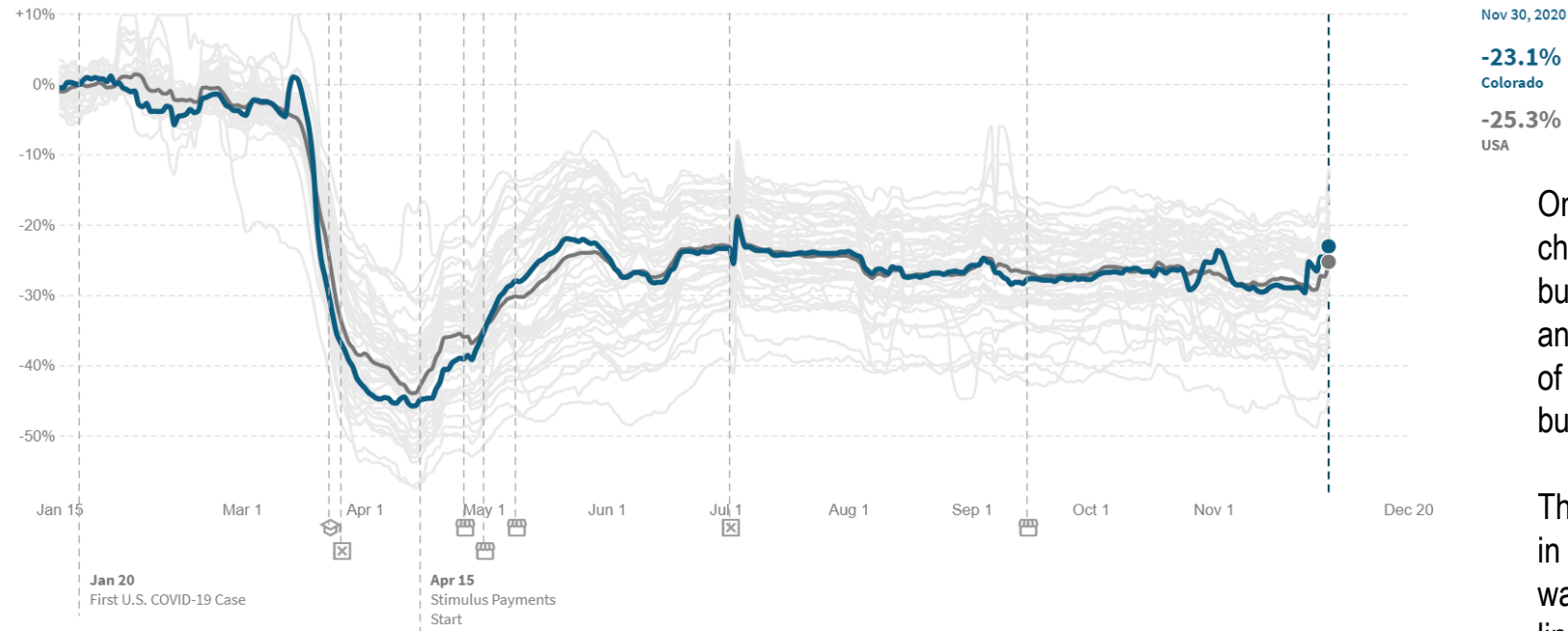
Category	U.S.	Colorado
All Spending	-1.7%	-9.9%
Groceries	24.8%	21.7%
Retail	14.6%	11.6%
Healthcare	-24.9%	-28.3%
Restaurants/Hotels	-25.9%	-43.5%
Transportation	-46.4%	-59.7%
Ent. & Recreation	-51.8%	-64.2%

Small Businesses Open

U.S. vs. Colorado

Percent Change in Number of Small Businesses Open*

In **Colorado**, as of **November 30 2020**, the number of small businesses open **decreased** by **23.1%** compared to January 2020.



*Change in small businesses open (defined as having financial transaction activity), indexed to January 4-31 2020 and seasonally adjusted. This series is based on data from Womply.

last updated: December 14, 2020 next update expected: December 20, 2020

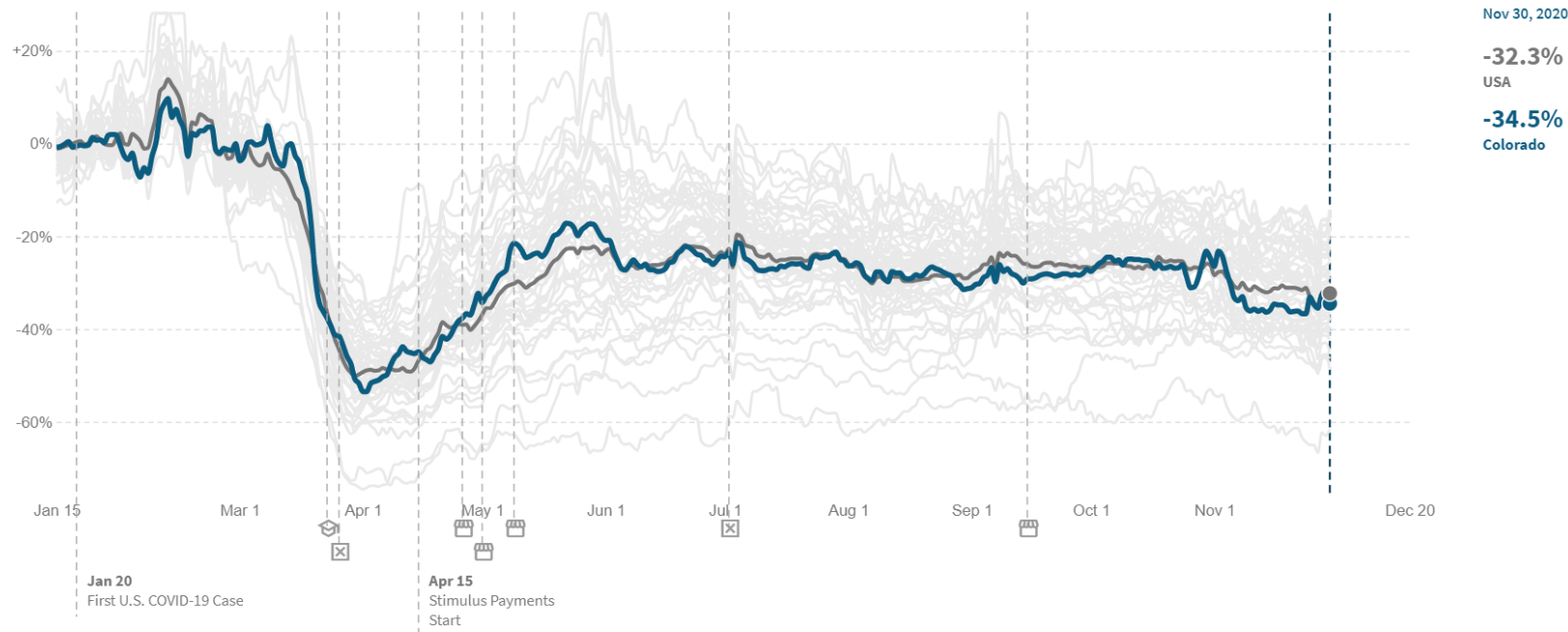
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Small Business Revenue

U.S. vs. Colorado

Percent Change in Small Business Revenue*

In **Colorado**, as of **November 30 2020**, total small business revenue **decreased** by **34.5%** compared to January 2020.



On November 30, the percent change in small business revenue was similar for the U.S. and Colorado. The highest rate of change was -14.3% in Montana. The lowest rate of change was -61.6% in the District of Columbia. The grey lines represent other states.

*Change in net business revenue for small businesses, indexed to January 4-31 2020 and seasonally adjusted. This series is based on data from Womply.

last updated: December 14, 2020 next update expected: December 20, 2020

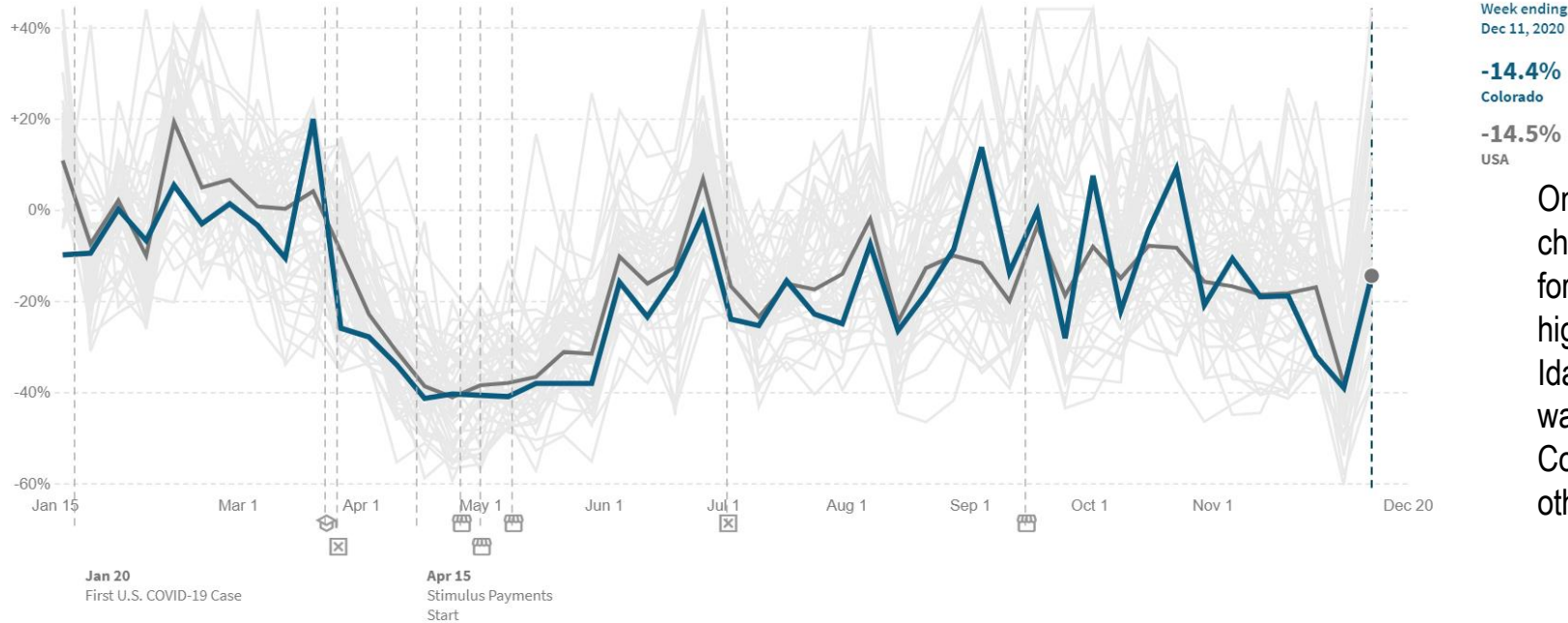
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Job Postings

U.S. vs. Colorado

Percent Change in Job Postings*

In **Colorado**, as of **December 11 2020**, total job postings **decreased** by **14.4%** compared to January 2020.



*Change in weekly unique job postings, indexed to January 4-31 2020. This series is based on data from Burning Glass Technologies.

last updated: December 15, 2020 next update expected: December 30, 2020

visit tracktherecovery.org to explore

Summary of Largest MSA Counties

The twelve largest MSA counties are sorted by the size of the labor force (column II). The most favorable values in a column are in green boxes and the least favorable are in red boxes. For example, in column III, Douglas has a 4.6% unemployment rate (green) and Pueblo has an 8.3% unemployment rate (red).

Largest Metro Counties in Colorado						
County	November Labor Force	November Unemployment Rate	Change in Consumer Spending	Change in Small Business Revenue	Change in Small Businesses Open	Change in Employment
Colorado	3,135,430	6.2%	-9.9%	-34.5%	-23.1%	-5.8%
Denver	429,690	7.1%	-7.0%	-34.7%	-24.3%	-7.1%
Arapahoe	374,316	6.8%	-5.5%	-34.0%	-16.6%	-4.0%
El Paso	346,675	6.0%	-13.5%	-20.5%	-17.8%	-4.8%
Jefferson	341,005	5.8%	-8.7%	-41.2%	-15.6%	-1.1%
Adams	279,865	7.0%	-0.4%	-20.3%	-3.8%	-5.9%
Larimer	202,898	5.2%	-19.0%	-27.9%	-20.2%	-8.7%
Douglas	195,414	4.6%	-6.5%	-61.4%	-28.3%	-2.2%
Boulder	192,190	5.1%	-13.9%	-39.6%	-11.1%	-12.1%
Weld	170,016	6.4%	-13.7%	-34.7%	-22.5%	1.6%
Mesa	78,770	6.0%	-17.6%	-22.0%	-24.1%	5.9%
Pueblo	77,967	8.3%	-22.4%	-22.6%	-24.1%	5.9%
Broomfield	40,620	5.3%	-18.7%	na	na	1.0%

Source: BLS, Opportunity Insights, cber.co

Summary

Summary

- The real GDP growth rate is projected to increase at a decreasing rate in Q4 2020 and Q1 2021.
- Nationally, business applications are increasing at a faster pace than in Colorado.
- The NFIB and ISM indices slowed in November. The Michigan Consumer Index showed increased optimism from Democrats.
- The equity markets continue to post gains.
- In Colorado, the stagnant unemployment rates and increasing initial and continued claims suggest there will be negative job growth through February. Unlike past recessions, Colorado is not a leading state in this recovery.
- The lagging Colorado industries are leisure and hospitality, state and local government, and transportation. These sectors currently account for about two-thirds of the current employment shortfall.
- The recession has had less impact on the employment of higher wage earners than middle-wage earners. Lower-wage earners were hit the hardest and are recovering the slowest.
- There were more single-family and multi-family building permits in 2020 despite the pandemic and a labor shortage. It is unlikely these permits address the lack of affordable housing.
- The number of passengers at DIA has increased rapidly but is at least 50% below 2019.
- Oil production is declining because of increased state regulations and lower global demand.
- Colorado's consumption is well below the nation and most states.
- About one-in-four small businesses are no longer in operations. Small business revenue is down by over one-third.
- The second round of stimulus checks has been approved by Congress (Finally), and the distribution of a vaccine is in place. Strong job growth will resume in Q2 and Q3.

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Review of Colorado and United States Economy
Based on November Employment Data

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Gary Horvath has produced annual employment forecasts of the state economy for over 30 years. They have been supplemented by monthly economic updates and indices that track economic performance over the short term. In addition, he has directed three statewide analyses that included reviews of all 64 county economies.

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.