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# Economic Trends for Colorado Through September 2019

Colorado-based Business and Economic Research  
Prepared  
October 20, 2019

# 2019 Economic Trends for Colorado

## Through September

For more than a year there have been numerous articles in the media suggesting a recession is right around the corner. The most current data shows the U.S. and Colorado economies are on solid footing, but most economists now agree the economy is growing at a slower rate. Colorado is on track to add 52,400 jobs in 2019, an increase of 1.9%. The current unemployment rate is painfully low at 2.7% and businesses are struggling to find qualified workers. The contents of this chartbook are listed below.

### United States

- U.S. Real GDP, Employment, Job Openings, and Inflation
- U.S. Labor Productivity, Industrial Production and Capacity Utilization
- Manufacturing and Nonmanufacturing Indices
- Retail Sales, and Auto and Light Truck Sales
- Single Family Permits, Construction Spending, NAHB HMI and Housing Starts, and Case Shiller Index
- S&P Performance
- NFIB Index and Michigan Consumer Sentiment
- Summary

### Colorado

- Colorado GDP
- Colorado Population and Population Trends
- Employment, Percent Change in Employment, and Unemployment
- Colorado Occupations
- DIA Passengers, New Vehicle Registrations, and Venture Capital
- Building Permits, Valuation, and Housing Prices
- Oil Production, Oil Production by State, Oil and Gas Production by County, and Prices
- Higher Education
- Summary

The 2019 forecast can be found at <https://cber.co/economic-forecasts/cber-co-economic-forecast/>. Monthly economic updates are available at <https://cber.co/economic-updates/>

# U.S. Economy





# The U.S. Economy

Real Gross Domestic Product, Employment, Job  
Openings, and Inflation

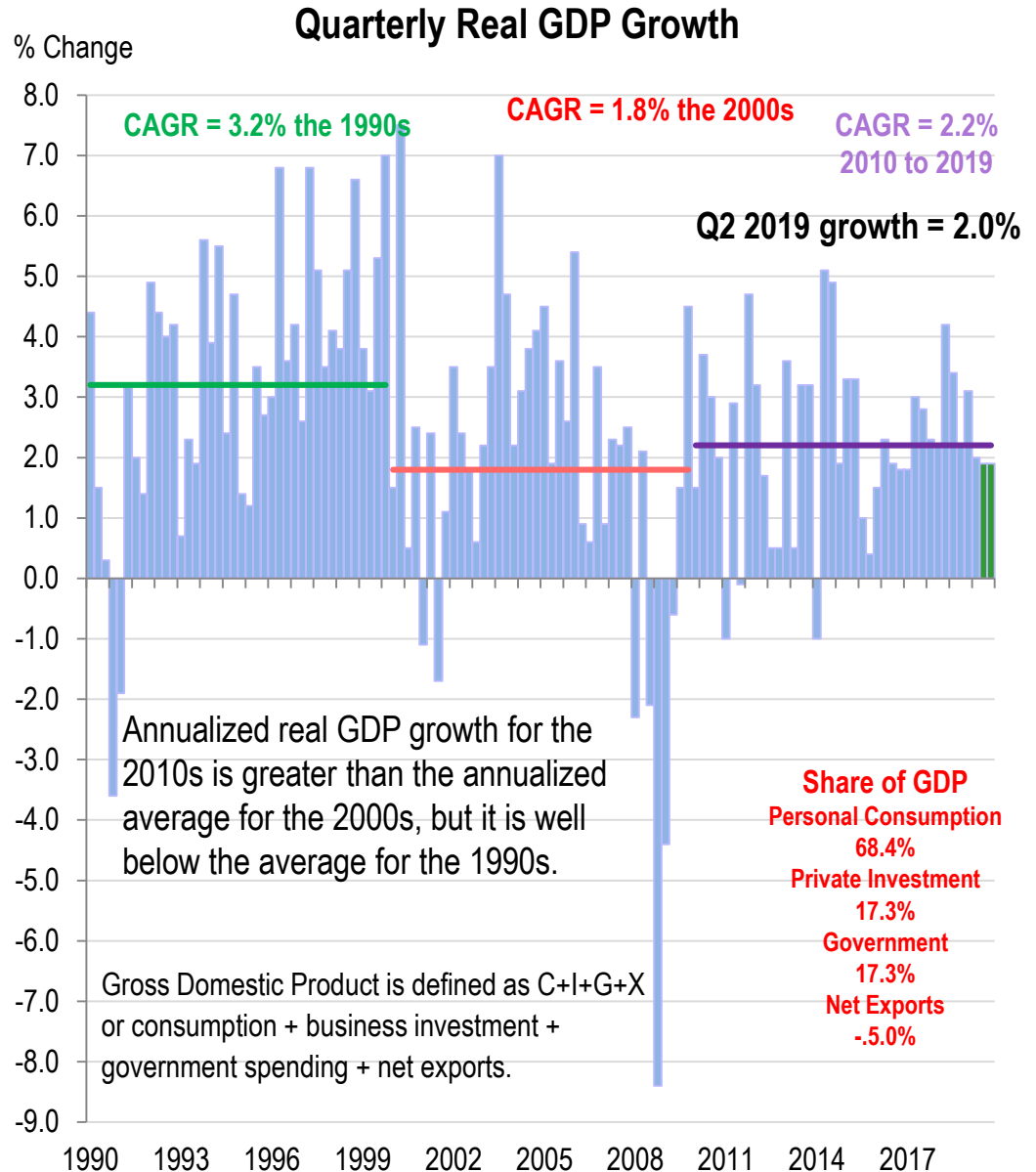
# Quarterly Real GDP Growth

## Historical United States

The third estimate for Q2 2019 real GDP growth was revised downward to 2.0%. Q2 2019 is the 21<sup>st</sup> consecutive quarter of positive growth since Q1 2014.

Real GDP growth for Q3 and Q4 will be 2.0% or slightly less (green bars). Overall growth for 2019 will be in the range of 2.3% to 2.5%.

Projected real GDP for 2020 will be 1.8% to 2.2%. Growth will continue to be driven by personal consumption. In 2020 there may be fiscal stimulus to sustain the expansion because it is an election year.

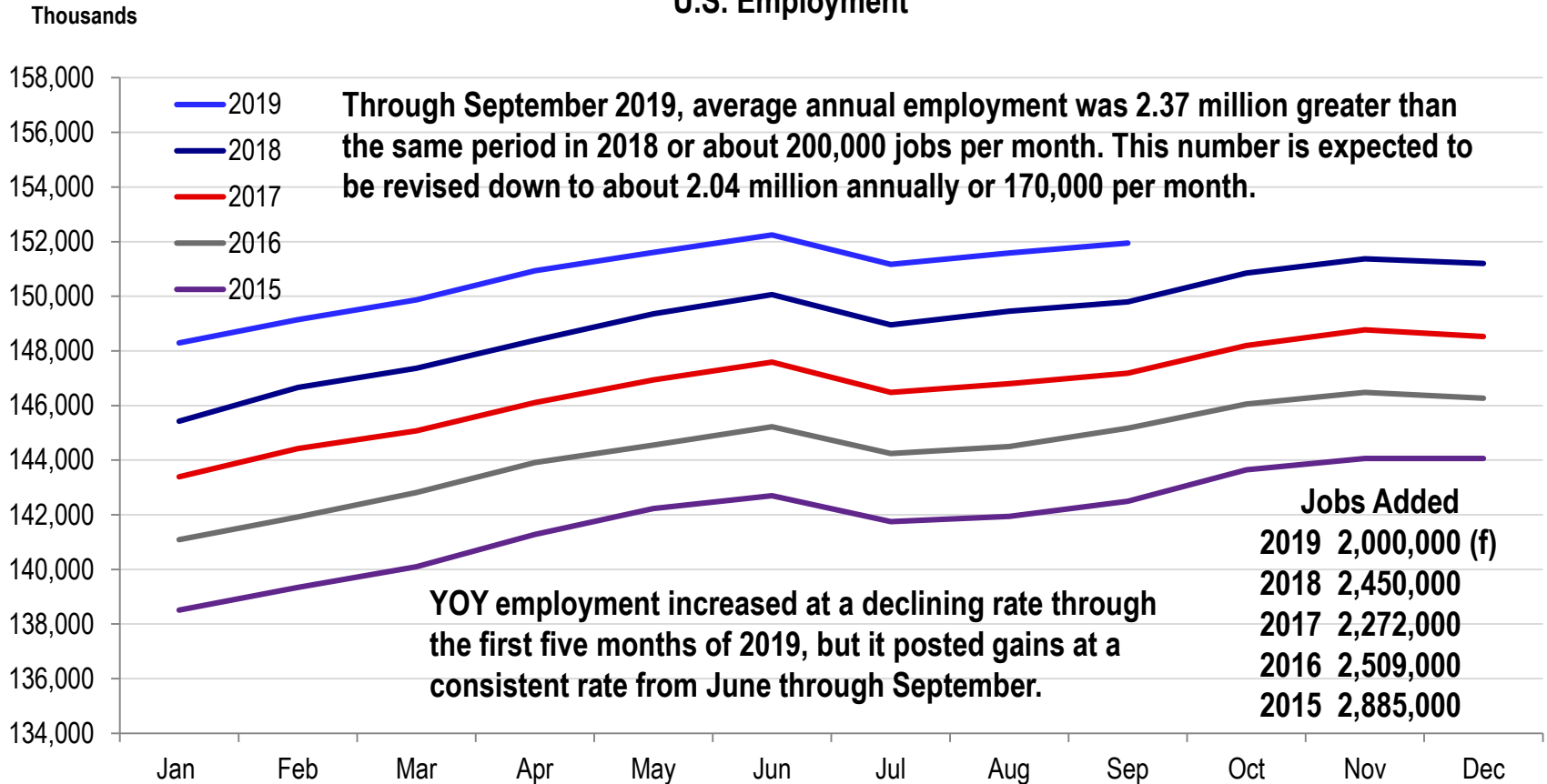


Source: Bureau of Economic Analysis, Table 1.1.1, Share of GDP based on 2017, cber.co.

# U.S. Employment

## 2015 to 2019

U.S. Employment

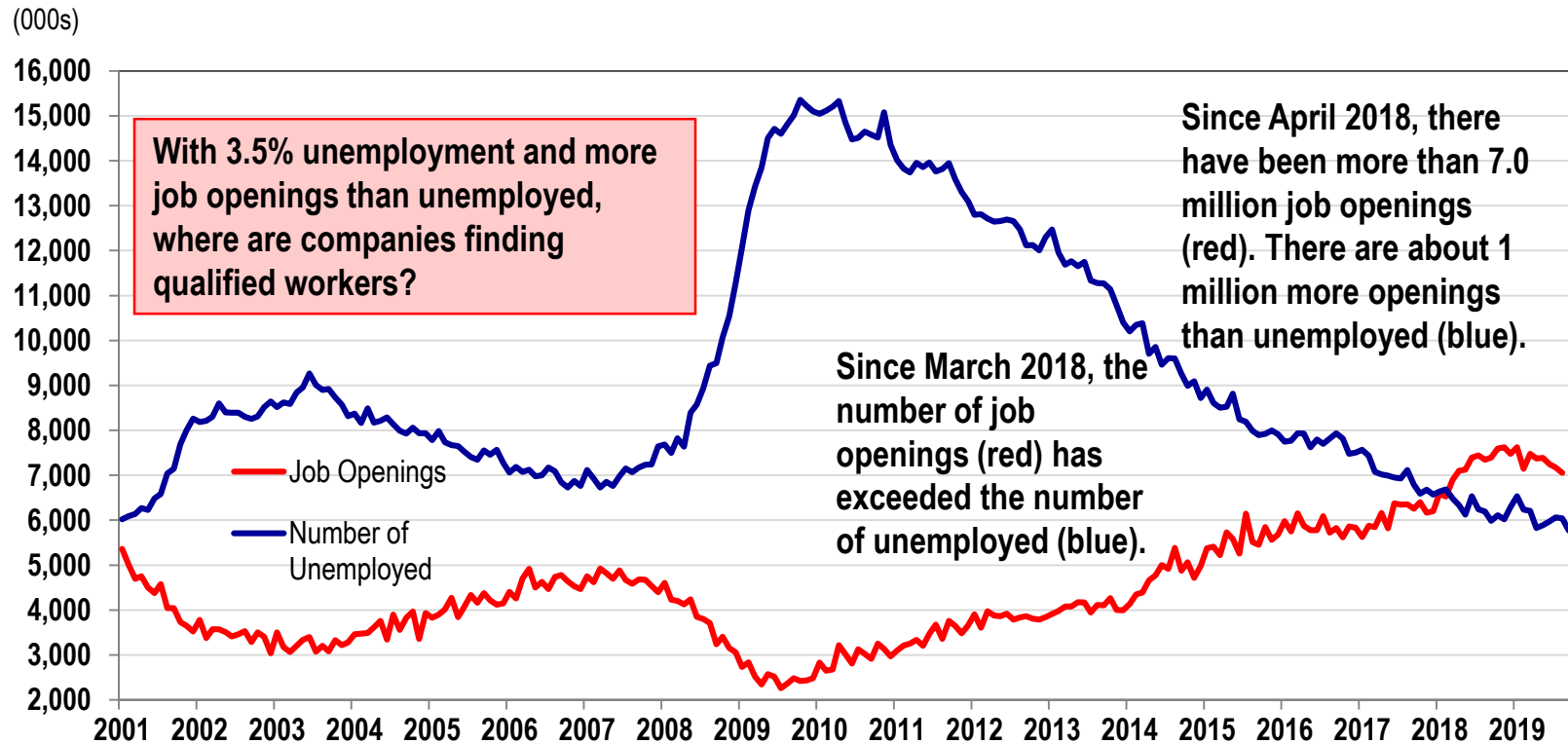


Source: BLS, NSA, cber.co. Note: CES Employment is also referred to as nonfarm wage and salary employment.

# Job Openings vs. Number of Unemployed

United States

## Job Openings vs. Number of Unemployed



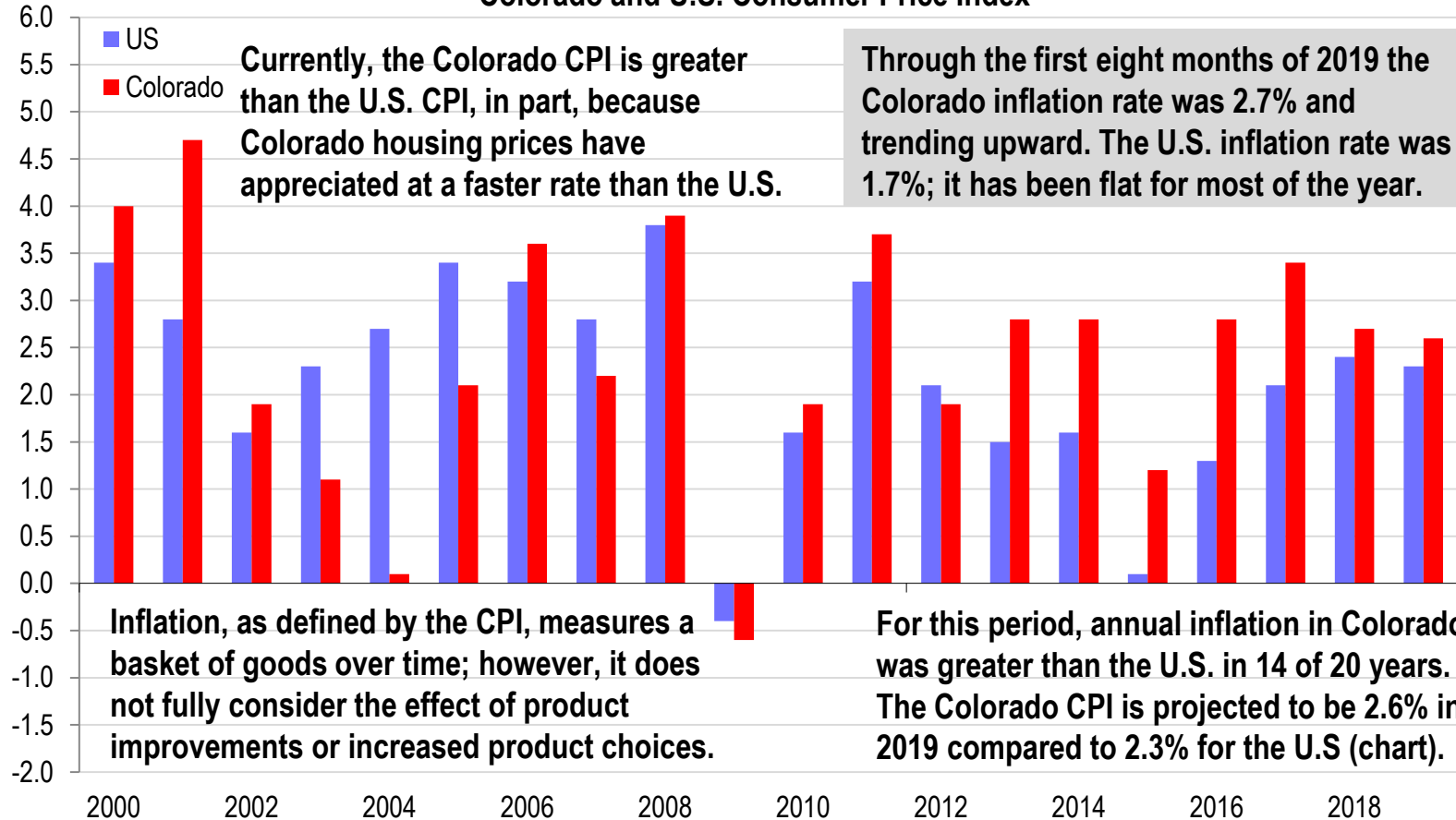
Source: Bureau of Labor Statistics, SA, cber.co.

# Consumer Price Index (CPI)

## Colorado vs. U.S.

1982-84=100,  
% change

Colorado and U.S. Consumer Price Index



Currently, the Colorado CPI is greater than the U.S. CPI, in part, because Colorado housing prices have appreciated at a faster rate than the U.S.

Through the first eight months of 2019 the Colorado inflation rate was 2.7% and trending upward. The U.S. inflation rate was 1.7%; it has been flat for most of the year.

Inflation, as defined by the CPI, measures a basket of goods over time; however, it does not fully consider the effect of product improvements or increased product choices.

For this period, annual inflation in Colorado was greater than the U.S. in 14 of 20 years. The Colorado CPI is projected to be 2.6% in 2019 compared to 2.3% for the U.S (chart).

Source: Bureau of Labor Statistics, SA, cber.co.





# The U.S. Economy

U.S. Labor Productivity, Industrial Production and Capacity Utilization – All Industries

# U.S. Labor Productivity (Output per Hour)

Percent Change Same Quarter Prior Year Nonfarm Business

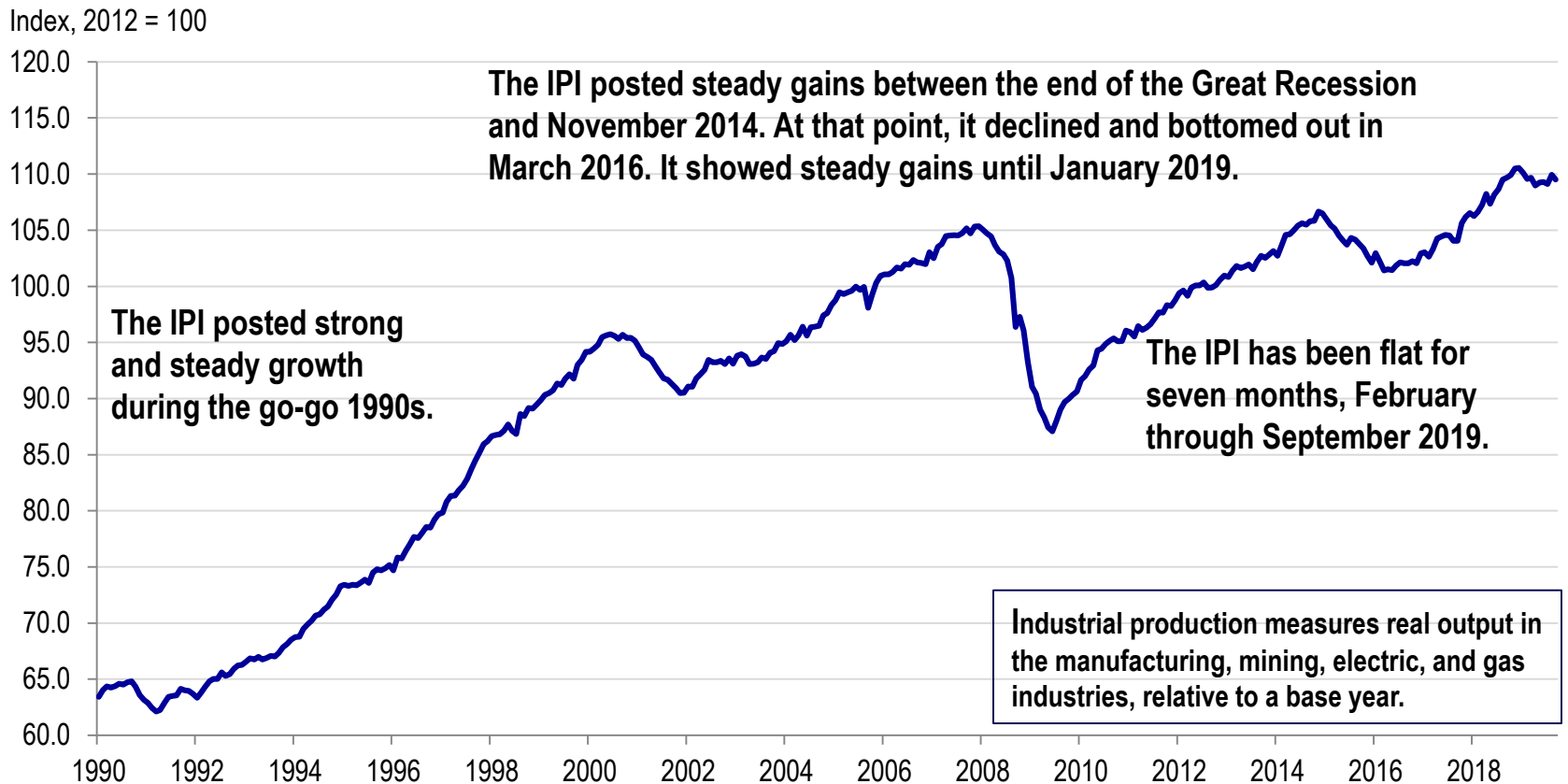


Source: Bureau of Labor Statistics, Major Sector Productivity (NonFarm Business) NSA, cber.co.

# Industrial Production Index

## All Industries

Industrial Production, All Industries



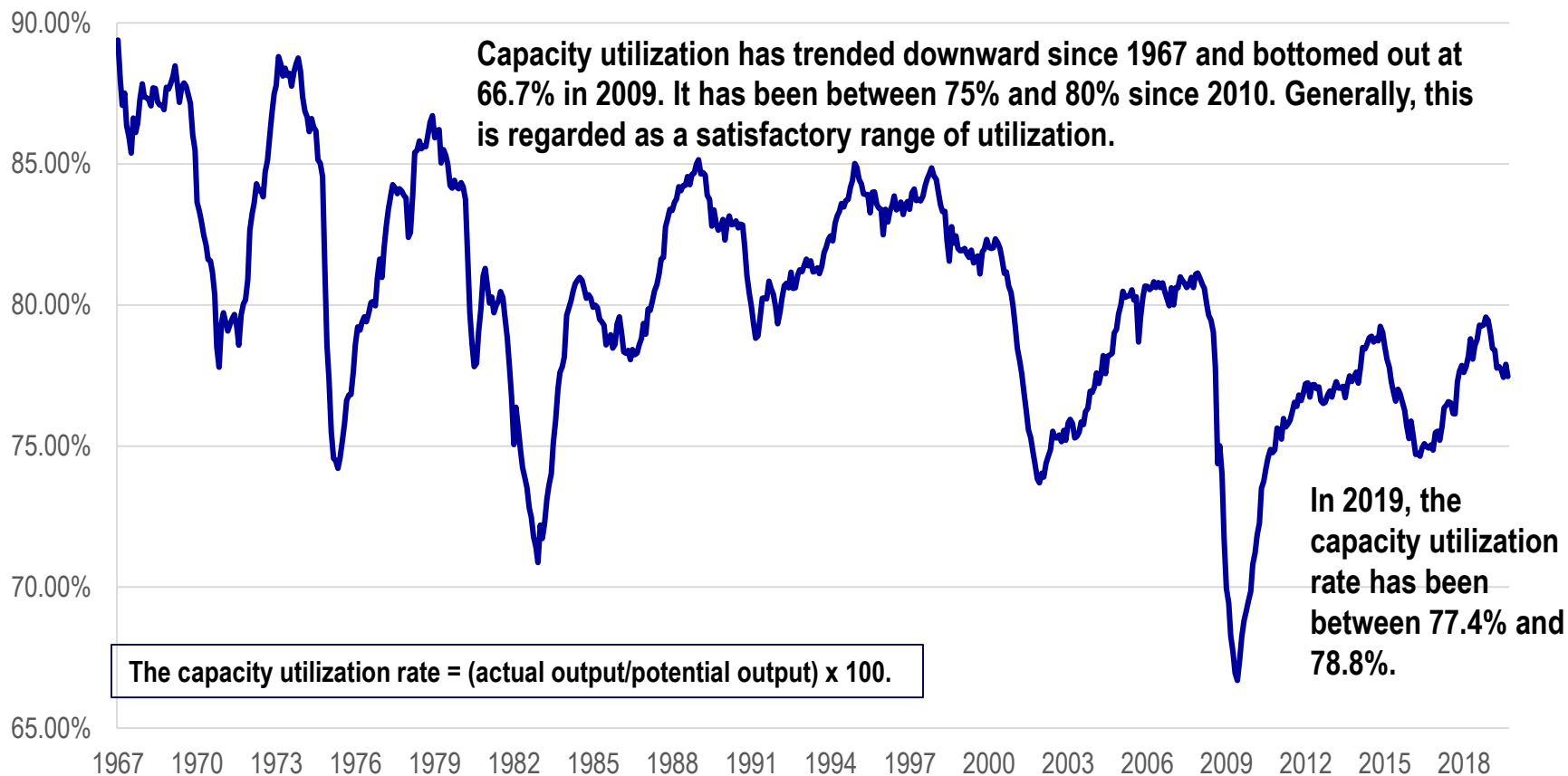
Source: FRED, Federal Reserve, cber.co.

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# Capacity Utilization

## Total Industry

Capacity Utilization



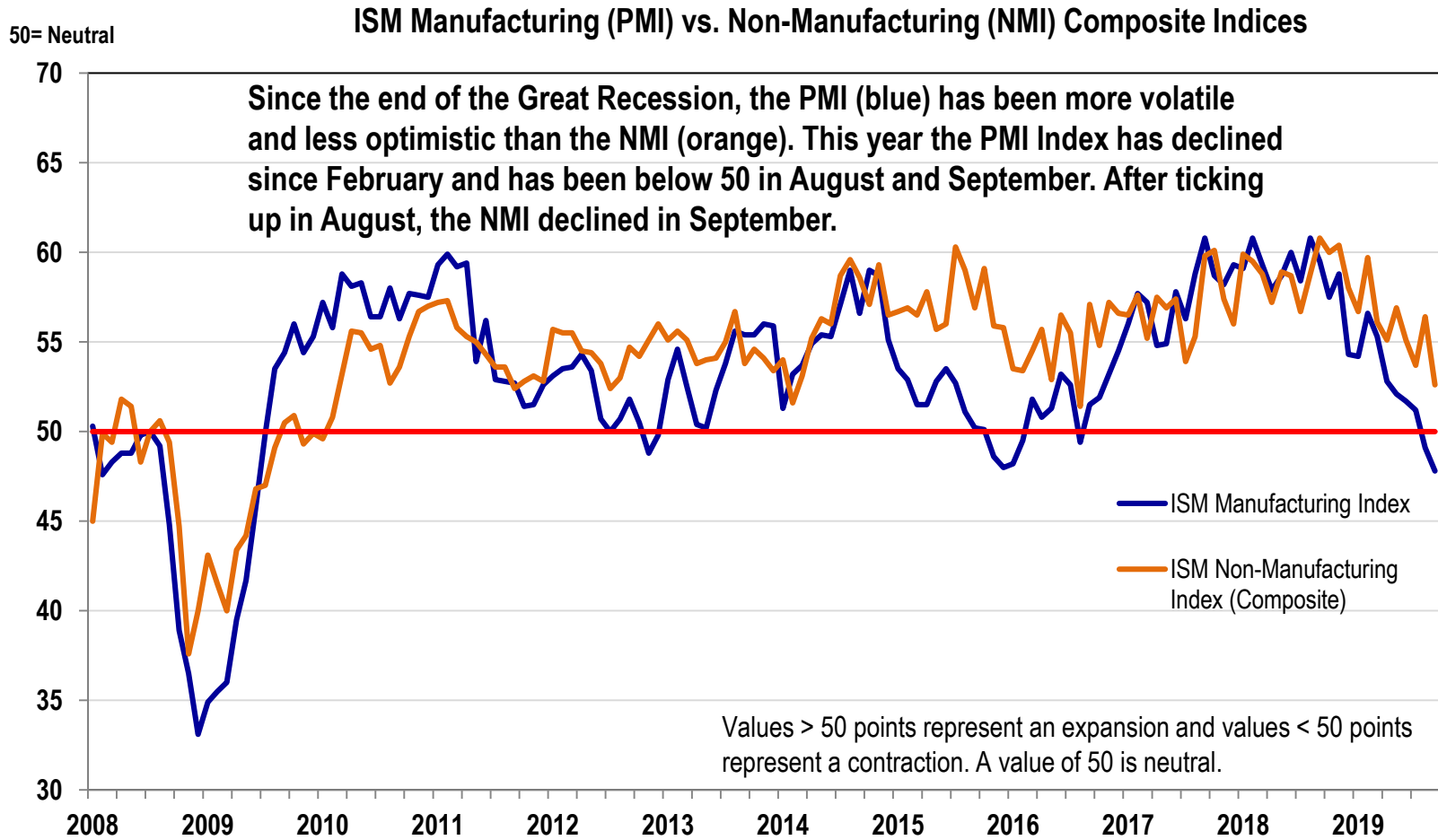


# The U.S. Economy

Manufacturing and Nonmanufacturing Indices

# ISM PMI Composite Indices

## Manufacturing vs. Non-manufacturing



Sources: Institute for Supply Management (ISM), FRED, cber.co.

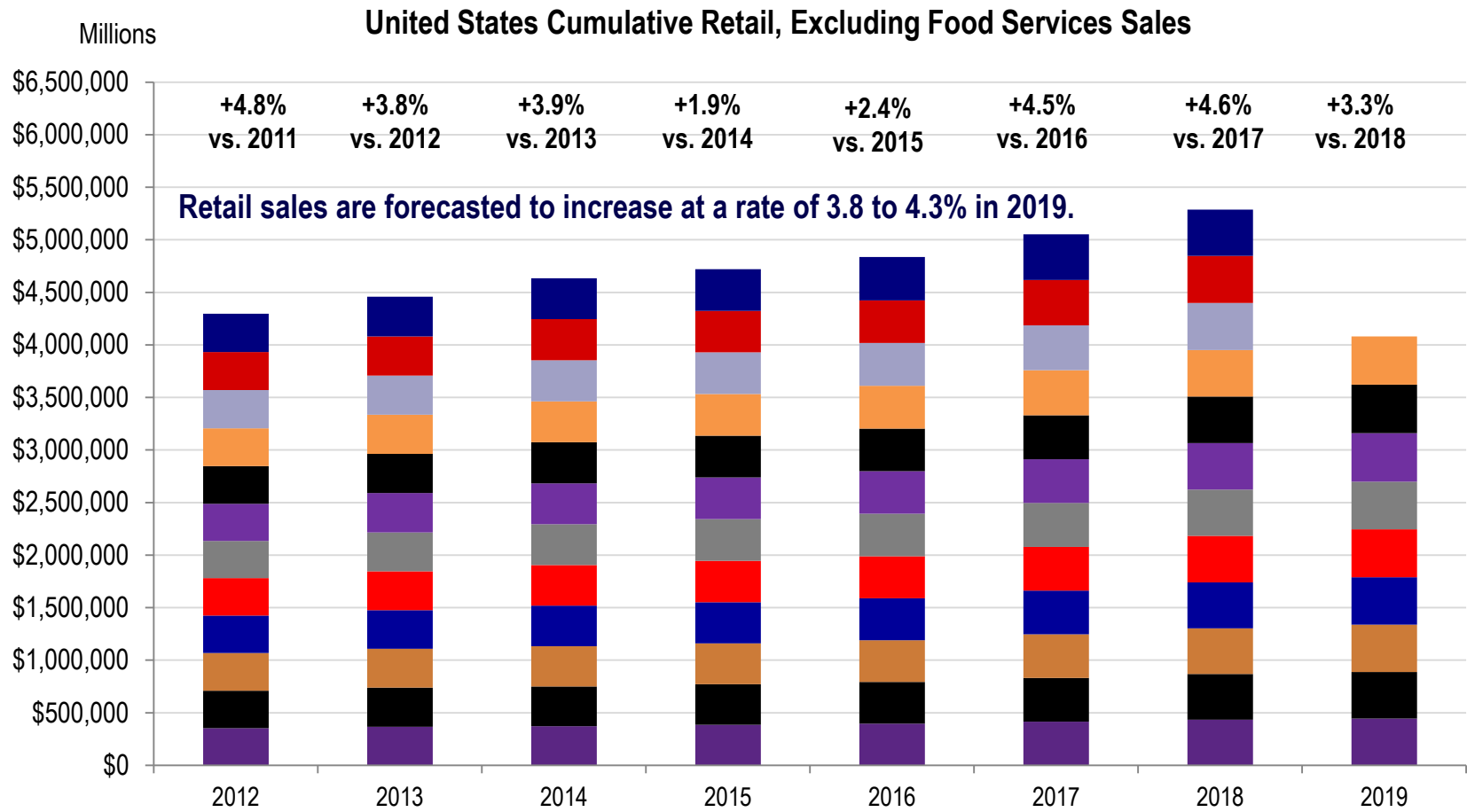


# The U.S. Economy

## Retail Sales and Auto Sales

# Cumulative Retail, Excluding Food Services Sales

Monthly



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

Note: Data is in descending order with December at the top and January at the bottom, not adjusted for inflation.



# Retail Sales

## Deck the Halls, Hit the Malls

Montgomery Wards, Robert May, Johnny Marks, and Gene Autry were at the forefront of commercializing Christmas with the release of the book and classic song *Rudolph the Red-Nosed Reindeer*.

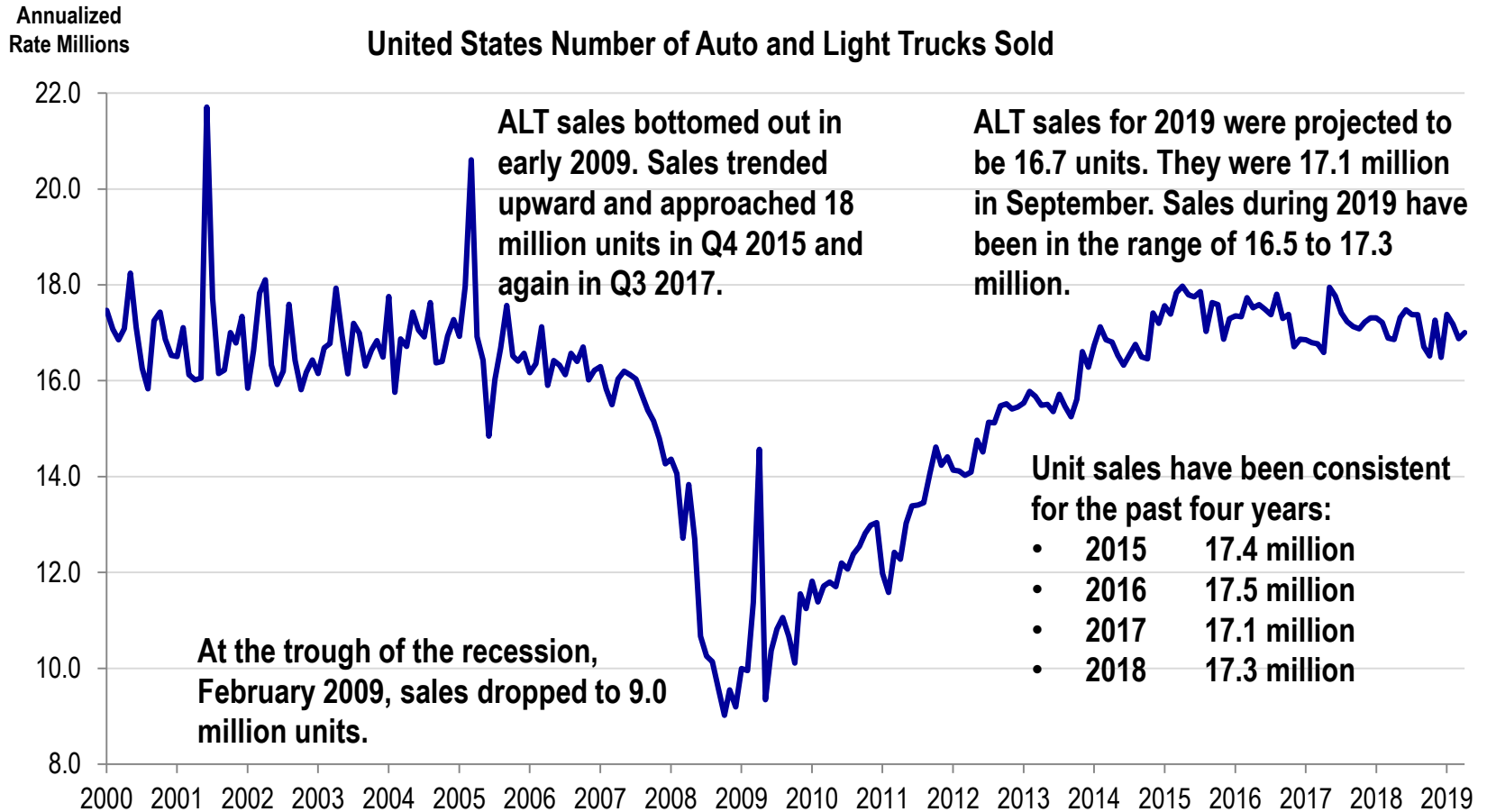
Rudolph will be shining his nose brightly on the 2019 holiday season. The National Retail Federation projects that holiday sales will be 3.8% to 4.2% greater than in 2018. This compares to 2.1% last year and 3.7% for the past five years.

Deck the halls, hit the malls. Break out your credit cards and keep the Colorado economy strong!



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

## Monthly (Annualized Rate Millions)



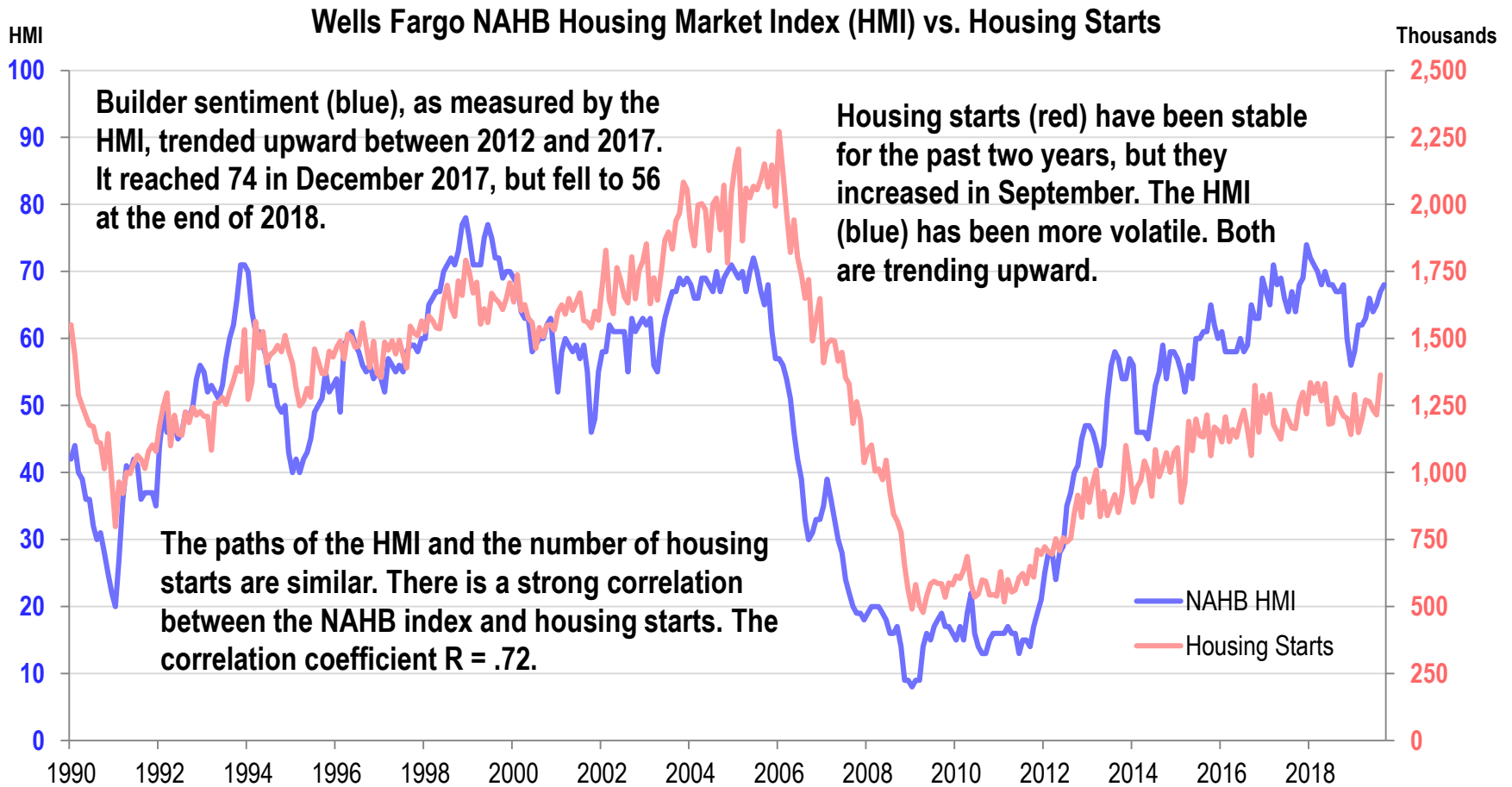
Source: FRED, BEA, SAAR, cber.co.



# The U.S. Economy

NAHB HMI and Housing Starts, S&P CoreLogic Case-Shiller

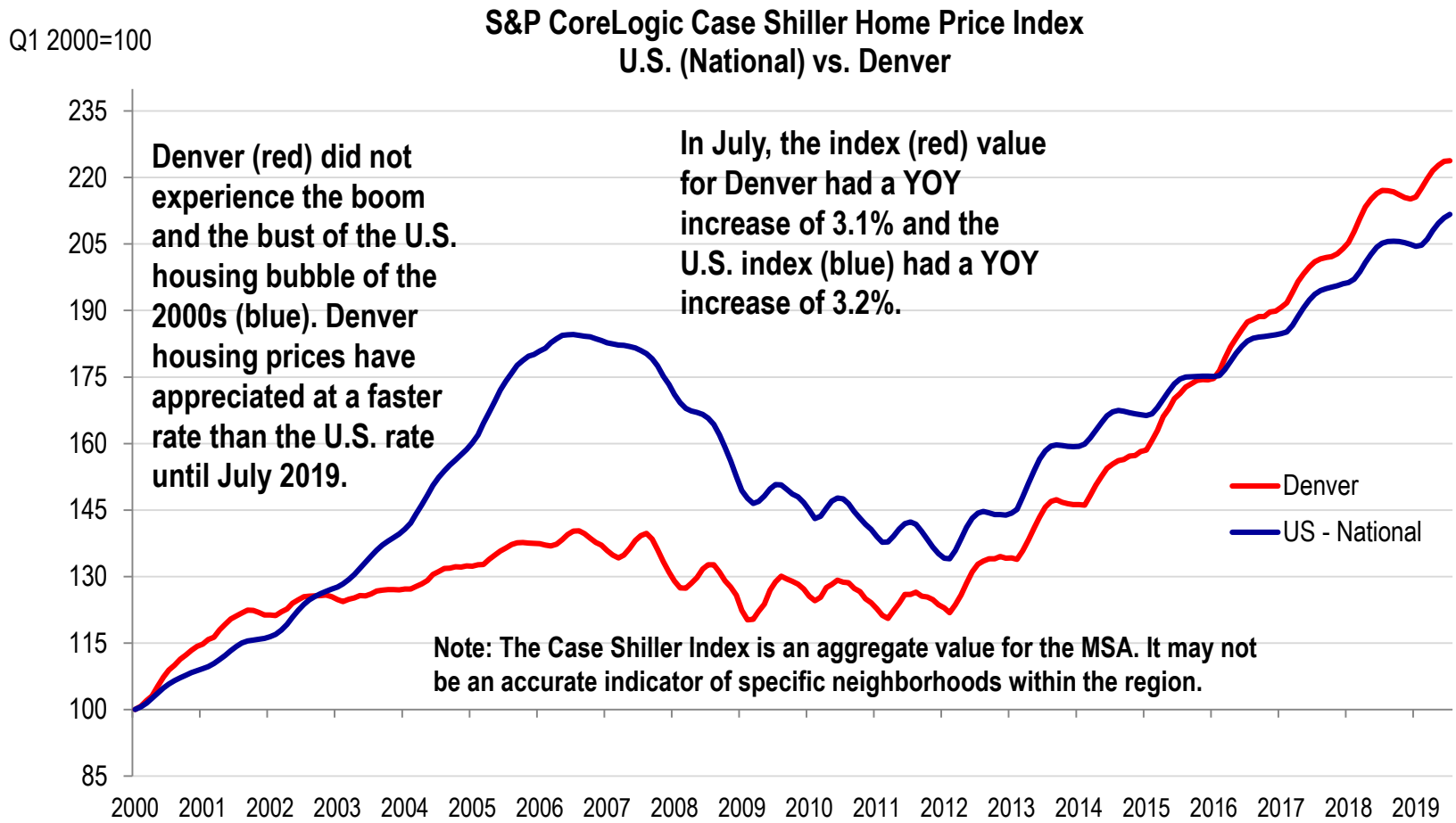
# Wells Fargo NAHB HMI vs. Housing Starts



Source: NAHB, cber.co.

# Case Shiller Home Price Index

## National vs. Denver Index Value



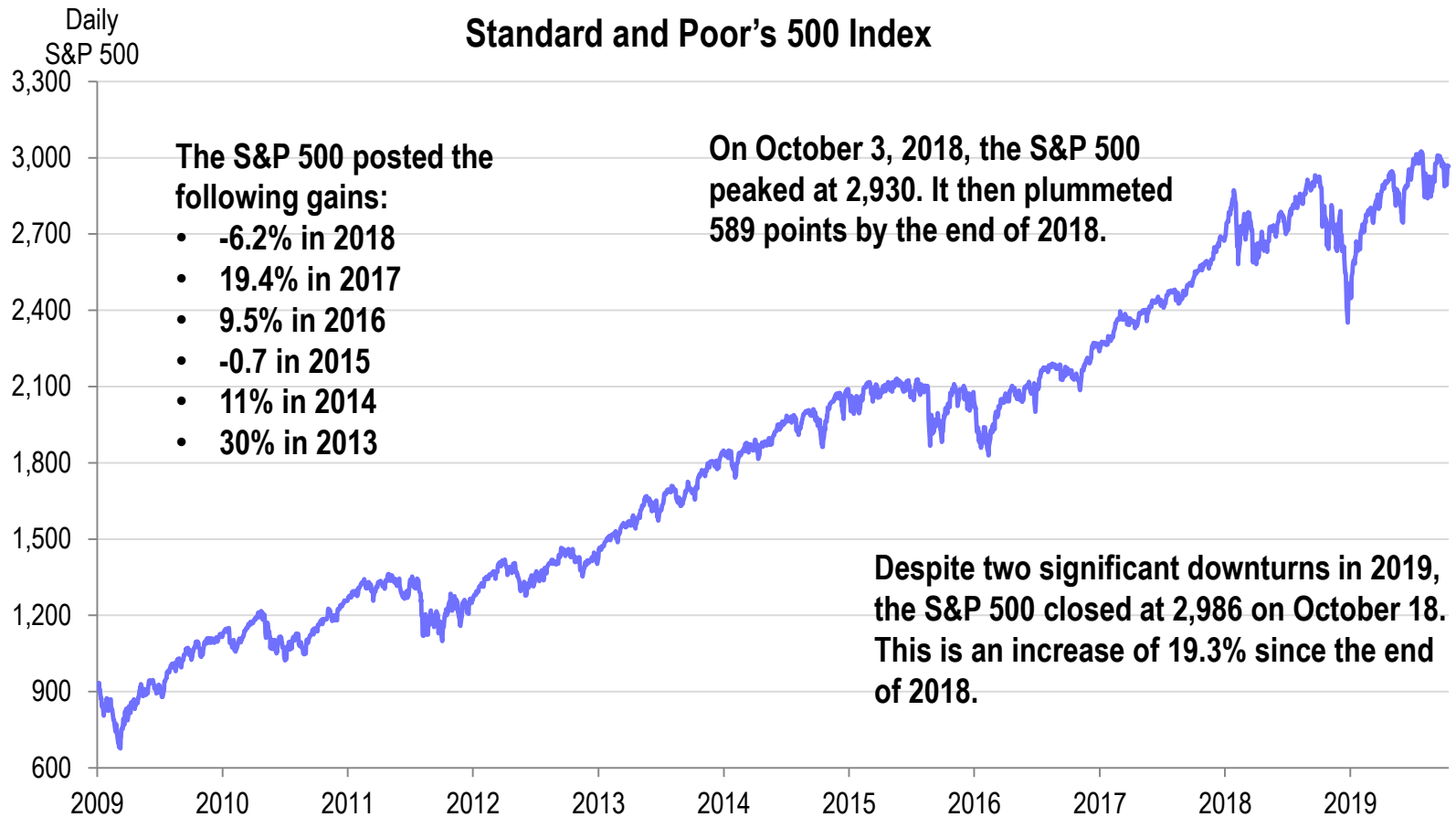
Source: S&P Core-Logic Case-Shiller, cber.co.



# United States Economy

S&P Performance, Volatility, Historical S&P Performance

# ● Standard and Poor's 500 Index



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

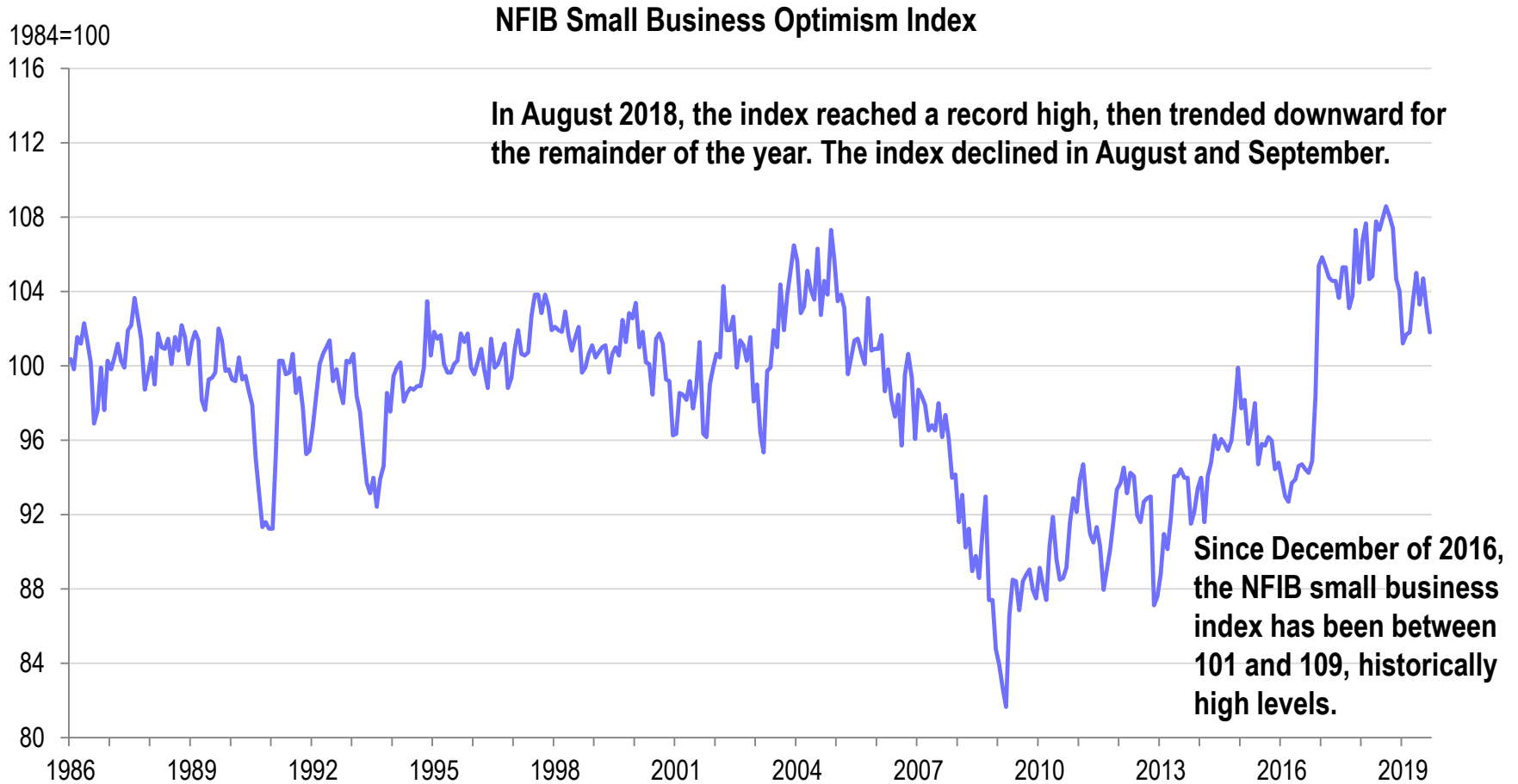


# The U.S. Economy

NFIB Index, Michigan Consumer Sentiment

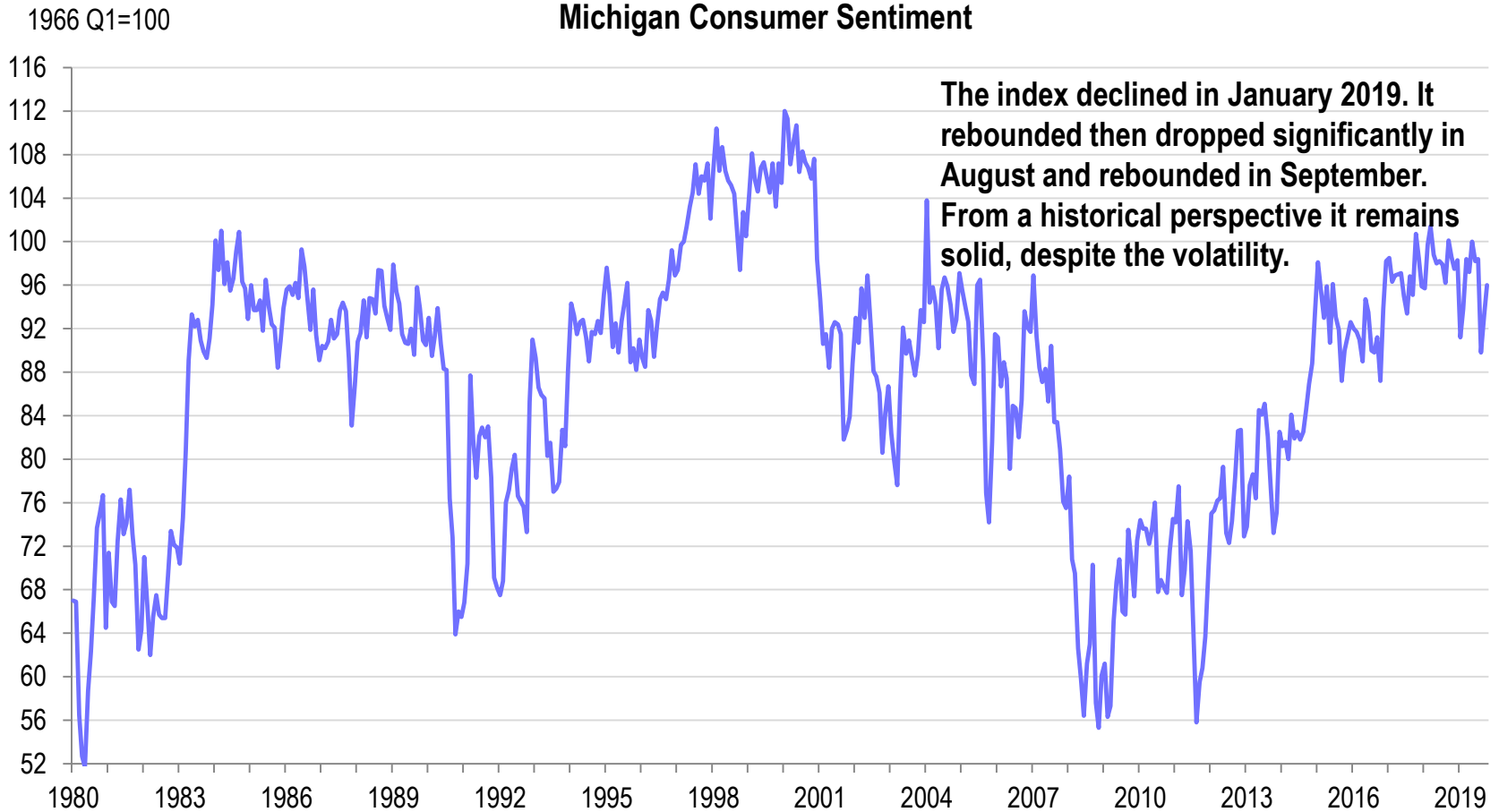


# NFIB Small Business Optimism Index



Source: NFIB, cber.co. Index 1984=100

# University of Michigan Consumer Sentiment



Source: University of Michigan, cber.co.

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



# The U.S. Economy

## Summary



# U.S. Summary

## U.S. Economic Growth is Expected to Continue

- The unemployment rate will remain low
- U.S. inflation will be low
  - College tuition has increased at slower rates than in the past
  - Medical costs are high, but rising at a slower rate
  - Housing prices are appreciating at slower rates
- Employment will show steady growth
- Wages will continue to increase
- Interest rates will remain low for an extended period
- There is a strong possibility of fiscal or monetary stimulus in 2020

## Risks

- Slower global growth is expected in the short-term
  - UK and EU
  - China
- Trade policy
  - It is estimated that tariffs have negatively impacted real GDP growth by 0.5% points
  - Trade talks have begun with China
  - NAFTA/USMCA is waiting to be ratified by Congress.
- Political gridlock had sidetracked the economic agenda

**Many economists believe there is greater downside risk than upside potential**

A grayscale photograph of a dense forest. In the center, a waterfall cascades down a rocky ledge. The trees are tall and thin, creating a textured background. The overall scene is serene and natural.

# The Colorado Economy



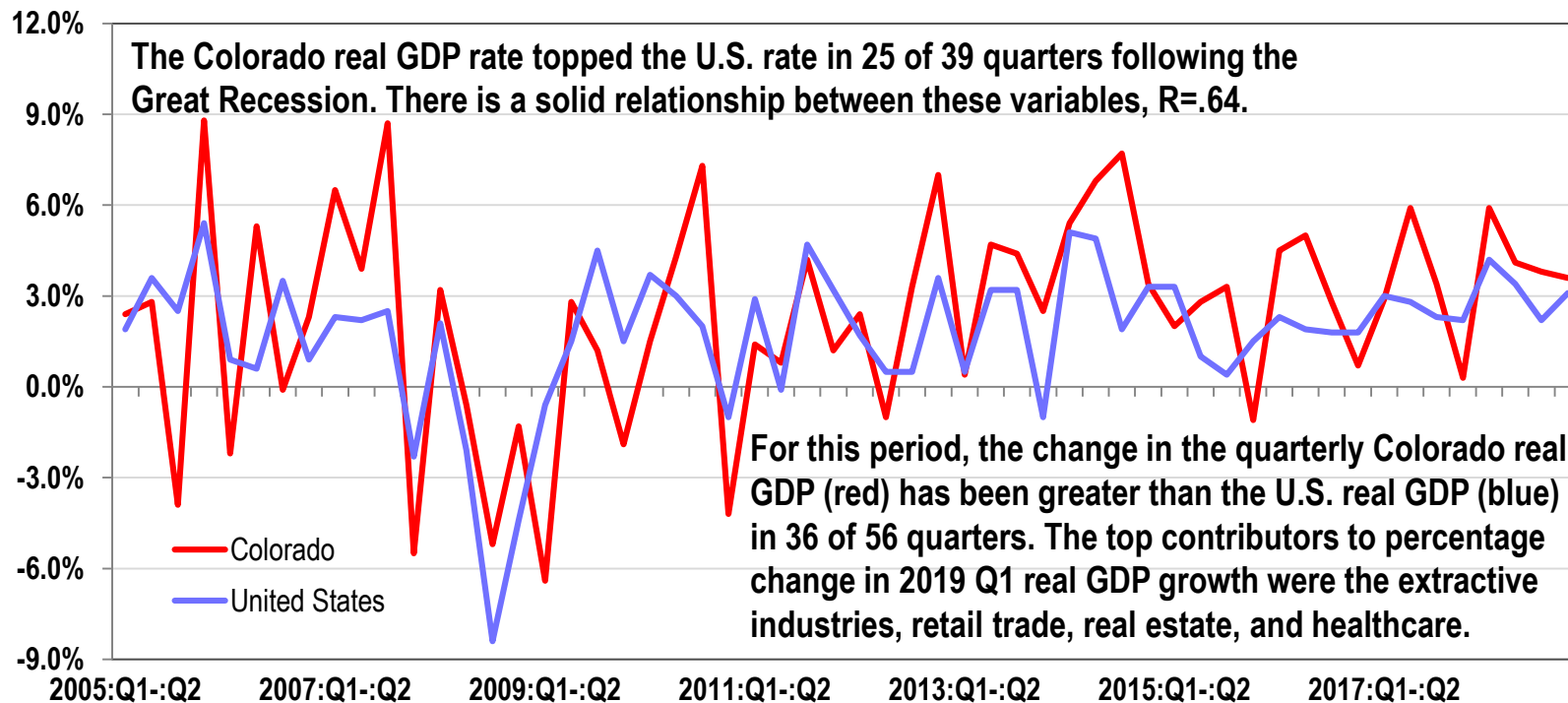
# The Colorado Economy

## Gross Domestic Product

# Real Gross Domestic Product

## Colorado vs. U.S. (Quarterly Rate)

Quarterly Rate of Change for Real Gross Domestic Product



Source: Bureau of Economic Analysis. Note: U.S. real GDP is summary of states GDP; quarterly rate is annualized.



# The Colorado Economy

## Colorado Population



# Colorado Population

## Components of Change

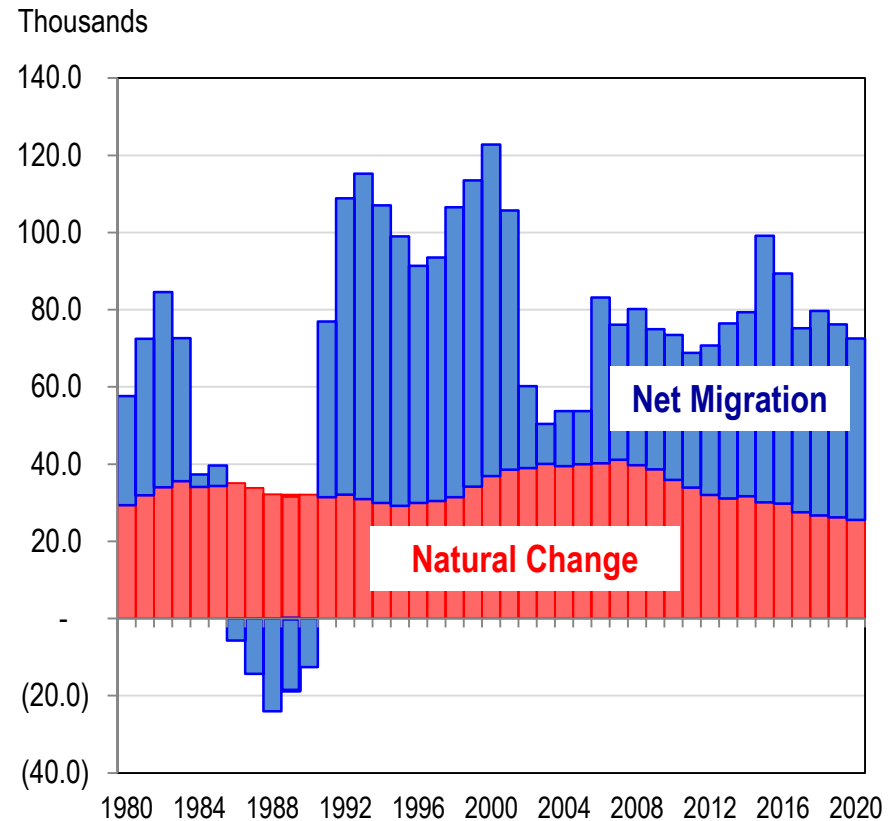
Population increases and decreases are a result of the natural rate of change (births minus deaths) and the change in net migration (people moving into the state minus people moving out of the state).

Over the past 3½ decades the natural rate of change (red bars) varied from a low of 26,700 in 2018 to a peak of 41,124 in 2007. The natural rate for 2019 is projected to be 26,200, a new low, as a result of a decline in fertility rates.

Changes resulting from net migration (blue bars) are closely tied to the strength of the economy and the change in state employment. For example, there were five years, from 1986 to 1990, when net migration was negative. More people moved out of state than moved into the state to escape the regional recession. During the past two recessions, 2001 and 2007, net migration declined, but did not turn negative. It was difficult for people to move anywhere to escape the bad economy.

The Colorado population will increase by about 75,000 for each of the years from 2016 to 2020. In 2019, the state's population will increase by 1.3%, or 76,200, to 5,765,527.

Change in Colorado Population 1980 - 2020



# Colorado Population Trends

## Population Trends That Affect the Colorado Economy

- The state's population is not growing evenly across all counties. In fact, the population in about half the counties did not increase between 2010 and 2018.
- The 65+ population is small, but it is growing across the state at different rates.
- The ethnic mix in Colorado is changing. Minorities will be a greater share of the population in the future.
- Wages are less and job opportunities are fewer in rural counties. A majority of the districts are in rural counties. This affects K-12 education as 104 of 178 school districts have four-day school weeks. This is up from 39 in 2000. There are 80,000 students in this category and most districts are in rural Colorado.
- The fertility rate is declining. As a result, the under 18 population has declined in 40 of the state's 64 counties. State FTE enrollment numbers are increasing at a decreasing rate.

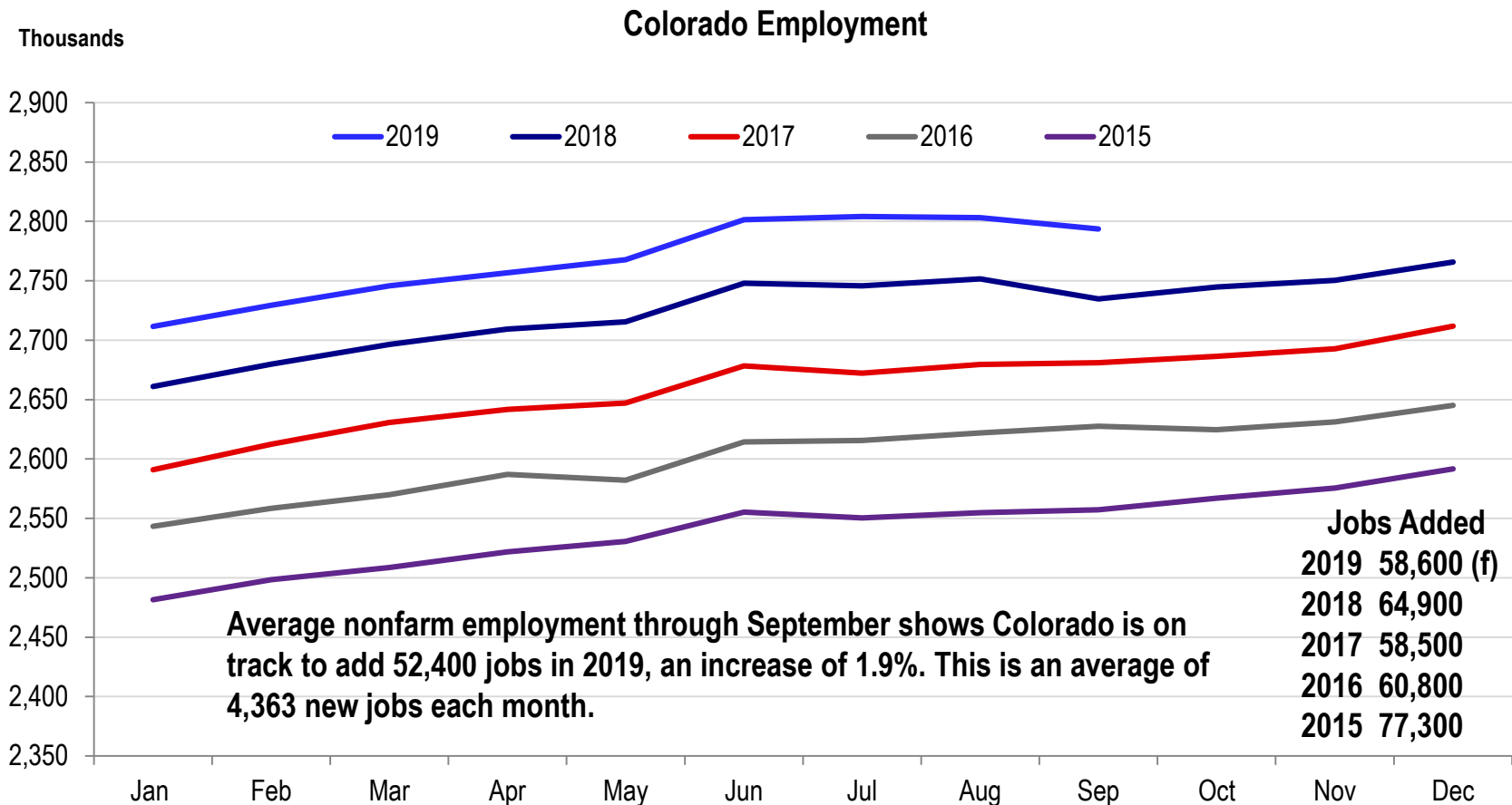


# The Colorado Economy

Employment, Rate of Employment Growth, and  
Unemployment Rate

# Colorado Employment

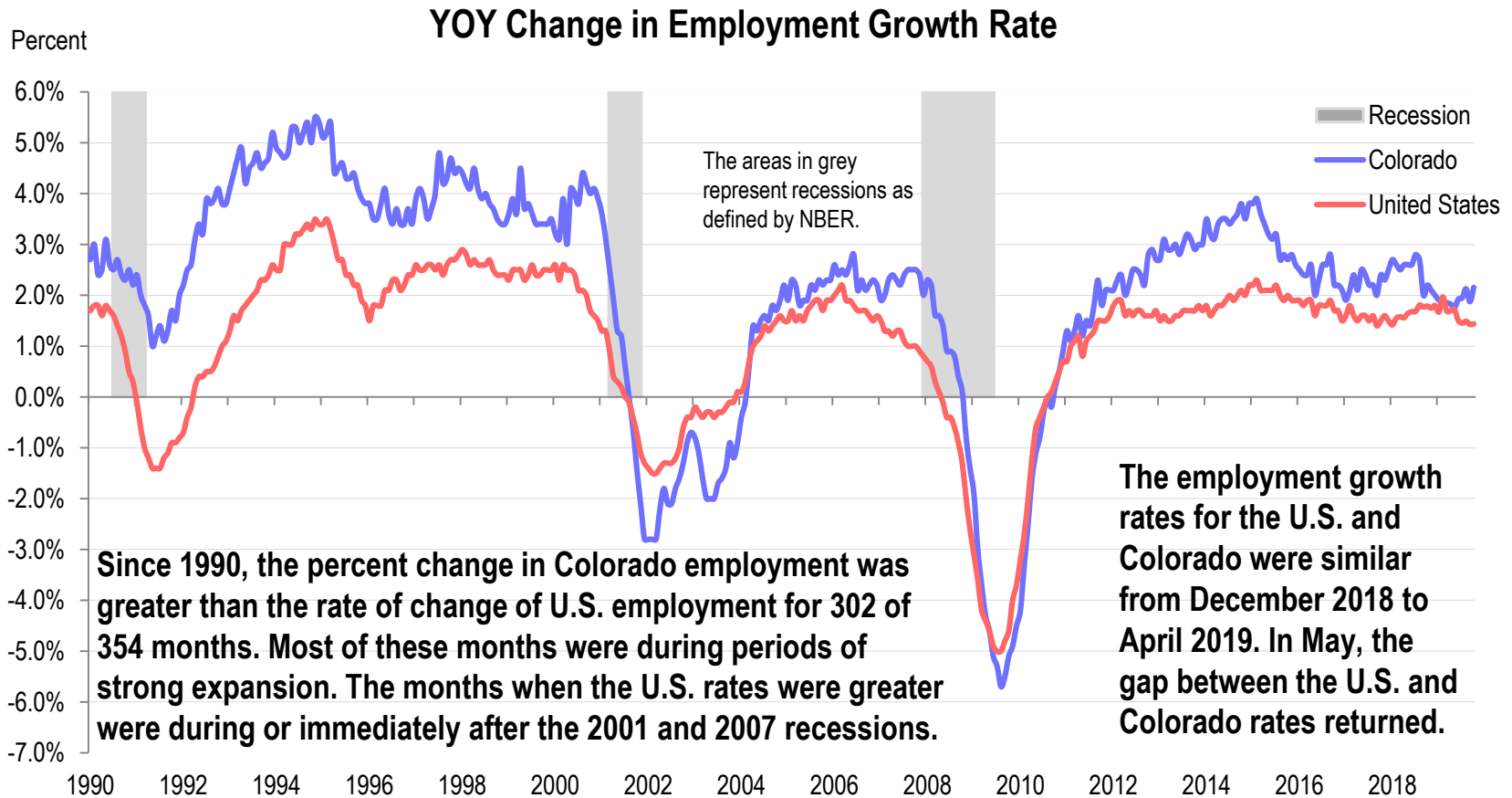
## 2015 to 2019



Source: BLS, cber.co. Note: CES Employment is also referred to as nonfarm wage and salary employment.

# YOY Percent Change in Employment

## Colorado vs. U.S.



Source: Bureau of Labor Statistics, NSA, NBER, cber.co.

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## Unemployment Rate vs. Colorado

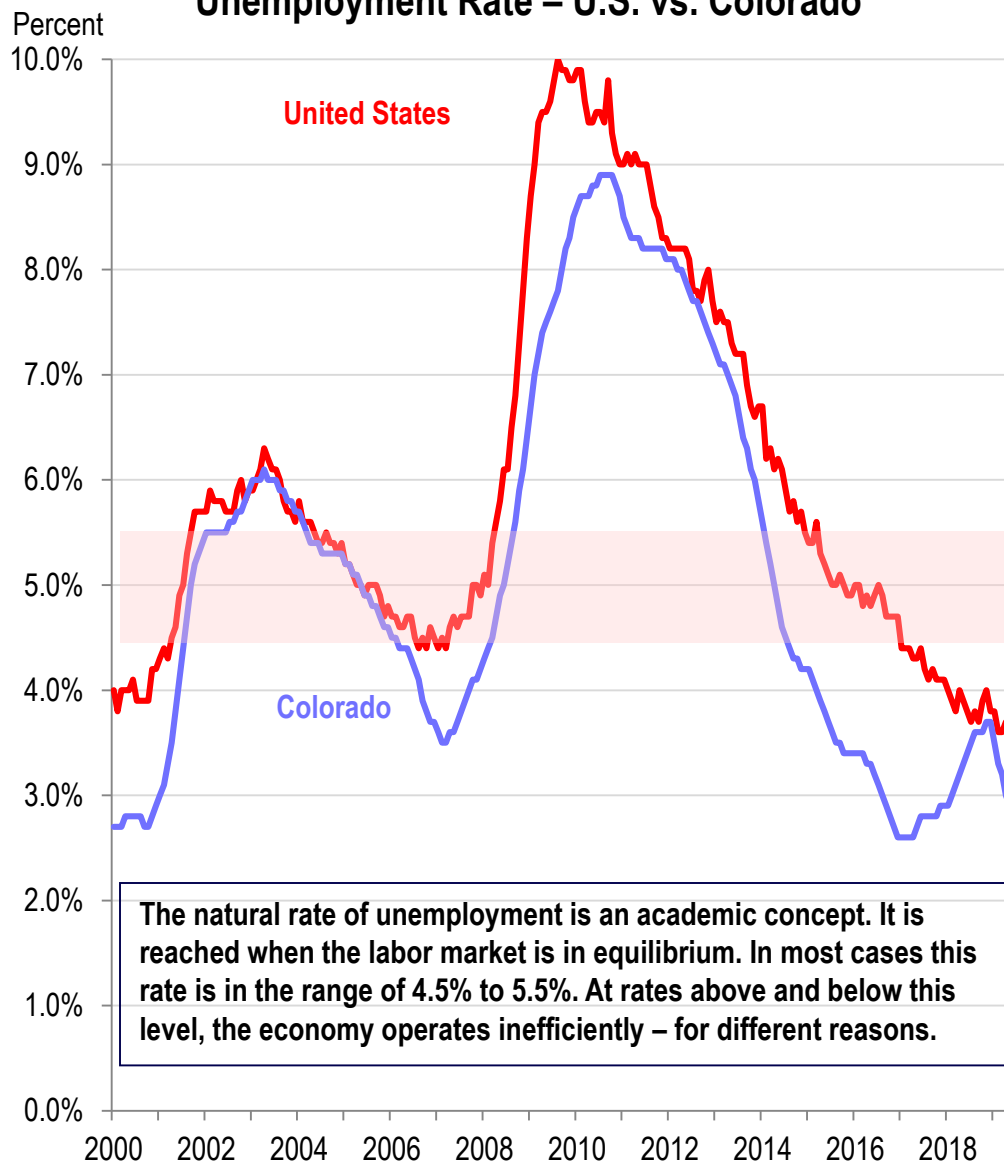
In September 2019, the unemployment rate for Colorado dropped to 2.7% compared to 3.5% for the U.S.

The U.S. and Colorado unemployment rates have declined since 2010 when the U.S. rate was 9.9% and the Colorado rate was 8.8%.

The U.S. rate fell below 4.5% in March 2017 and has been there for 30 months. By comparison, there was a 31-month period from November 1998 to May 2001 (not shown) when the U.S. rate was below 4.5%.

The Colorado rate dropped below 4.5% in October 2014 and has been there for 60 months. By comparison, there was an 89-month period from May 1994 to September 2001 (not shown) when Colorado's rate of unemployment was less than 4.5%.

## Unemployment Rate – U.S. vs. Colorado



Source: Bureau of Labor Statistics, SA; cber.co.



# The Colorado Economy

## Occupations



# Colorado Occupations

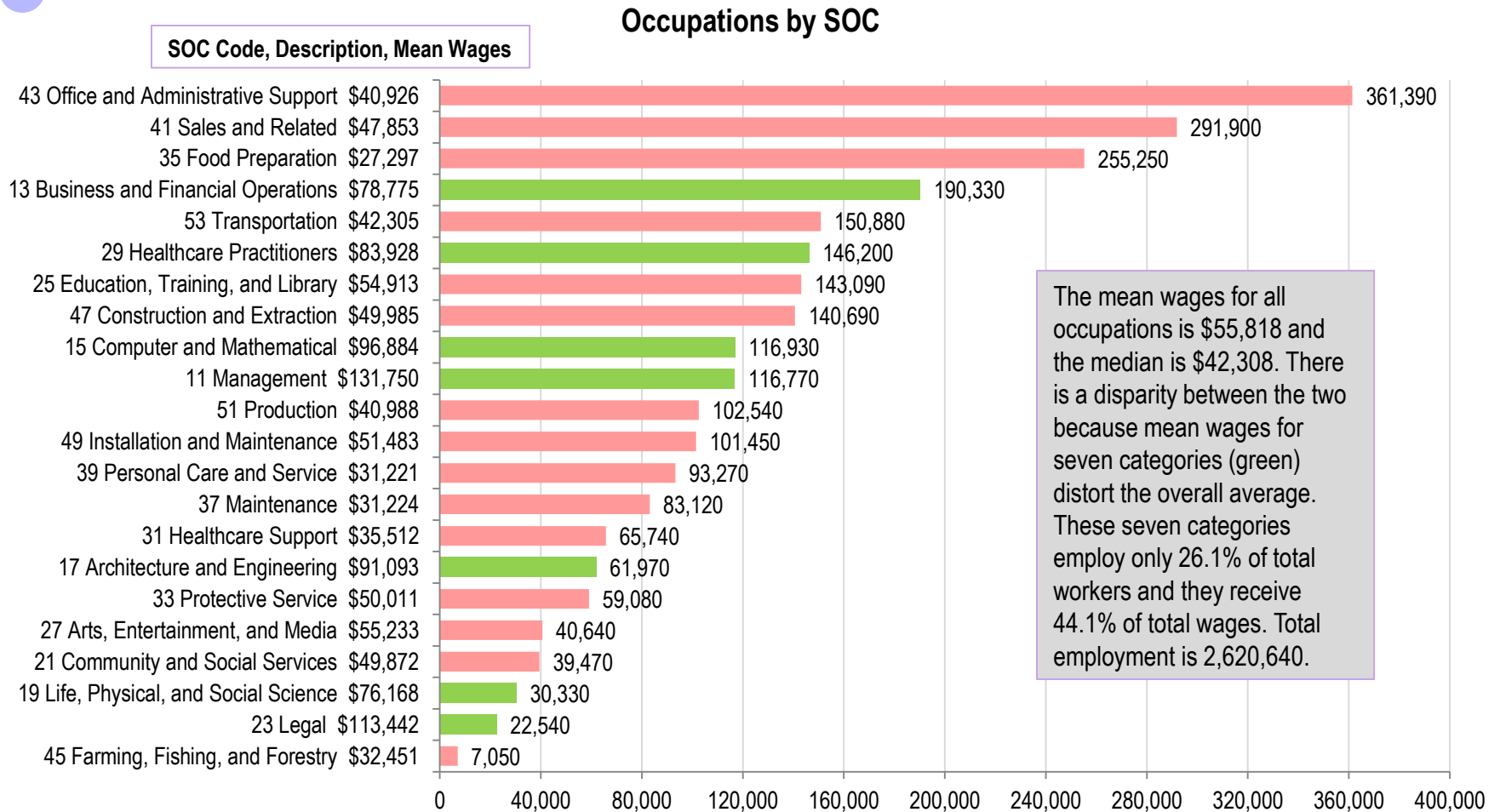
Most economic forecasts and analysis focus on industries as defined by the NAICS codes.

The next two slides provide a different perspective about economic growth because they focus on average annual wages and occupations as defined by the 22 SOC codes. This information is valuable for setting up workforce training programs.



# Occupations by SOC

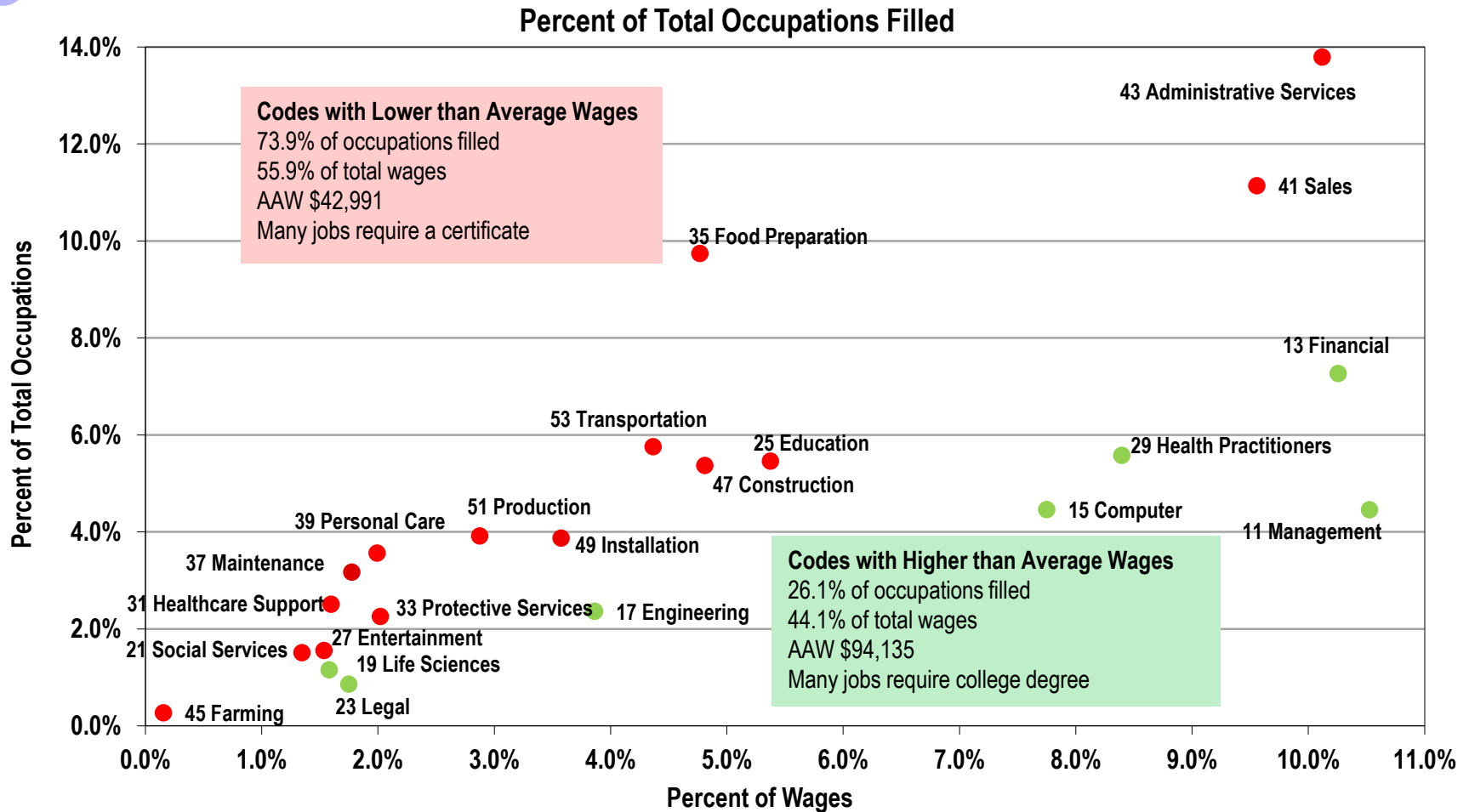
## Colorado 2018



Source: Bureau of Labor Statistics, cber.co.

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

# Percent of Occupations vs. Percent of Wages



Source: LMI Gateway, cber.co.



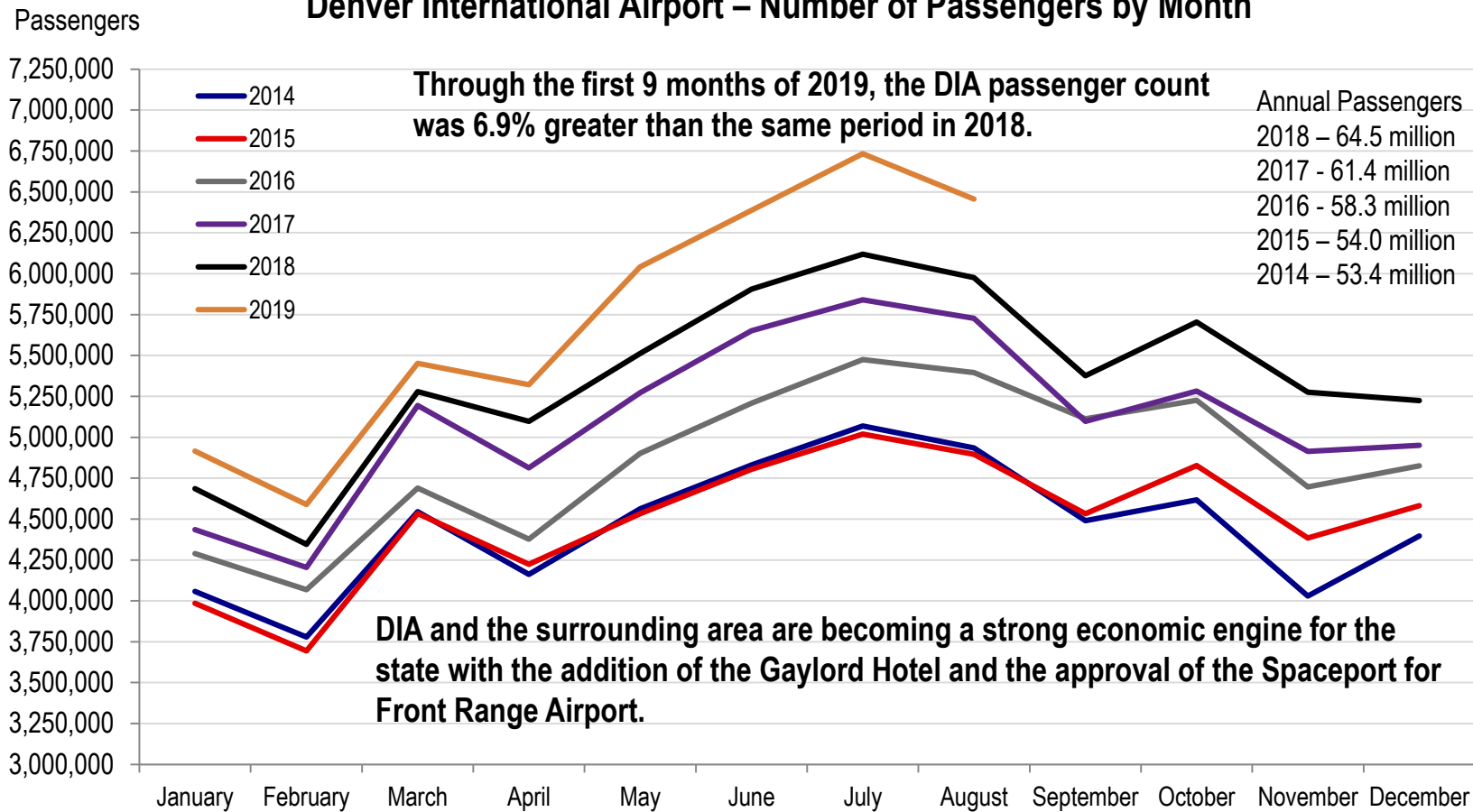
# The Colorado Economy

DIA Passengers, Vehicle Registrations, and Venture Capital

# Denver International Airport

## Passenger Count

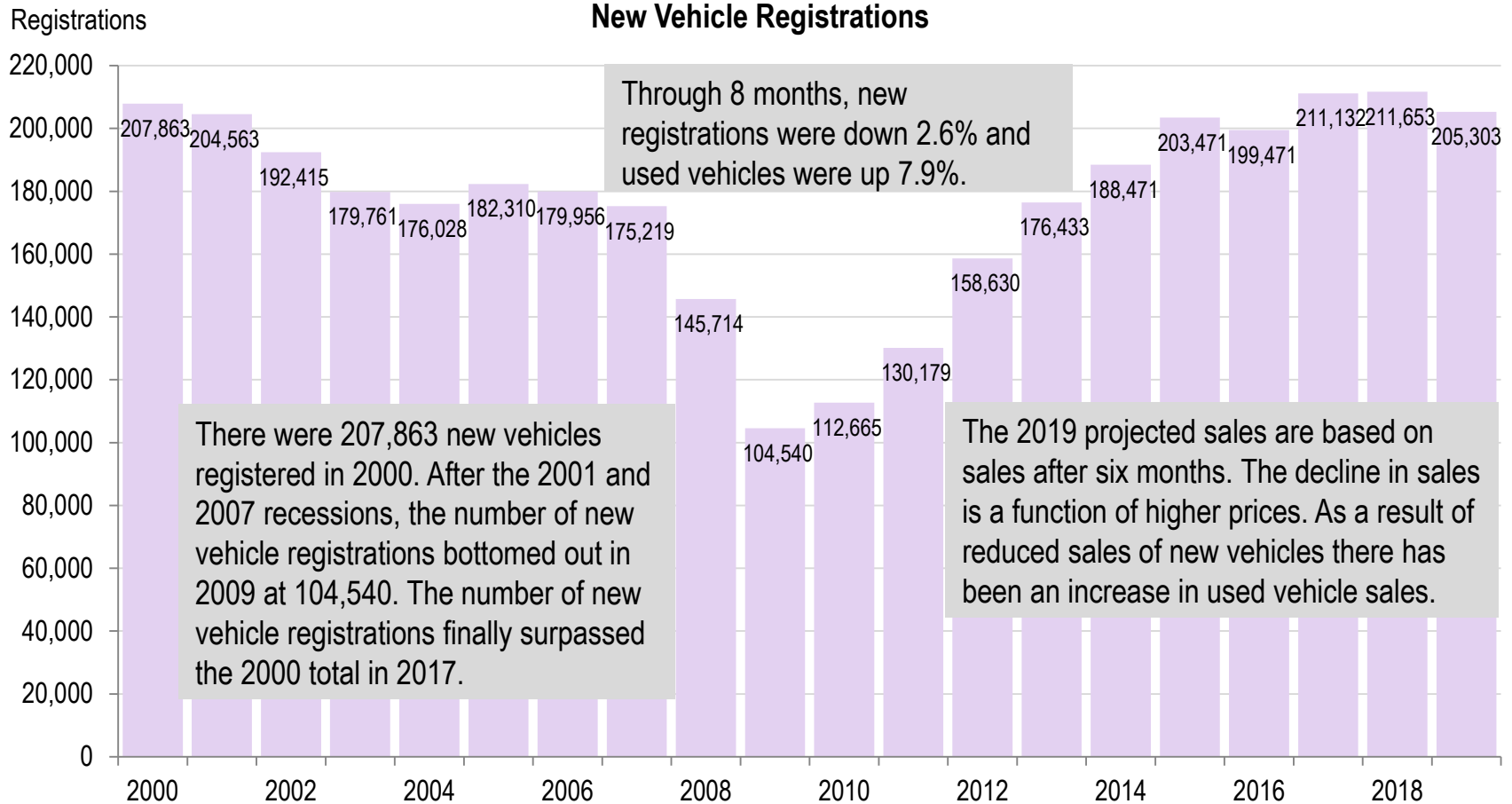
Denver International Airport – Number of Passengers by Month



Source: FlyDenver.com, cber.co.

# New Vehicle Registrations

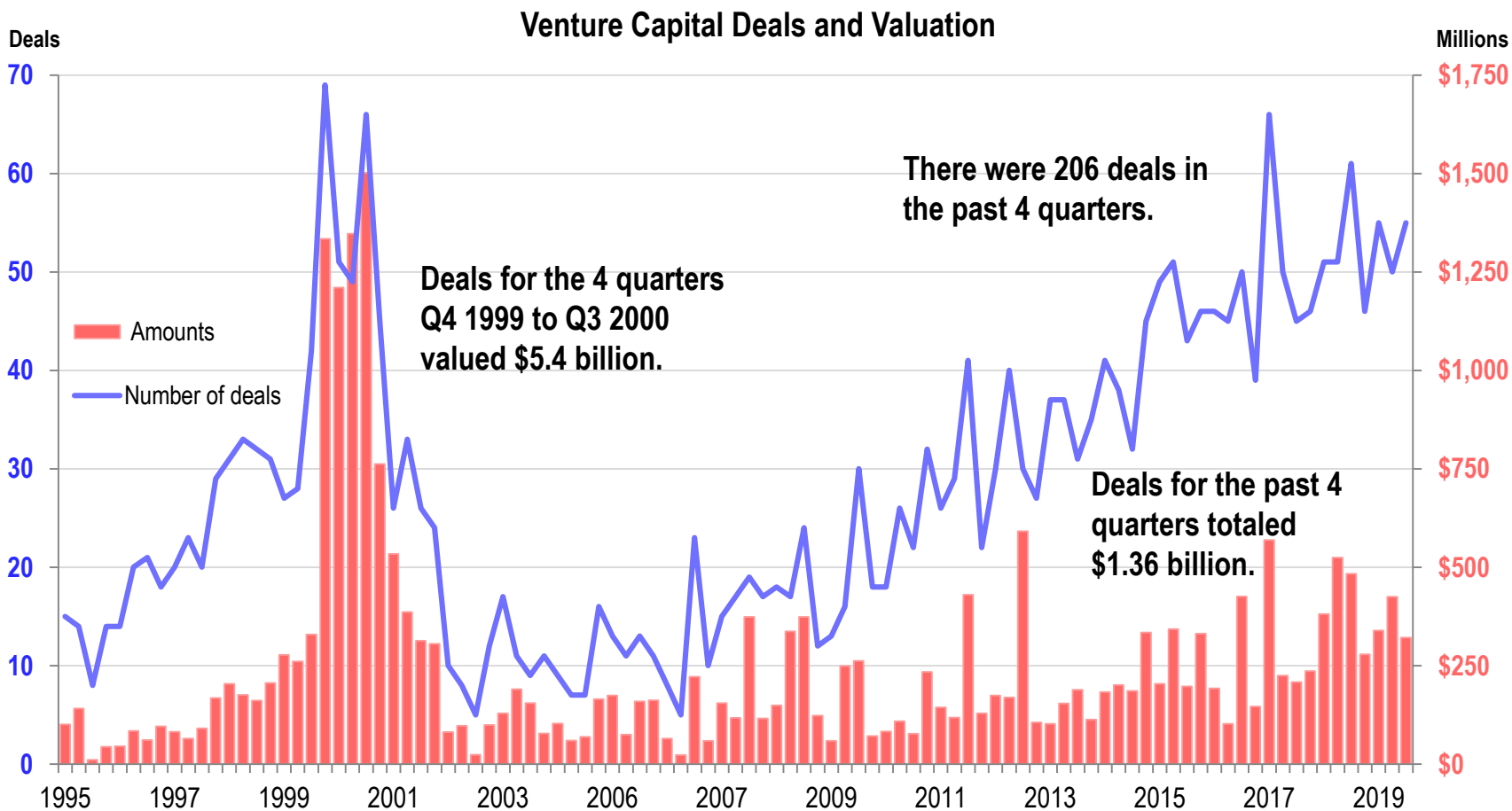
Colorado



Source: Colorado Auto Dealers Association, cber.co.

# PWC Venture Capital Deals and Value

## Colorado



Source: PWC, cber.co.

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



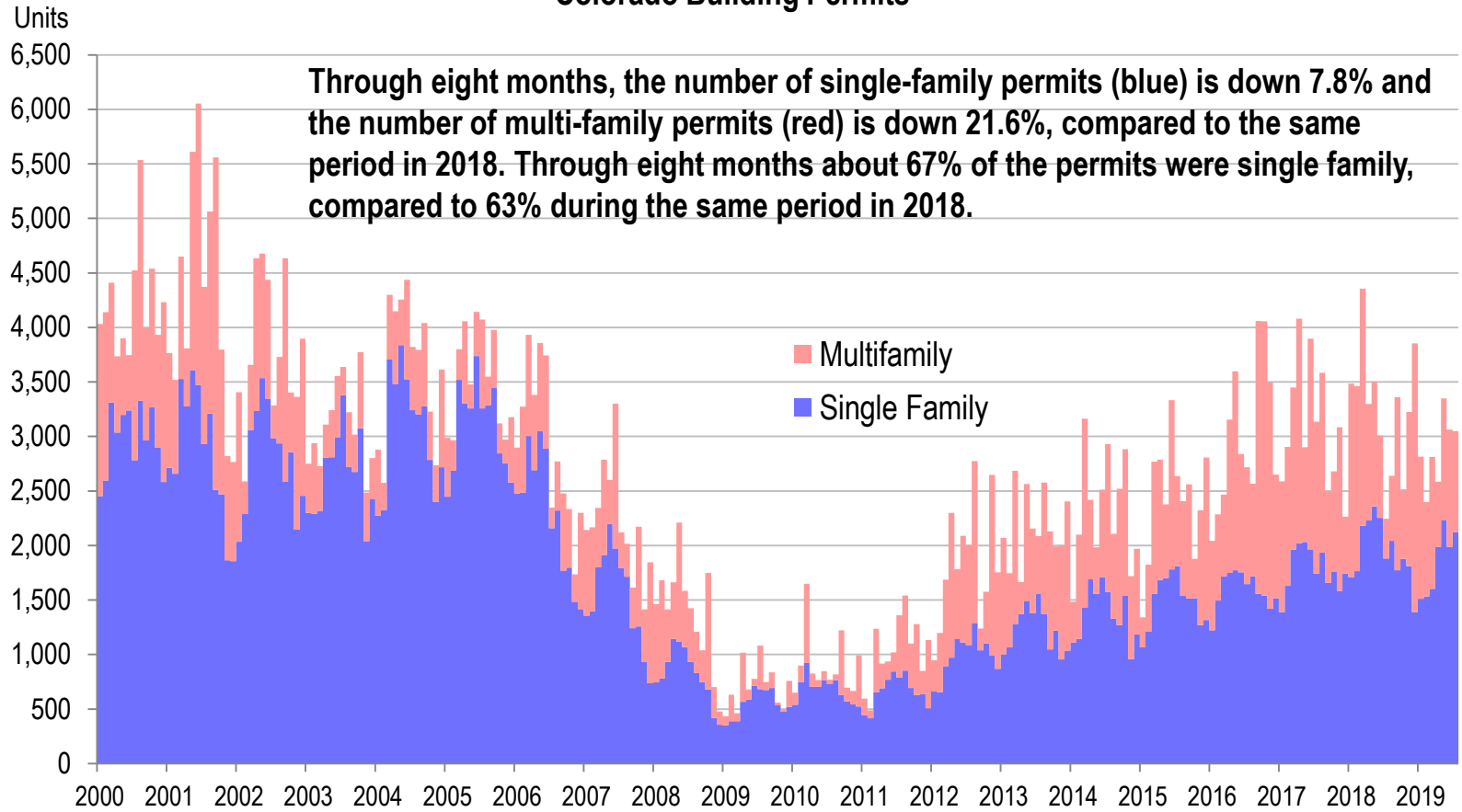
# The Colorado Economy

## Building Permits, Valuation, and Case Shiller

# Colorado Residential Building Permits

Units

### Colorado Building Permits

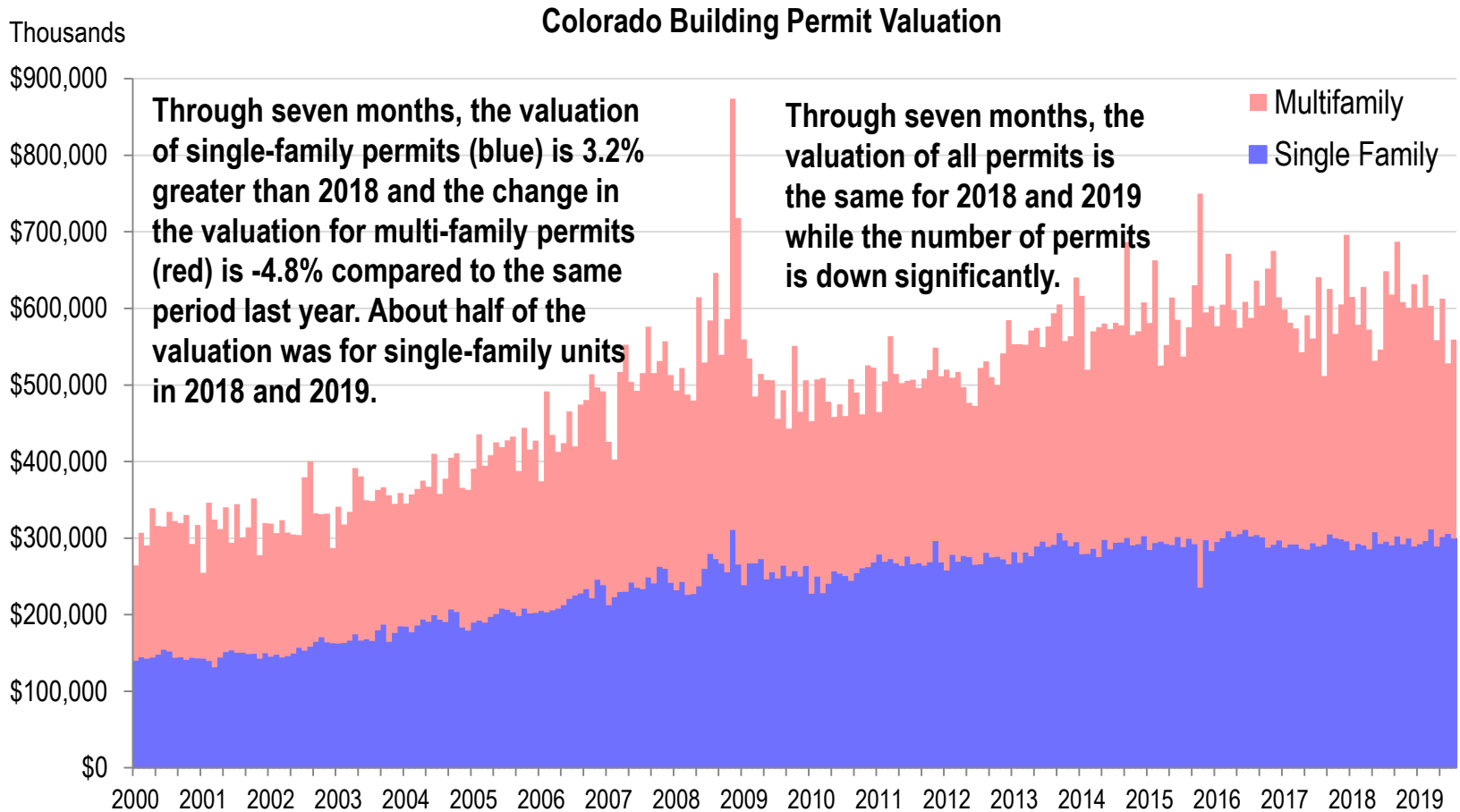


Source: TAMU Real Estate Center, U.S. Census Bureau, cber.co.



# Colorado Residential Building Permits

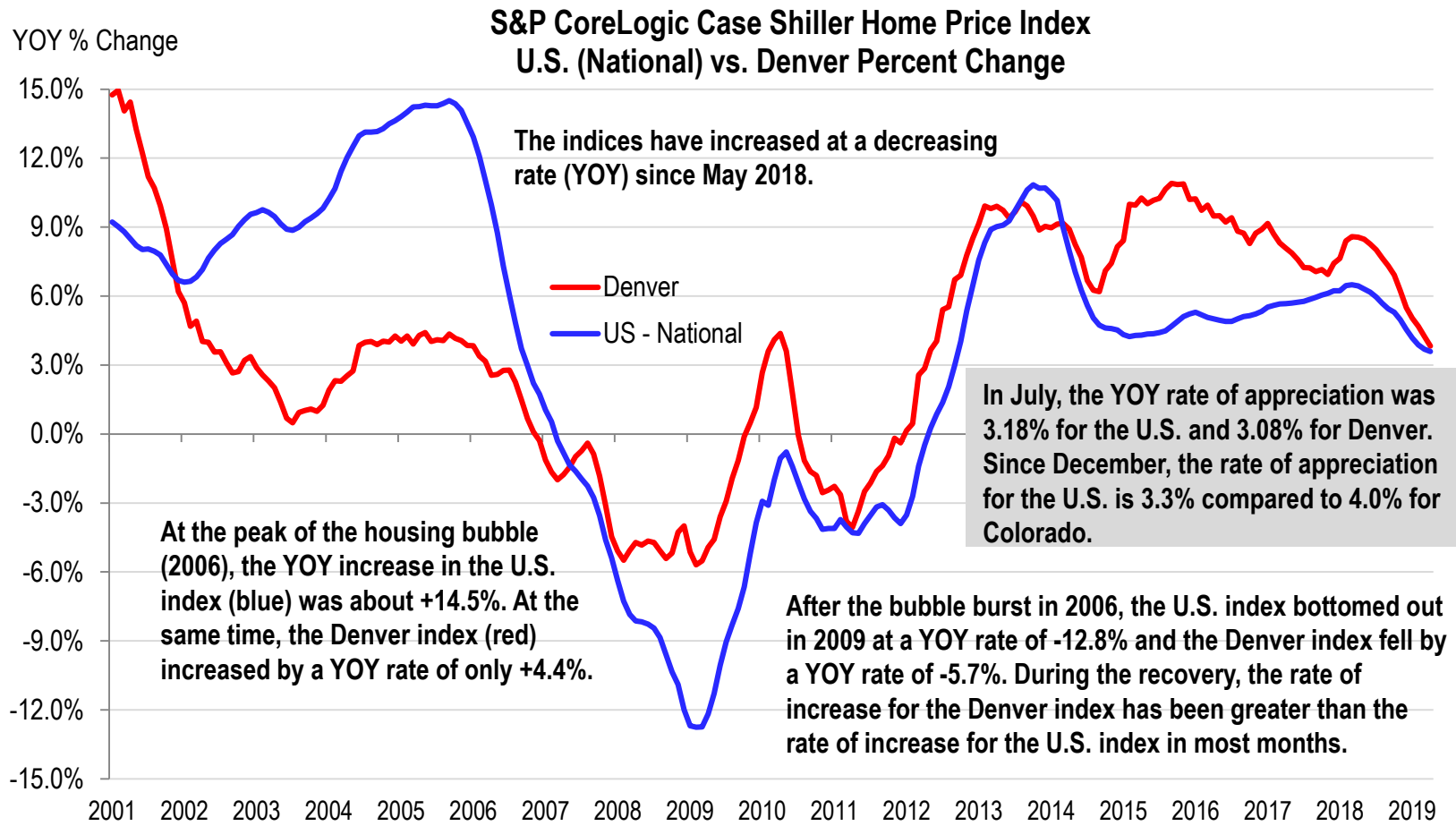
## Valuation



Source: TAMU Real Estate Center, U.S. Census Bureau, cber.co. Note: Not adjusted for inflation.

# Case Shiller Home Price Index

## National vs. Denver Rate of Change



Source: S&P Core-Logic Case-Shiller, cber.co.

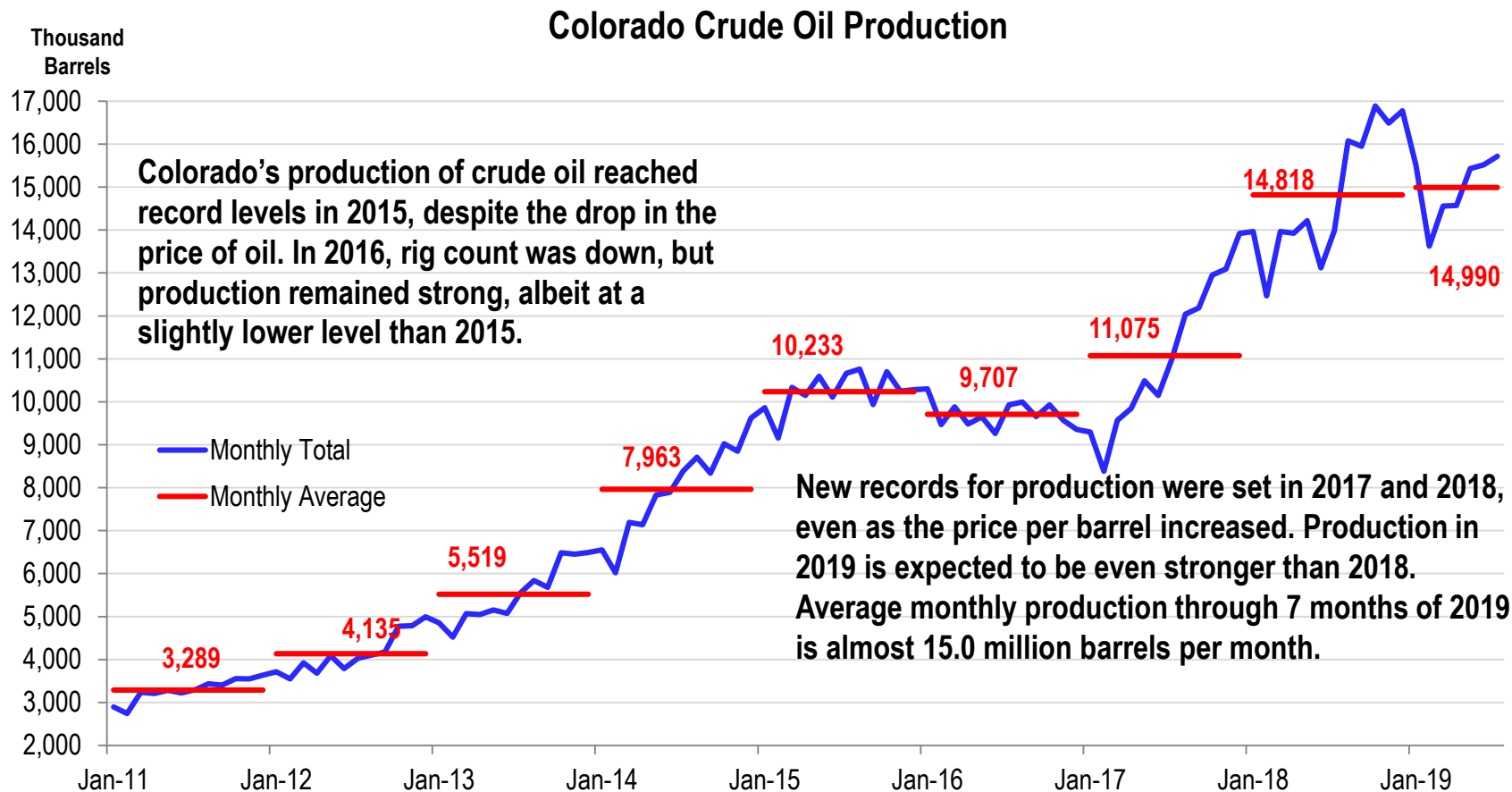


# The Colorado Economy

## Oil Production

# Colorado Field Production of Crude Oil

## 2011 to 2019 (Thousand Barrels)

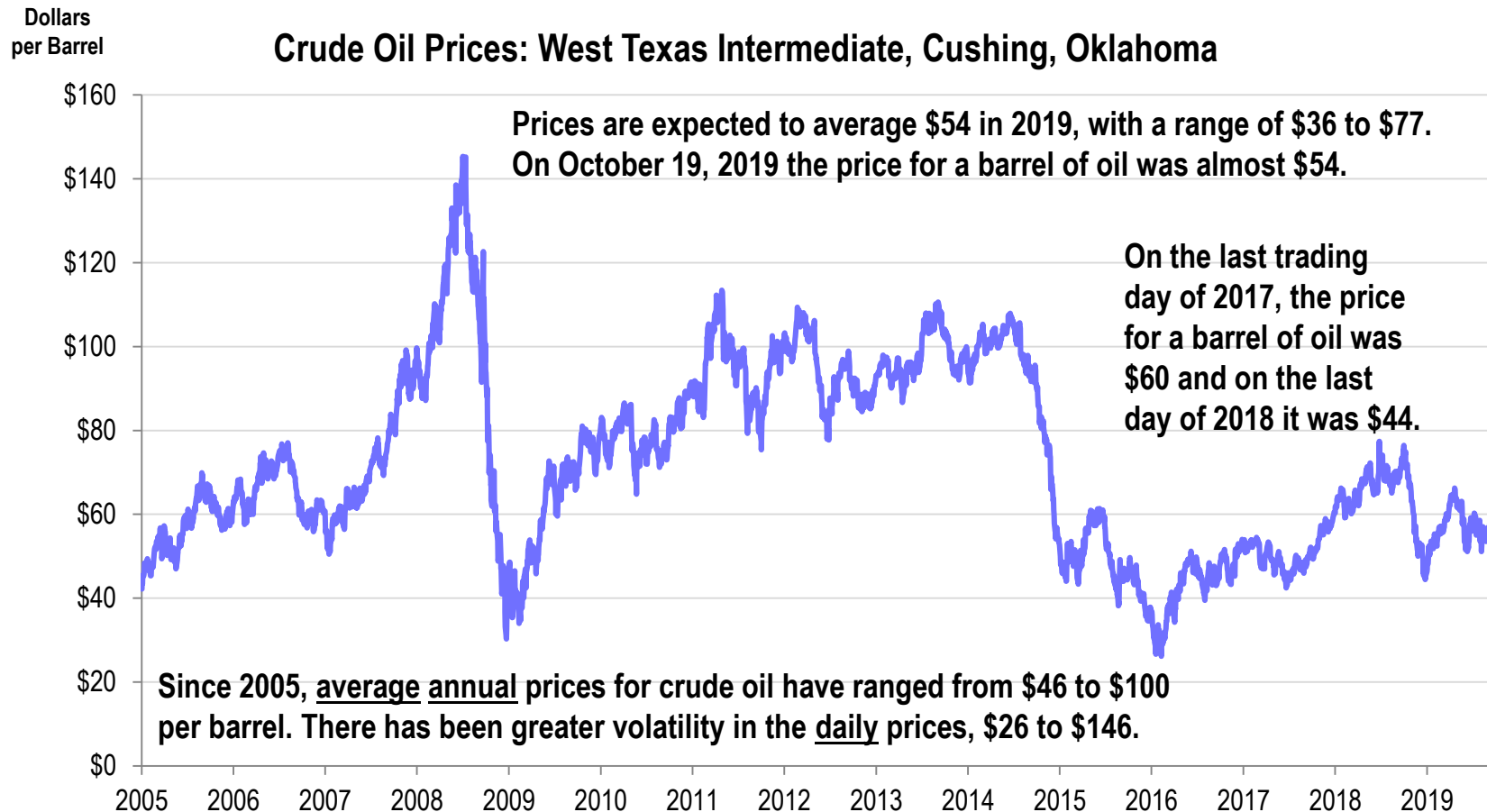


Source: EIA, cber.co.

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

# Crude Oil Prices

## West Texas Intermediate



Source: FRED, EIA, cber.co.

# Crude Oil Production by State

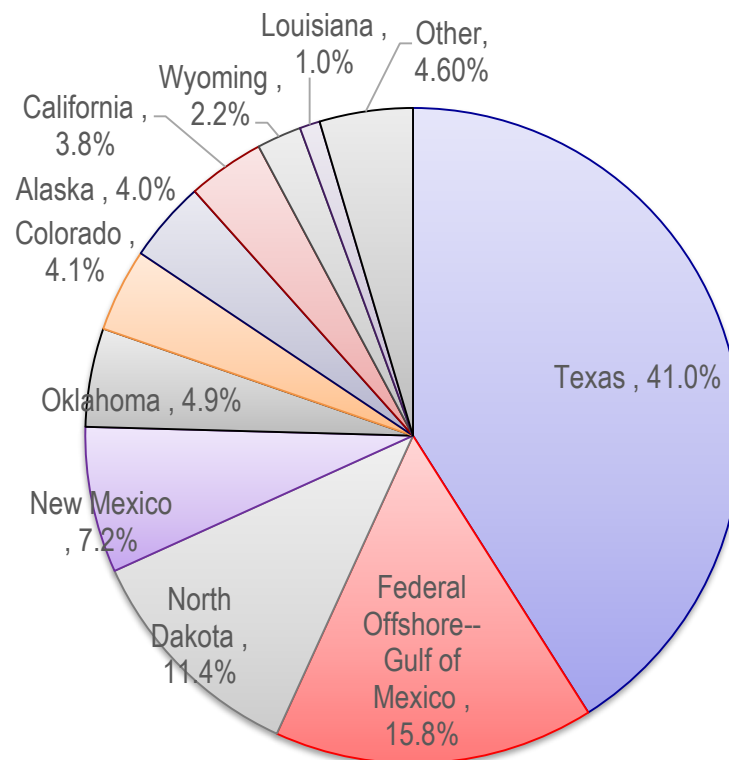
## January - June 2019

### Percent of Oil Production by State

In January 2019, oil was produced in 32 states plus two federal offshore regions (Gulf of Mexico and West Coast). Over the course of a year, there is very little change in the top 10 states.

Colorado accounted for 4.1% of the total oil produced. The industry plays an important role in the U.S. and Colorado economies and the country's efforts to be energy independent.

### Percent of U.S. Production, 2019

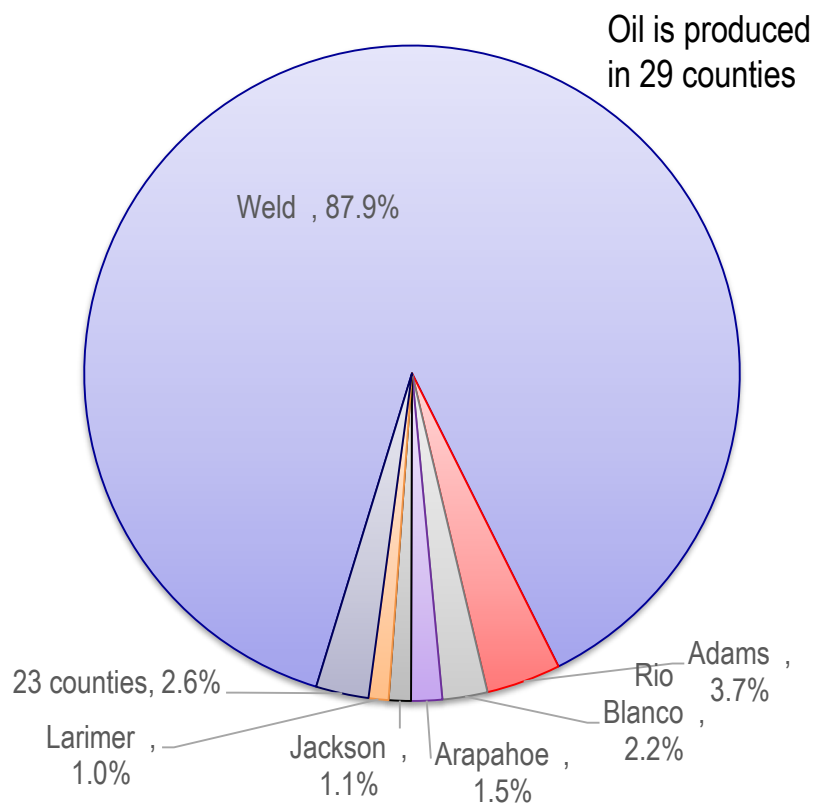


Source: EIA, cber.co.

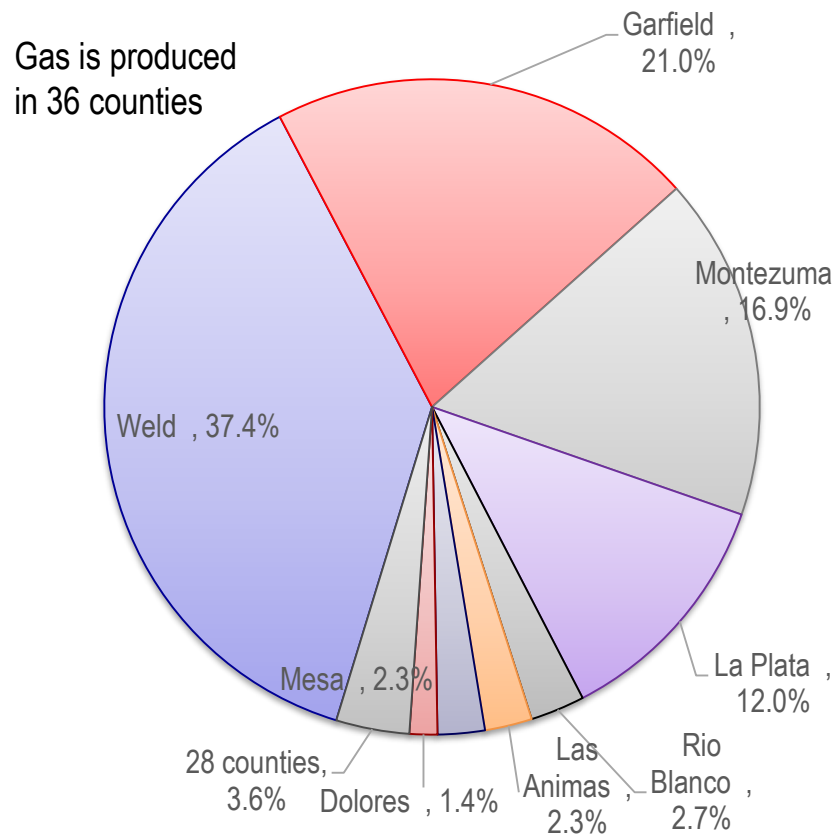
# Production of Colorado Oil and Gas by County

## 2019

Percent of Oil Production 2019



Percent of Gas Production 2019



Source: COGCC, cber.co.



# Higher Education

Higher education is challenged with declining or stagnant enrollment, high tuition costs, and diminishing value for a degree.





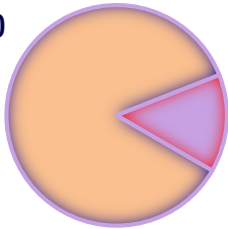
# Higher Education



## Resident vs. Nonresident Enrollment

2009-2010

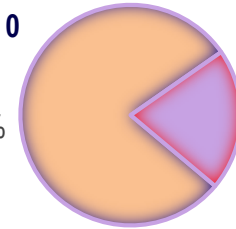
Res.,  
85.7%



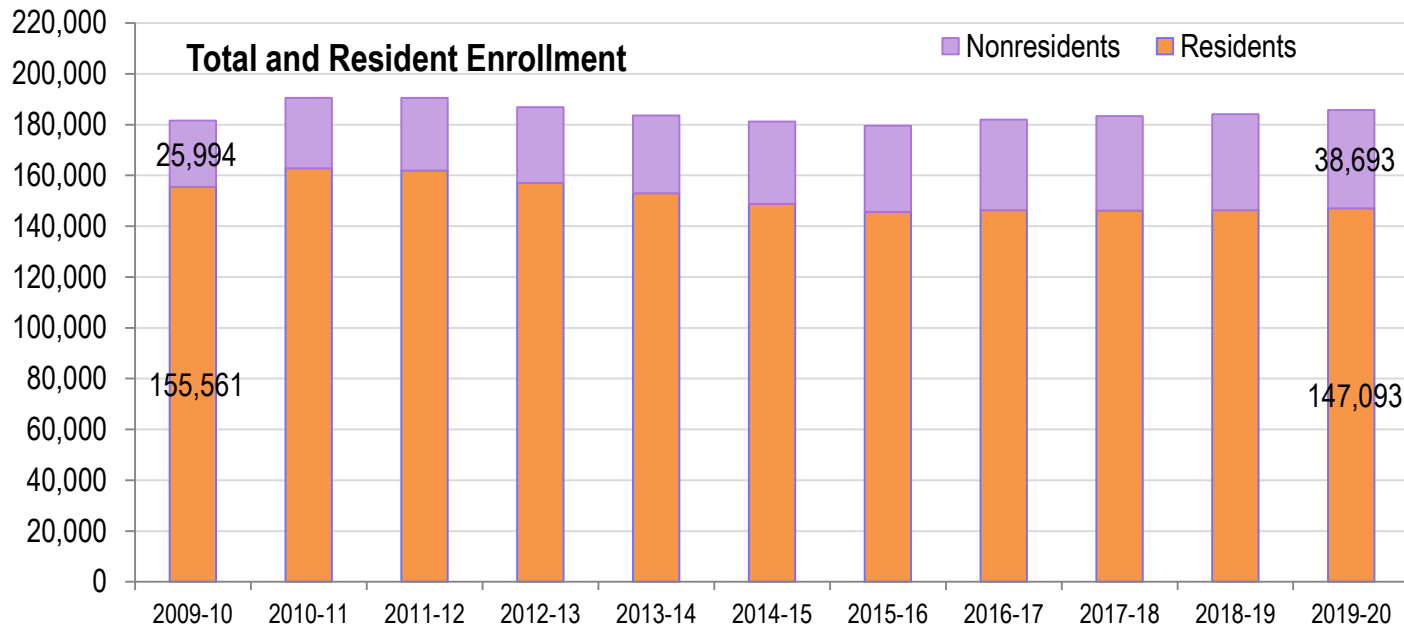
NR,  
14.3%

2019-2020

Res.,  
79.2%



NR,  
20.8%



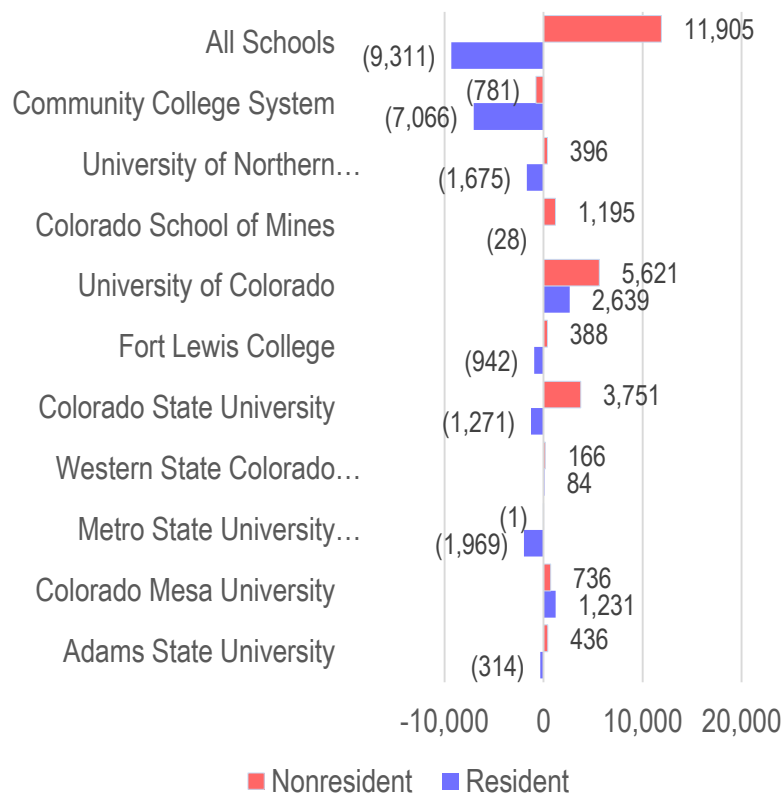
Source: 2019 Higher Education Forecast by Legislative Staff based on DHE data, cber.co. Note: Res. = Resident, NR = Nonresident



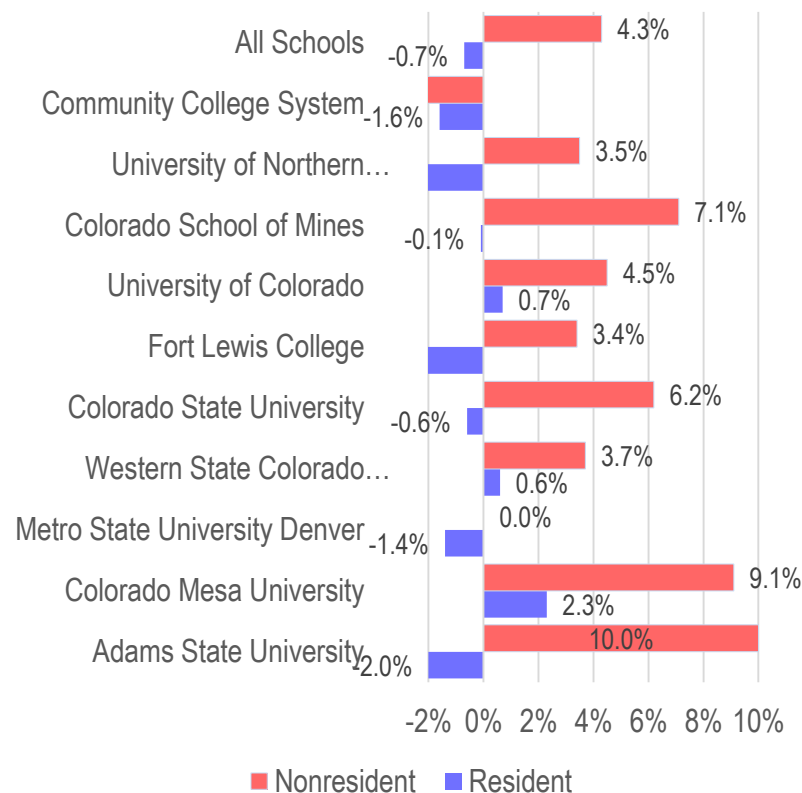
# Higher Education

## Change in Student Enrollment, Resident vs. Nonresident

Absolute Change in Student Enrollment  
2009-2010 vs. 2018-2019

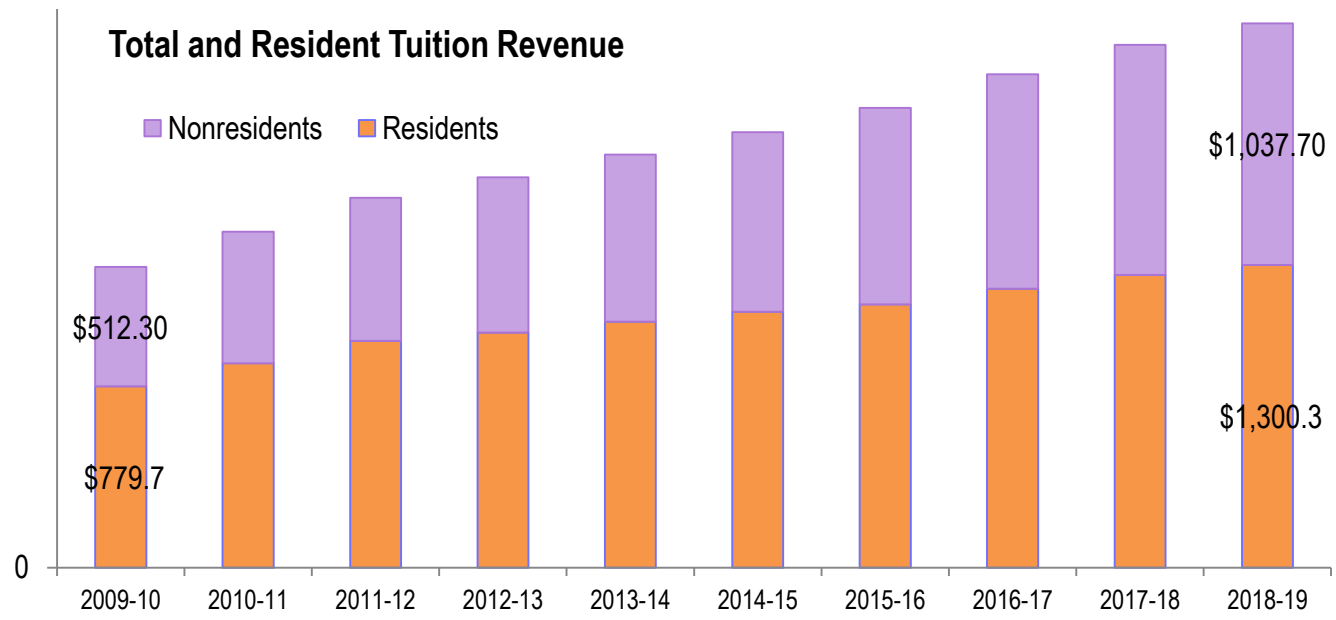
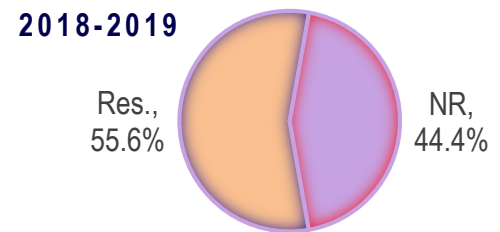
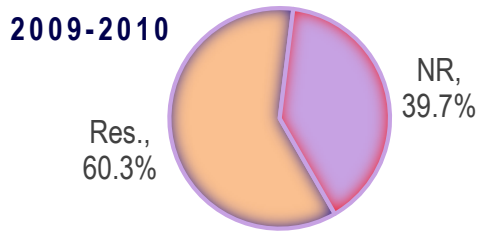


Percent Change in Student Enrollment  
CAGR 2009-2010 vs. 2018-2019



# Higher Education

## Resident vs. Nonresident Tuition Revenue



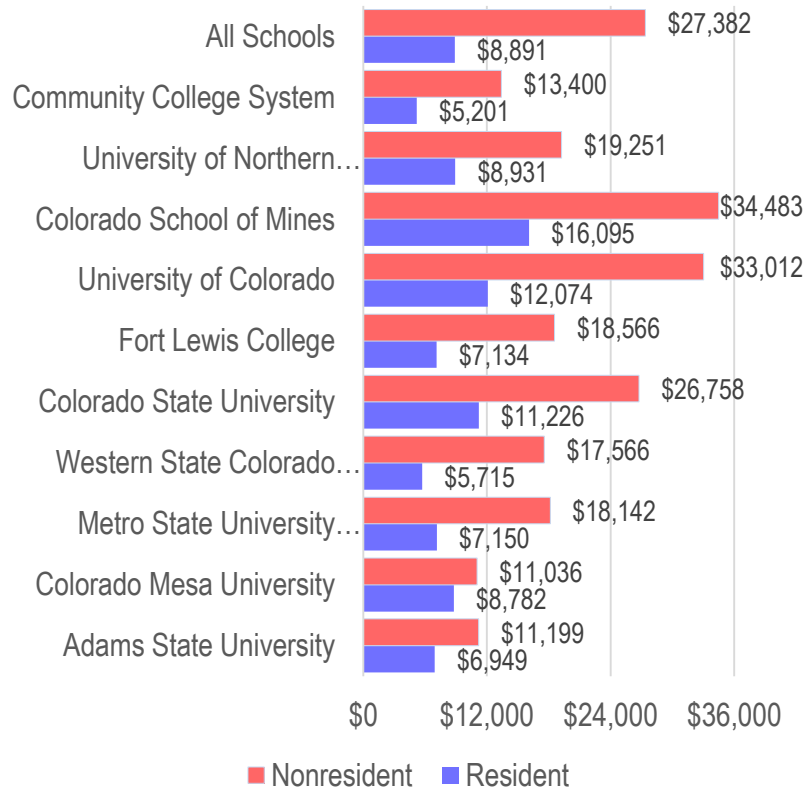
Source: 2019 Higher Education Forecast by Legislative Staff based on DHE data, cber.co. Note: Res. = Resident, NR = Nonresident



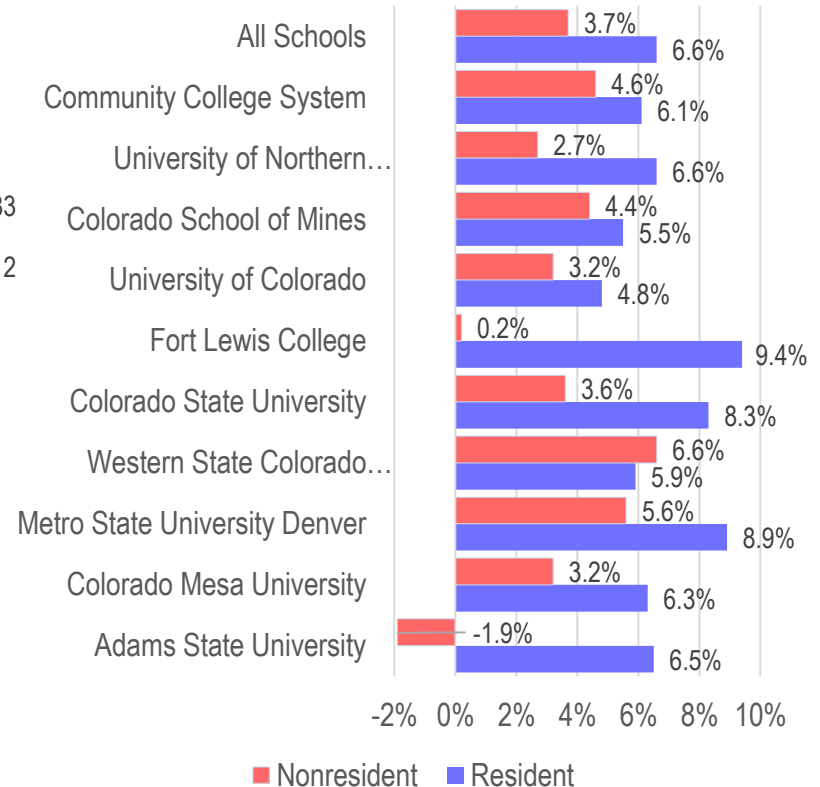
# Higher Education

## Average Per Student Tuition (FTE), Resident vs. Nonresident

Average Tuition, 2018-2019  
Resident vs. Nonresident

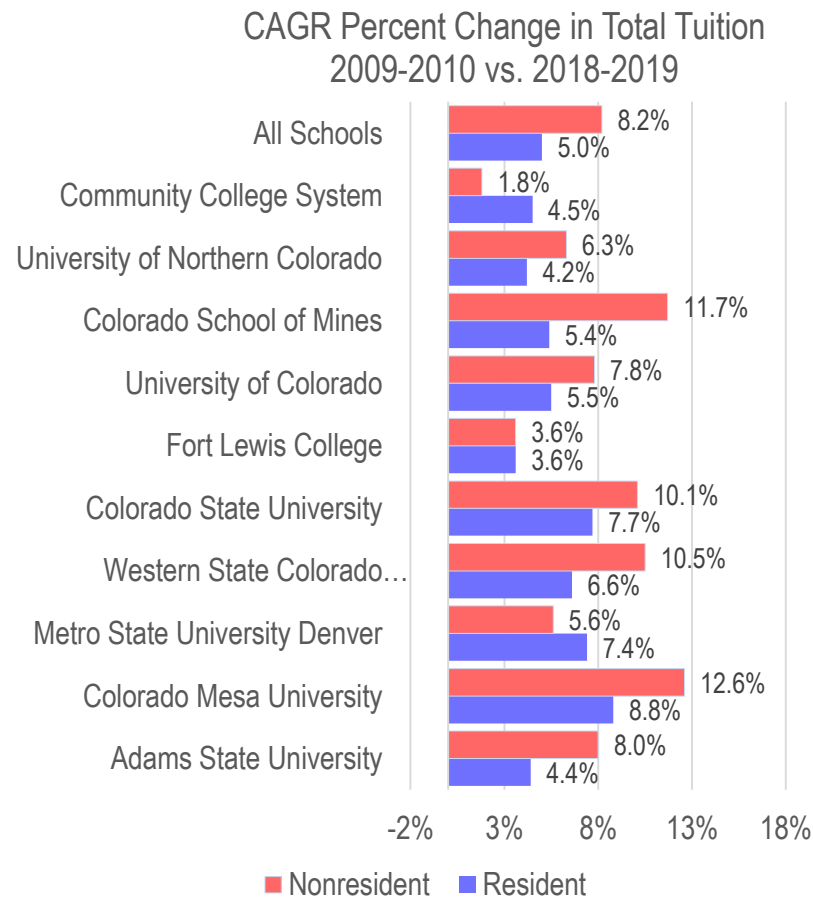
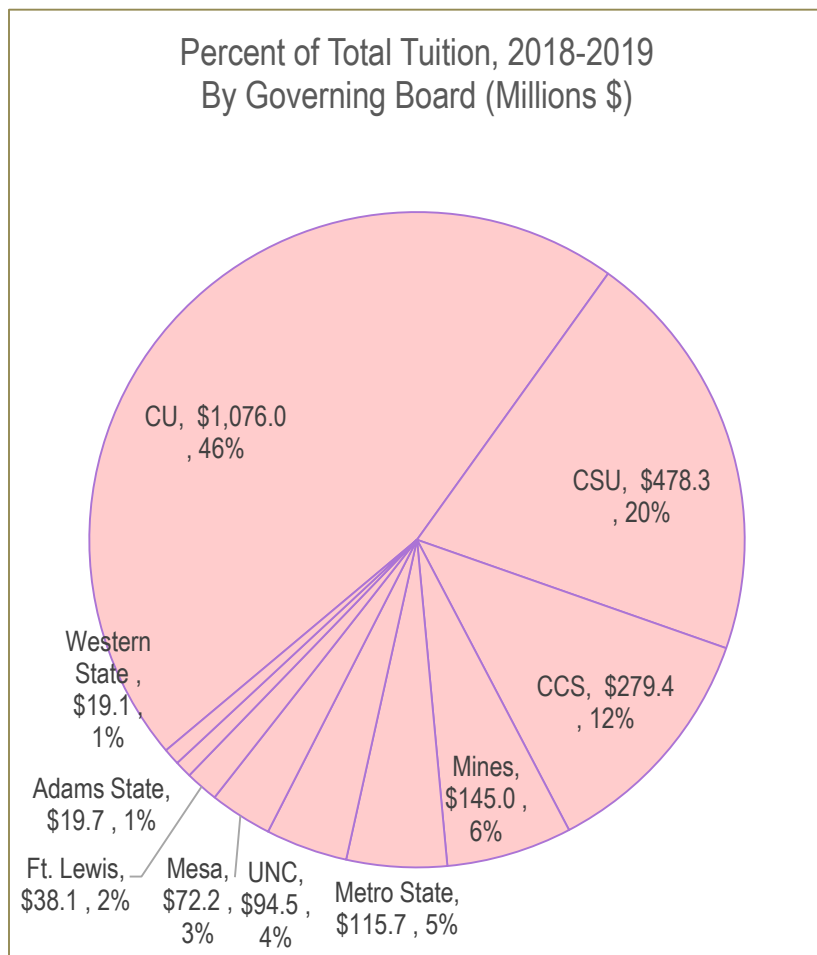


Change in Average per Pupil Tuition  
CAGR 2009-2010 vs. 2018-2019



# Higher Education

## Total Tuition, Resident vs. Nonresident





# The Colorado Economy

## Summary

# Annual Employment Change in Colorado Employment

Through the first 9 months of 2019, average employment is 52,400 jobs, or 1.9%, greater than the same period in 2018. Looking into 2020, there is greater downside risk than upside potential.

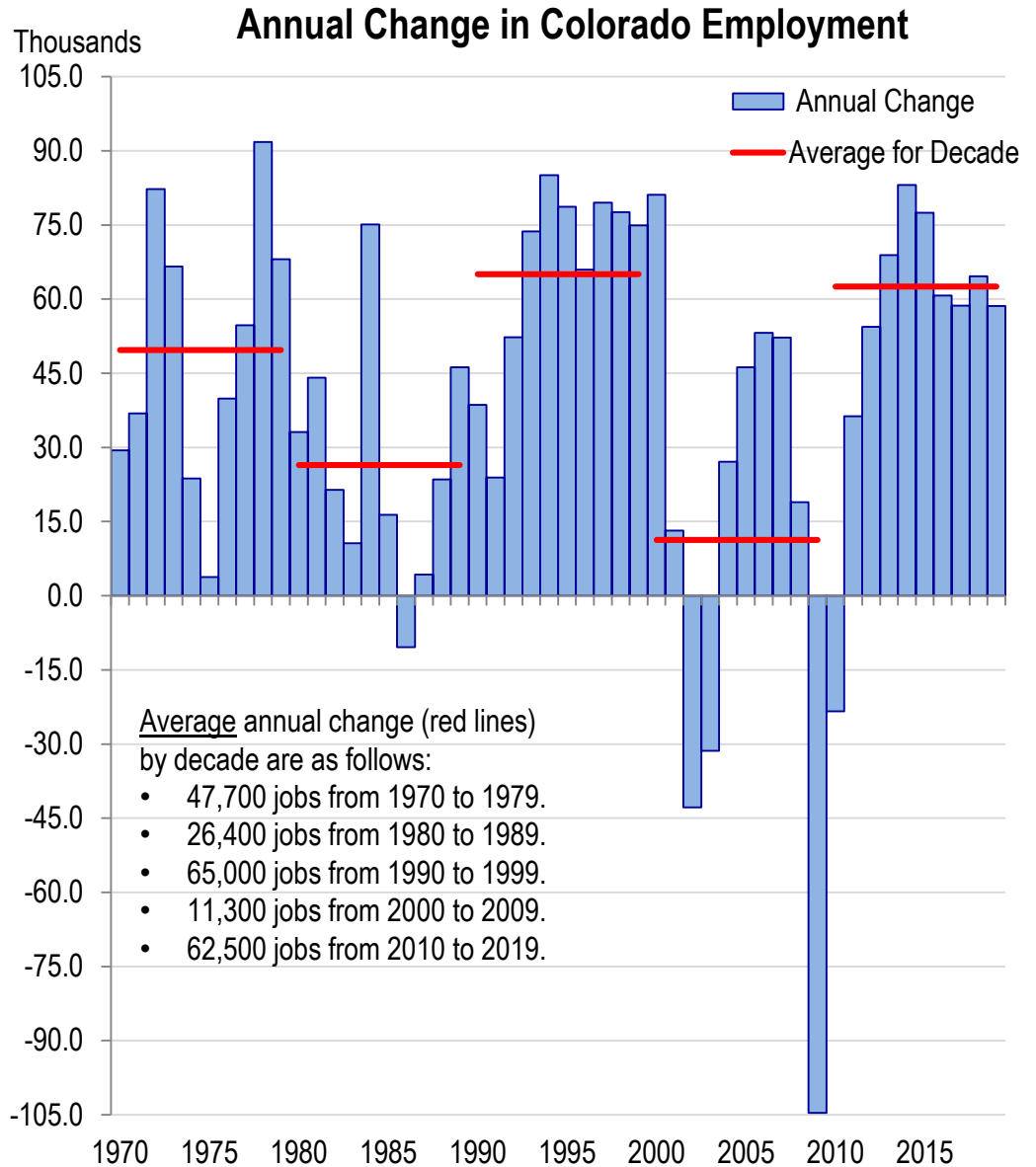
## Strengths

- Job growth is solid
- Economic development efforts are effective
- Wage growth is evident

## Concerns

- Qualified workers are scarce
- There needs to be investment in the infrastructure (transportation, water)
- Increased opposition to growth
- Overreach of legislation and state government
- State government has concerns about their funding

Source: Bureau of Labor Statistics, cber.co.





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Economic Trends for Colorado Through September 2019

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Gary Horvath has produced annual employment forecasts of the state economy for over 25 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 lead for the photonics/electronics cluster in OEDIT’s early stage and proof of concept grant program.