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# Review of Colorado Employment Data Through February 2018

Colorado-based Business and Economic Research  
Prepared  
March 25, 2018

# Overview of Analysis

This chartbook provides a series of graphs, charts, discussions, and data that tell the story about the changes in the 2018 Colorado employment situation for the first two months of 2018. The release for the February data comes on the heels of the March benchmark revisions for the previous two years. This analysis looks at economic activity at the national level and state trends that will impact economic changes in the months ahead. This information is divided into the two sections listed below.

## U.S. Economy

- ✓ Real Gross Domestic Product and Employment (Additional U.S. Data in Colorado Section)
- ✓ S&P 500 Performance and Volatility, Crude Oil Prices, Inflation, and Personal Savings Rate
- ✓ Mortgage Rates, Housing Prices, and Construction Spending
- ✓ Index for Services and Manufacturing, Retail Sales, and Light Truck and Auto Sales
- ✓ Summary

## The Colorado Economy

- ✓ Population, Employment, Unemployment, and Labor Force
- ✓ Leading and Coincident Index – US vs. Colorado
- ✓ Trends - Inflation, Housing Prices, Building Permits
- ✓ Trends – Oil Production, DIA Passengers, Vehicle Sales
- ✓ Summary



# The U.S. Economy

## Real Gross Domestic Product and Employment

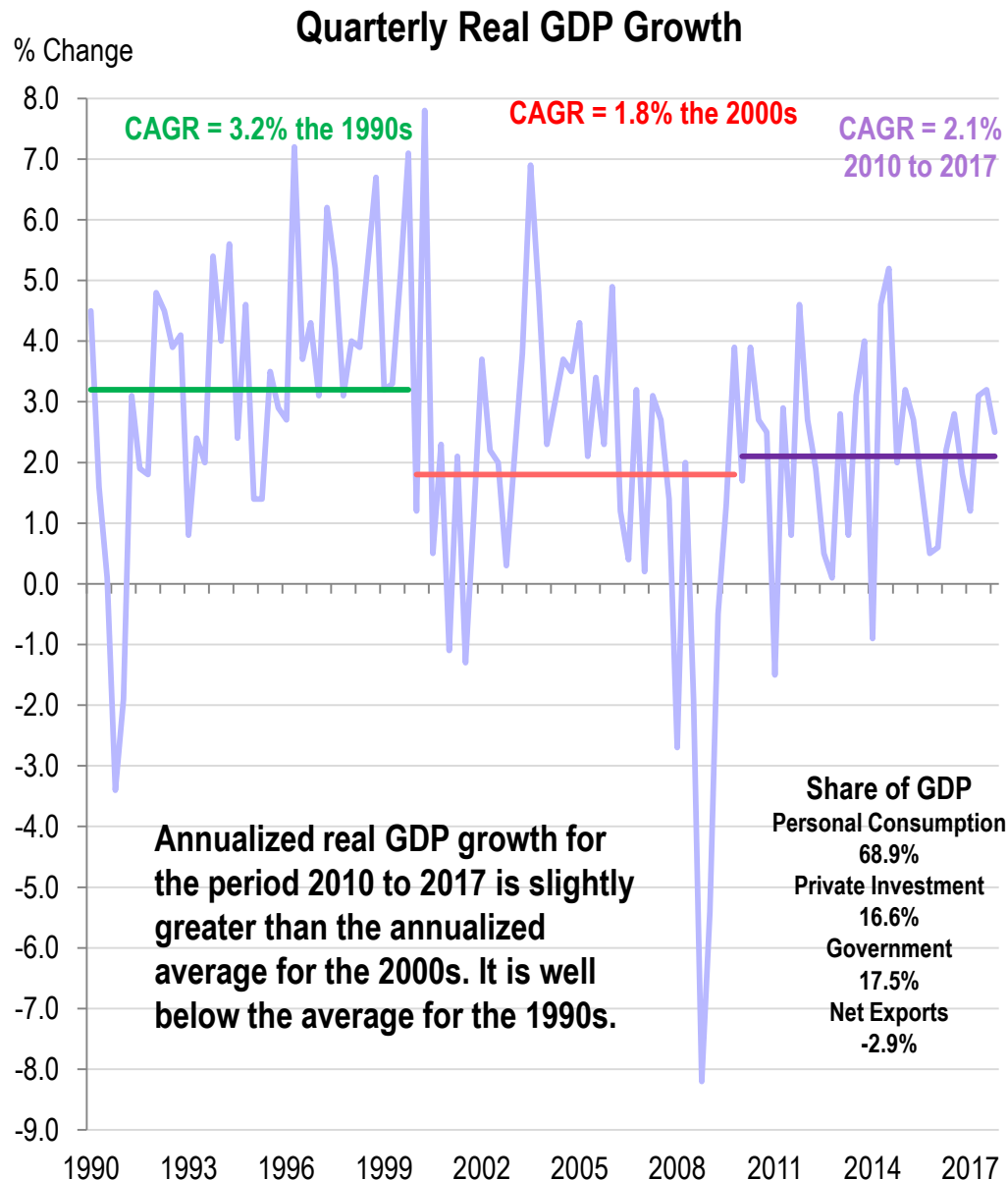
# Quarterly Real GDP Growth Historical United States

Between 2010 and 2017, real GDP growth has ranged from 1.6% to 2.6%. Historical annualized real GDP growth is:

- 1990s 3.2% (green line).
- 2000s 1.8% (red line).
- 2010 to 2017 2.1% (purple line).

Real GDP growth in 2017 was 2.5%. The rate of growth in 2018 is projected to be in the range of 2.3% to 2.7%, with greater upside potential than downside risk.

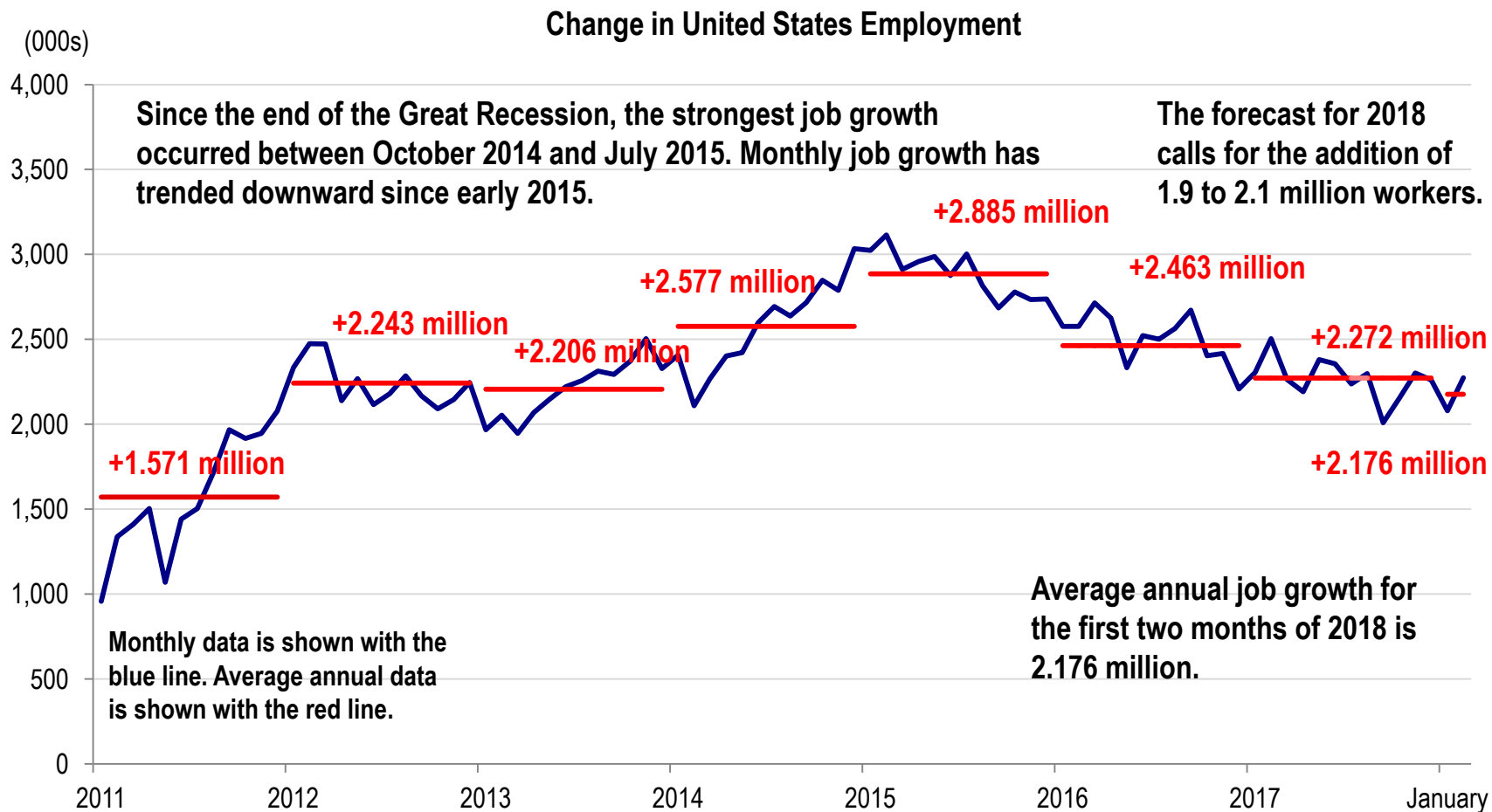
As usual, growth in 2018 will be driven by consumer spending;. There will be stronger business investment and government spending.



Source: Bureau of Economic Analysis, cber.co, Note GDP chained on 2009.

# Change in United States Employment

## Year-Over-Year



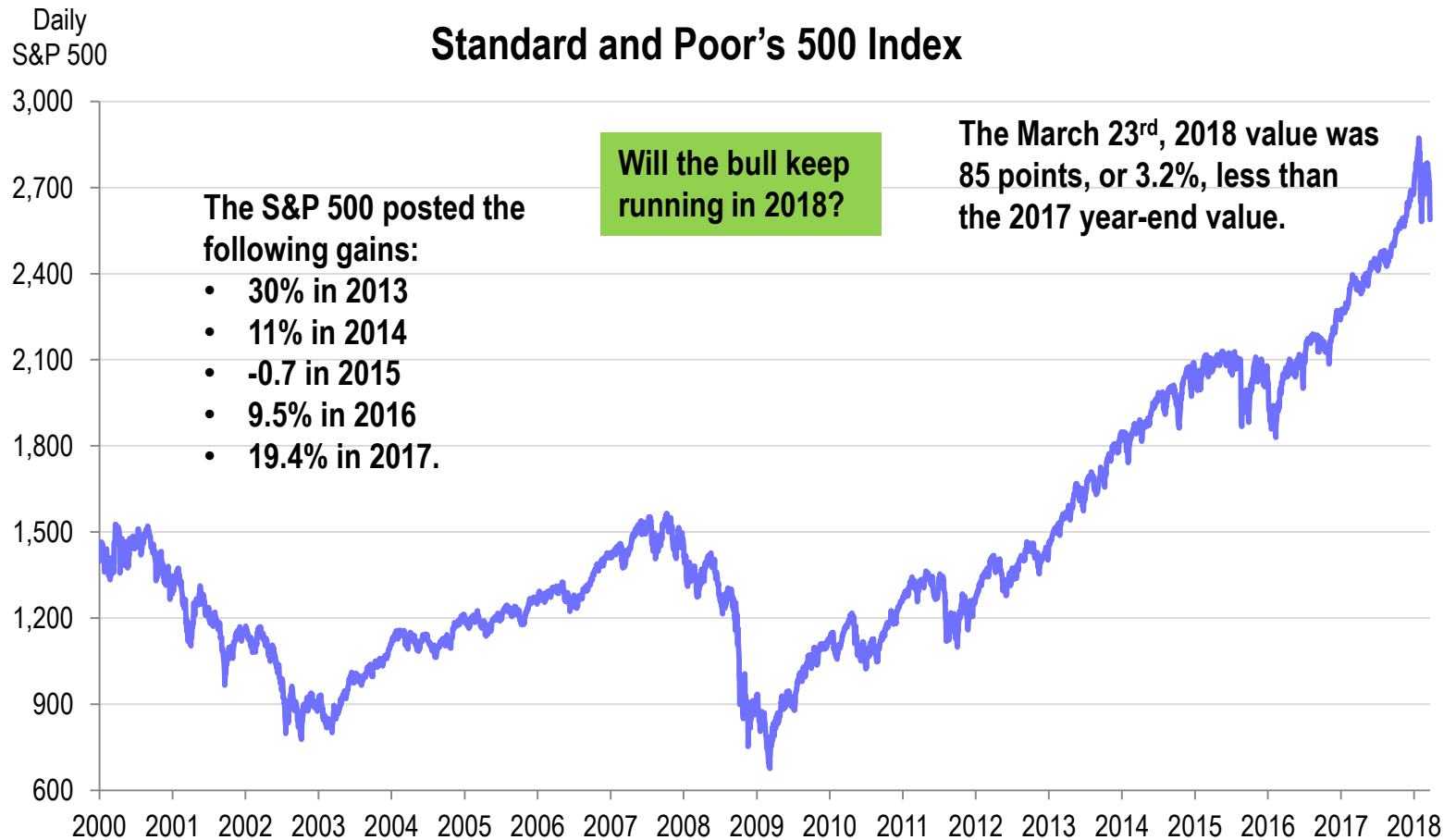
Source: Bureau of Labor Statistics, NSA; cber.co.



# United States Economy

S&P Performance and Volatility, Crude Oil Prices,  
Inflation, and Personal Savings Rate

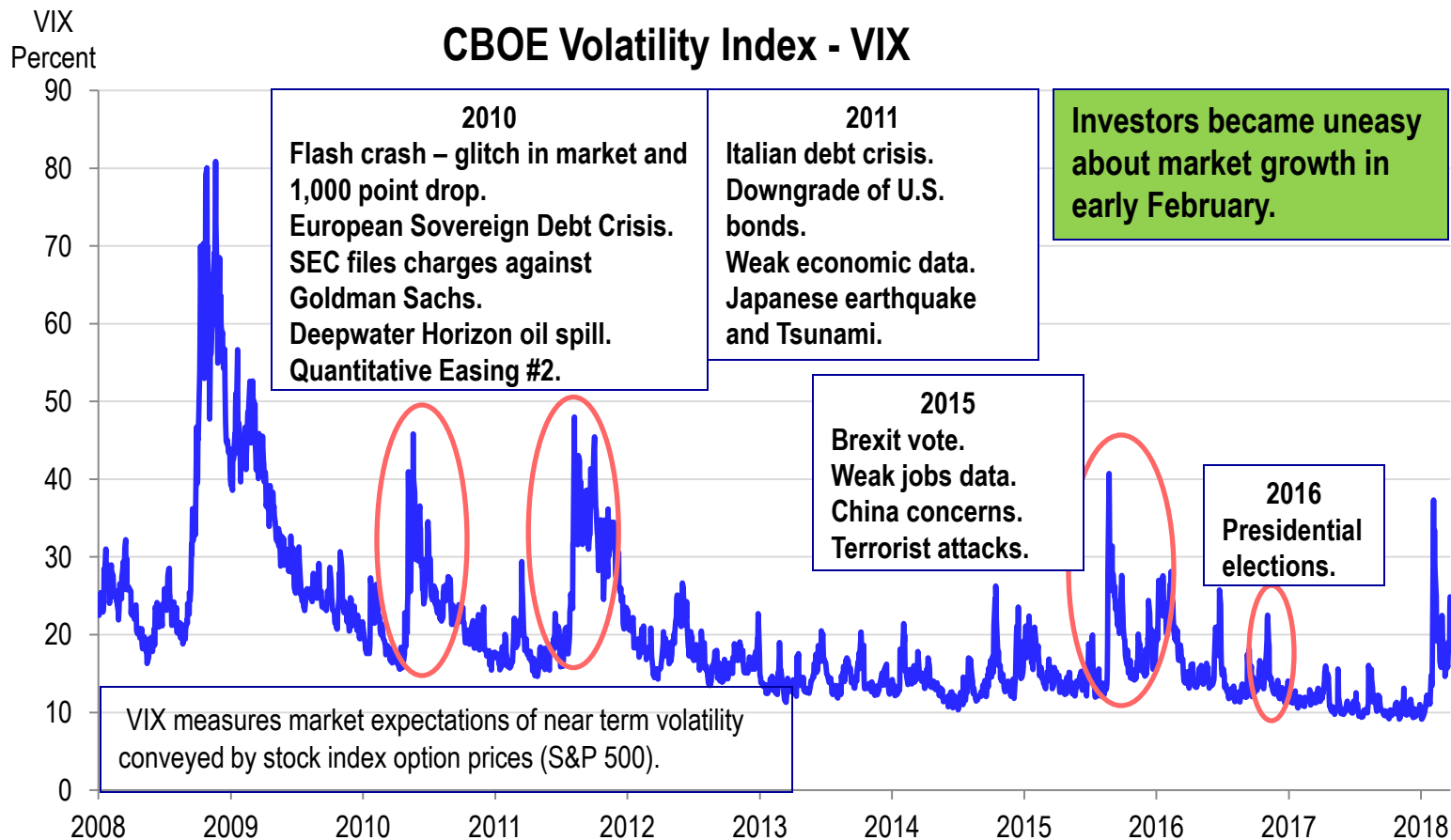
# ● Standard and Poor's 500 Index



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

# CBOE Volatility Index

## VIX (VIXCLS)

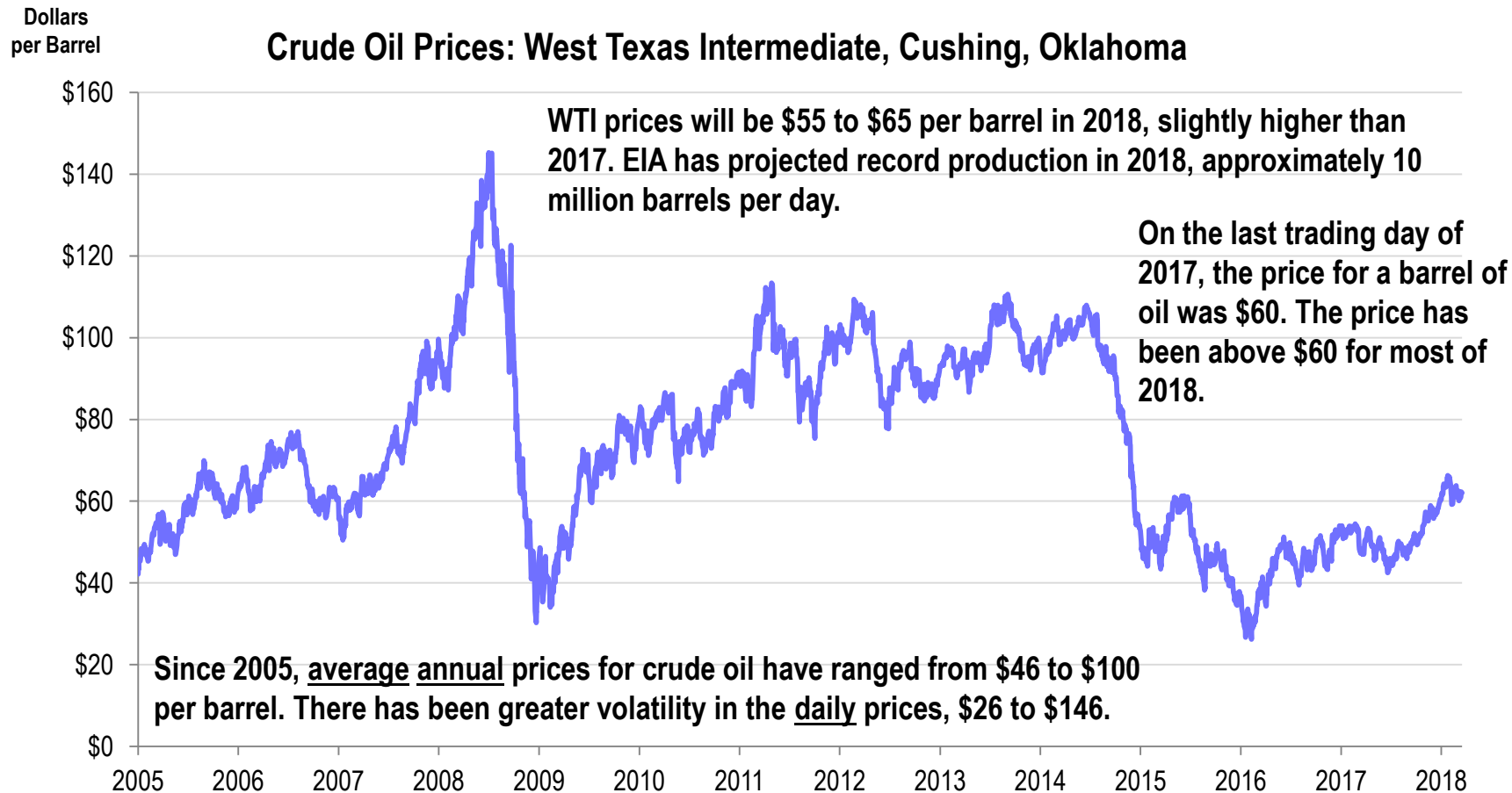


Source: FRED, Chicago Board Options Exchange, cber.co.



# Crude Oil Prices

## West Texas Intermediate



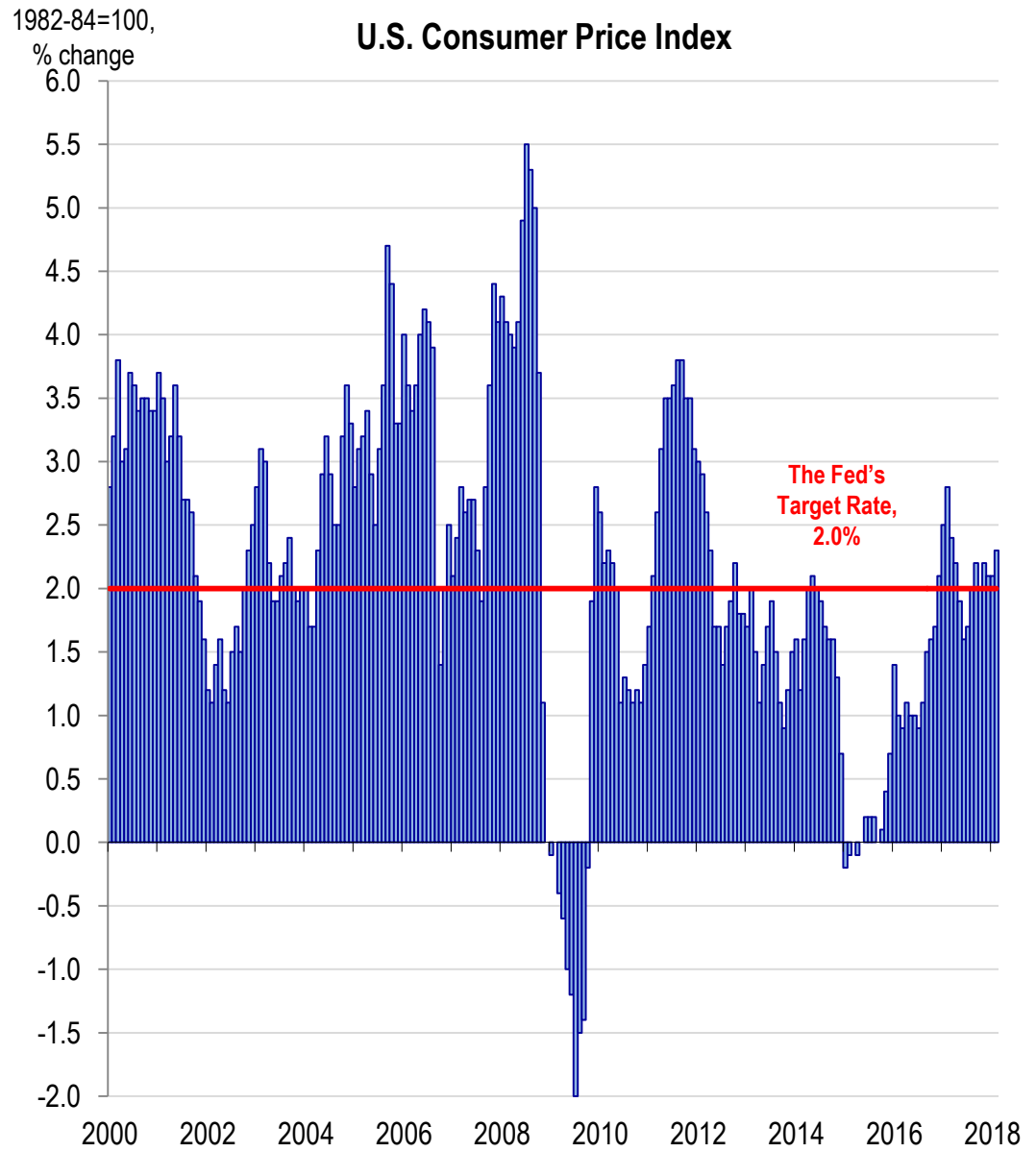
Source: FRED, EIA, cber.co.

# Consumer Price Index (CPI)

In 2018, U.S. inflation, as measured by the seasonally adjusted CPI, will increase by 2.3%. This is slightly above the Fed's target rate of 2.0%. Increases in 2018 will be a result of higher interest rates, housing costs, health care costs, and gasoline prices.

Recent annual rates are:

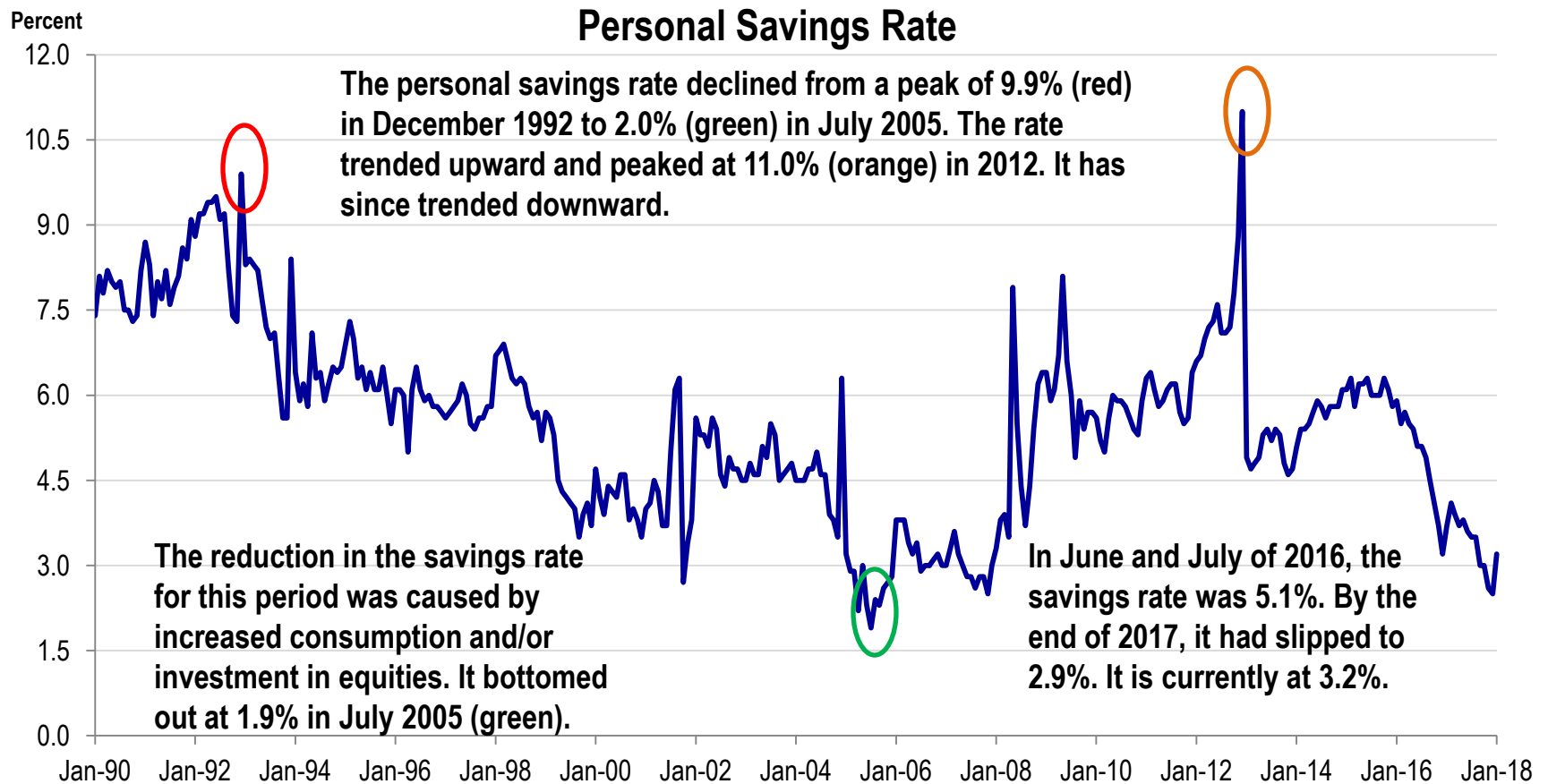
- 2012 2.1%
- 2013 1.5%
- 2014 1.6%
- 2015 0.1%
- 2016 1.3%
- 2017 2.1%
- 2018 2.3 %



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

# U.S. Personal Savings Rate

## Percentage of Disposable Personal Income



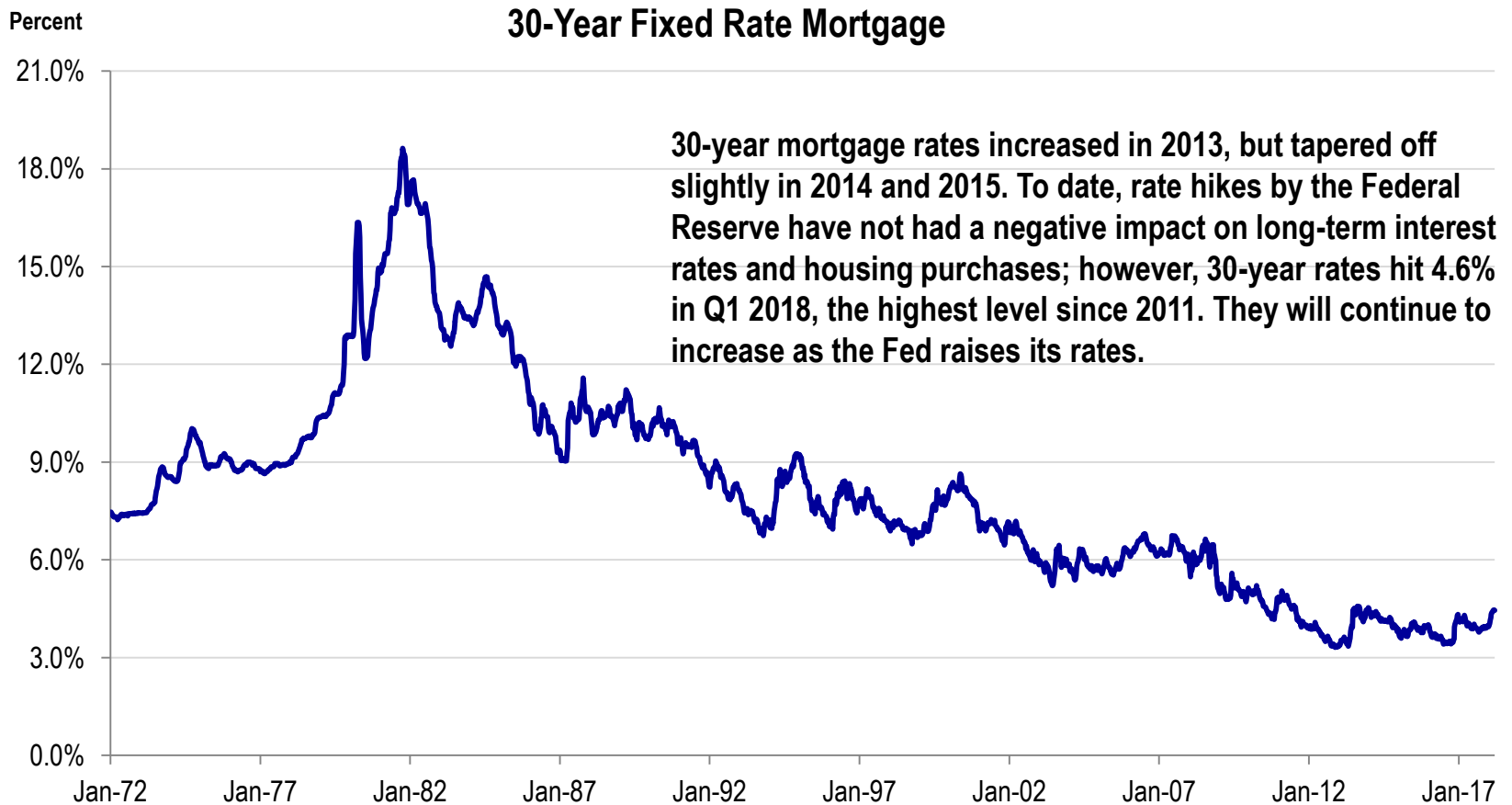
Source: FRED, SA.



# The U.S. Economy

Mortgage Rates, Housing Prices, and Construction Spending

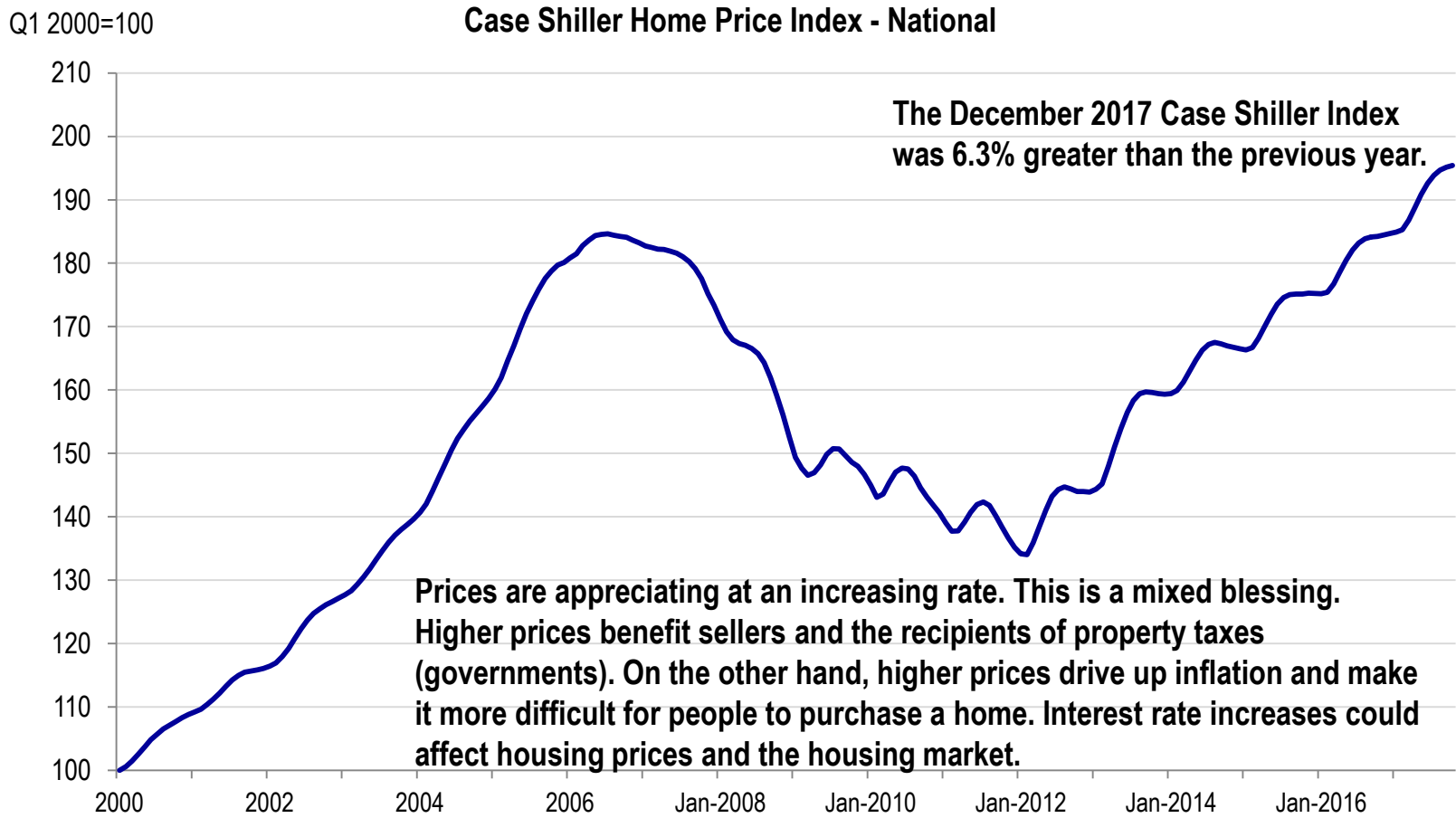
# 30-Year Fixed Rate Mortgage



Source: FRED, Freddie MAC, cber.co.

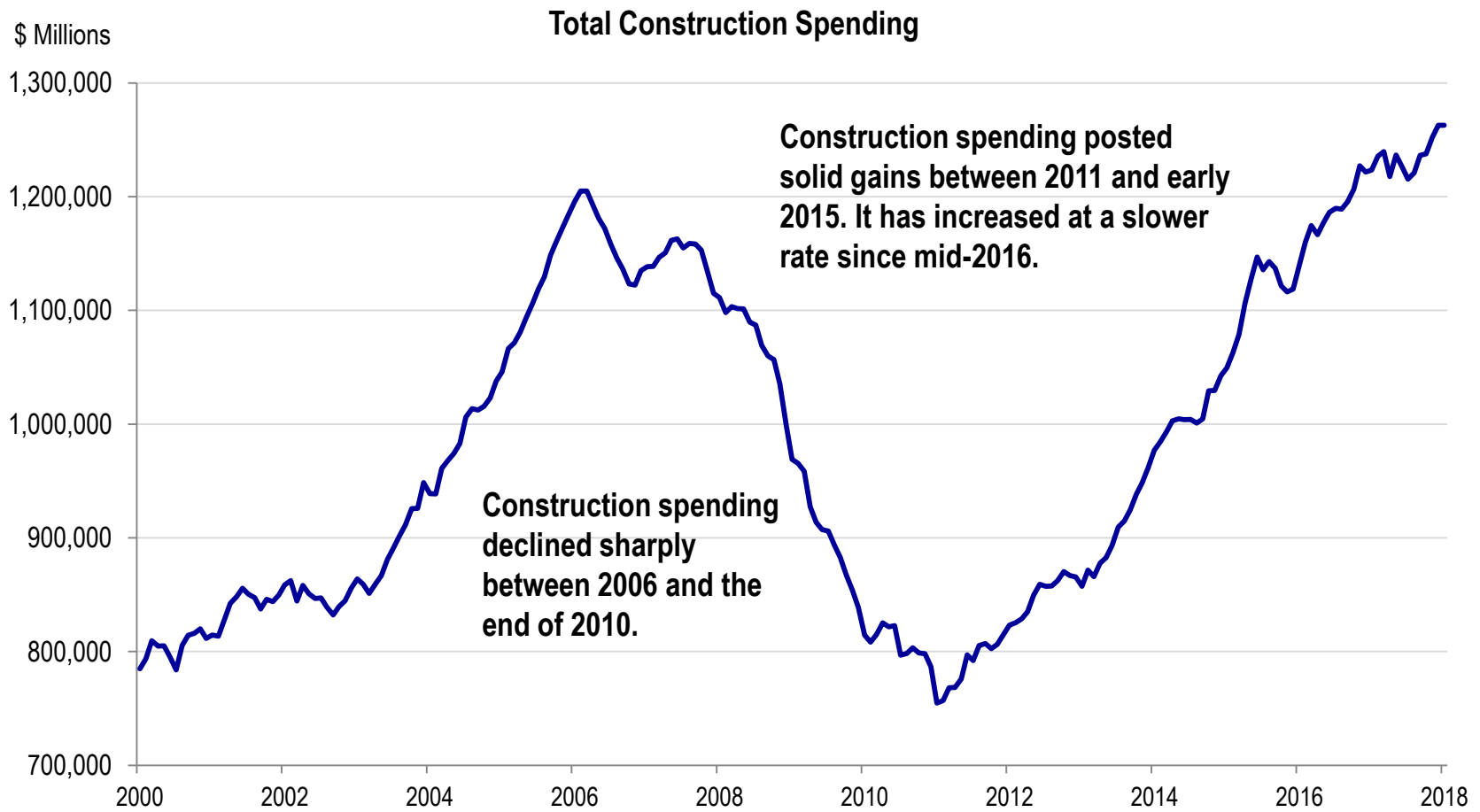
# Case Shiller Home Price Index

## National Index



Source: S&P Case-Shiller.

# Total U.S. Construction Spending



Source: FRED, Census Bureau, not adjusted for inflation, cber.co.



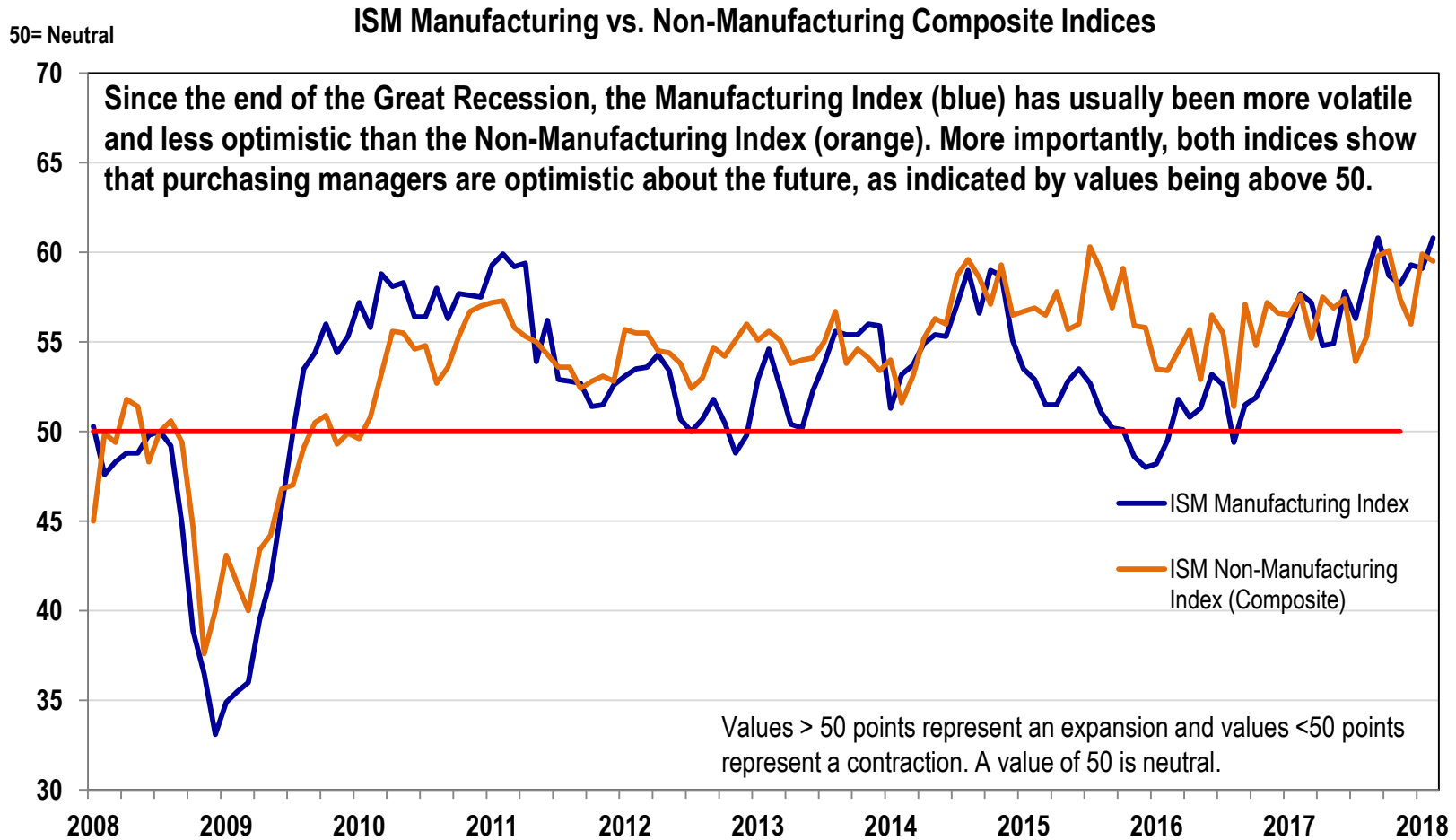
# The U.S. Economy

Index for Services and Manufacturing, Retail Sales, and  
Light Truck and Auto Sales



# ISM PMI Composite Indices

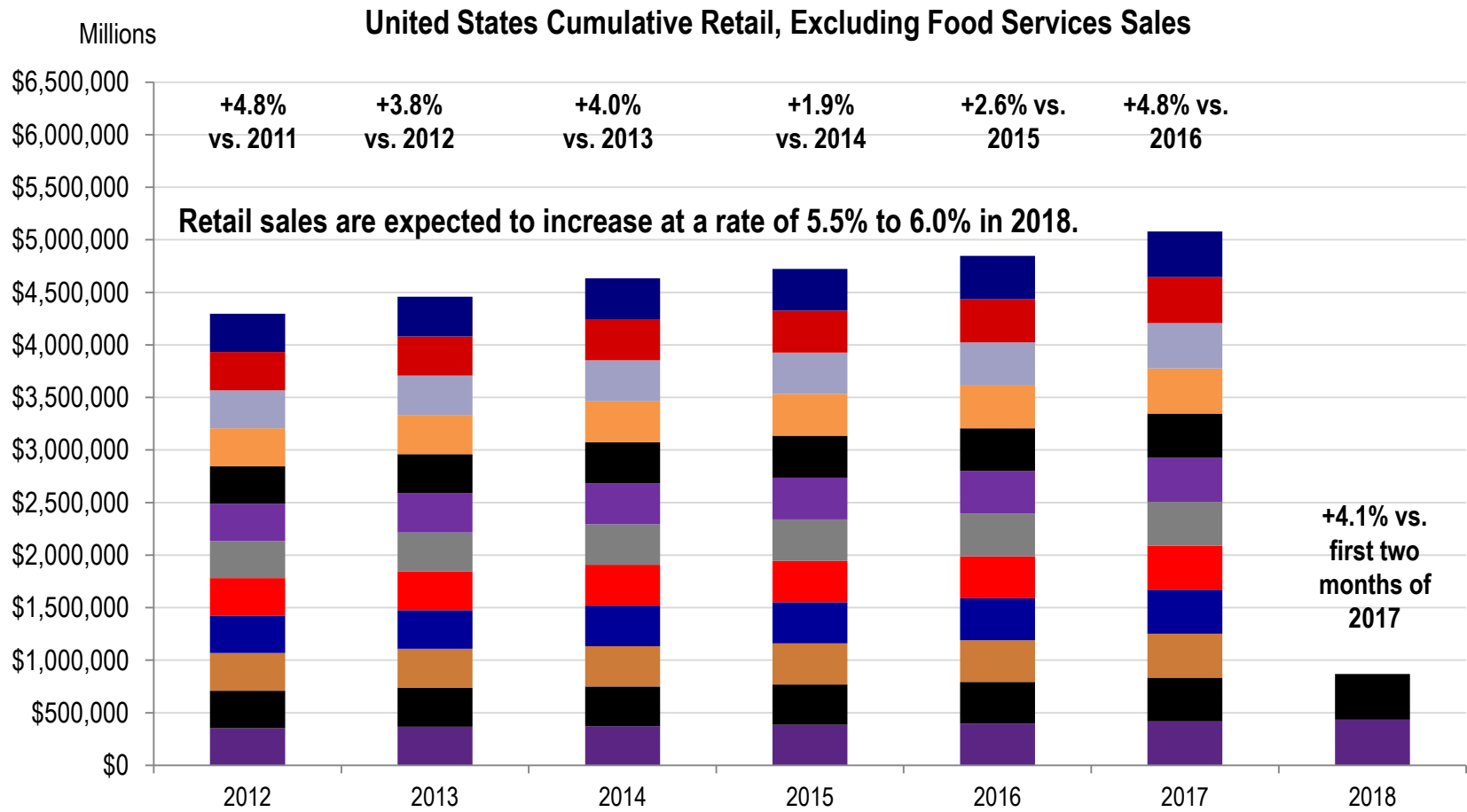
## Manufacturing vs. Non-manufacturing



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

# Cumulative Retail, Excluding Food Services Sales

## Monthly

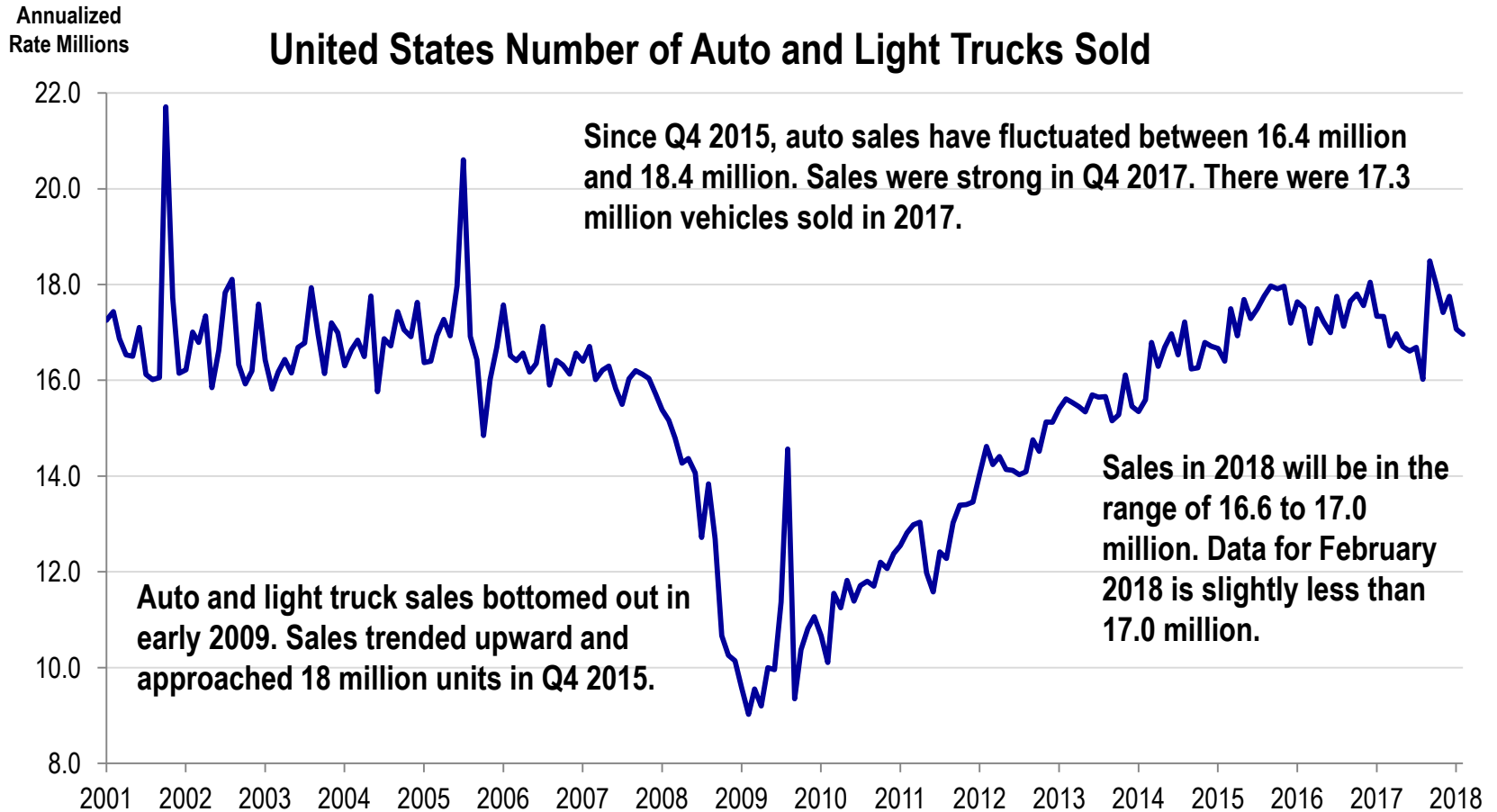


Source: U.S. Census Bureau, FRED, cber.co.

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

# U.S. Weekly Auto and Light Truck Sales

## Monthly (Annualized Rate Millions)



Source: FRED, BEA, cber.co.

Note: Seasonally Adjusted Annualized Rate.

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# The United States Economy

## Summary

### Watch for the Following in 2018

- **Global and U.S. Real GDP** – Global and U.S. real GDP growth will be similar to 2017.
- **Global Geopolitical Tensions** –North Korea, Russia, Syria, China - Which country is next?
- **Brexit** – The Brexit talks have entered a more serious phase of negotiations.
- **Consumption and Investment** – Consumers will continue to spend; business investment will increase.
- **Inflation** - The Fed will keep inflation in check, slightly above the target rate.
- **Unemployment** - The national unemployment rate will continue to decline and more companies will be challenged to find workers.
- **Jobs** – Through two months of 2018, U.S. job growth has been stronger than expected.
- **Rate Increases** - The increase in interest rates by the Fed may reduce demand for housing and durable goods as the year progresses.
- **Manufacturing** - U.S. manufacturers will continue to benefit from a weaker dollar., but they may be impacted if there is a tariff war.
- **Retail Trade** - The retail industry will continue to evolve, e-commerce will increase, consumers will continue to spend. Vehicle sales will be slower in 2018.
- **Corporate Profits** - Corporate profits will continue to be strong in 2018.
- **Construction and Housing** - Demand for residential and commercial construction will continue to be strong. Housing prices will continue to appreciate at an increasing rate.
- **Equities** – After starting out 2018 a strong note, the bull market has paused. Continued volatility in the market is expected.
- **Price of Oil** - The price for a barrel of oil will be in the range of \$55 to \$65.
- **Political and Social Divide** - The performance of the economy is strong enough that it has taken a backseat to other issues.
- **Productivity** – Labor productivity continues to be a concern.
- **Debt** – Personal and government debt may become an issue if the economy slows too much. The savings rate is too low.
- **Mother Nature** - Natural disasters (hurricanes, fires, floods, etc.) will continue to disrupt state and regional economies.



# The Colorado Economy

Population, Employment, Unemployment, and Labor Force

# Colorado Population

## Components of Change

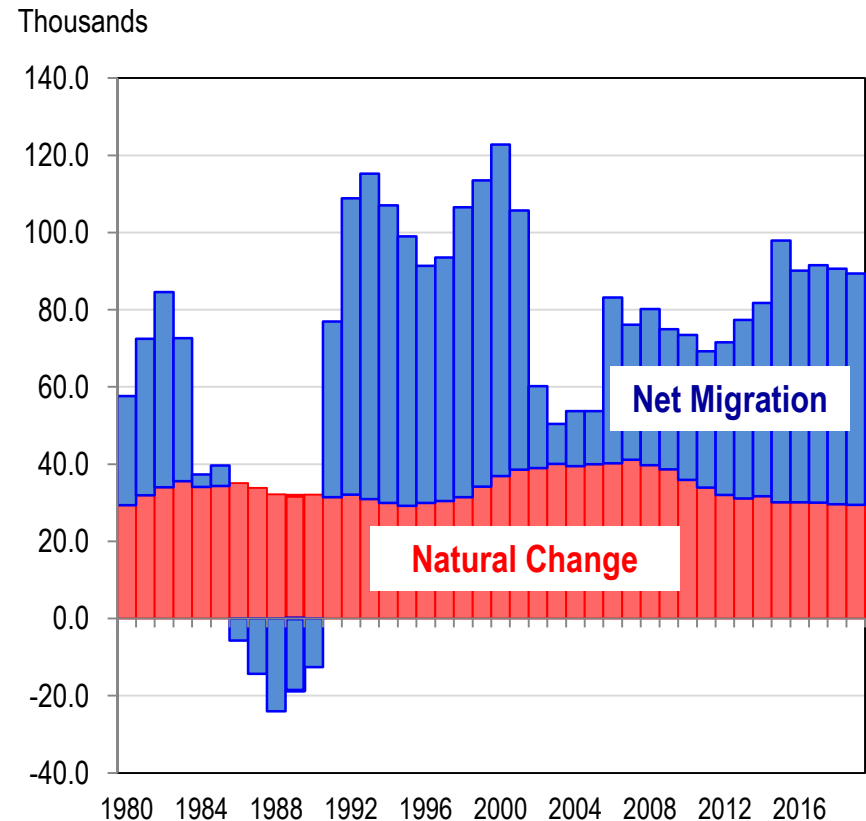
Population increases and decreases are a result of the natural rate of change (births minus deaths) and the change in net migration (people moving into the state minus people moving out of the state).

Over the past 3½ decades the natural rate of change (red bars) varied from a low of 29,145 in 1995 to a peak of 41,124 in 2007. In 2018 it is projected to drop to 29,400. Fertility rates in Colorado have declined.

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 and the change in population were negative. More people moved out of state than moved into the state to escape a 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 downturn.

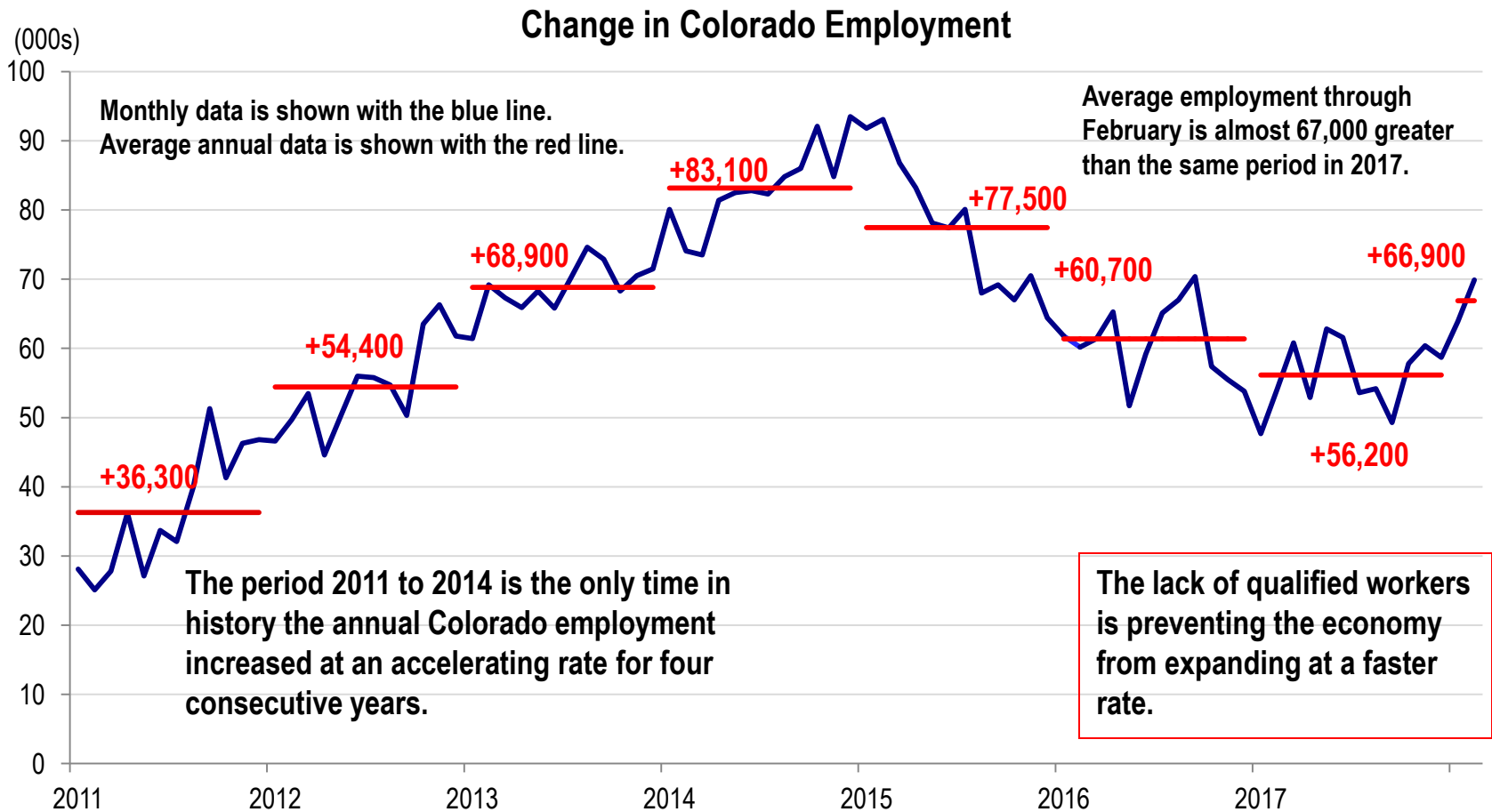
The Colorado population will increase by about 90,000 for the years 2015 to 2018. In 2018 the state's population will increase by 1.6% to 5,720,280.

Change in Colorado Population 1980 - 2019



# Change in Colorado Employment

## Year-Over-Year

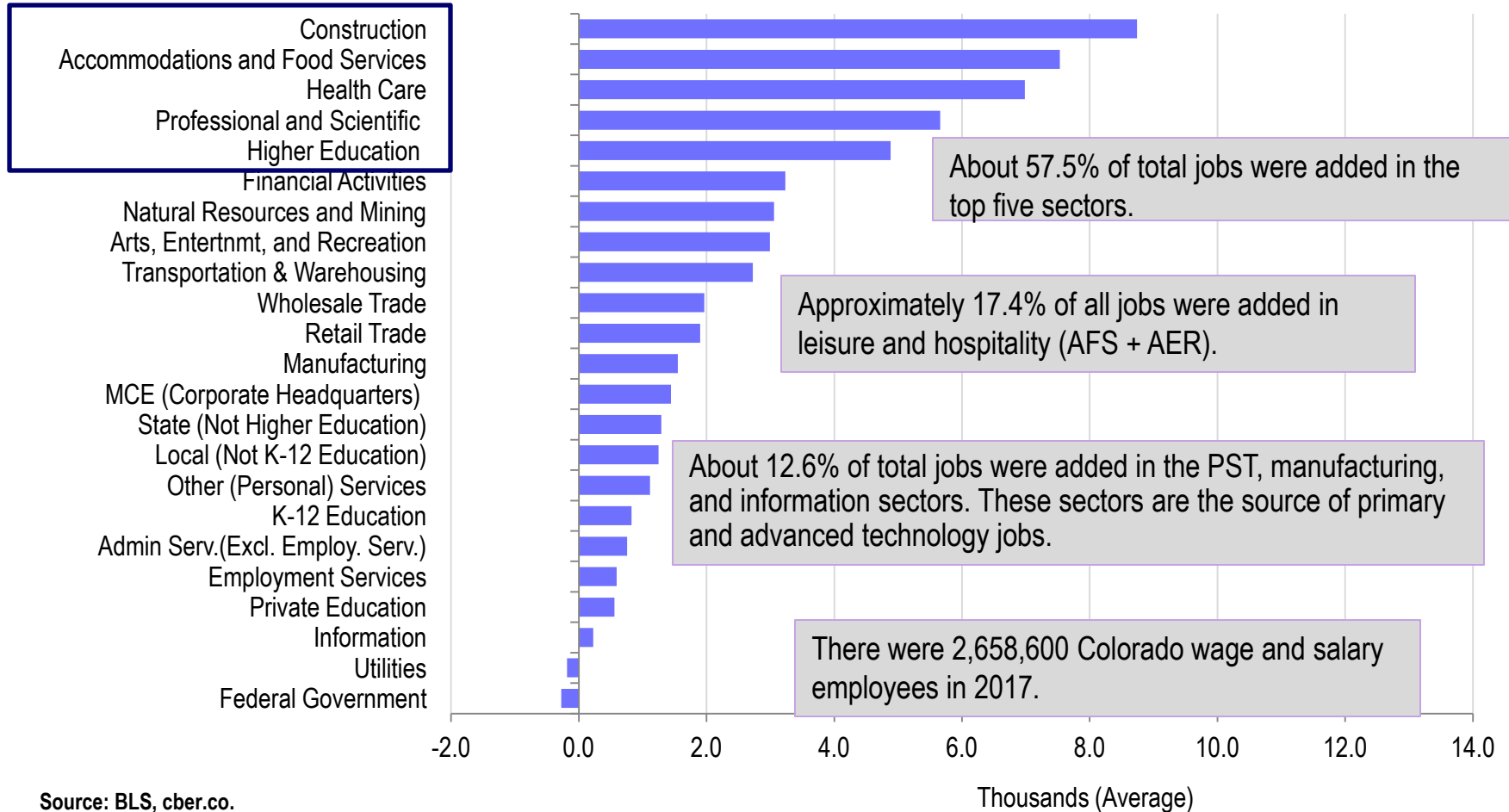


Source: Bureau of Labor Statistics, NSA, cber.co.

# Change in Employment

## 12 Month Rolling Average Through February 2018

Job Change All Sectors



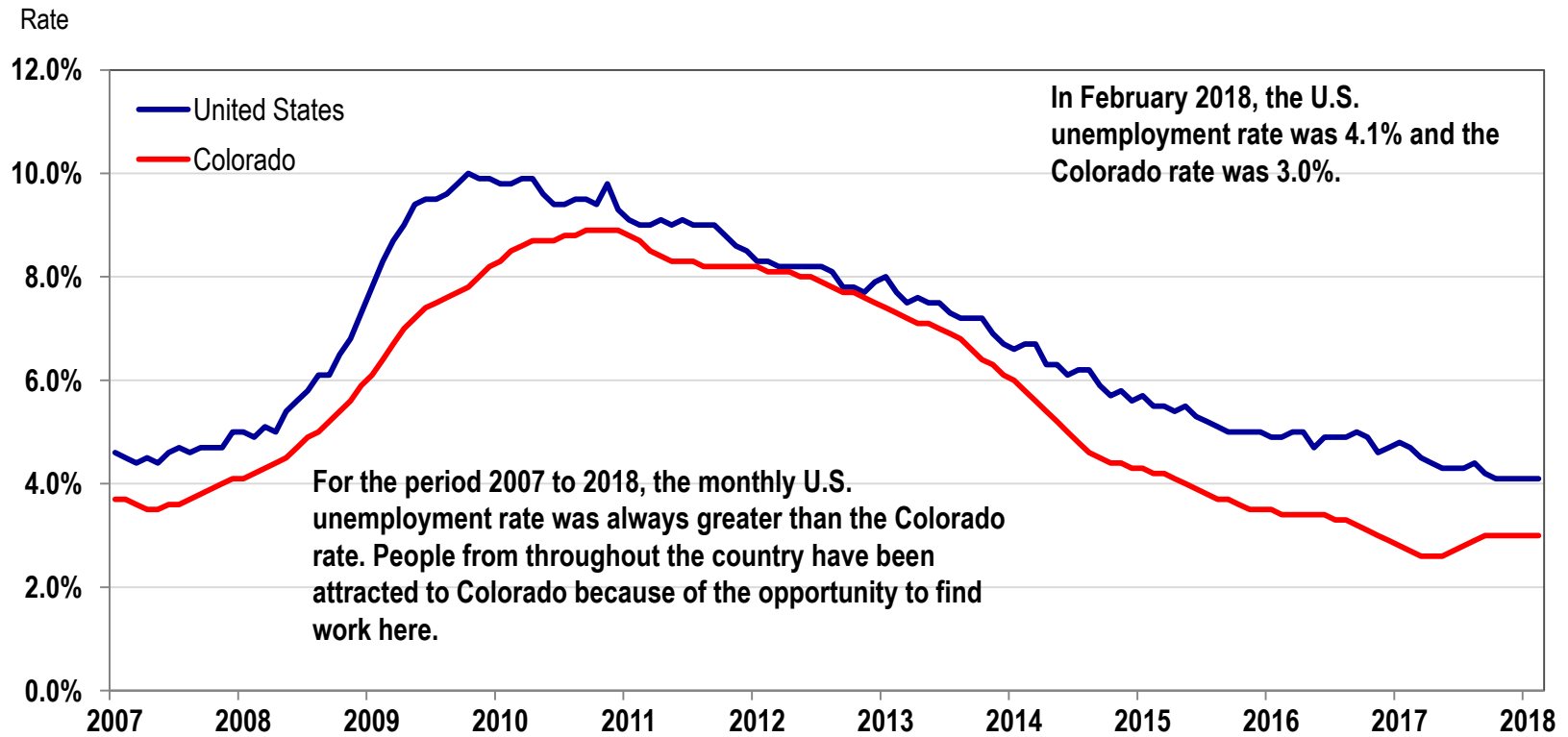
Source: BLS, cber.co.



# Annual Unemployment Rate

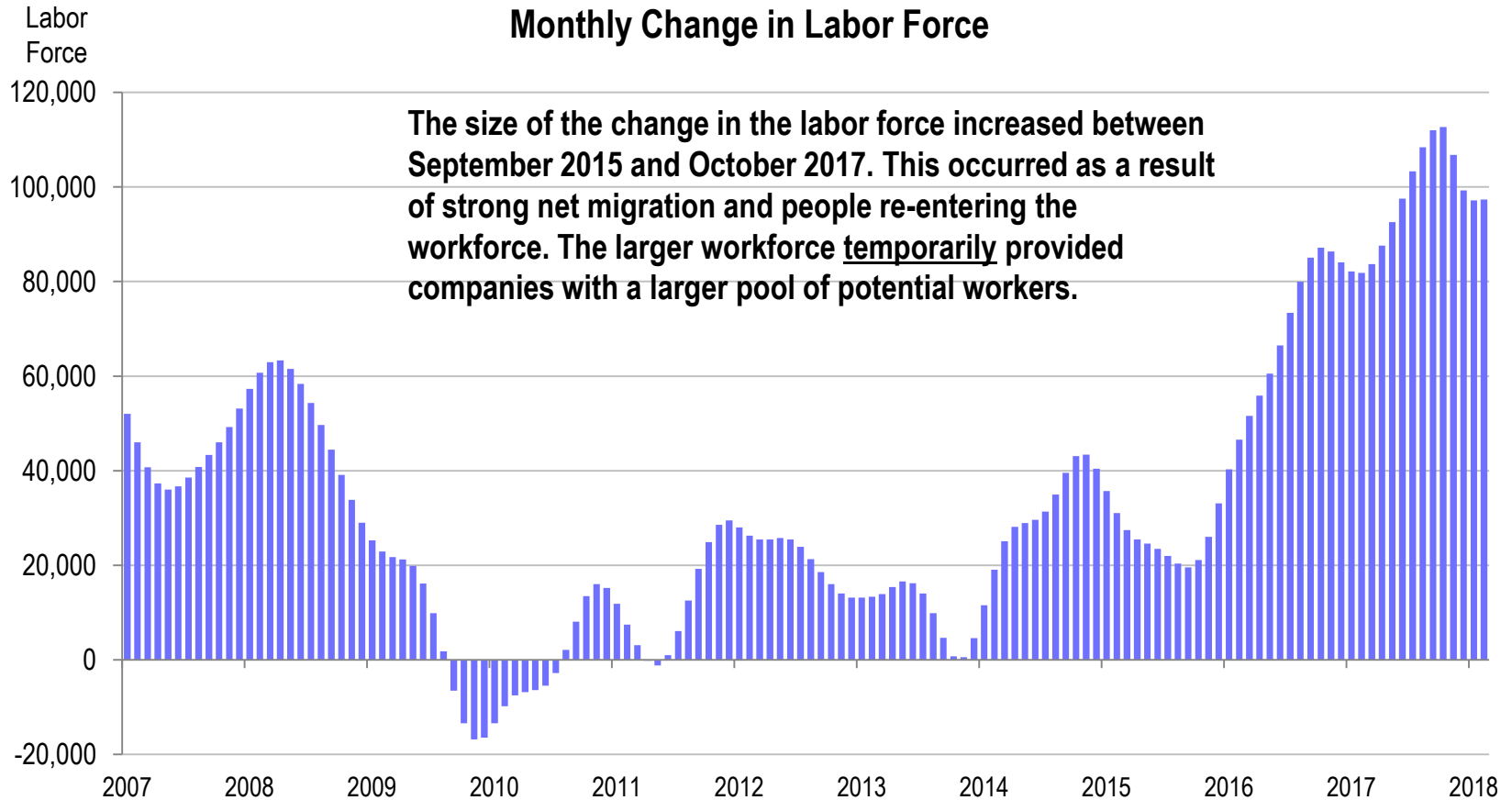
## Colorado vs. U.S.

Unemployment Rate – Colorado vs. U.S.



Source: Bureau of Labor Statistics, cber.co.

# Monthly Change in Colorado Labor Force



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

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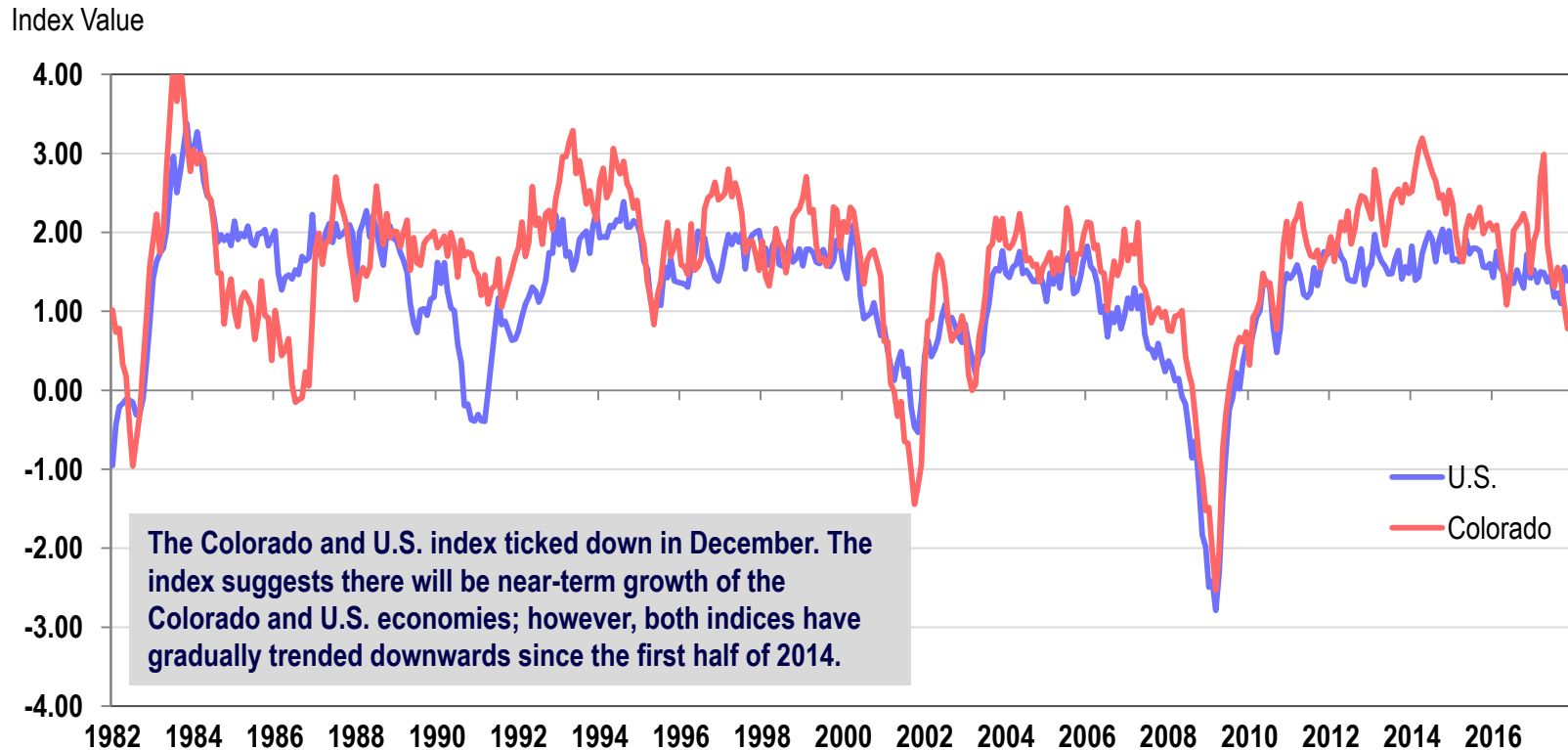
# The Colorado Economy

## Leading and Coincident Indices

# Philadelphia Fed Leading Index

## Colorado vs. U.S.

Philadelphia Federal Reserve Leading Index – Colorado



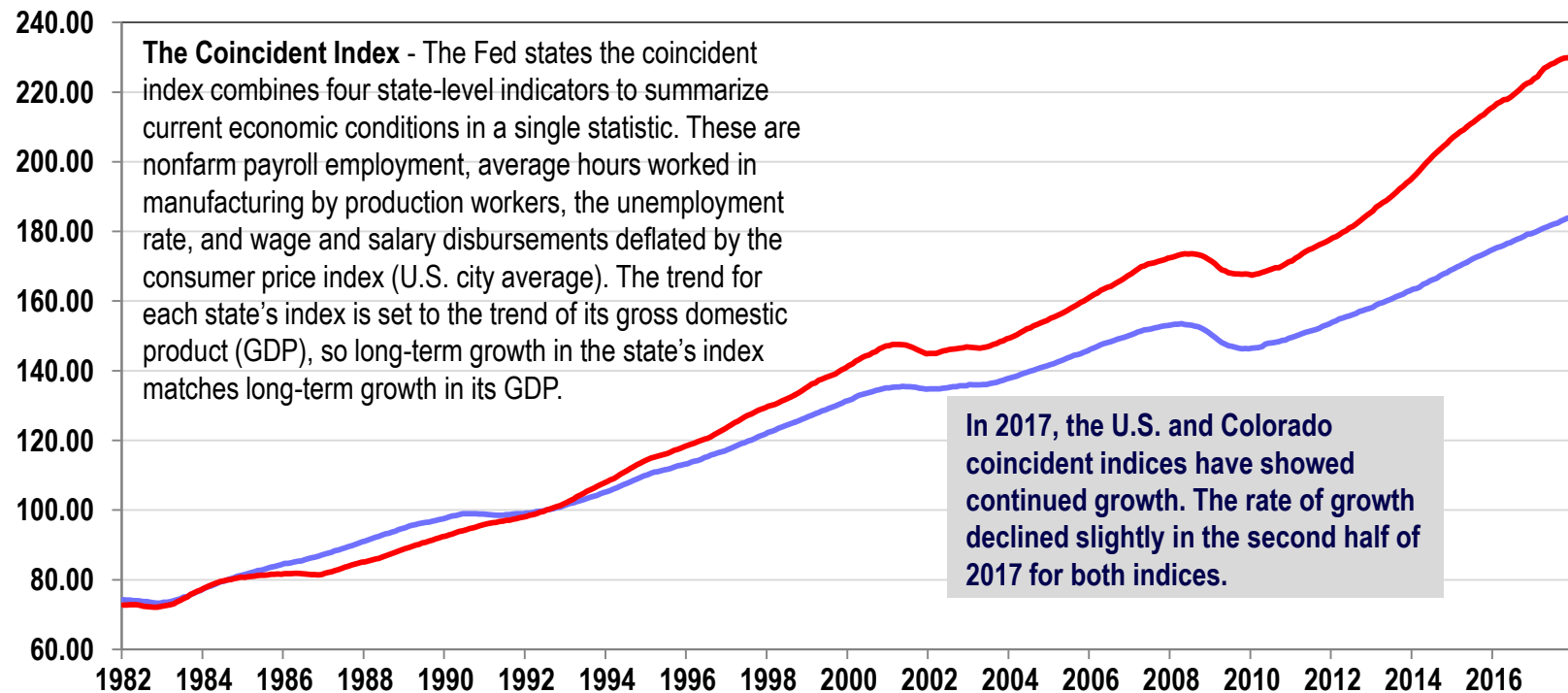
Source: Philadelphia Federal Reserve, [cber.co](http://cber.co). Note: The leading index predicts the six-month growth rate of the U.S. and state's coincident index.

# Philadelphia Fed Coincident Index

## Colorado vs. U.S.

### Philadelphia Federal Reserve Leading Index – Colorado

Index Value



Source: Philadelphia Federal Reserve, [cber.co](http://cber.co). Note: The leading index predicts the six-month growth rate of the U.S. and state's coincident index.



# The Colorado Economy

Trends – Inflation, Housing Prices, Construction

# Trends from 2017 to Watch in 2018

## Inflation, Housing Prices, and Construction

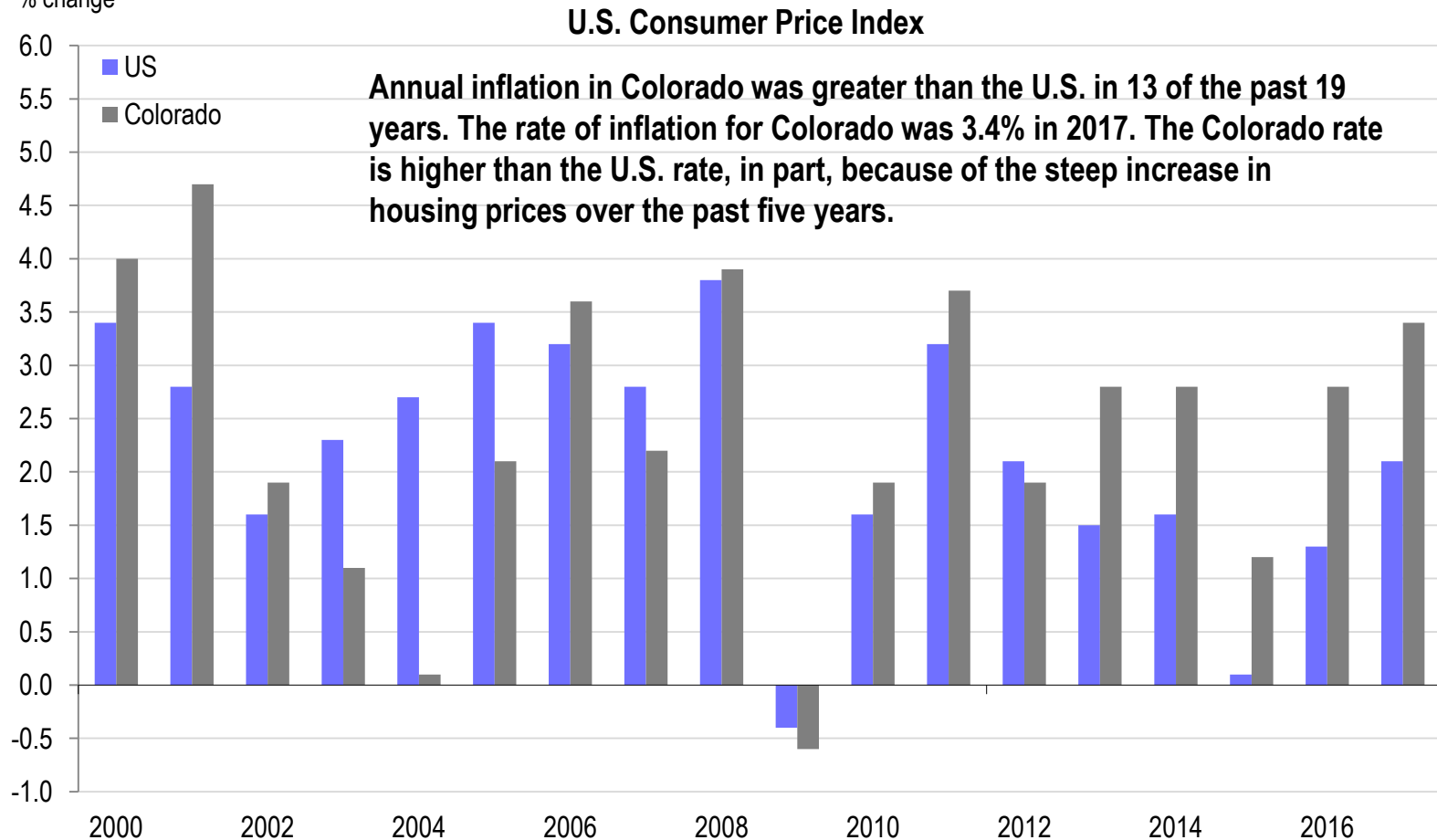
**Charts for the following trends are provided on the subsequent pages.**

- Colorado's inflation is increasing faster than the U.S., in part because of the increase in housing prices. At what point will inflation be a deterrent to consumer spending and future growth in the state?
- Home prices in Denver are rising faster than the U.S. rate. It will become even more difficult for newcomers and residents to find attainable and affordable housing, especially with the rate increases by the Fed. At what point will the lack of affordable housing cause the economy to slow? Will workers leave the state or not move to Colorado because they cannot find housing?
- Colorado construction continues to be strong. The recent data shows an increase in the number of single family permits and a decrease in the number of multi-family permits. There are a lot of plans for increased housing on the drawing board. When will the supply of affordable housing catch up with the demand?

# Consumer Price Index (CPI)

## Colorado vs. U.S.

1982-84=100,  
% change

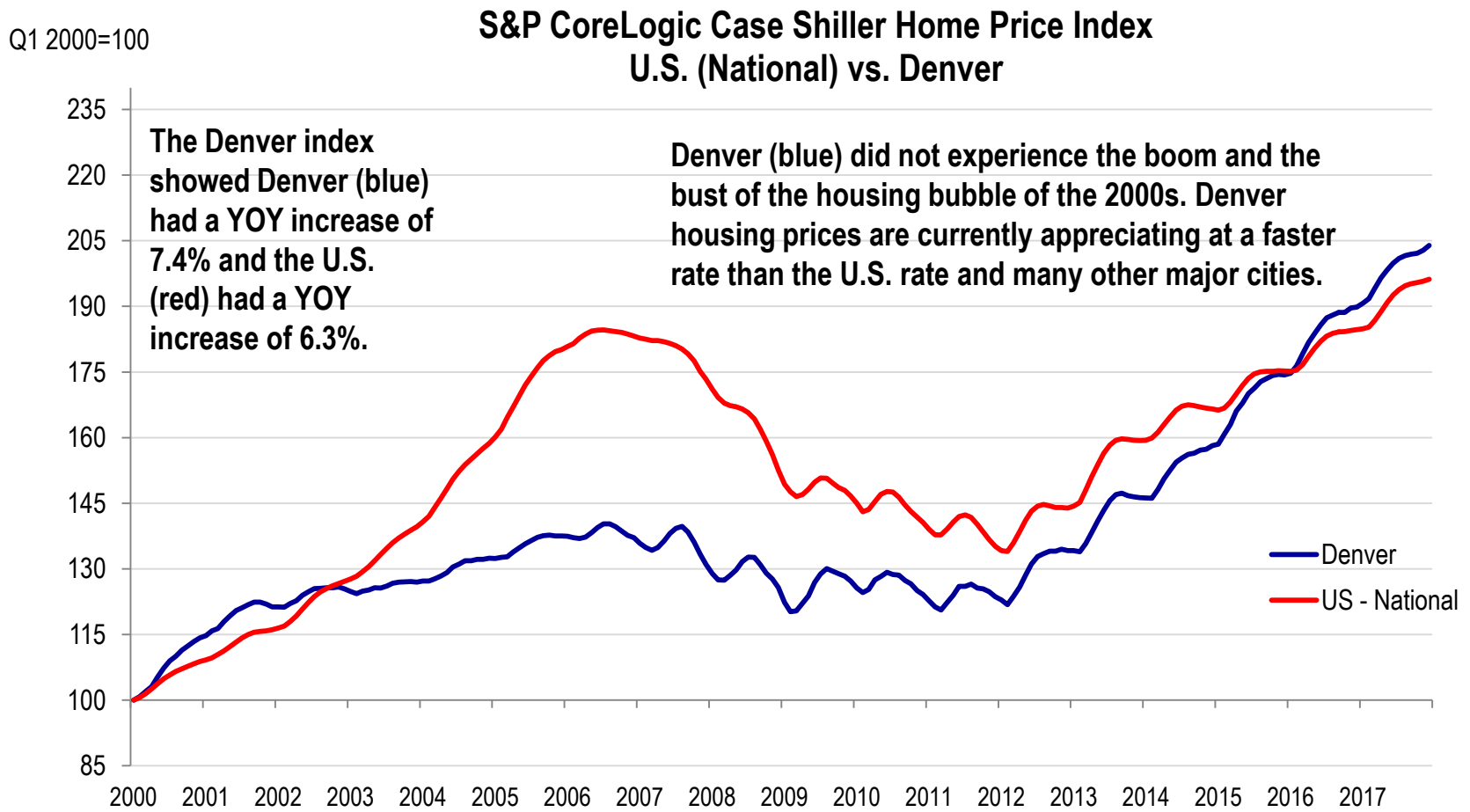


Source: Bureau of Labor Statistics, SA, cber.co.



# Case Shiller Home Price Index

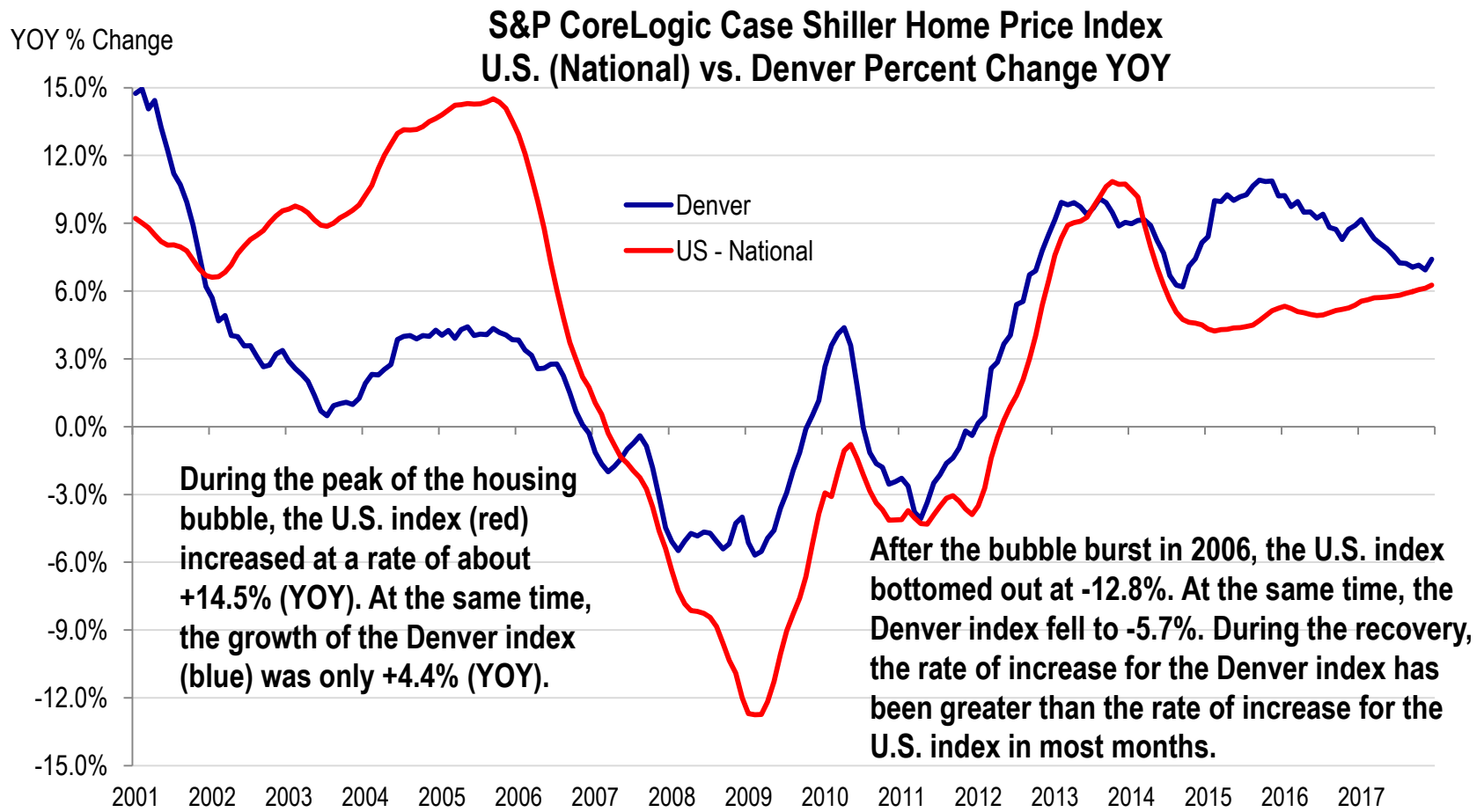
## National vs. Denver Index Value



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

# Case Shiller Home Price Index

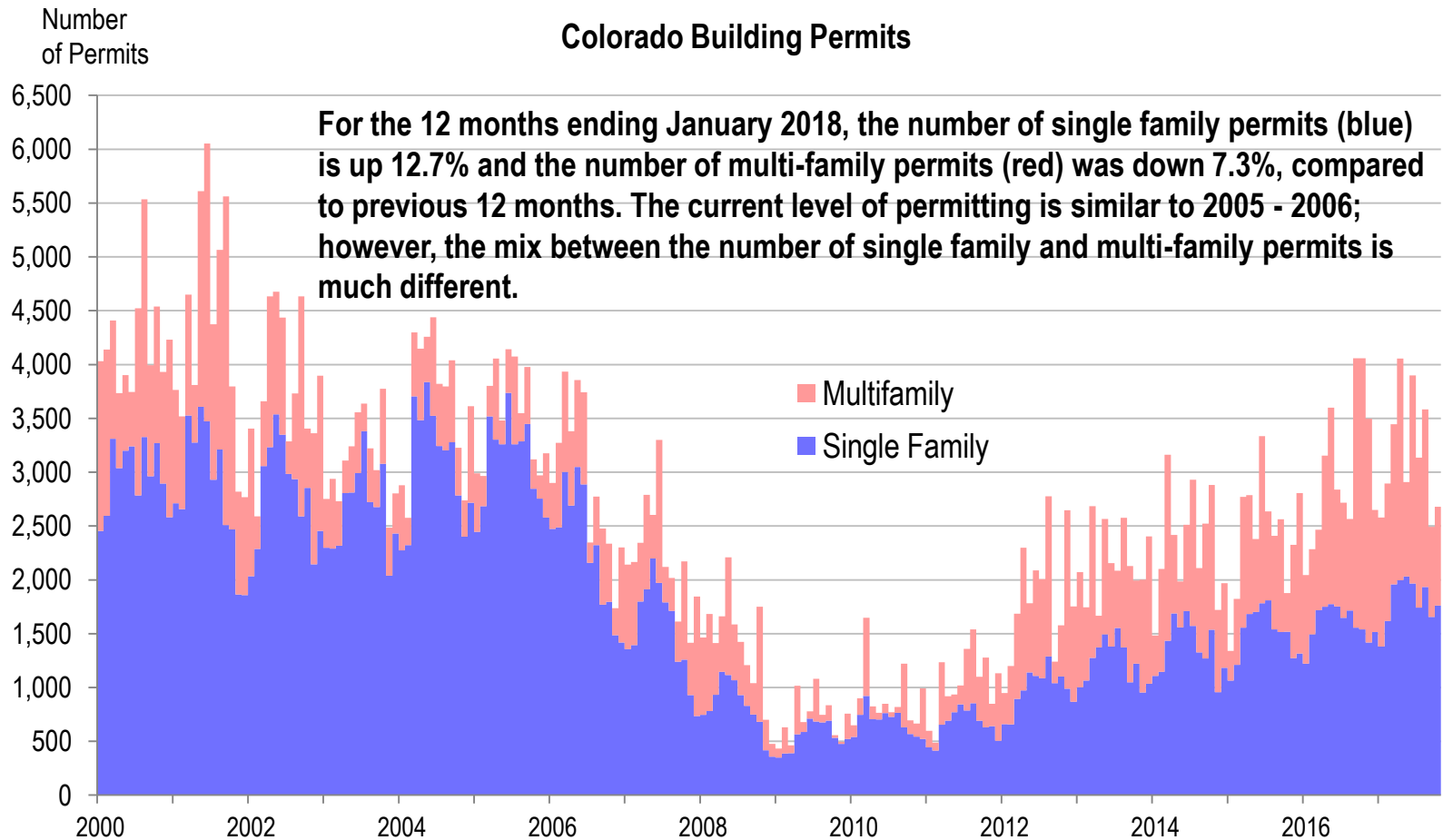
## National vs. Denver YOY Rate of Change



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

# Colorado Residential Building Permits – Units

## Monthly



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



# The Colorado Economy

Trends – Oil Production, DIA Passengers, Vehicle Sales

# Trends from 2017 to Watch in 2018

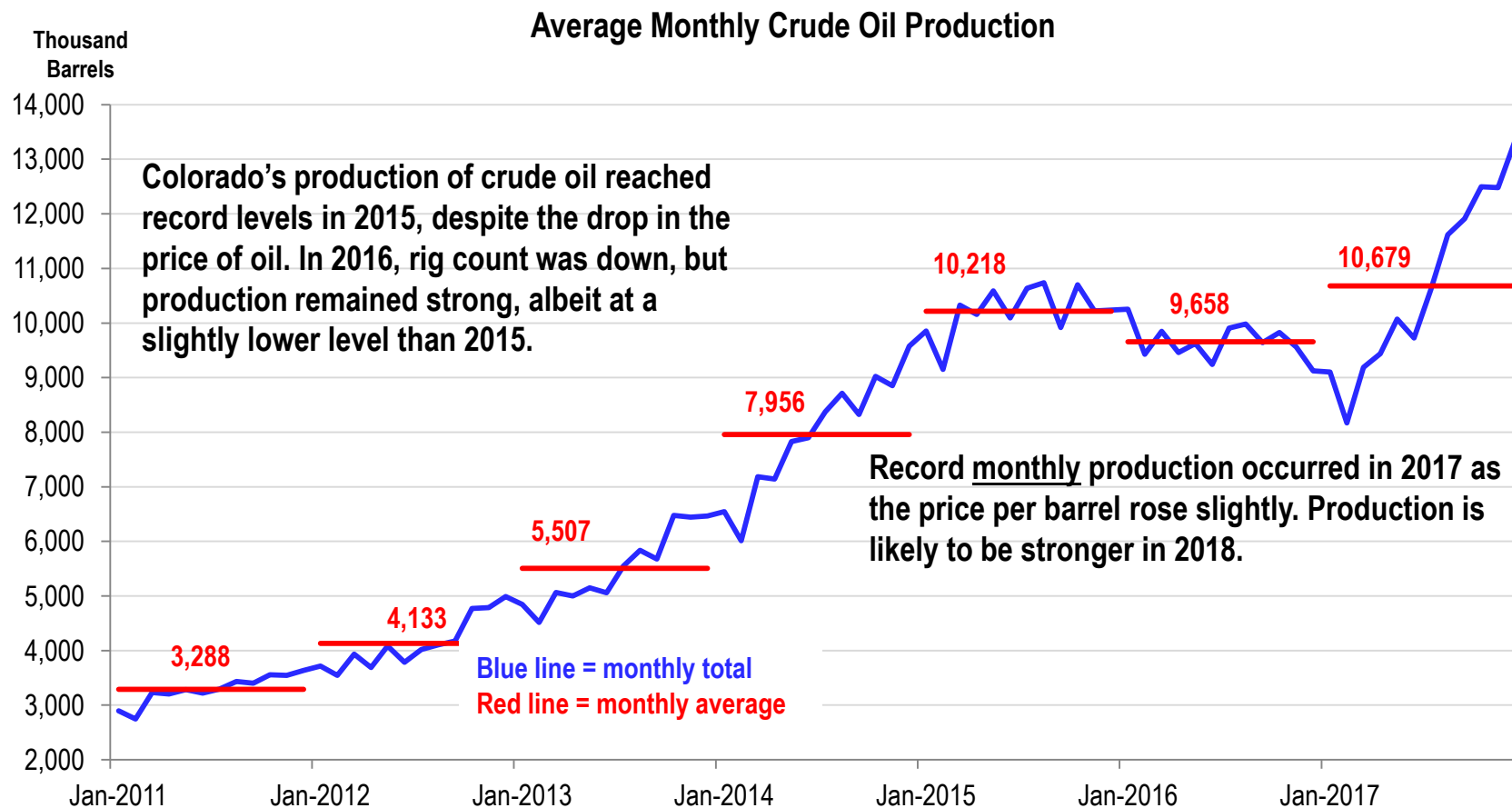
## Oil Production, DIA Passengers, Vehicle Sales

**Charts for the following trends are provided on the subsequent pages.**

- Record-setting oil production in the Niobrara oil patch has kept the Northern Colorado economy strong. Will future production be altered by changes in public policy?
- More than 61 million passengers passed through DIA in 2017. The number of passengers is likely to increase again in 2018. Will the area's infrastructure be able to support the growth surrounding the airport?
- New and used vehicle registrations were at record levels in 2017. This was counter to the national trend. At the moment it appears used vehicle registrations will be stronger than new vehicle registrations in 2018. Will Colorado new vehicle registrations continue to post solid gains in 2018?

# Average Monthly Colorado Crude Oil Production

## 2011 to 2017 (Thousand Barrels)



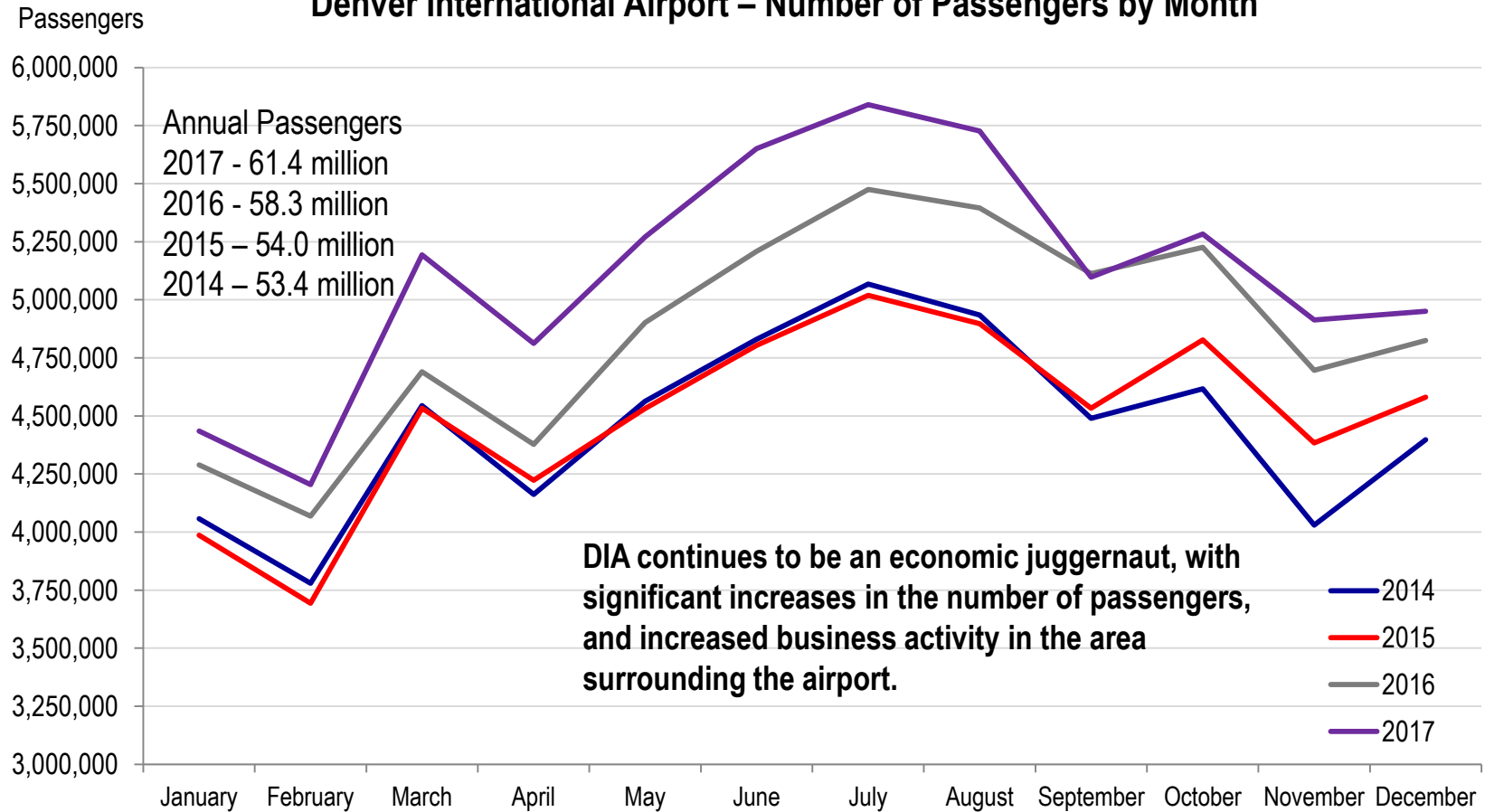
Source: EIA, cber.co.

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# Denver International Airports

## Passengers

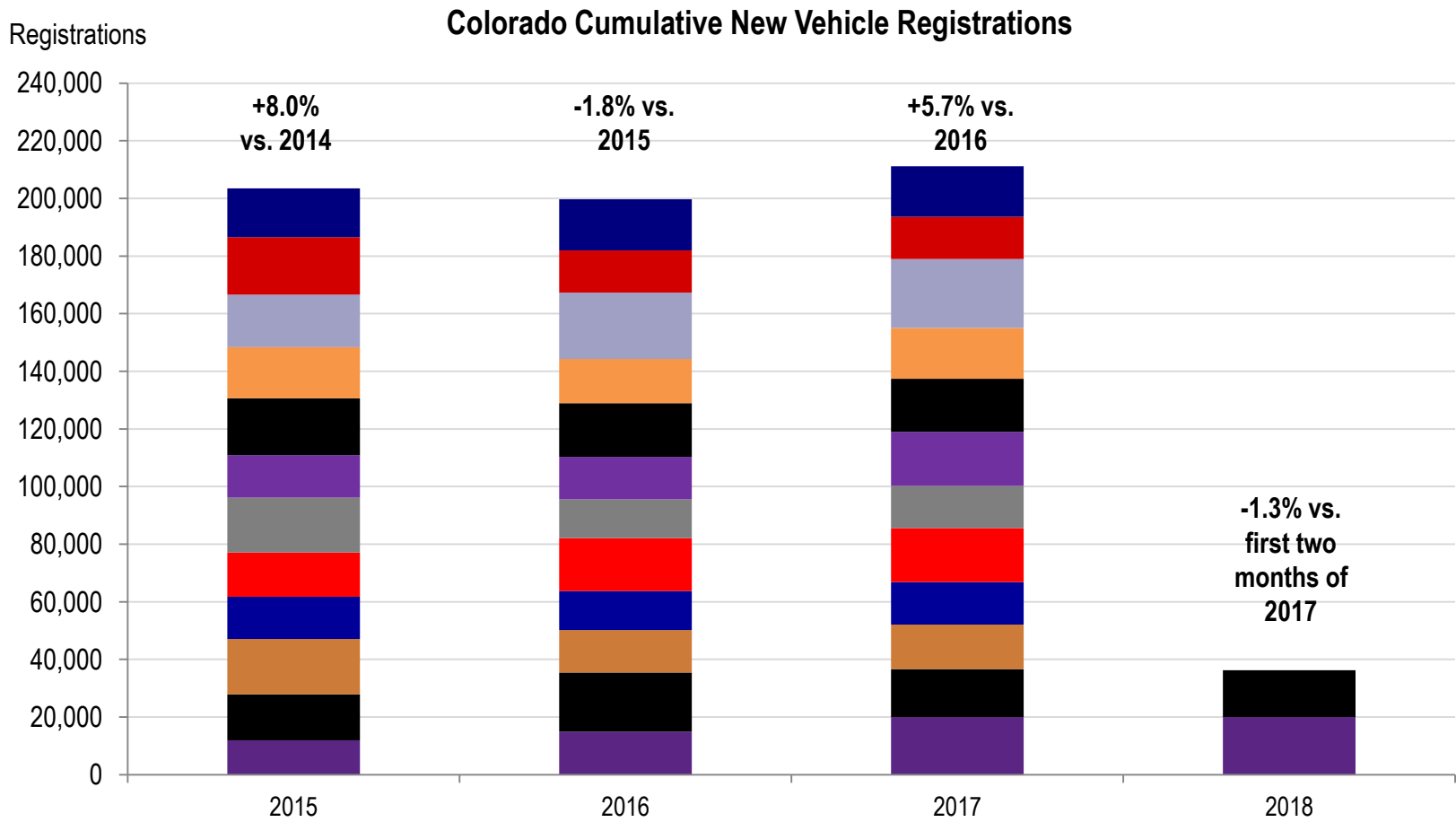
Denver International Airport – Number of Passengers by Month



Source: FlyDenver.com, cber.co.

# Cumulative Colorado New Vehicle Registrations

## Monthly Registrations

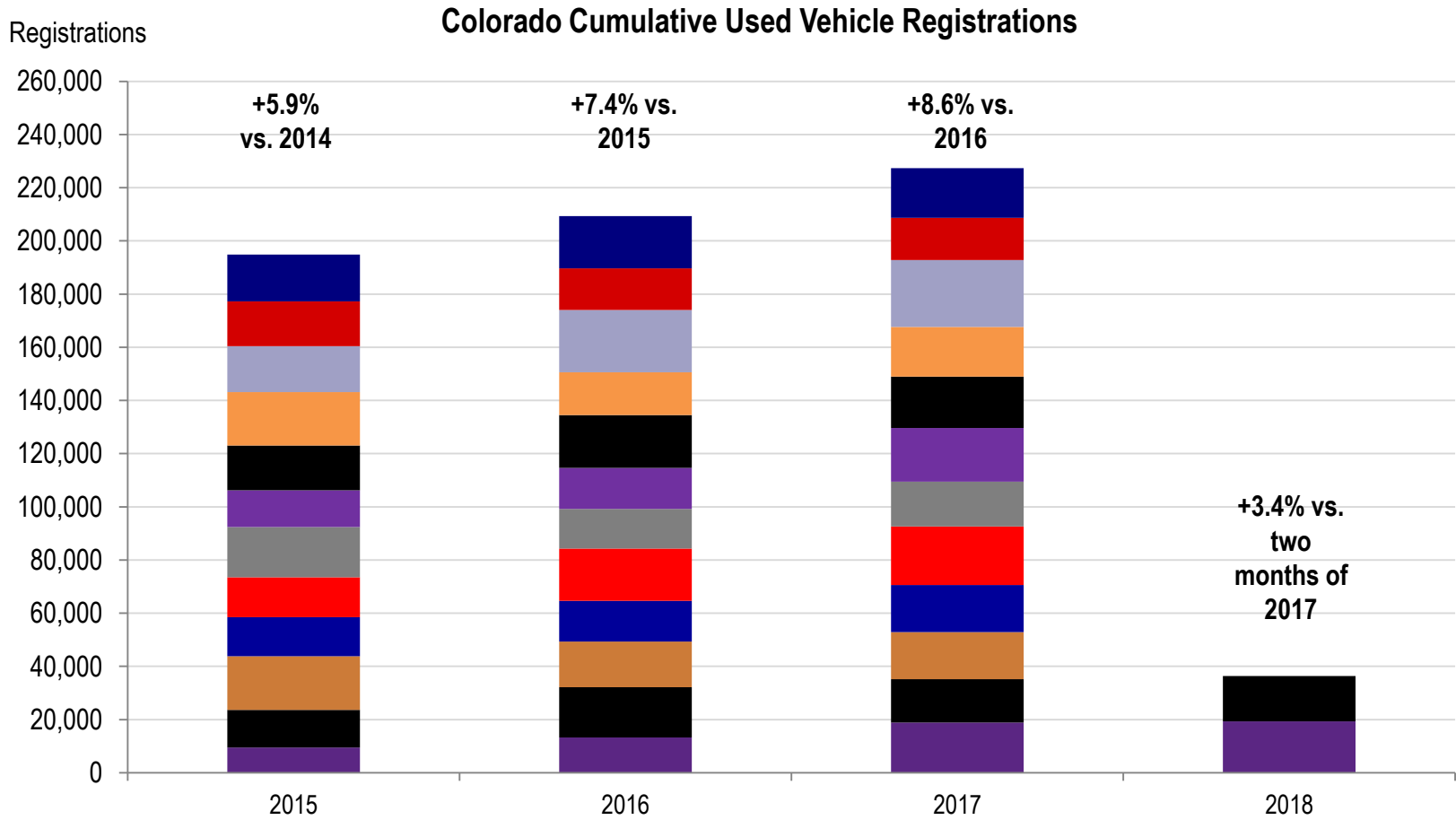


Source: Colorado Auto Dealers Association, cber.co. Note: Data is in descending order with December at the top and January at the bottom, not adjusted for inflation.



# Cumulative Colorado Used Vehicle Registrations

## Monthly Registrations



Source: Colorado Auto Dealers Association, [cber.co](http://cber.co). Note: Data is in descending order with December at the top and January at the bottom, not adjusted for inflation.



# The Colorado and U.S. Economy

## Summary

# Trends from 2017 to Watch in 2018

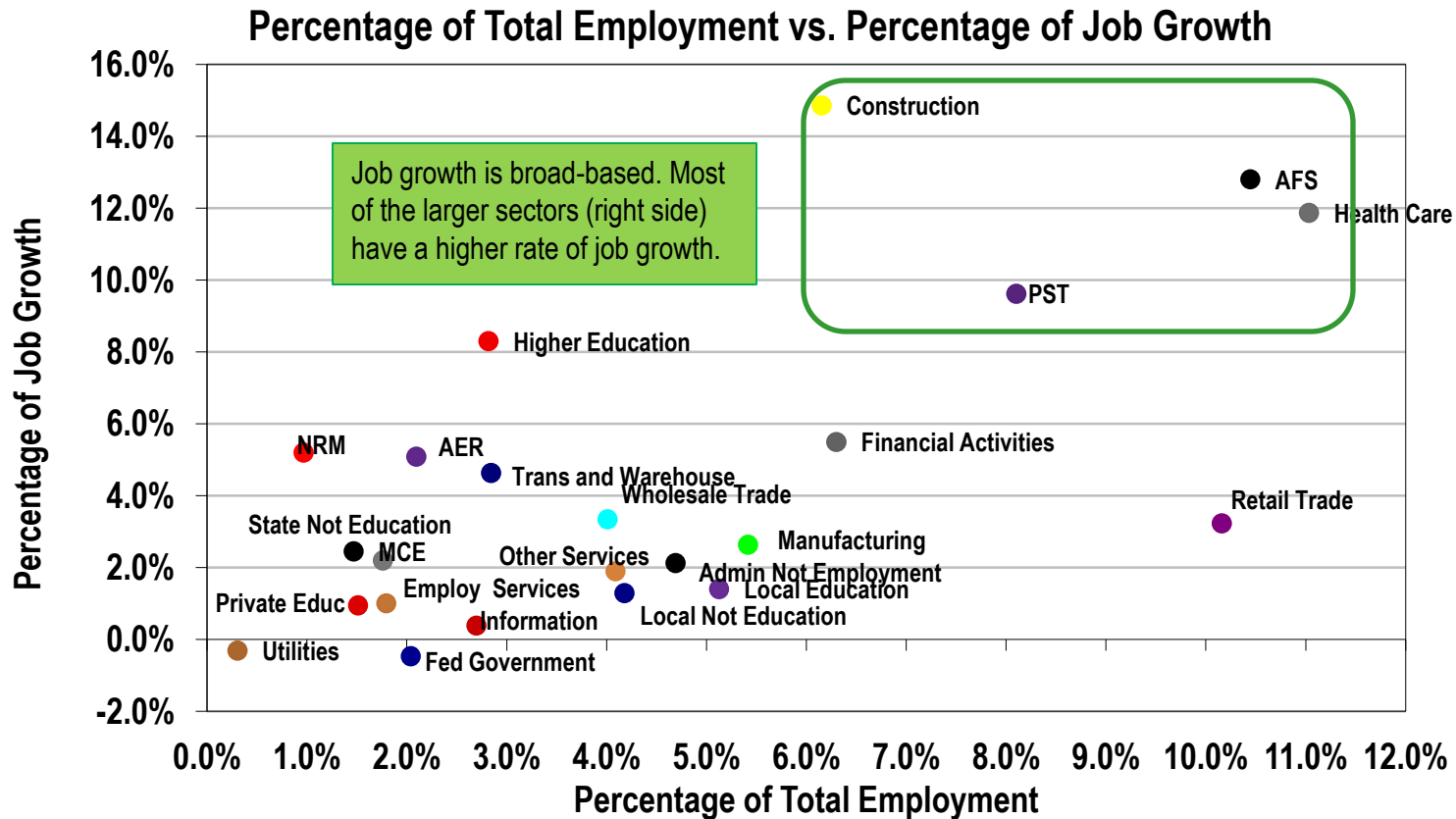
## Summary

**In addition to previously mentioned trends, the following factors will impact the growth of the Colorado economy in 2018.**

- People will continue to move to Colorado because they see opportunity here; however, Colorado companies will struggle to find qualified workers. Will Colorado continue to attract newcomers? Can the state's infrastructure support this added growth?
- Typically, when unemployment is low, the scarcity of workers causes wages to increase. Colorado wage growth has been weak for the past ten years. Are companies giving their employees increased benefits rather than wage increases? Will wages increase at a higher rate in the future?
- Population is expected to grow at a slower rate than in recent years. Fertility rates will continue to decline and net migration will be lower. Will the strong level of net migration meet the workforce needs of Colorado's businesses?
- In 2016 and 2017 the state's labor force (household survey) increased significantly. The rate of growth is tapering off. Will this trend continue in 2018?
- All three goods producing sectors added jobs – the extractive industries are back in positive territory and construction posted strong gains. In addition, there has been strong broad-based job growth in the following industries: leisure and hospitality; health care; and professional, scientific and technical services. Growth in most sectors is likely to continue in 2018!
- Despite solid retail trade sales, retail employment increased at a slower than usual rate. Is Colorado saturated with retailers? Are "bad" retailers being eliminated?

# Colorado Job Growth by Sector

% of Total Employment vs. % of Job Growth



Source: Bureau of Labor Statistics, cber.co.

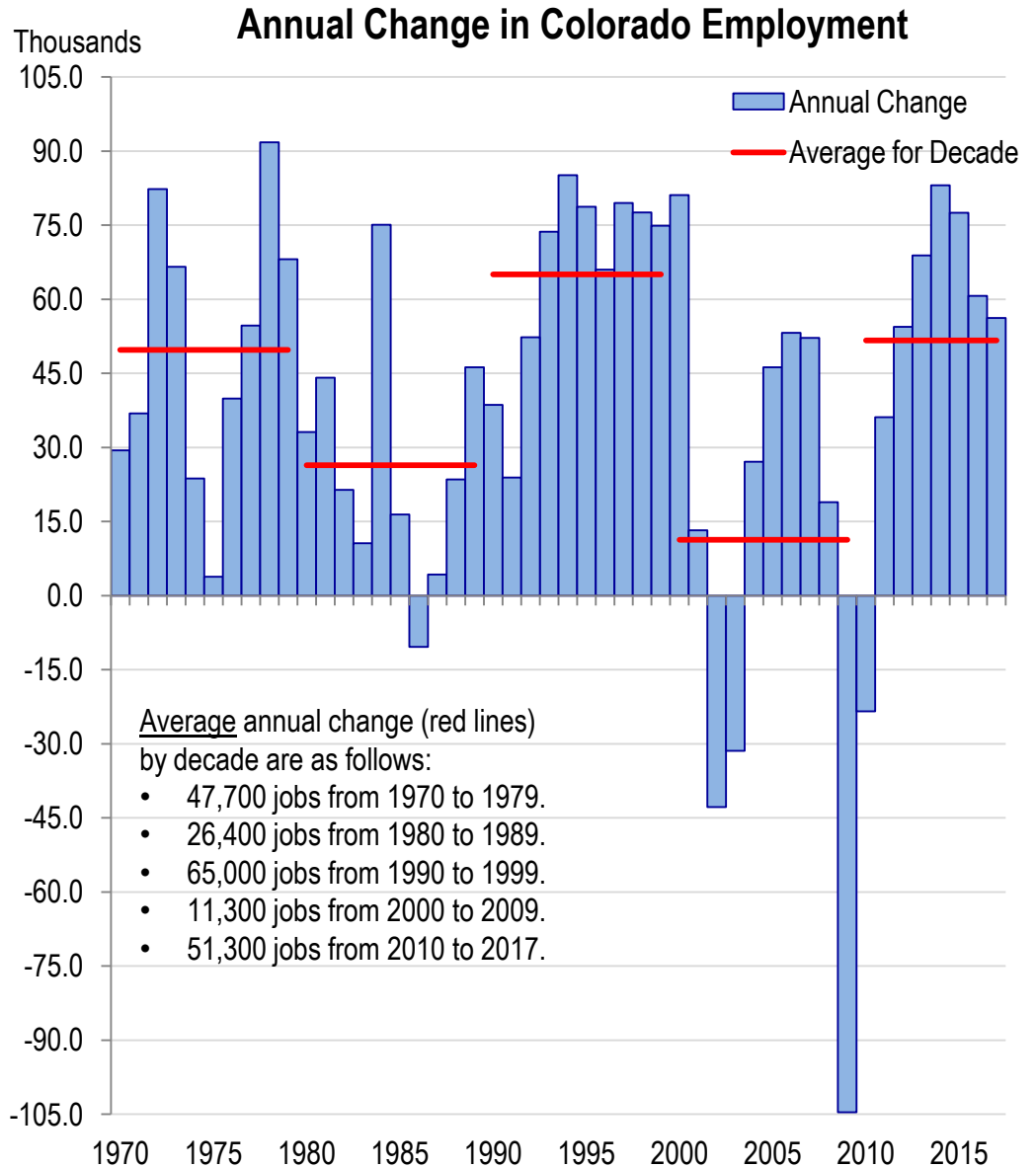
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● Annual Employment  
● Change in Colorado  
● Employment

The state added 56,200 jobs in 2017. Colorado employment increased by 2.2%.

For the first 8 years of this decade, Colorado has added an average of 51,700 jobs.

The forecast for 2018 calls for slightly slower job growth than 2017, in the range of 1.9% to 2.1%.



Source: Bureau of Labor Statistics, cber.co.



## cber.co Review of Colorado Employment Data through February 2018

This analysis is for informational purposes only. Any opinions or interpretations of data are those of the presenter. As such, they do not represent the viewpoints of any group or particular organization.

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For additional information contact cber.co at [cber@cber.co](mailto:cber@cber.co).

### ABOUT THE AUTHOR

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, Broomfield Economic Development Corporation, and Colorado Photonics Industry Association. Horvath has also been the lead for the photonics/electronics cluster in OEDIT’s early stage and proof of concept grant programs.