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Colorado Economy and Employment Data Through August 2017

Colorado-based Business and Economic Research
Prepared
September 20, 2017

Overview of Economic Review

This chartbook provides a series of charts, graphs, and discussions that review the Colorado wage and salary employment data published by the Bureau of Labor Statistics. Based on data through August, Colorado employment is on track to add 50,700 jobs this year. The unemployment rate of 2.4% indicates there is a lack of qualified workers in most industries. It is a deterrent to stronger job and real GDP growth.

U.S. Economy

- The Economy Through August 2017.
- The United States Economy.
 - Leading Index and Real GDP.
 - Employment and Unemployment Rate.
 - S&P 500 and Equity Volatility.
 - Manufacturing, Non-manufacturing, Retail Trade, and Auto Sales.

The Colorado Economy

- Amazon – How will Colorado Fare?
- Population; Employment; Unemployment Rate; Annual Employment vs. Net Migration vs. Unemployment Rate; Unemployment by MSA and Select Counties
- Employment in Strong Growth, Solid Growth, Volatile Categories.
- Key Sectors and Trends to Watch.
 - Extractive industries
 - Construction, Housing Prices
 - Manufacturing, Retail Trade, New and Used Car Registrations, DIA Passengers.
- Summary.

The complete 2017 cber.co forecast can be found at <http://cber.co/economic-forecasts/>

The Economy Through August 2017

United States

From an economic perspective, very little has changed over the past couple of months. That is not bad news!

- The Fed is optimistic about the U.S economy.
- Q2 real GDP rate was revised up.
- YTD retail sales are up 4.3%.
- Y-O-Y housing prices for the U.S. continue to appreciate (5+%),
- The S&P 500 is up 11%; the VIX shows little volatility.
- The unemployment rate is 4.4%.
- Purchasing managers are optimistic about the future (manufacturing and non-manufacturing).
- The U.S. is on track to add 2.2 million jobs in 2017.

Despite the political unrest, U.S. economic growth remains solid.

Colorado

If only there were enough qualified workers to fill the vacant jobs, the state would be experiencing much stronger job growth.

The Good News

- Construction permits.
- Housing prices.
- Auto sales.
- DIA passengers.
- Good activity on the streets.
- Moderate job growth.

Areas to Watch

- Prices for a barrel of oil continue to be flat.
- Colorado Leading Index is down.
- Manufacturing employment is down.



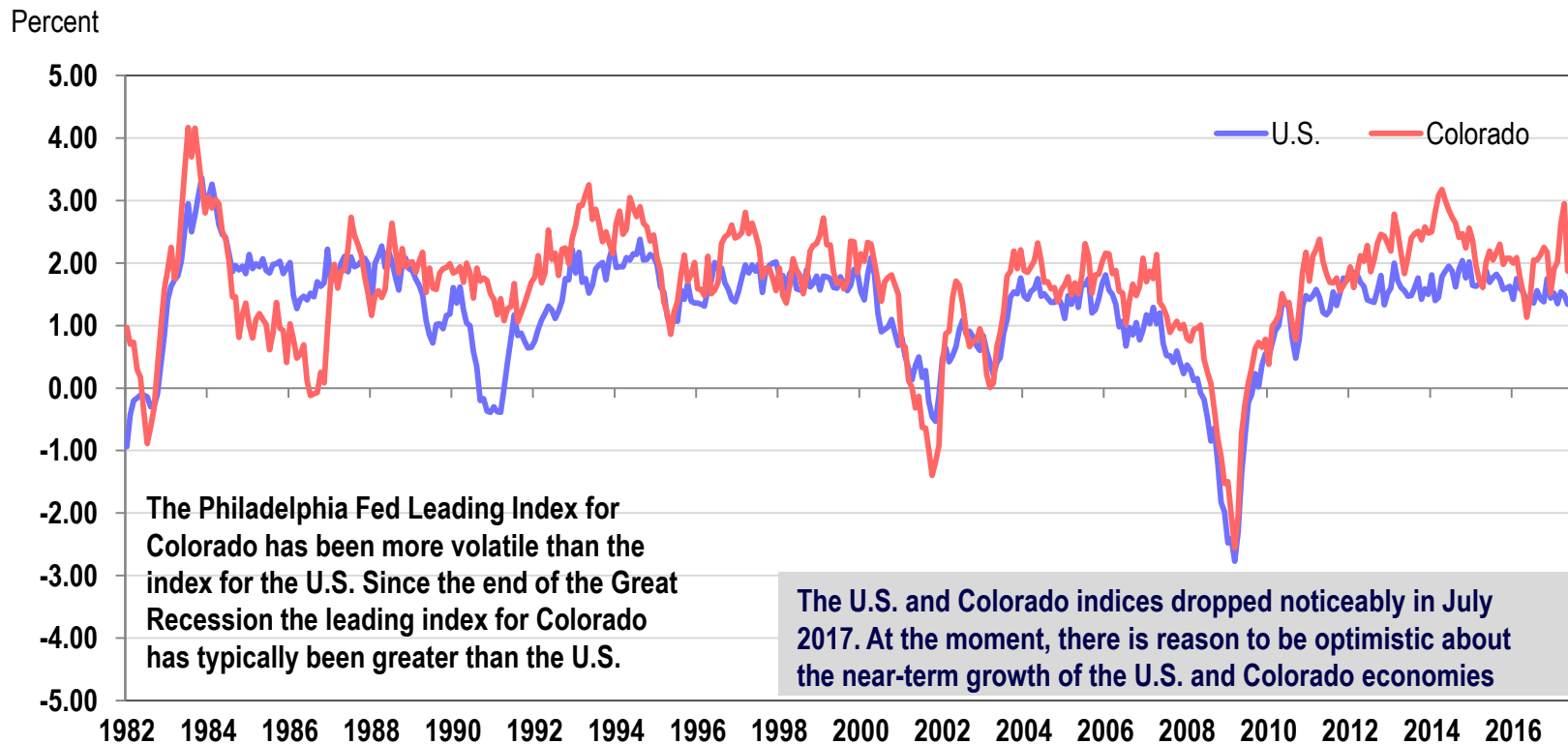
The U.S. Economy

Leading Index and Real GDP

Leading Index

Colorado vs. United States

Philadelphia Federal Reserve Leading Index - Colorado vs. U.S.



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

Quarterly Real GDP Growth United States

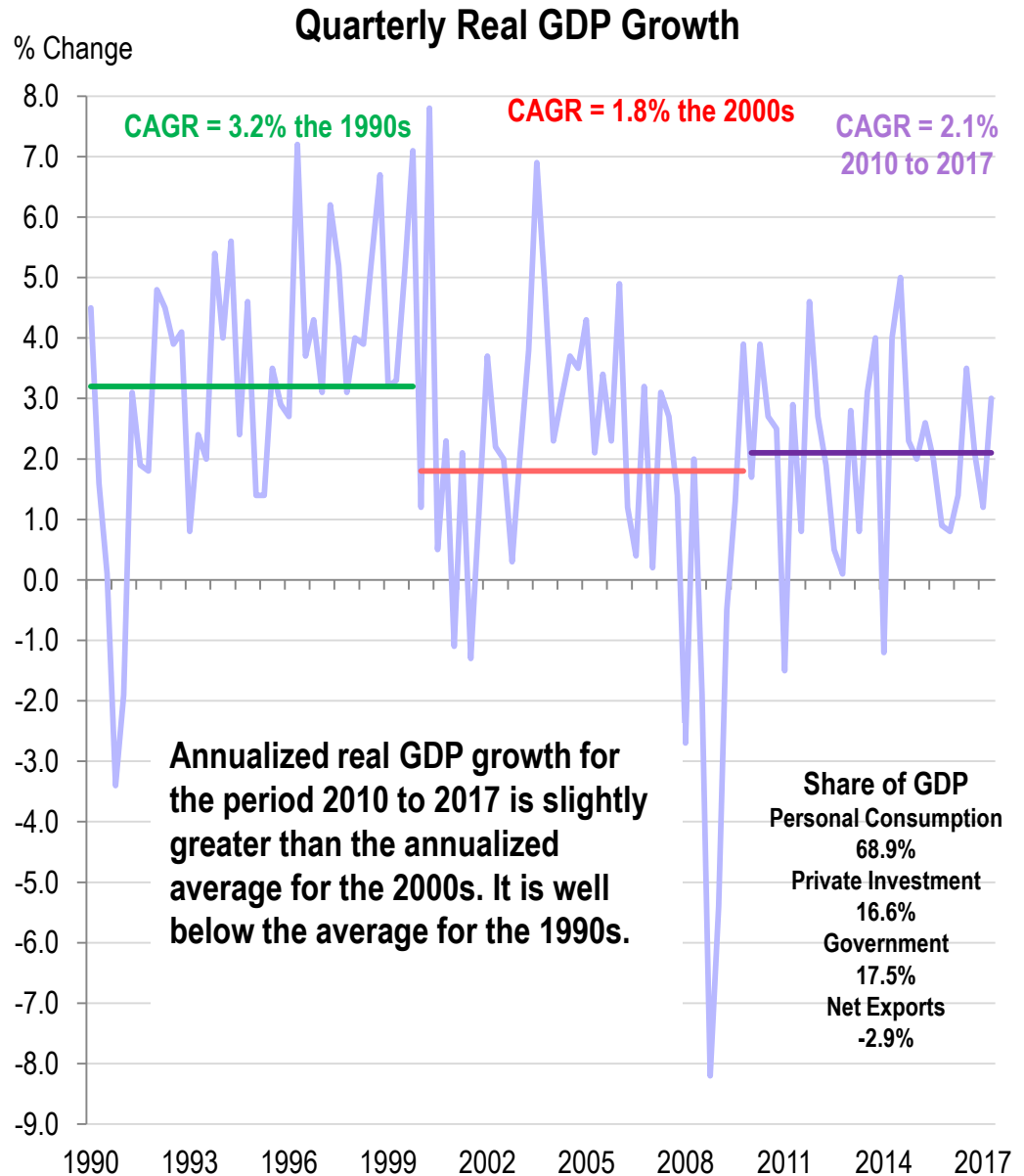
Historical annualized real GDP growth is:

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

The final estimate of real GDP growth for Q1 2017 is 1.2%. The second estimate for Q2 was bumped up to 3.0%.

Real GDP growth for recent years was:

- 2010 2.5%
- 2011 1.6%
- 2012 2.2%
- 2013 1.7%
- 2014 2.4%
- 2015 2.6%
- 2016 1.6%
- 2017 2.1% to 2.5% projected.



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

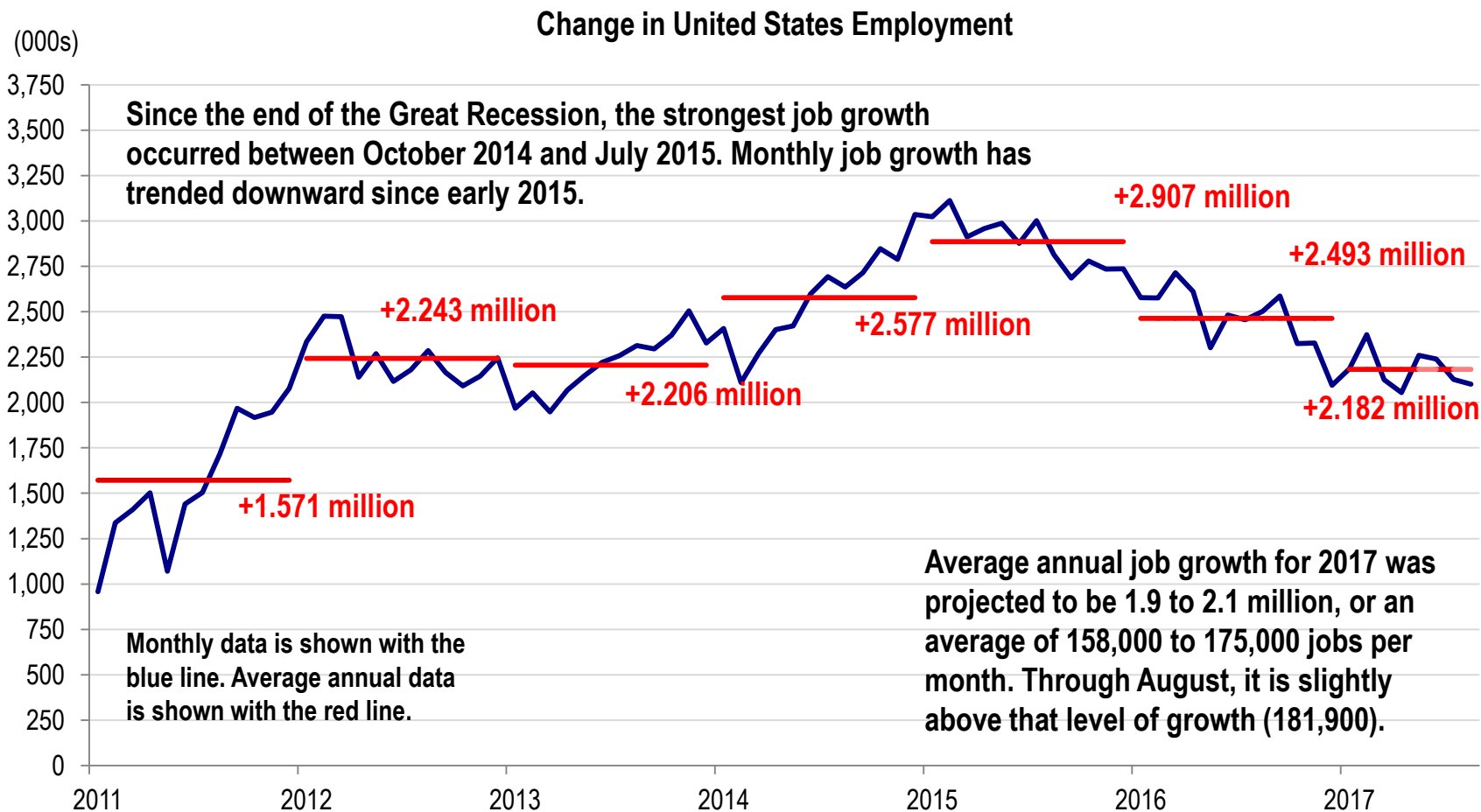


The U.S. Economy

Employment and Unemployment Rate

Change in United States Employment

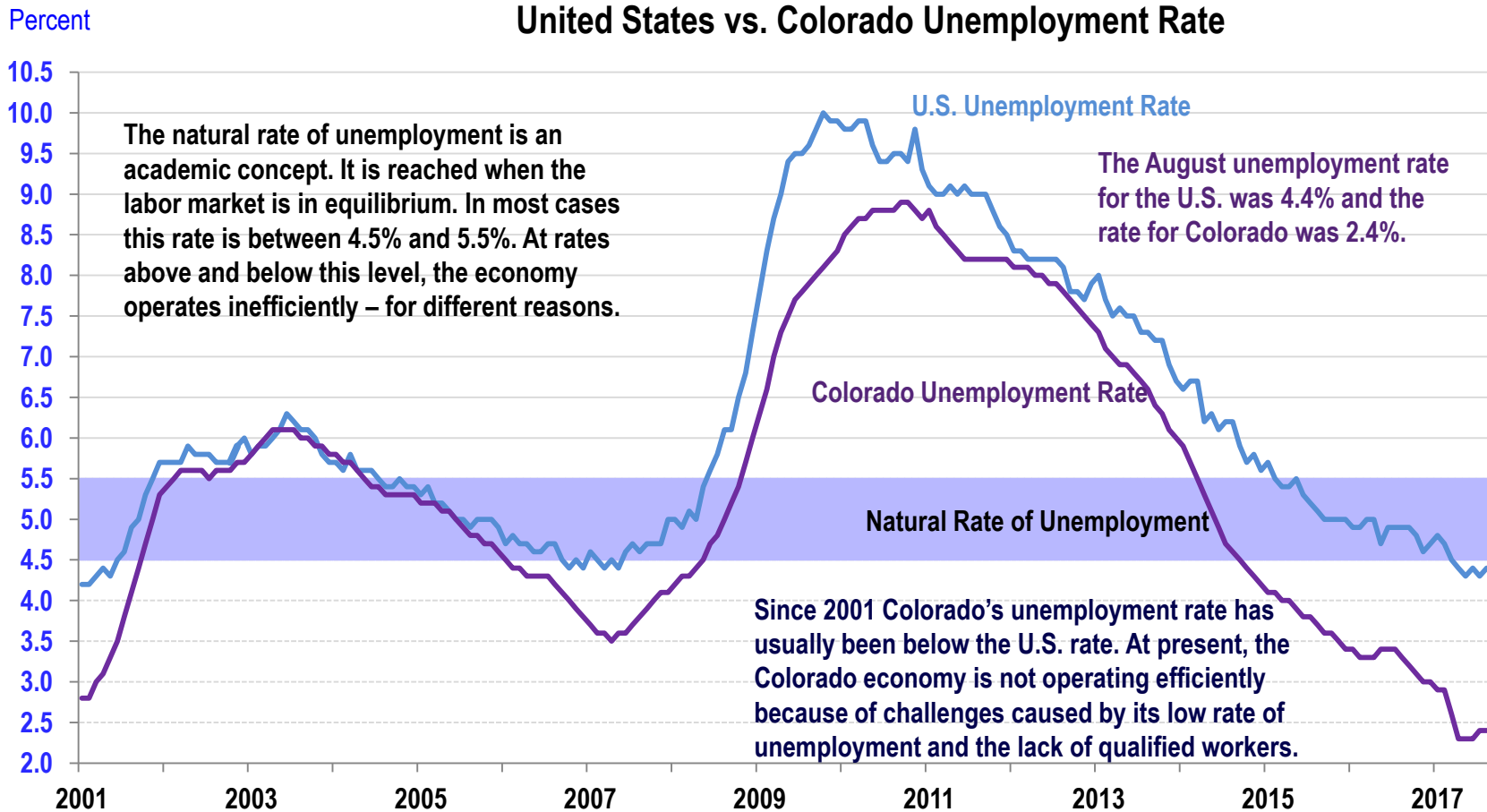
Year-Over-Year



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

Unemployment Rate

United States vs. Colorado



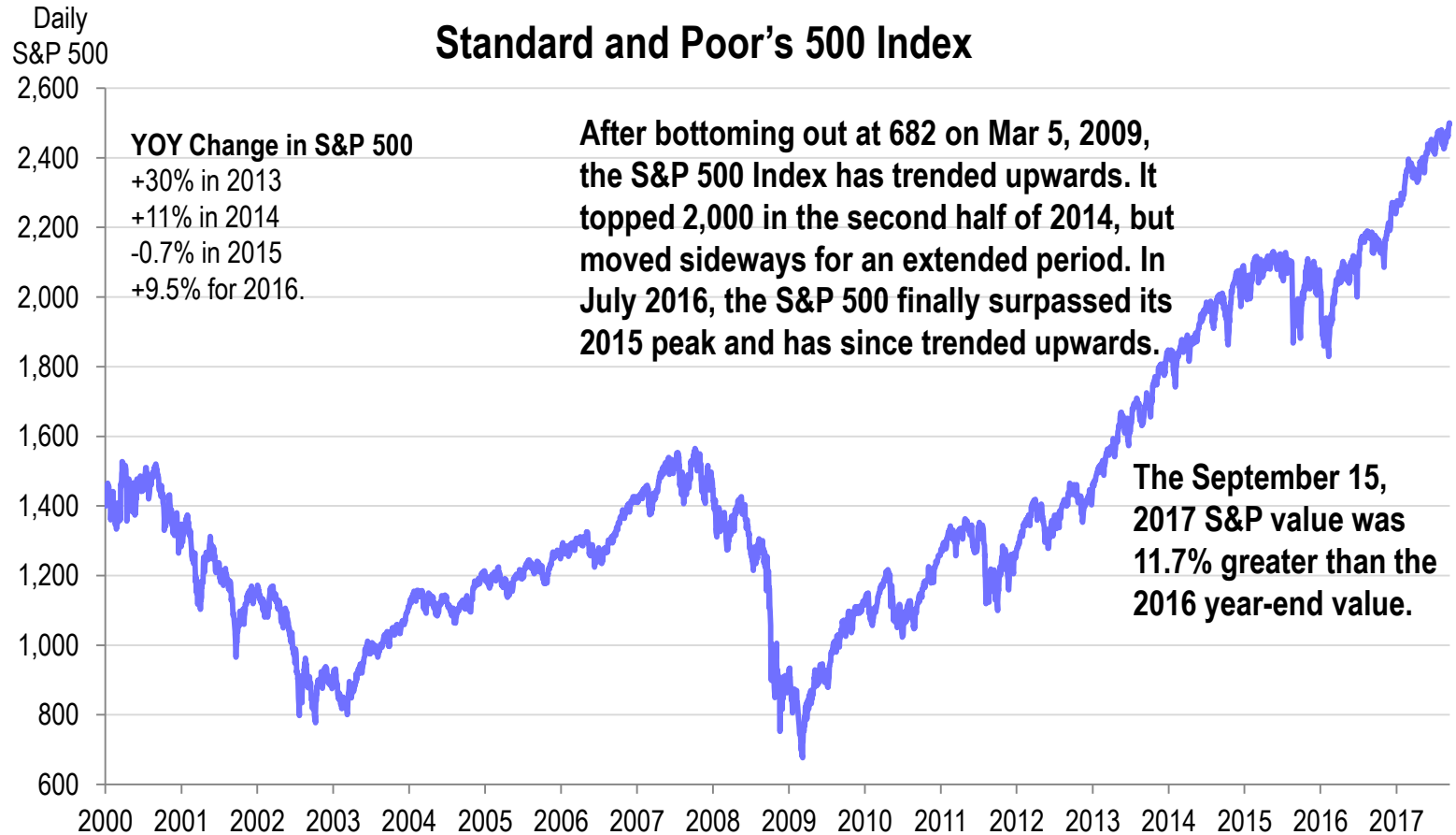
Source: Bureau of Labor Statistics, SA, cber.co.



The U.S. Economy

S&P 500 and Equity Volatility

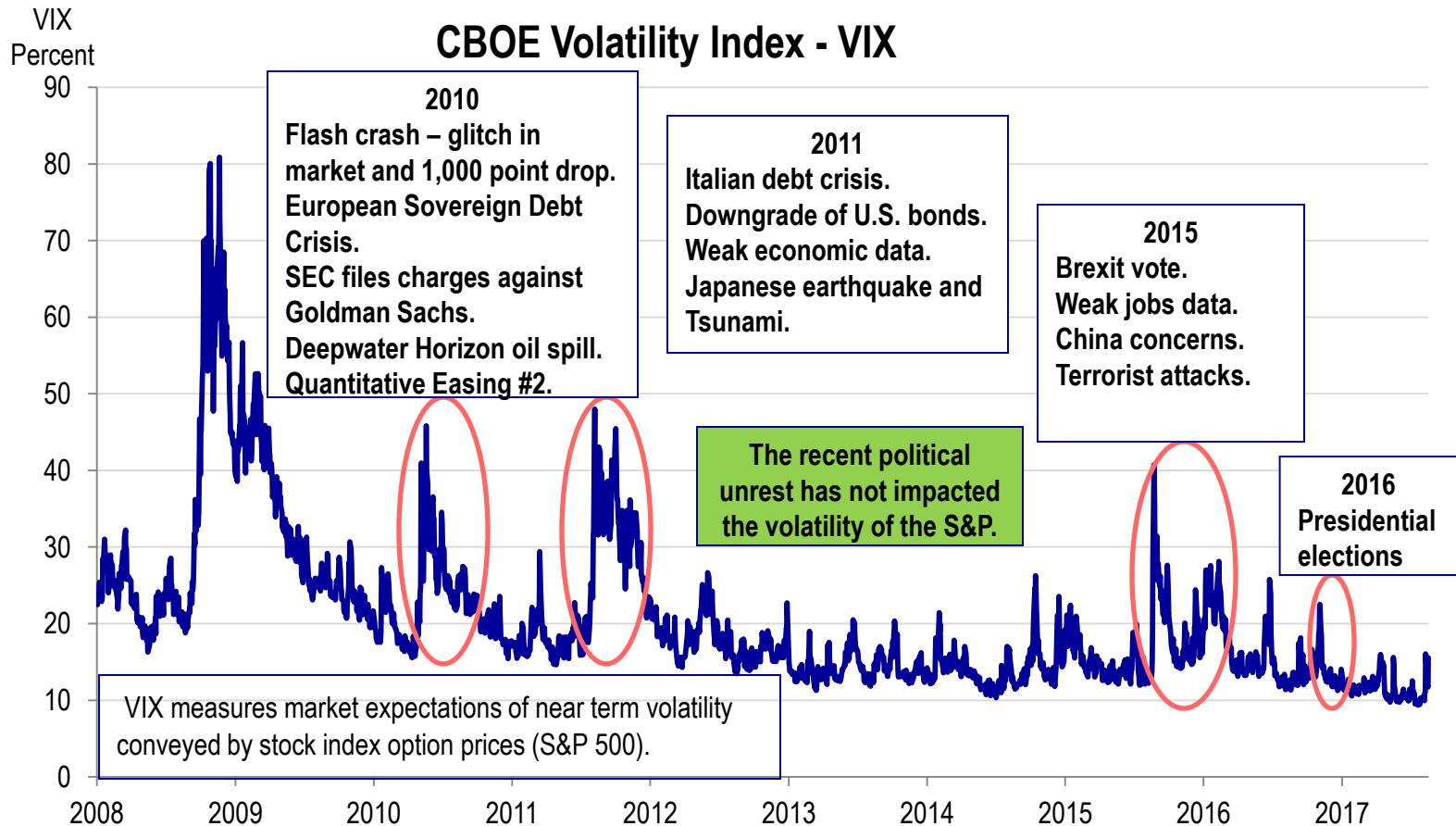
Standard and Poor's 500 Index



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

CBOE Volatility Index

VIX (VIXCLS)



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

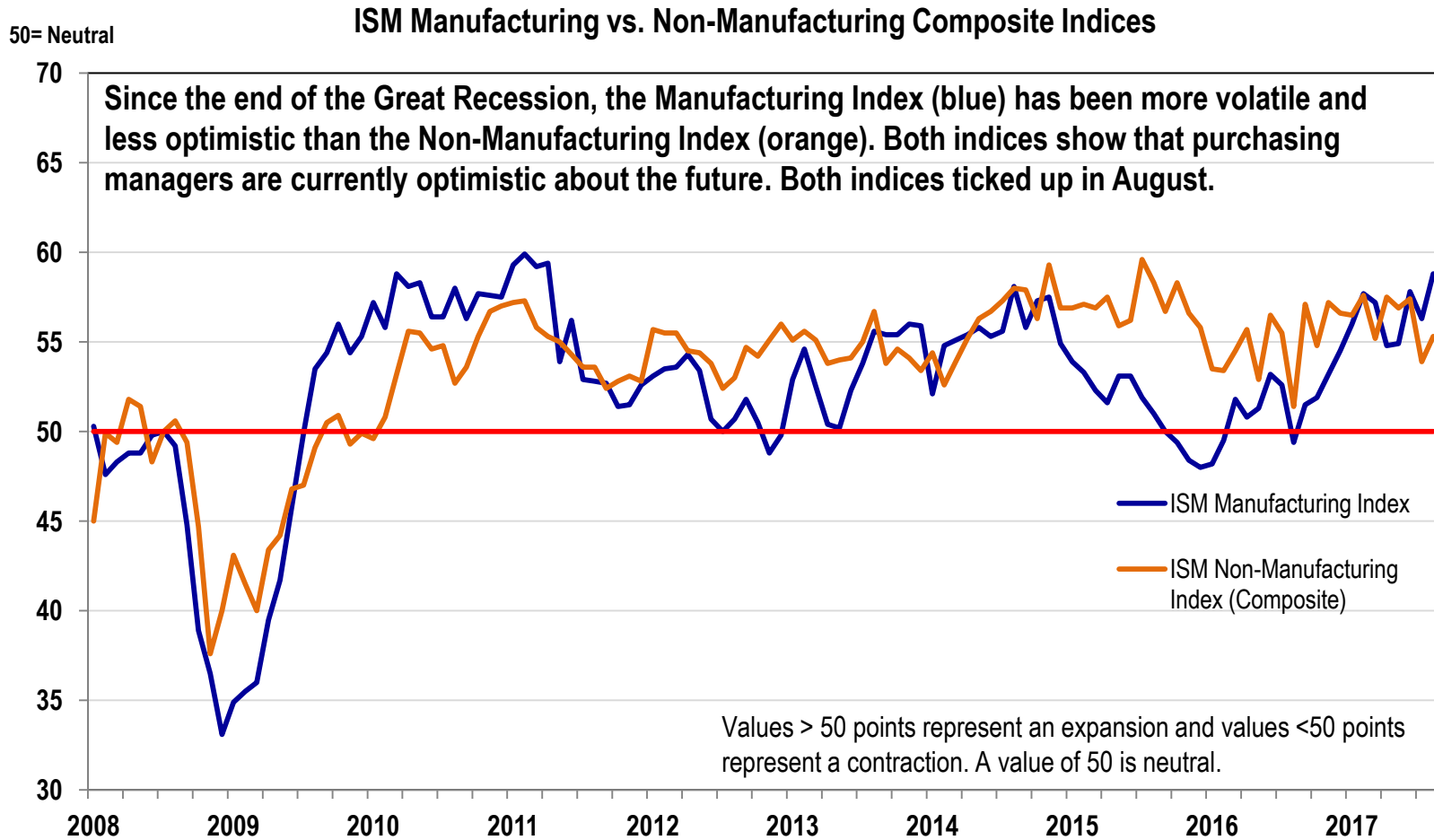


The U.S. Economy

Manufacturing, Non-Manufacturing, Retail Trade Sales, and Auto Sales

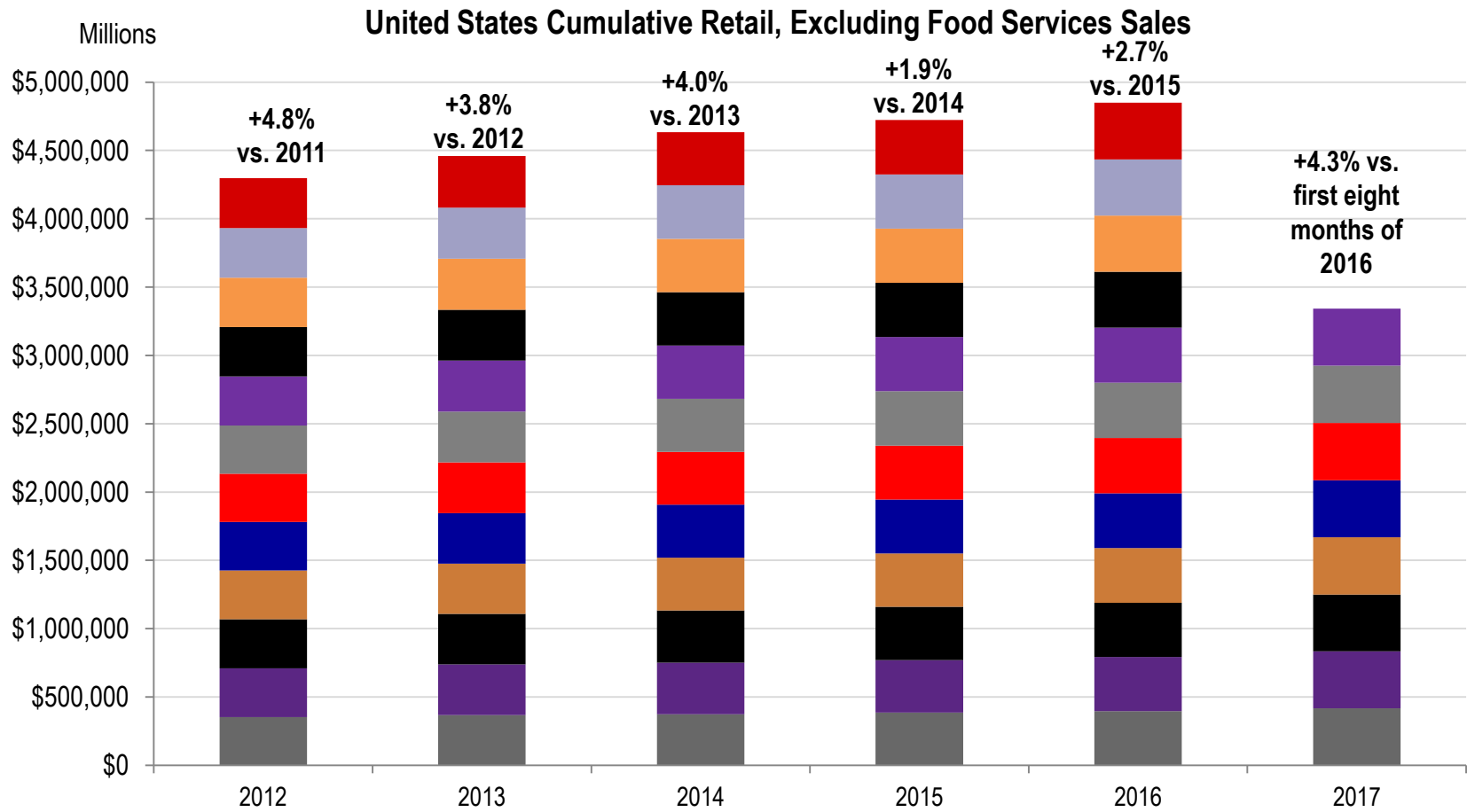
ISM PMI Composite Indices

Manufacturing vs. Non-manufacturing



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

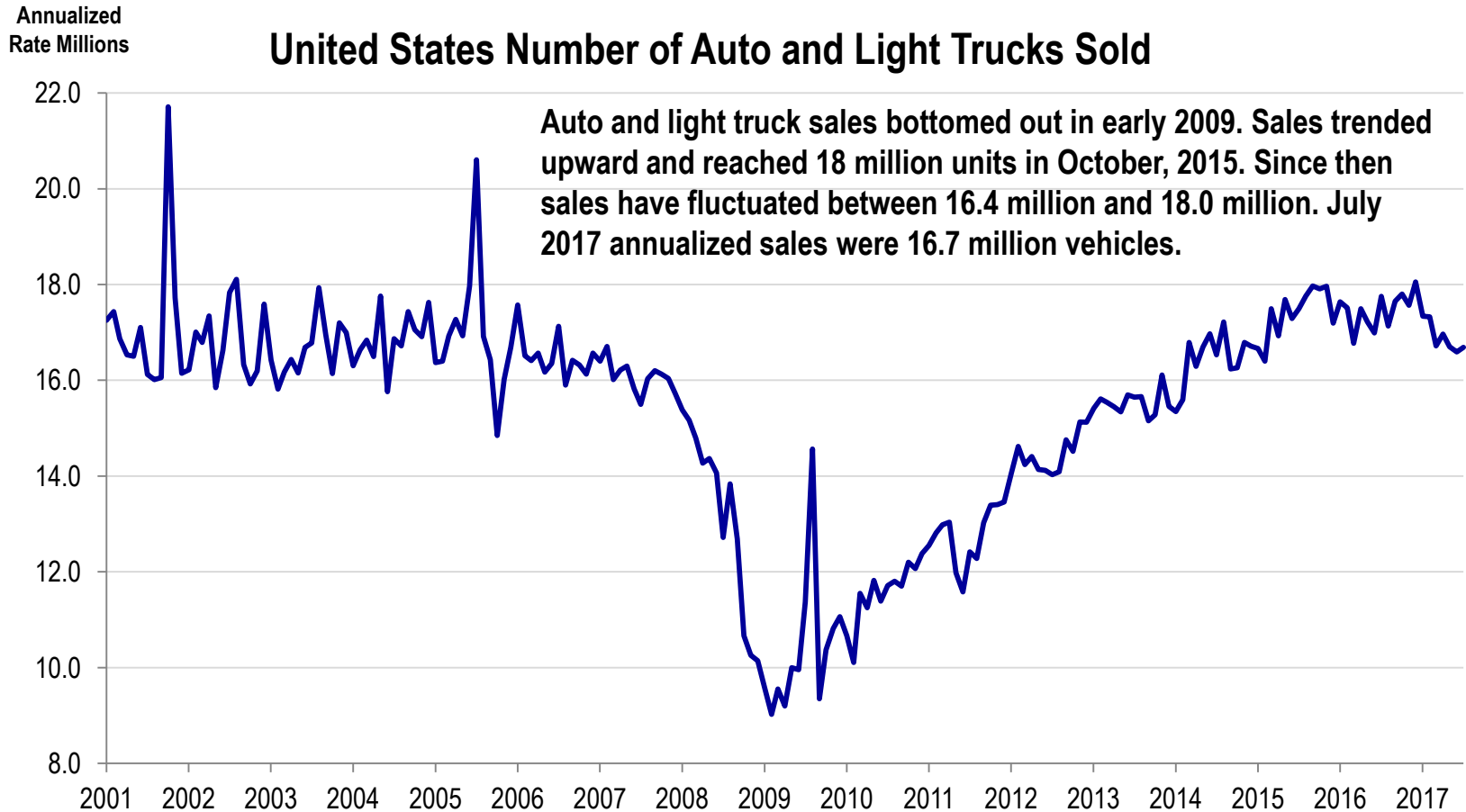
Cumulative Retail, Excluding Food Services Sales



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



Source: FRED, BEA, cber.co.

Note: Seasonally Adjusted Annualized Rate.

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The Colorado Economy

Amazon

Amazon – How Will Denver Fare?

Last week it was announced that Denver will be respond to a RFP to be the home of a second Amazon headquarters. This slide includes key points from the RFP grouped into two categories. How do you think Denver will fare? The RFP , which was published by the *New York Times*, is available at <http://cber.co/economic-updates/>

Would it be a good business decision for Amazon to move to Denver?

Contents of RFP

- How easy is it to attract and retain strong technical talent?
- What incentives will be offered?
- Are there big thinkers in the local communities?
- How innovative, creative, and collaborative are Colorado business and government leaders?
- Are elected officials eager and willing to work with the company?
- Does Colorado have a stable and business-friendly environment?
- Does the state have a strong economy?
- Does Colorado have excellent universities?
- Are there enough hotel rooms to house Amazon visitors in a year (233,000 room nights)?
- How is Denver's connectivity?

Would the employees like living in Denver?

Contents of RFP

- What is it like to live in Denver? How good are the recreational opportunities and cultural activities? How is the weather?
- Is there an inclusive atmosphere?
- What is the commute time? How congested is the traffic during rush hour?
- How good is the mass transit system?
- How easy is it to get out of town?
- What is the cost of living and inflation rate?
- What housing options are available near the potential headquarters? How reasonable are housing prices?
- What is Denver's crime rate?

HOW DO YOU THINK DENVER WILL FARE?



The Colorado Economy

Population, Employment, Unemployment by MSA, Unemployment by Select Counties

Colorado Population

Components of Change

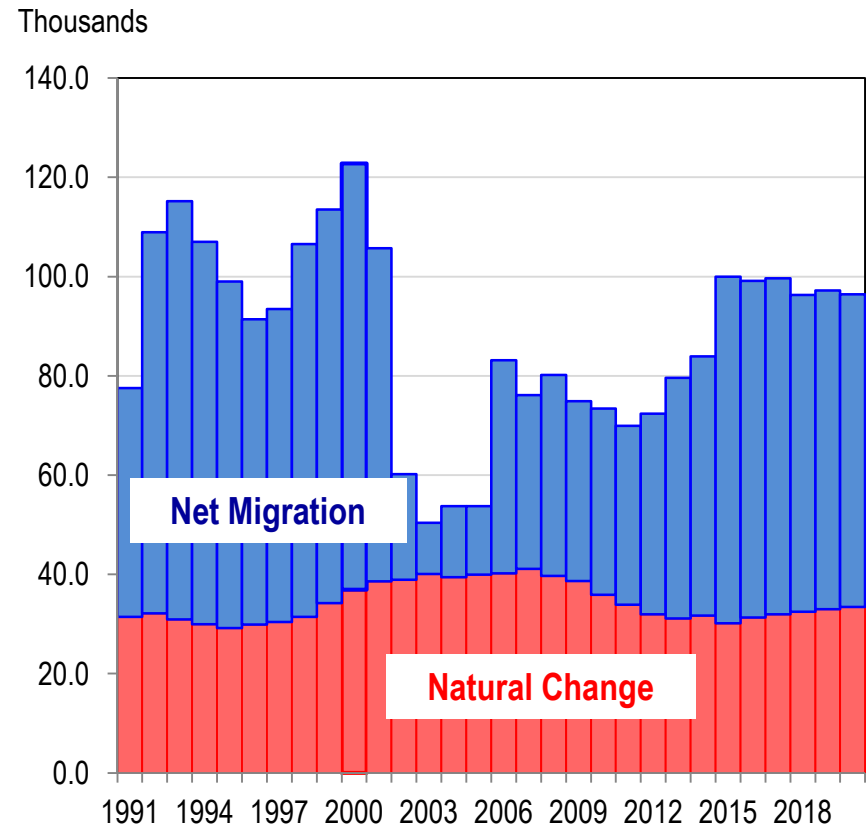
The population increases and decreases are a result of the natural rate of change (births minus deaths) and the change in net migration (people moving into the state minus people moving out of the state).

Over the past 2½ 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. For the past 10 years it has been slightly above 30,000.

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 (not shown on this chart). More people moved out of state than moved into the state to escape a regional recession. During the past two recessions, net migration declined, but did not turn negative. It was difficult for people to move anywhere to escape the downturn.

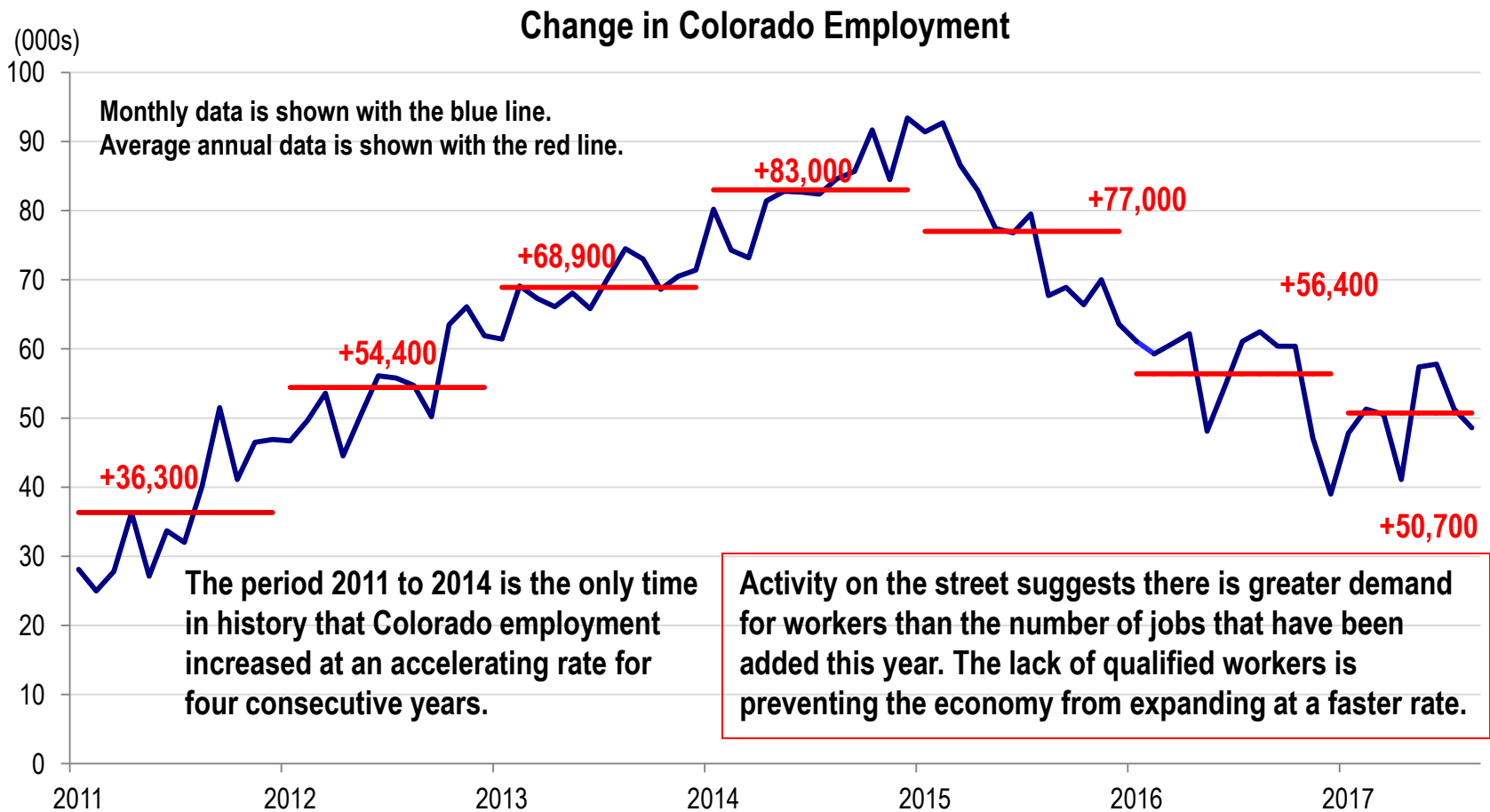
The Colorado population will increase by about 100,000 in 2015, 2016, and 2017. In 2017 the state's population will increase by 1.8% to 5.655,405.

Change in Colorado Population 1991 - 2016



Change in Colorado Employment

Year-Over-Year



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



Unemployment Rate

Colorado

Colorado's unemployment rate has dropped to record lows. The rate has been below 2.5% for five consecutive months. From 2015 to the present, there have been 21 consecutive months when the unemployment rate was below 3.5%.

Prior to 2017, there were 31 consecutive months during 1998 to 2001 when the unemployment rate was below 3.5%. Unlike the current situation, the unemployment rate did not drop below 2.5% during that period.

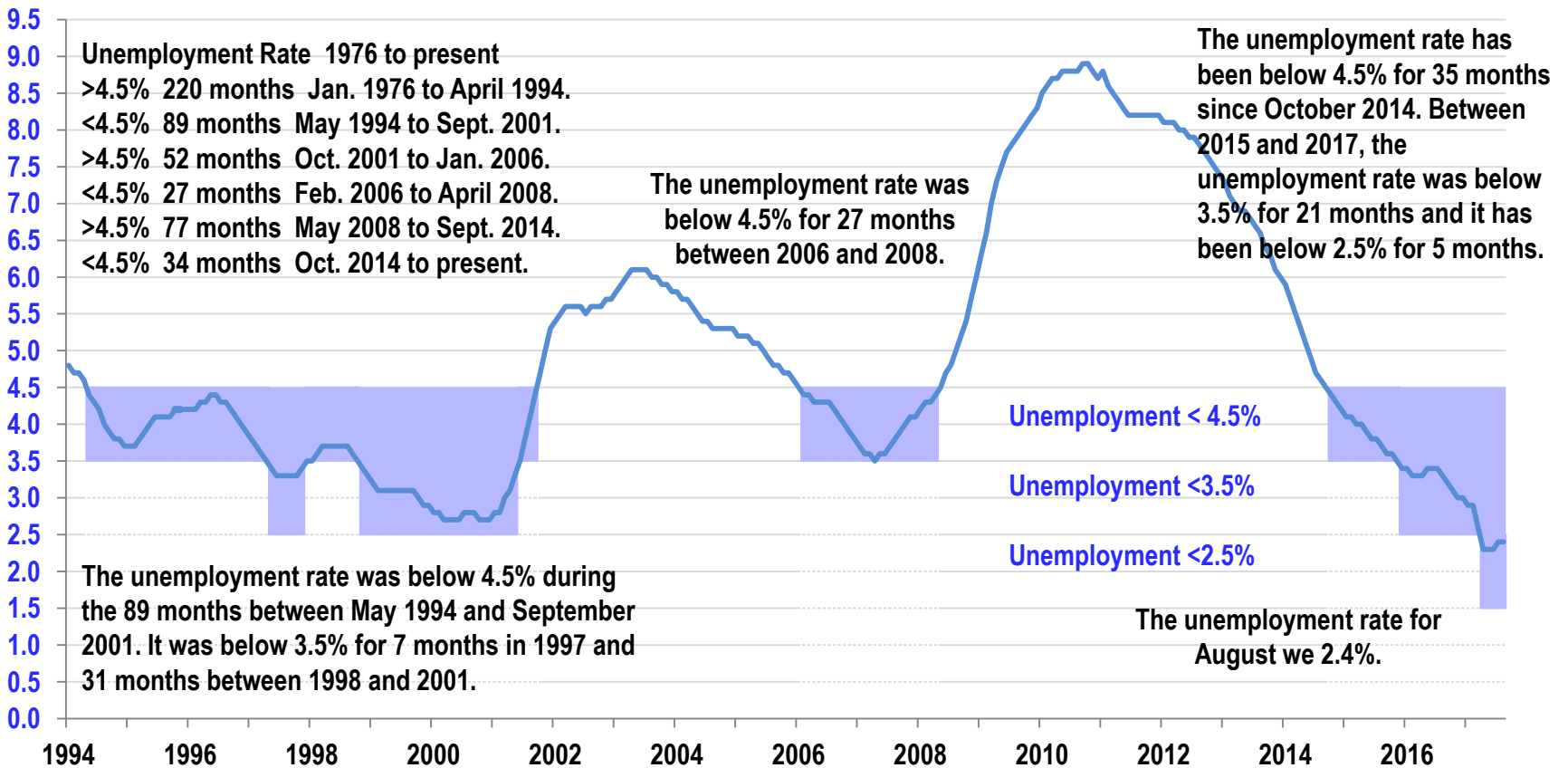
Over the past year, developers and business leaders have announced aggressive development plans for the Front Range. Currently, the supply of qualified workers does not meet the labor needs of employers. This mismatch is likely to get worse in the months ahead, particularly with the need for construction workers in Texas and Florida.

Unemployment Rate

Colorado

Percent

Colorado Unemployment Rate



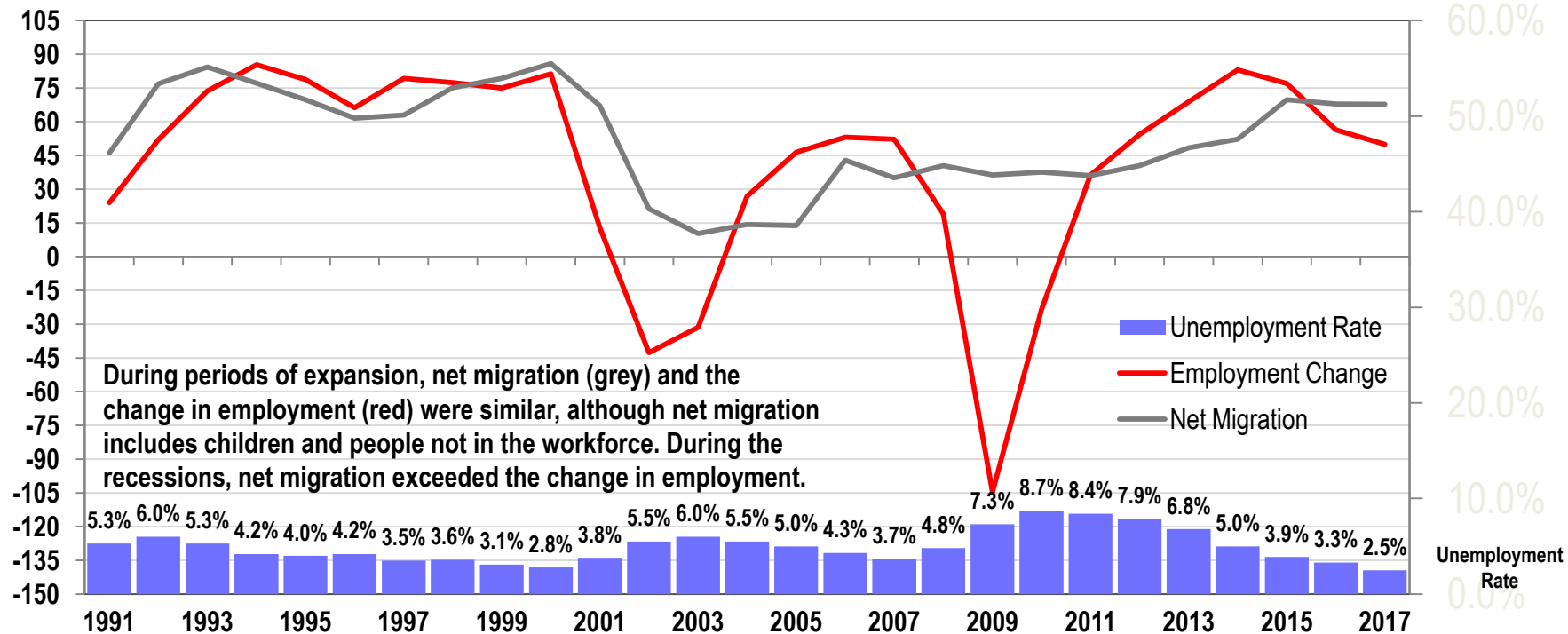
Source: Bureau of Labor Statistics, SA, cber.co.

Annual Employment, Net Migration, Unemployment Rate

Colorado

Change in Employment vs. Net Migration

Thousands

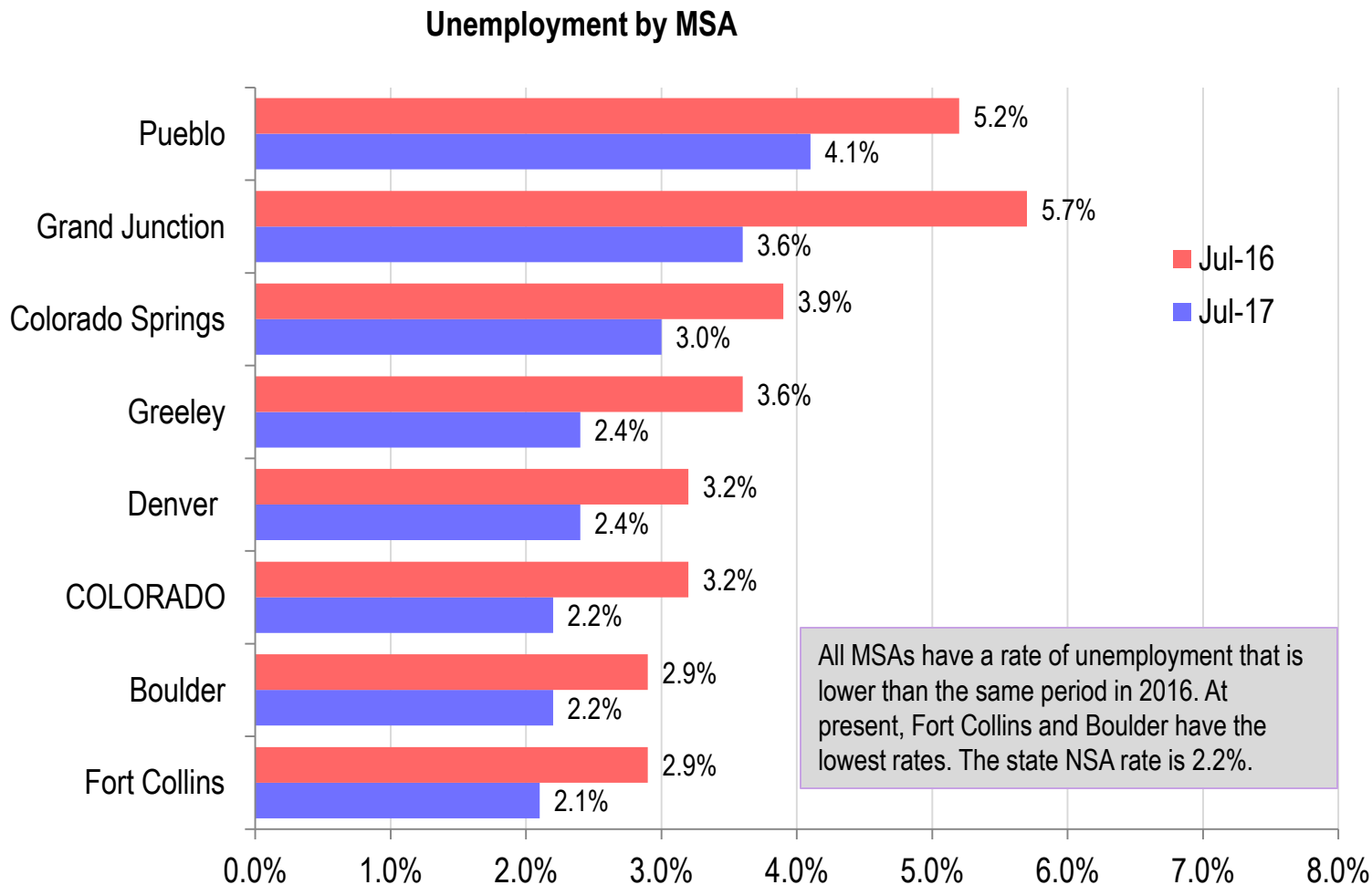


Source: Bureau of Labor Statistics, Colorado Demography Office, cber.co.

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Unemployment by MSA

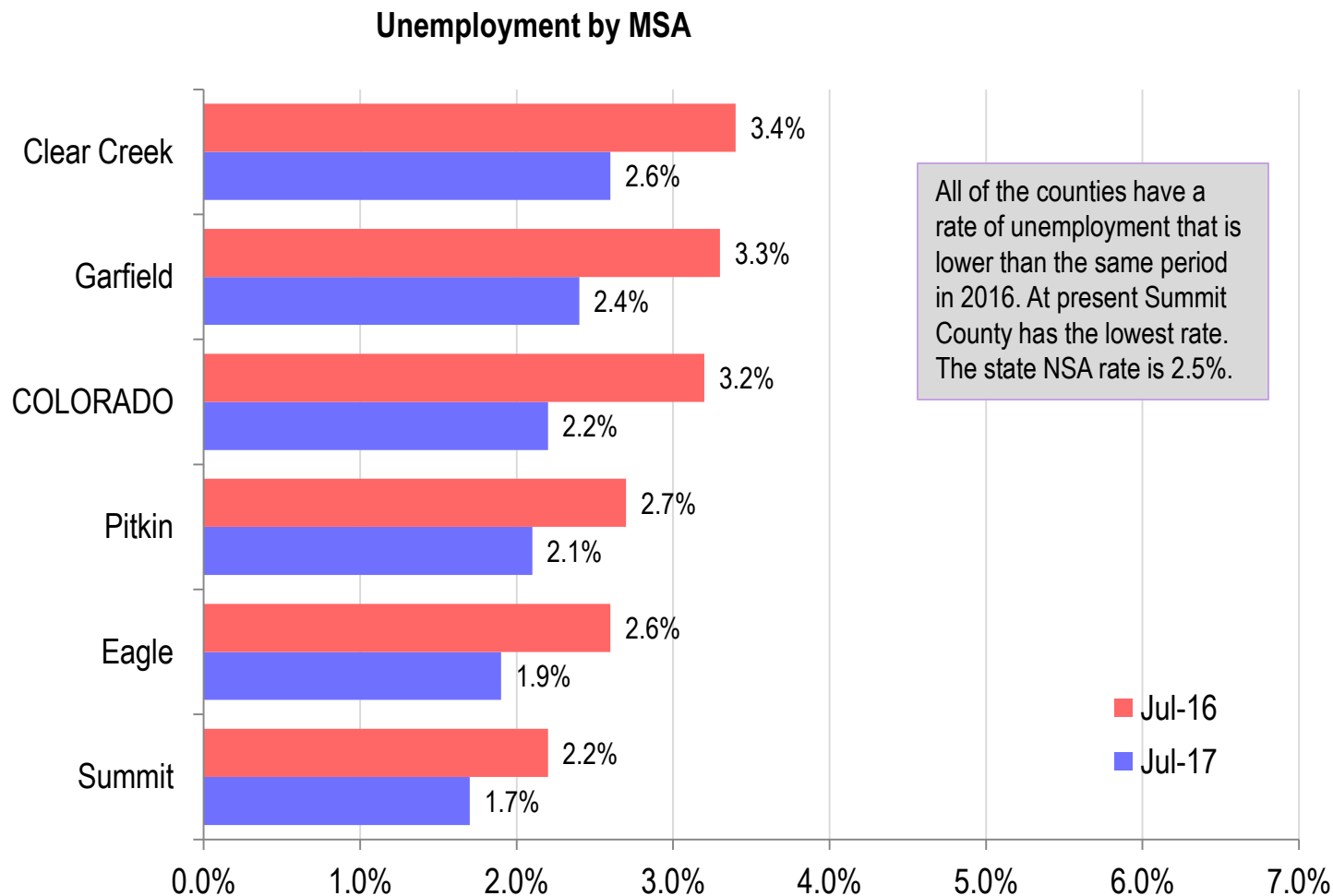
2016 vs. 2017



Source: Bureau of Labor Statistics, NSA, cber.co. Note: MSA unemployment lags by two months and is reported only on a non-seasonally adjusted basis.

Unemployment by County (I-70)

2016 vs. 2017



Source: Bureau of Labor Statistics, NSA, cber.co. Note: MSA unemployment lags by two months and is reported only on a non-seasonally adjusted basis.



Colorado Economy

Employment in Strong Growth, Solid Growth, Volatile Categories

Change in Employment Summary of Strong, Solid, and Volatile Growth Categories

Strong Growth Category – 22,600 jobs added, 2.7% growth rate.

Health care and professional, business, and personal (other) services are the major sectors.

Solid Growth Category – 20,000 jobs added, 2.0% growth rate.

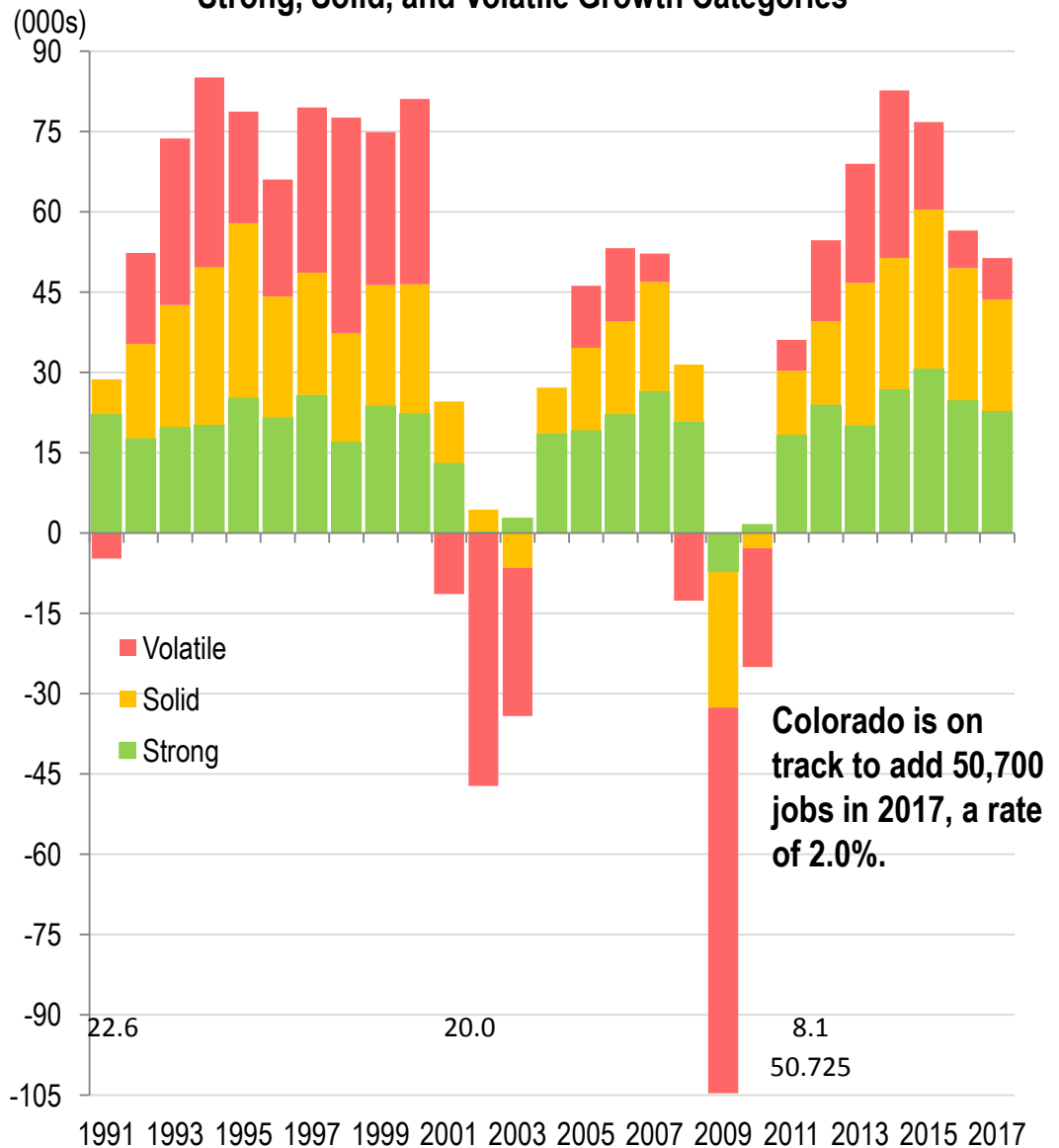
Accommodations and food services, trade, and state and local government are the major sectors.

Volatile Category – 8,100 jobs added 1.1% growth rate.

Boom or bust industries – such as the extractive industries, manufacturing, information.

Colorado is on track to add **50,700 jobs** in 2017, a rate of **2.0%**, based on employment data through August.

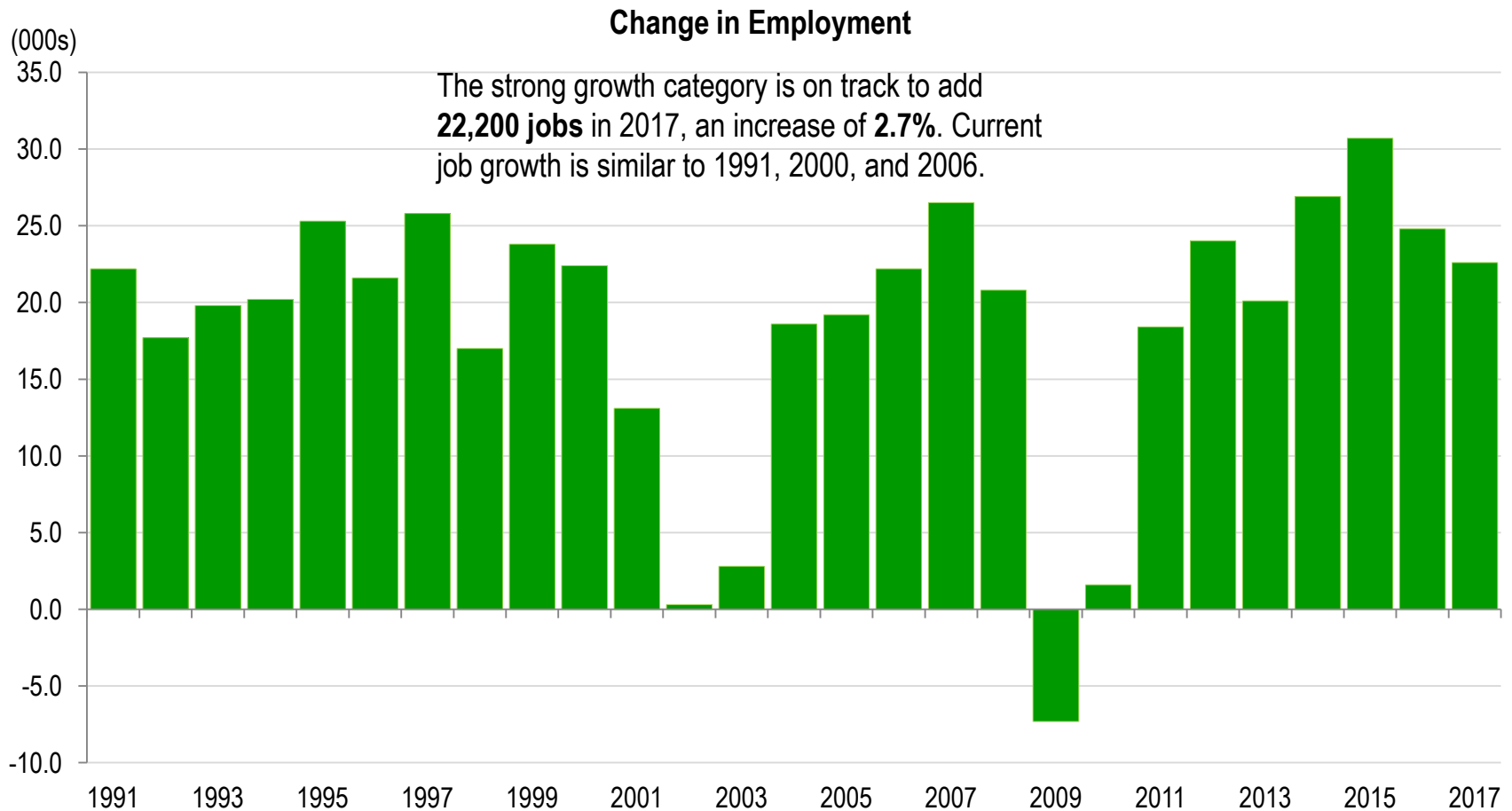
Strong, Solid, and Volatile Growth Categories



Source: Bureau of Labor Statistics, cber.co.

Change in Employment

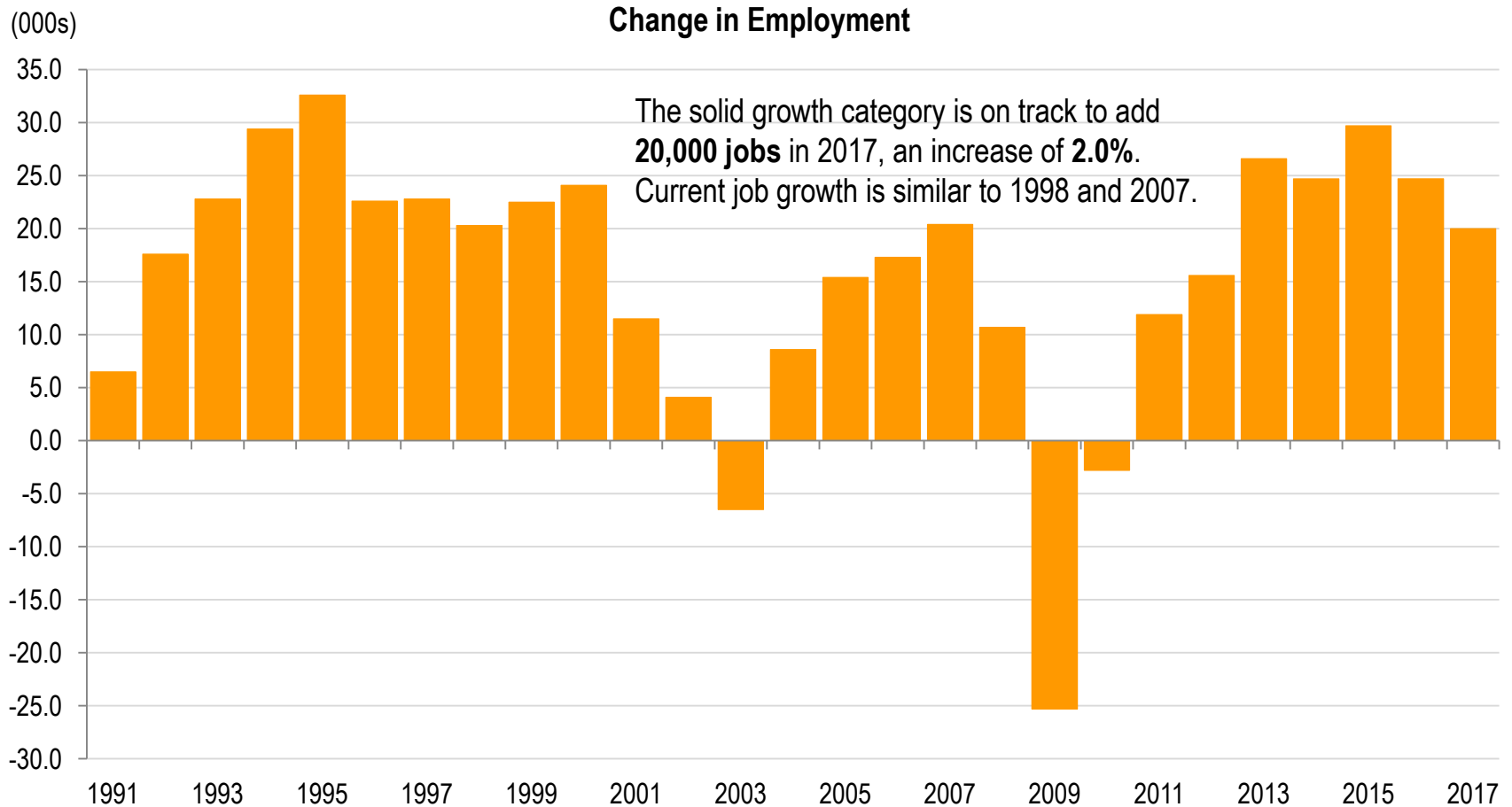
Strong Growth Category



Source: Bureau of Labor Statistics, cber.co.

Change in Employment

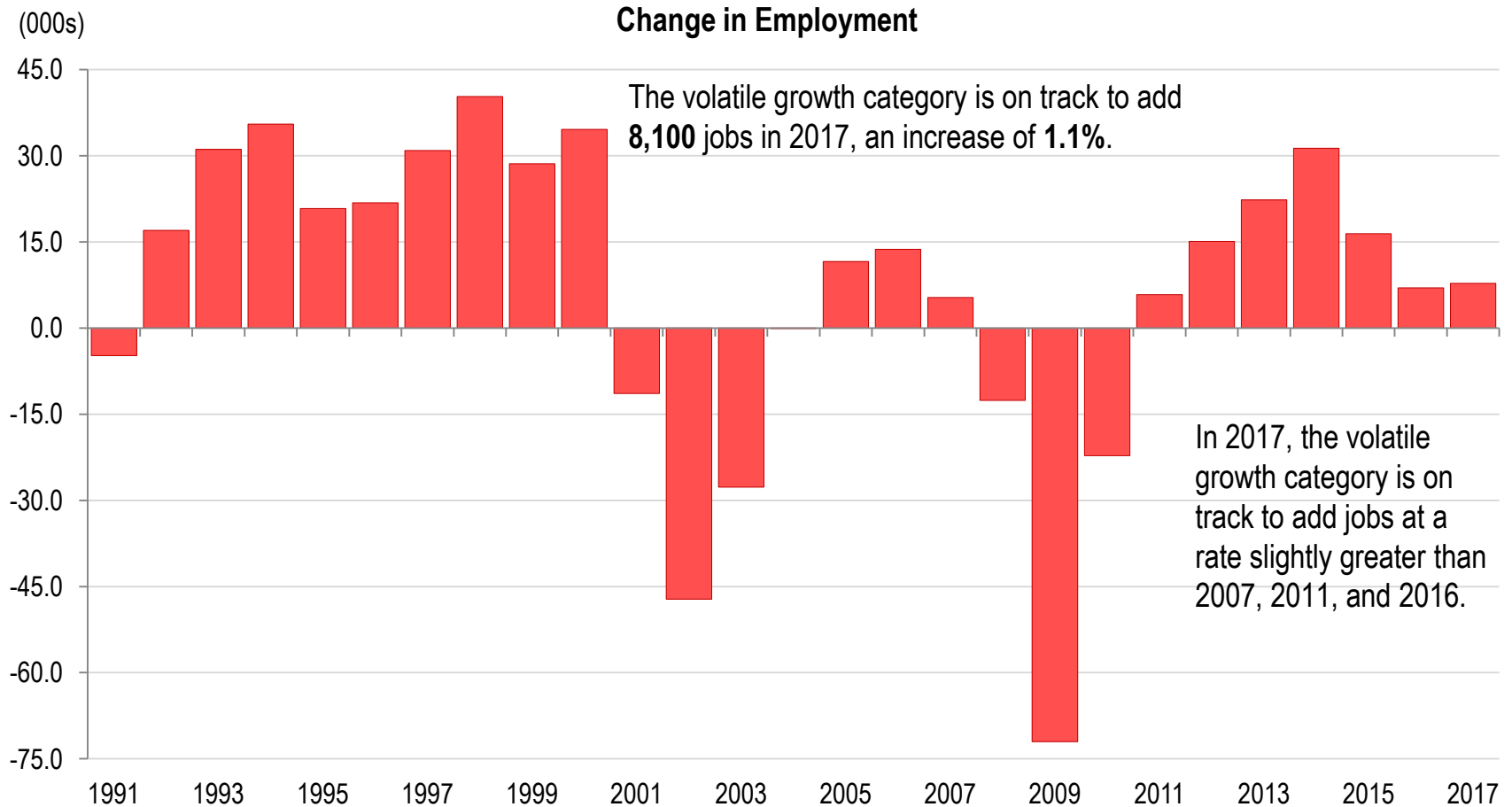
Solid Growth Category



Source: Bureau of Labor Statistics, cber.co.

Change in Employment

Volatile Growth Category



Source: Bureau of Labor Statistics, cber.co.

Six Industries That Are Important to Employment Growth for Different Reasons

The following six charts look at two sectors that are contributing significant job growth to the strong growth, solid growth, and volatile job categories. Combined, these sectors are responsible for 72% of the jobs added in 2017.

Strong Growth Category

- Healthcare
- Professional, Scientific, and Technical Services

Total 30% of jobs added, or 15,000 jobs.

Solid Growth Category

- Accommodations and Food Services
- Retail

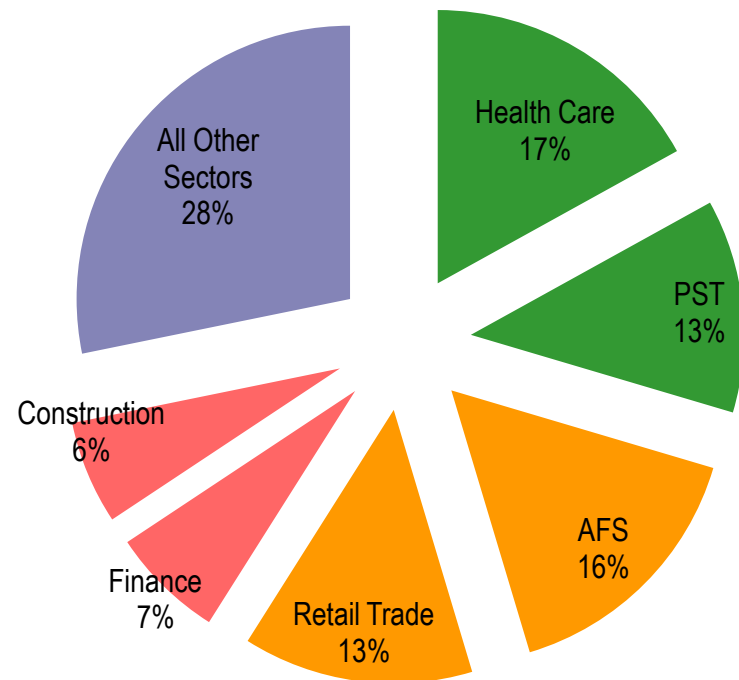
Total 29% of jobs added, or 14,900 jobs.

Volatile Category

- Financial Activities
- Construction

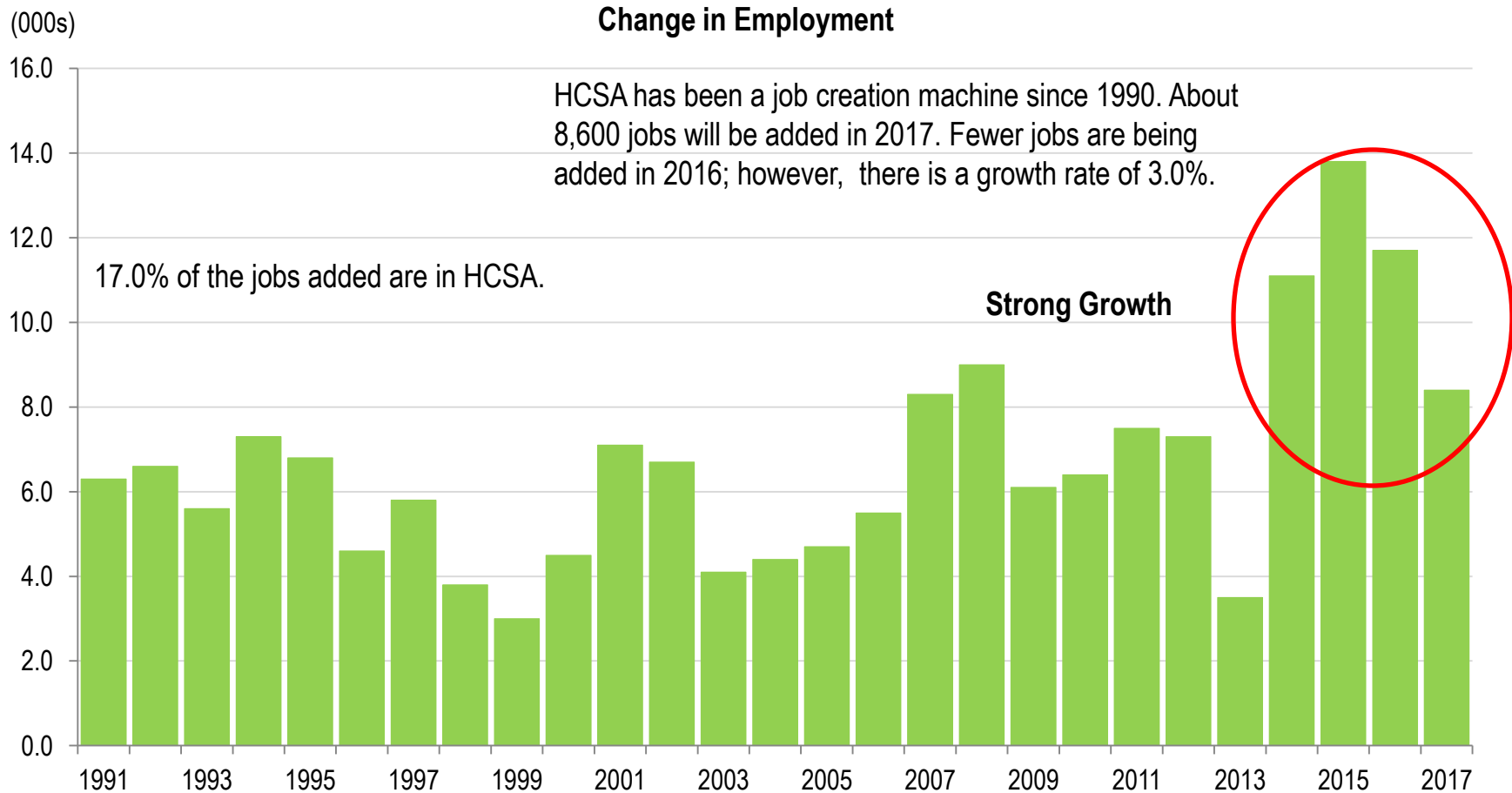
Total 13% of jobs added, or 5,500 jobs added.

Top Sectors by Category



Change in Employment

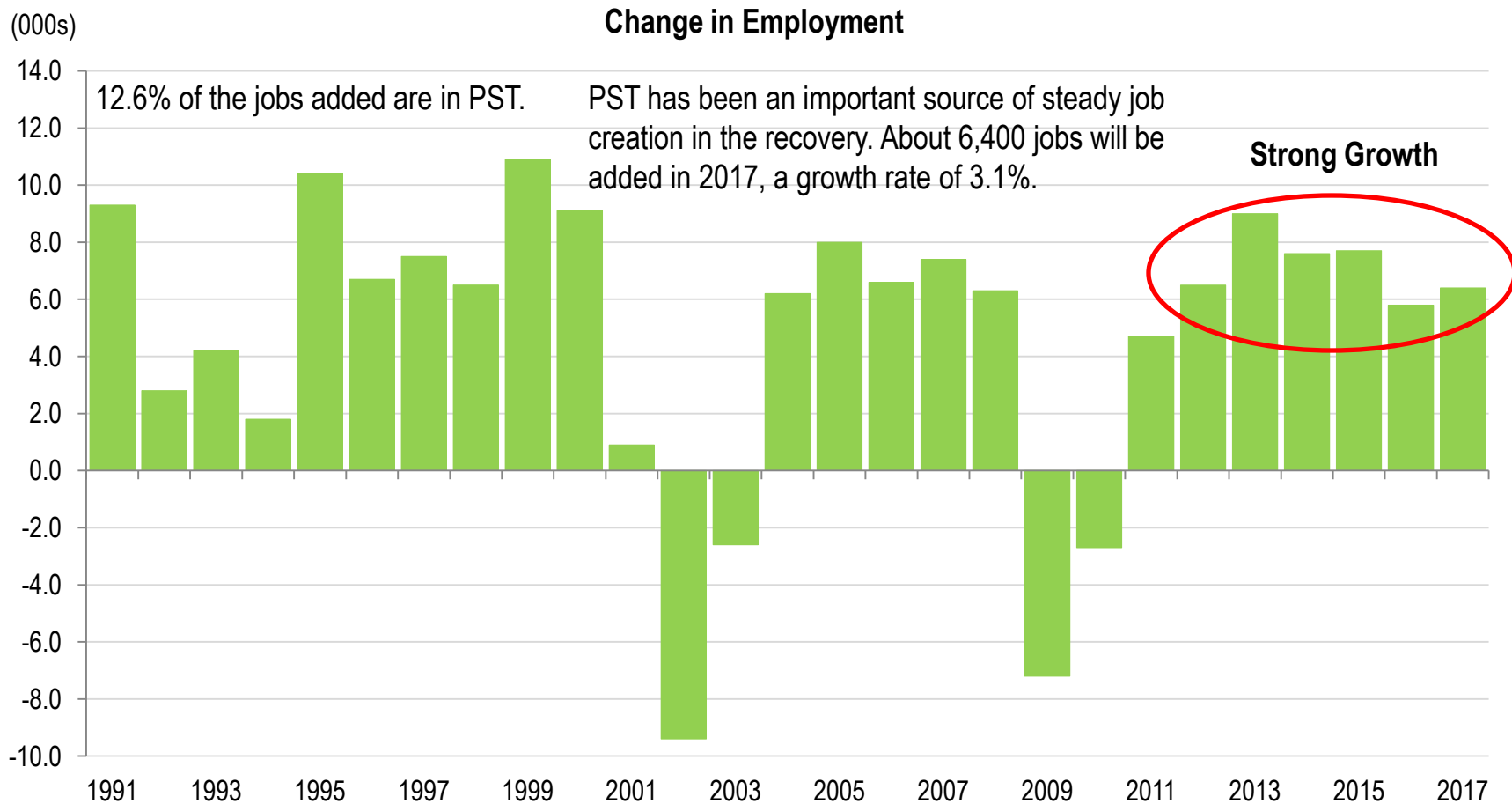
Health Care and Social Assistance



Source: Bureau of Labor Statistics, cber.co.

Change in Employment

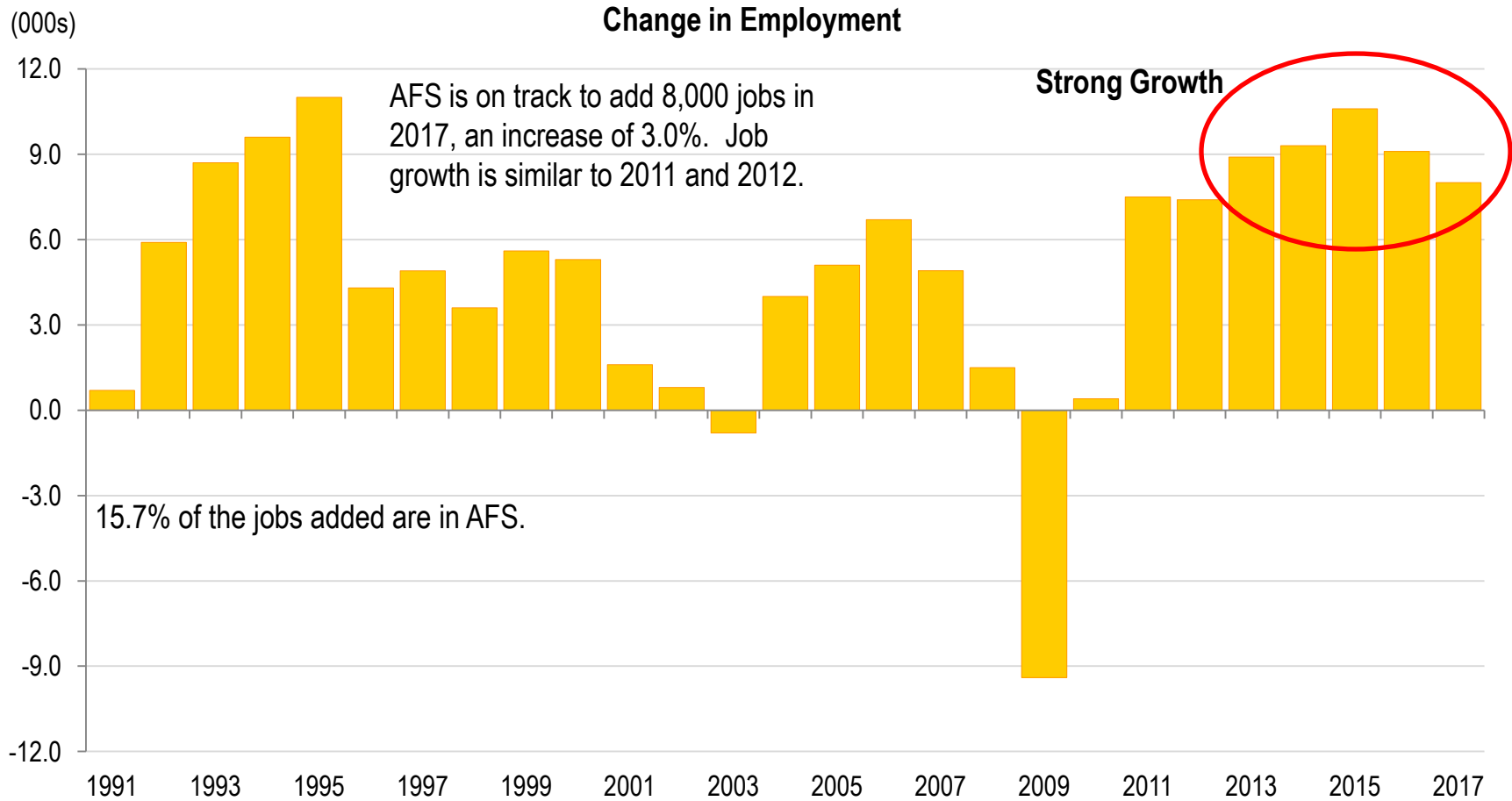
Professional, Scientific, and Technical Services



Source: Bureau of Labor Statistics, cber.co.

Change in Employment

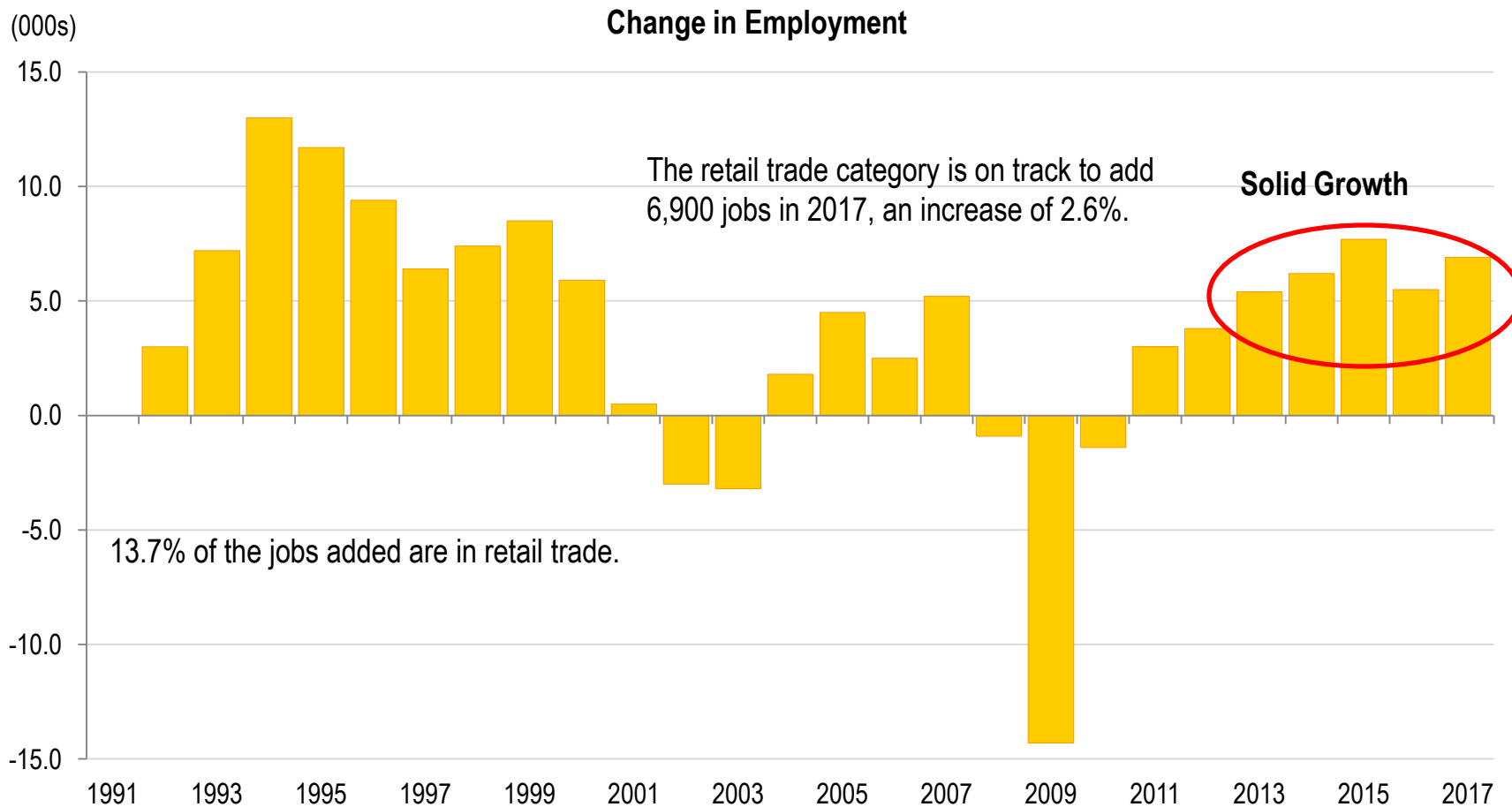
Accommodations and Food Services



Source: Bureau of Labor Statistics, cber.co.

Change in Employment

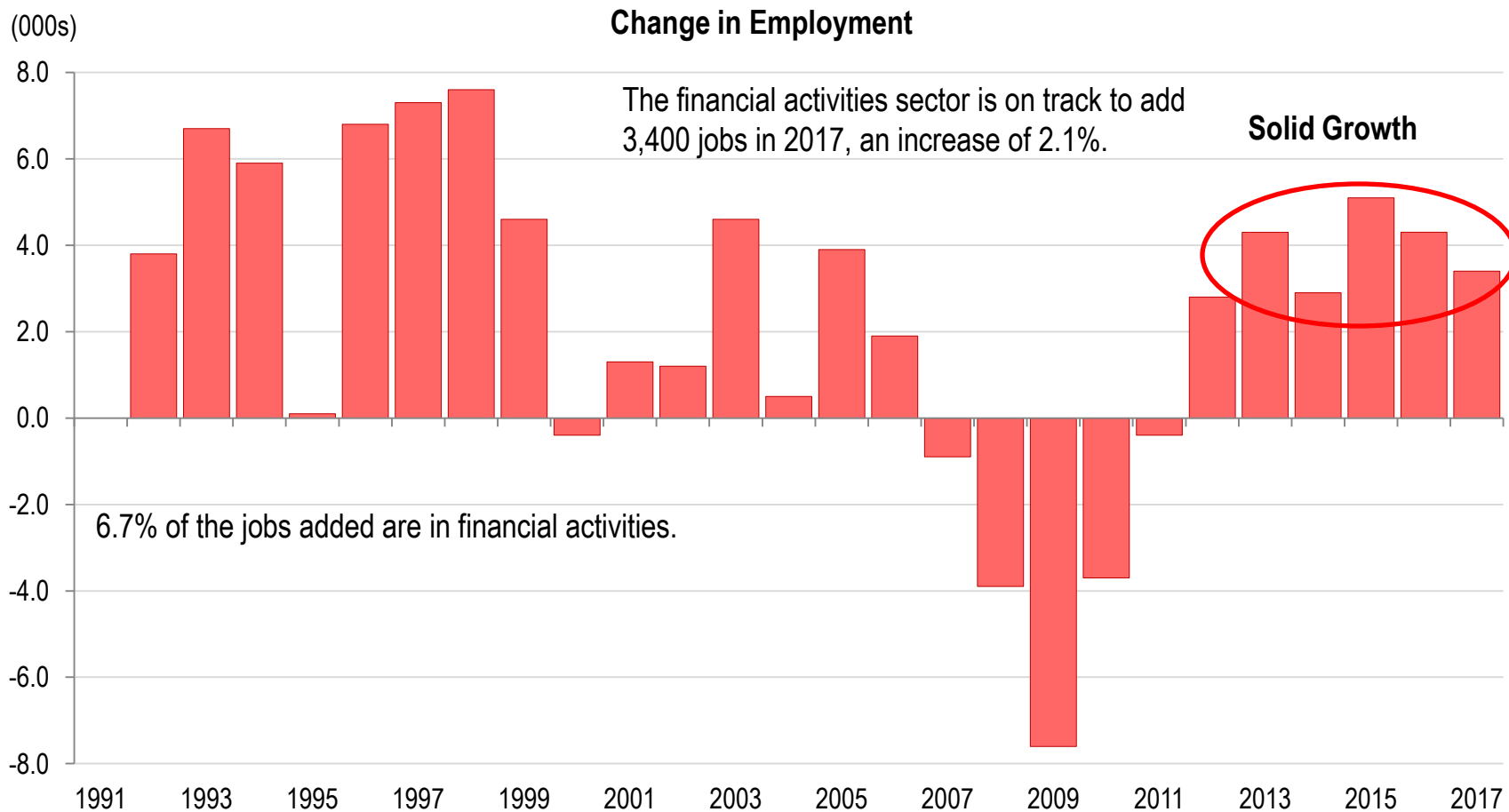
Retail Trade



Source: Bureau of Labor Statistics, cber.co.

Change in Employment

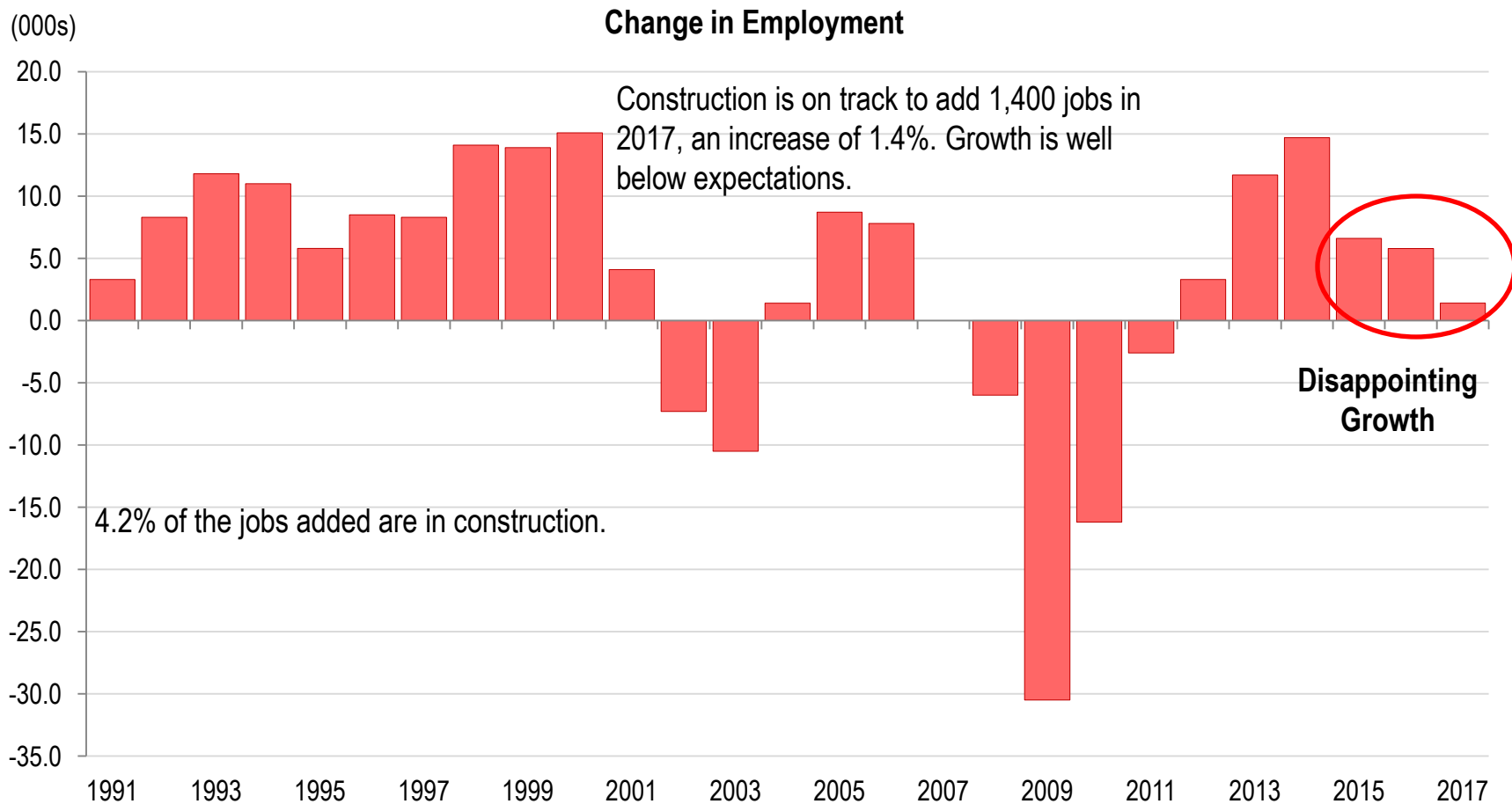
Financial Activities



Source: Bureau of Labor Statistics, cber.co.

Change in Employment

Construction



Source: Bureau of Labor Statistics, cber.co.



Colorado Economy

Key Sectors and Trends to Watch

Key Sectors and Trends to Watch

Within the three categories of employment (strong growth, solid growth, and volatile) there are key sectors and sources of economic activity that drive changes in the state economy. This section looks at “trends to watch” in those categories.

- Extractive industries – employment, production, and number of rigs.
- Construction – permits and valuation.
- Housing prices – appreciation rates.
- Manufacturing/durable goods – employment and real GDP.
- Retail trade – evolution of the industry.
- Auto sales - new and used car registrations.
- DIA – passenger traffic.

Key Sectors and Trends to Watch

Extractive Industries

- EIA recently released a forecast stating the price for a barrel of oil will stay around \$50 through 2018. In addition, they projected that production will decline in the future.

The Construction Industry

- The number of single family and multi-family permits are up significantly compared to a year ago. Aggressive plans have been announced for the residential and commercial development of the Front Range.

Housing Prices

- The Case Shiller Index shows that Denver housing prices are appreciating at a faster rate than most of the nation. This is a mixed blessing – it benefits homeowners and government entities that rely on property taxes for revenue. Rising prices also reduce the inventory of affordable housing units.

Manufacturing

- After six years of job gains, Colorado manufacturing employment is on track to shed jobs in 2017. On a brighter note, real GDP manufacturing growth has posted gains. Colorado has a competitive advantage in real GDP growth for durable goods.

Retail Trade

- Retail trade employment continues to grow, but at a rate slower than close to the average for the state.

New and Used Car Registrations

- Both Colorado new and used car registrations for the first 7 months of the year are stronger than in 2016. The trend for Colorado sales is counter to the national trend. It is an indicator that Coloradans have disposable income or they are increasing their debt.

DIA Passengers

- DIA continues to set records for the number of passengers in 2017. This is a sign of better air service in and out of Denver and the greater role that Denver is playing in the U.S. economy.

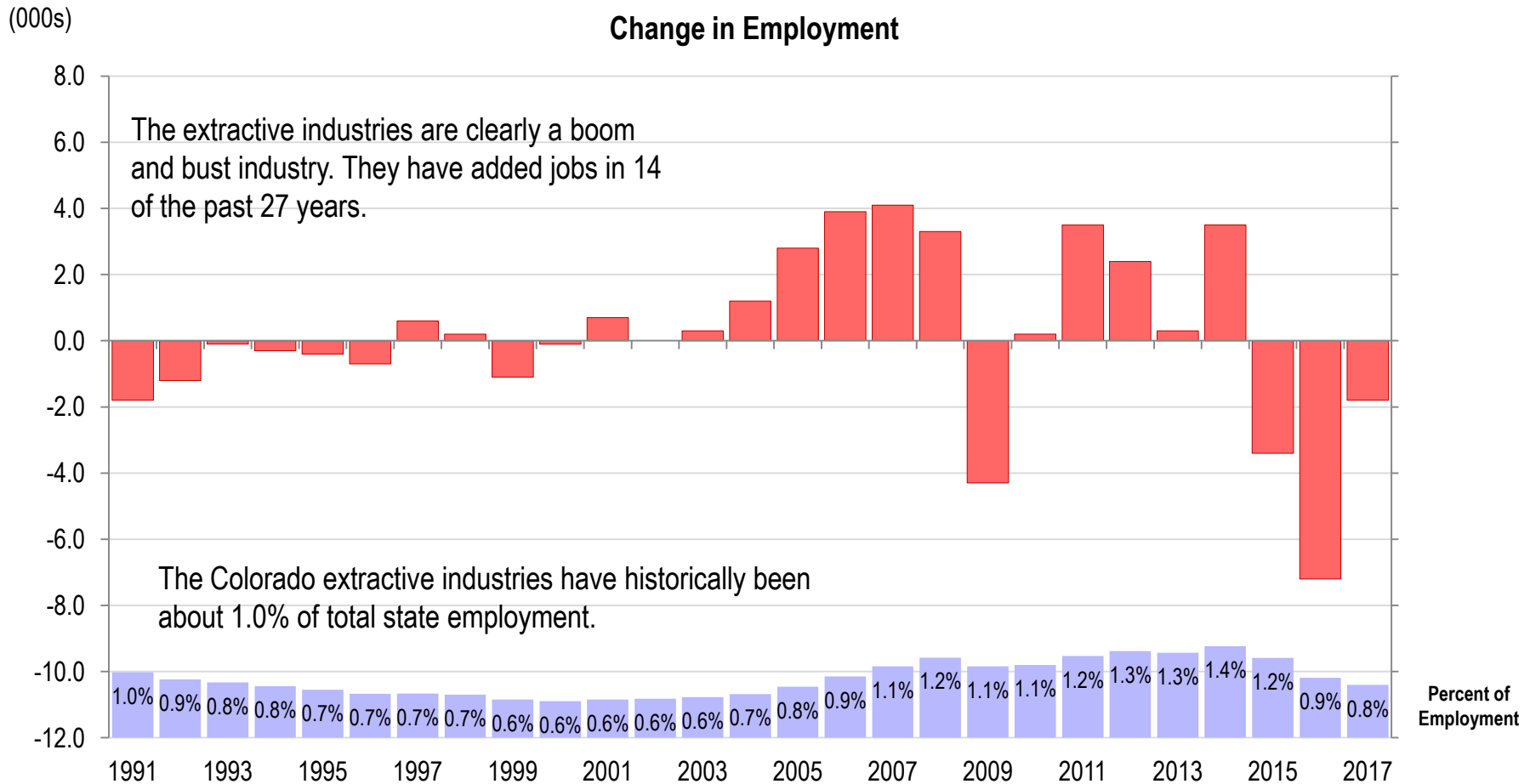


Key Sectors and Trends to Watch

Extractive Industries

Change in Employment/Percent of Total Employment

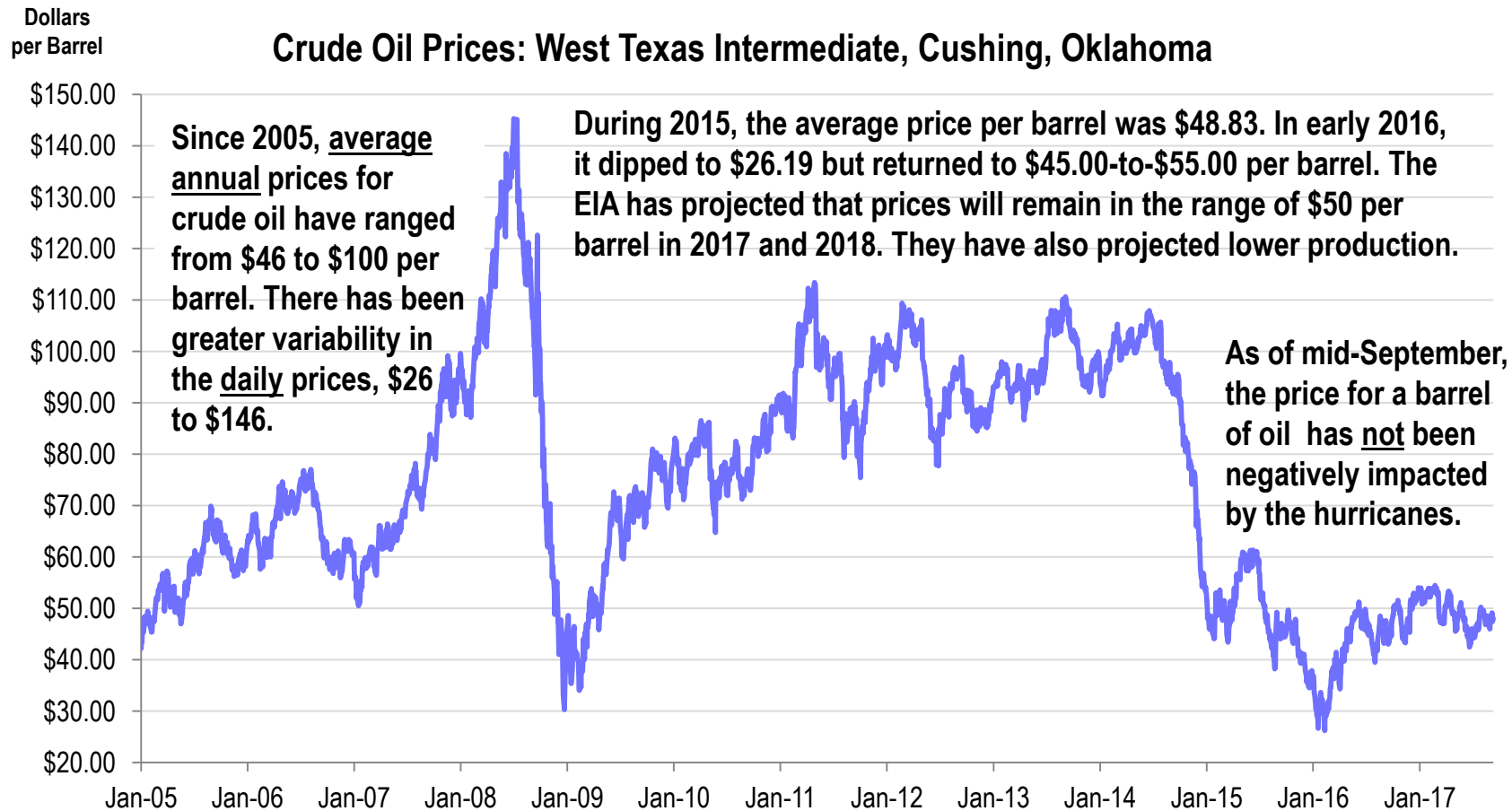
Extractive Industries



Source: Bureau of Labor Statistics, cber.co.

Crude Oil Prices

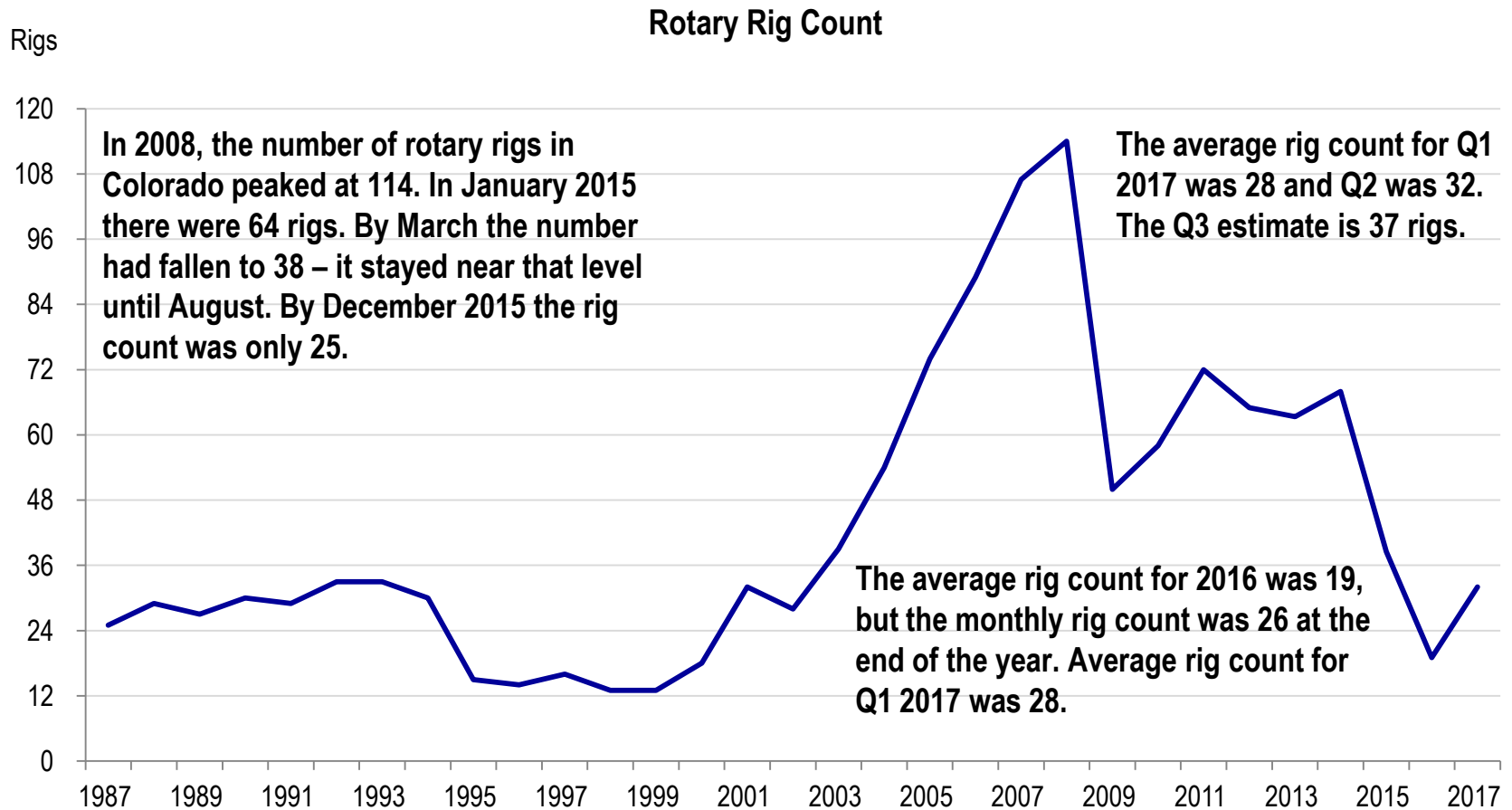
West Texas Intermediate



Source: FRED, EIA, cber.co.

Colorado Annual Rotary Rig Count

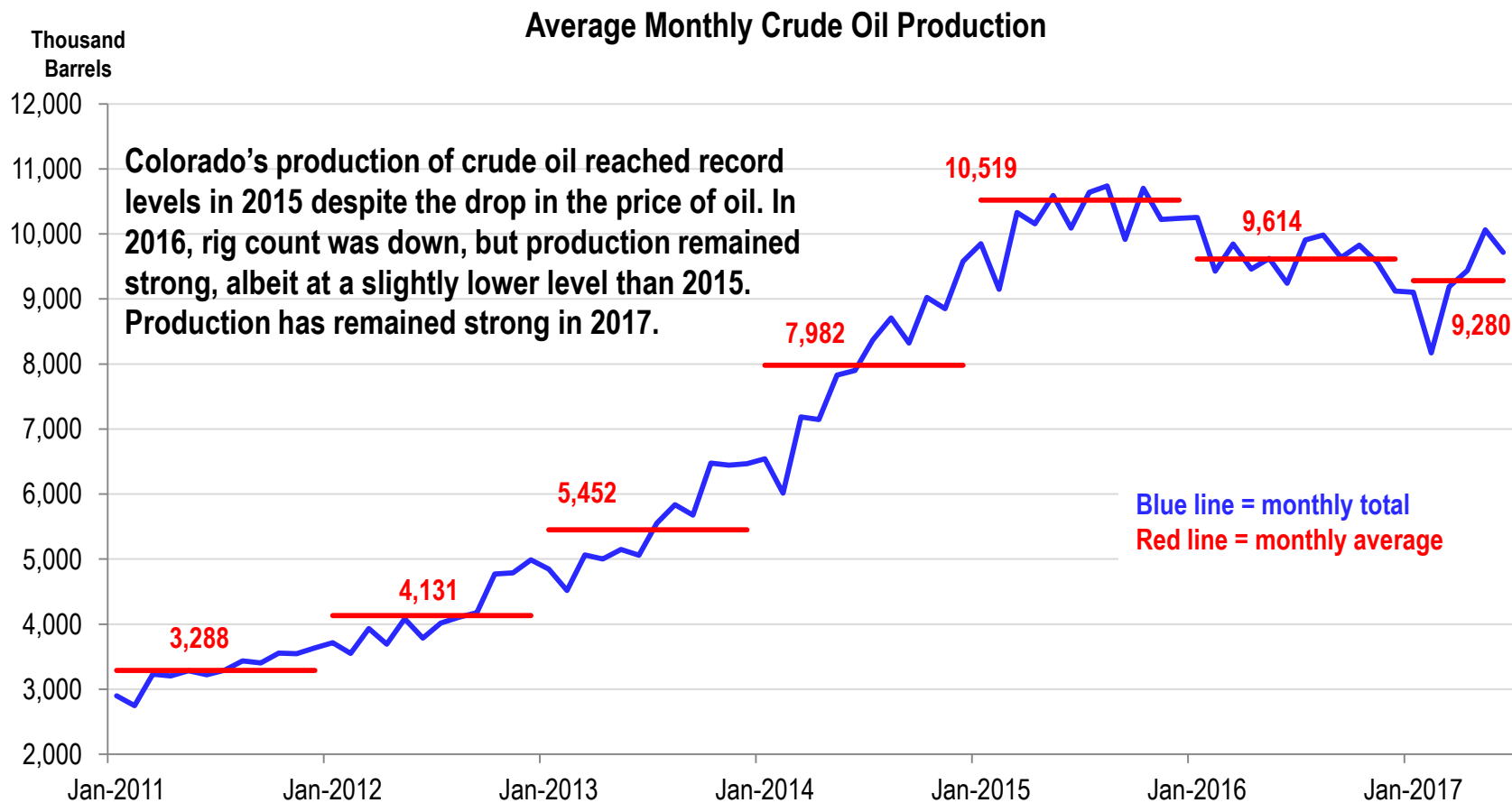
1987 to 2017



Source: Baker-Hughes, cber.co.

Average Monthly Colorado Crude Oil Production

2011 to 2017 (Thousand Barrels)



Source: EIA, cber.co.

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

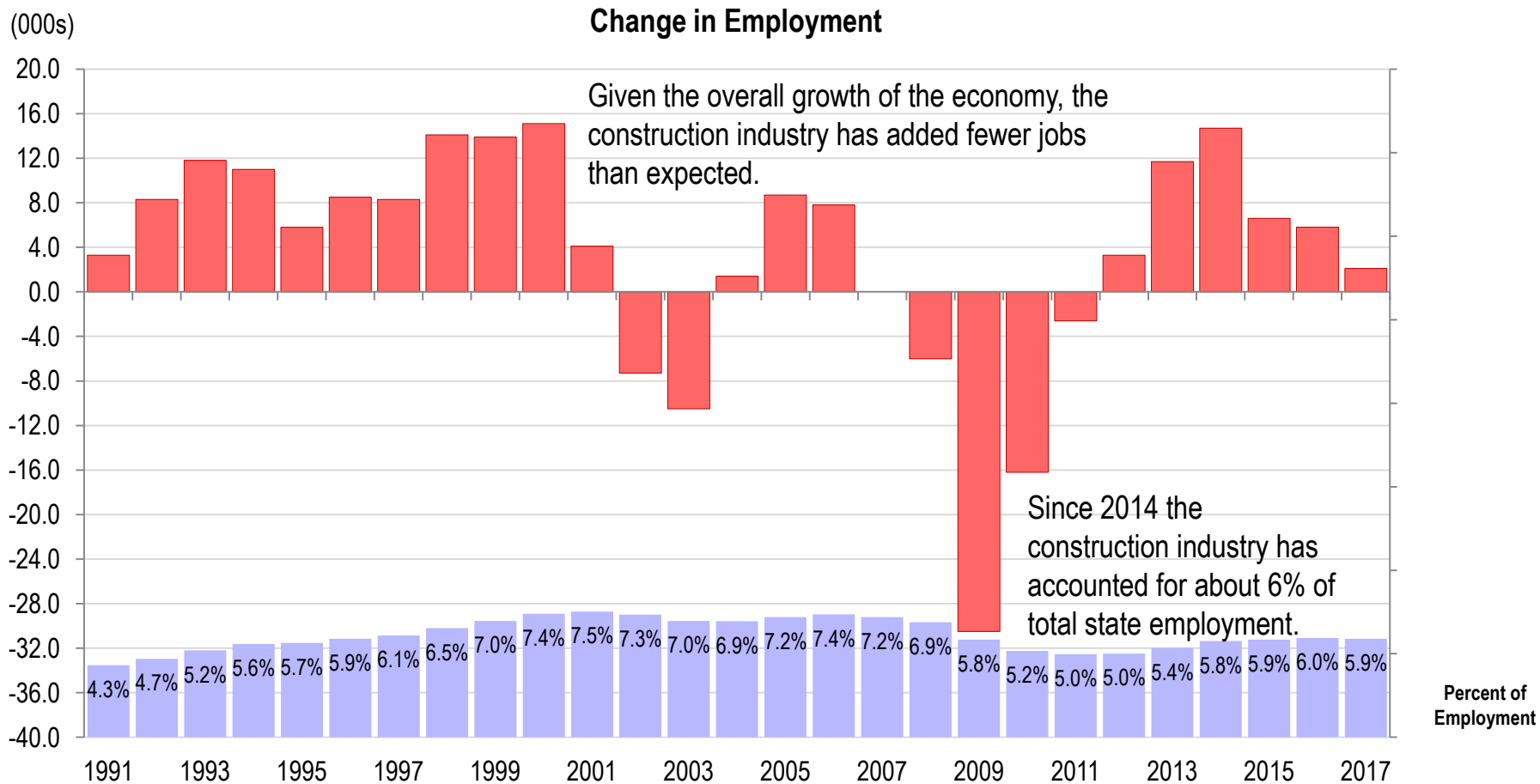


Key Sectors and Trends to Watch

Construction and Housing

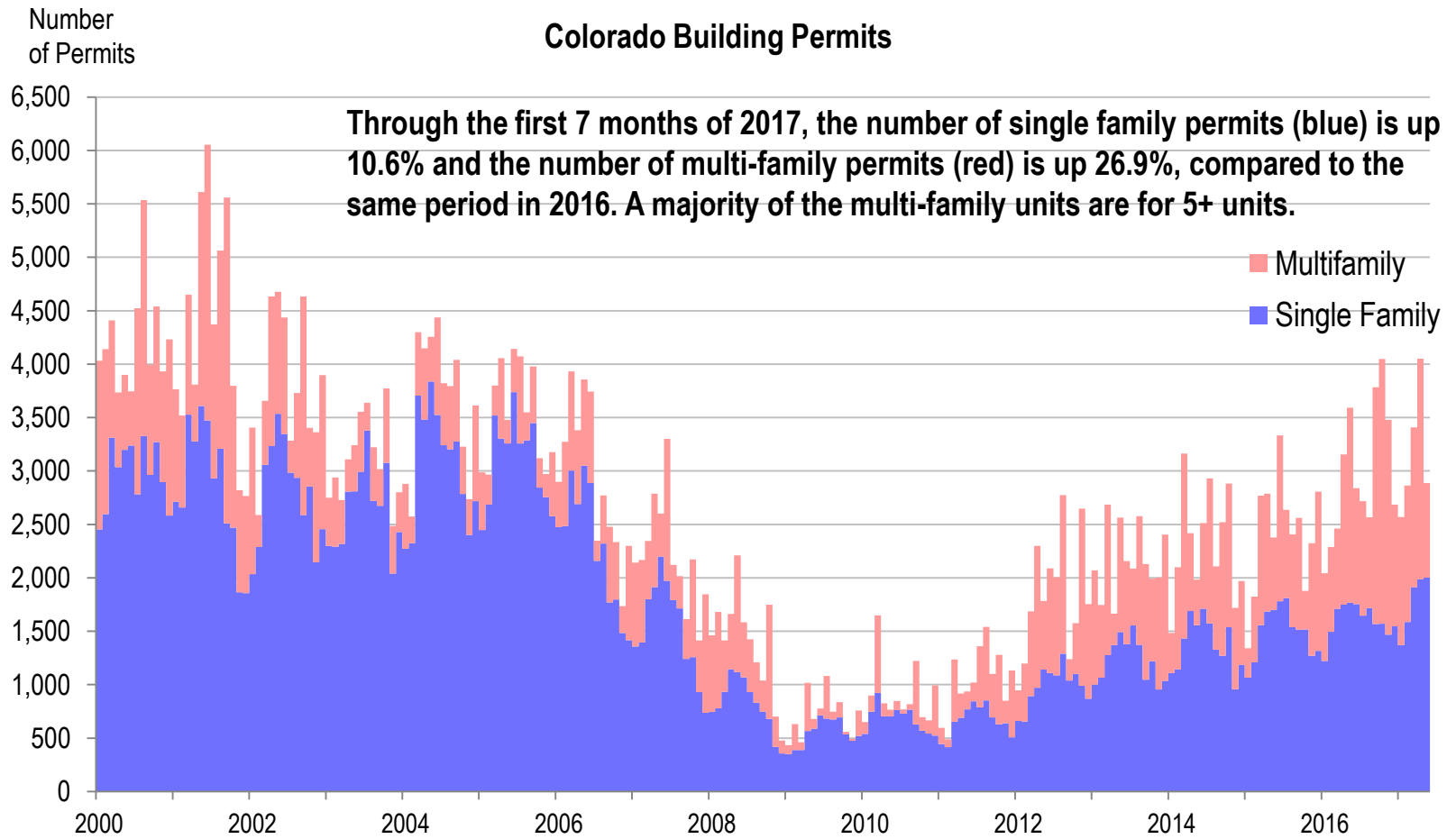
Change in Employment/Percent of Total Employment

Construction



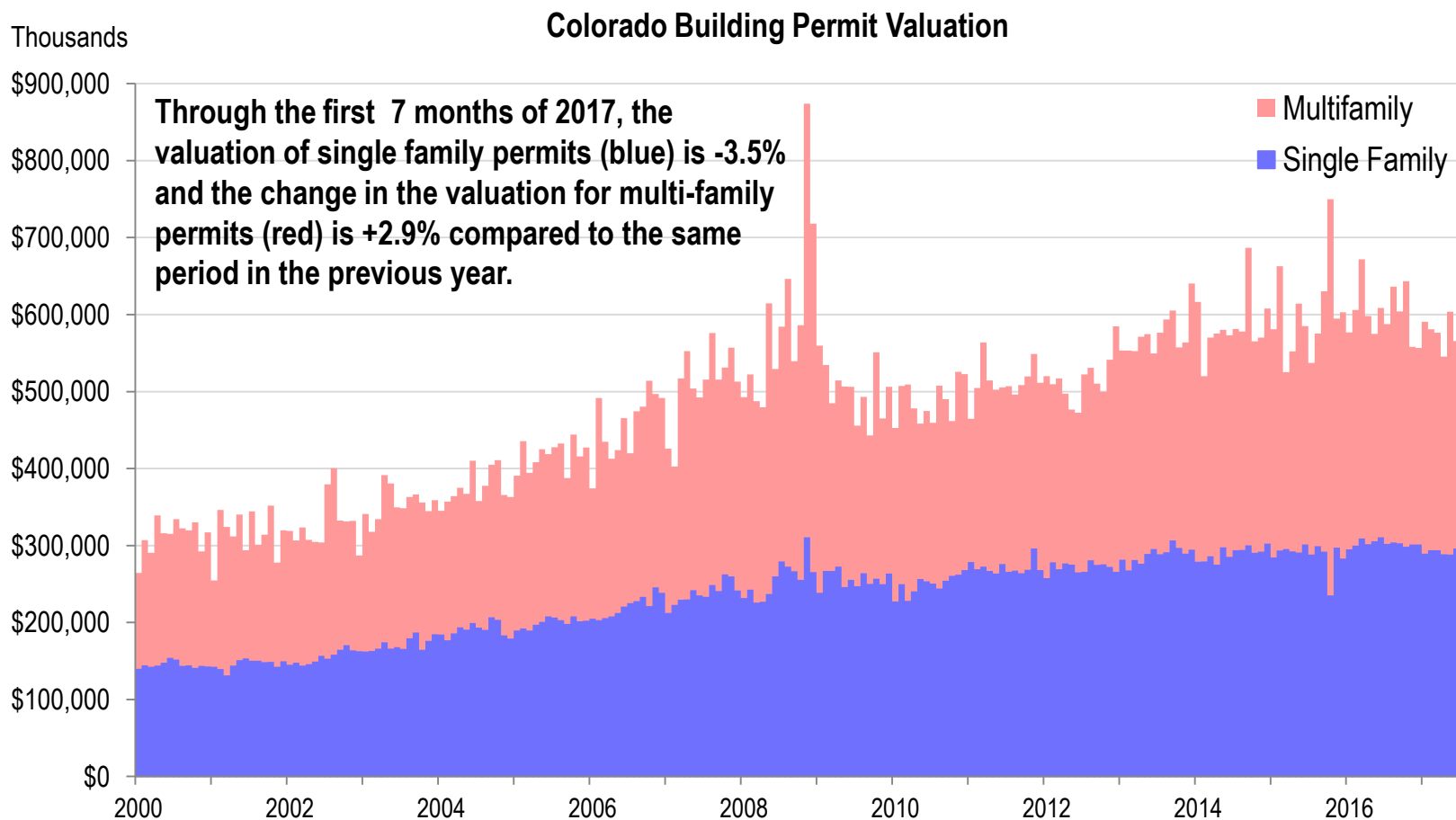
Source: Bureau of Labor Statistics, cber.co.

Colorado Residential Building Permits - Units



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

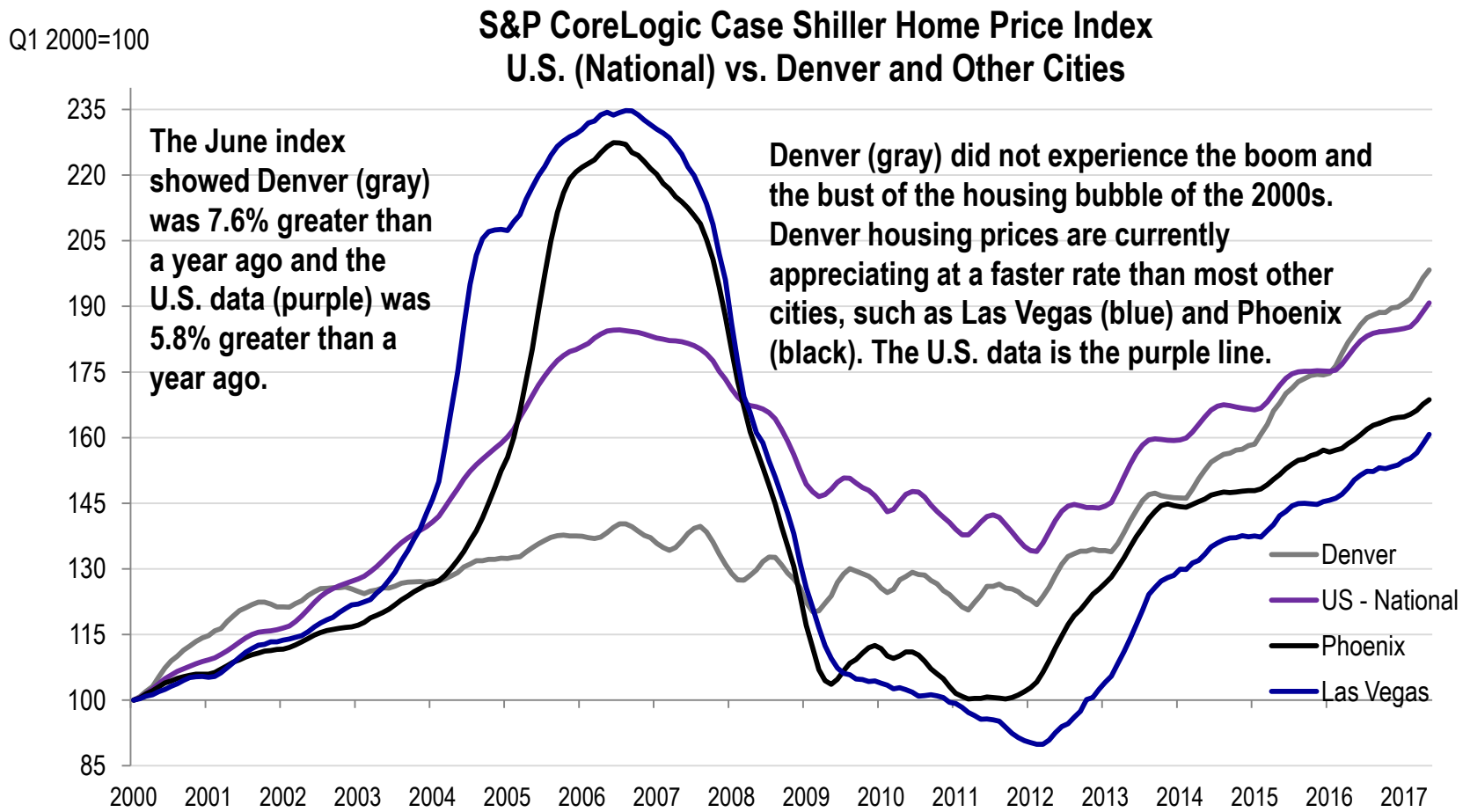
Colorado Residential Building Permits - Valuation



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

Case Shiller Home Price Index

National vs. Denver (Colorado)



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

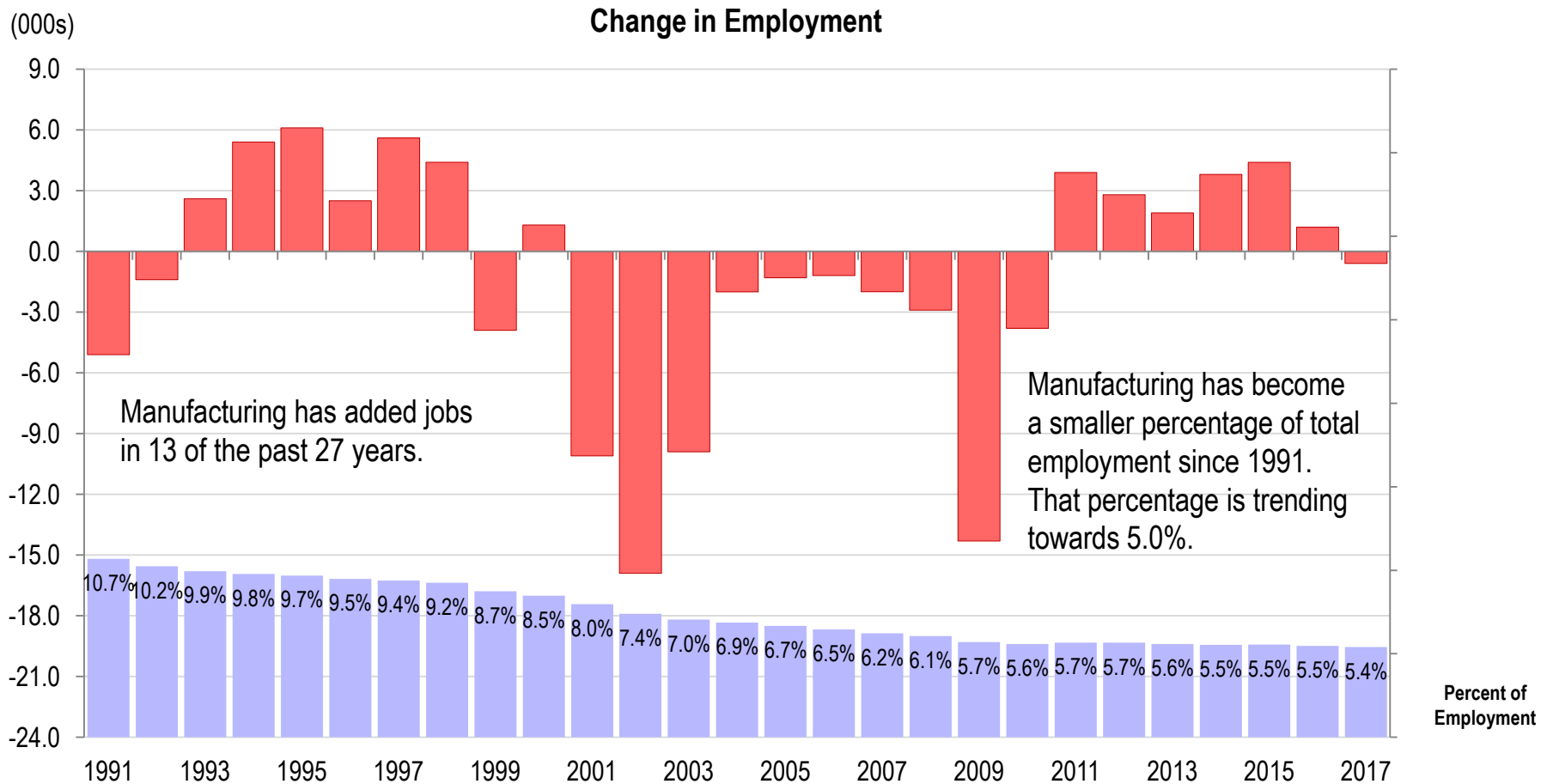


Key Sectors and Trends to Watch

Manufacturing

Change in Employment/Percent of Total Employment

Manufacturing

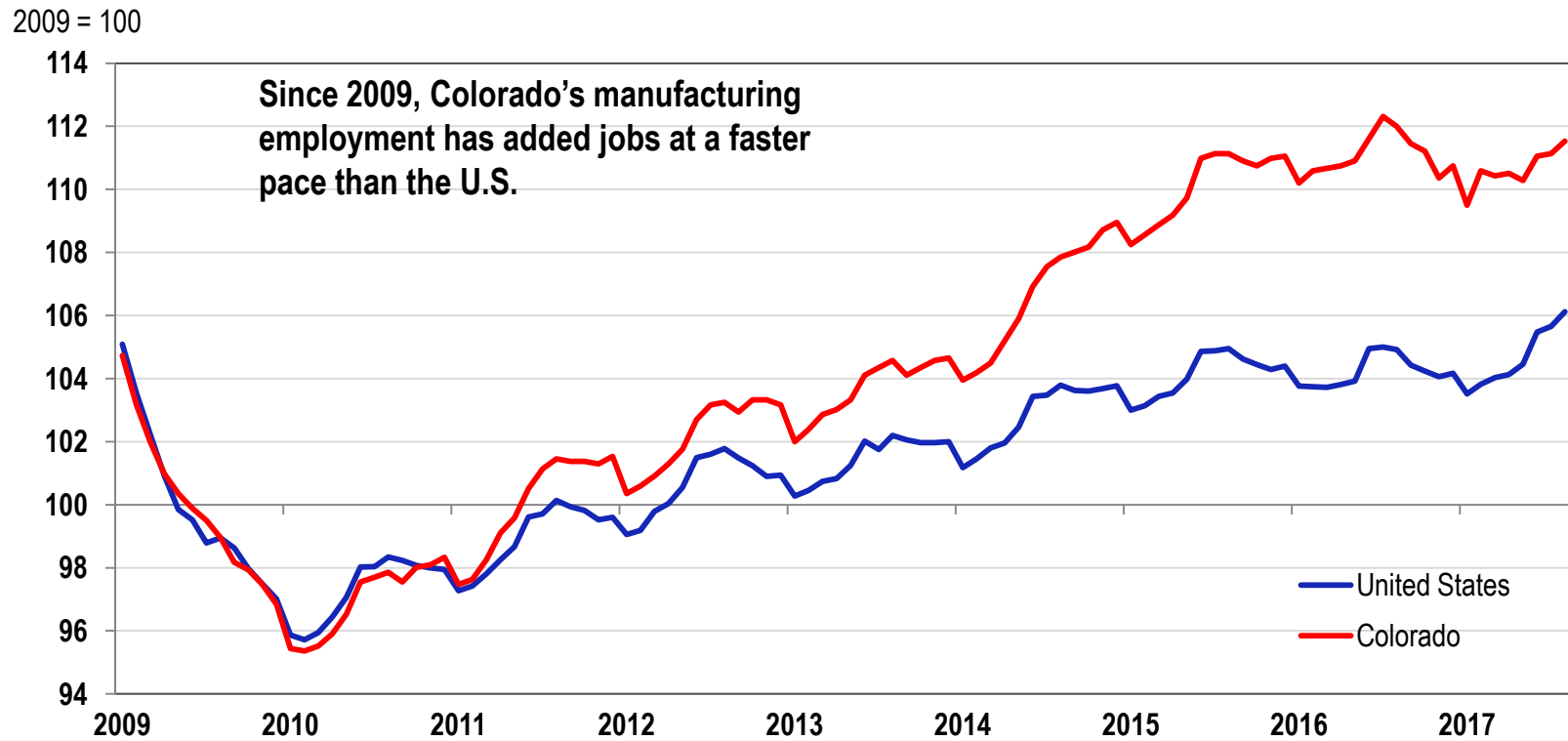


Source: Bureau of Labor Statistics, cber.co.

Index of Employment

Colorado vs. U.S. Manufacturing

Index of Employment 2009 to 2017



Source: Bureau of Labor Statistics.

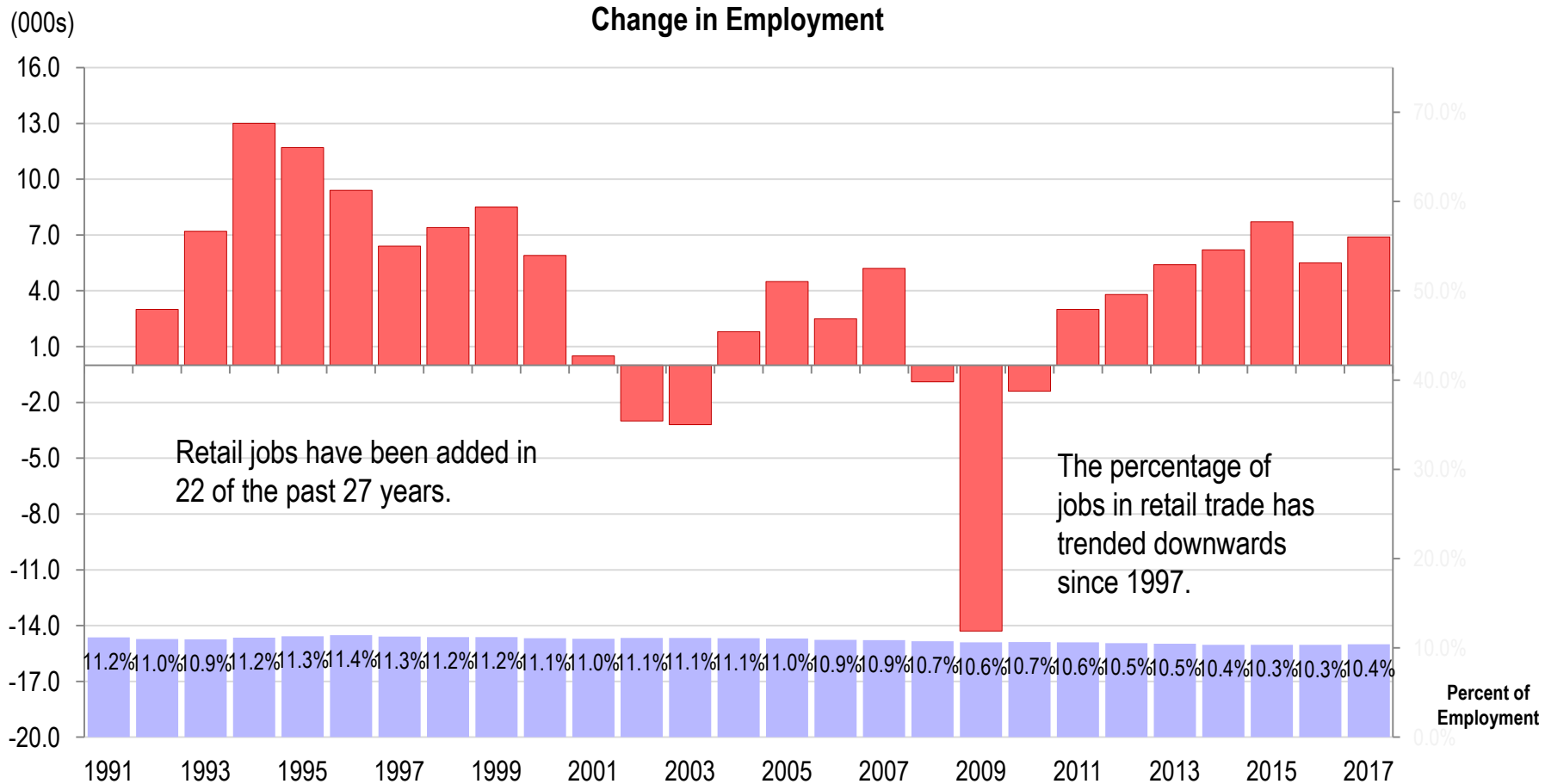


Key Sectors and Trends to Watch

Retail, New and Used Car Registrations, and DIA

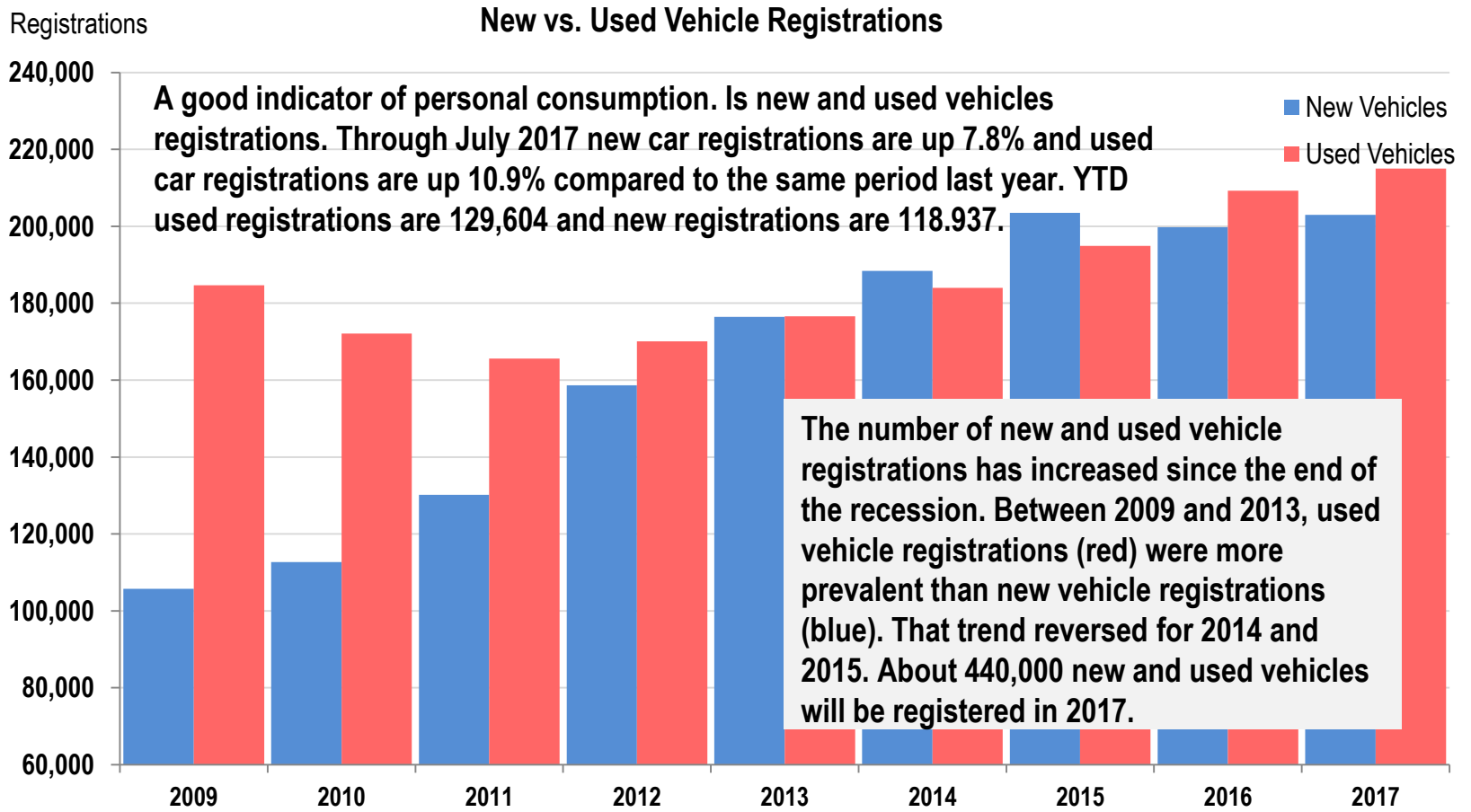
Change in Employment/Percent of Total Employment

Retail



Source: Bureau of Labor Statistics, cber.co.

Colorado New and Used Vehicle Registrations



Source: Colorado Auto Dealers Association, cber.co.

DIA Passengers



Source: flydenver.com, cber.co.



The Colorado Economy

Summary

Colorado Summary

There are times when the activity on the street sums up the economy better than the data. September 2017 is one of those months.

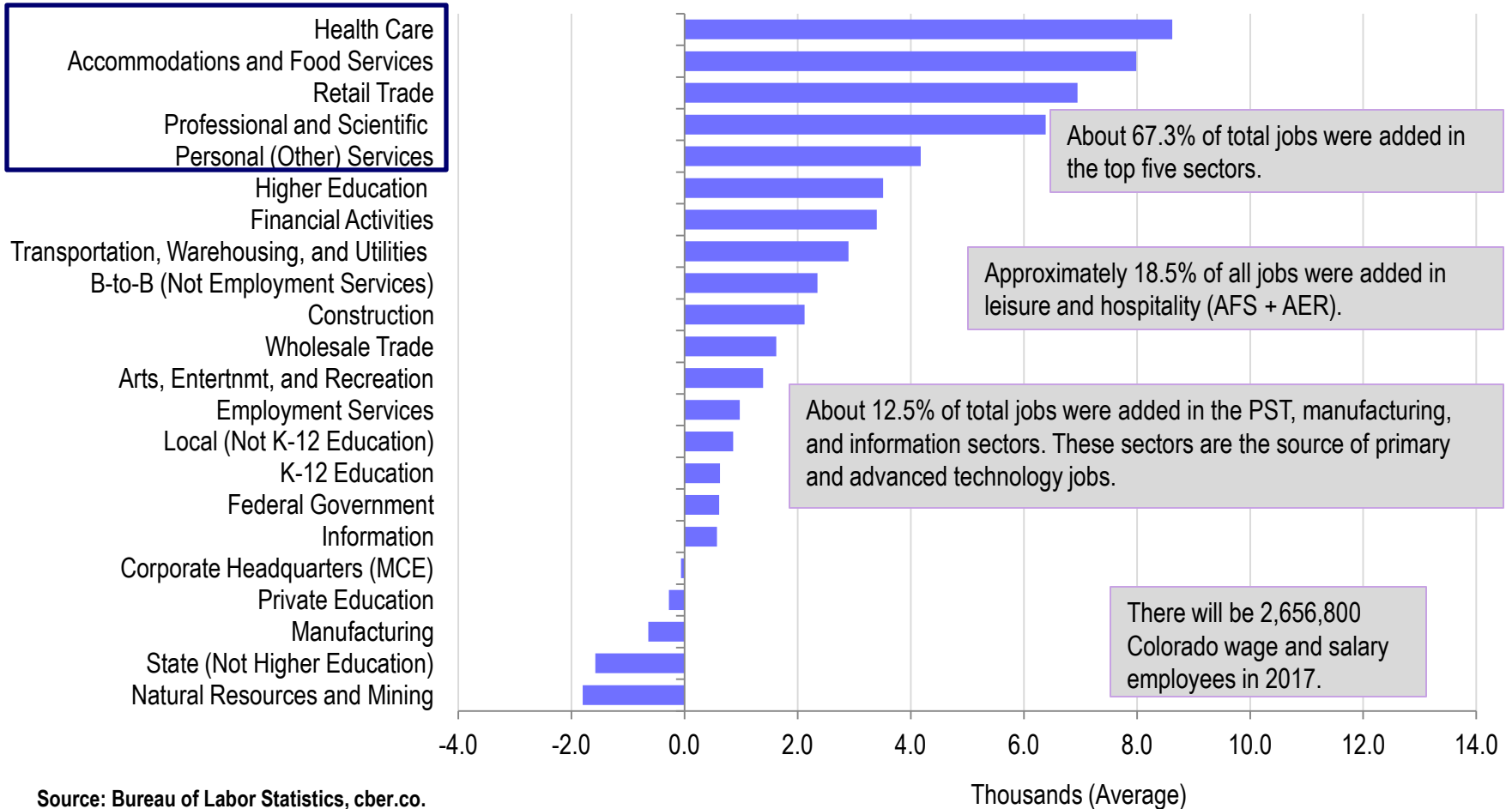
- Ikea made it official – the retailer has submitted plans to the City and County of Broomfield. Ikea's second store in Colorado is planned to open in 2019.
- The Colorado Department of Transportation will pair with Hyperloop One to conduct a feasibility study of a route between Cheyenne and Pueblo. The route covers 360 miles and includes 10 urban centers.
- Denver economic development and business leaders will be pursuing a bid for the Amazon's second headquarters. You can see the RFP at <http://cber.co/economic-updates/>. How will Denver fare?

There is a reason business leaders in other parts of the country have interest in the state – the Colorado economy is on solid footing and business leaders are optimistic about the future!

Job Changes

2017 YTD Through August

Job Change All Sectors



Source: Bureau of Labor Statistics, cber.co.

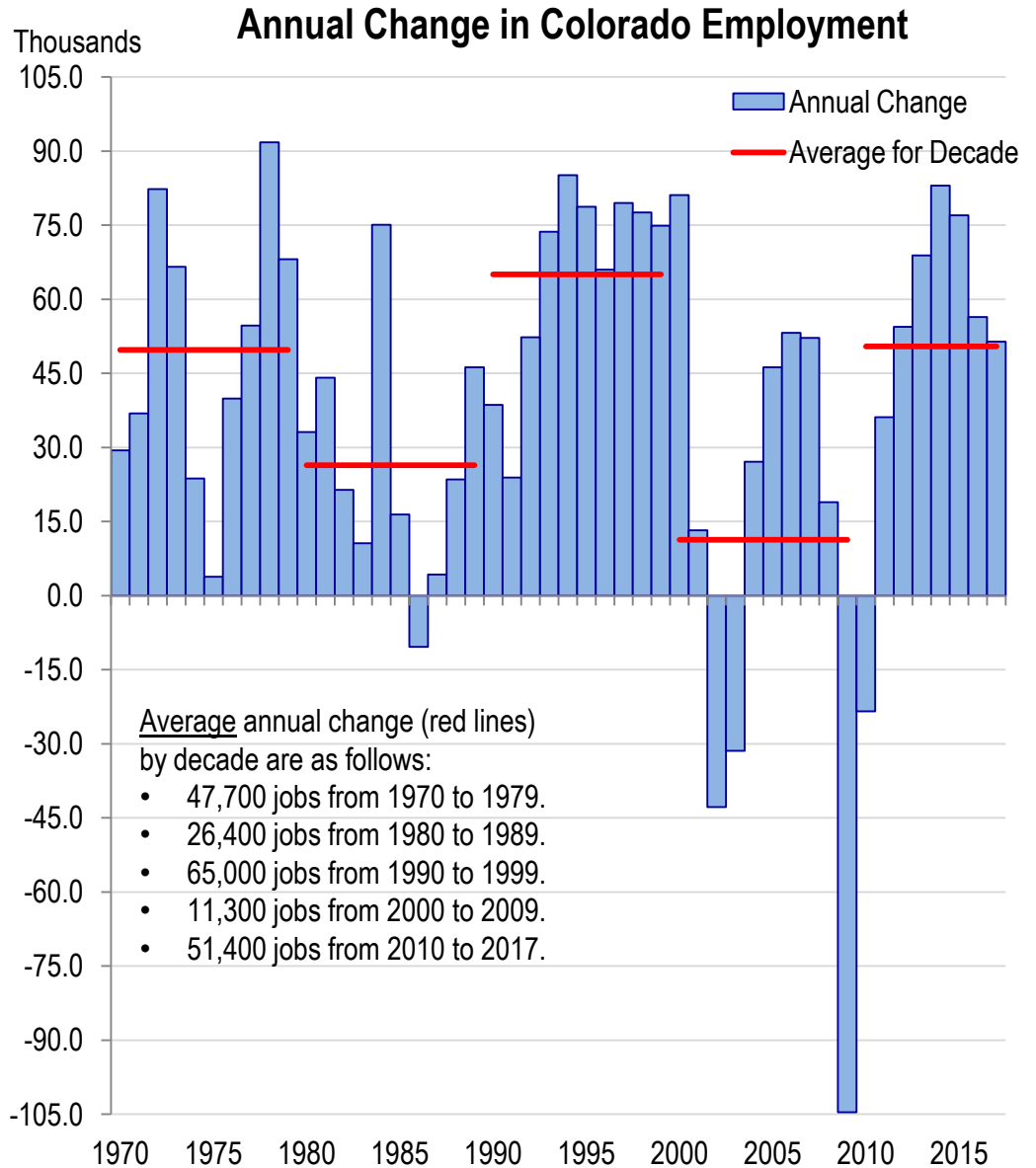
Annual Employment Change in Colorado

For the first 7 years of this decade (2010 to 2017), Colorado added an average of 50,700 jobs.

Colorado added 77,000 jobs in 2015 and 56,400 jobs in 2016.

Through August 2017, the state is on track to add 50,700 jobs, an increase of 2.0%.

The lack of qualified workers is preventing the economy from expanding at a faster rate.



Source: Bureau of Labor Statistics, cber.co.



Review of Colorado Economy and Employment Data Through August 2017

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.

ABOUT THE AUTHOR

Gary Horvath has produce 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.

In addition, 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, which is part of OEDIT’s early stage and proof of concept programs.