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Colorado Economic Forecast 2018

Colorado-based Business and Economic Research
Prepared
January 12, 2018

Overview of Forecast

This chartbook provides a series of graphs, charts, discussions, and data that tell the story about what will drive changes in the Colorado and United States economy in 2018. This information is divided into the sections listed below.

Global and U.S. Economy

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  - Housing Prices and Mortgage Rates
  - Construction
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The Colorado Economy

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The Global and U.S. Economy

The Global and U.S. Economy

Summary of Key Data – United States and Global Economies

Summary of Key Data

United States and Global Economies

United States

Real GDP – In 2018, annual real GDP growth will be stronger than 2017. It will be in the 2.3% to 2.7% range.

Real Personal Consumption – Annual personal consumption will be in the 2.3% to 2.7% range for 2018.

U.S. Employment – The U.S. will add between 158,000 to 175,000 jobs per month, or 1.9 to 2.1 million jobs in 2018.

Unemployment Rate – Average 2017 unemployment was 4.4%; look for 3.9% to 4.3% in 2018.

Consumer Price Index – The CPI is estimated to be 2.1% in 2017 and 2.3% in 2018.

Corporate Profits – The most recent corporate profits, for July 2017, were up 9.8% compared to July 2016.

Price of a Barrel of Oil (WTI) – Oil closed the year at $60 per barrel. It will be in the $55 to $65 range for 2018.

Case Shiller Housing Prices – YOY U.S. home prices for October were +6.2%. Appreciation is trending upwards.

Standard and Poor's 500 – The S&P 500 posted a gain of 19.4% in 2017. For the near-term, the bull will continue to run in 2018.

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Global GDP

Global and Category Real GDP Growth

Global 3.0%
Mature 2.1%
Emerging 3.8%
The global, mature, and emerging economies will post real GDP growth for 2018 similar to 2017.

Mature Economies (2.1%)

U.S. 2.6%
Japan 1.0%
Eurozone 1.9%

Emerging Economies (3.8%)

Sub-Saharan Africa 2.7%
Russia, Central Asia and Southern Europe 2.5%
Latin America 1.6%
India 6.5%
China 3.9%
Middle East and North Africa 2.7%

Source: The Conference Board.

The Global Economy

Real Gross Domestic Product

Global Real GDP Growth

The global real GDP forecast is based on the Conference Board global forecast. TCB is more conservative than the popular IMF forecast.

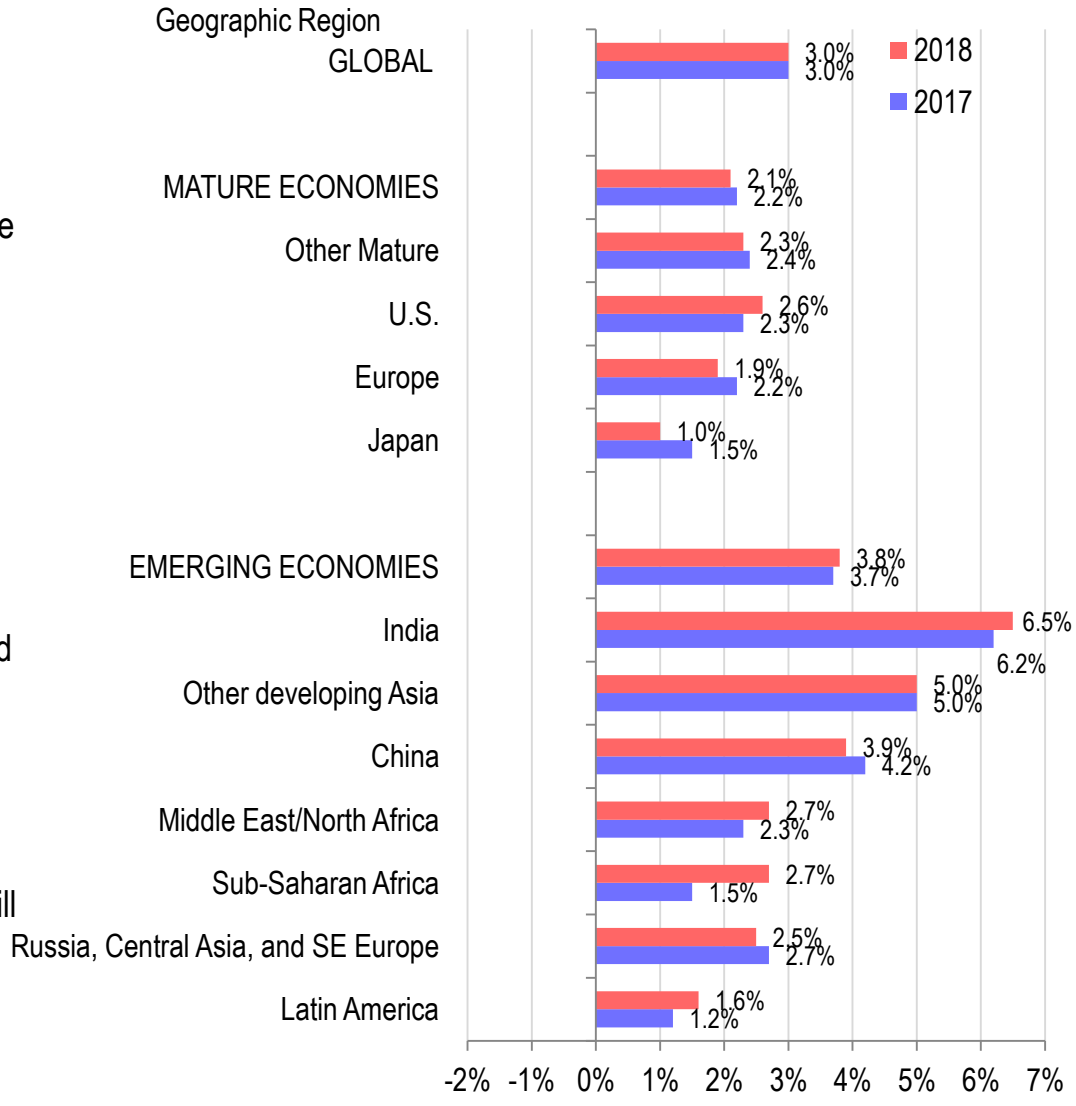
Real GDP growth for 2018 vs. 2017 will be:

- 3.0% global growth, similar to 2017.
- 2.1% mature economies, down from 2.2%.
- 3.8% emerging economies, up from 3.7%.

Mature – The U.S. will lead growth in the mature economies at 2.6%. Japan will experience weak growth and Germany will lead the Eurozone.

Emerging - In 2018, the Chinese economy is expected to grow at 3.9%. India will lead the region with a 6.5% rate of growth. The Latin America economy turned positive in 2017; it will post stronger gains in 2018.

Real GDP Growth 2017 vs. 2018



Source: The Conference Board (December, 2017), cber.co.

The U.S. Economy

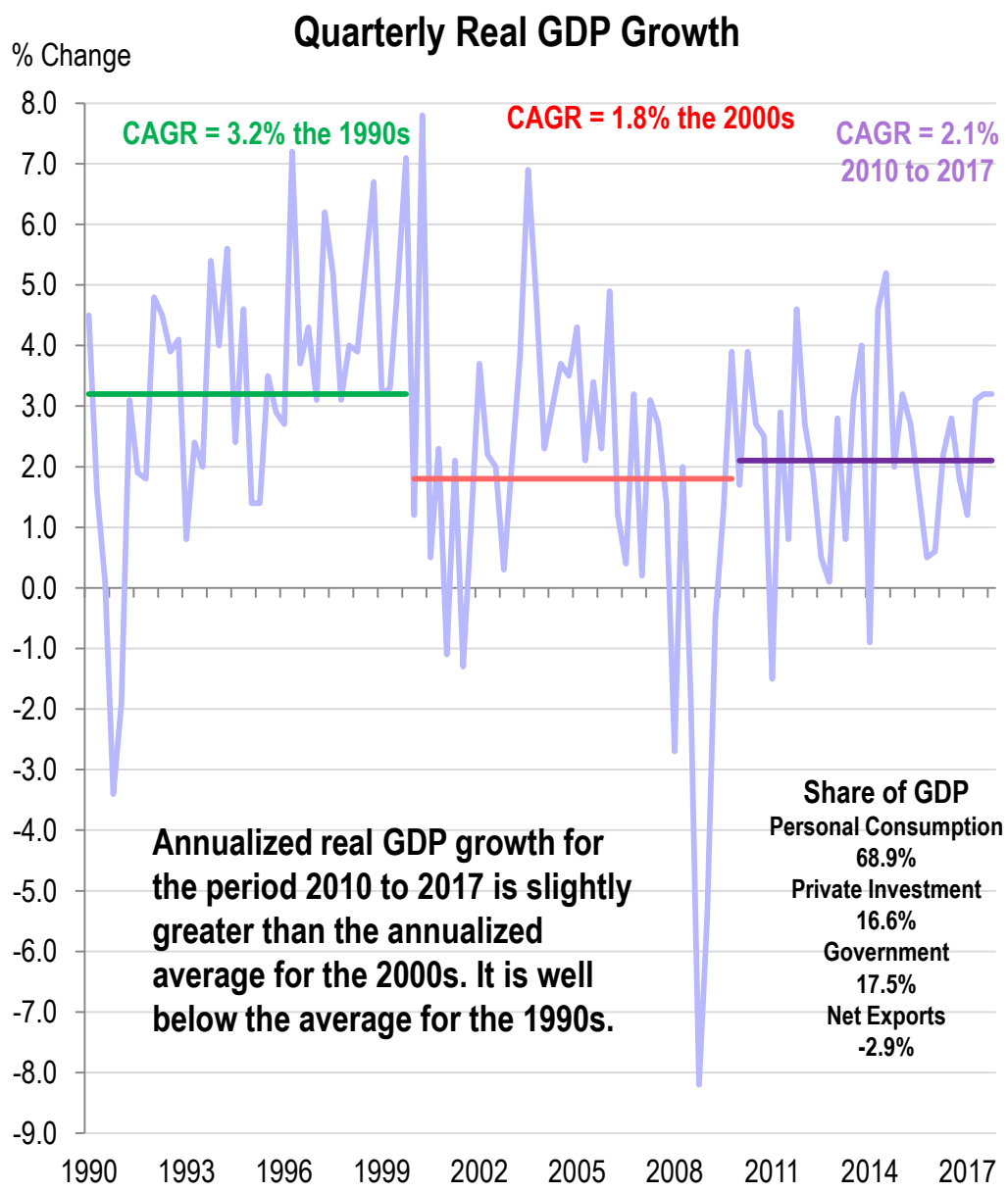
Real Gross Domestic Product

Quarterly Real GDP Growth Historical United States

Between 2010 and 2017, real GDP growth has ranged from 1.6% to 2.6%. The rate of growth in 2018 is projected to be in the range of 2.3% to 2.7%. The most likely rate of growth will be 2.5% with greater upside potential than downside risk.

The 2017 cber.co forecast was for U.S. real GDP growth to be 2.1% to 2.5%. Preliminary estimates are that it will be 2.3% or 2.4%.

Historical annualized real GDP growth is:
- 1990s 3.2% (green line).
- 2000s 1.8% (red line).
- 2010 to 2017 2.1% (purple line).



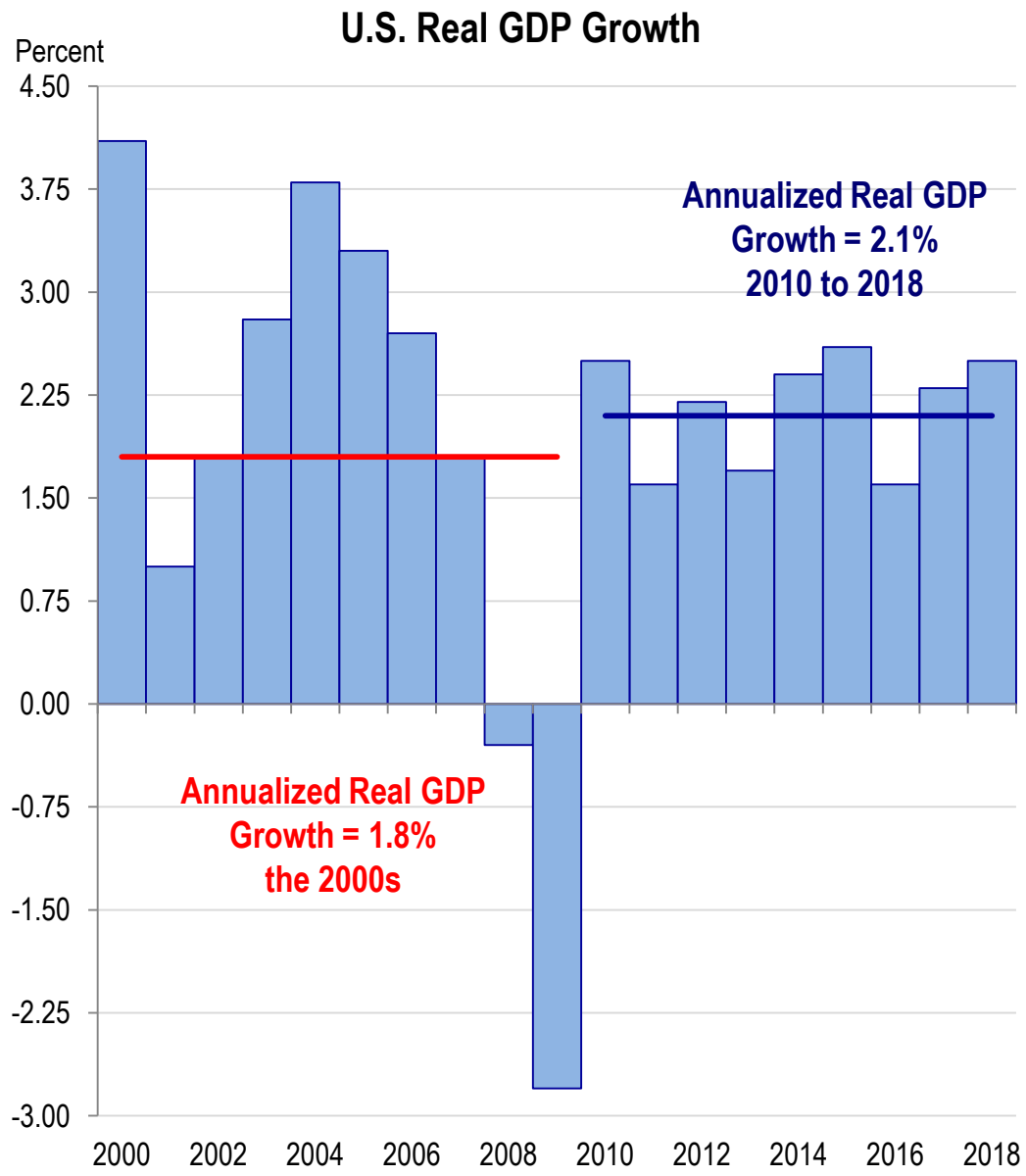
Source: Bureau of Economic Analysis, cber.co, Note GDP chained on 2009.

U.S. Real GDP Growth
C+I+G+X

Real GDP will grow at a rate between 2.3% to 2.7% in 2018.

- As is usually the case, personal consumption will drive real GDP growth. It will increase by 2.3% to 2.7%.
- With the passage of the tax reform, business investment will increase by 4.3% to 4.7%
- Government spending will increase by 0.6% to 0.8%.
- The trade deficit will increase by 3.0% to -$630 billion.

GDP = Consumption + Private Investment + Government Spending + Net Exports



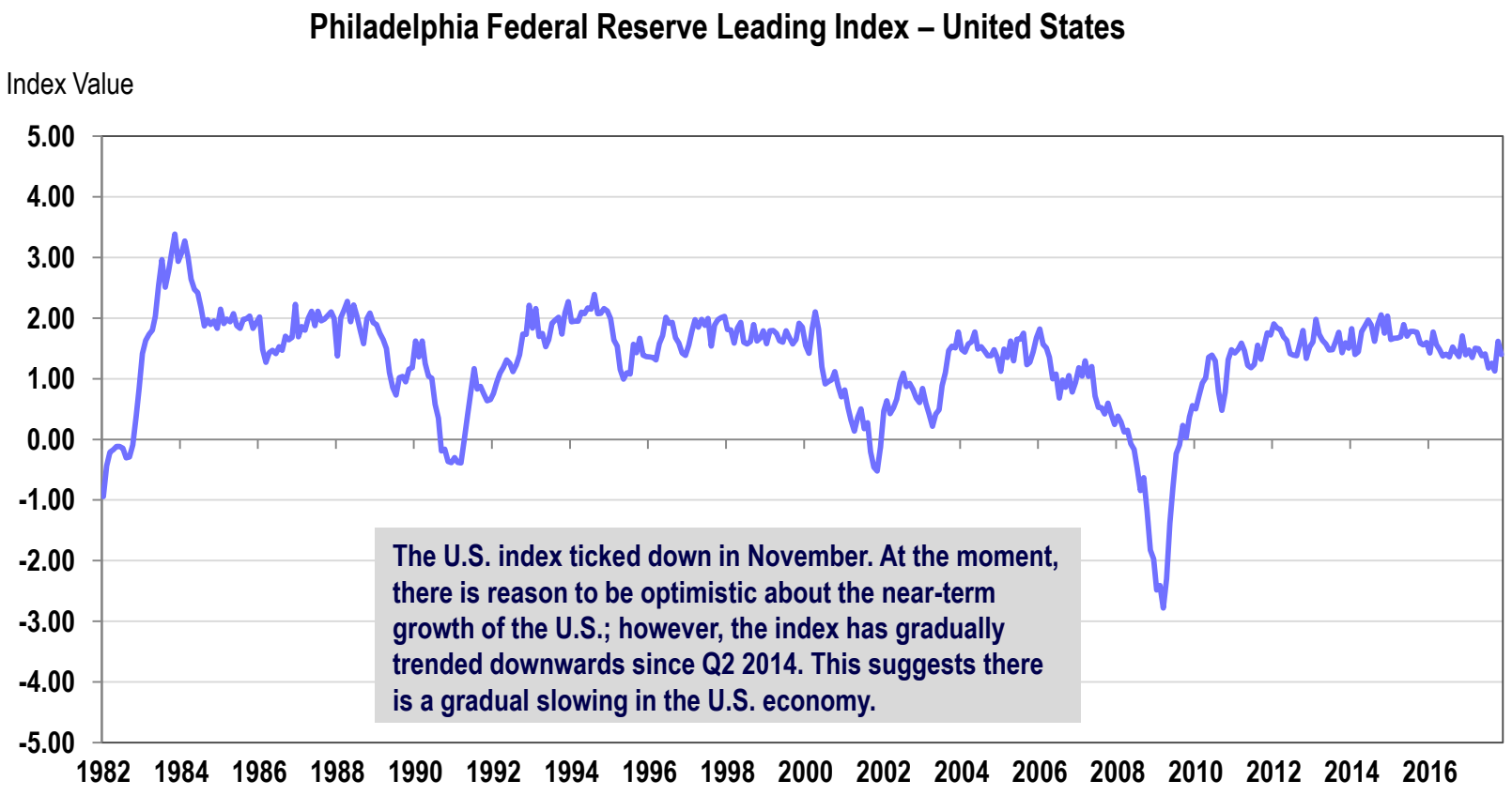
Source: Bureau of Economic Analysis, cber.co, chained in 2009 dollars.

The U.S. Economy

Leading and Coincident Indices

Philadelphia Fed Leading Index

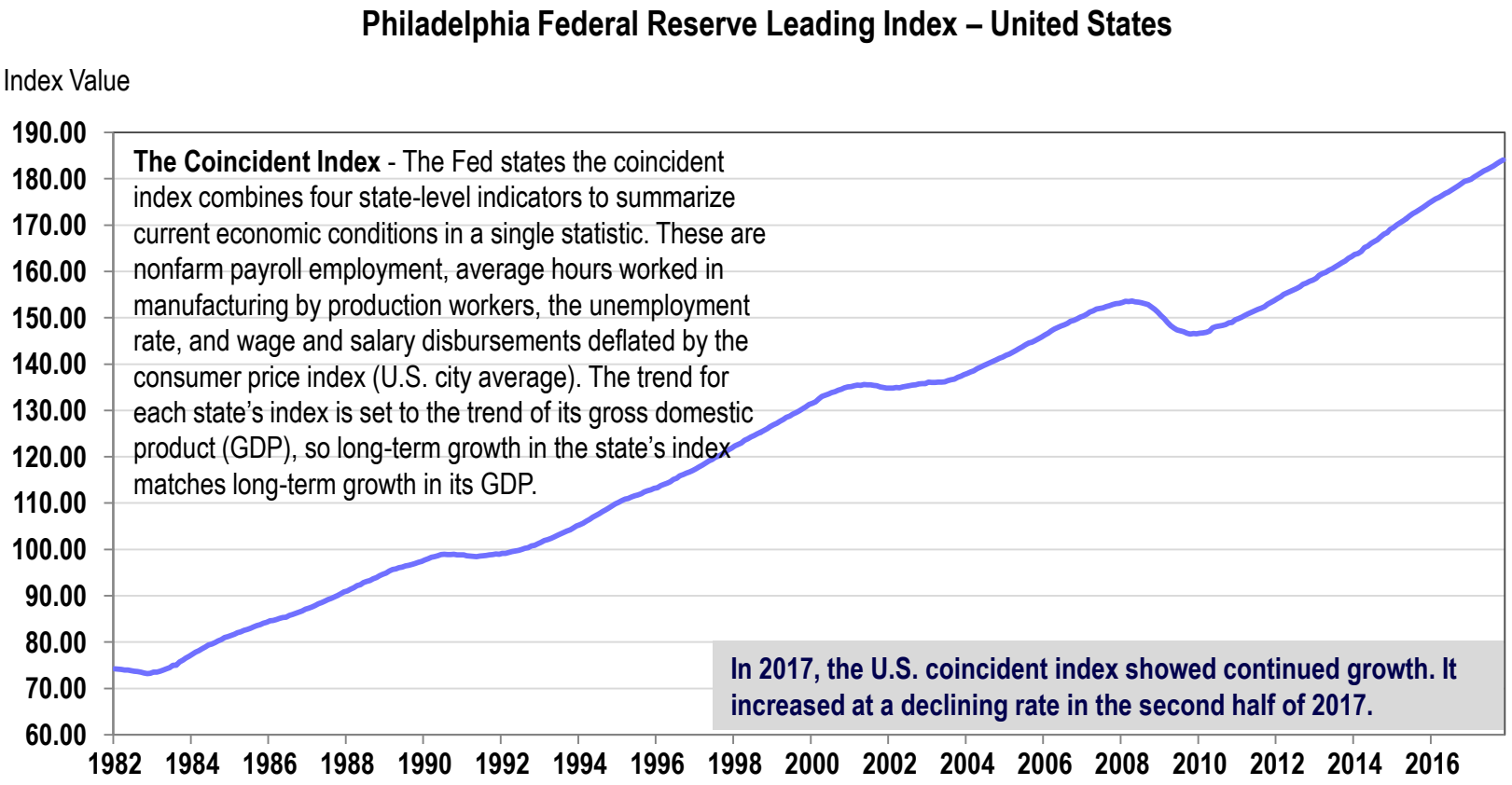
United States



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.

Philadelphia Fed Coincident Index

United States



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.

The U.S. Economy

The R Word

The R Word

Don't Panic - Yet! It Will Happen Soon Enough

When is the next recession?

Recently, economists and members of the media have raised the question, "When is the next recession?"

This has been a popular topic because the current business cycle is mature. In addition, jobs are being added at a slower pace, interest rates are increasing, there is a shortage of labor, wage growth has been weak, and there is a high level of uncertainty with the leadership of the country.

Admittedly, there are challenges that are preventing the economy from growing at a faster pace, but at the moment there is little to suggest a recession will occur within the next year. While it is possible that terrorist attacks, natural disasters, or extended political unrest could cause a downturn, such events cannot be predicted.

How Does our Current Situation Compare to Other Expansions?

A look at past recessions shows the U.S. economy is closing in on the longest time frame for an expansion. NBER shows the longest expansion lasted 120 months, from March 1991 to February 2001.

The current expansion began in June 2009. It has lasted 103 months, including December 2017.

The R Word

Length of Cycles

Length of Cycles

Peak Date/Quarter	Trough Date/Quarter	Contraction Peak to Trough	Expansion Previous Trough to this Peak	Peak from Previous Peak	Trough from Previous Trough
August 1957 (III)	April 1958 (II)	8	39	49	47
April 1960 (II)	February 1961 (I)	10	24	32	34
December 1969 (IV)	November 1970 (IV)	11	106	116	117
November 1973 (IV)	March 1975 (I)	16	36	47	52
January 1980 (I)	July 1980 (III)	6	58	74	64
July 1981 (III)	November 1982 (IV)	16	12	18	28
July 1990 (III)	March 1991(I)	8	92	108	100
March 2001(I)	November 2001 (IV)	8	120	128	128
December 2007 (IV)	June 2009 (II)	18	73	81	91
Through Dec 2017			103		

Source: NBER, cber.co.

Why This Data is Important to Colorado

Global and U.S. Real GDP and Leading Indices

- Despite the saber rattling, there will be solid real GDP growth in most mature and emerging economies around the world.
- The Leading and Coincident Indices, produced by the Philadelphia Federal Reserve, suggest the U.S. will continue to see steady economic growth in 2018. There is also a chance there may be a slightly slowdown in growth.

The major take-away from the data in this section is that the fundamentals of the global and U.S. economy are currently solid enough that a recession is unlikely in 2018. In other words, Colorado should benefit from solid international and domestic growth.

The U.S. Economy
Employment and Unemployment

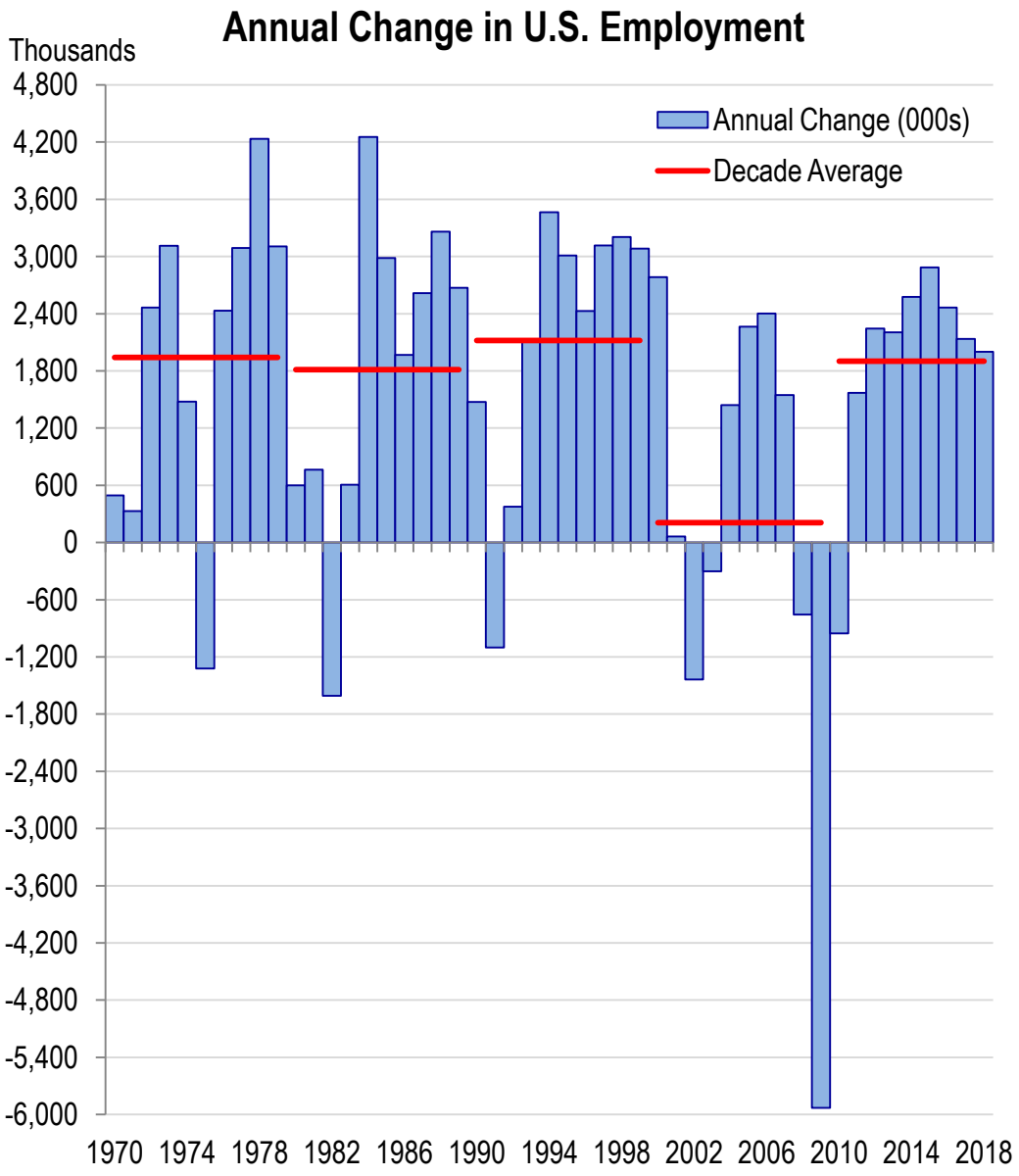
Annual Change in U.S. Employment

The U.S. added slightly more than 2.1 million jobs in 2017. Between 1.9 million and 2.1 million jobs will be added in 2018.

The average absolute change in employment for the 2010s is similar to the 1970s and 1980s and much greater than the 2000s.

The average annual change (red lines) by decade follows:

- 1.9 from 1970 to 1979.
- 1.8 from 1980 to 1989.
- 2.1 million from 1990 to 1999.
- 0.2 million from 2000 to 2009.
- 1.9 million from 2010 to 2018 (9 years).



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

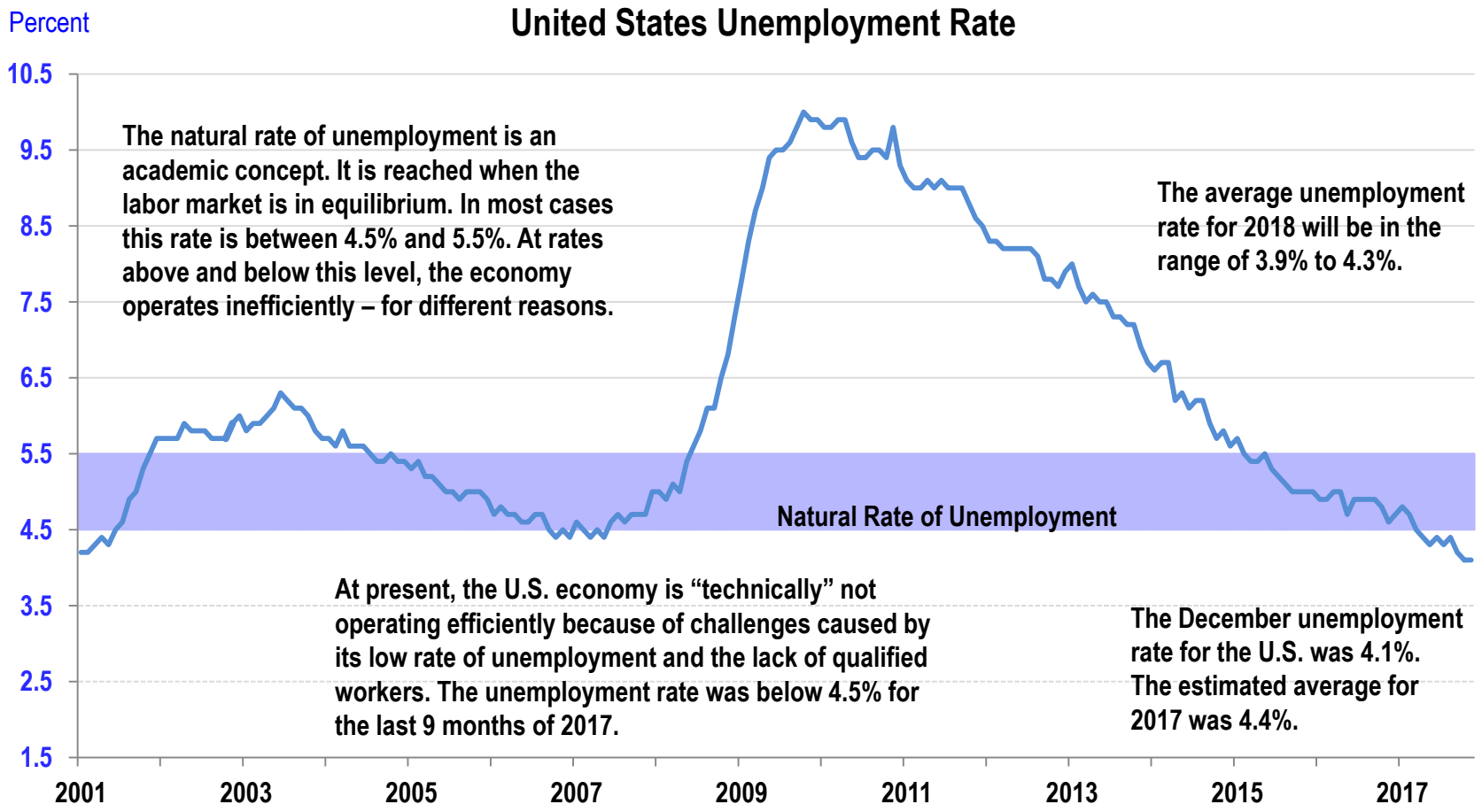
Change in United States Employment

Year-Over-Year

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

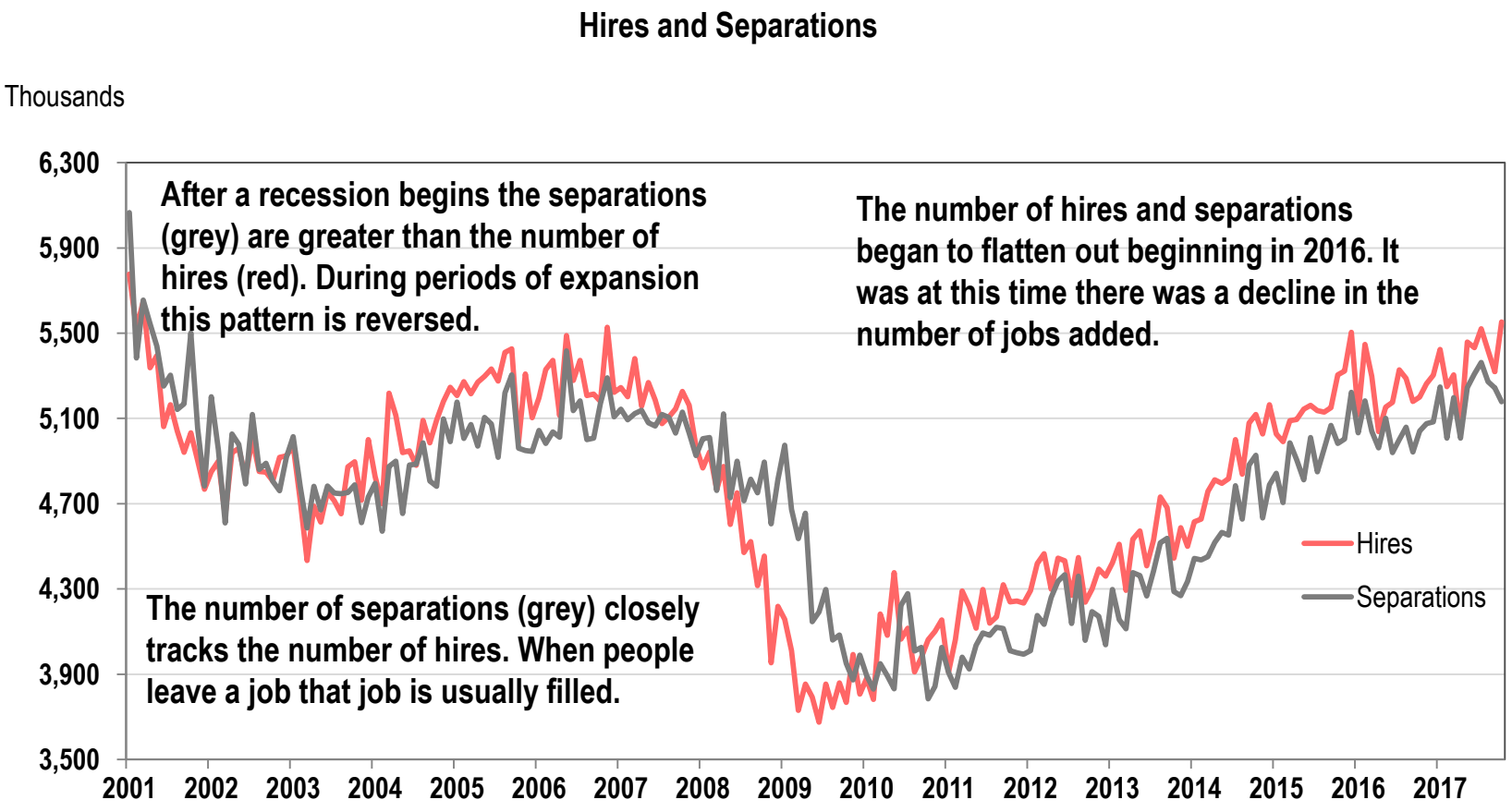
Unemployment Rate

United States



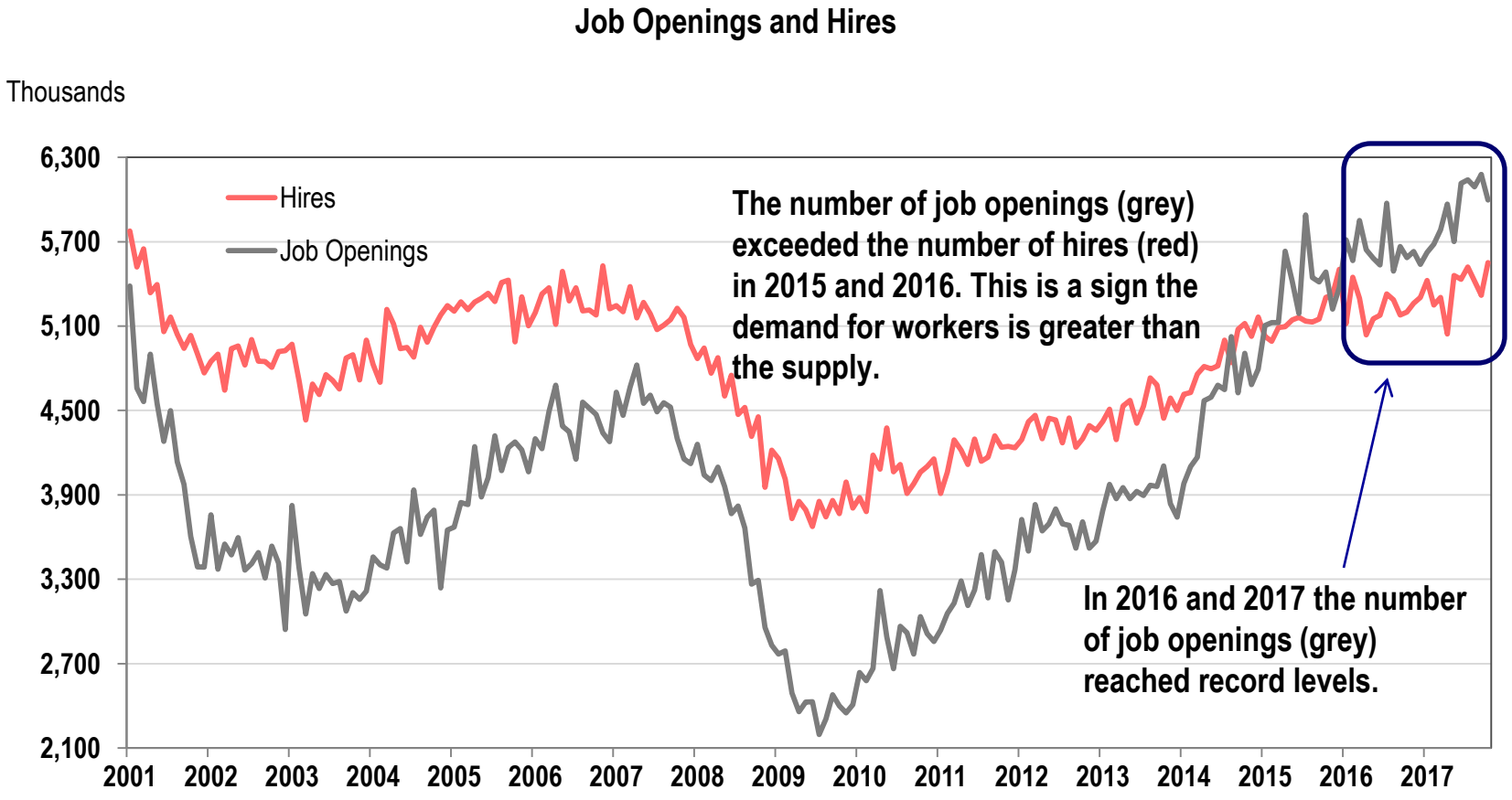
Source: Bureau of Labor Statistics, SA, cber.co.

U.S. Hires and Separations



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

U.S. Job Openings and Hires

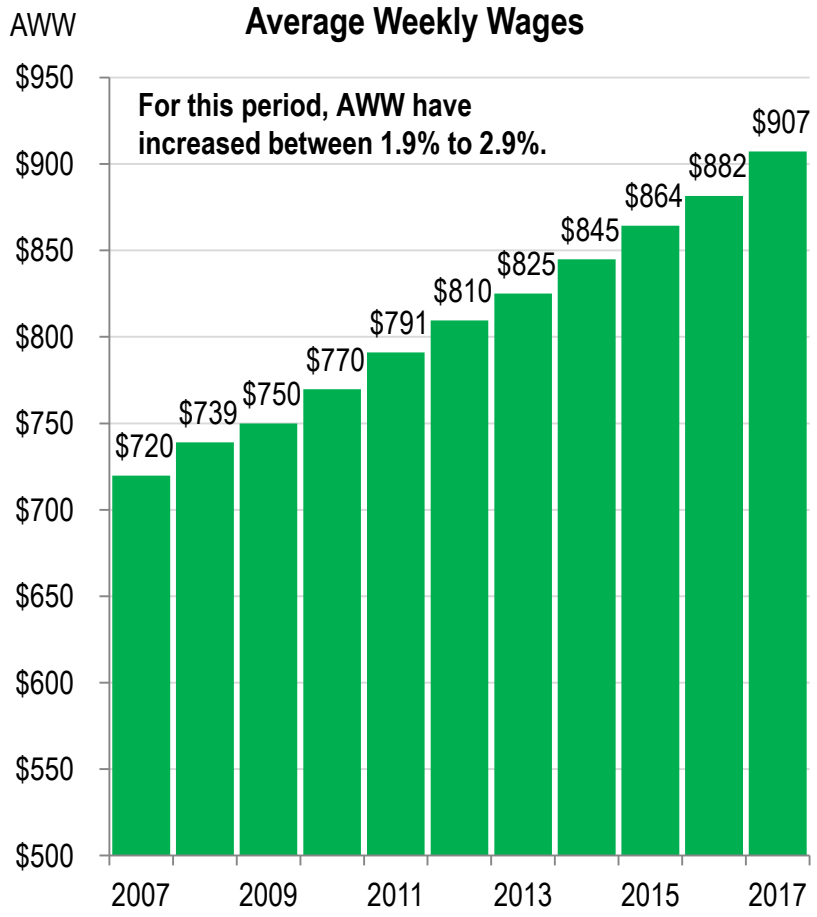


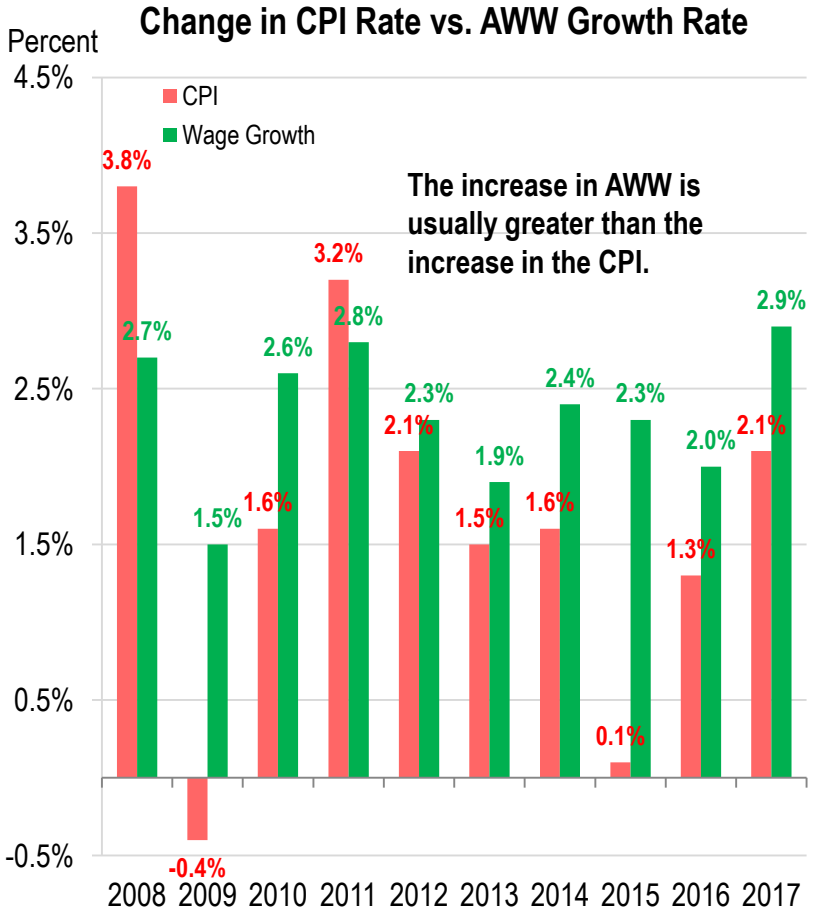
Source: Bureau of Labor Statistics, SA, cber.co.

The U.S. Economy

Earnings, Real Median Household Income, and Productivity

U.S. Average Weekly Wage Growth



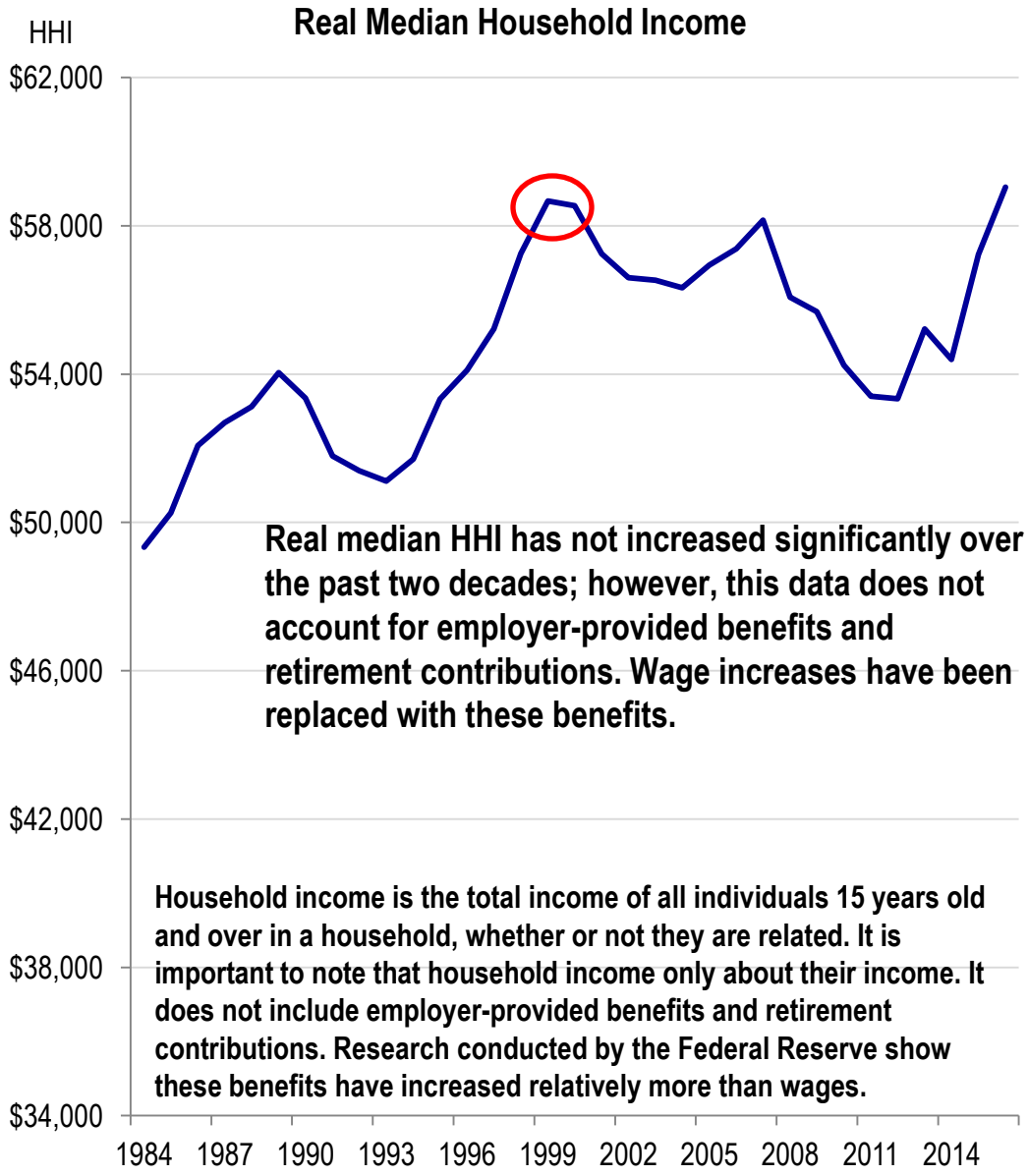


Source: Bureau of Labor Statistics, SA, cber.co. Note: Wages do not include benefits.

Real Median Household Income (CPI-U-RS Adjusted Dollars, Not Seasonally Adjusted)

The most current household income data shows that in 1999 (red circle) U.S. real median household income was $374 less than 2016 ($58,685 vs.$59,039).

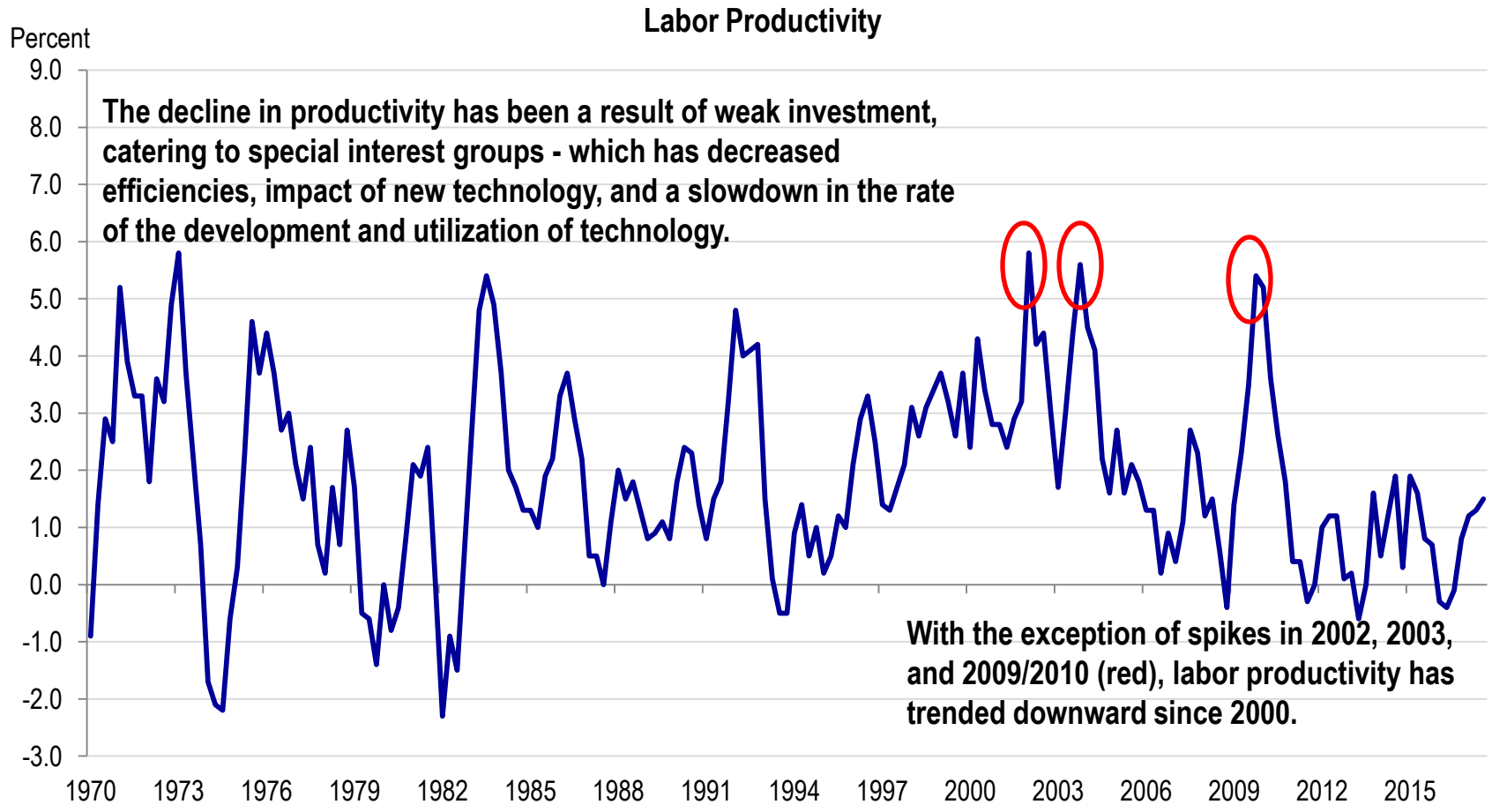
In the 31 years between 1984 and 2015, real median household income increased at an annualized rate of 0.56%.



Source: Federal Reserve, FRED, cber.co

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.

Why This Data is Important to Colorado

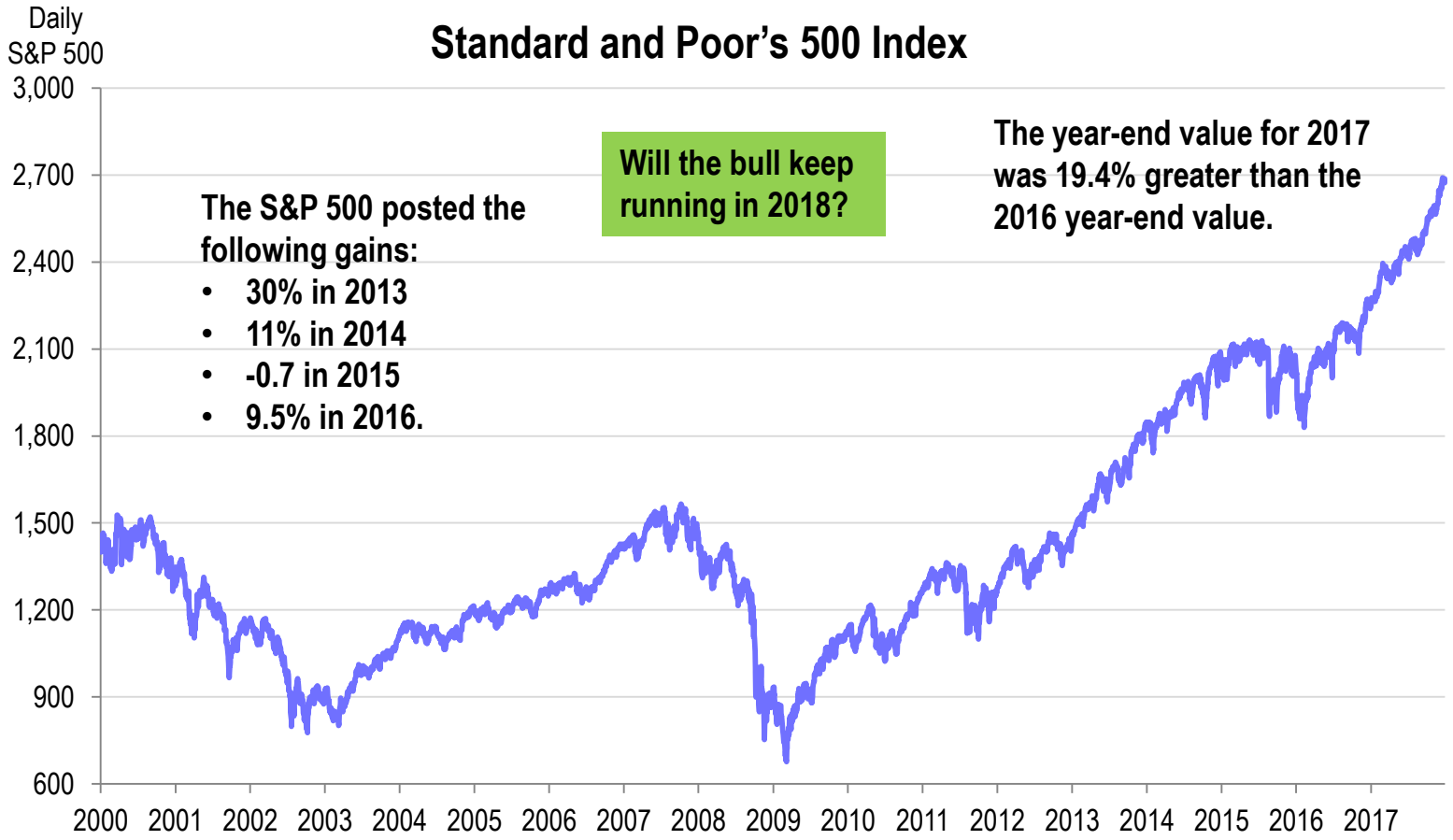
Employment; Unemployment; Hires, Separations, and Openings; Wages; and Productivity

- The U.S. experienced solid, but slightly slower job growth in 2017.
- For most of 2017, job growth was constrained by the lack of qualified workers who lived in the location where jobs were being added.
- In 2016, the number of openings, hires, and separations began to flatten out. As a result, employment growth increased at a declining rate.
- Average U.S. wages have increased since the end of the Great Recession. Generally, they have increased at a rate greater than inflation. The wage data does not account for employer contributions to benefit programs for workers.
- The decline in labor productivity continues to be a concern.
- These trends will continue in 2018.
- This data suggests that U.S. jobs will be added at a steady pace in 2018. That pace is likely to be slower than 2017, but we are not headed for a recession – yet. This applies to the U.S. and Colorado.
- Colorado Inflation does not follow the national trend – it typically increases at a greater rate. Since the end of the Great Recession, inflation has been greater than wage growth in Colorado.

United States Economy

S&P Performance and Volatility, Corporate Profits, the Price of Oil, and Inflation

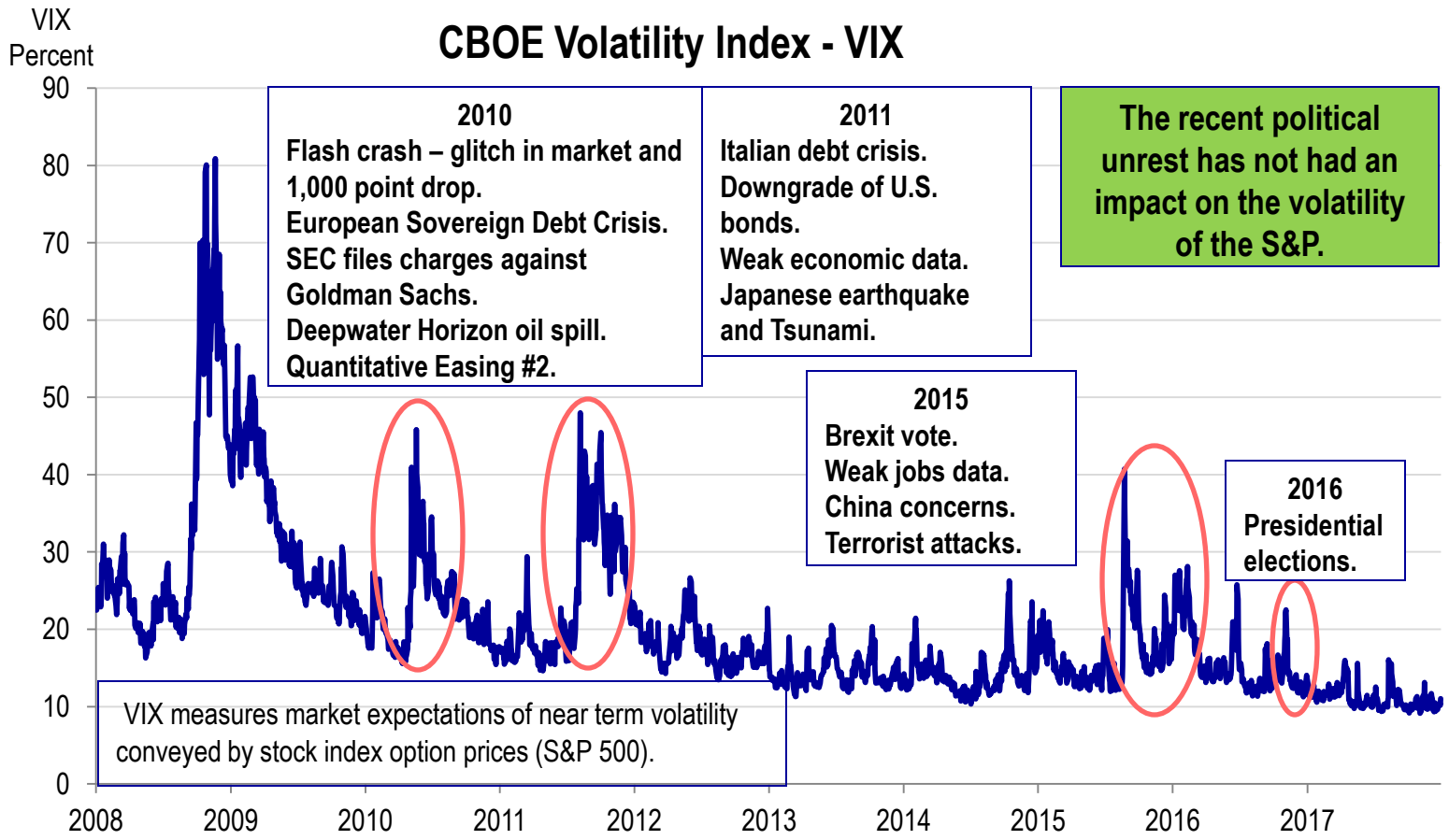
Standard and Poor's 500 Index



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

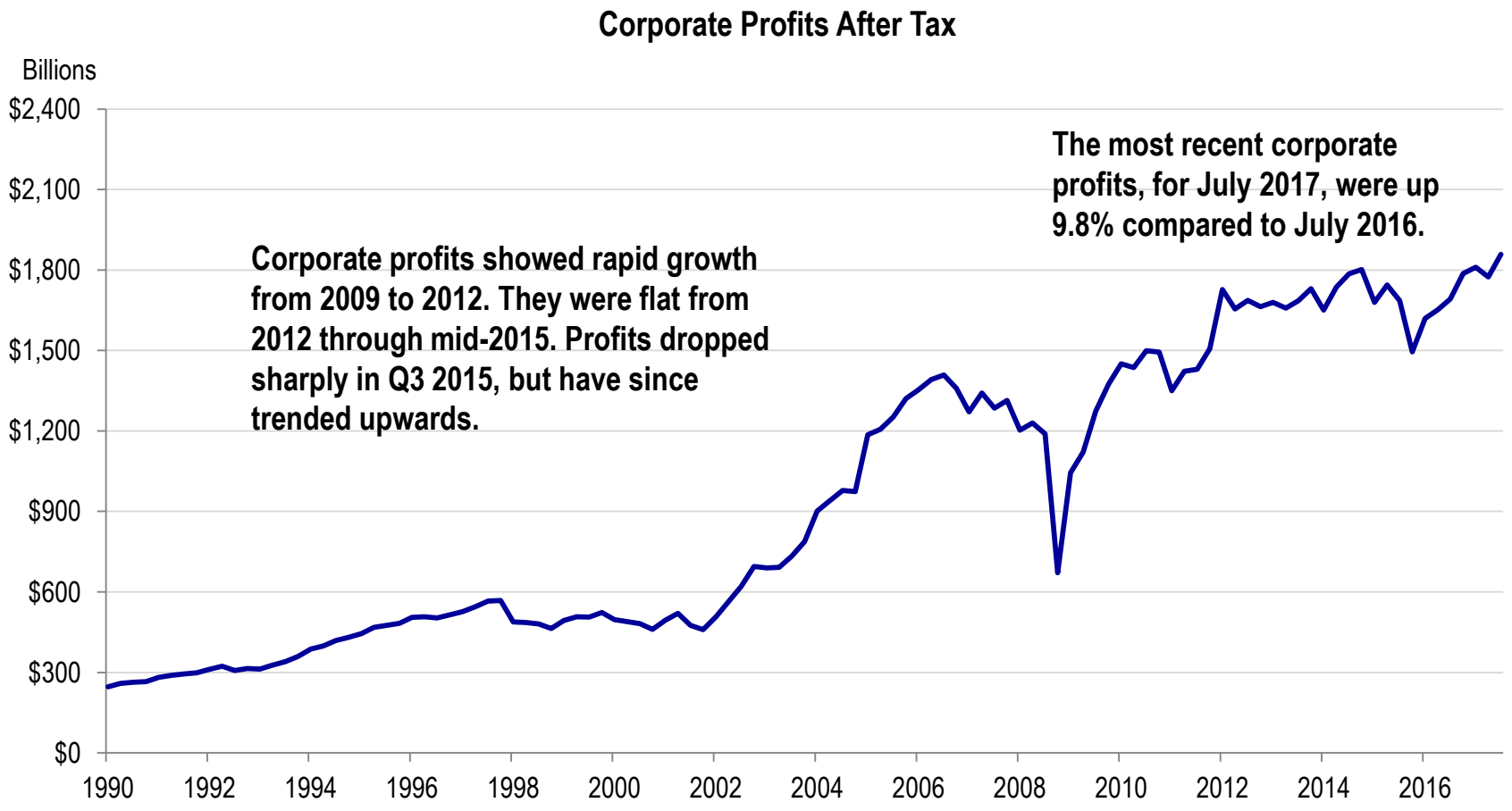
CBOE Volatility Index

VIX (VIXCLS)



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

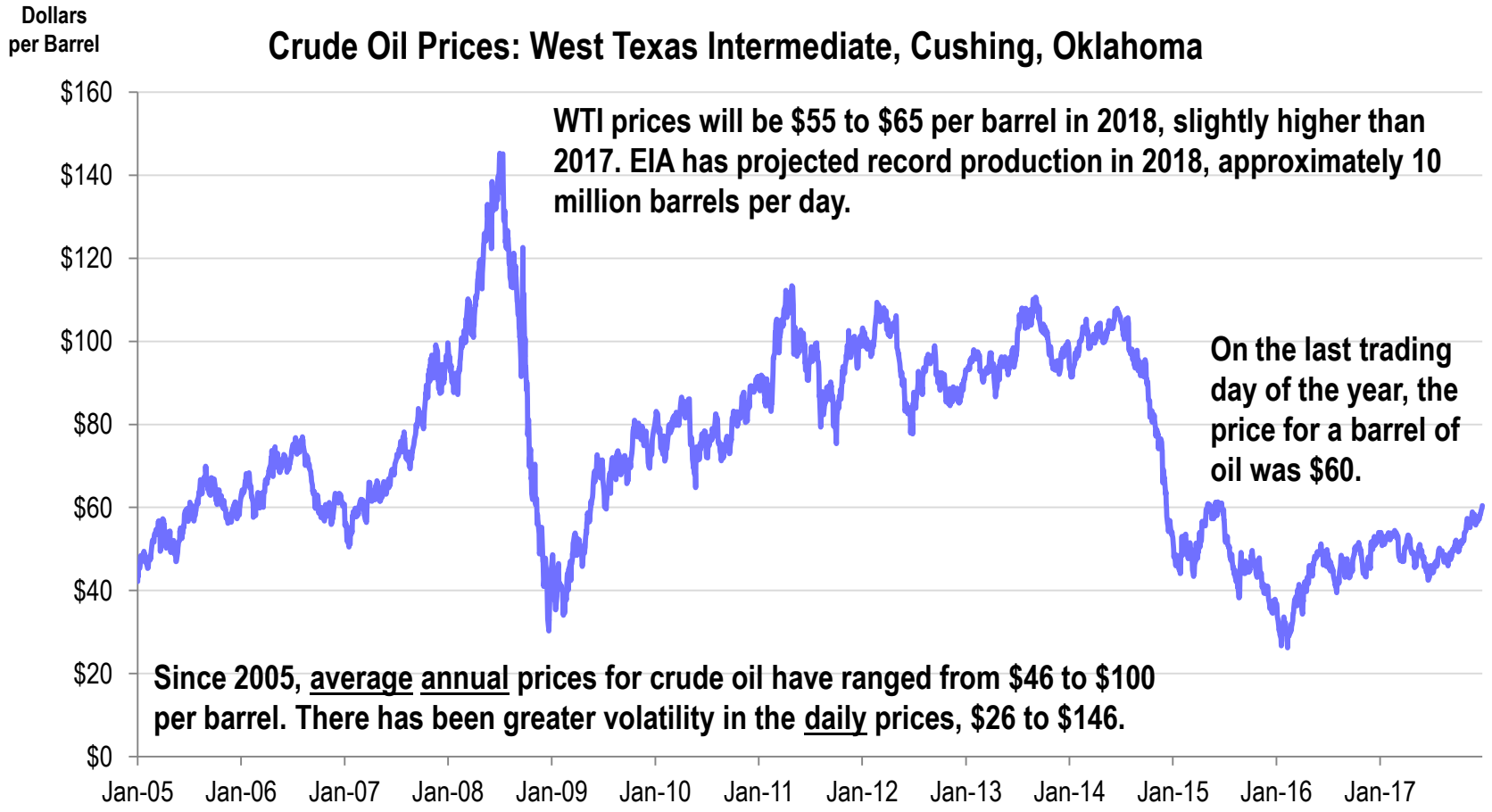
Corporate Profits After Tax (without IVA and CCAdj)



Source: FRED, BEA, cber.co.

Crude Oil Prices

West Texas Intermediate



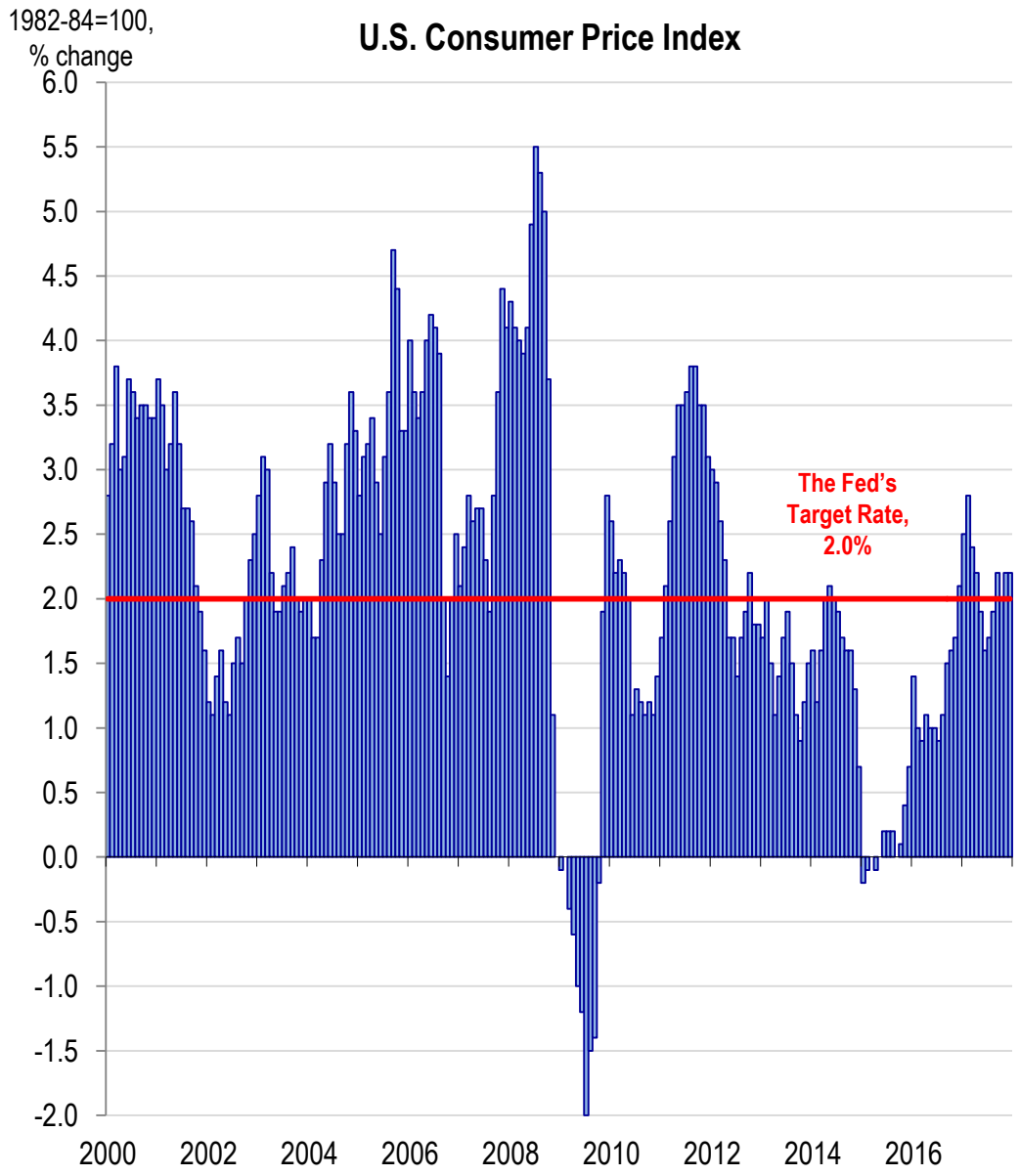
Source: FRED, EIA, cber.co.

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.

Why This Data is Important to Colorado

S&P Performance and Volatility, Corporate Profits, the Price of Oil, and Inflation

The following are highlights from the data:

- Changes in the equity markets can increase or decrease investor wealth and consumer confidence.
- The lack of volatility in the VIX index and the increase in corporate profits show the discord in society has not had a negative impact on the way business was conducted in 2017.
- Corporate profits increased in 2017.
- Consumers will see an increase in the price at the pump.
- There will be record oil production in 2018.
- U.S. Inflation will remain near the Fed's target rate.

This data suggests that in 2018, Colorado should benefit in the following ways:

- Companies will be financially stronger and able to pay higher wages and increase their business investments.
- Consumer and business confidence will remain positive.
- Record oil production will result in increased severance taxes. This will benefit state and local governments.

On the other hand:

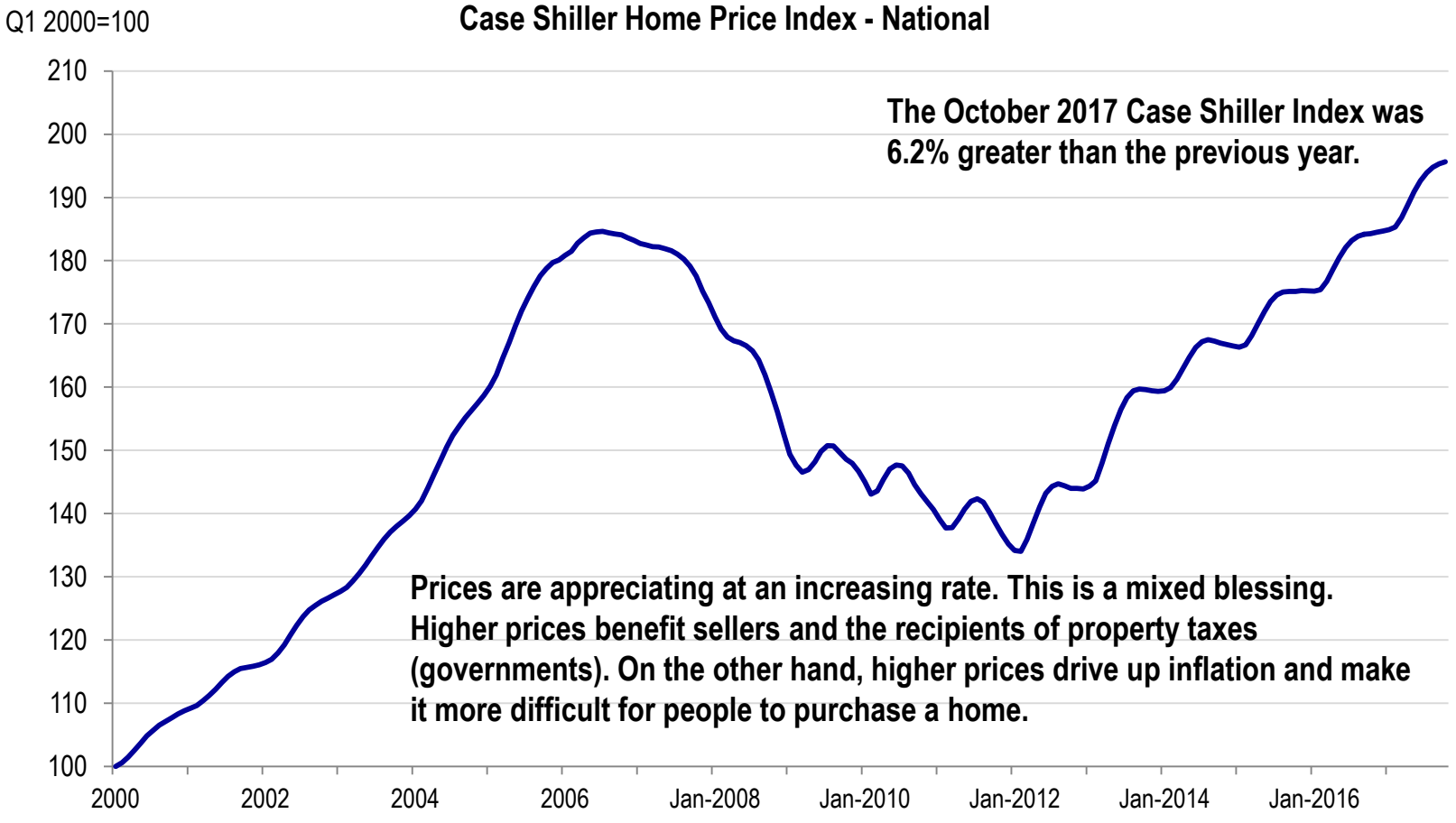
- It will be more costly to live in Colorado than the U.S.
- Inflation will be driven higher by prices at the pump, increased housing costs, and higher interest rates.

The U.S. Economy

Housing Prices and Mortgage Rates

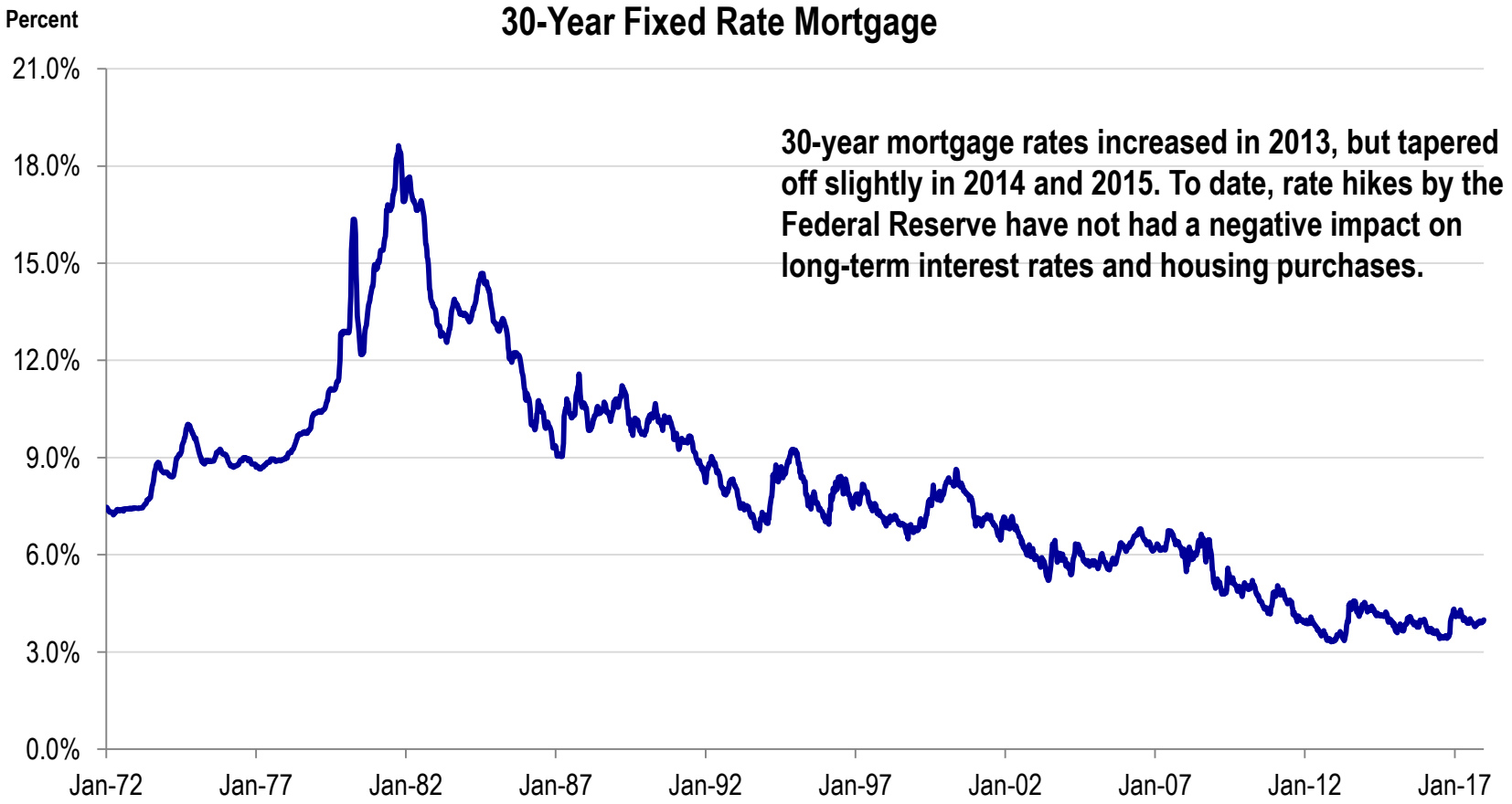
Case Shiller Home Price Index

National Index



Source: S&P Case-Shiller.

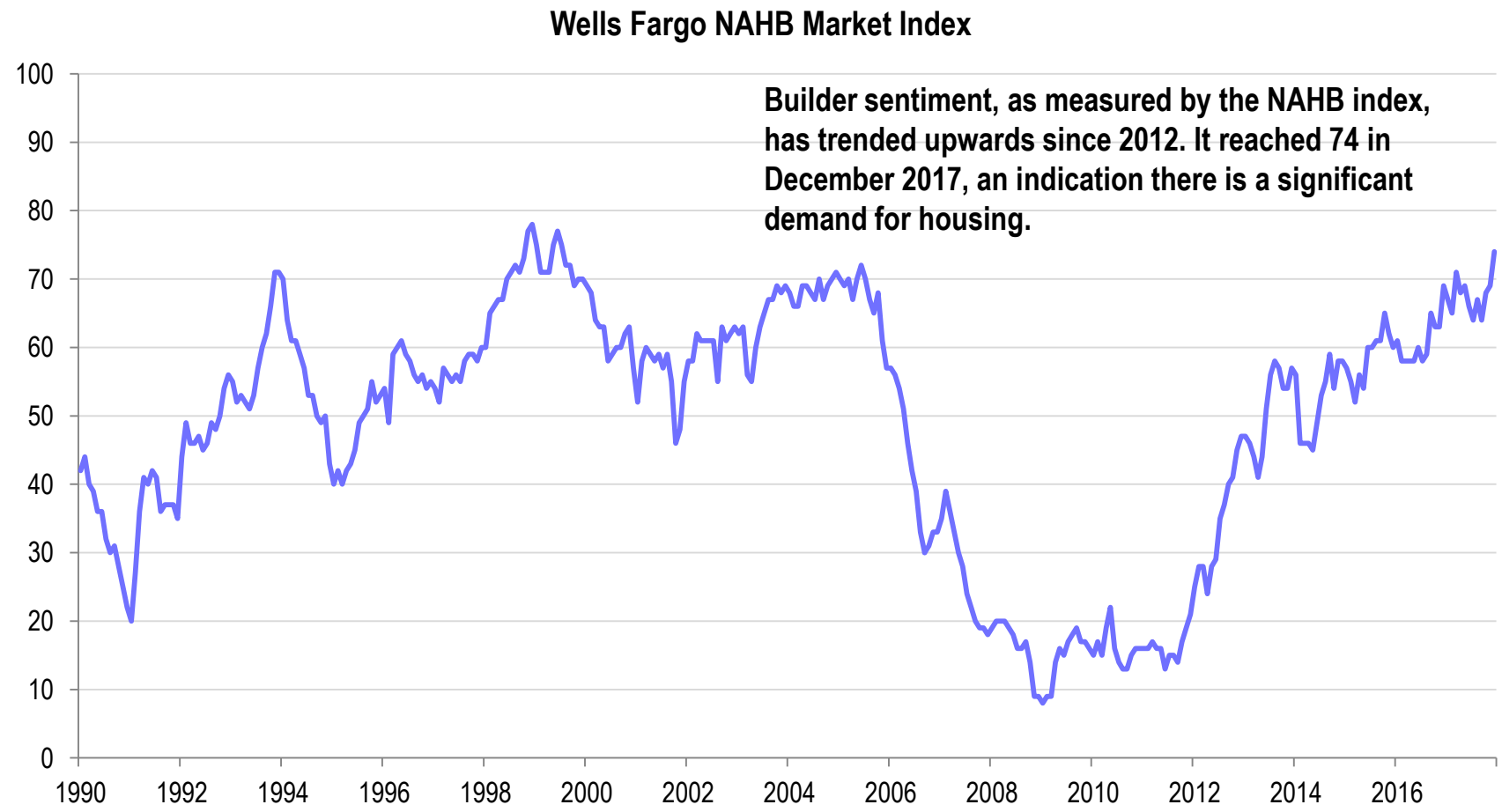
30-Year Fixed Rate Mortgage



Source: FRED, Freddie MAC, cber.co.

The U.S. Economy
Construction

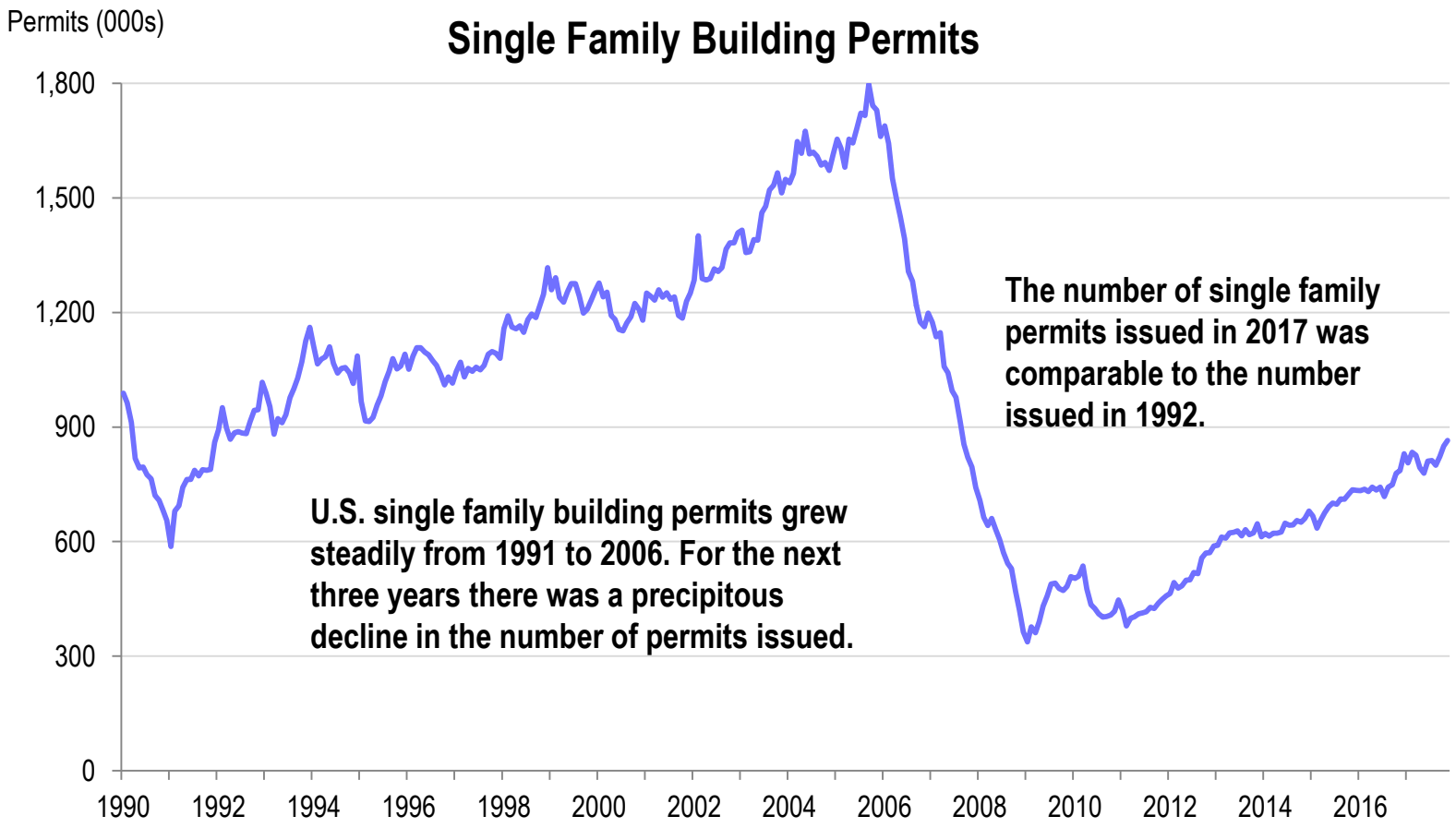
Wells Fargo NAHB Market Index



Source: NAHB, cber.co.

New Single Family Building Permits

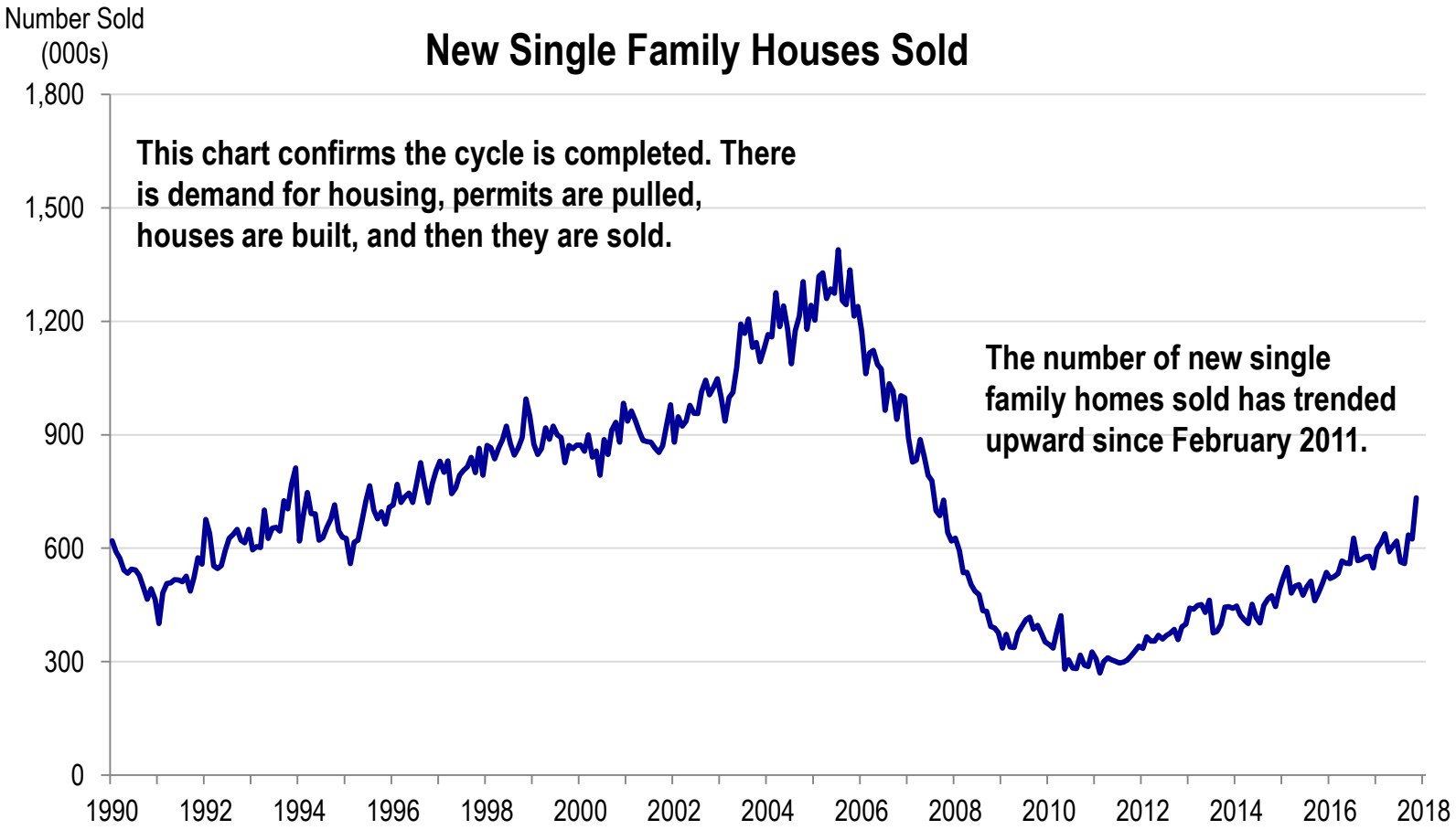
United States



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

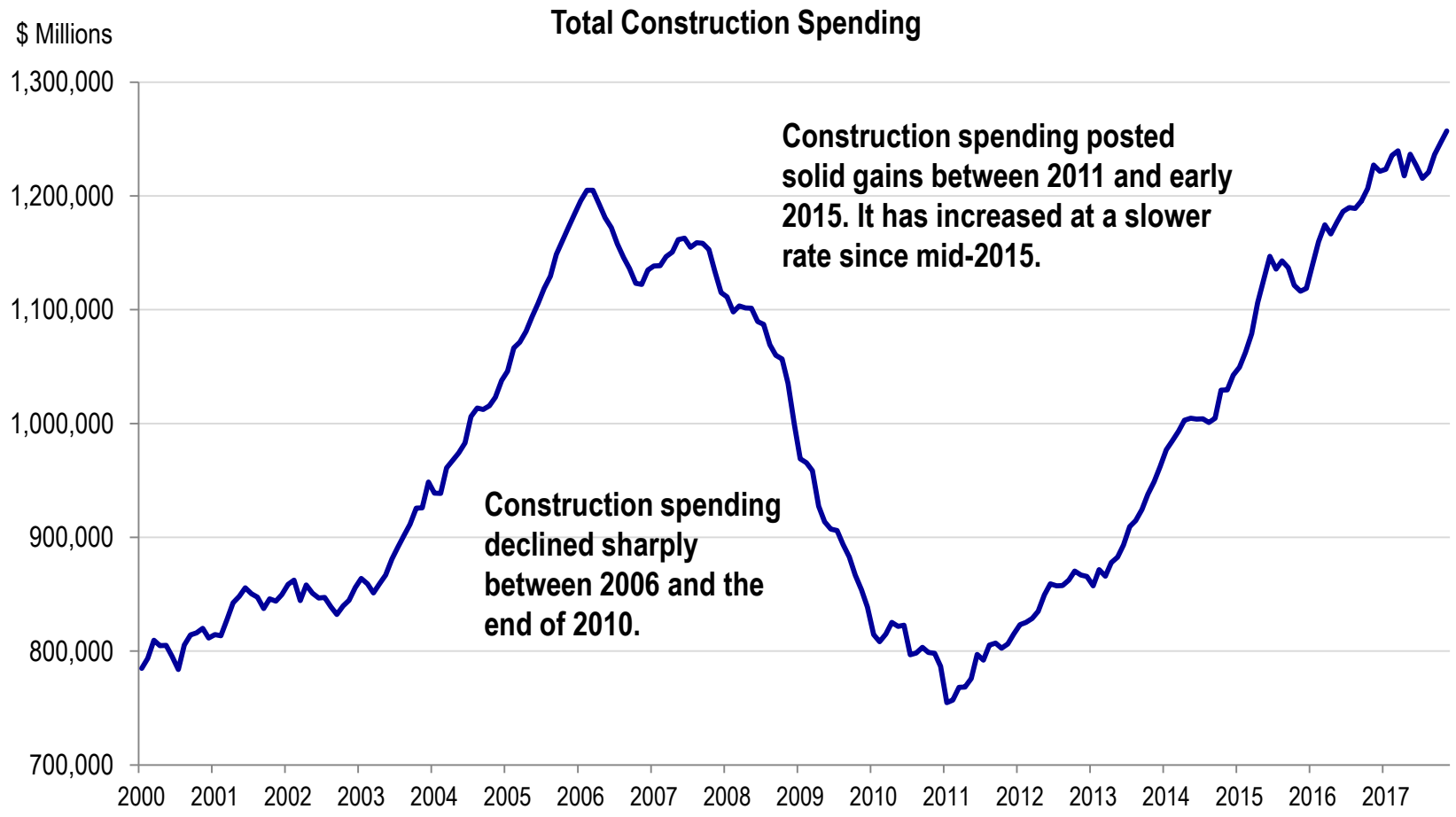
New Single Family Homes Sold

United States



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

Total U.S. Construction Spending



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

Why This Data is Important to Colorado

Housing, Housing Prices, Mortgage Rates, and Construction

- U.S. housing prices are increasing at an increasing rate.
- Mortgage rates have remained low, even with the periodic rate increases by the Federal Reserve. That will change in 2018 if the Federal Reserve puts 3 rate hikes in play.
- There is demand for additional housing, single-family permits are being issued to build houses, and the houses are being built and then they are sold. The cycle is being completed.
- Total construction spending is increasing. This includes industrial and infrastructure construction.

This data is a mixed blessing.

On a positive note:

- The nationwide construction boom includes Colorado.
- Home owners are benefitting from increased appreciation.
- Increased construction will address the inventory problem in some parts of the country, including Colorado.
- The increase in inventory will decrease the rate of appreciation – this benefits potential buyers.

On a negative note:

- The shortage of local construction workers may be exacerbated by activity and higher wages in other states.
- Housing is becoming unaffordable and unattainable for many Americans. This is becoming a problem in Colorado.
- Anecdotal evidence suggests Coloradans are leaving the state because they cannot find affordable housing.
- The increase in inventory may decrease the rate of appreciation – this hurts the owners.

The U.S. Economy

Debt and Savings

Debt – Reason for Concern

Debt is often justified if it is responsibly used to make purchases that stimulate consumption and growth.

Debt is often criticized if debt service obligations prevent consumption and growth.

Whether or not you believe debt is good for the economy, one thing is for sure – consumer and government debt has increased!

Federal Debt

- In July 2007 the federal debt was $9.0 trillion.
- In July 2017 the federal debt was $20.2 trillion.

Public Debt

- In July 2007, public debt was 61.8% the size of the GDP.
- In July 2017, public debt was 103.8% the size of the GDP.

Consumer Credit Outstanding

- In July 2007 consumer credit outstanding was $2.5 trillion.
- In July 2017 consumer credit outstanding was $3.8 trillion.

Student Loans

- In July 2007 student loans outstanding were $800 billion.
- In July 2017 student loans outstanding were $1.5 trillion.

Motor Vehicle Loans

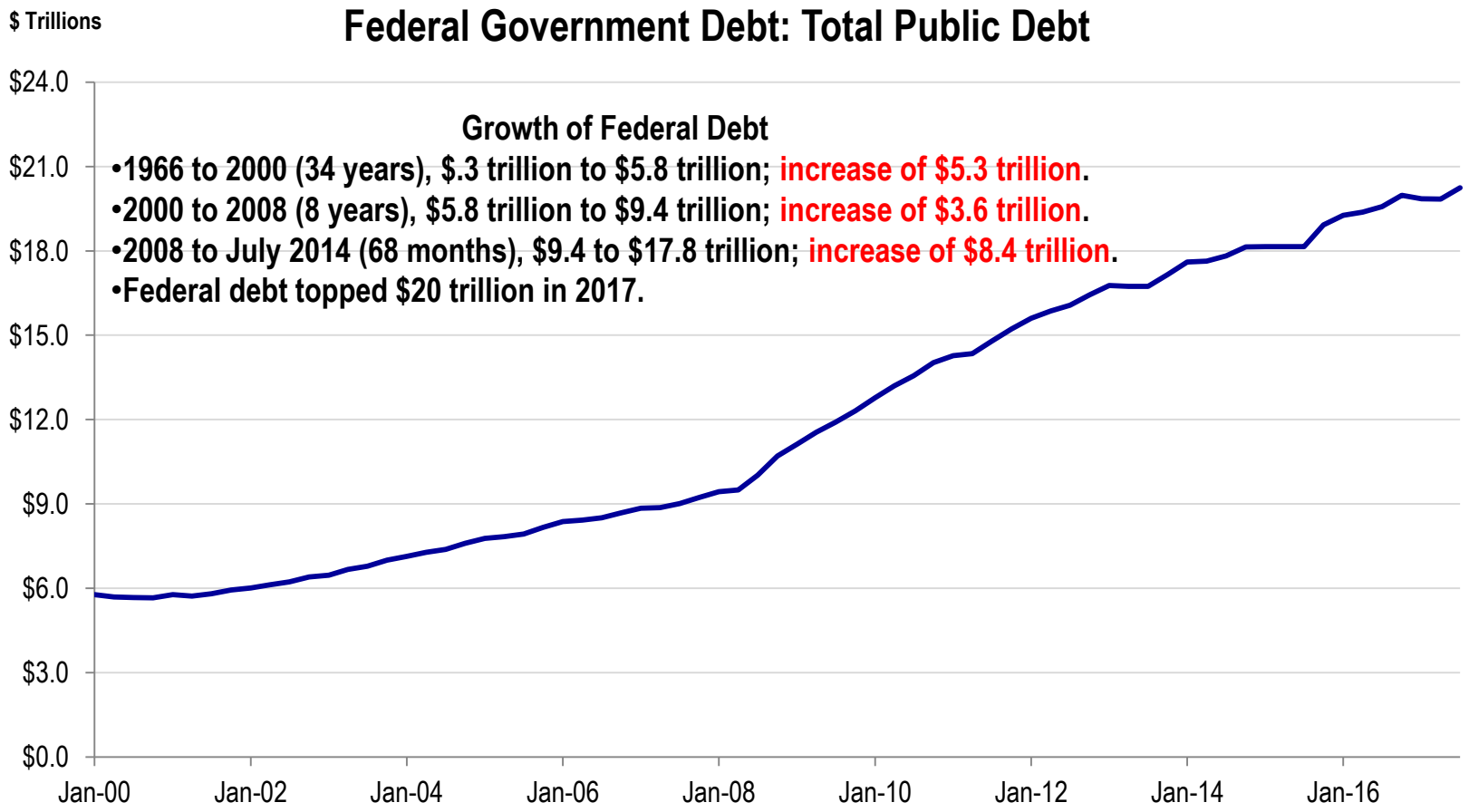
- In July 2007 motor vehicle loans outstanding were $600 billion.
- In July 2017 motor vehicle loans outstanding were $1.1 trillion.

In November 2015 the personal savings rate was 6.1%. In November 2017, it was 2.9%. Recently, money that was previously being saved has been spent on consumer goods, housing, or invested in the equities market.

"It is the debtor that is ruined by hard times."

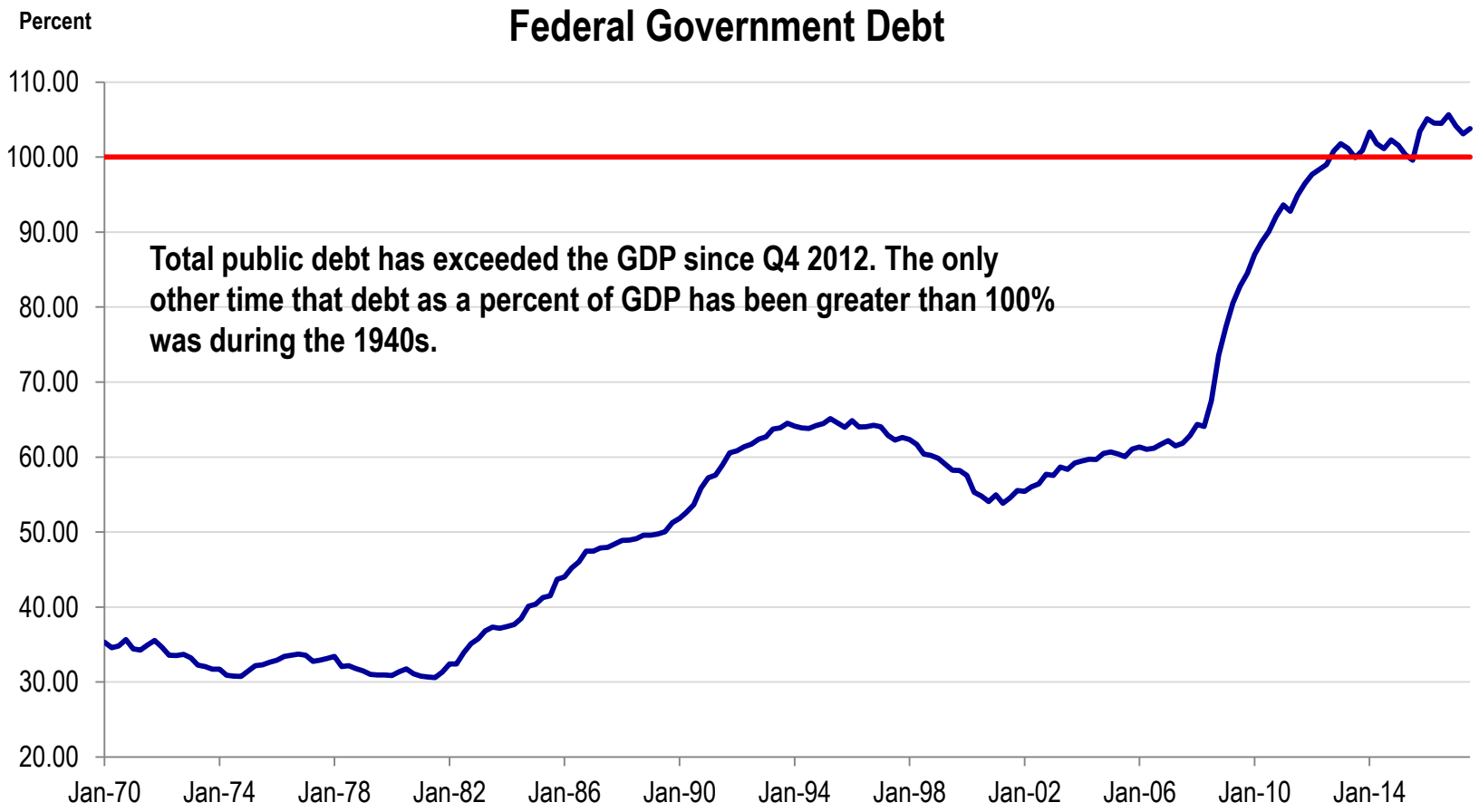
-Rutherford B. Hayes

U.S. Federal Government Debt



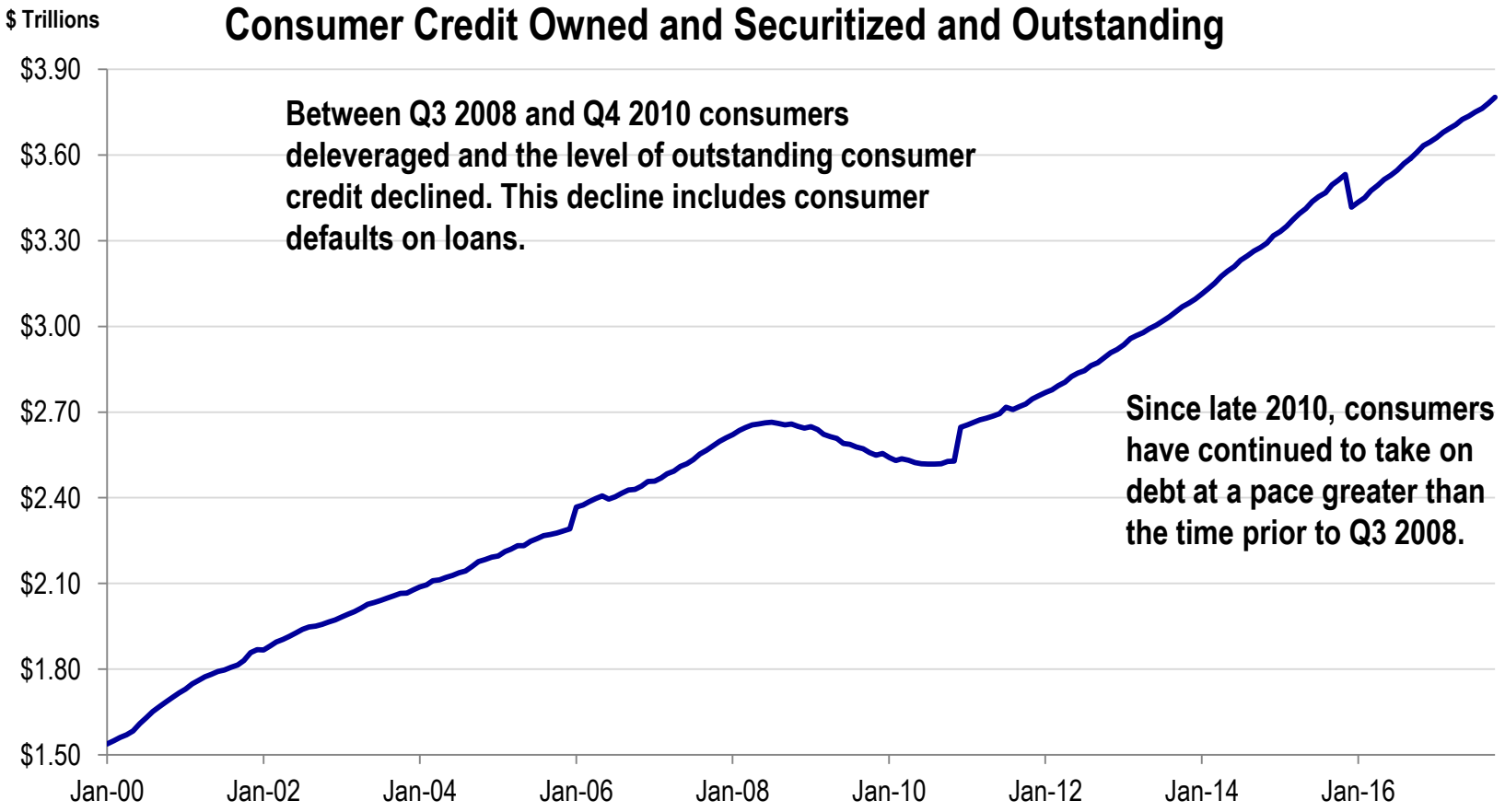
Source: FRED, cber.co.

U.S. Public Debt as a Percent of GDP



Source: FRED, cber.co.

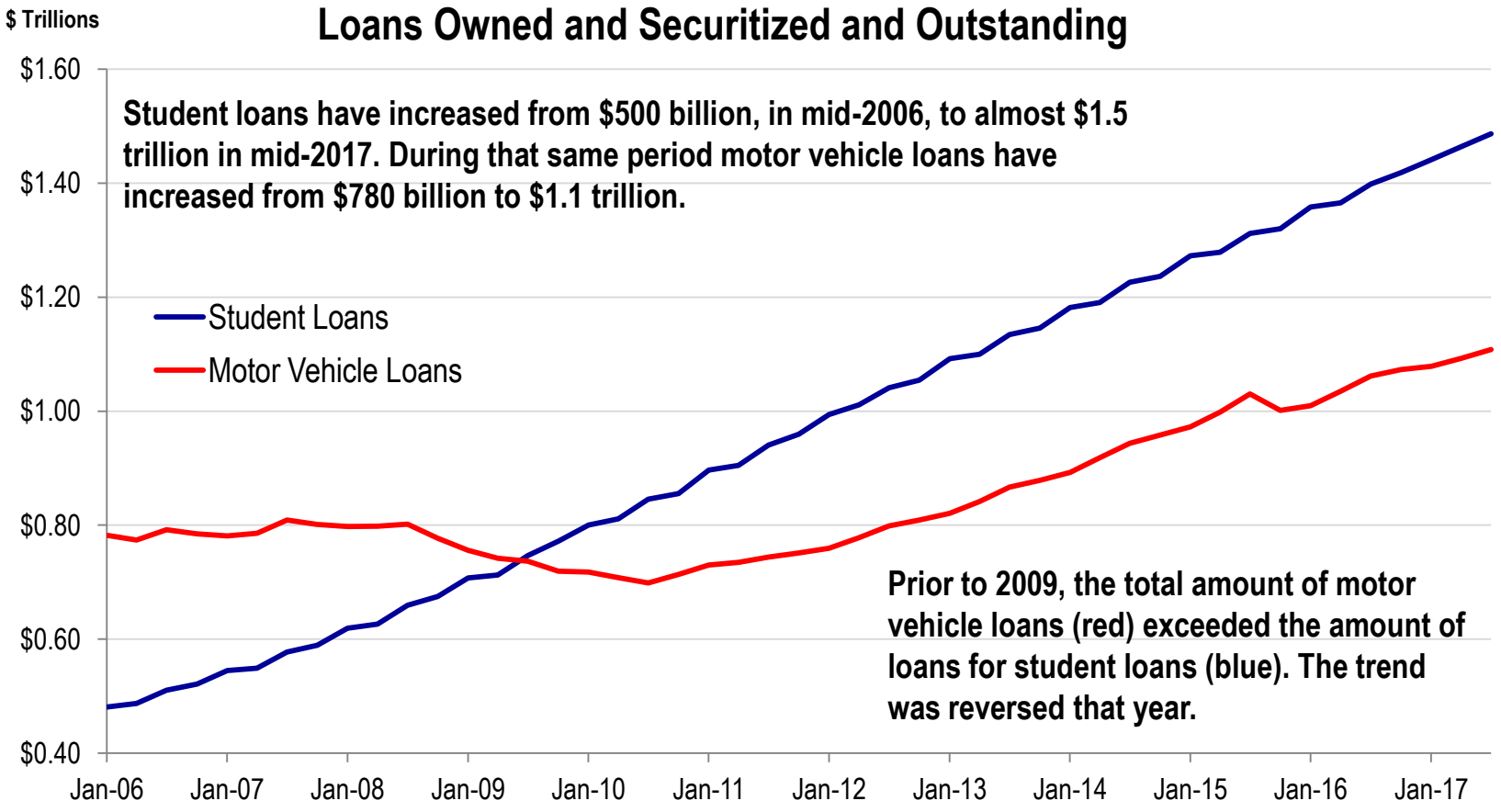
U.S. Consumer Credit Outstanding



Source: FRED, Federal Reserve, G.19, SA.

U.S. Loans Outstanding

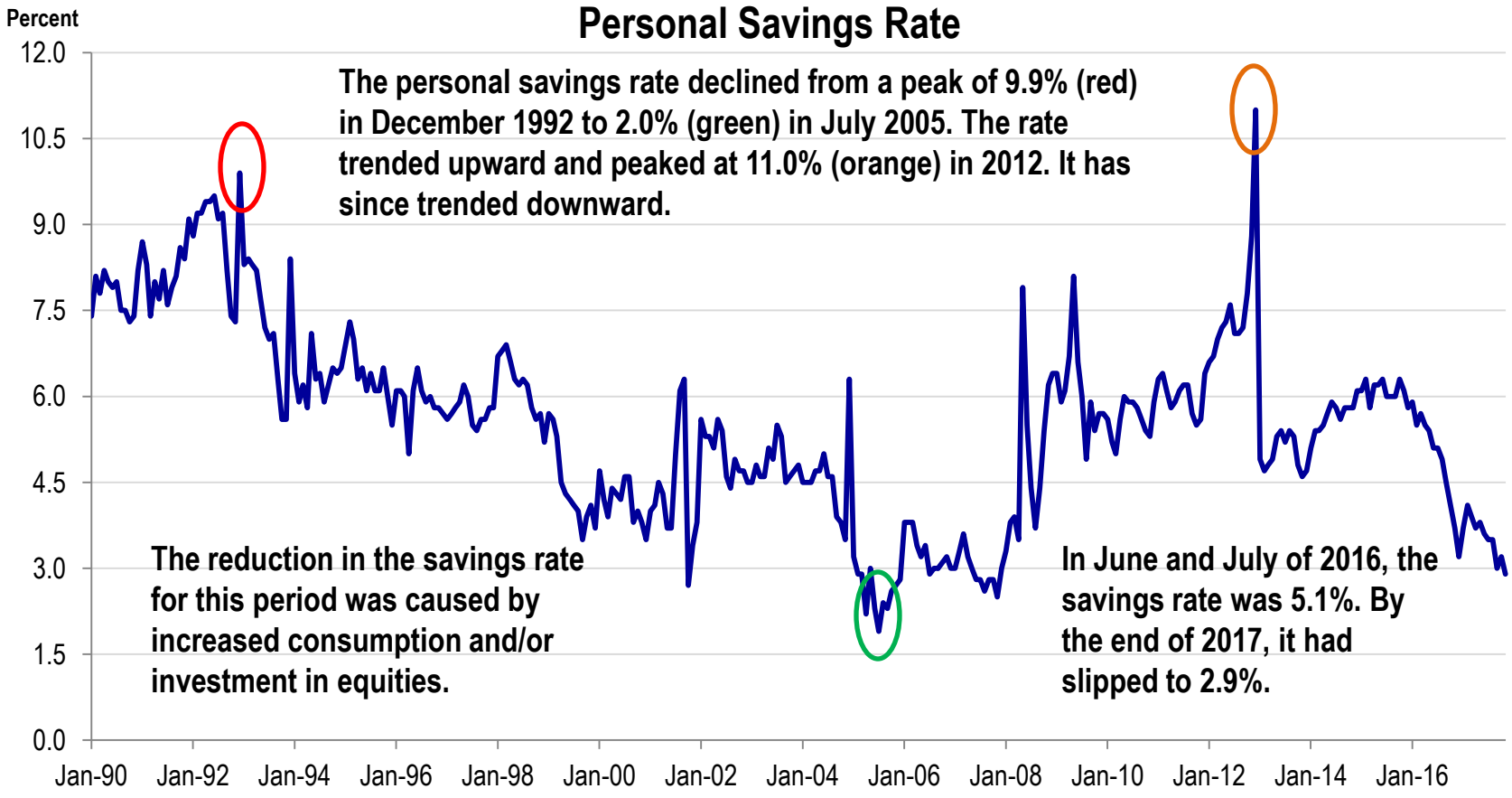
Student Loans vs. Motor Vehicle Loans



Source: FRED, cber.co.

U.S. Personal Savings Rate

Percentage of Disposable Personal Income



Source: FRED, SA.

Why This Data is Important to Colorado

Debt

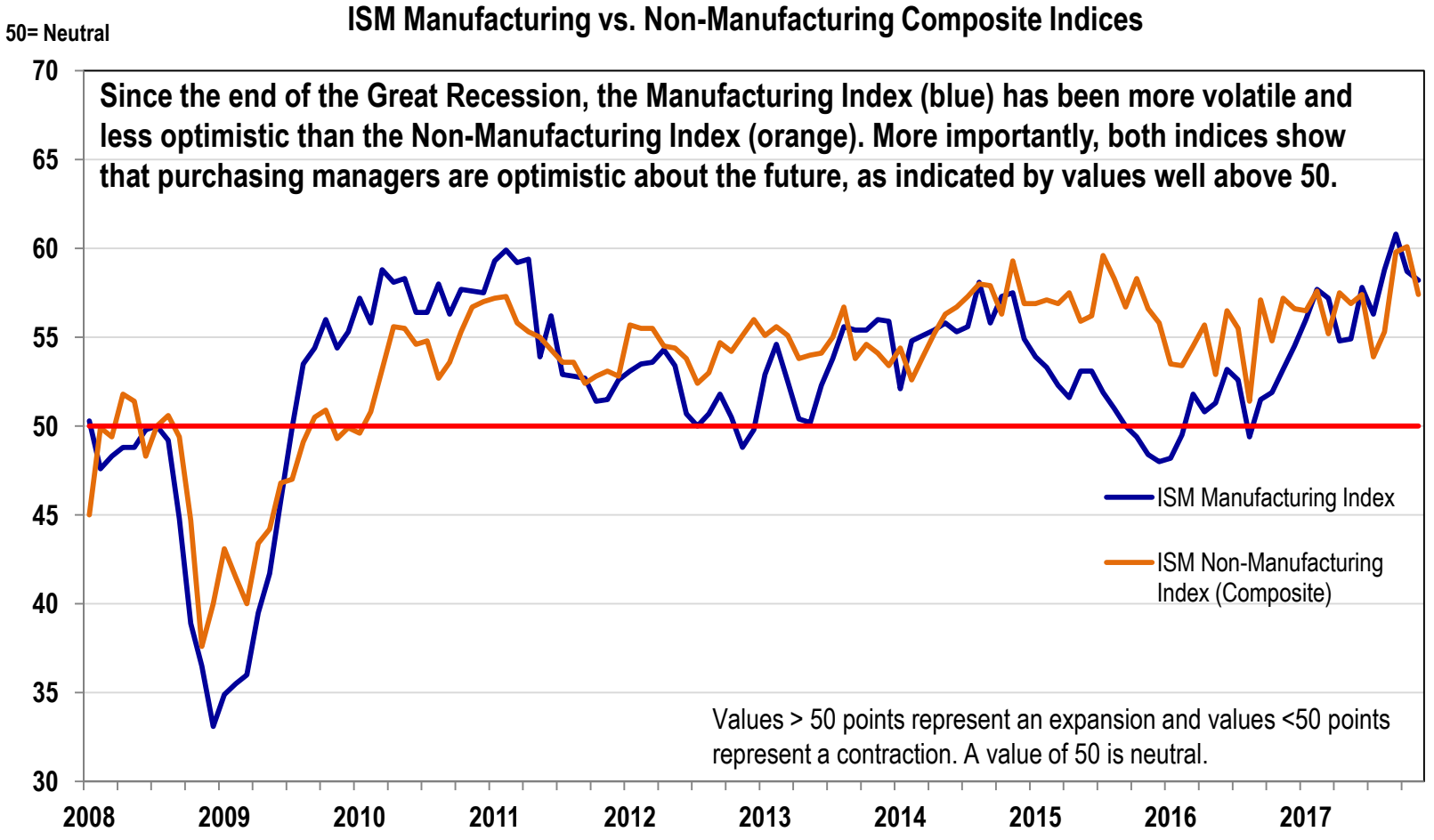
- Debt is a two-edged sword.
- Debt has increased – in the U.S. and Colorado!
- In some cases, governments, businesses, and individuals have taken on debt that has benefitted them.
- In some cases governments, businesses, and individuals have taken on debt that has been detrimental to them.
- On a positive note, the Colorado state government is required to have a balanced budget. This theoretically eliminates/reduces public debt.
- Consumer and public debt are an issue in Colorado – student loans and the unfunded liabilities for PERA are prime examples.
- Given the record number of auto sales in 2017, delinquent or defaulted auto loans may become a concern.

The U.S. Economy

Retail, Services, and Manufacturing

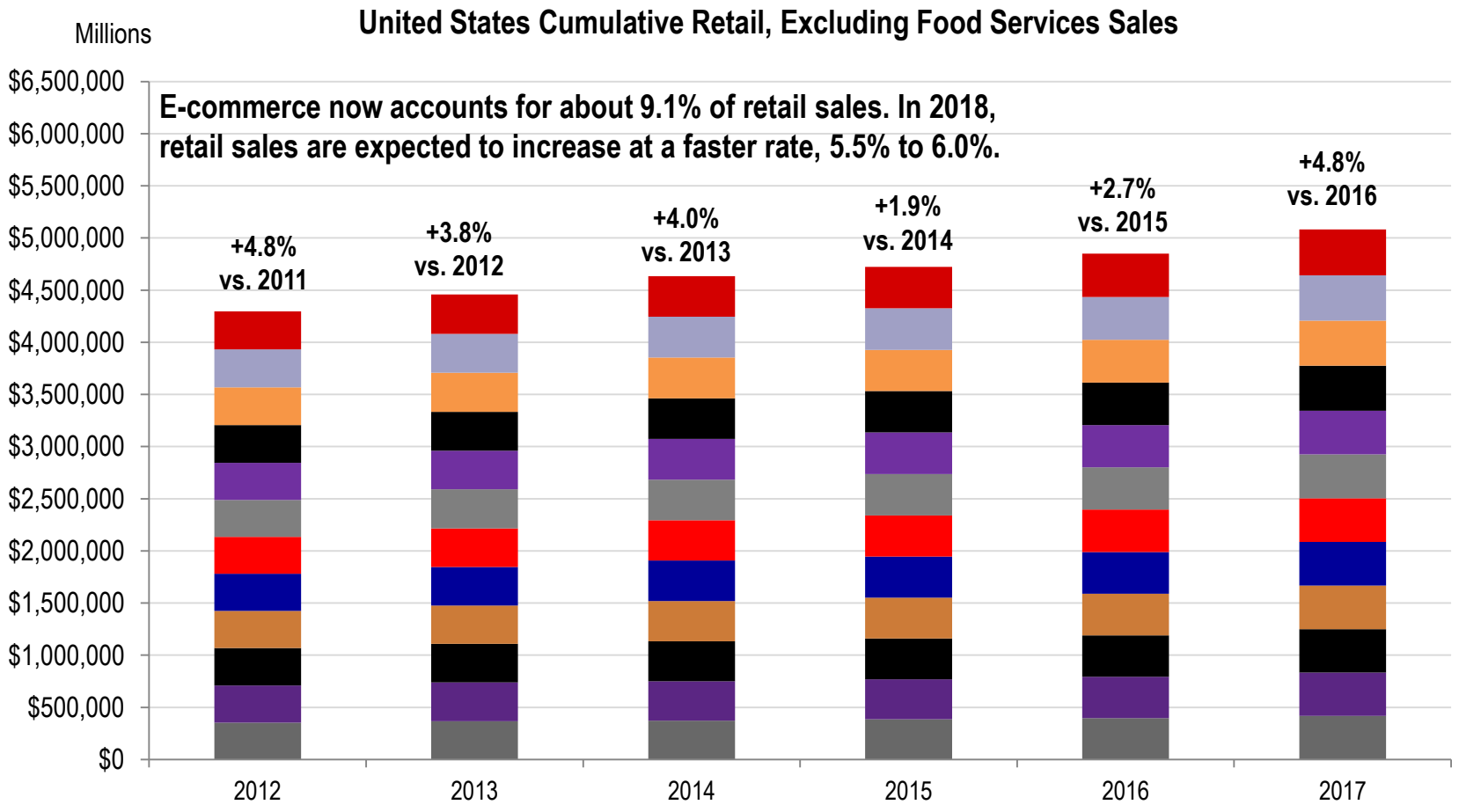
ISM PMI Composite Indices

Manufacturing vs. Non-manufacturing



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

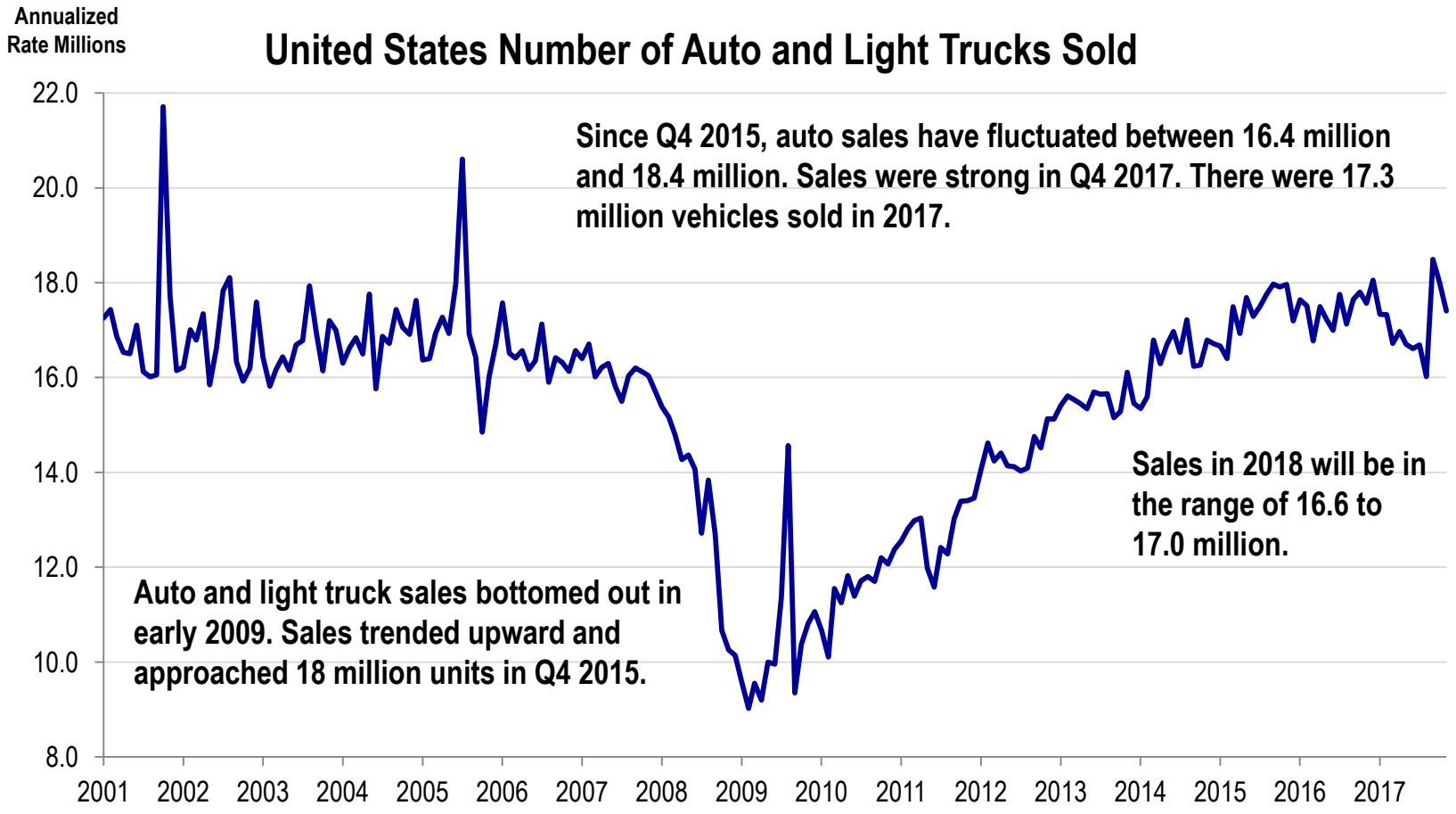
Cumulative Retail, Excluding Food Services Sales



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

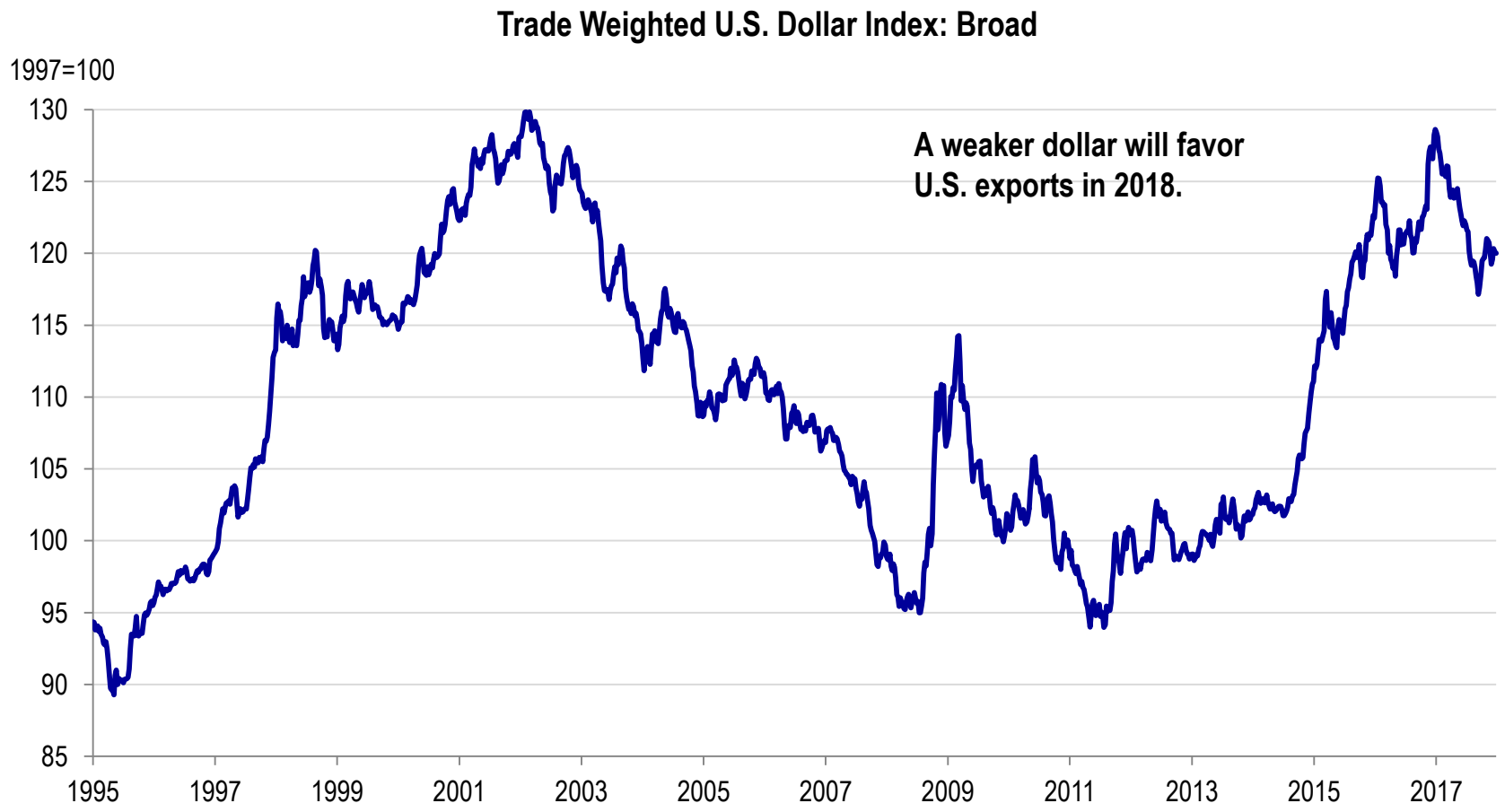
Note: Data is in descending order with December at the top and January at the bottom, not adjusted for inflation.

U.S. Weekly Auto and Light Truck Sales



Source: FRED, BEA, cber.co.
Note: Seasonally Adjusted Annualized Rate.

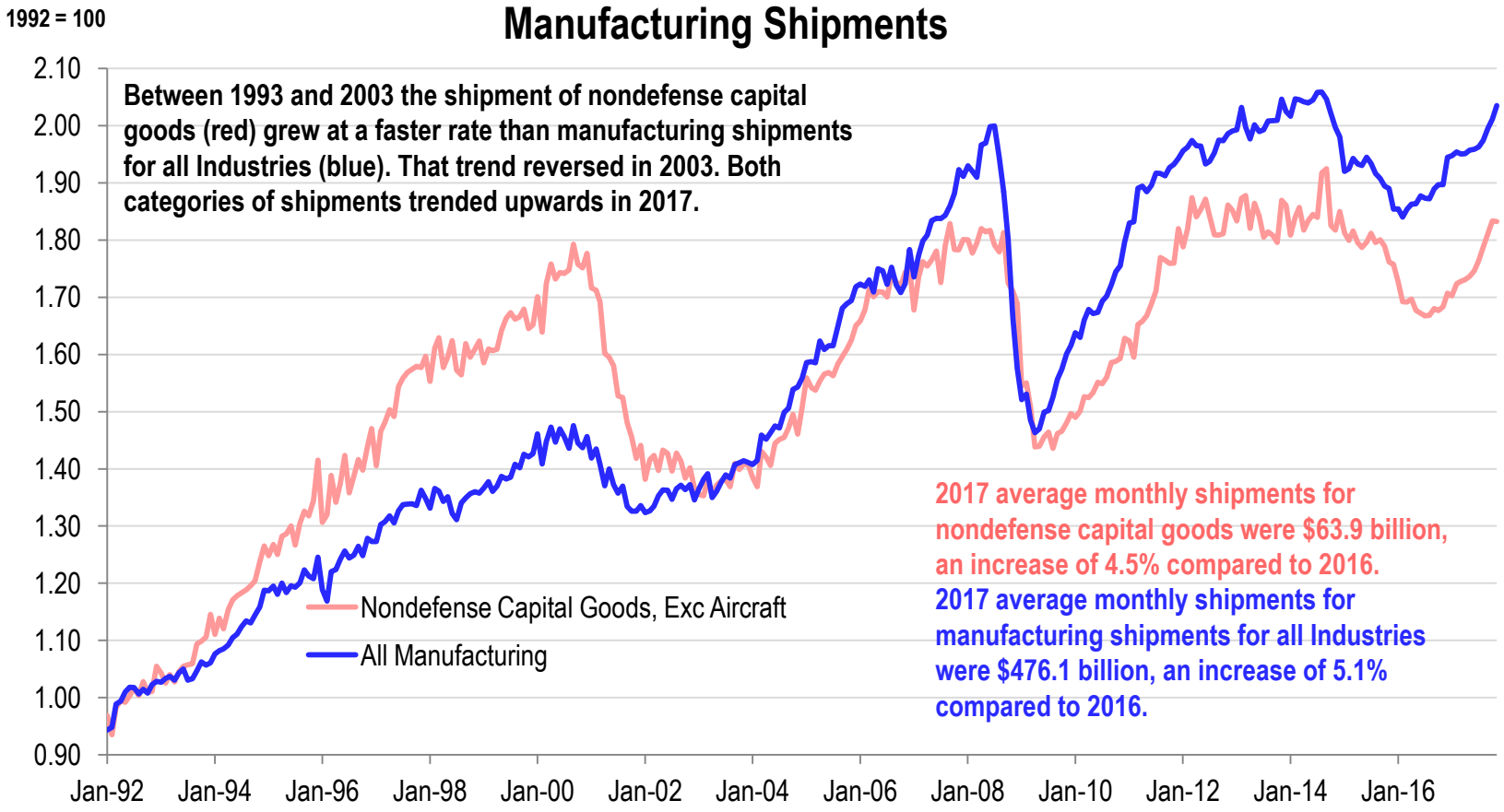
Trade Weighted U.S. Dollar Index: Broad



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

United States Manufacturing Shipments

All Industries vs. Nondefense Capital, Excluding Aircraft



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

Why This Data is Important to Colorado

Retail, Services, and Manufacturing

- The retail industry is evolving!
- Nationally, retail sales for 2018 are projected to increase at a faster rate than in 2017.
- There were fewer auto and light truck sold in 2017. Nationally, the trend is for a continued decline in sales. There is a possibility that Colorado vehicle sales could have another strong year, given the level of net migration and increased number of workers.
- Since the end of the Great Recession, manufacturing and non-manufacturing purchasing managers have consistently been optimistic about the future.
- As the dollar has weakened, manufacturing shipments have increased.
- Colorado retailers are changing the way they conduct their business, in line with national trends.
- The momentum from strong retail sales in the Christmas season will carry over into 2018. That enthusiasm may be dampened by the lack of snow in Colorado ski resorts.
- In 2018, Colorado retail sales will be solid, but they will increase at a lower rate of growth than 2017. This is counter to the national trend.
- Colorado auto dealers bucked the national trend in 2017 by having record sales. They will continue to buck the trend in 2018.
- In the past, the positive expectations of purchasing managers have translated into solid business activity. In 2018, that should also be the case in the U.S. and Colorado.
- Colorado exporters will benefit from a weaker dollar.

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** – Syria, North Korea - 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; companies in more regions are challenged to find workers.
- **Jobs** - The U.S. will add jobs at a slightly slower pace than 2017. This slower rate of growth is not a sign of a recession in the near-term.
- **Rate Increases** - The increase in interest rates by the Fed may reduce demand for housing and durable goods in late 2018.
- **Manufacturing** - U.S. manufacturers will continue to benefit from a weaker dollar.
- **Retail Trade** - The retail industry will continue to evolve, e-commerce will increase, consumers will continue to spend, and vehicle sales will be slower in 2018.
- **Corporate Profits** - Corporate profits will continue to be strong in 2018.
- **Construction and Housing** - Demand will continue to be strong for residential and commercial construction. Housing prices will continue to appreciate at an increasing rate.
- **Equities** - The bull market will continue its run into 2018. Will it be running at the end of the year?
- **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 is 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. Is the savings rate too low?
- **Mother Nature** - Natural disasters (hurricanes, fires, floods, etc.) will continue to disrupt state and regional economies.

The Colorado Economy

The Colorado Economy

Summary of Key Data – United States vs. Colorado

Summary of Key Data

United States and Colorado

Colorado	United States
Population - Colorado's population will increase by 90,600 in 2018 to a total of 5,720,280. Net migration will be 61,000.	**Real GDP –** In 2018, annual real GDP growth will be stronger than 2017. It will be in the 2.3% to 2.7% range.
Colorado GDP – The Colorado real GDP will expand by 2.8% in 2017 and in the range of 2.7% to 3.3% in 2018.	**Real Personal Consumption** – Annual personal consumption will be in the 2.3% to 2.7% range for 2018.
Wage and Salary Employment – Colorado will add 57,200 jobs in 2017. The range of growth in 2018 is 51,400 to 57,400 jobs.	**U.S. Employment** – The U.S. will add between 158,000 to 175,000 jobs per month, or 1.9 to 2.1 million jobs in 2018.
Unemployment Rate – The unemployment rate will be in the range of 3.2% to 3.4% in 2018. Rates will be lowest in Boulder and Ft. Collins.	**Unemployment Rate** – Average 2017 unemployment was 4.4%; look for 3.9% to 4.3% in 2018.
Consumer Price Index – The Denver-Boulder-Greeley CPI is expected to be 3.4% in 2017 with an increase to 3.3% in 2018.	**Consumer Price Index** – The CPI is estimated to be 2.1% in 2017 and 2.3% in 2018.
Retail Trade Sales (Including Food Services) – In 2018, annual retail trade sales will increase by 4.7% to $108.7 billion.	**Corporate Profits** – The YOY corporate profits for July 2017, the most recent data, were up 9.8%.
Construction – About 22,000 single-family permits will be issued in 2018 – if the industry can find enough qualified workers.	**Price of a Barrel of Oil (WTI)** – Oil closed the year at $60 per barrel. It will be in the $55 to $65 range for 2018.
Case Shiller Housing Prices – The YOY rate of appreciation for October 2017 was +7.2%. The rate of YOY appreciation will decline in 2018.	**Case Shiller Housing Prices** – The U.S.YOY rate of appreciation for October 2017 was +6.2%. Appreciation is trending upwards.
There will be solid, but slower economic growth in Colorado in 2018. The rate of job and real GDP growth will outpace the U.S.	**Standard and Poor's 500** – The S&P 500 posted a gain of 19.4% in 2017. For the near-term, the bull will continue to run in 2018.
	The U.S. will post modest job and GDP growth in 2018.

The Colorado Economy

Components of Change and Net Migration

Colorado Population

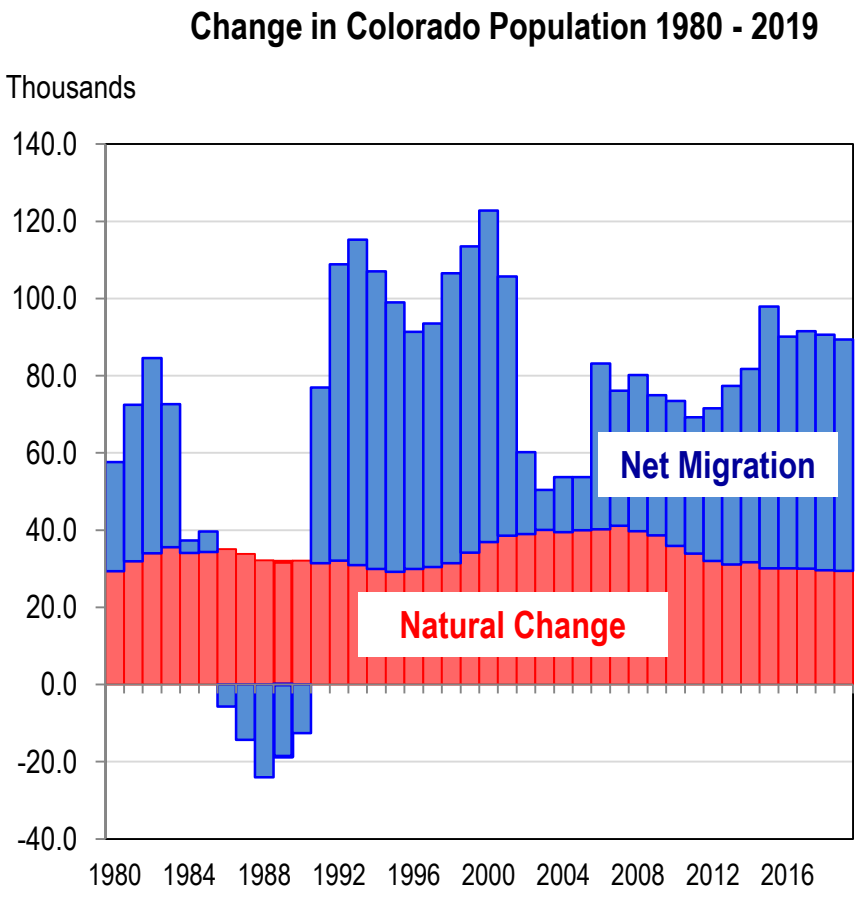
Components of Change

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, 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.



Sources: State Demography Office and cber.co.
Colorado-based Business and Economic Research http://cber.co

Net Migration

Historical Top Ten States for Colorado In-Flows and Out-Flows (2005 to 2013)

State Rankings of Net Migration for Colorado: In-Flow

	2005	2006	2007	2008	2009	2010	2011	2012	2013
1	California	California	California	California	New Mexico	California	Oregon	California	California
2	New York	Arizona	Texas	Nevada	California	Texas	New Mexico	Massachusetts	Illinois
3	Pennsylvania	Ohio	Ohio	New Mexico	Michigan	Arizona	Texas	New York	Texas
4	Nebraska	Pennsylvania	Missouri	New Jersey	Nevada	Georgia	Ohio	Louisiana	New York
5	North Carolina	New York	Connecticut	Arizona	Indiana	Illinois	Illinois	Illinois	Virginia
6	Nevada	Massachusetts	Maryland	Alaska	Minnesota	Washington	Arizona	Indiana	Alabama
7	Wyoming	Virginia	Kansas	Florida	Nebraska	Michigan	Alabama	Alaska	Missouri
8	New Hampshire	Utah	Oregon	Pennsylvania	North Carolina	Florida	California	Nebraska	Kansas
9	Massachusetts	New Mexico	Massachusetts	South Carolina	Arizona	Oregon	Tennessee	New Jersey	Florida
10	Indiana	Louisiana	Illinois	Georgia	Missouri	Indiana	Alaska	Kentucky	Pennsylvania

State Rankings of Net Migration for Colorado: Out-Flow

	2005	2006	2007	2008	2009	2010	2011	2012	2013
1	Arizona	Nevada	Washington	Washington	Florida	Kansas	Wyoming	Arizona	Oregon
2	Washington	Idaho	Florida	North Carolina	Utah	Arkansas	Kansas	Nevada	Hawaii
3	Oregon	Kansas	Virginia	Missouri	Montana	Maryland	Florida	Oregon	South Carolina
4	Hawaii	Texas	Oklahoma	South Dakota	Washington	South Carolina	Louisiana	Virginia	Nebraska
5	Michigan	Kentucky	Idaho	Kansas	Kentucky	Idaho	South Carolina	South Dakota	Indiana
6	Idaho	Missouri	Wyoming	Nebraska	Pennsylvania	Virginia	Idaho	Minnesota	Utah
7	Texas	South Dakota	Mississippi	Tennessee	Texas	Iowa	Michigan	Iowa	Alaska
8	Oklahoma	Tennessee	Michigan	New York	Vermont	Alabama	District of Columbia	North Carolina	North Dakota
9	Arkansas	Arkansas	Minnesota	Maine	Connecticut	Louisiana	Utah	Washington	Arkansas
10	New Mexico	North Dakota	South Carolina	Vermont	Oregon	Tennessee	Connecticut	Maine	District of Columbia

Sources: State Demography Office and cber.co.

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

Why This Data is Important to Colorado

Colorado Population

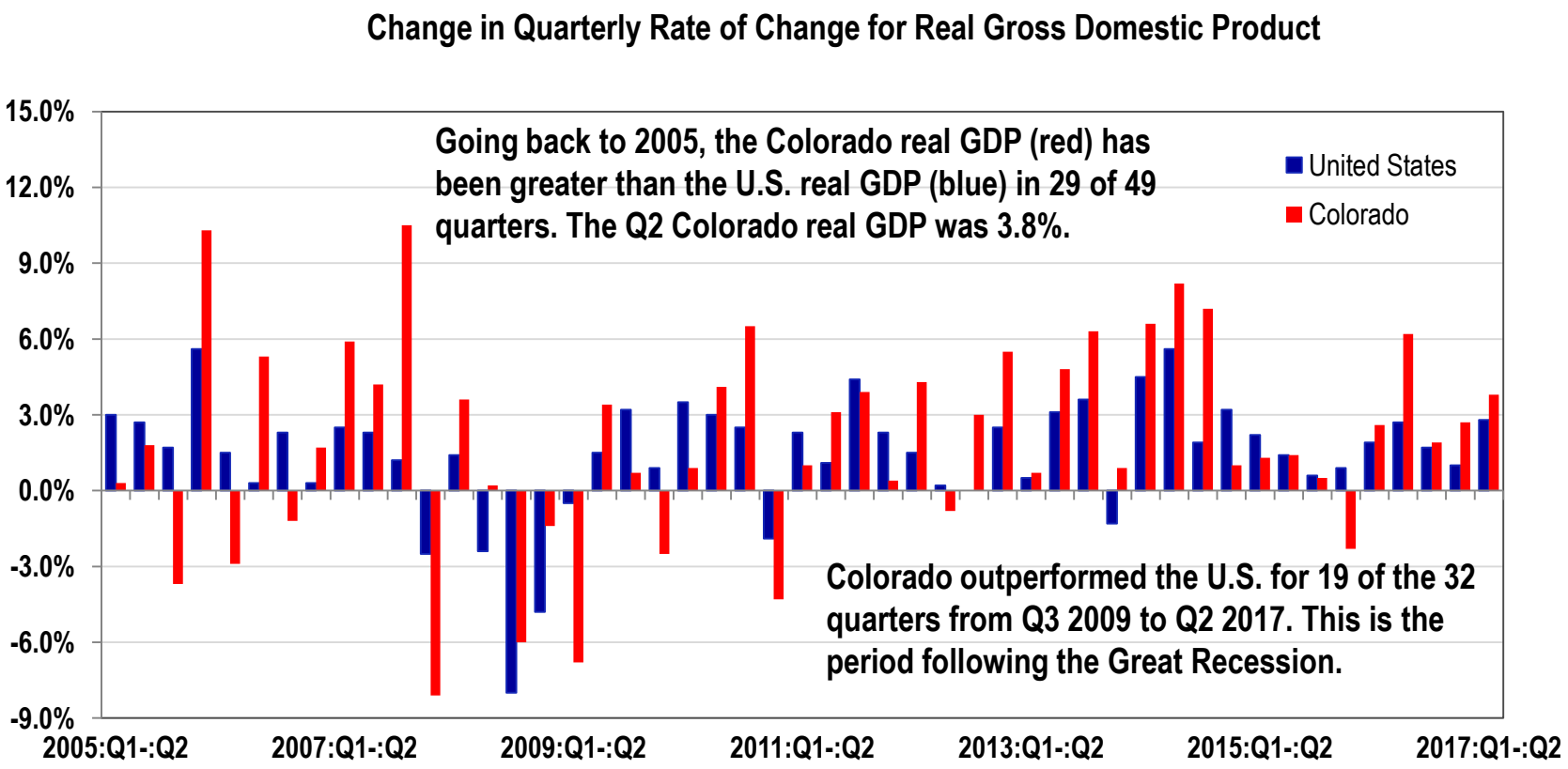
- In the past, Colorado businesses have relied heavily on net migration to fill their workforce needs.
- Net migration changes the demographics of the state (age, ethnicity, size of household, income, etc.) of the state population.
- The change in demographics has many societal and economic implications ranging from affordable housing to education to health care. As a result, public and private leaders will adopt policies to meet the changing needs of Colorado residents.

The Colorado Economy

Gross Domestic Product

Real Gross Domestic Product

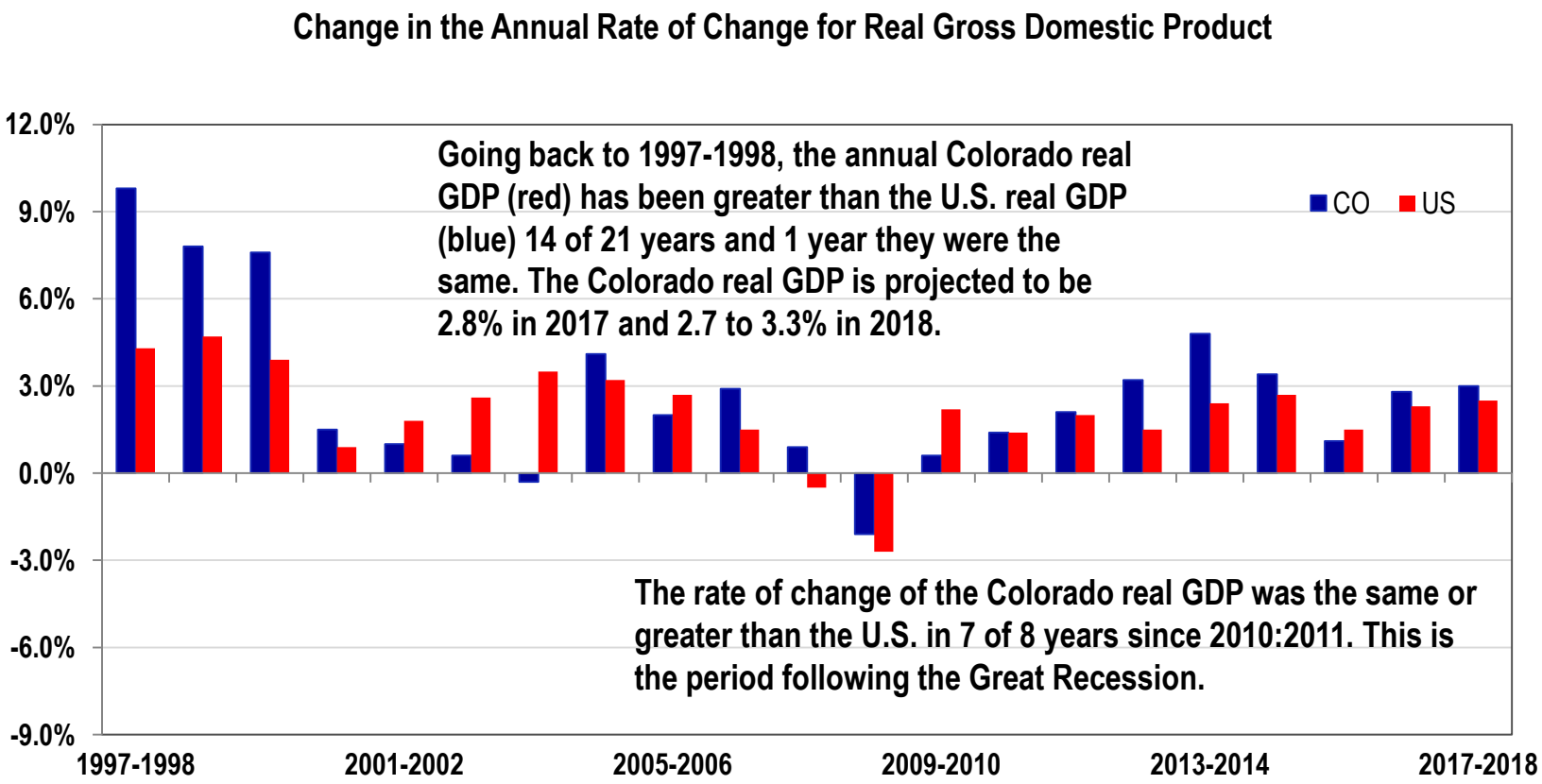
Colorado vs. U.S. (Quarterly)



Source: Bureau of Economic Analysis. Note: U.S. real GDP is summary of states GDP.

Real Gross Domestic Product

Colorado vs. U.S. (Annual)



Source: Bureau of Economic Analysis. Note: U.S. real GDP is summary of states GDP.

Industry Contribution to Colorado Real GDP

Industry Contribution to Real GDP

The table on the next page looks at the contribution of six industries to Colorado real GDP between 2010 and 2016. (Extractive industries, finance, real estate, health care, PST, and AER). The values in the table illustrate how the contribution of these industries can be volatile and dominate GDP growth.

An example of this volatility is the fluctuation in the contribution of the extractive industries that is caused by changes in the price of related commodities. In turn, these price changes affect demand. In many cases, there is significant fluctuation in commodity prices over a short period, hence the fluctuation in the contribution to real GDP.

The data in the table shows the extractive industries were a drag on real GDP growth in 2011 and 2016; however, in 2014 these industries were responsible for about 27% of the state's real GDP growth (1.29 percentage points out of 4.80 points).

In another example, the finance sector was responsible for 1.02 percentage points out of 1.40 points in 2011.

The table on the following page shows the contribution of 20 sectors and subsectors for 2016. It does not show the volatility across years. Instead, it shows the wide range of contribution to real GDP within one year.

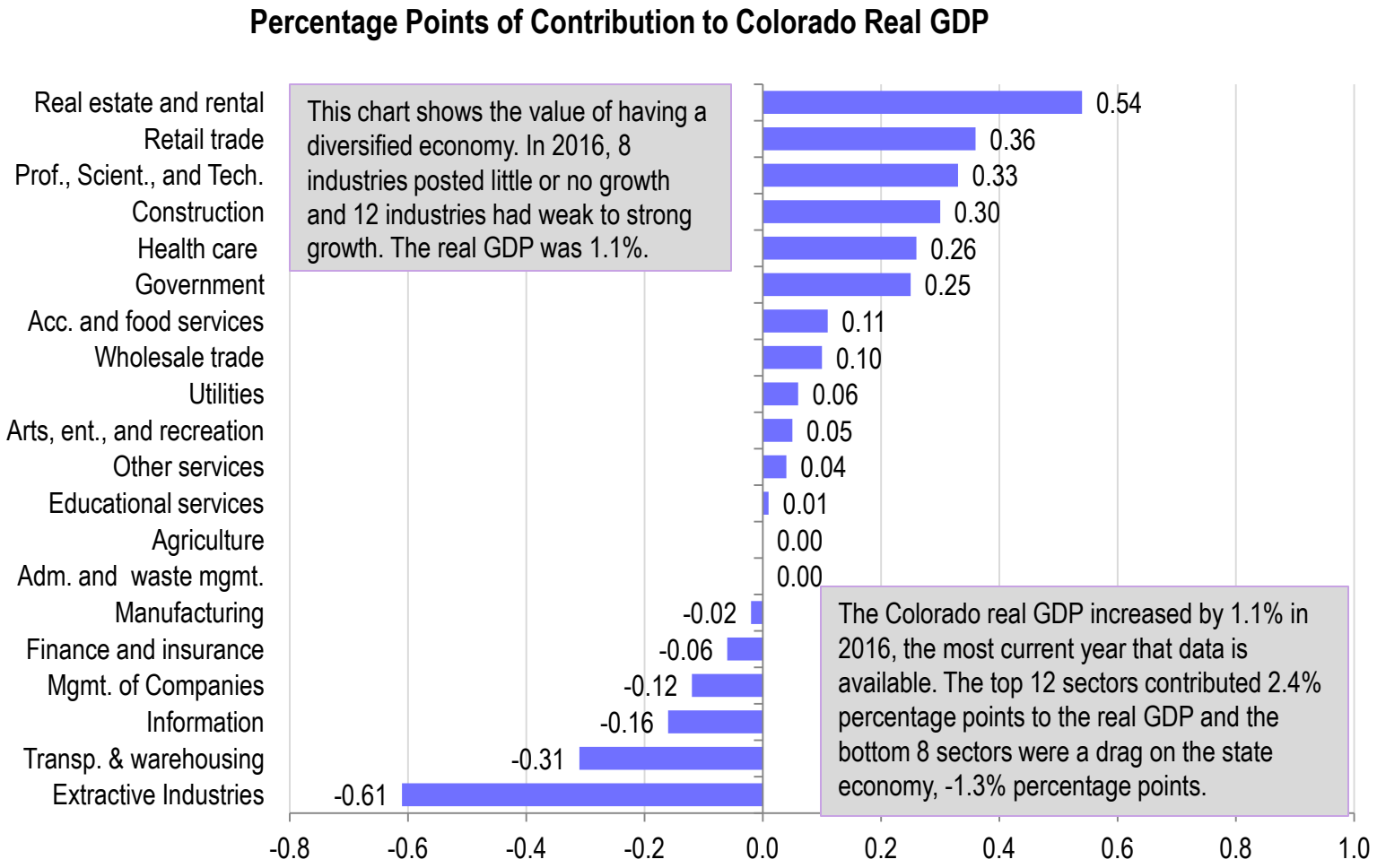
Contribution of Top Industries to Colorado Real GDP

Trend of Contribution Measured in Percentage Points

	2010	2011	2012	2013	2014	2015	2016
Extractive Industries	-0.36	0.19	0.06	0.51	1.29	0.52	-0.61
Finance	0.39	1.02	0.55	0.06	0.23	0.51	0.48
Real Estate	0.63	0.64	0.05	0.18	0.31	0.43	0.54
Health Care	0.05	0.08	0.18	0.13	0.25	0.31	0.26
Professional, Scientific, Tech.	0.12	0.18	0.28	0.33	0.43	0.28	0.33
Arts, Ent. and Recreation	0.15	0.22	0.09	0.33	0.19	0.20	0.16
*Other Industries	-0.38	-0.93	0.89	1.66	2.10	1.15	-0.06
Total Real GDP Growth	**0.60**	**1.40**	**2.10**	**3.20**	**4.80**	**3.40**	**1.10**
Total of Six Industries	0.98	2.33	1.21	1.54	2.70	2.25	1.16
Six Industries as a % of Total GDP	163%	166%	58%	48%	56%	66%	105%

Source: Bureau of Economic Analysis, cber.co. Note: *Other Industries includes Agriculture, Utilities, Construction, Manufacturing, Wholesale Trade, Retail Trade, Information, Management of Companies and Enterprises, Administrative Services, Educational Services, Accommodations and Food Services, Other Services, and Government.

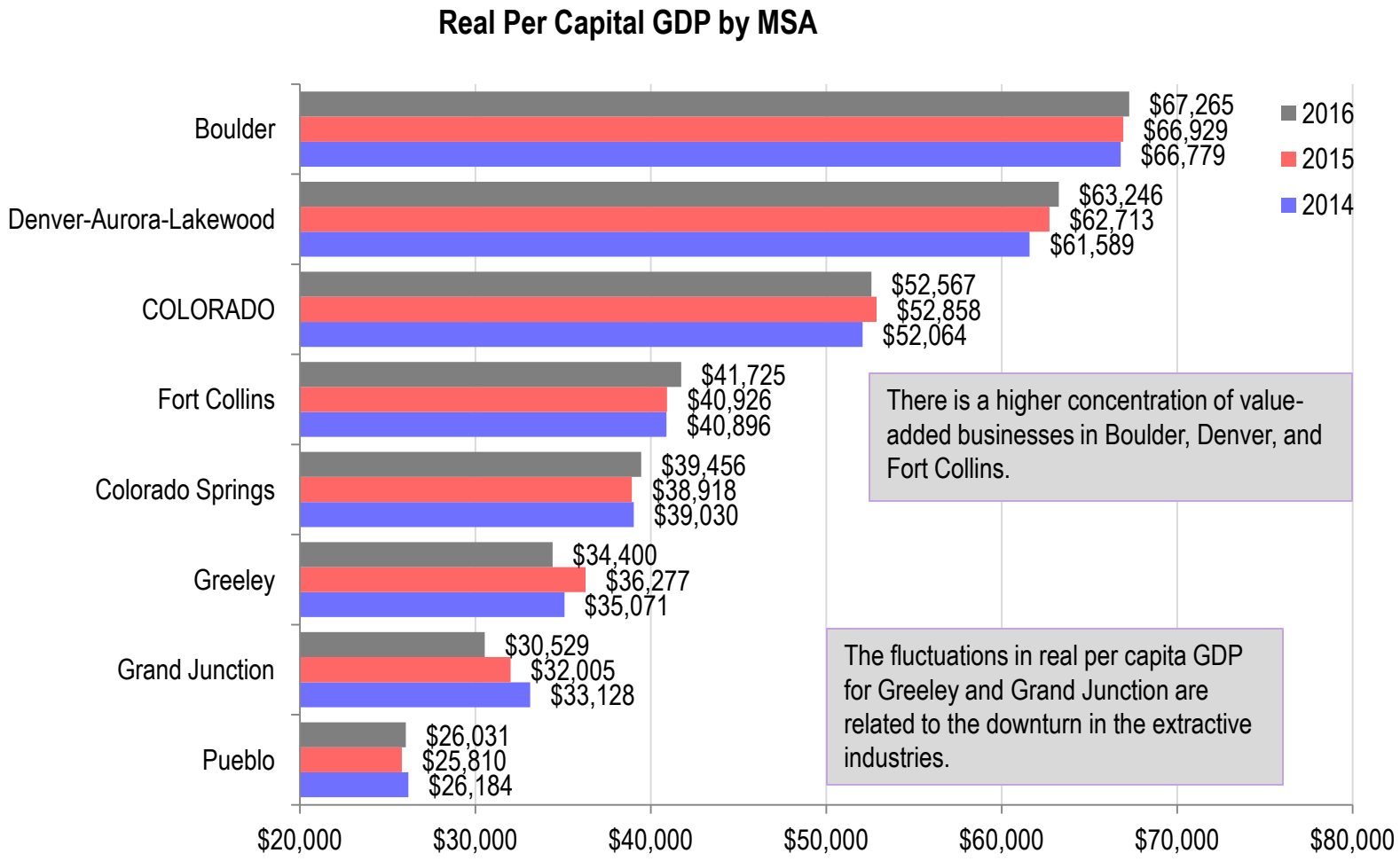
2016 Contribution to Real GDP by Sector
Colorado



Source: Bureau of Economic Analysis. Note: This reflects change from the prior period.

Real Per Capita GDP MSA

2014 to 2016



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

Why This Data is Important to Colorado

Gross Domestic Product

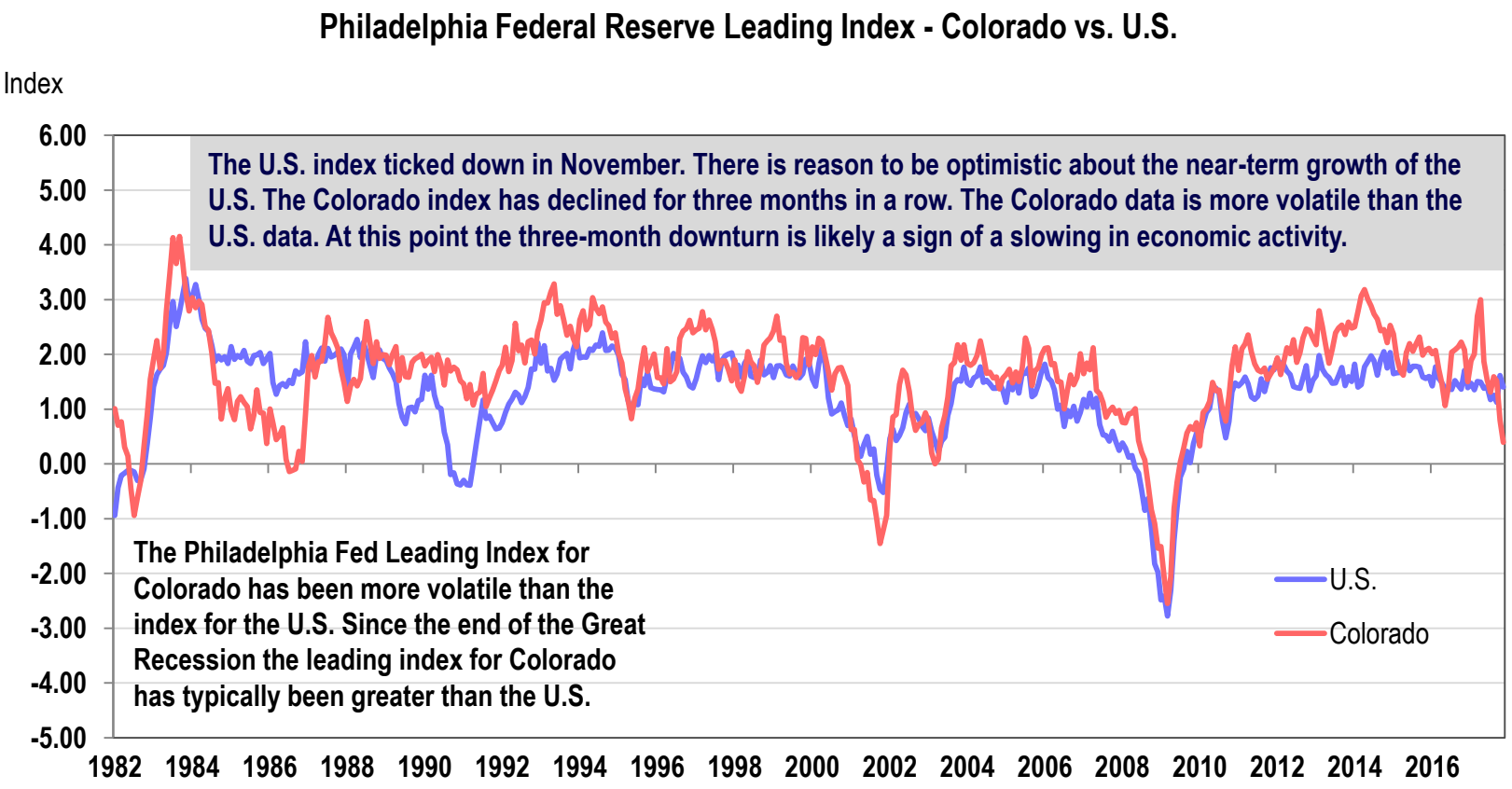
- All industries contribute to the economy in different, but important ways. Some industries are leaders in job creation, others generate sales taxes, some pay high wages, and others have high sales or economic value-added. For the latter reason, there is value in analyzing real GDP growth.
- Any analysis of the state economy should include industry contributions to employment and real GDP. For example, the Colorado real estate, information, and the extractive sectors employ a small number of people, but are capable of causing significant changes in the state economic activity. These changes are not often evident when evaluating only the employment data.
- Because the Colorado economy is smaller than the national economy and its mix of industries is slightly different, the Colorado real GDP is usually greater than the U.S. GDP.
- The concentration of high value-added industry in major MSAs attracts other high value-added companies. As a result, the MSAs grow at a faster rate and have greater wealth than many rural areas.

The Colorado Economy

Leading and Coincident Indices

Philadelphia Fed Leading Index

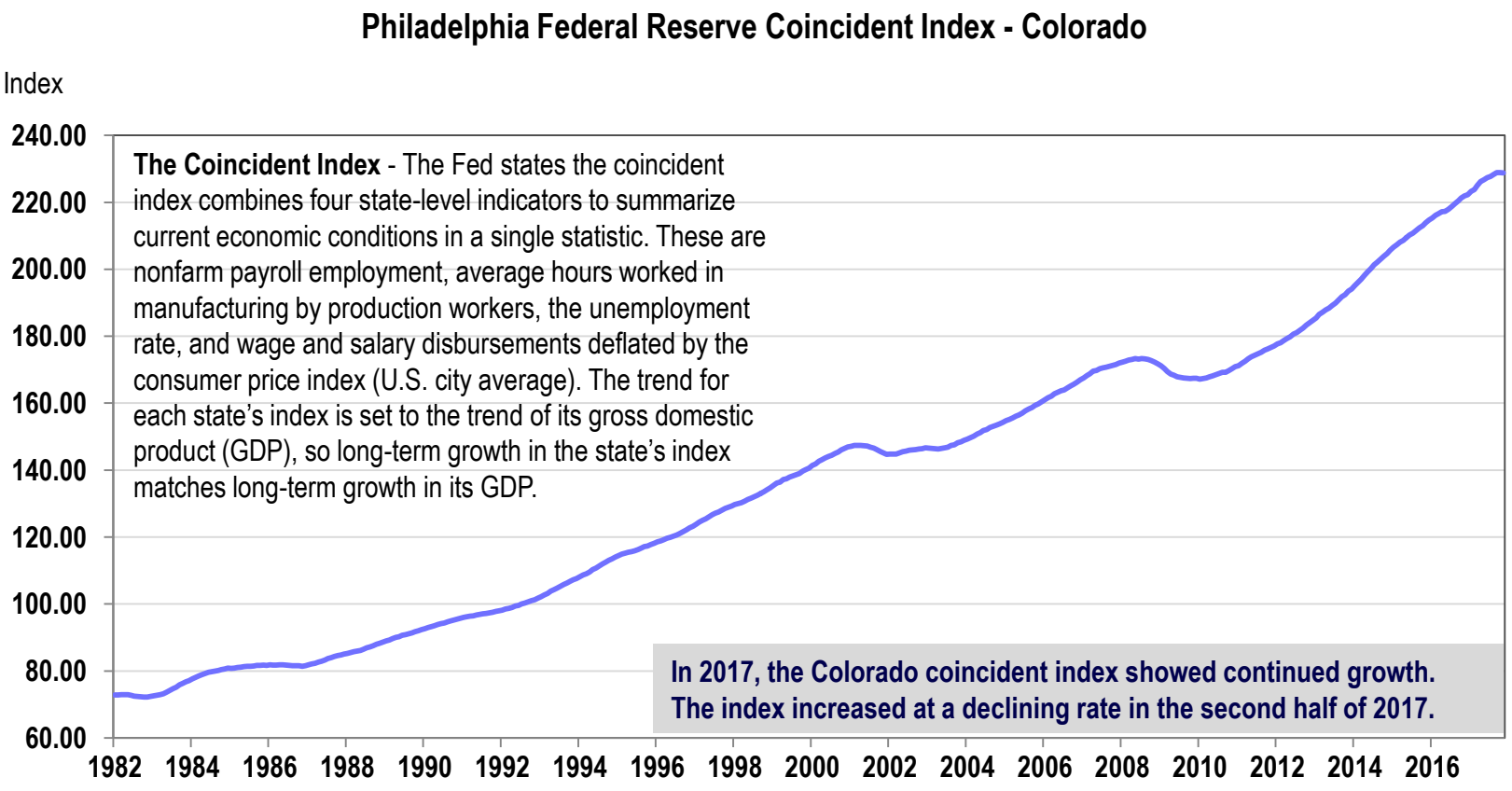
Colorado vs. United States



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.

Philadelphia Fed Coincident Index

Colorado



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.

Why This Data is Important to Colorado

Leading and Coincident Indices by the Philadelphia Fed

- The Leading and Coincident indices produced by the Philadelphia Fed support other data that points to solid economic activity in Colorado in 2018. The rate of growth will be slightly slower than 2017.

The Colorado Economy

State Government

The State of the State

Revenue and Economic Projections

This section shows General Fund revenue projections from 2017 to 2020. It is important to be aware of state government revenue streams because they fund essential services to businesses, residents, and visitors.

CLC and OSPB Projections

The following charts show some of the revenue and economic projections provided by the Colorado Legislative Council (CLC) and the Governor's Office of State Planning and Budgeting (OSPB).

CLC and OSPB Economic Forecasts

The December economic update provides estimates from 2017 and the forecast for 2018.

The quarterly updates provided by both groups are recommended reading for those anxious to learn more about the Colorado economy and funding of the state government.

Sales Tax, Individual Income Tax, and General Fund

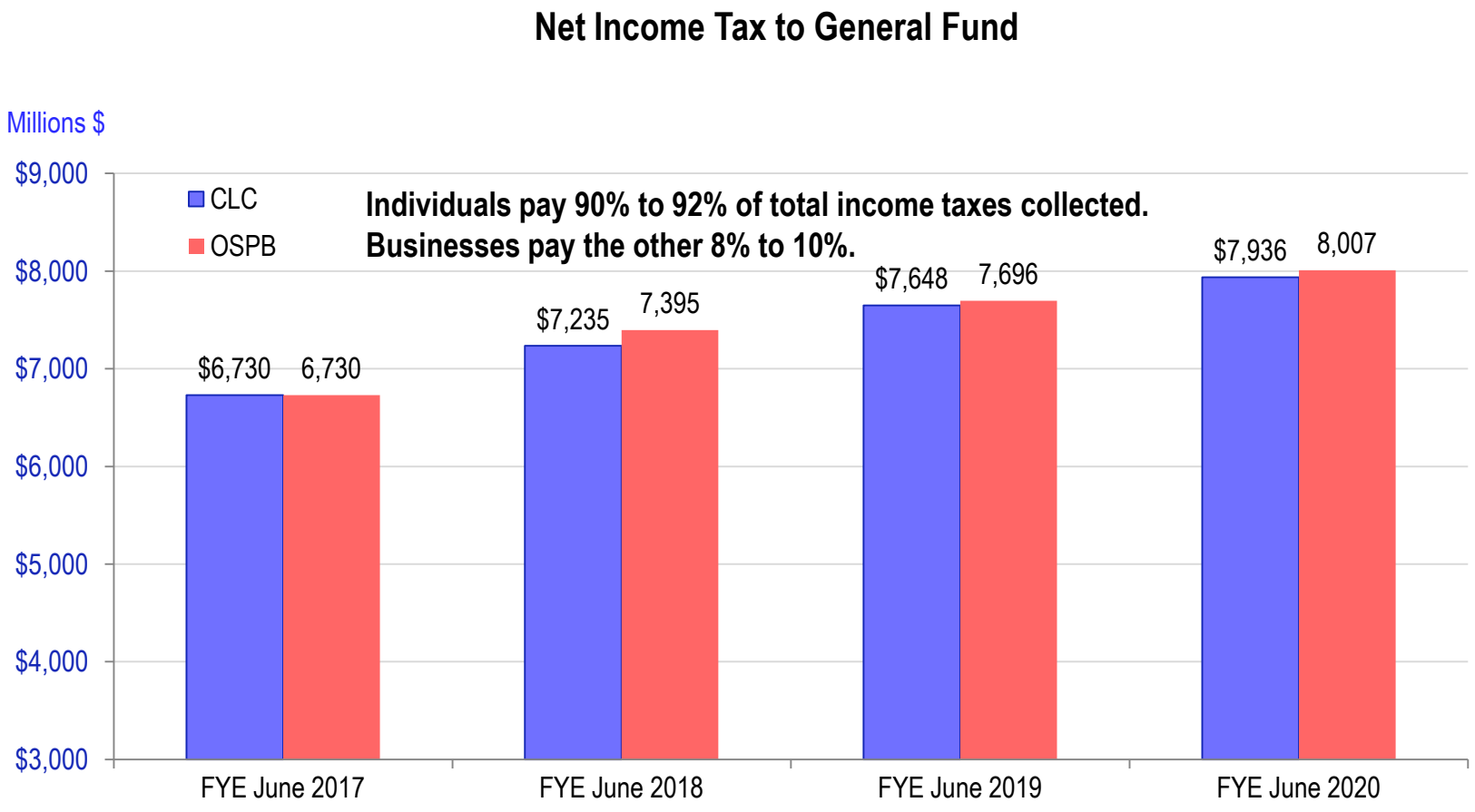
Net Income Tax Revenue accounts for about two-thirds of the Gross General Fund Revenue. Income Tax Revenue for FYE 2018 is projected to be about $7.3 billion.

Excise and Sales Tax Revenue accounts for about one-fourth of the Gross General Fund. The Sales Tax Revenue for FYE 2018 is projected to be approximately $3.5 billion.

General Fund Revenue for FYE 2018 will increase to about $11.2 billion.

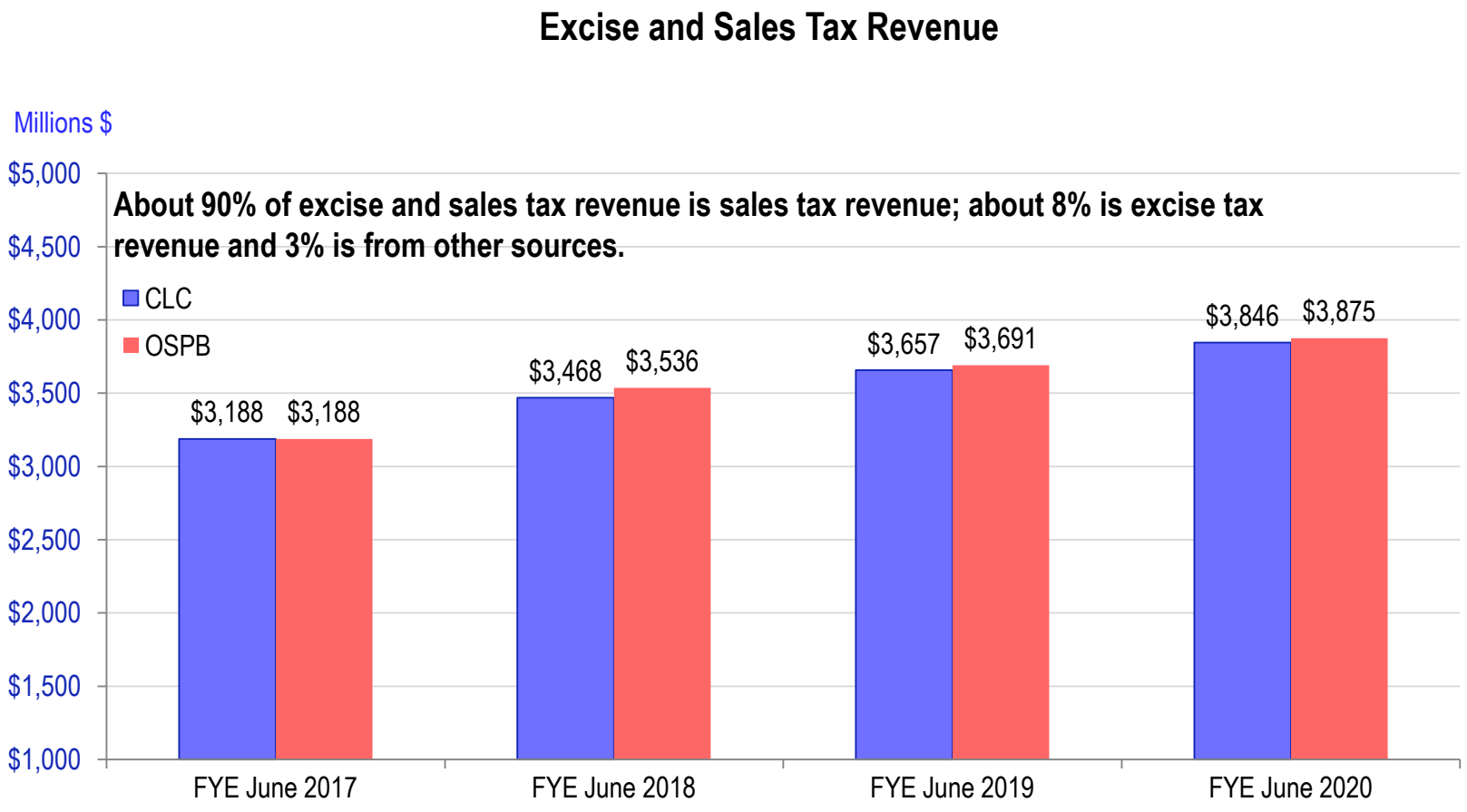
Note: The State Fiscal Year is July 1st through June 30th.

Colorado Net Income Tax



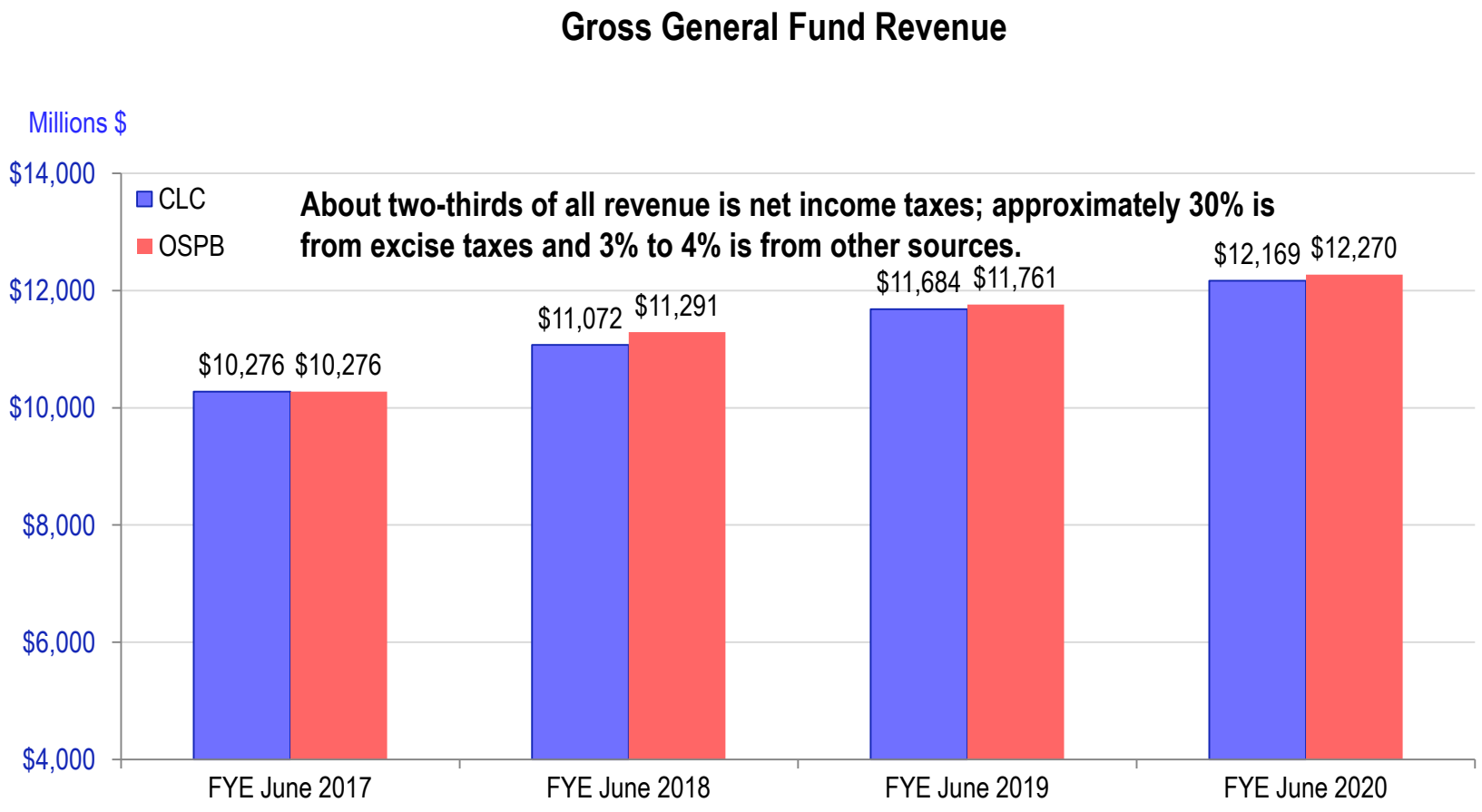
Source: Colorado Legislative Council and OSPB December 2017.

Colorado Excise and Sales Tax Revenue



Source: Colorado Legislative Council and OSPB, December 2017.

Colorado Gross General Fund Revenue



Source: Colorado Legislative Council and OSPB, December 2017.

CLC and OSPB December 21 Quarterly Forecasts

2017 Estimates for 2017

In late December, the Colorado Legislative Council and the Governor's Office of State Planning and Budgeting released their final quarterly updates for 2017. The following tables highlight estimates for key indicators in 2017. These estimates serve as the basis for their 2018 forecasts which are the foundation for General Fund projections.

U.S. Economy December 2017 Estimate for 2017

Category	CLC	OSPB
Real GDP % Change	2.2%	2.3%
Employment Change/%	2.2 million 1.5%	2.2 million 1.5%
Unemployment Rate	4.4%	4.4%
Inflation (CPI)	2.0%	2.0%

Colorado Economy December 2017 Estimate for 2017

Category	CLC	OSPB
Population Change /%	+77,600 1.4%	+79,400 1.4%
Employment Change/%	+57,200 2.2%	+57,200 2.2%
Unemployment Rate	2.7%	2.8%
Retail Trade Sales (Millions)/%	$103,753 5.0%	$103.900 4.8%
Home Permits (000s) SF and MF	44.4	42.3
Denver-Boulder Inflation Rate	3.1%	3.0%

Source: CLC, OSPB, and cber.co.

CLC and OSPB December 21 Quarterly Forecasts

2017 Forecasts for 2018

In late December, the Colorado Legislative Council and the Governor's Office of State Planning and Budgeting released their final quarterly updates for 2017. The following tables highlight their 2018 forecasts which are the foundation for General Fund projections.

Economy December 2017 Forecast for 2018

Category	CLC	OSPB
Real GDP % Change	2.4%	2.4%
Employment Change %	1.7 million 1.2%	1.6 million 1.1%
Unemployment Rate	4.1%	4.2%
Inflation (CPI)	2.0%	1.9%

Colorado Economy December 2017 Forecast for 2018

Category	CLC	OSPB
Population Change /%	+78,700 1.4%	+78,700 1.4%
Employment Change/ %	+45,200 1.7%	+50,400 1.9%
Unemployment Rate	2.6%	3.0%
Retail Trade Sales (Millions)/%	$108,837 4.9%	$108,700 4.7%
Home Permits (000s) SF and MF	45.9	41.1
Denver-Boulder Inflation Rate	2.6%	2.6%

Source: CLC, OSPB, and cber.co.

Why This Data is Important to Colorado

State Government

The CLC and OSPB economic and revenue forecasts provide:

- The state's public sector perspective of the performance of the state economy.
- A foundation for the financial limitations the state legislature has in setting policy and funding state agencies.

- Both OSPB and CLC have prepared economic forecasts for the state government based on reasonable assumptions. The forecasts for both groups call for 2018 economic growth to be slightly slower than 2017.
- The key issues facing the 71st General Assembly are:
  - Additional funding for the state's transportation infrastructure.
  - The PERA system has $30 million of unfunded liabilities.
  - The education lobby will make its case for increased funding of the state's education system.
  - Social issues.

The 2018 session is held during an election year. It will be contentious, unpredictable, and key issues will not be sufficiently addressed.

The Colorado Economy

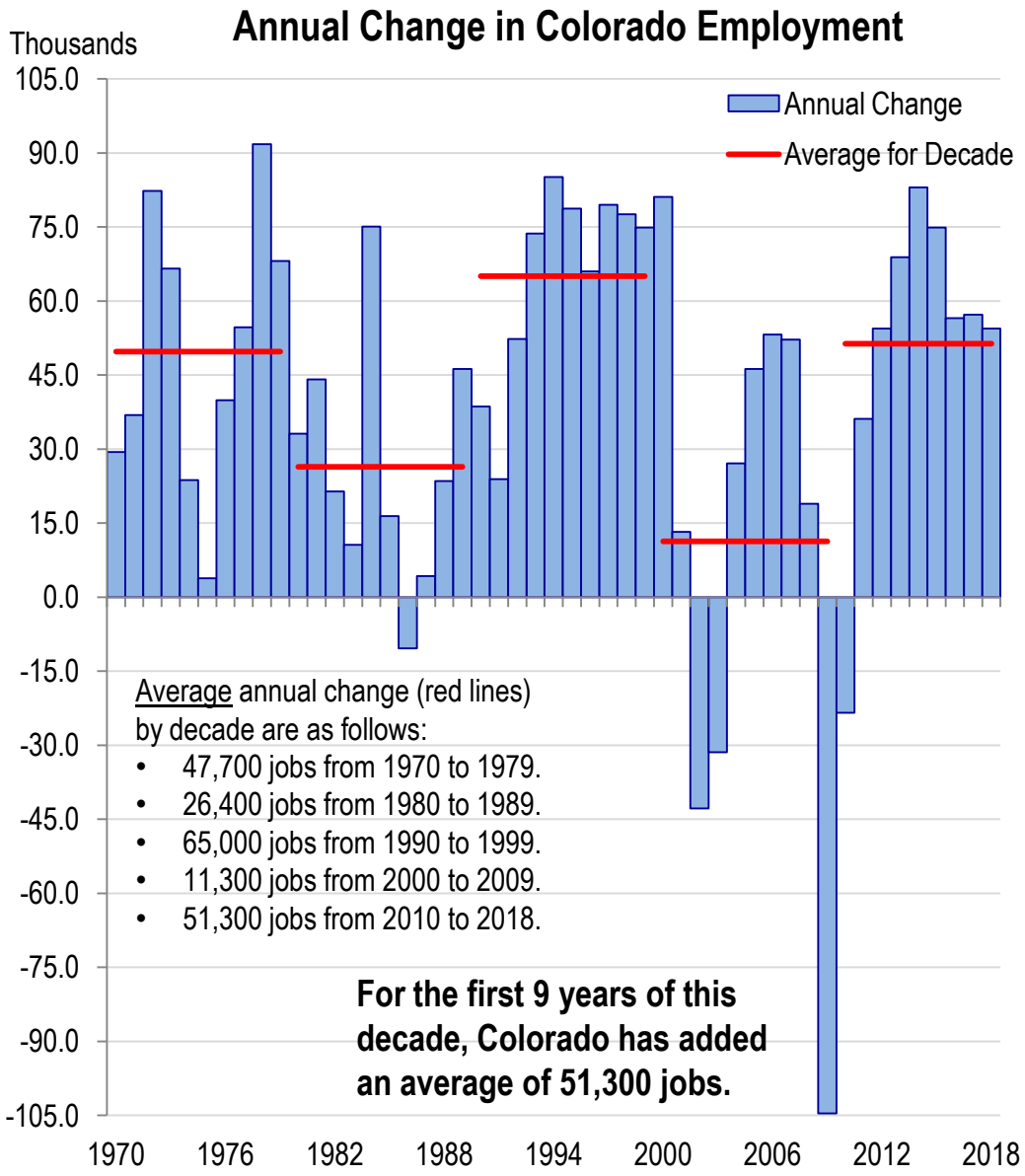
Employment and Unemployment

Annual Employment Change in Colorado Employment

Colorado will add 51,400 to 57,400 jobs in 2018. Colorado employment will increase by 1.9% to 2.1%. Average annual employment is most likely to be at the midpoint or the bottom half of that range.

The 2018 forecast assumes that Colorado added 57,200 jobs in 2017 and 56,500 in 2016.

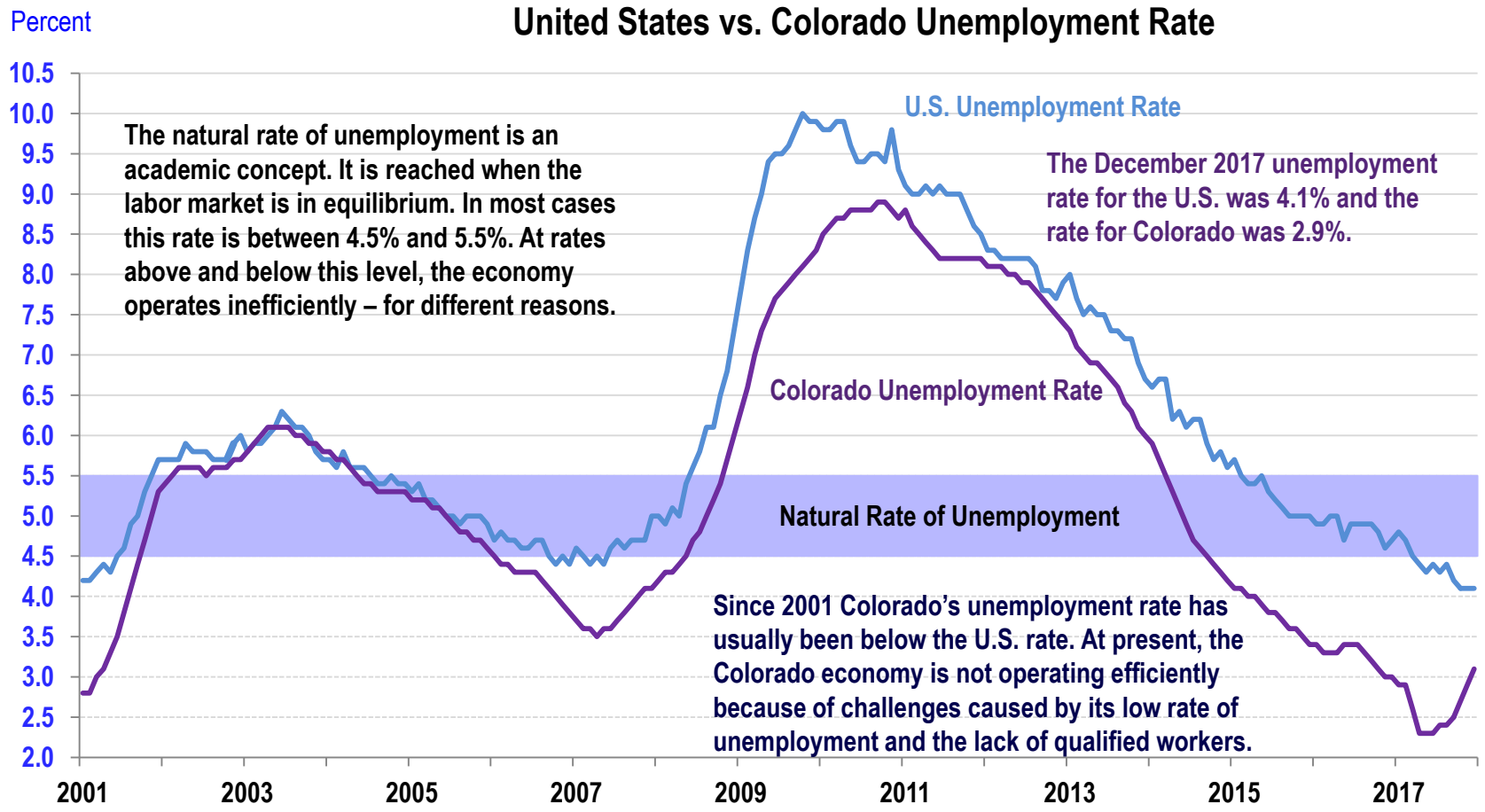
The 2017 cber.co forecast called for 57,000 to 63,000 jobs in 2017, an increase in employment of 2.2% to 2.4%. As mentioned above, the cber.co projected employment was within that range.



Source: Bureau of Labor Statistics, cber.co.

Unemployment Rate

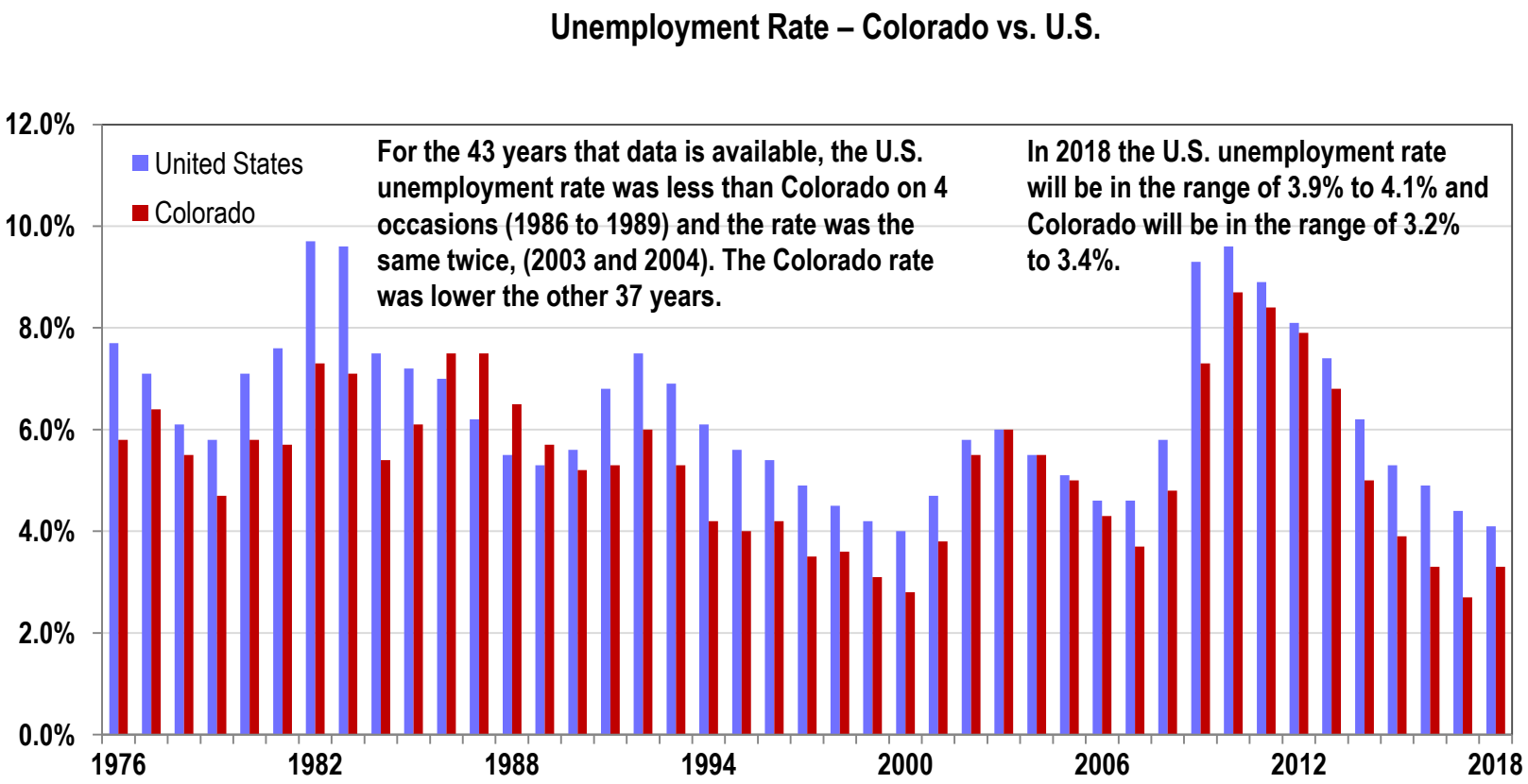
United States vs. Colorado



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

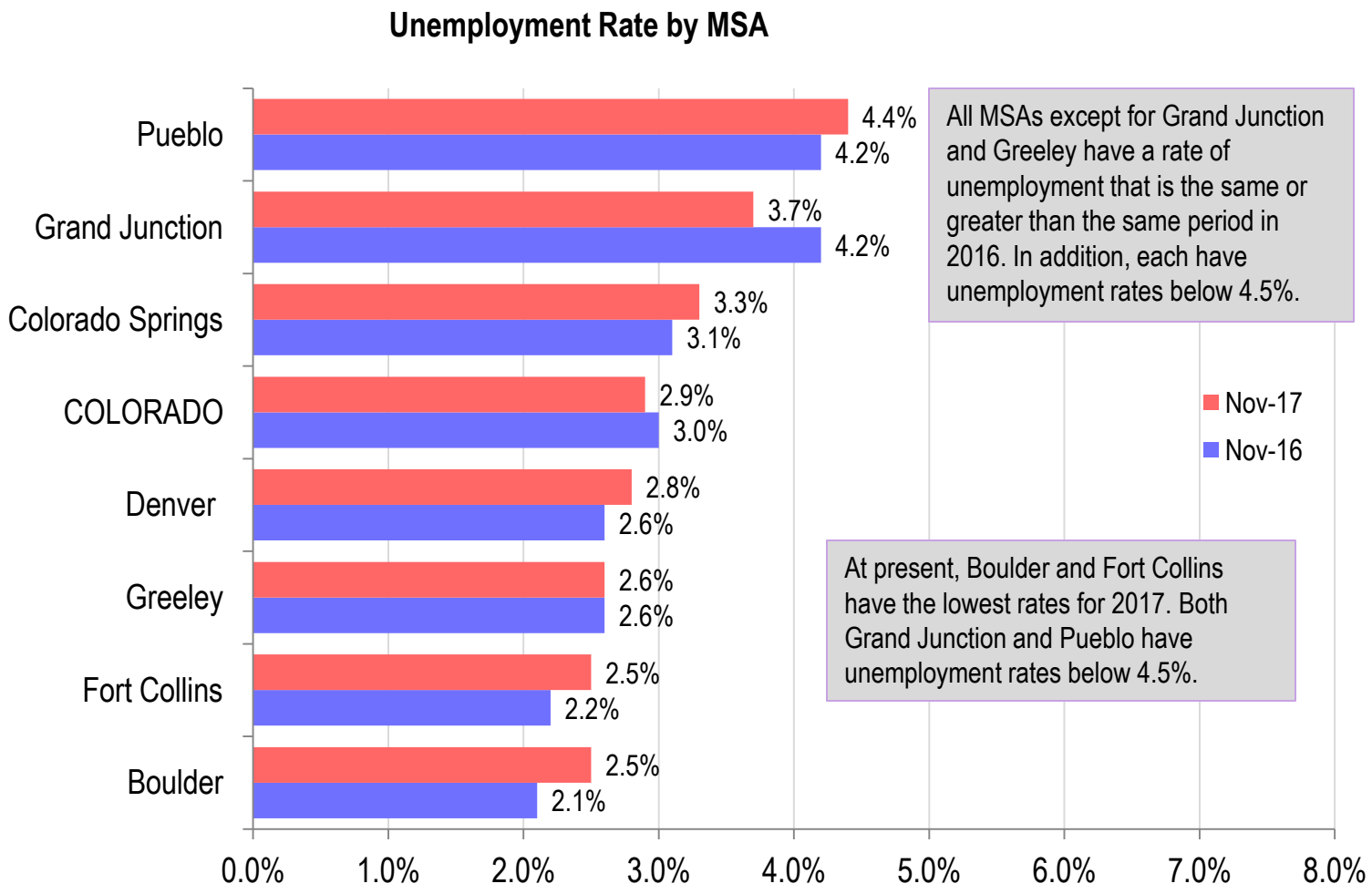
Annual Unemployment Rate

Colorado vs. U.S.



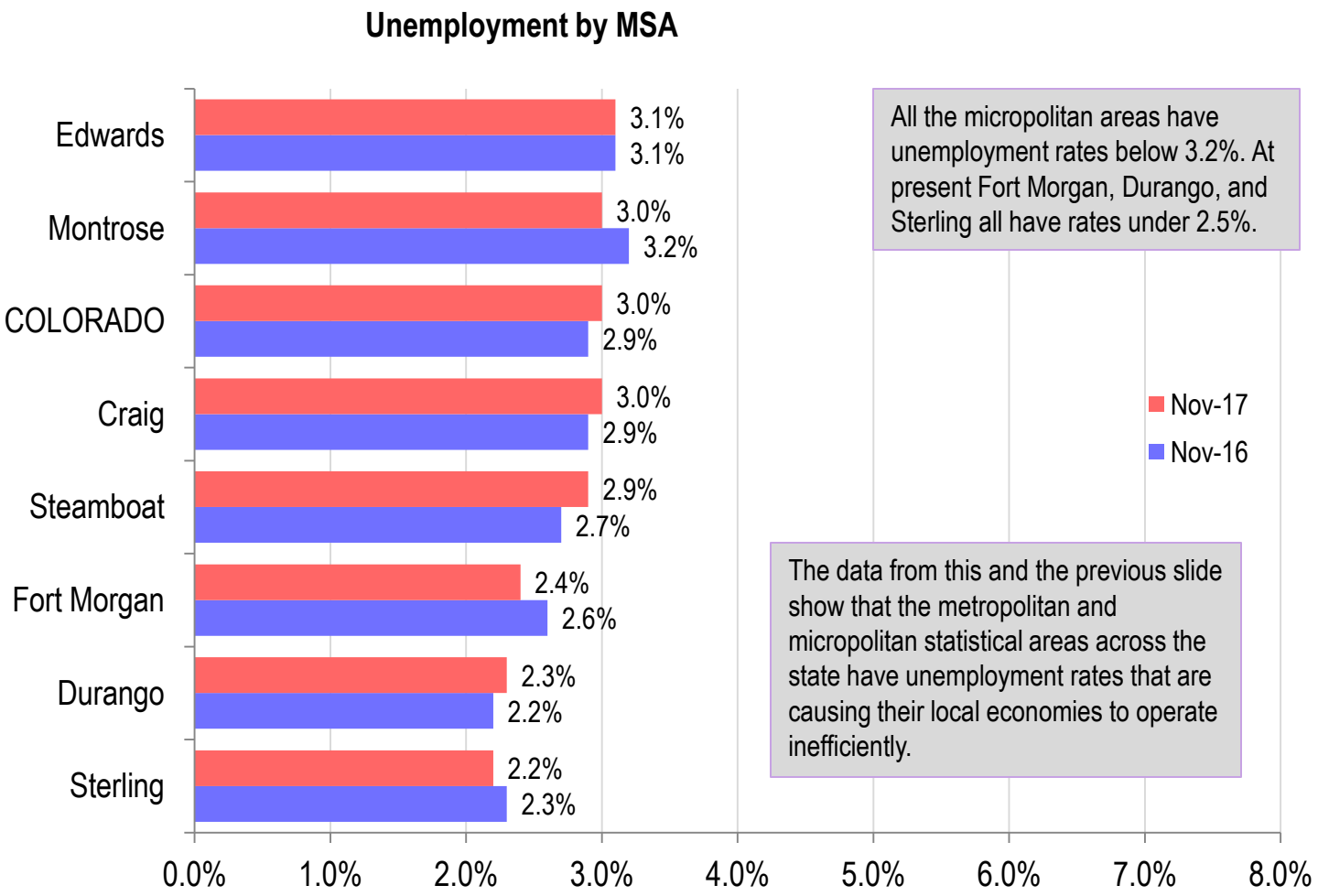
Source: Bureau of Economic Analysis. Note: U.S. real GDP is summary of states GDP.

Unemployment Rate by Metropolitan Statistical Area
2017 vs. 2016



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 Rate by Micropolitan Statistical Area
2017 vs. 2016



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.

Why This Data is Important to Colorado

Employment and Unemployment

- The state level of job growth for the state is:
  - 56,500 in 2016
  - 57,200 in 2017
  - 51,400 to 57,400 in 2018.

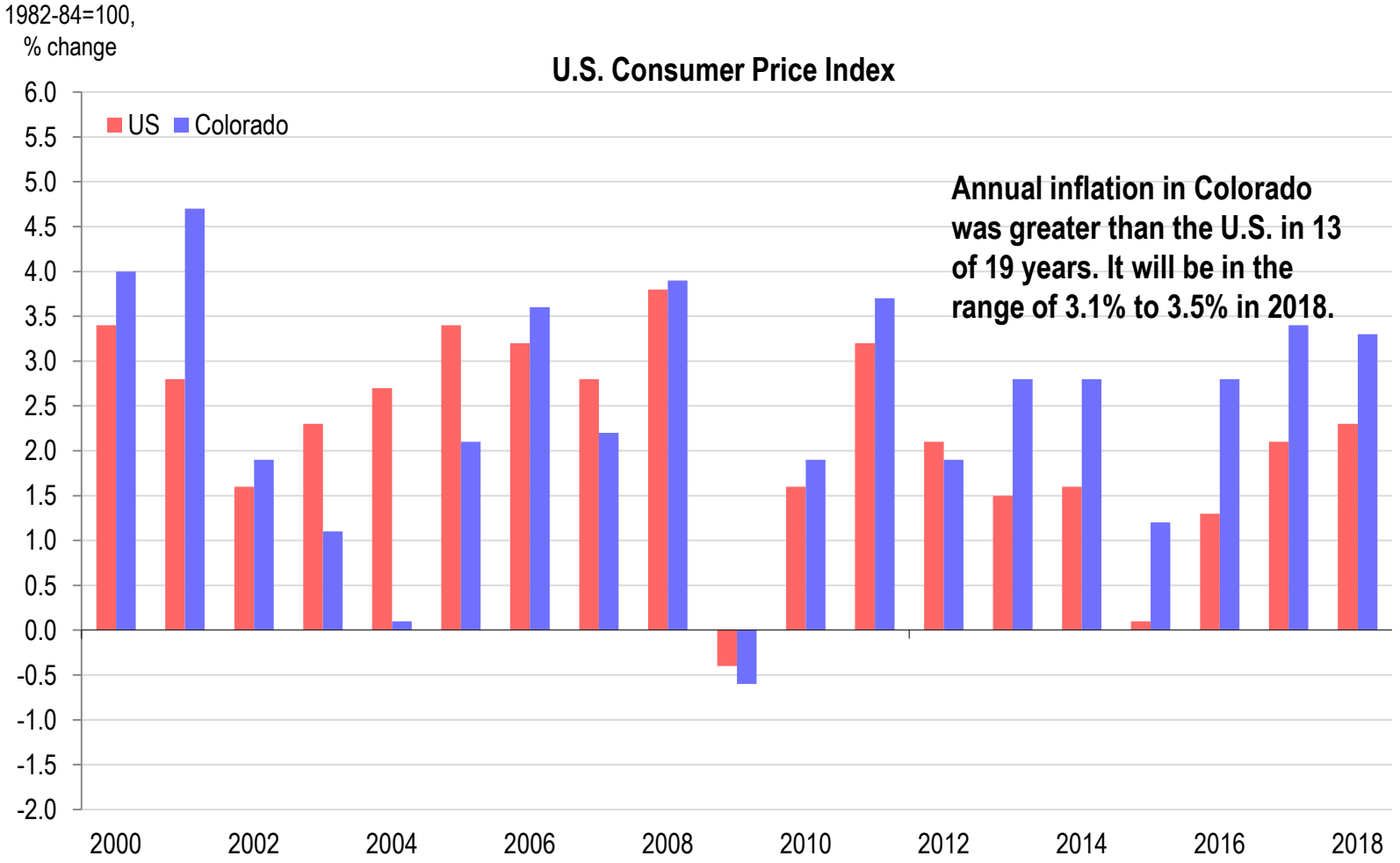
  Job growth is relatively steady for this three year period.
- The unemployment rate is extremely low in all areas of the state.
- The lower unemployment rate in Grand Junction is one of many statistics that shows Mesa County is finally recovering from the downturn caused by the decline in the price for a barrel of oil.

The Colorado Economy

Inflation, Wages, and Number of Establishments

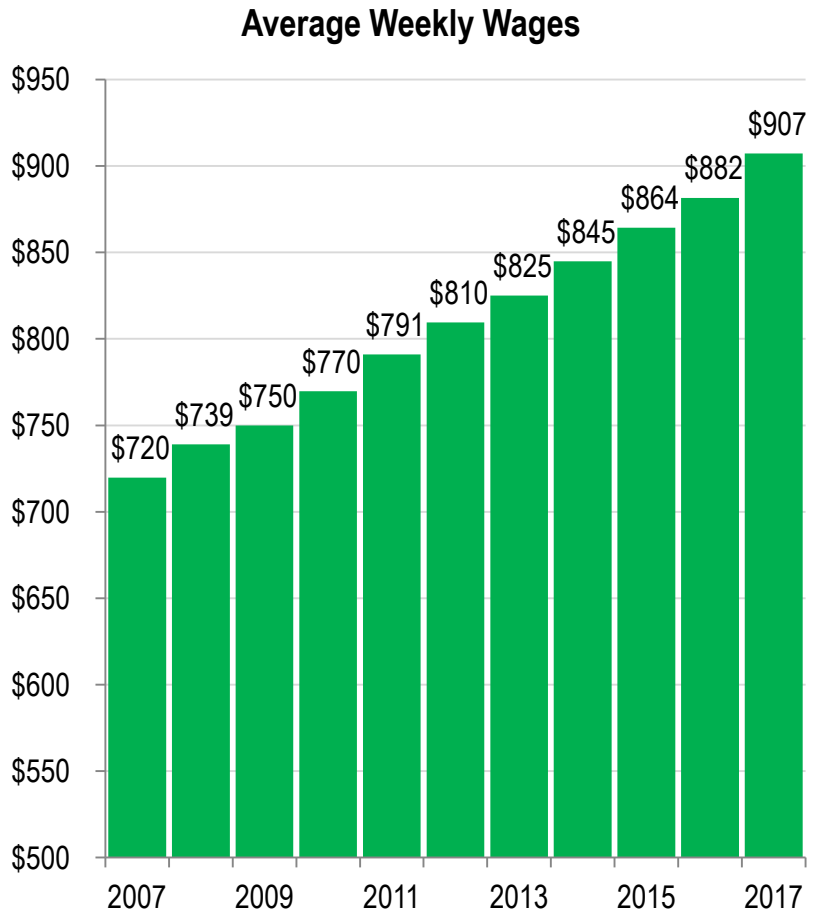
Consumer Price Index (CPI)

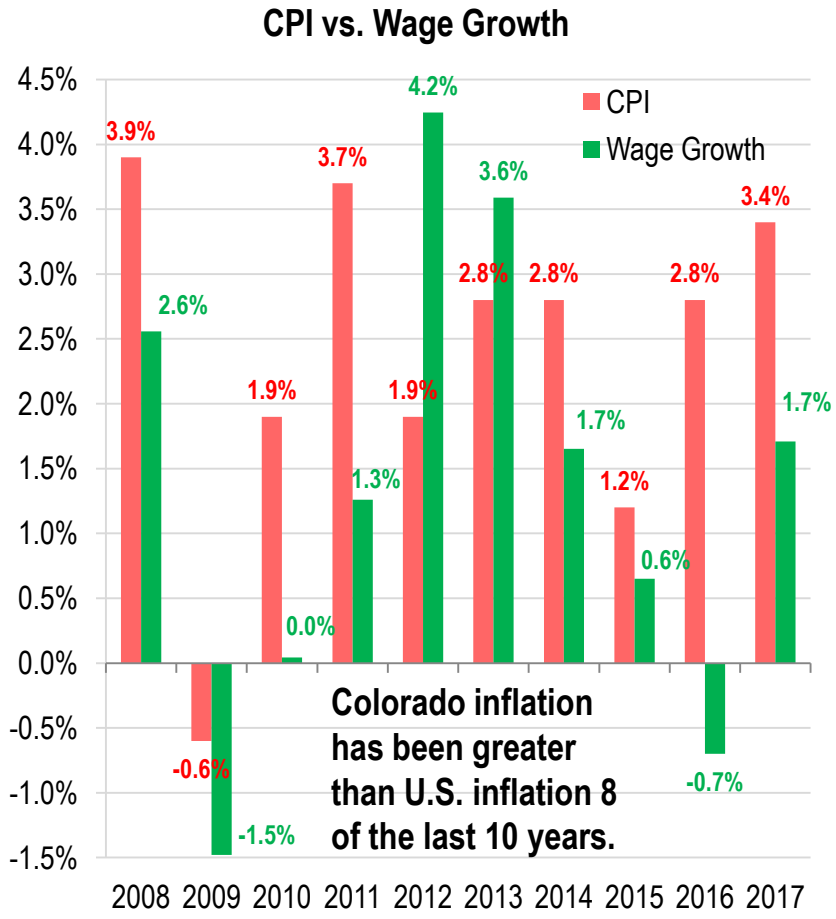
Colorado vs. U.S.



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

Colorado Average Weekly Wage Growth





Source: Bureau of Labor Statistics, SA, cber.co. Note: Wages do not include benefits.

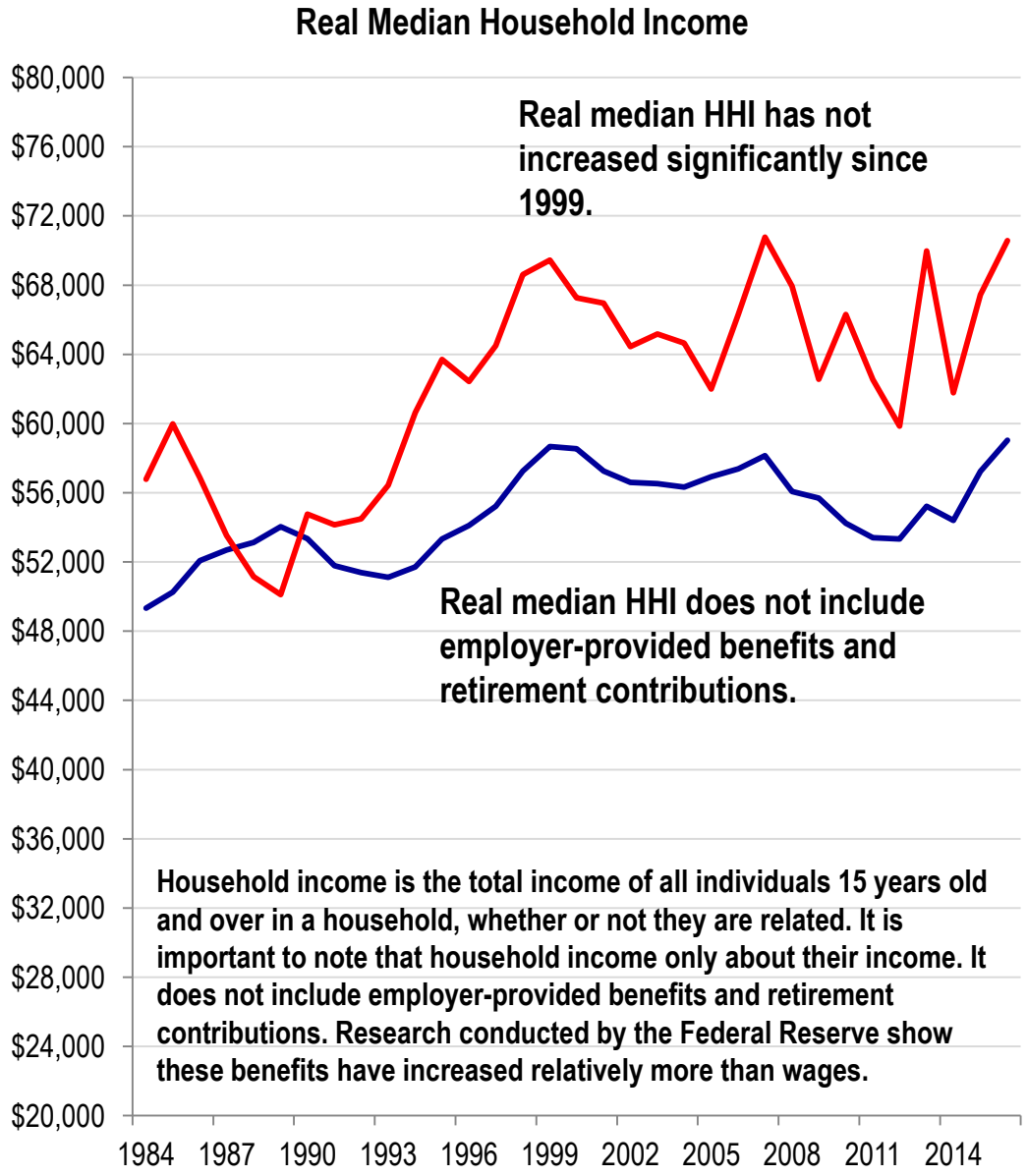
Real Median Household Income (CPI-U-RS Adjusted Dollars, Not Seasonally Adjusted)

The most current data shows that in 1999 real median household income (HHI) for Colorado was $1,117 less than in 2016 ($69,449 vs. $70,566).

The 2007 real median HHI was $210 greater than it was in 2016 ($70,776 vs. $70,566).

In the 31 years between 1984 and 2016, real median HHI increased at an annualized rate of 0.68%.

For most years, real median HHI has been greater for Colorado than the U.S.



Source: Federal Reserve, FRED, cber.co

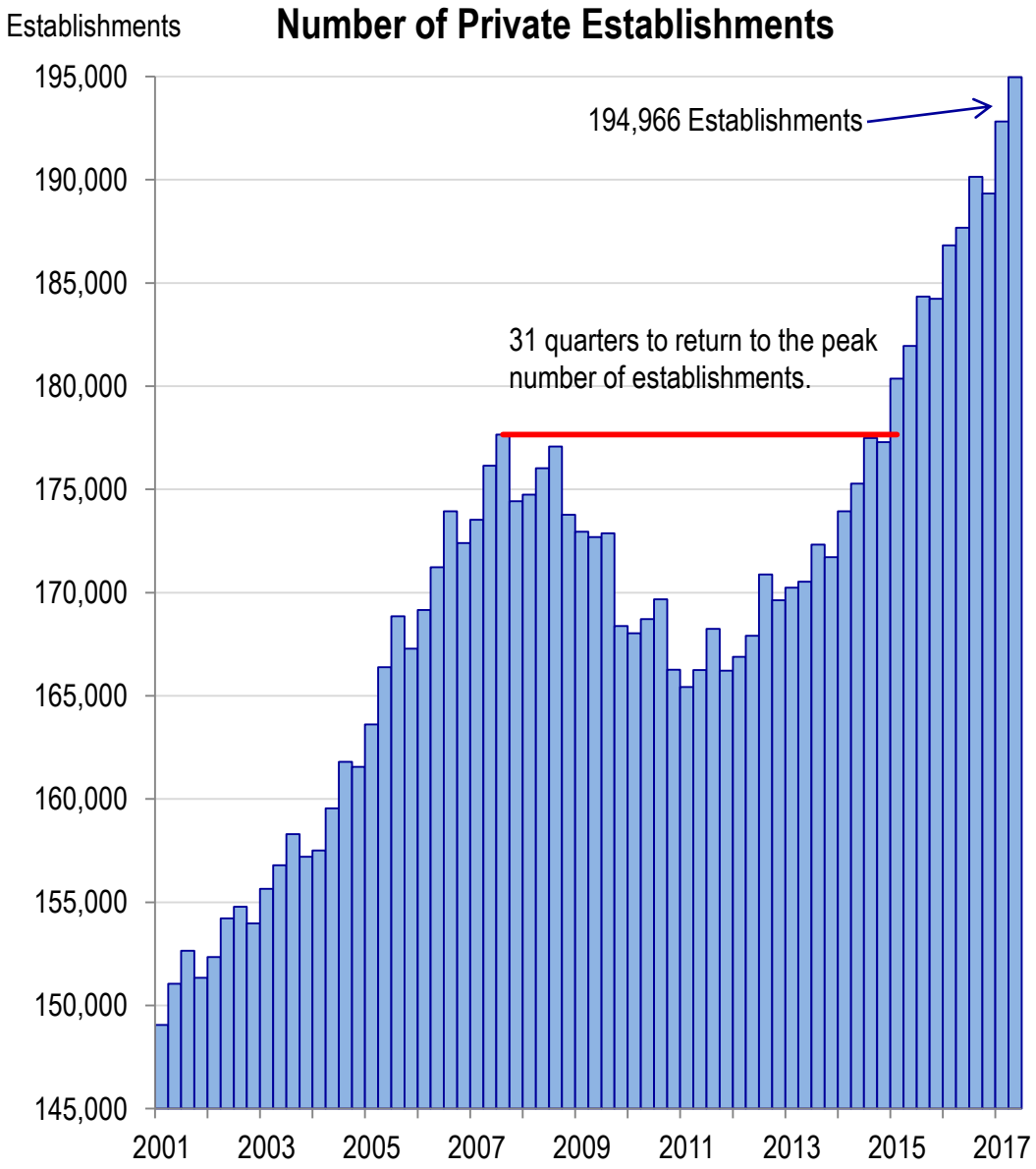
Number of Colorado Private Establishments (Quarterly)

In Q2 2017, there were 194,966 private sector establishments.

From the trough in Q1 2001 to the most current quarter, Q2 2017, there have been 29,537 establishments added, at an annualized growth rate of 2.7%.

The rate of this increase in establishments is similar to the period prior to the Great Recession, Q1 2001 to Q3 2007. During this period of 27 quarters, the number of establishments increased at an annualized rate of 2.6%

The creation of new establishments will be a source of job growth in 2018 and beyond.



Source: Bureau of Labor Statistics, cber.co.

Why This Data is Important to Colorado

Wages and Establishments

- Typically, the rate of inflation in Colorado is greater than the rate for the U.S. This will continue to be a challenge for Coloradans. The increase will be driven by increased housing/rental prices.
- Recent wage increases in Colorado have generally been below the rate of inflation.
- There is anecdotal evidence that Colorado workers in some industries are migrating to states with higher wages.
- The lack of qualified employees to fill jobs in all parts of the state is constraining the growth of the state's economy.
- On a positive note, the slower rate of job growth is allowing the state to expand at a manageable rate.
- The increase in the number of establishments will provide Coloradans with an increased number and variety of places to work.

The Colorado Economy

Colorado Employment Forecast - Strong Growth, Solid Growth, Volatile Categories

Colorado Economic Forecast

Sector Portfolio Analysis

Background of the cber.co Forecast

In 2012-2013, cber.co evaluated the accuracy of other state employment forecasts to find a way to more accurately forecast total employment.

Then, it analyzed BLS data from 1990 to 2012 based on a number of factors that measured change. From that analysis, 23 sectors and subsectors were grouped into three categories (strong growth, solid growth, and volatile growth).

This portfolio approach has made it easy to see that some sectors consistently have a higher rate of growth and some sectors have a consistent, but lower rate of growth. Others are more volatile.

Overview of the cber.co Forecast Methodology

Each year, 3 total employment forecasts are prepared.

1. The first forecast projects total employment and job growth for the past two years and the next year.
2. The second forecast includes projections for the strong, solid, and volatile growth categories. The projections for these categories are summed for the state total. The category totals are tracked throughout the year.
3. The difference between the two forecasts is reconciled to produce the final forecast.

Annual Employment Situation for the Strong Growth Category

Over the past two decades the following sectors have been the foundation for consistent growth in Colorado employment.

- Professional, Scientific, and Technical Services
- Management of Companies and Enterprises
- Administrative Services (Not Employment Services)
- Private Education
- Health Care
- Arts, Entertainment, and Recreation
- Other Services.

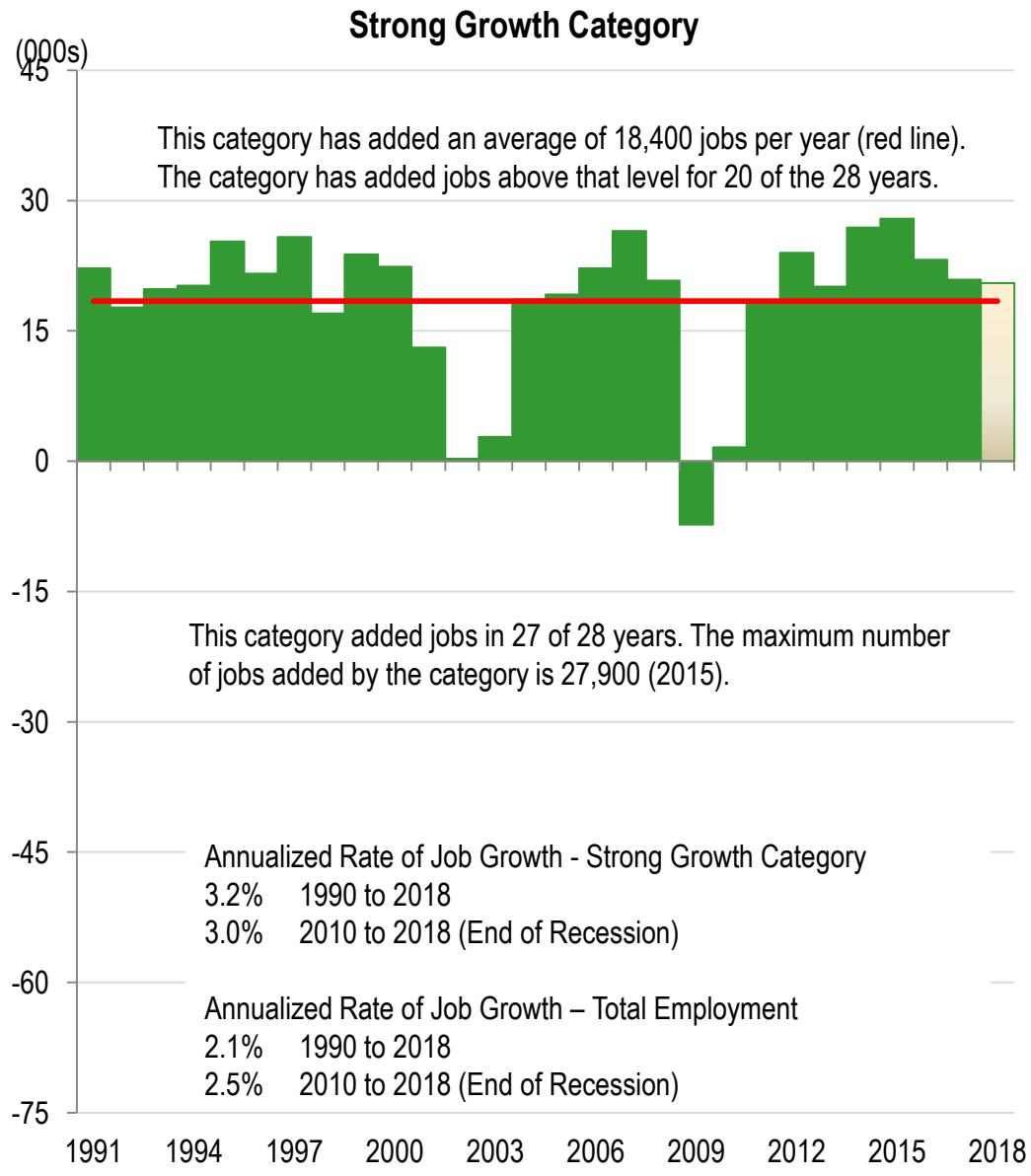
Total employment for this category was:

1997 517,900 workers, 26.2% of total employment

2007 683,800 workers, 29.3% of total employment

2017 863,100 workers, 32.5% of total employment

In 2018, between 19,500 and 21,500 workers will be added at a rate of 2.3% to 2.5%. The number of jobs added is slightly less than 2017.



Source: Bureau of Labor Statistics, cber.co.

Annual Employment Situation for the Solid Growth Category

Over the past two decades the following sectors generally posted gains. The category posted stronger jobs gains during the 1990s than the 2000s and 2010s.

- Wholesale Trade
- Retail Trade
- State (Not Higher Education)
- Higher Education
- Local (Not K-12 Education)
- K-12 Education
- Accommodations and Food Services

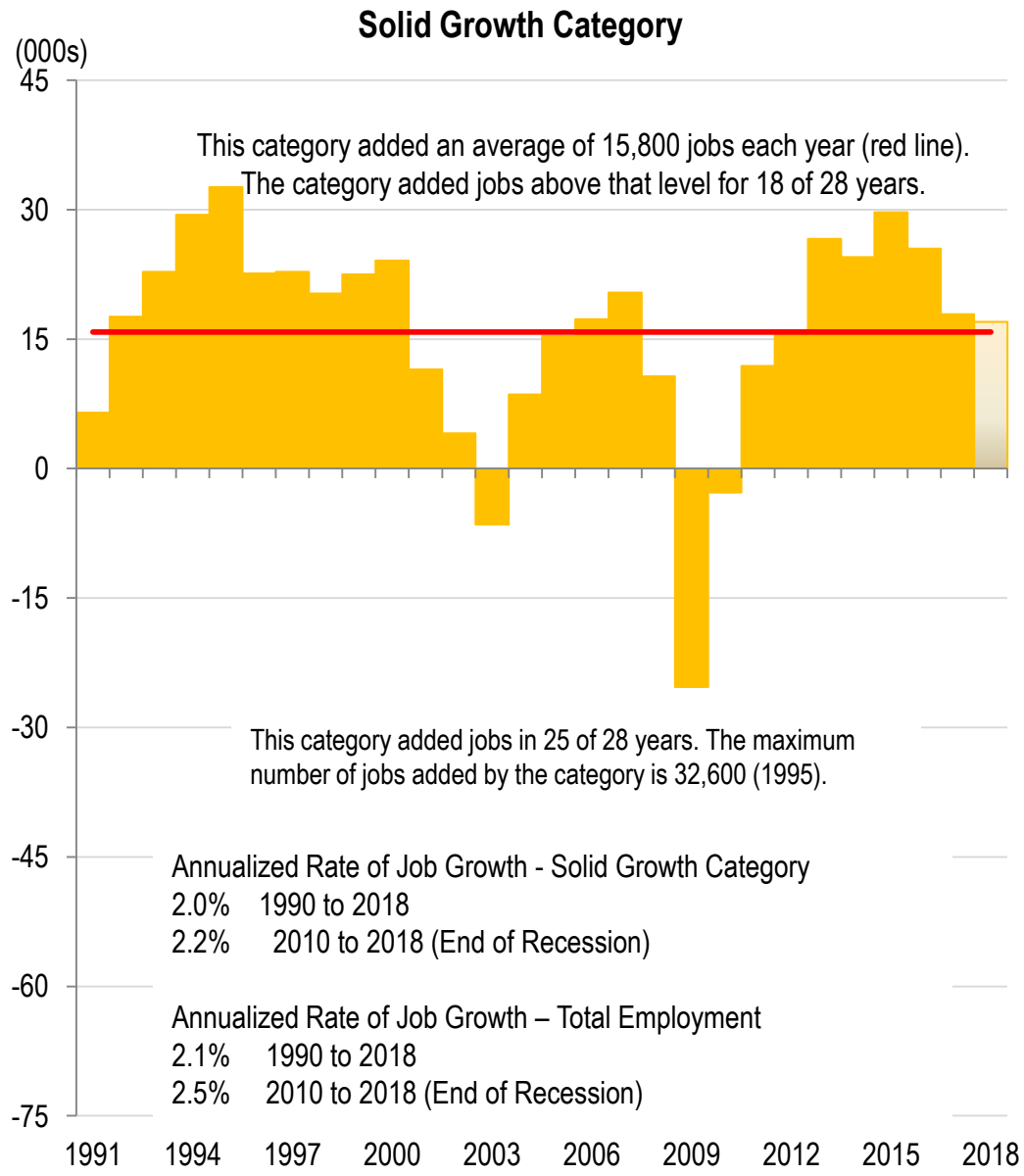
Total employment for this category was:

1997 763,400 workers, 38.6% of total employment

2007 901,100 workers, 38.6% of total employment

2017 1,034,900 workers, 39.0% of total employment

In 2018, between 16,000 and 18,000 jobs will be added, at a rate of 1.5% to 1.7%. The number of jobs added is slightly less than 2017.



Source: Bureau of Labor Statistics, cber.co.

Annual Employment Situation for the Volatile Category

Over the past two decades the sectors listed below were the primary source of volatility in total employment.

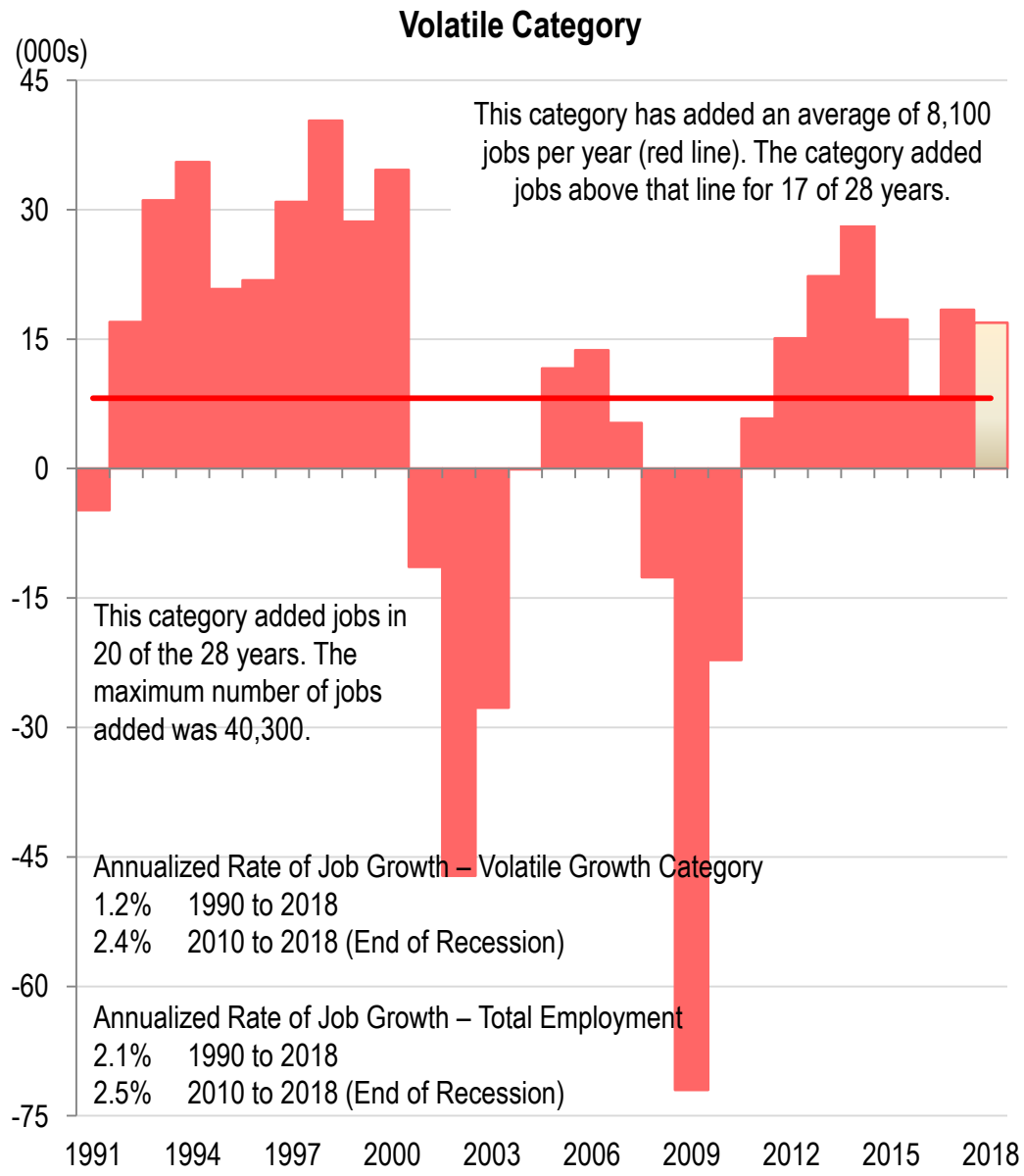
The sectors are:

- Natural Resources and Mining
- Construction
- Manufacturing
- Transportation and Warehousing
- Utilities
- Employment Services
- Financial Activities
- Information
- Federal Government

Total employment for this category was:

1997 698,900 workers, 35.3% of total employment
2007 746,600 workers, 32.0% of total employment
2017 757,600 workers, 28.5% of total employment

In 2018 between 15,900 and 17,900 jobs will be added, at a rate of 2.1% to 2.3%. The number of jobs added is slightly less than 2017.



Source: Bureau of Labor Statistics, cber.co.

Scenarios for the 2018 Colorado Economic Outlook

Colorado job growth for 2016 and 2017 was steady. It will continue to be that way in 2018. There is more downside risk to the forecast than upside potential. This means the job growth for 2018 may be slightly slower than 2017.

Strong Growth Category (About 32% of total employment)
In 2018, the rate of job growth for this category will be **2.3% to 2.5%.**

Solid Growth Category (about 39% of total employment)
In 2018, the rate of job growth will be **1.5% to 1.7%.**

Volatile Growth Category (29% of total employment)
In 2018, the rate of job growth will be **2.1% to 2.3%.**

2018 Economic Outlook

Optimistic Scenario
- U.S. real GDP will be greater than 2.7%.
- The U.S. will add more than 2.1 million workers.
- Colorado will add more than 57,400 workers, job growth will be greater than 2.1%.

Most Likely Scenario
- U.S. real GDP will be 2.3% to 2.7%.
- The U.S. will add 1.9 to 2.1 million workers.
- Colorado will add 51,400 to 57,400 workers, job growth will be 1.9% to 2.1%.

Pessimistic Scenario
- U.S. real GDP less than 2.3%.
- The U.S. will add less than 1.9 million workers
- Colorado will add less than 51,400 workers, job growth will be less than 1.9%.

The probability of these scenarios follows:
- Most Likely 60%
- Optimistic 18%
- Pessimistic 22%.

There is more downside risk than upside potential.

Source: cber.co.

2018 Employment Forecast

Most Likely Scenario

Twenty-three sectors and subsectors have been placed into three categories based on their growth patterns over the past two decades. Projections for these categories are used in the development of the 2018 employment forecast.

Strong Growth Category
+19,500 to 21,500 Employees

- Professional and Scientific
- Management of Companies and Enterprises
- Administrative Services (Not Employment Services)
- Private Education
- Health Care
- Arts, Entertainment, and Recreation
- Other Services.

Solid Growth Category
+16,000 to 18,000 Employees

- Wholesale Trade
- Retail Trade
- State (Not Higher Education)
- Higher Education
- Local (Not K-12 Education)
- K-12 Education
- Accommodations and Food Services

Volatile Growth Category
+15,900 to +17,900 Employees

- Natural Resources and Mining
- Construction
- Manufacturing
- Transportation and Warehousing
- Utilities
- Employment Services
- Financial Activities
- Information
- Federal Government

In 2018 Colorado will add 51,400 to 57,400 jobs, or job growth of 1.9% to 2.1%.

Source: cber.co.

Putting the Forecast in Perspective

This Is Not Fake News!

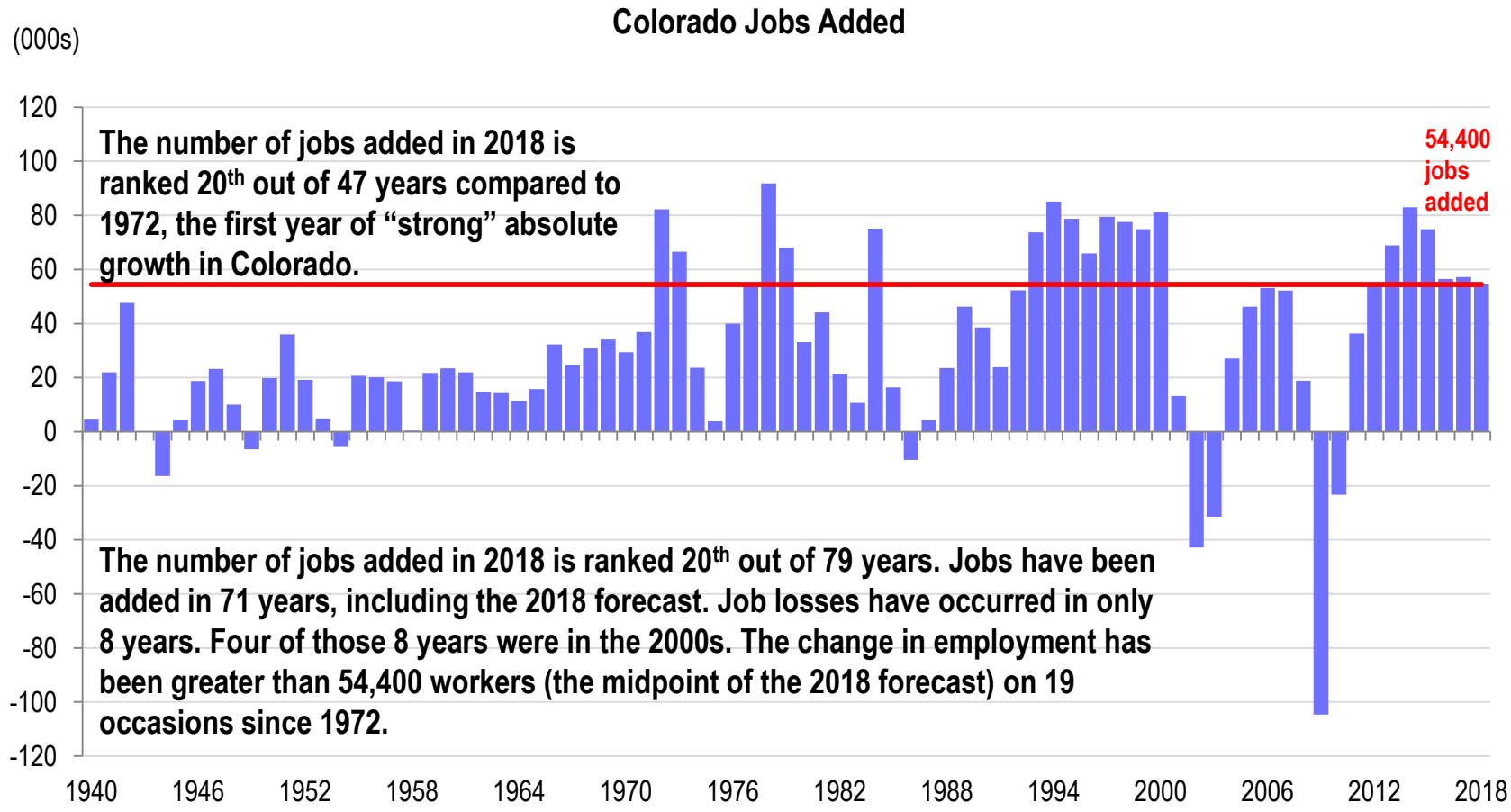
In 1954, Darrell Huff wrote the classic book, *How to Lie with Statistics*.

The following three charts look at the 2018 forecast using data presentation concepts mentioned Huff's book. All charts accurately represent the facts.

The story to be told – Colorado adds 54,400 jobs in 2018, an increase of 2.0%.

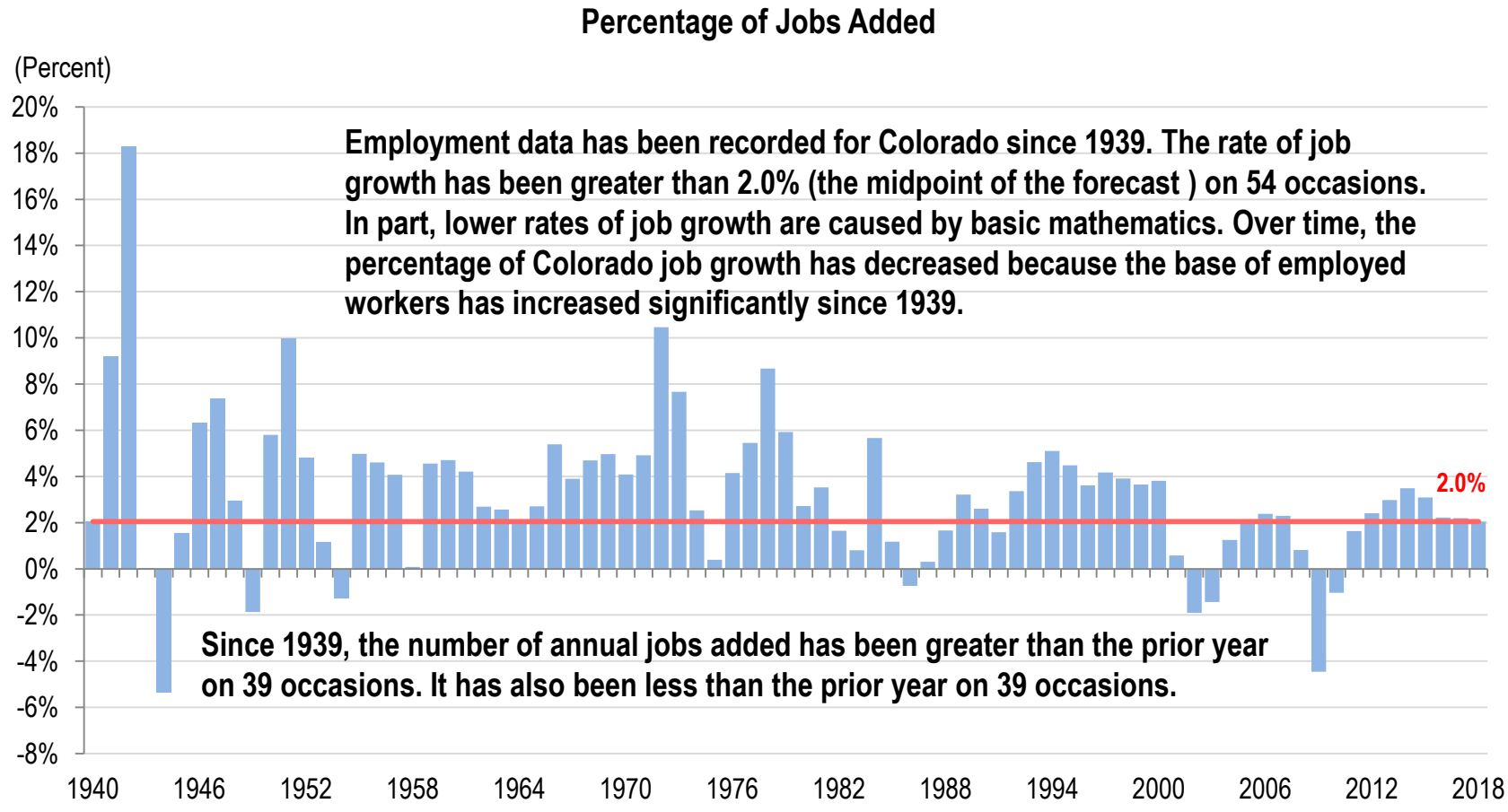
- The chart showing absolute job growth indicates there was solid job growth in 2018.
- On the other hand, the chart showing relative job growth indicates the job growth in 2018 was weak.
- Another way to look at Colorado's job growth is to compare it to the nation. This chart shows that Colorado employment has increased at a faster rate than U.S. employment. That infers the level of job growth is better than the norm.
- Which is correct? They are all correct!

The Projected Absolute Job Growth for 2018 (Total Jobs Added) will be the 20th Strongest Since 1939.



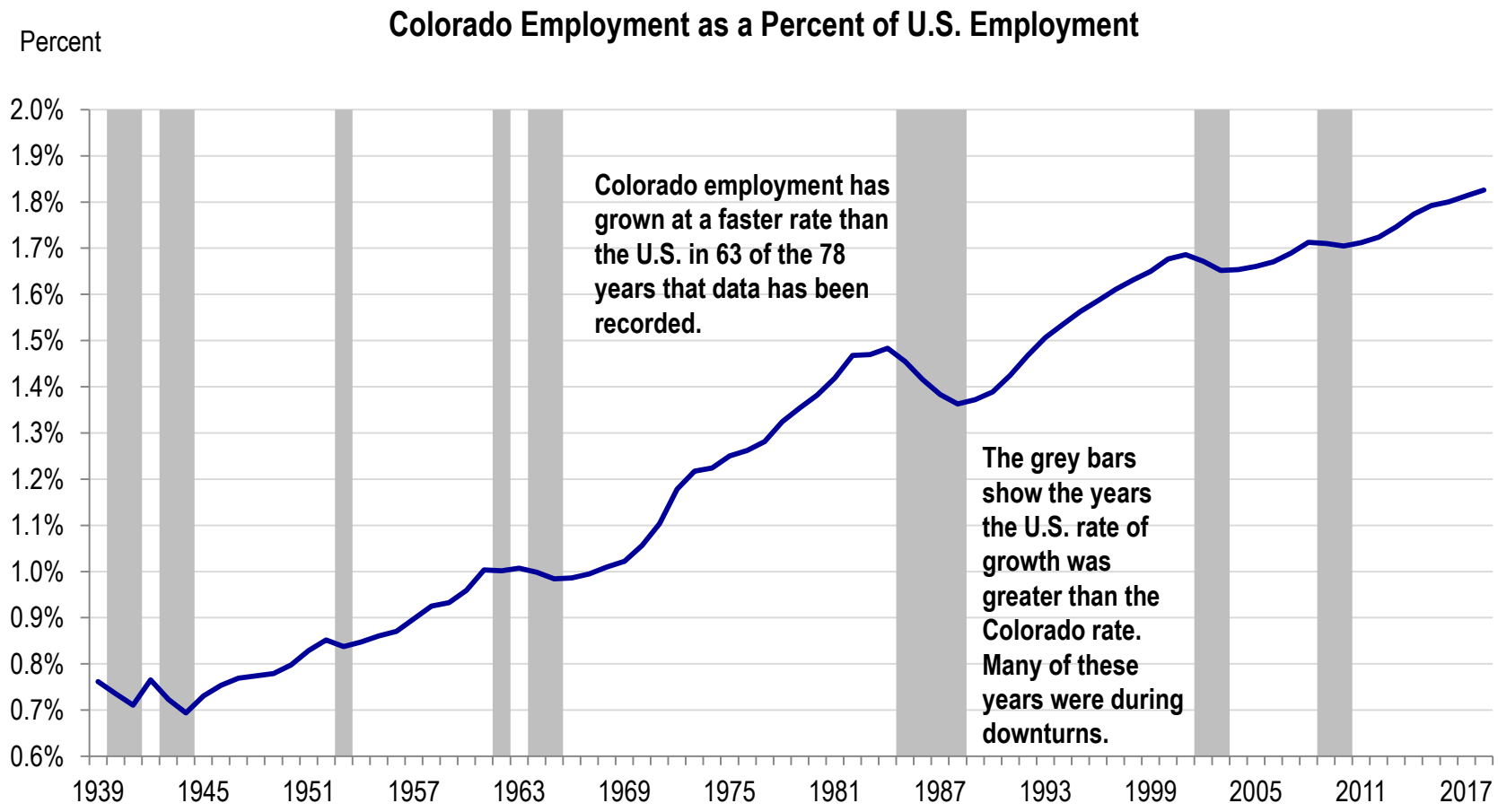
Source: Bureau of Labor Statistics, cber.co.

The Projected Rate of Colorado Job Growth for 2018 will be the 55th Strongest in 79 Years



Source: Bureau of Labor Statistics, cber.co.

Colorado Employment as a Percent of U.S. Employment



Source: Bureau of Labor Statistics, cber.co.

Colorado Economy

Employment in Strong Growth, Solid Growth, Volatile Categories

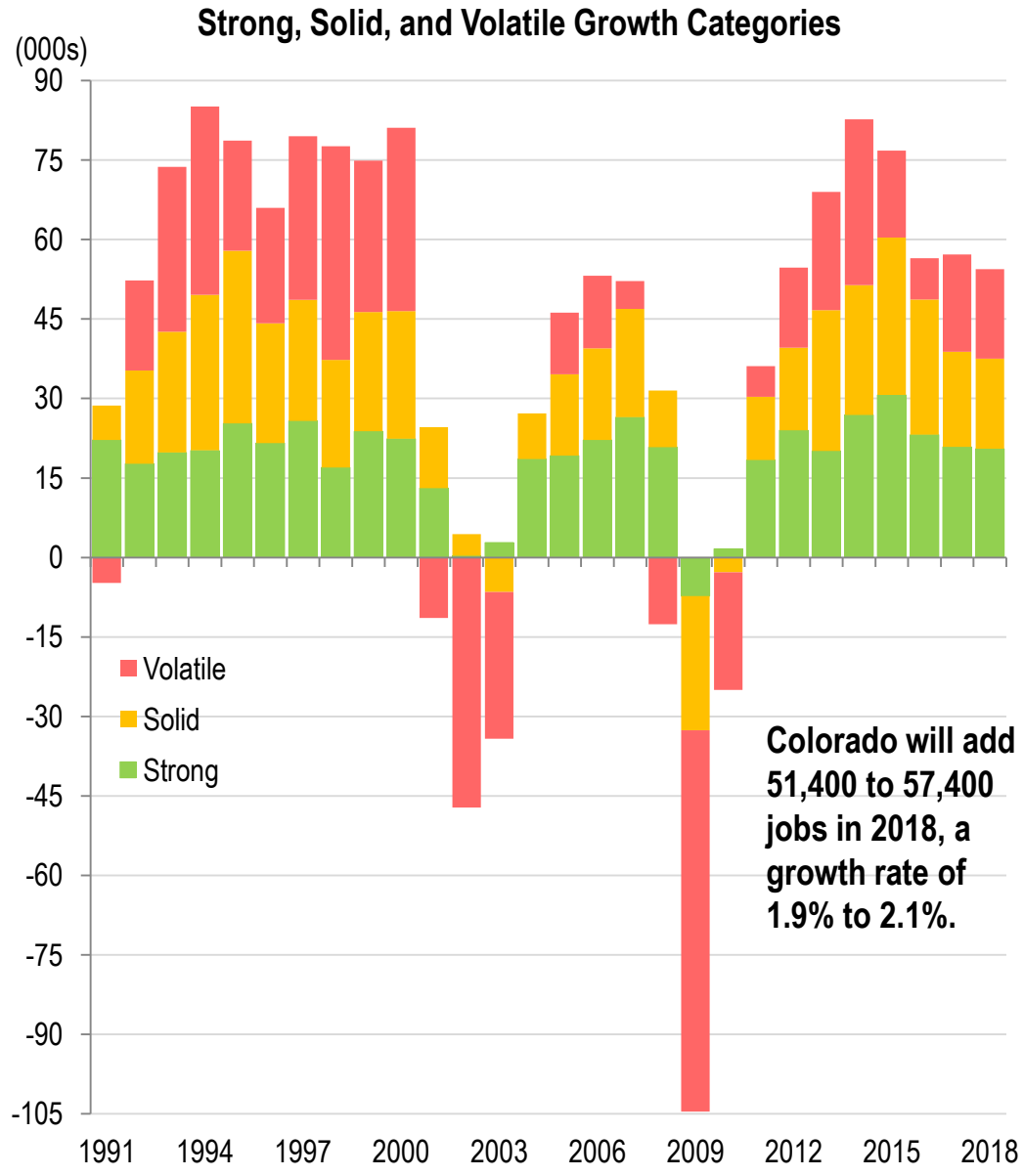
Change in Employment Summary of Strong, Solid, and Volatile Growth Categories

This section looks more closely at the Solid, Strong, and Volatile Growth Categories

Strong Growth Category – 19,500 to 21,500 jobs added, 2.3% to 2.5% growth rate.
Health care and professional and scientific services, and higher education are the top sectors for job growth.

Solid Growth Category – 16,000 to 18,000 jobs added, 1.5% to 1.7% growth rate.
Accommodations and food services, trade, and state and local government are the leading sectors for job growth.

Volatile Category – 15,900 to 17,900 jobs added 2.1 to 2.3% growth rate.
Boom or bust industries – such as the extractive industries, manufacturing, information.



Source: Bureau of Labor Statistics, cber.co.

Six Industries That Are Important to Employment Growth for Different Reasons

The charts on the following six pages look at two sectors from each of the strong growth, solid growth, and volatile job categories that are contributing significant job growth. Combined, these sectors will be responsible for about 68% of the jobs added in 2018.

Strong Growth Category
- Health care
- Professional, Scientific, and Technical Services

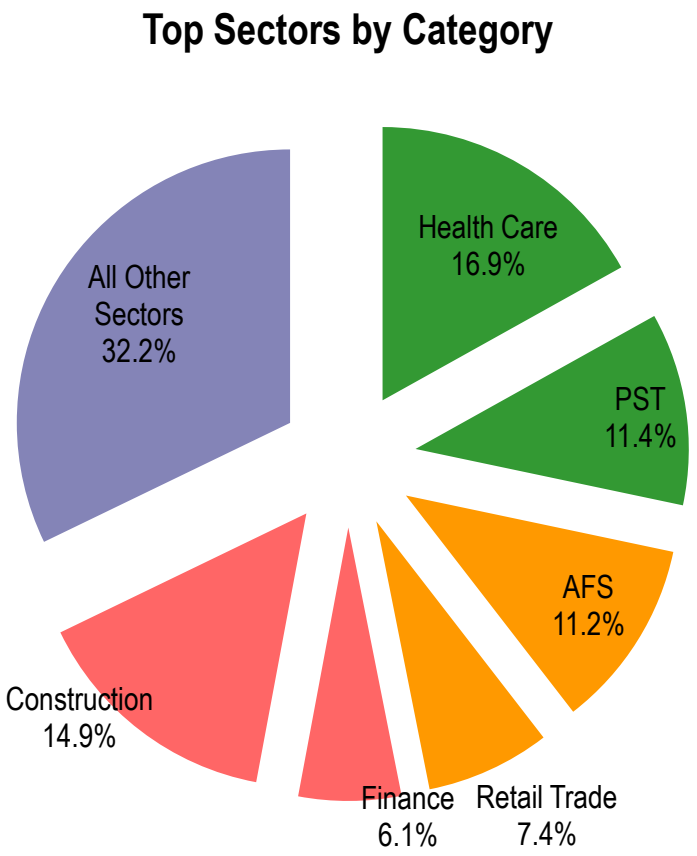
Total 28% of jobs added, or 15,400 jobs.

Solid Growth Category
- Accommodations and Food Services
- Retail

Total 19% of jobs added, or 10,100 jobs.

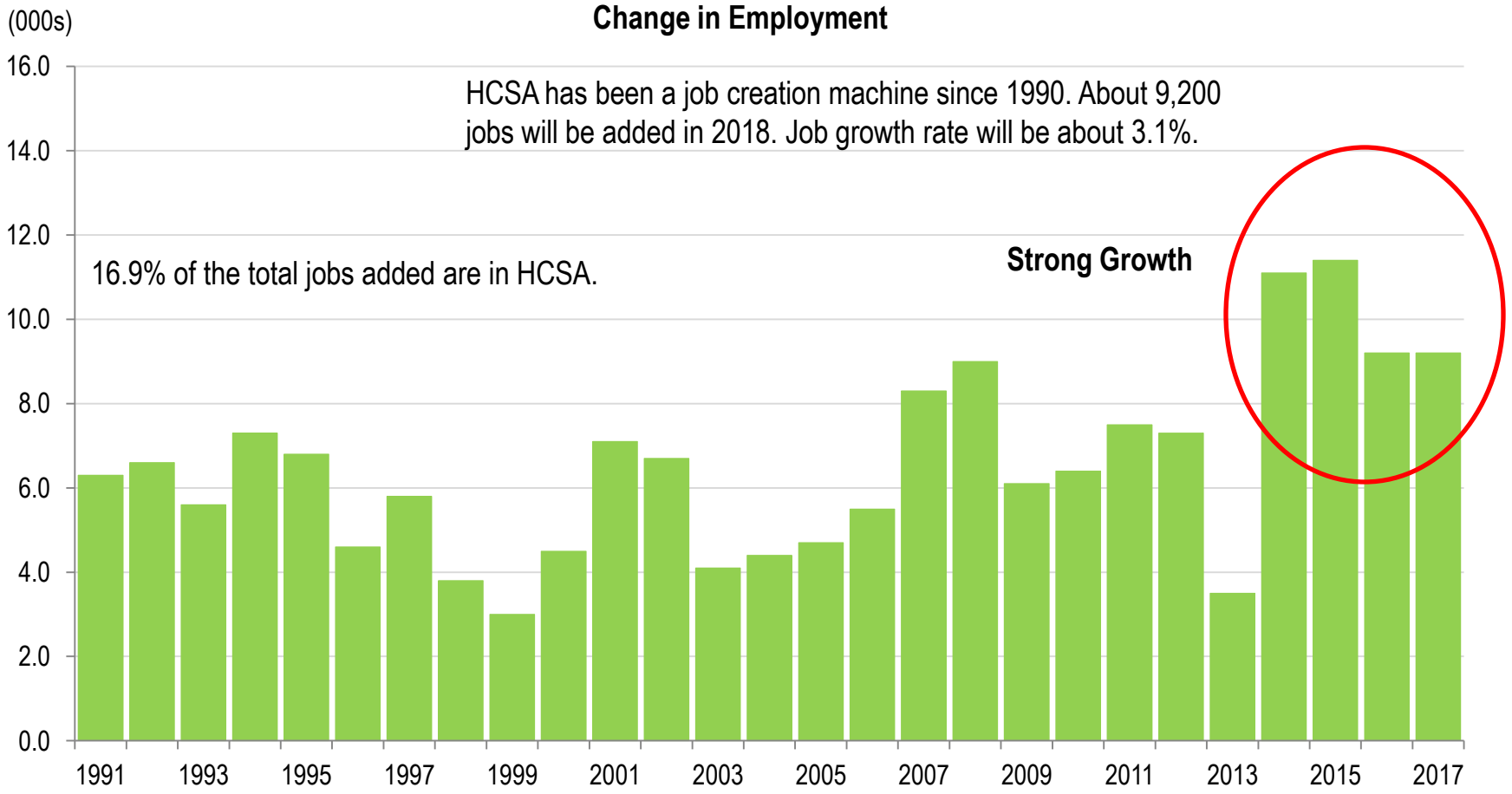
Volatile Category
- Financial Activities
- Construction

Total 21% of jobs added, or 11,400 jobs added.



Change in Employment

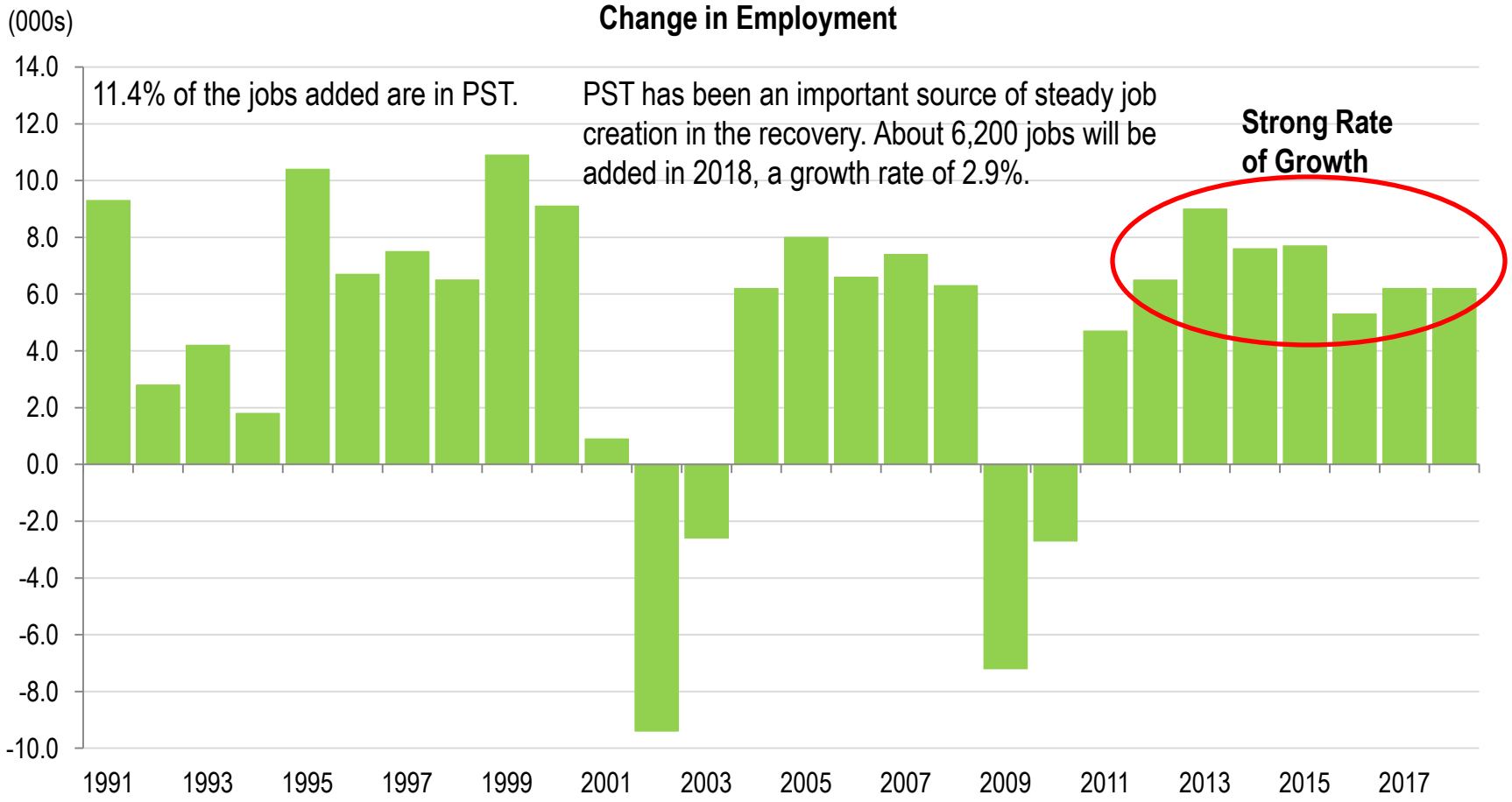
Health Care and Social Assistance



Source: Bureau of Labor Statistics, cber.co.

Change in Employment

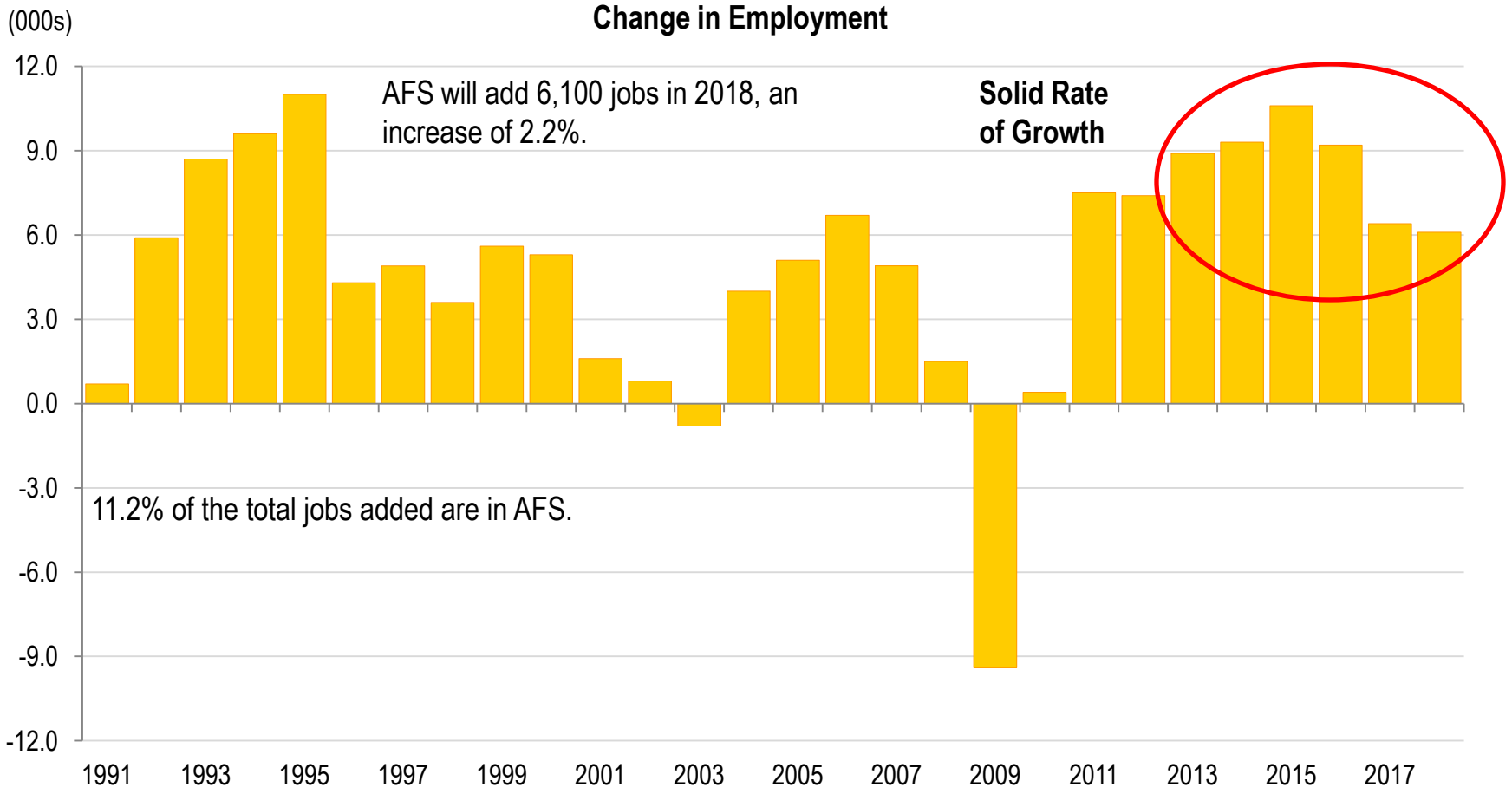
Professional, Scientific, and Technical Services



Source: Bureau of Labor Statistics, cber.co.

Change in Employment

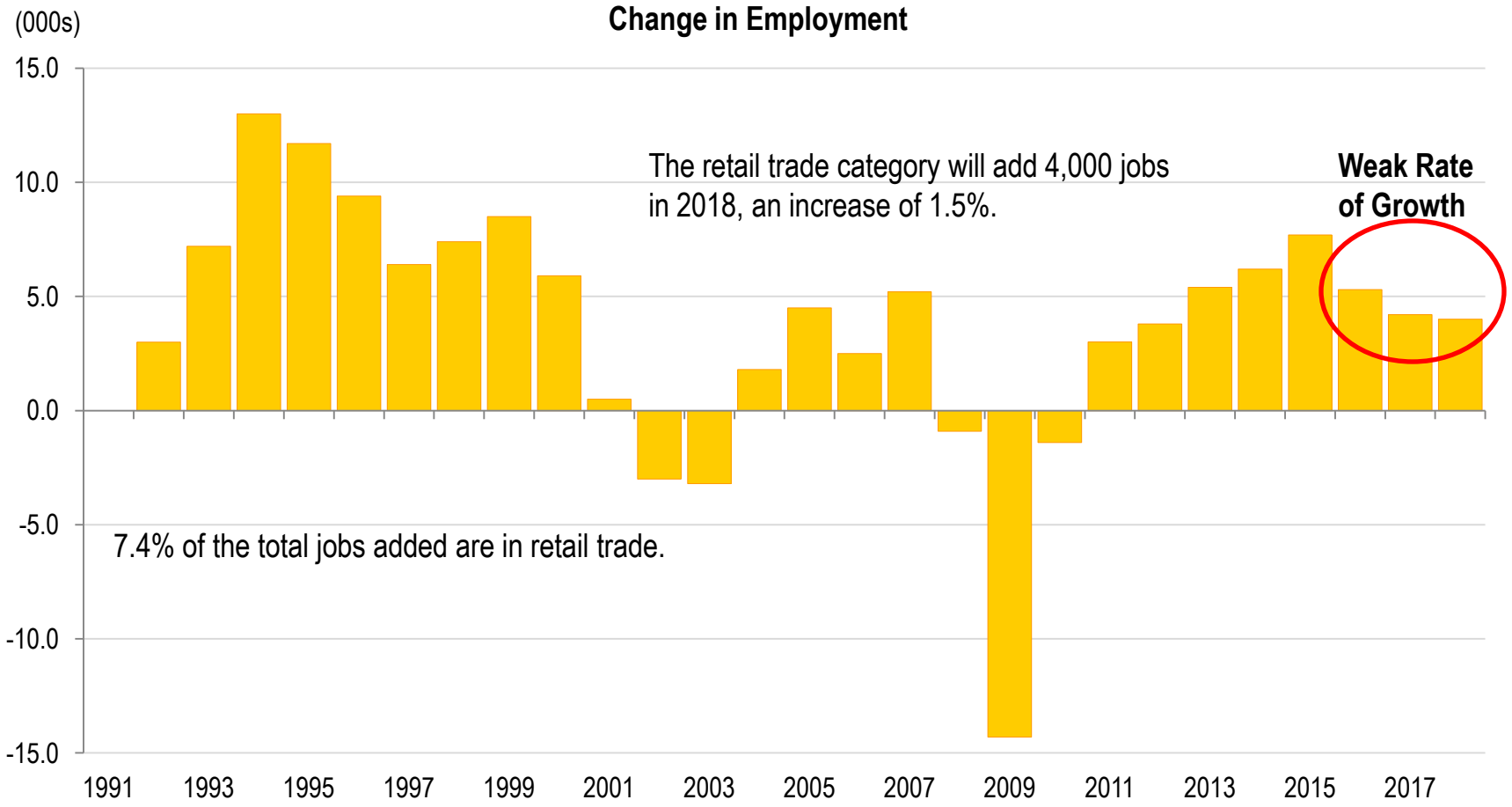
Accommodations and Food Services



Source: Bureau of Labor Statistics, cber.co.

Change in Employment

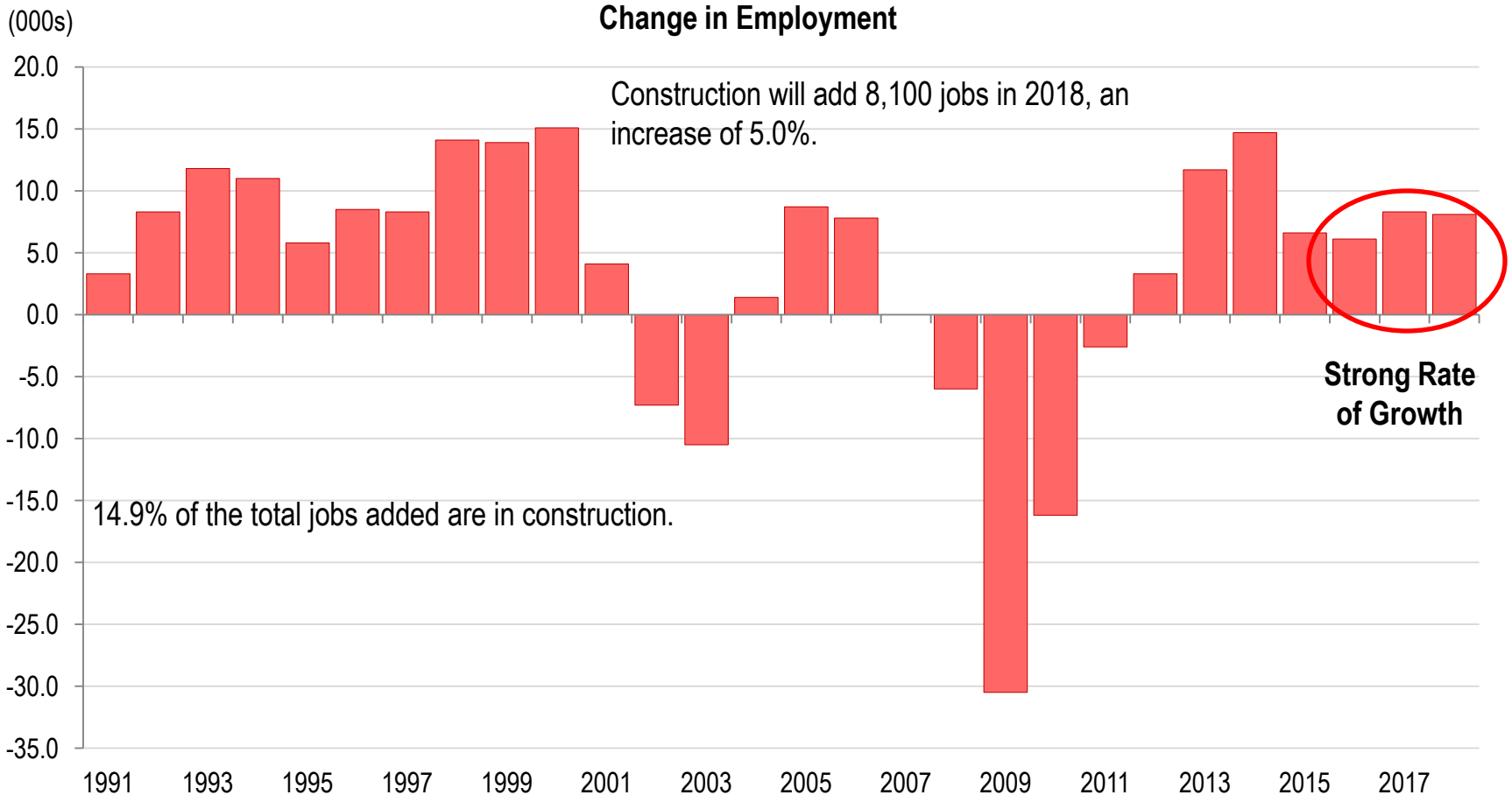
Retail Trade



Source: Bureau of Labor Statistics, cber.co.

Change in Employment

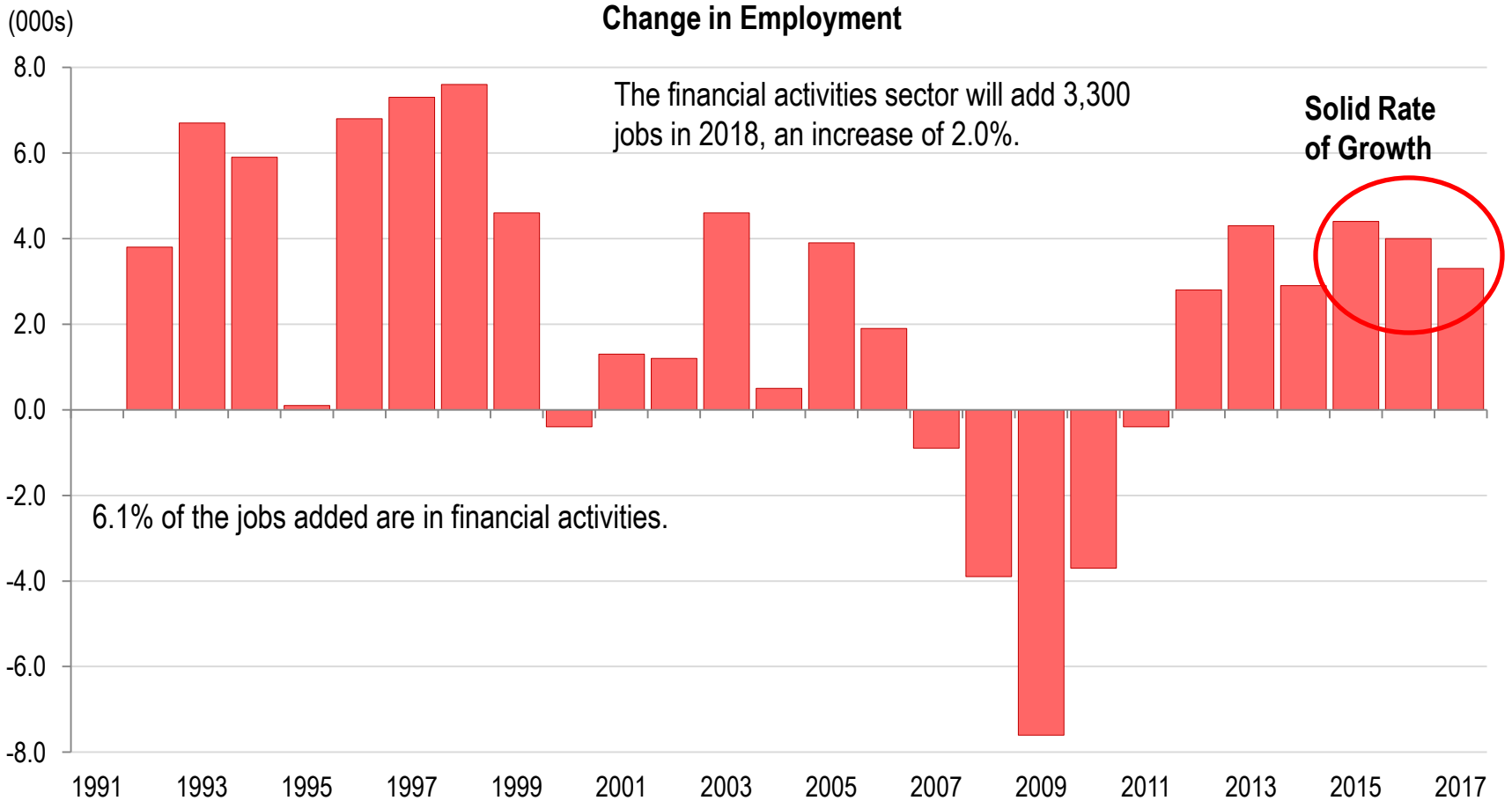
Construction



Source: Bureau of Labor Statistics, cber.co.

Change in Employment

Financial Activities



Source: Bureau of Labor Statistics, cber.co.

Why This Data is Important to Colorado

Employment Forecast, Putting the Forecast in Perspective

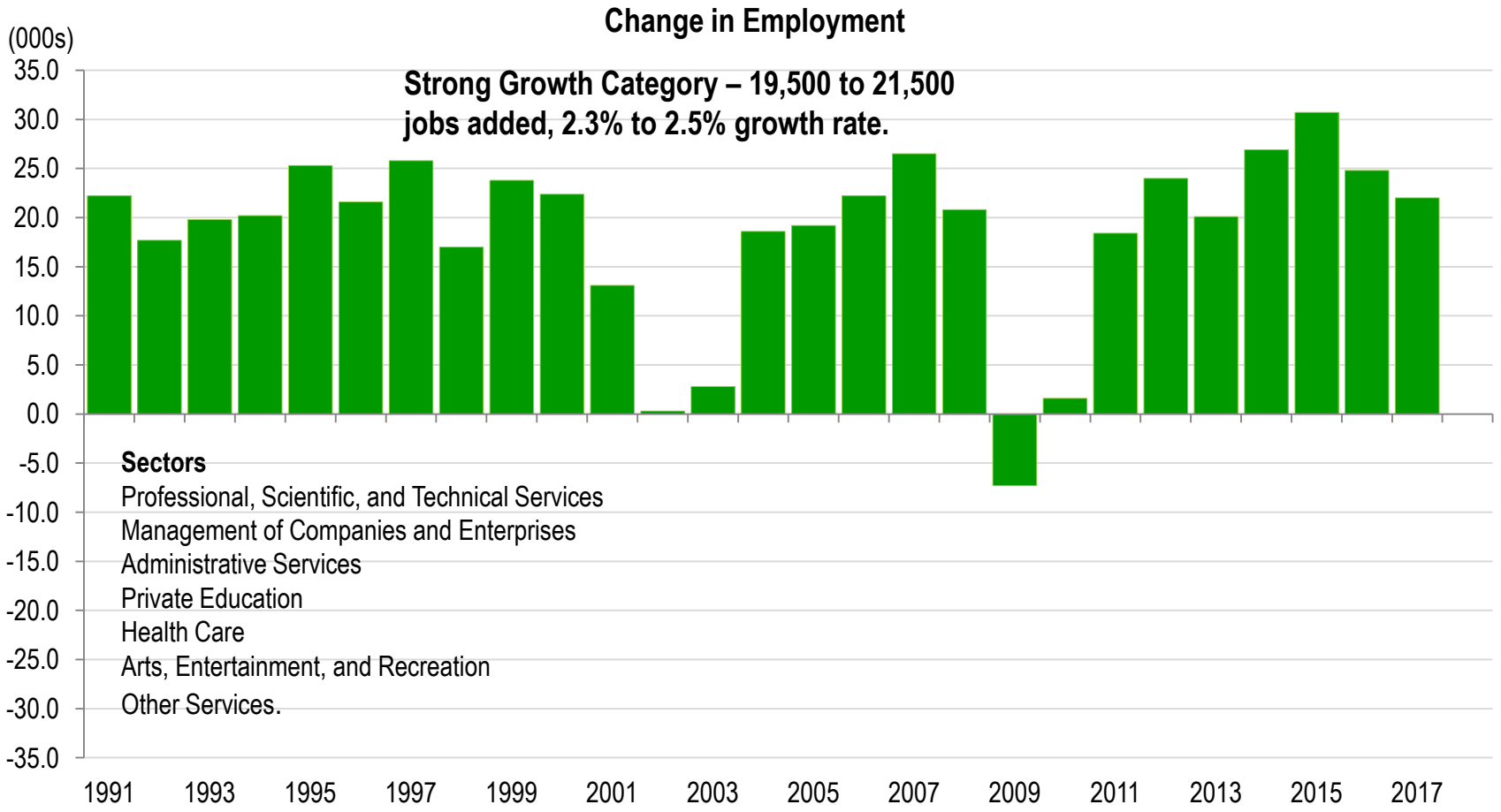
- There are headwinds in the best of economies; however, the current challenges should not prevent Colorado from adding jobs at the forecasted rate in 2018.
- The projected job growth in each of the three categories (strong growth, solid growth, and volatile growth) is historically modest. It is achievable based on the fundamentals of the sectors within those categories.
- Almost 68% of the jobs are being added in the following six categories: health care, construction, PST, AFS, retail trade, and financial activities. These are the six largest sectors and employ about 53% of total employees.
- The following growth rates serve as a reality check for the forecast:
  - Total employment 1.9% to 2.1%.
  - Government 1.2% to 1.4%.
  - Private Sector 2.1% to 2.3%.
  - Goods Producing 3.3% to 3.5%.
  - Service Producing 1.8% to 2.0%.

Colorado Economy

Trends to Watch Strong Growth, Solid Growth, Volatile Categories

Trends to Watch

Strong Growth Category



Source: Bureau of Labor Statistics, cber.co.

Things to Look for in 2018

Strong Growth Category

Strong Growth Category

- Professional, Scientific, and Technical Services (PST)
- Management of Companies and Enterprises
- Administrative Services (Not Employment Services)
- Private Education
- Health Care
- Arts, Entertainment, and Recreation (AER)
- Other Services

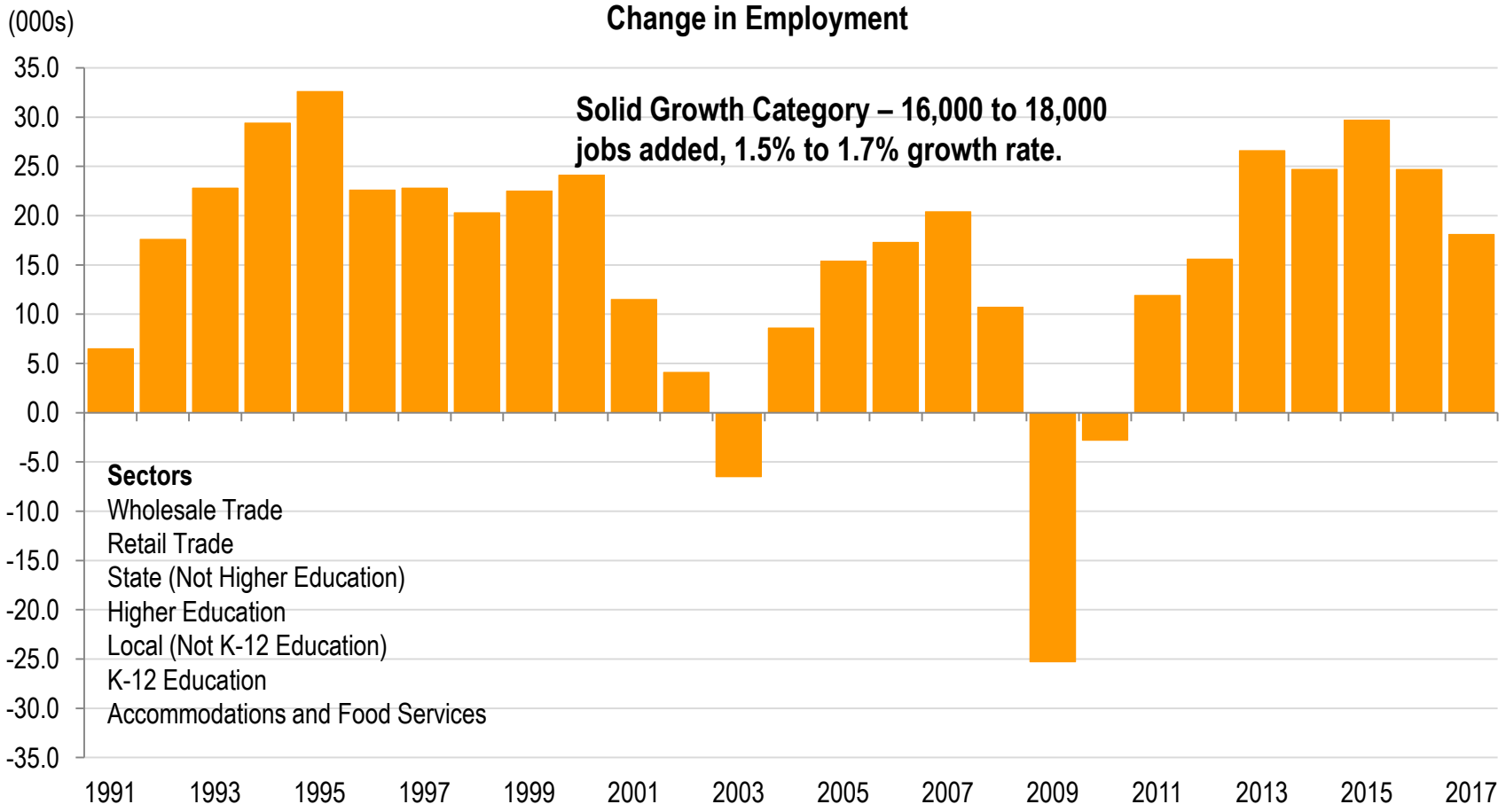
Employment charts for the PST and Health care sectors are provided in the previous section.

Things to Look For in 2018

- The health care sector will continue to be a job creation machine in 2018. It will be fueled by in-migration and the aging of the baby boomers.
- The PST sector took a hit when the oil and gas industry "tanked". It will benefit from the resurgence of that industry in 2018.
- The AER industry will see weaker job growth because Mother Nature did not deliver snow for the Christmas holiday ski season.

Trends to Watch

Solid Growth Category



Source: Bureau of Labor Statistics, cber.co.

Things to Look for in 2018

Solid Growth Category

Strong Growth Category

(Business and Services)

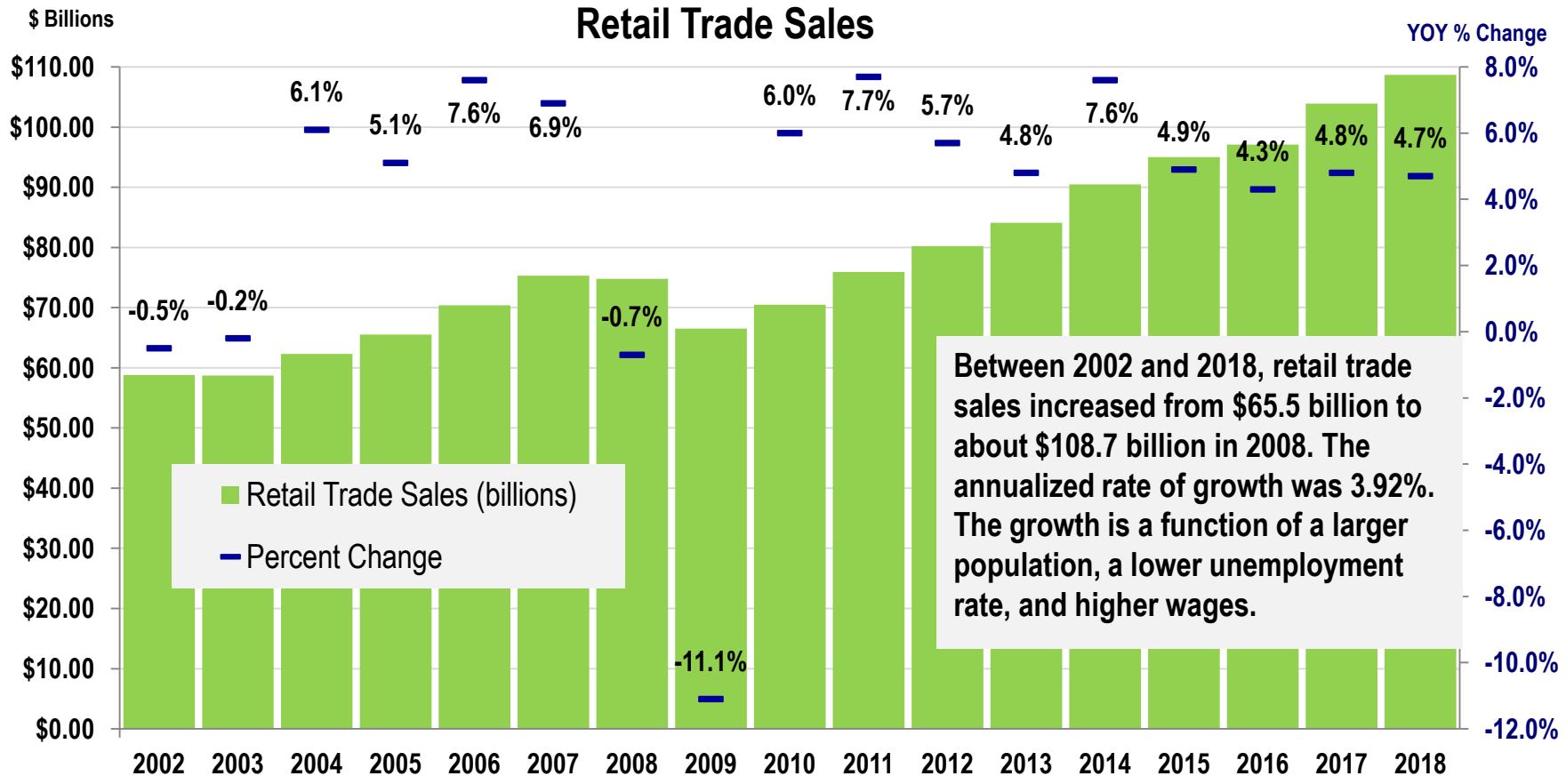
- Wholesale Trade
- Retail Trade
- State (Not Higher Education)
- Higher Education
- Local (Not K-12 Education)
- K-12 Education
- Accommodations and Food Services

Employment charts for the Retail Trade and AFS sectors are provided in a previous section. This section also includes charts for Retail Trade Sales, Retail Establishments, and Vehicle Registrations.

Things to Look For in 2018

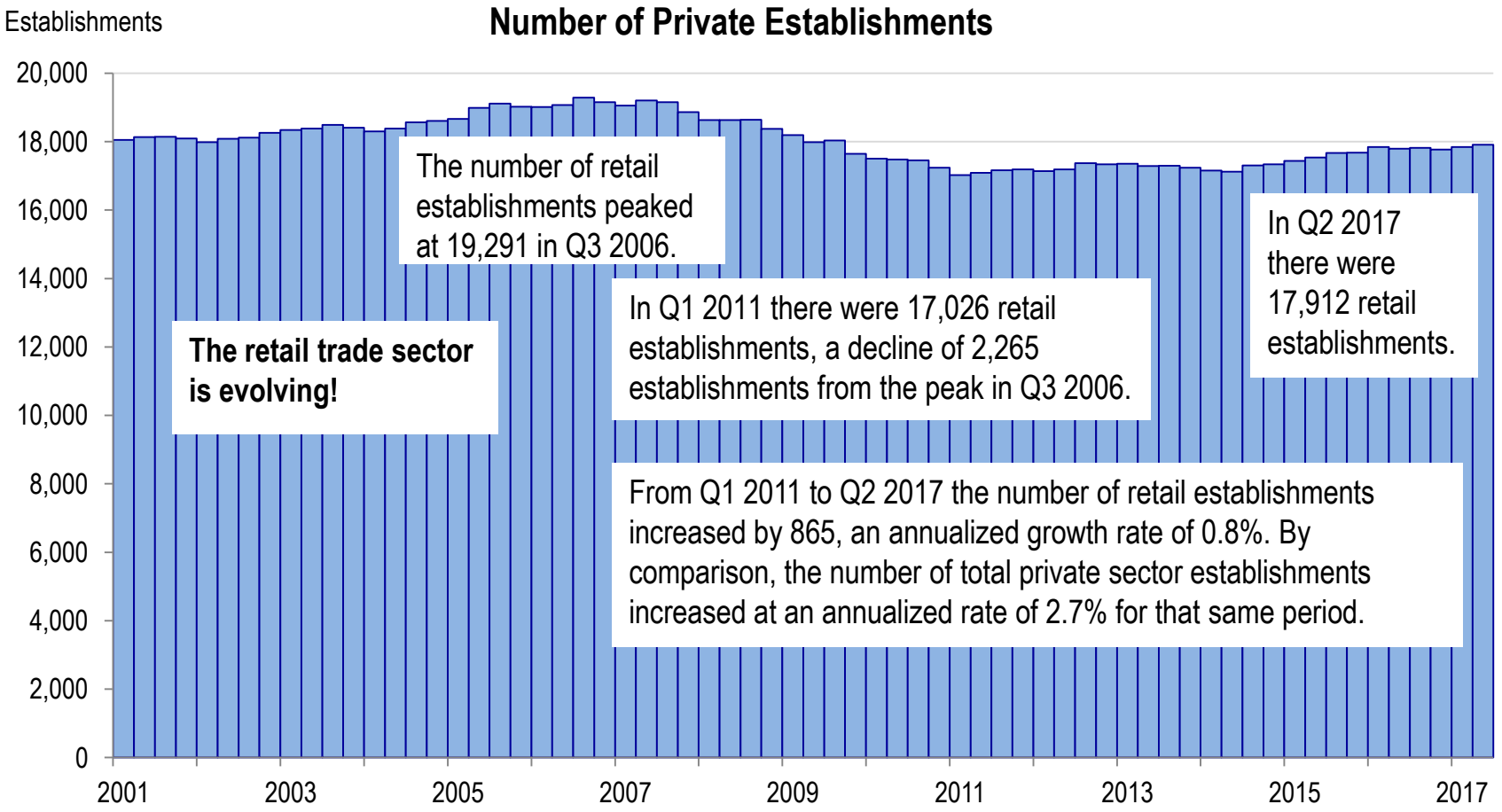
- U.S. retail sales will post strong gains. Colorado retail sales will be solid, but they will increase at a slower rate than 2017.
- The retail trade industry is evolving as evidenced by the financial challenges facing many big box retailers.
- Colorado employment in the retail trade and accommodations and food service industries may be lower than normal because of a late start to the ski season.
- Bond issues were passed for multiple school districts in the November elections. This is a sign of confidence in the economy.
- Higher education will add jobs again in 2018. The sector has lost jobs once since 1990. In 2006 higher education shed 100 workers.

Colorado Retail Trade Sales (Including Food Services)



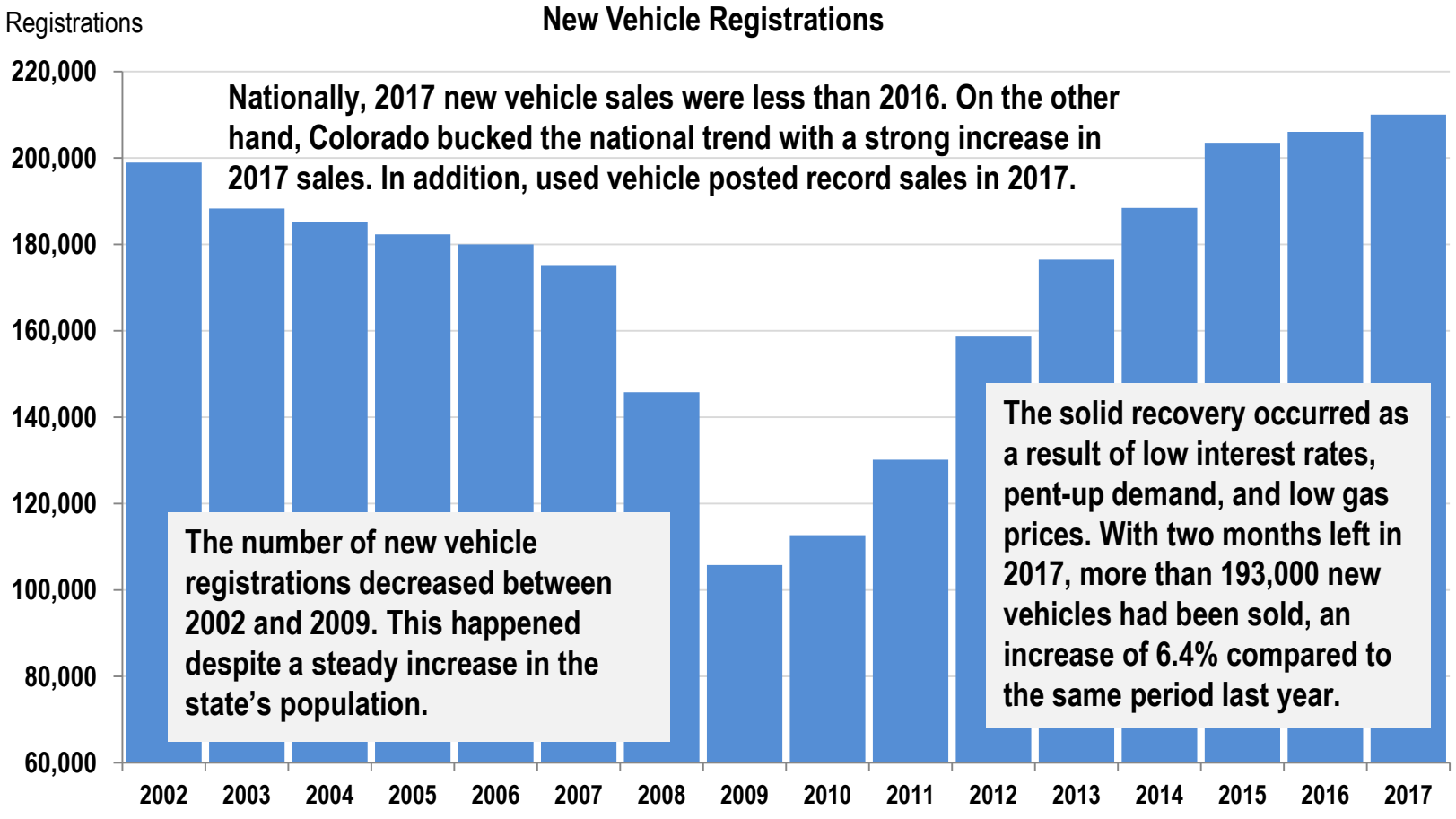
Source: Colorado Department of Revenue, CLC, OSPB, cber.co. Note: Not seasonally adjusted.

Number of Colorado Private Retail Establishments



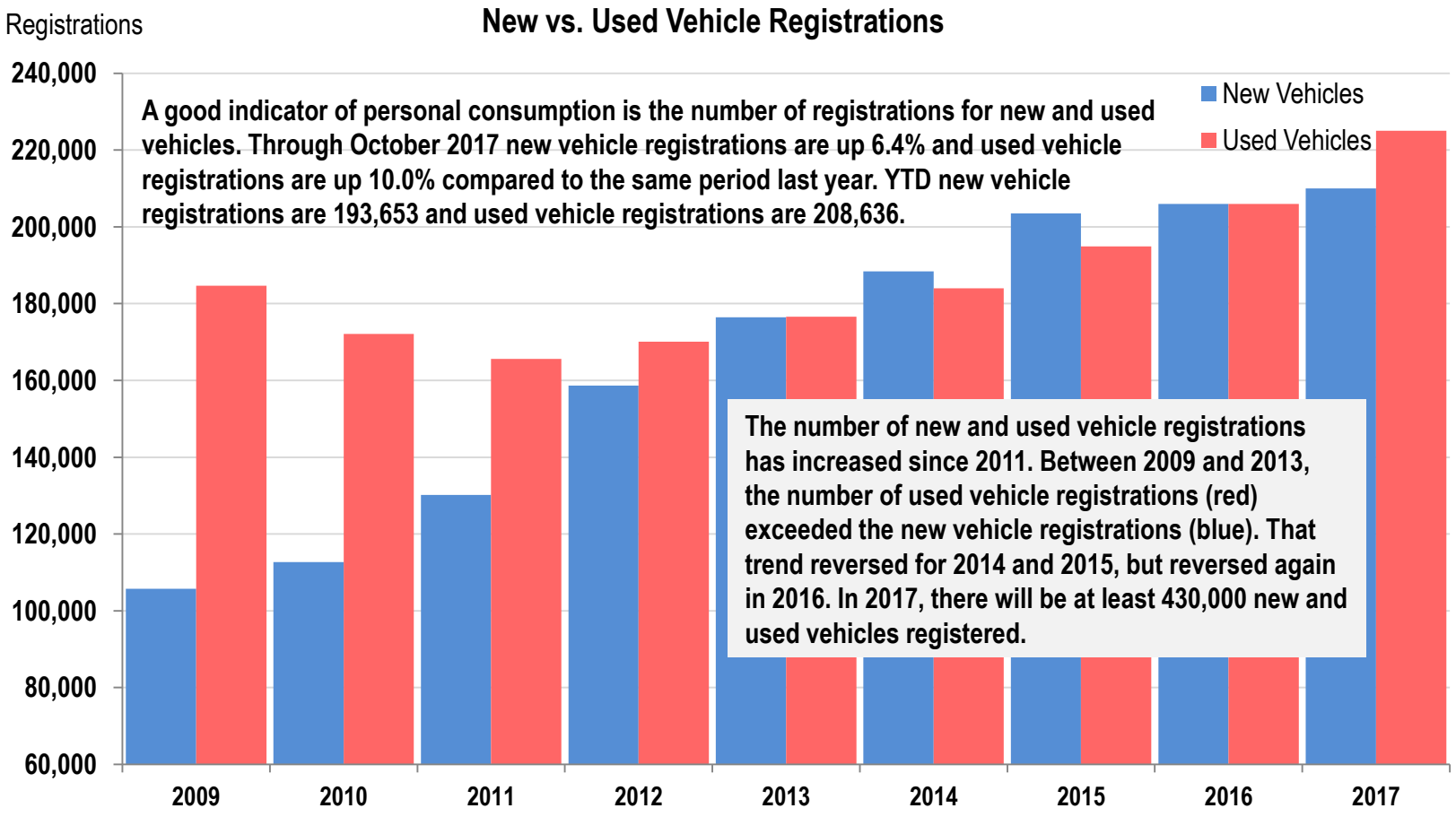
Source: Bureau of Labor Statistics, cber.co.

Colorado New Vehicle Registrations



Source: Colorado Auto Dealers Association, cber.co.

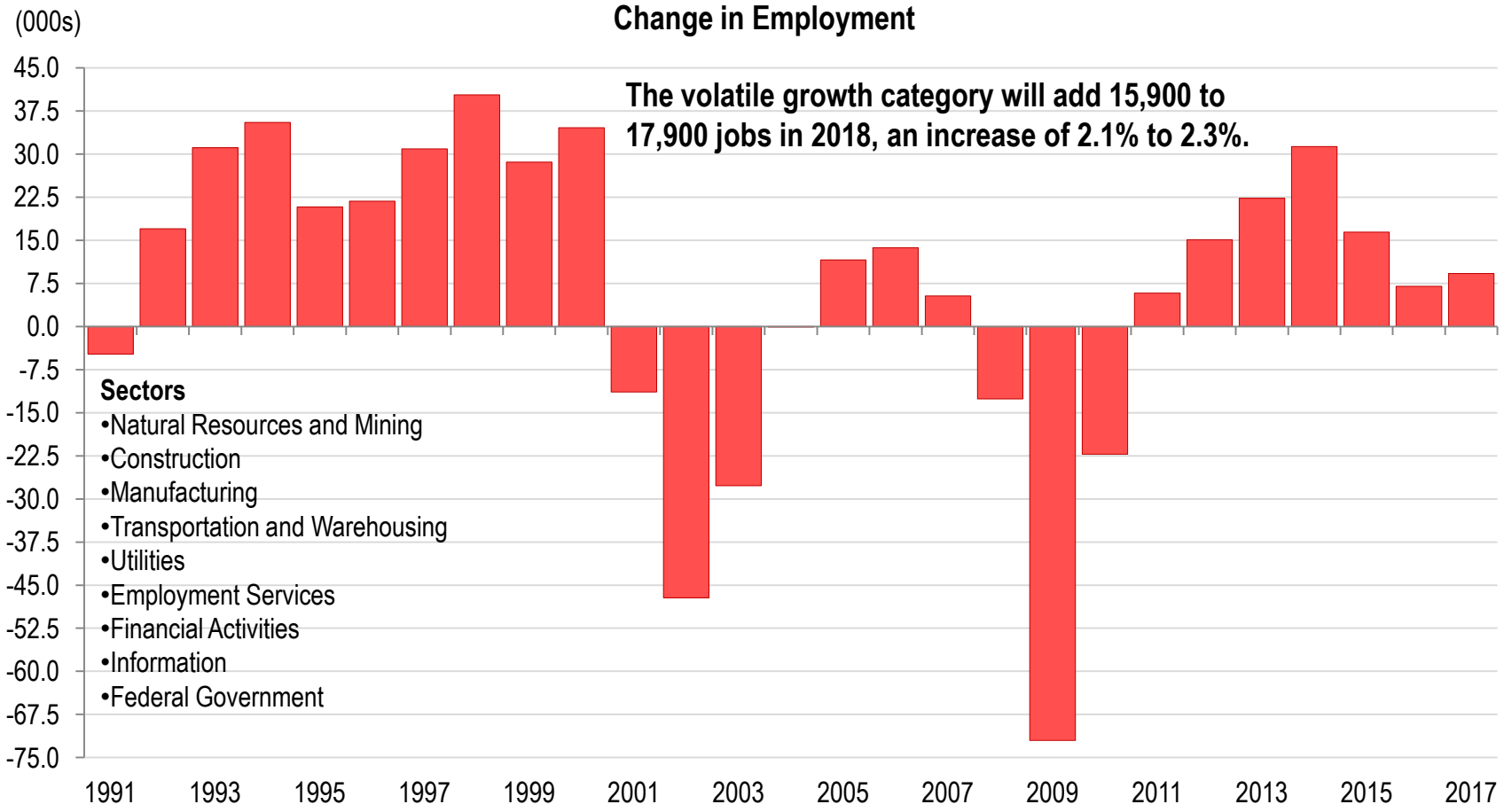
Colorado New and Used Vehicle Registrations



Source: Colorado Auto Dealers Association, cber.co.

Trends to Watch

Volatile Growth Category



Source: Bureau of Labor Statistics, cber.co.

Things to Look for in 2018
Volatile Category

Volatile Category

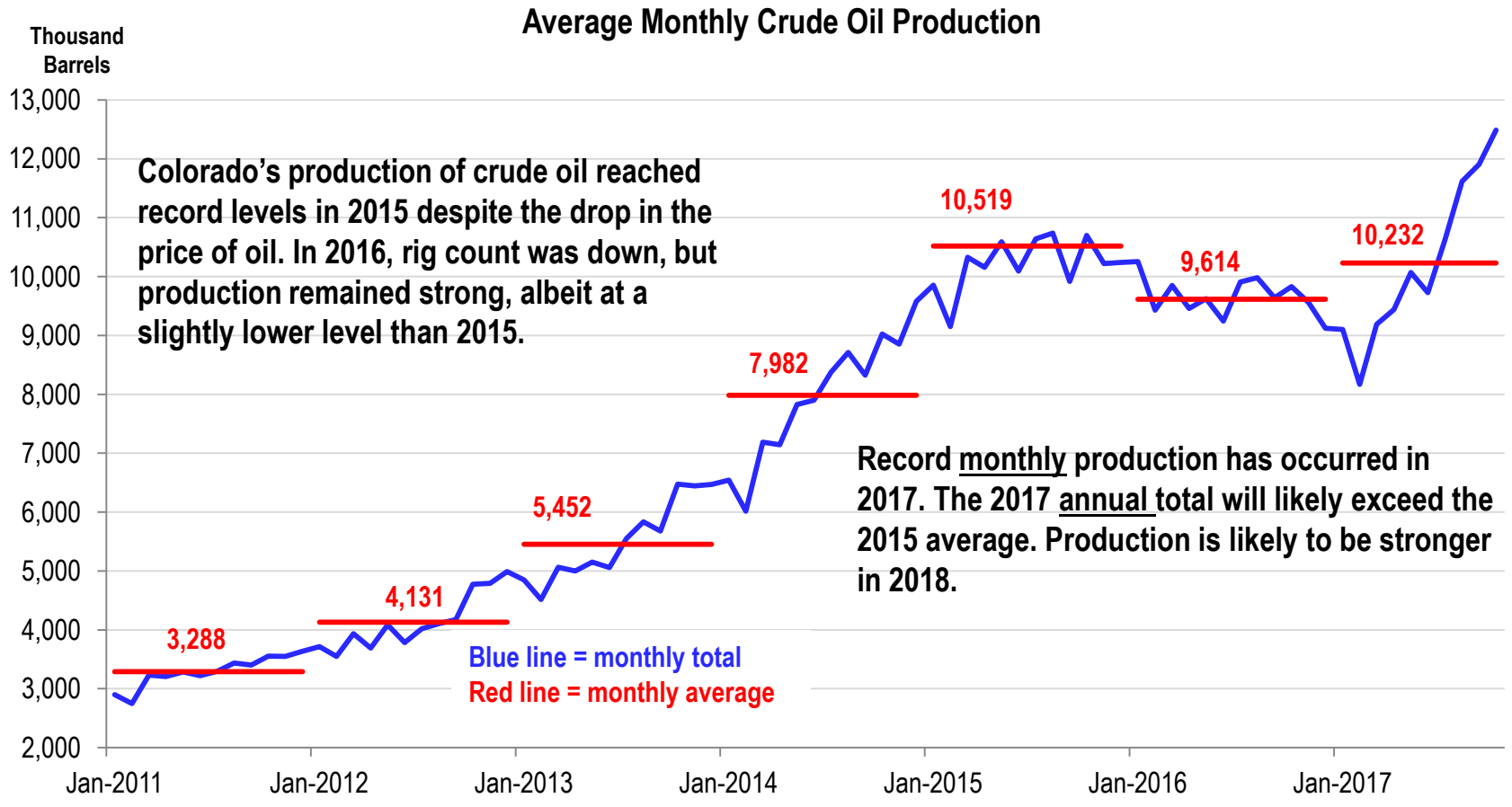
- Natural Resources and Mining (NRM)
- Construction
- Manufacturing
- Transportation and Warehousing
- Utilities
- Employment Services
- Financial Activities
- Information
- Federal Government

Employment charts are available for Financial Activities and Construction in a previous section. This section also includes charts for crude oil and natural gas production, rig and well count, Case-Shiller housing price index, and DIA passengers.

Things to Look For in 2018

- The NRM sector will again be a strong contributor to real GDP growth. It will add direct jobs in the industry and support jobs in the PST sector.
- Net migration will support continued construction activity This past election, several school systems had bond issues passed that will improve their schools and support the construction industry.
- DIA will continue to drive economic activity in Colorado.
- Vestas and aerospace manufacturers will lead the sector in economic activity.
- The information and financial activities sector will impact change in real GDP (plus or minus) in 2018.

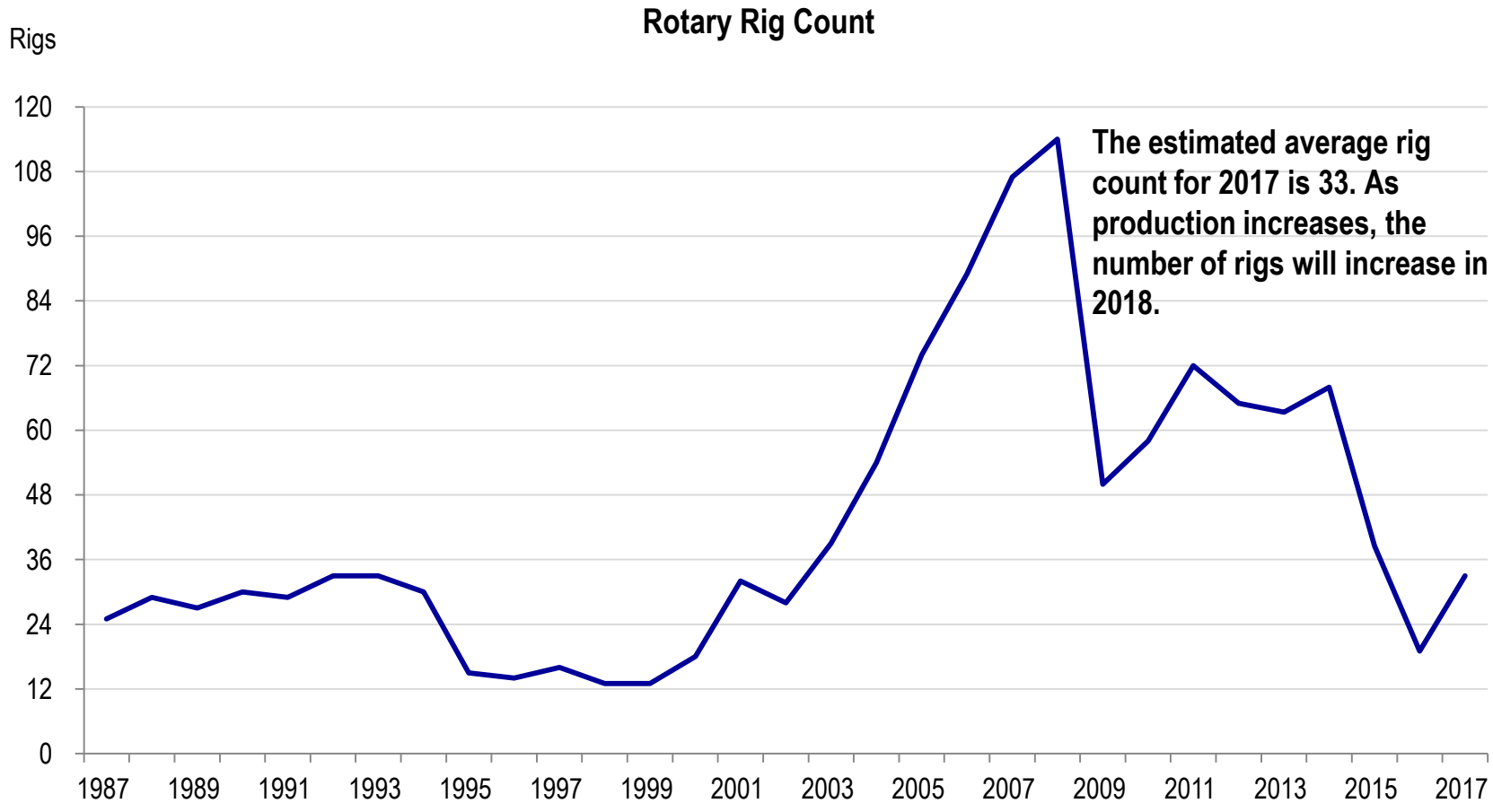
Average Monthly Colorado Crude Oil Production
2011 to 2017 (Thousand Barrels)



Source: EIA, cber.co.

Colorado Annual Rotary Rig Count

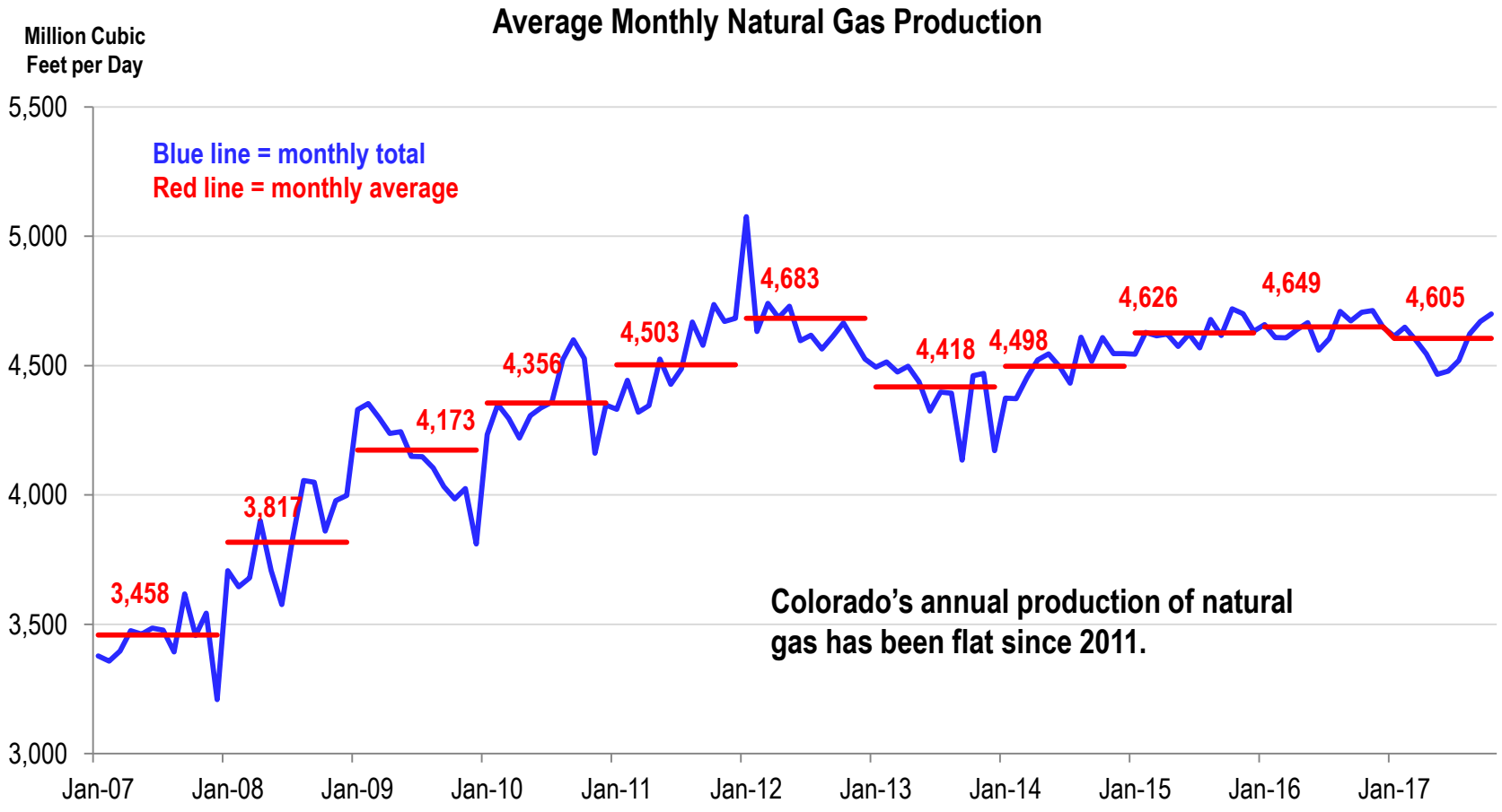
1987 to 2017



Source: Baker-Hughes, cber.co.

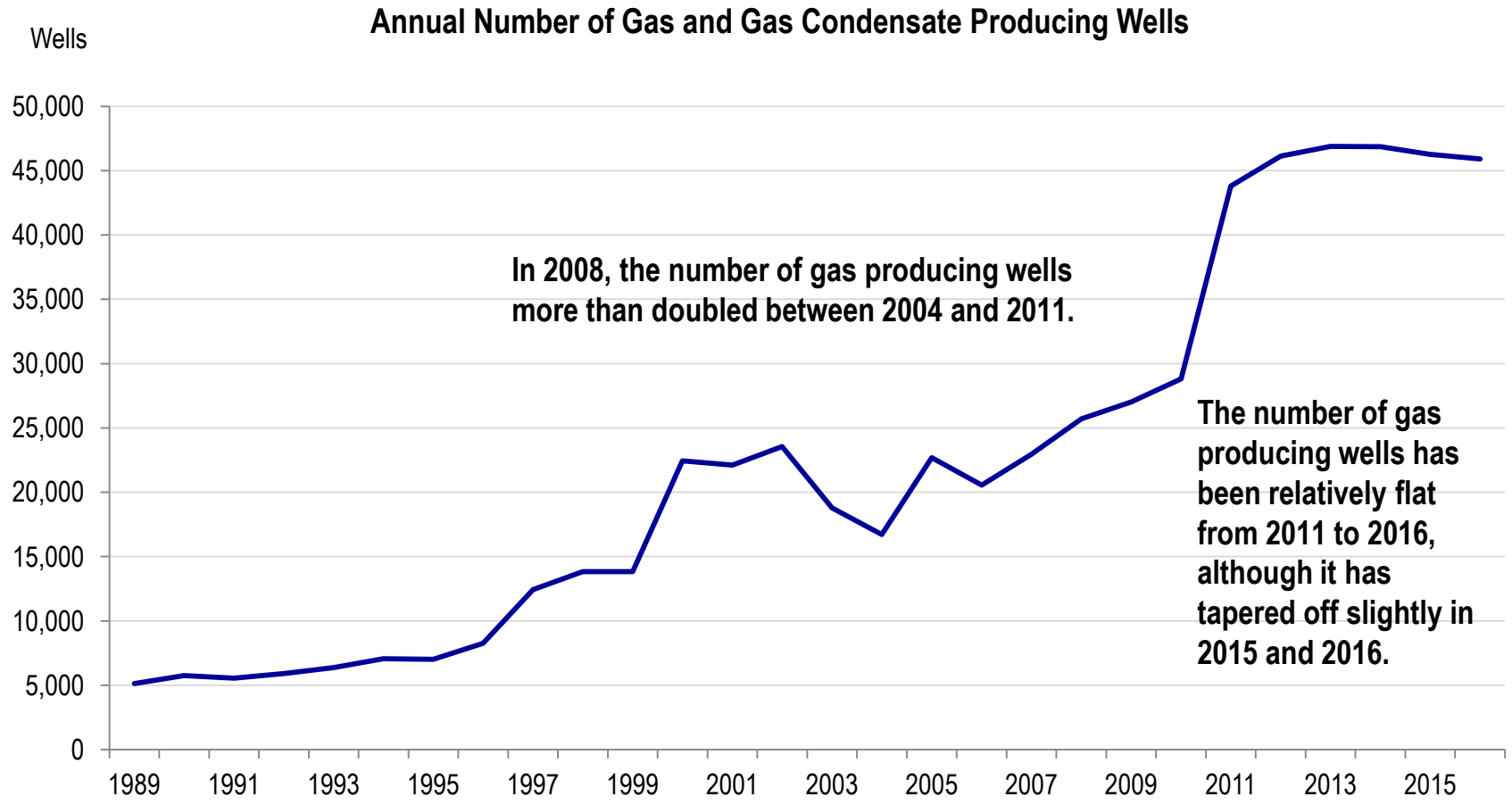
Average Monthly Colorado Natural Gas Production

2007 to 2017 (Million Cubic Feet per Day)



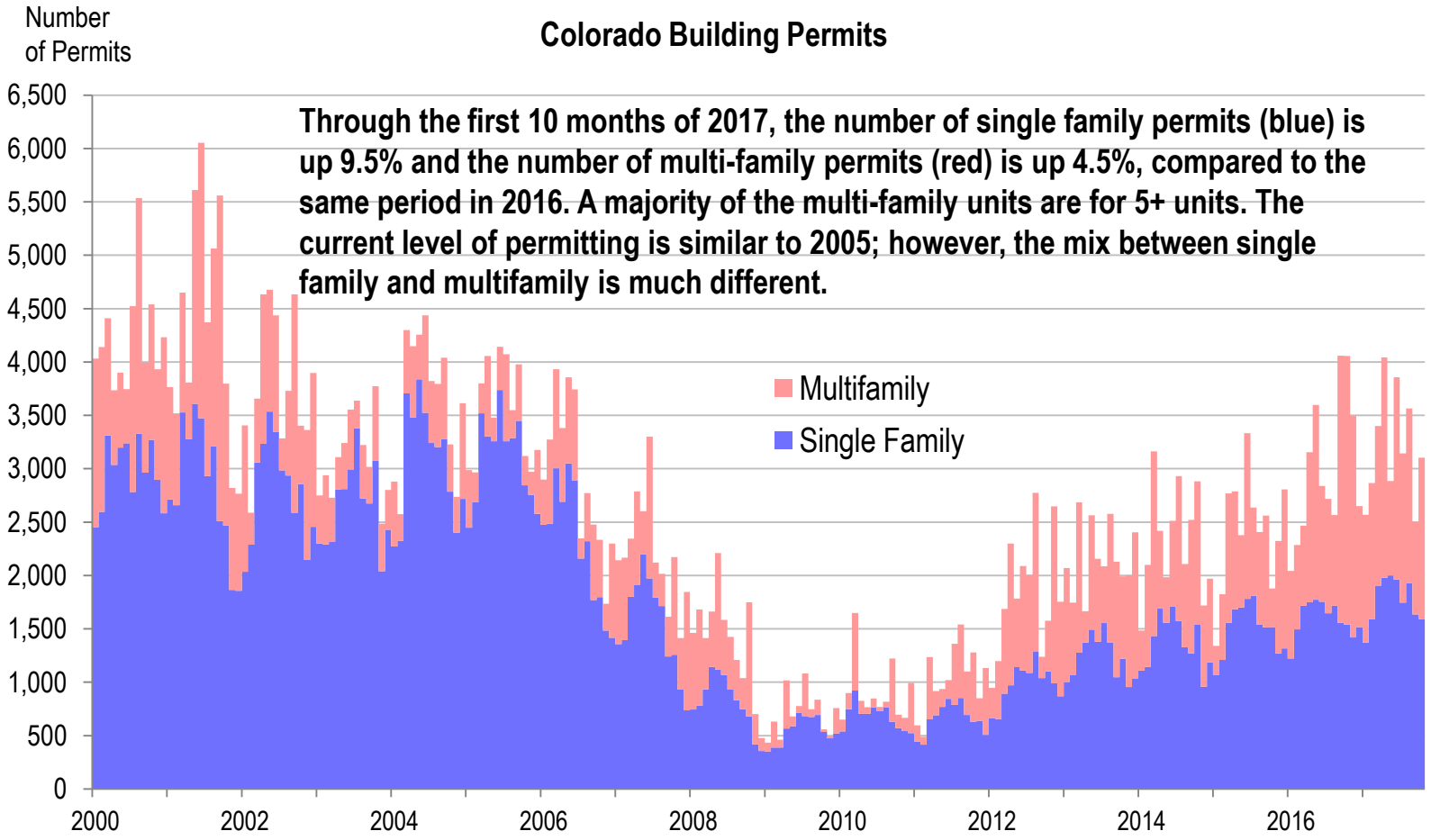
Source: EIA, cber.co.

Number of Gas Producing Wells
1987 to 2017



Source: EIA, cber.co.

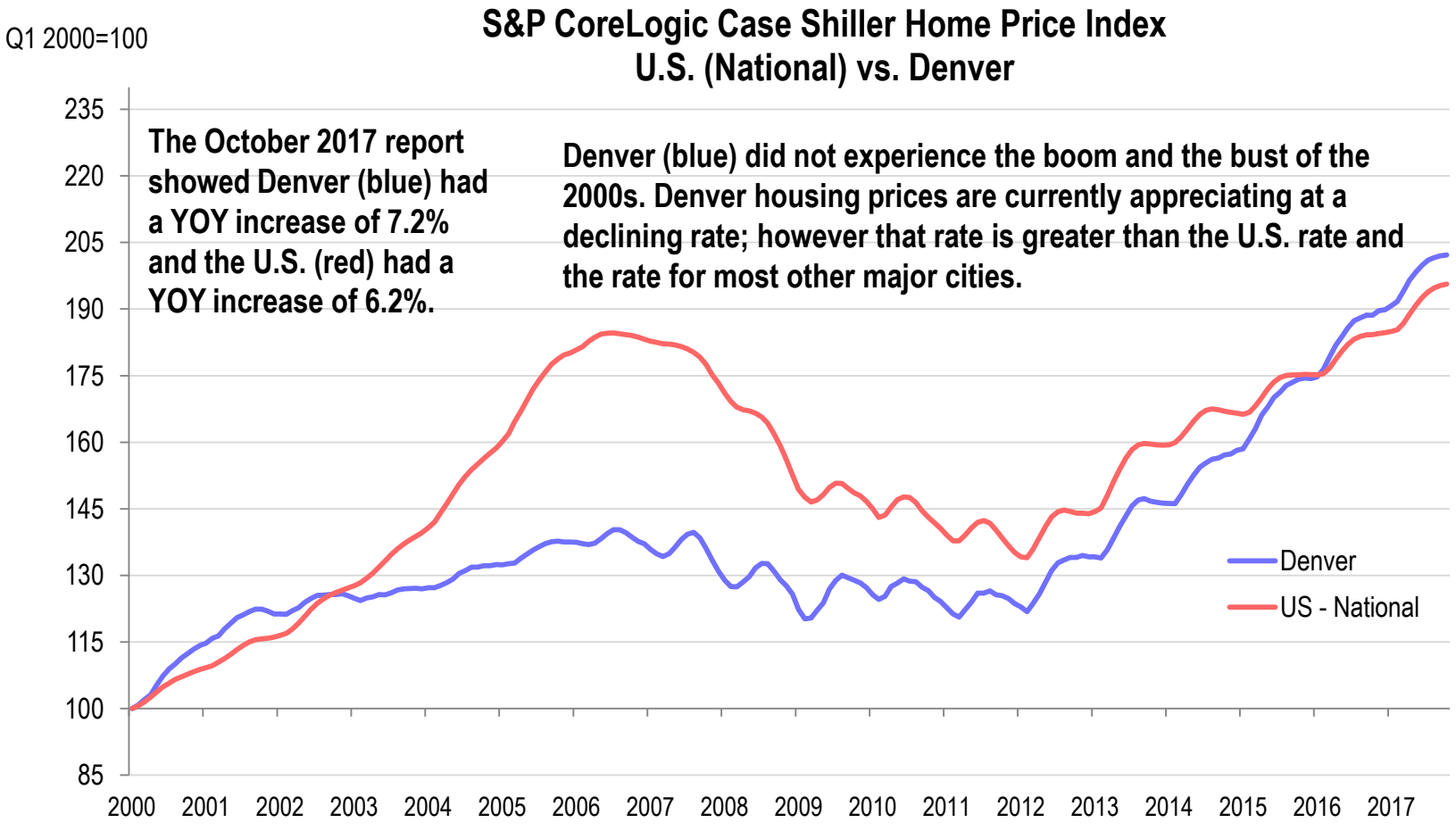
Colorado Residential Building Permits - Units



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

Case Shiller Home Price Index

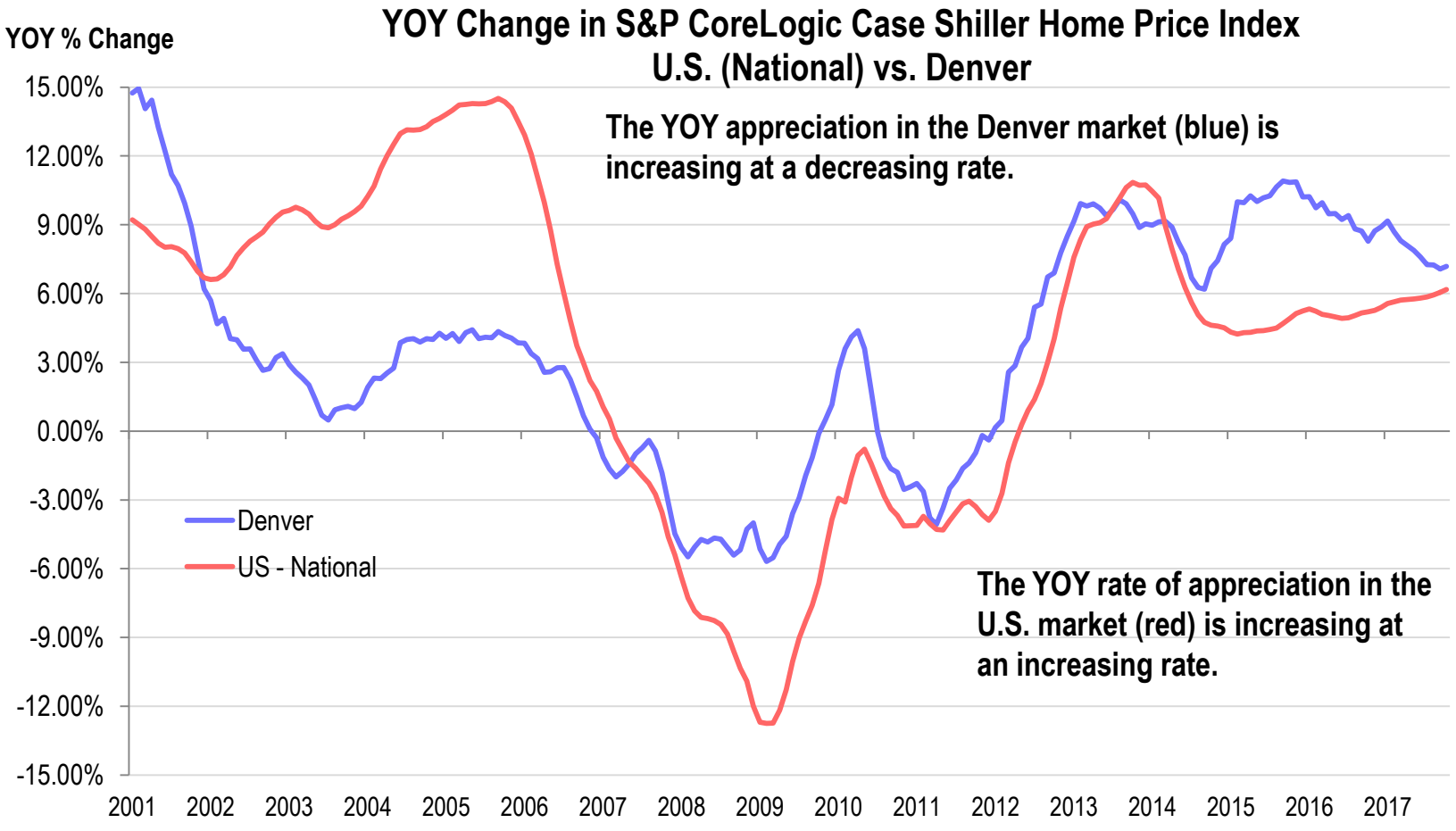
National vs. Denver Index Value



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

Case Shiller Home Price Index

YOY Change in the National vs. Denver Index Value



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

DIA Passengers

Up, Up, and Away

Source: flydenver.com, cber.co.

Why This Data is Important to Colorado

Trends to Watch/Things to Look for in 2018

- There are always areas of concern with any economy, and Colorado is no exception. **Most of the 2018 trends to watch are positive.**
- Colorado job growth for 2016 and 2017 was down from the previous 3 years, but there was steady and manageable growth. Steady is not bad!
- Preparing the 2018 forecast required a different mindset from previous years because growth was **steady** and key sectors were **evolving**. The following list includes issues that public and private leaders will be addressing in 2018 and beyond:
  - How will the retail and information sectors evolve?
  - Will Colorado impose regulations on the extractive industries that eliminate them from the state's economic base?
  - What will DIA and the surrounding area look like?
  - How will Colorado's transportation infrastructure change and how will that change be funded?
  - How will Colorado more effectively educate its youth?
  - What will be done to make higher education and postsecondary education more relevant and affordable?
  - How will the state manage its changing demographics?
- 2018 should be a good year!

Colorado Economy
Summary

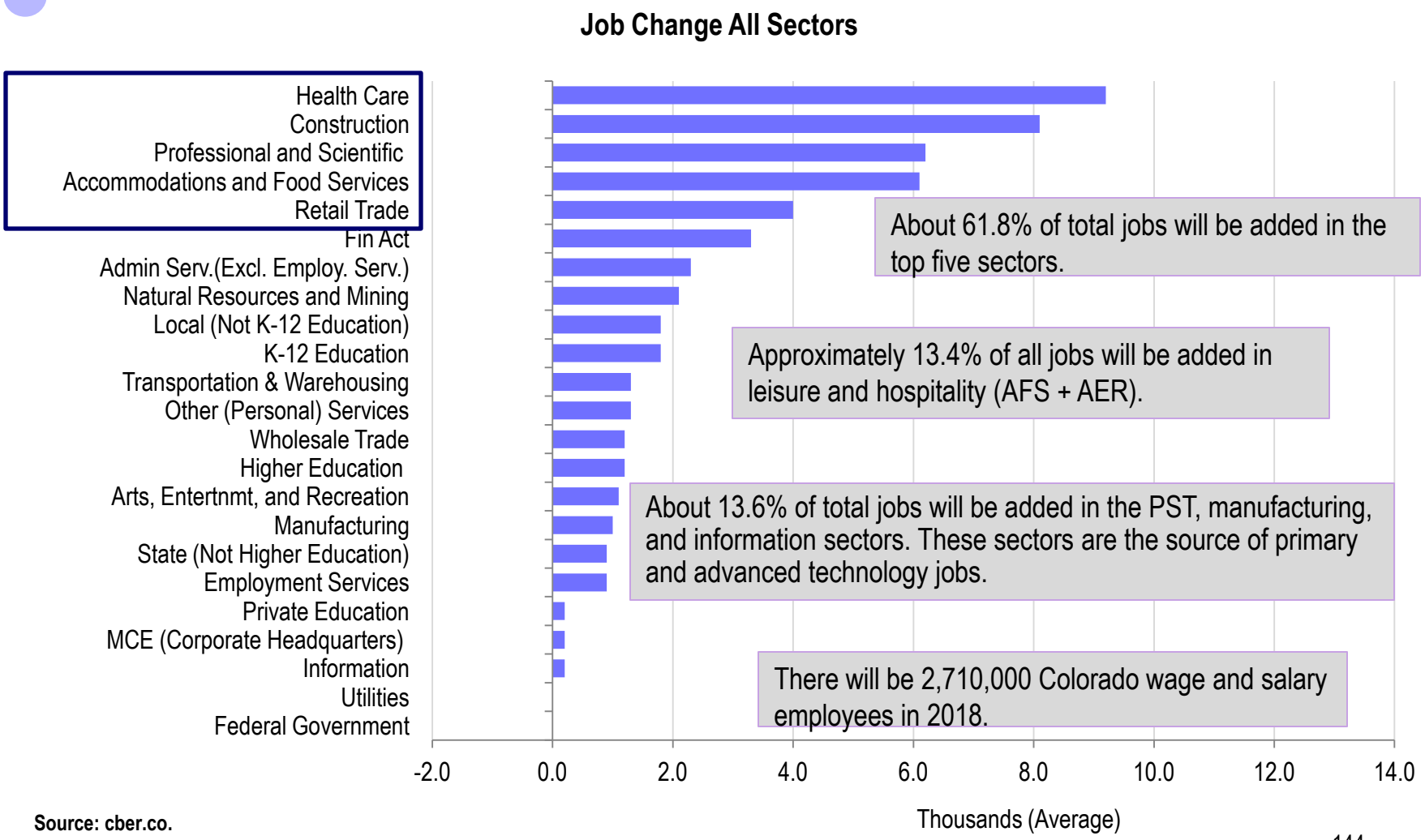
The Colorado Economy in 2018

Watch for the Following in 2018

- Colorado will benefit from stable global and U.S. real GDP growth.
- Net migration will be comparable to the last two years.
- The Colorado inflation rate will increase; it will be about a point greater than the U.S. rate.
- The Colorado economy is not operating efficiently because the unemployment rate is too low.
- Colorado job growth will be slightly less than 2017.
- The Colorado real GDP growth rate will be greater than the U.S. rate and will be driven by health care, real estate, and the extractive industries.
- The state's economic growth would be slowed if the Fed Funds rate is increased 3 times in 2018.
- Manufacturing growth will be driven by a handful of larger companies.
- Retail trade is evolving. Retail sales will remain strong.
- The 2018 legislative session will be dicey as legislators struggle to address social issues, congestion, transportation issues, the state pension fund, and how much funding should be allocated to education.
- The state's information sector is quietly evolving; there will be minimal job growth, but high value added.
- The growth of the state will be constrained by the lack of workers to complete construction projects .
- There are three economies in Colorado – Front Range, micropolitan areas such as Durango, and rural Colorado. It is an understatement to say that many rural counties are significantly challenged.
- Amazing things are happening at DIA and the area surrounding it – Welcome Gaylord!
- The lack of snow in December and early January has left its mark on the state's ski areas. It would be worse if they had not invested in snowmaking.

Projected Job Changes

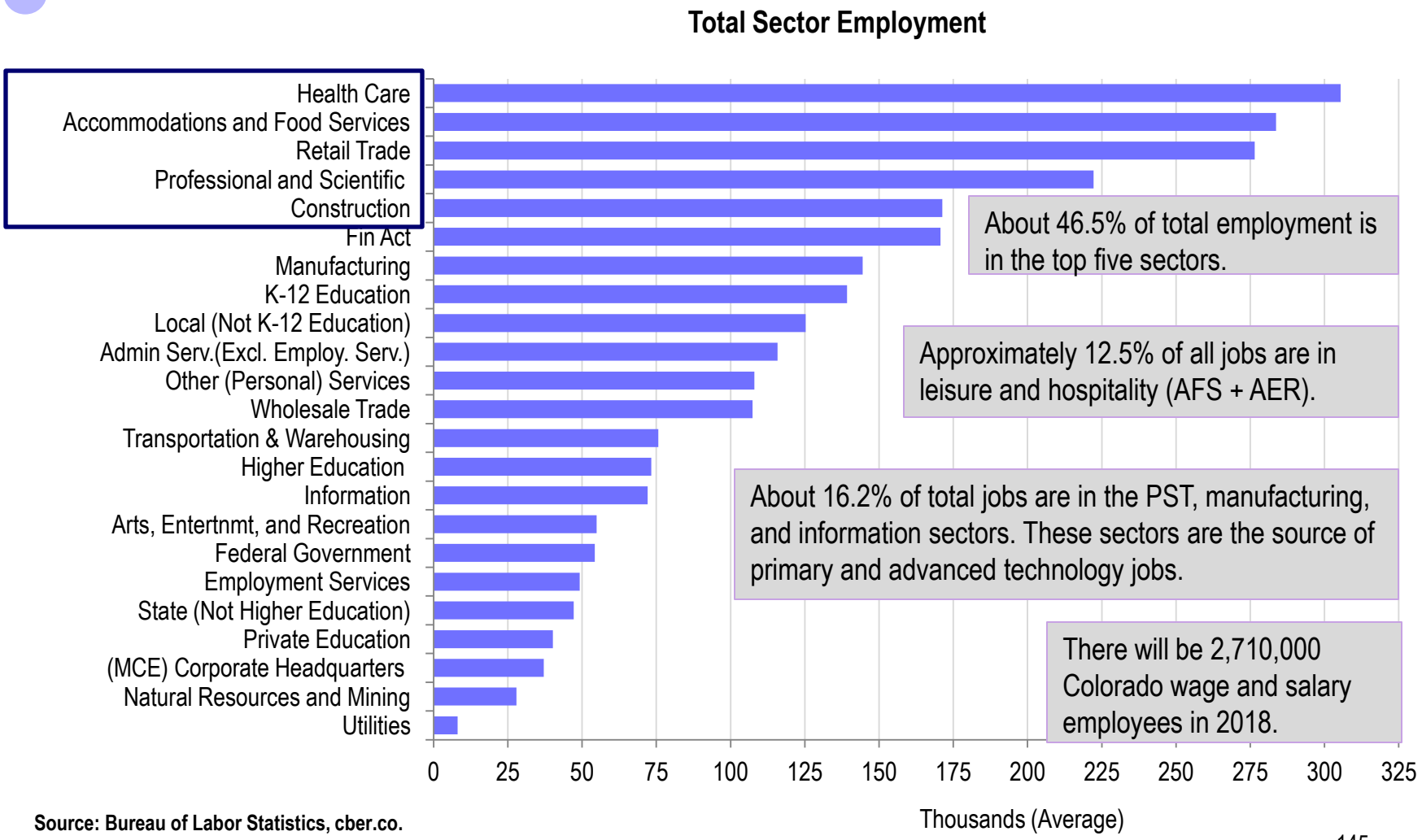
2018 Forecast



Source: cber.co.

Colorado Wage and Salary Employment

2018 Forecast



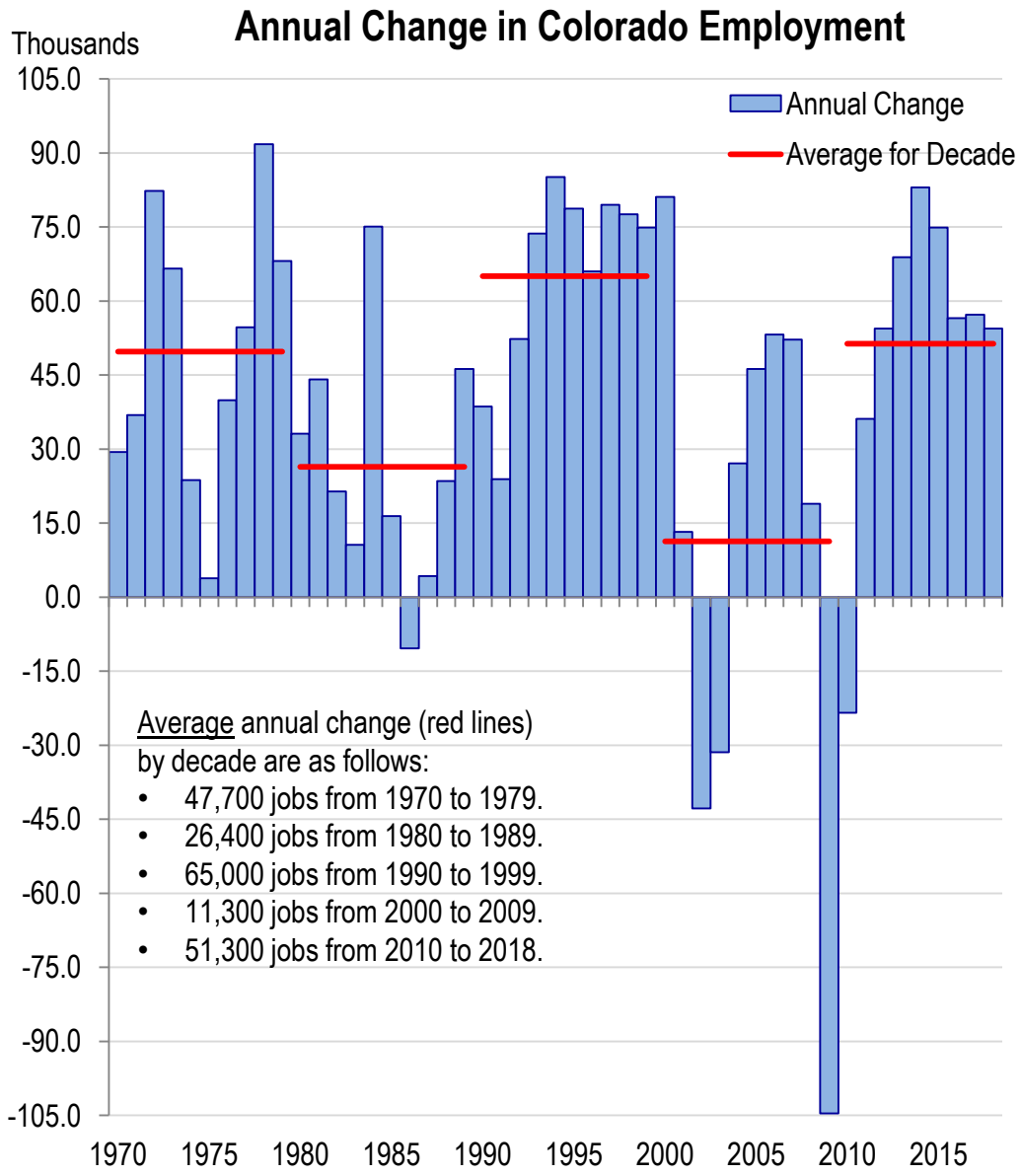
Source: Bureau of Labor Statistics, cber.co.

Annual Employment Change in Colorado Employment

The state will add 51,400 to 57,400 jobs in 2017. Colorado employment will increase by 1.9% to 2.1%.

The 2018 forecast assumes that Colorado added 56,500 jobs in 2016 and 57,200 jobs in 2017. The job growth for 2015 to 2017 is steady and slightly above the average for the decade.

For the first 9 years of this decade, Colorado has added an average of 51,300 jobs.



Source: Bureau of Labor Statistics, cber.co.

cber.co Colorado Economic Forecast 2018

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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, 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.