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Colorado Economic Forecast 2015

Colorado-based Business and Economic Research
Prepared
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Overview of Document

This chartbook provides a series of charts, graphs, discussions, and data that make the case that the Colorado economy will continue to show steady job growth in 2015. This information is divided into the sections listed below.

Global and U.S. Economy

The Colorado Economy

The outlines for these sections are on the subsequent page.

The Appendix

Note that the Appendix includes a review of the accuracy of the 2014 cber.co forecast and tests for the reasonableness of the 2015 forecast.

Key information regarding the creation of the report is included in the Appendix.

- The cber.co Forecast – A Review of the 2014 Forecast and Related Issues
- Colorado Employment Forecast - Putting the Forecast in Historical Perspective
- BLS/LMI Data Revision Process
- Analysis for Determining Forecast Categories

Overview of Forecast

This forecast is divided into the sections listed below.

Global and U.S. Economy

- Summary of 2015 Forecast – The Short Version
- The Global Economy
- The U.S. Economy
  - Output and the R-Word
  - Employment, Unemployment, and Income
  - Services, Manufacturing and Construction
  - Inflation and Mortgage Rates
  - Housing, Equities, and Oil Prices
  - Debt

The Colorado Economy

The Colorado Economy

- Output, Inflation, Income, and Wages
- Population and Unemployment
- State Government
- Establishments, Housing, Construction, and Consumers
- The Concentration of Key Industries
- The Colorado Employment Forecast
- Summary, Opportunities, and Challenges

Summary of 2015 Economic Forecast The Short Version

While this summary is a little too long for Twitter, it provides a basic overview of 2015 economic expectations for Coloradans.

Global and United States

- The rate of Real Global GDP growth will be stronger. It will increase from 3.2% in 2014 to 3.4% in 2015.
- In 2015 U.S. Real GDP growth will be in the range of 2.5% to 2.9%, up slightly from 2014.
- U.S. job growth will increase at a faster rate, at least 2.6 million in 2015. Average U.S. employment will increase to 141,500,000 in 2015.
- The business cycle is in a mature stage and the country is faced with a number of issues with noticeable trade-offs such as: lower oil prices, higher housing prices, lower unemployment rate, and higher wages.

Colorado

- The steady growth of the global and U.S. economy will be mirrored in Colorado. After showing growth of 71,500 jobs in 2014, the most likely scenario is that the state will see job growth in the range of 70,000 to 76,000 in 2015. Jobs will be added at a rate of 2.9% to 3.1%. In other words, it will continue along the same path that it has been on for 2013 and 2014.
- Growth will be broad based driven by the Construction; Health Care; Accommodations and Food Services; Retail Trade; and the Professional, Scientific, and Technical Services Sectors. About 58.9% of total jobs will be added in the top five sectors. These sectors are projected to increase by 3.8% to 4.0% in 2015.

The Global Economy

Overview – The Global Economy 2015
Economy Will be Marginally Stronger

In 2015, output for the global economy is expected to grow at a rate slightly greater than 2014 for most countries.

On a Positive Note

- Emerging countries will continue to record stronger rates of growth than mature economies; however, growth in these economies is uneven. The Conference Board expects emerging economies to expand at a slightly lower rate than in 2014, while the IMF expects them to grow at a faster rate.
- Mature economies will see a higher rate of output growth in 2015. The U.S. will have the highest rate of expansion, the Eurozone and Japan will continue to be a drag on the global economy.
- In 2015, China will experience growth at a slower rate and India will post growth at a faster rate than 2014. The Russian economy will struggle in 2015.

Challenges and Risks

- Mature economies will be challenged to stabilize their financial sectors.
- Most economies will be challenged to increase their potential for growth through their monetary and fiscal policy and investment in infrastructure.
- Mature countries must deal with high levels of debt.
- Geopolitical tensions have risen over the past year. Will they continue in 2015?
- Currently oil producing countries have allowed for over-production of oil. In turn, this has caused the price of a barrel of oil to drop. If low prices continue, they have the potential of derailing the economies of countries that rely on high oil prices to meet their budgets.

Annual Real GDP World Growth

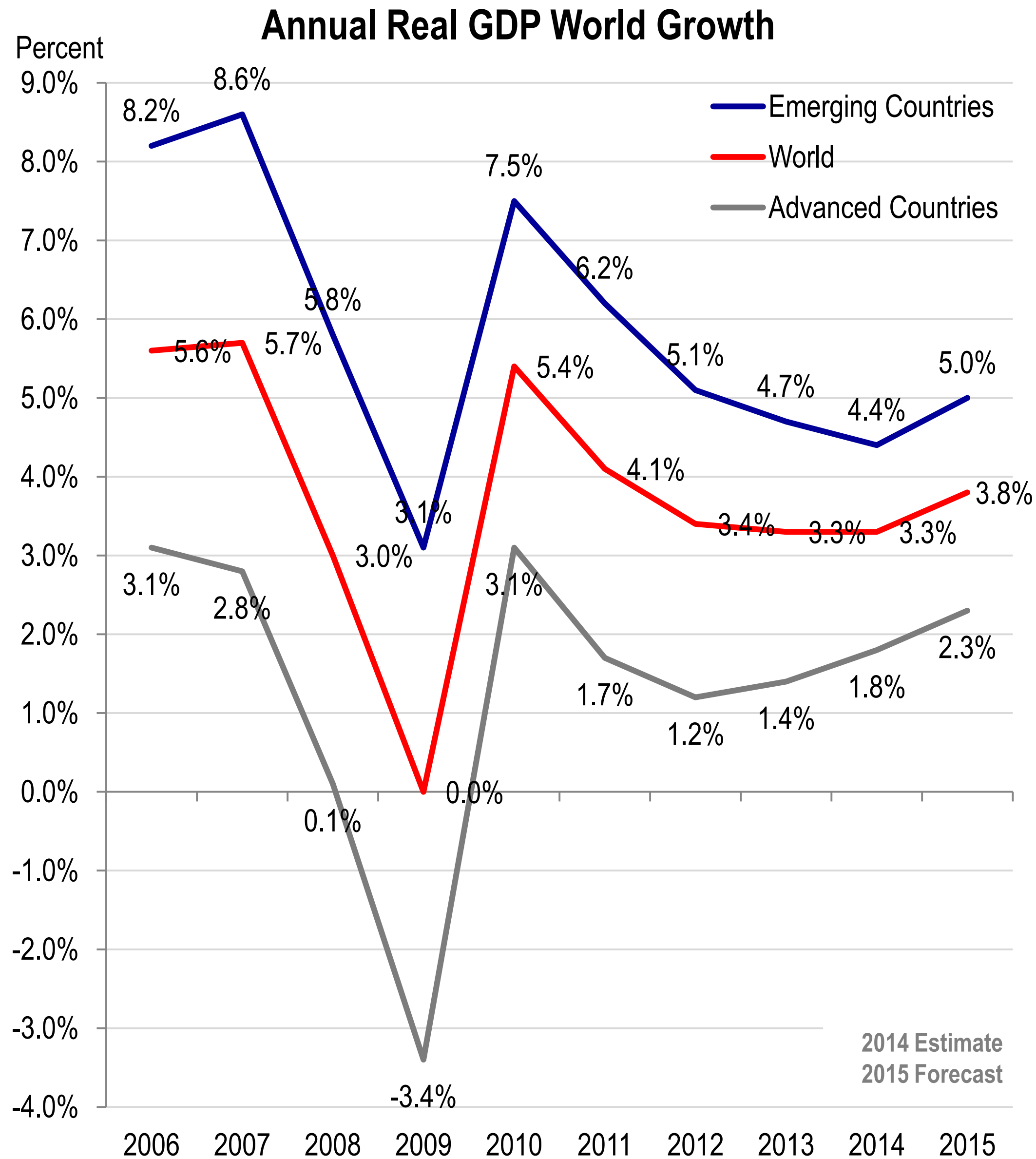
Both the Conference Board (TCB) and the International Monetary Fund (IMF) are optimistic about the global economy in 2015.

Emerging Countries (Blue)
- IMF 4.4% to 5.0%
- TCB 4.8% to 4.7%

World (Red)
- IMF 3.3% to 3.8%
- TCB 3.2% to 3.4%

Advanced Countries (Grey)
- IMF 1.8% to 2.3%
- TCB 1.9% to 2.3%

Though the chart displays data from the IMF, cber.co believes the TCB forecast is more likely.



Source: IMF (October 2014), the Conference Board (November 2014), cber.co.

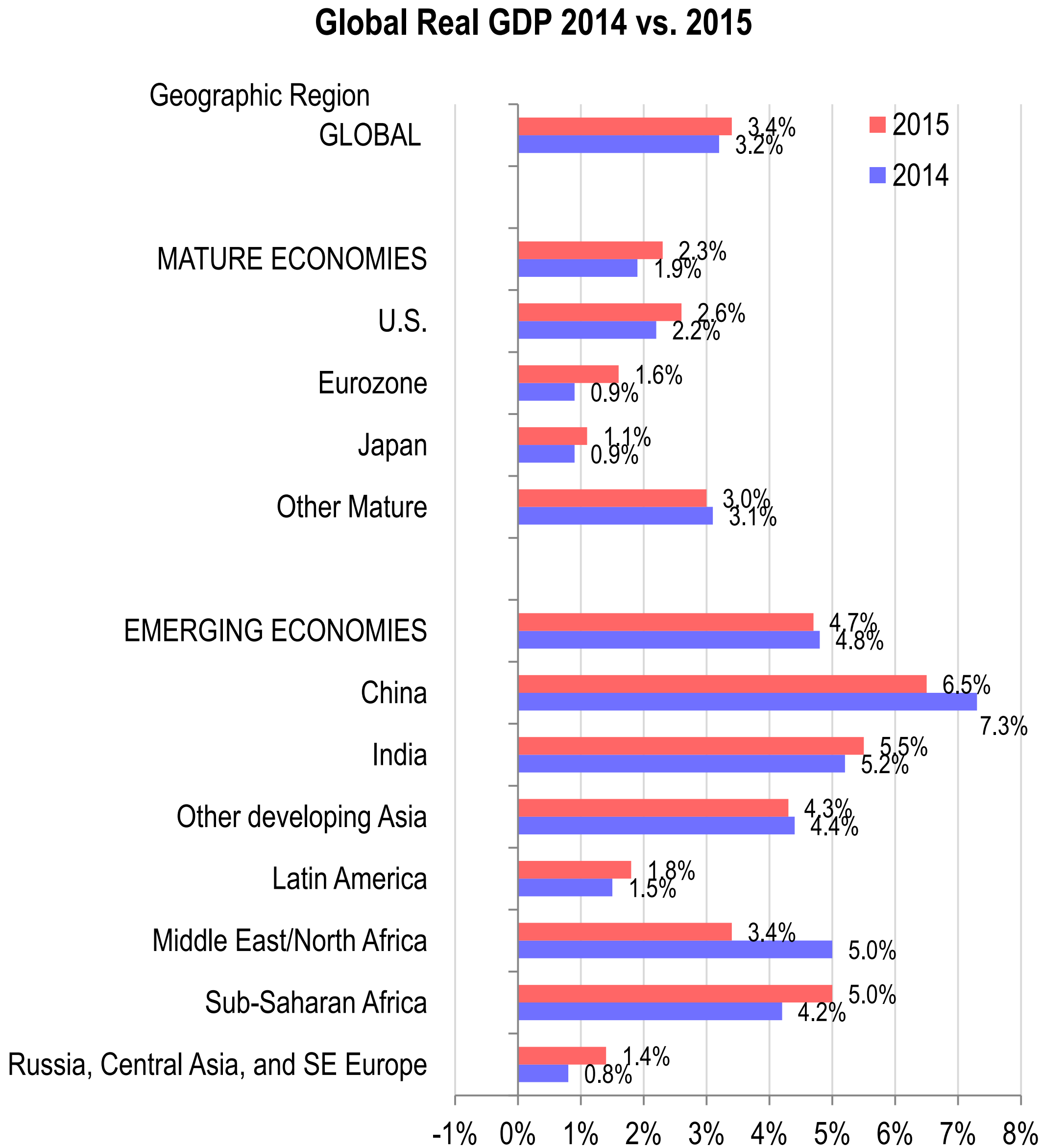
Global Real GDP

This chart shows the Global Real GDP forecast from The Conference Board.

Looking back, it can be seen that the global economy slightly outperformed the estimated growth for 2013 and the forecasted growth for 2014.

The 2015 forecast projects output growth to be above the 2014 level for the major mature economies.

China is expected to grow at a slower rate in 2015, while India will expand at a faster rate. Overall, the emerging economies are projected to have mixed levels of growth. Some countries will see improvement, while others will see growth at a lower rate.



Source: The Conference Board (November, 2014), IMF (October 2014), cber.co.

The U.S. Economy Output and The R-Word

Overview – The U.S. Economy 2015
Steady Growth Projected for the Months Ahead

The following charts tell the story about how in 2014 the U.S. economy finally took advantage of the momentum that had been building for several years. There was more good news than bad in the U.S. economy during 2014. There will be headwinds in 2015, but the good news outnumbers the bad news. Solid growth is expected to continue in 2015.

On a Positive Note…

- Purchasing managers for both goods and services were optimistic in 2014 and should remain that way in 2015.
- Manufacturing Shipments and Light Truck and Auto Sales posted solid gains in 2014 and will show continued growth in 2015.
- The rate of Real GDP growth will remain below potential, but will be at a higher rate than in 2013 and 2014. It will be in the 2.5% to 2.9% range.
- Real personal consumption will expand at a rate similar to 2014, in the range of 2.4 to 2.8%.

More Positive News…

- The U.S. added 2.5 million jobs in 2014 and will add 2.6 million in 2015.
- Per Capita Personal Income will increase by 4.0% in 2015.
- U.S. Inflation will be around 1.0% in 2014 and in the vicinity of the Fed’s target rate at 2.0% in 2015.
- The R word will be talked about more frequently because 66 months have passed since the trough for the Great Recession. Barring a major disaster, another downturn is not likely until after the 2016 elections.

Overview – The U.S. Economy 2015
Mixed News for the Months Ahead

There was more good news than bad for the U.S. economy during 2014. Continued solid growth is expected in 2015. Some of the mixed news is listed below.

Some Mixed News…

- The U.S. unemployment rate will approach 5.7% by the end of 2014 and decline to 5.0% by the end of 2015. Long-term forecasts project the rate will drop below 4.5% and stay at that level for an extended period. As a result, labor shortages will exist in many occupations.
- Labor shortages will create upward pressure on wages. This is good news for workers, but it will cut into profit margins for companies.
- Low oil prices are a mixed blessing. They often benefit the consumer, but not the oil producers. In turn, this will have a negative impact on taxes paid to local governments.
- Personal and public debt can be good for an economy if it is used to make purchases that stimulate consumption and growth. On the other hand, debt can deter growth if debt service obligations prevent consumption and growth.

More Mixed News…

- Housing prices increased at a solid rate during 2014. As the year passed, the rate of growth declined. Stronger housing prices increase personal wealth, but may make it more difficult for some to purchase a home. The rate of growth in housing prices may decline further as construction of new homes increases.
- After exceptionally strong growth in 2013, the equity markets were volatile in 2014. As the year ended, lower oil prices played havoc with the markets. Continued growth and volatility are likely in 2015.

The R Word

The R Word is Being Used More Frequently – Don't Panic!

Why the Talk of a Recession?

Economists and members of the media have begun to ask the question. "When is the next recession?" The question has arisen because the business cycle is mature. The next election is 23 months away. While political leaders cannot prevent a recession, they have incentive to do everything within their control to prevent one. A recession would be deadly to either party.

The fundamentals of the U.S. economy are solid. There are obstacles, but jobs are being added, output is increasing, and the unemployment rate is declining. At the moment there is little to suggest a recession will occur within the next year.

While it is possible that terrorist attack, 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 between the shortest and the longest time frame for an expansion (12 months and 120 months).

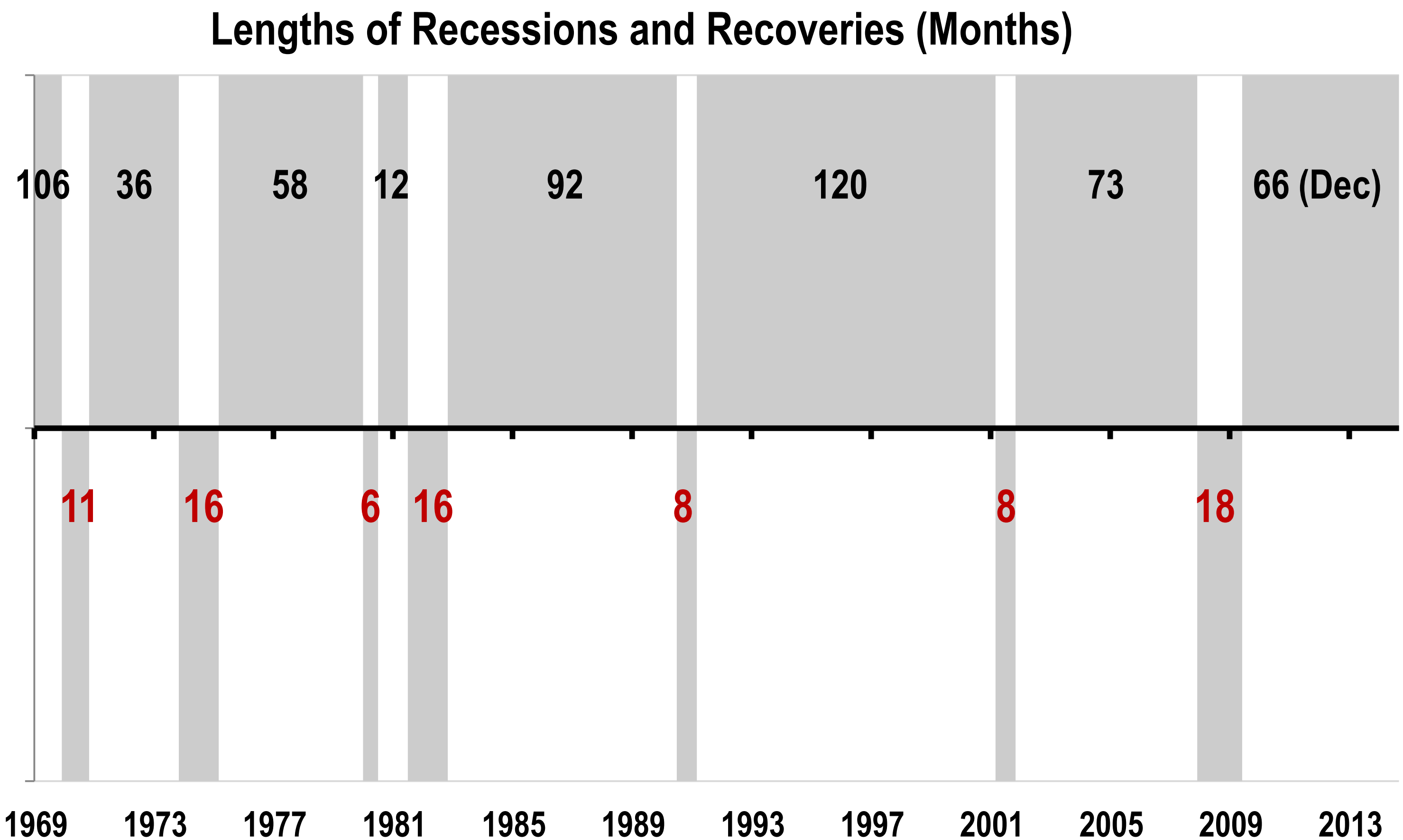
The most recent peak was in December 2007. Seven years, or 84 months have passed since the last peak.

The most recent trough was June 2009. Six and one-half years, or 66 months, have passed since the last trough.

If the length of current and future business cycles are similar to the length of past business cycles, then it is likely the U.S. will see the next recession before the end of Governor Hickenlooper's term in office.

The R Word

Length of Expansions and Contractions



Source: NBER.

Red Numbers = Peak to Trough.
Black Numbers = Previous Trough to this Peak.

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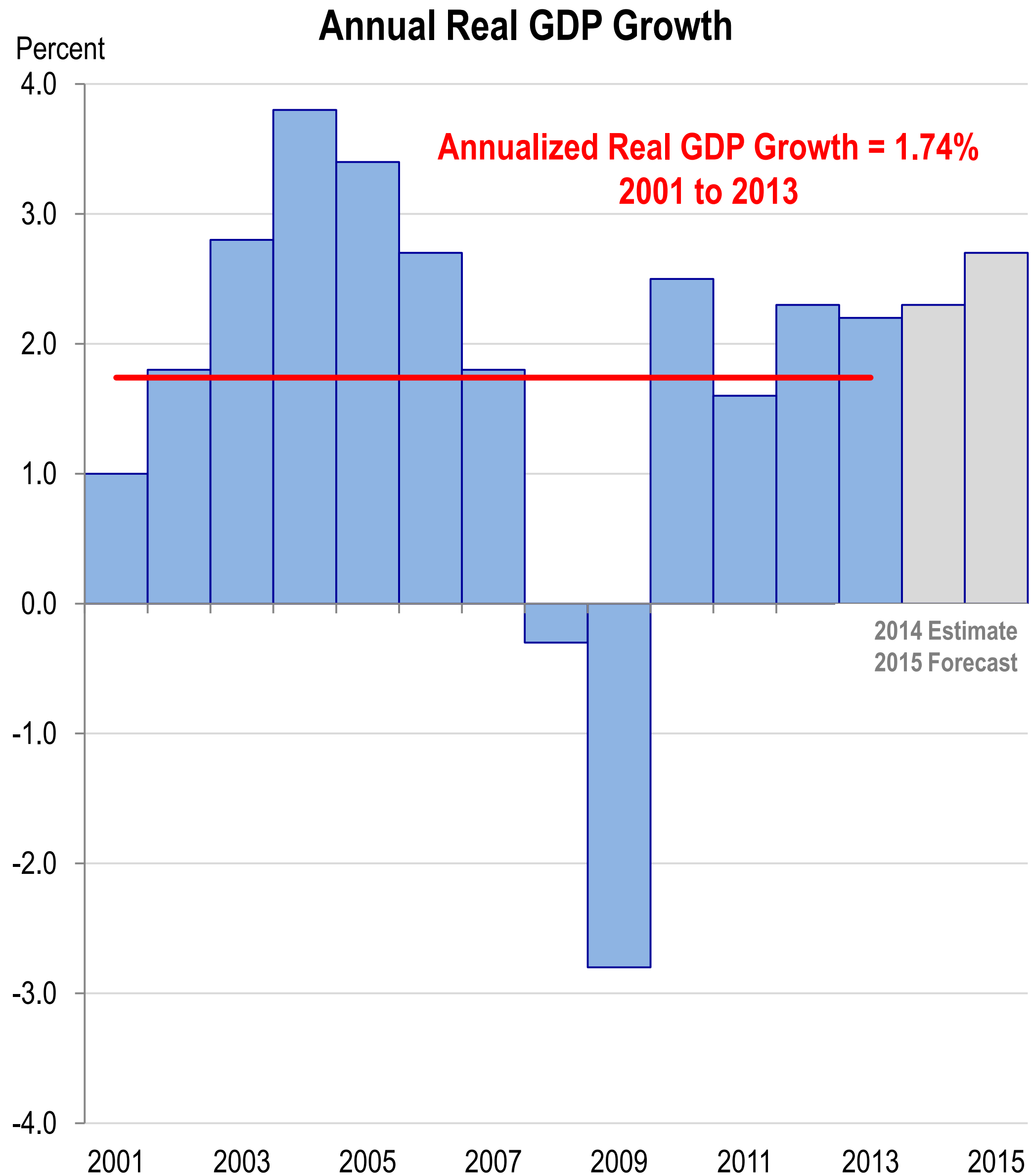
Annual Real GDP Growth

Real GDP grew at an annualized rate of 1.74% for the period 2001 to 2013 (red line).

The rate of growth for the period 2012 to 2015 are above that level. Output will grow at a rate between 2.5% to 2.9% in 2015.

- Personal consumption will drive the growth.
- Business investment will post modest growth.
- Government spending will be stronger.
- Net exports will not change drastically and the trade imbalance will be around -$450 billion, similar to 2014. The trade gap was about -$472 billion in 2013 and -$535 billion in 2012. The gap has narrowed as a result of a reduction in oil imports.



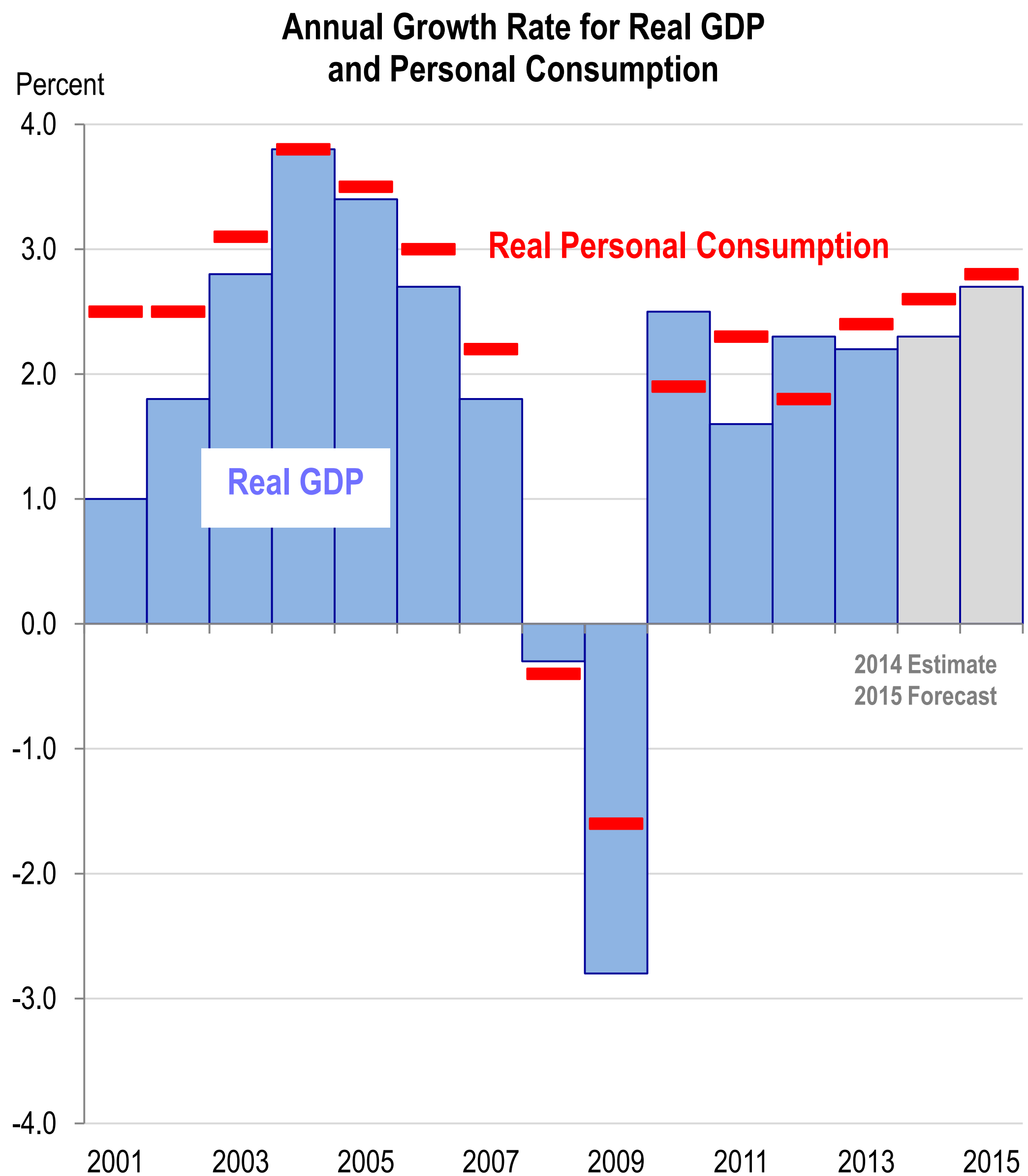
Source: Bureau of Economic Analysis, cber.co, chained in 2009 dollars.

Annual Real Personal Consumption and GDP Growth

In 1990 Personal Consumption (red bars) accounted for about 64% of GDP (blue); today it is about 68%.

Because consumption is such a high percentage of output there is a strong correlation between the growth rates of these two variables.

Real personal consumption will grow at a greater rate in 2015 vs. 2014; however, the rate of growth will be only 2.4% to 2.8%.



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

The U.S. Economy
Employment, Unemployment, Income

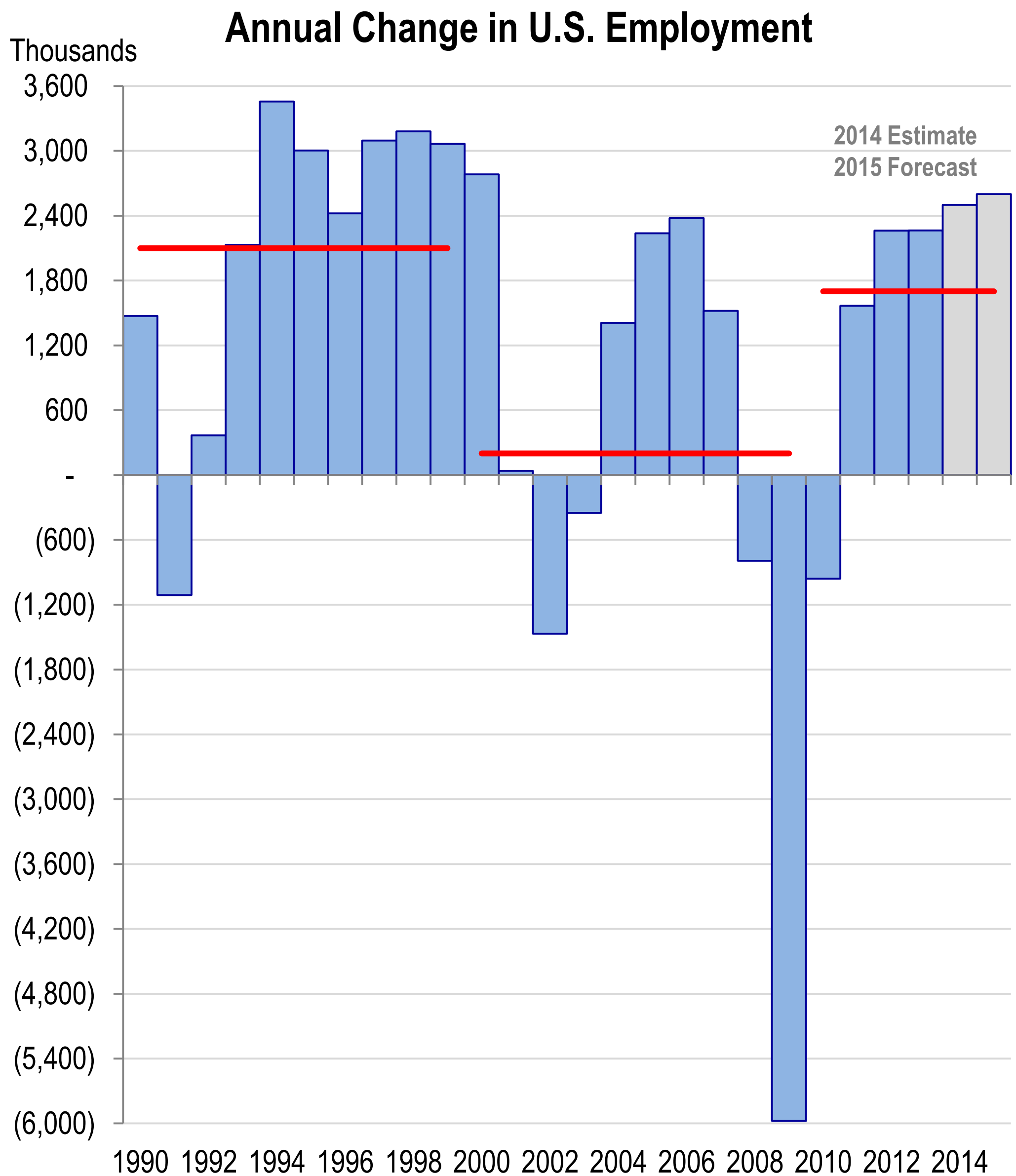
Annual Change in U.S. Employment

The current level of change in employment is less than the 1990s, but much greater than the 2000s. Average annual change (red lines) by decade are as follows:

- 2.1 million from 1990 to 1999
- 0.2 million from 2000 to 2009
- 1.7 million from 2010 to 2015.

The U.S. will add approximately 2.5 million jobs in 2014 and return to 2008 peak employment. Job growth in 2014 was stronger than the cber.co forecast (2.3 million jobs).

The U.S. will add 2.6 million jobs in 2015.



Source: Bureau of Labor Statistics, cber.co.

U.S. Unemployment Rate and Number of Unemployed

Both the unemployment rate and number of unemployed have slowly trended downward since peaking in late 2010.

cber.co projected the 2014 unemployment rate would drop below 6.2%. The rate dropped more quickly than anticipated and was at 5.8%.

The total number of unemployed (red) will drop below 9.0 million at the end of 2014. This is 2.3 million above the low point in 2007, but only 6.4 million below the high point in 2009.

By the end of 2015 unemployment will be below 5.0% and the number of unemployed will be about 7,500.

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

Number of Total Unemployed Who Have Been Out of Work for 27 Weeks and Over

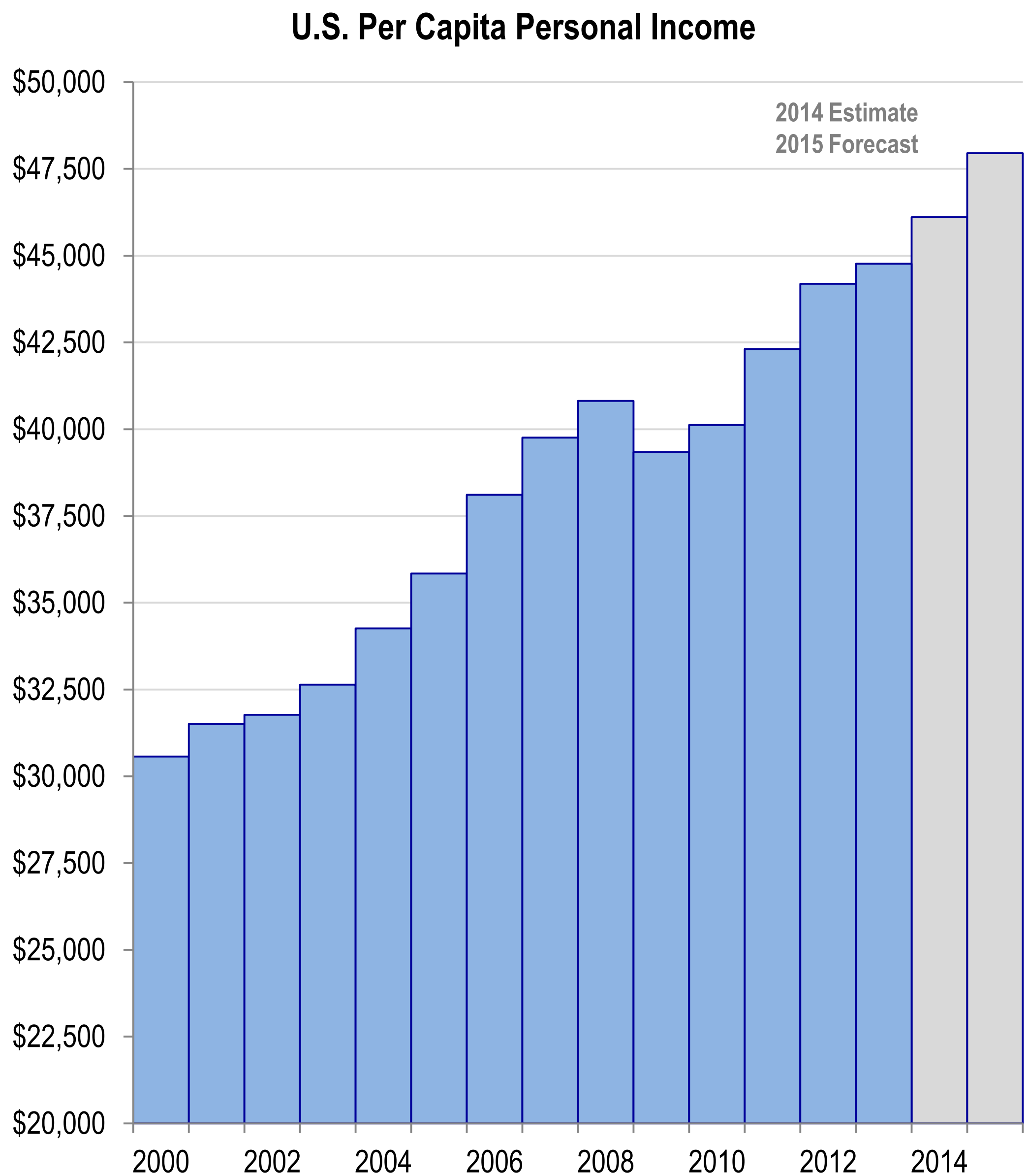
Source: Bureau of Labor Statistics, SA, FRED.

Per Capita Personal Income (PCPI)

The U.S. PCPI showed negligible growth in 2002 and it declined in 2009. It posted gains in all other years.

The U.S. PCPI is expected to increase by 3.0% in 2014, less than the cber.co projection of 3.9%.

The U.S. PCPI is expected to increase by 4.0% in 2015.



Source: Bureau of Economic Analysis, cber.co.

The U.S. Economy
Services, Manufacturing, and Construction

Services, Manufacturing and Construction Signs of a Healthy Economy

Purchasing managers in service and manufacturing companies have been optimistic for an extended period of time.

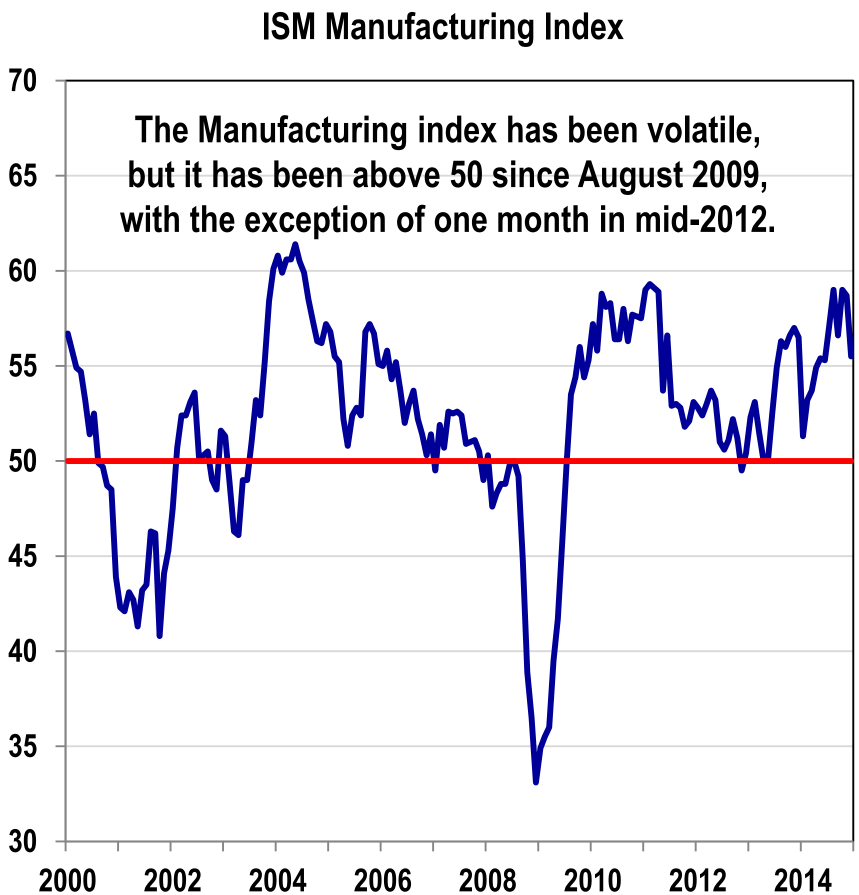
- The index for purchasing managers in the services sectors has been above 50 every month since August 2009. Since January 2010 the range of the index has been 51.5 to 65.0. The index trended upwards during 2014.
- Manufacturing purchasing managers became optimistic about the economy in mid-2009; however, their level of confidence has been more volatile. It was generally positive (49.5 to 59.0), but dropped back to 50 in both 2012 and 2013.

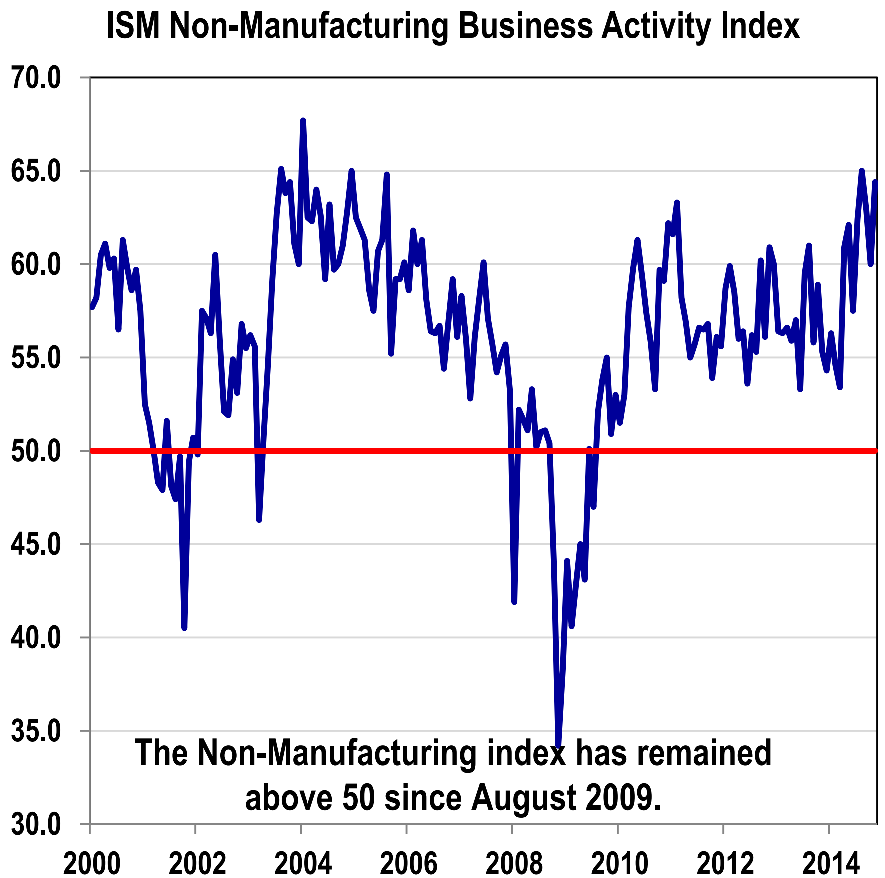
Manufacturing shipments are increasing at a steady rate.

Auto and light truck sales have returned to pre-recession levels.

Construction continues to show overall lukewarm growth, despite low interest rates.

ISM Purchasing Managers Indices

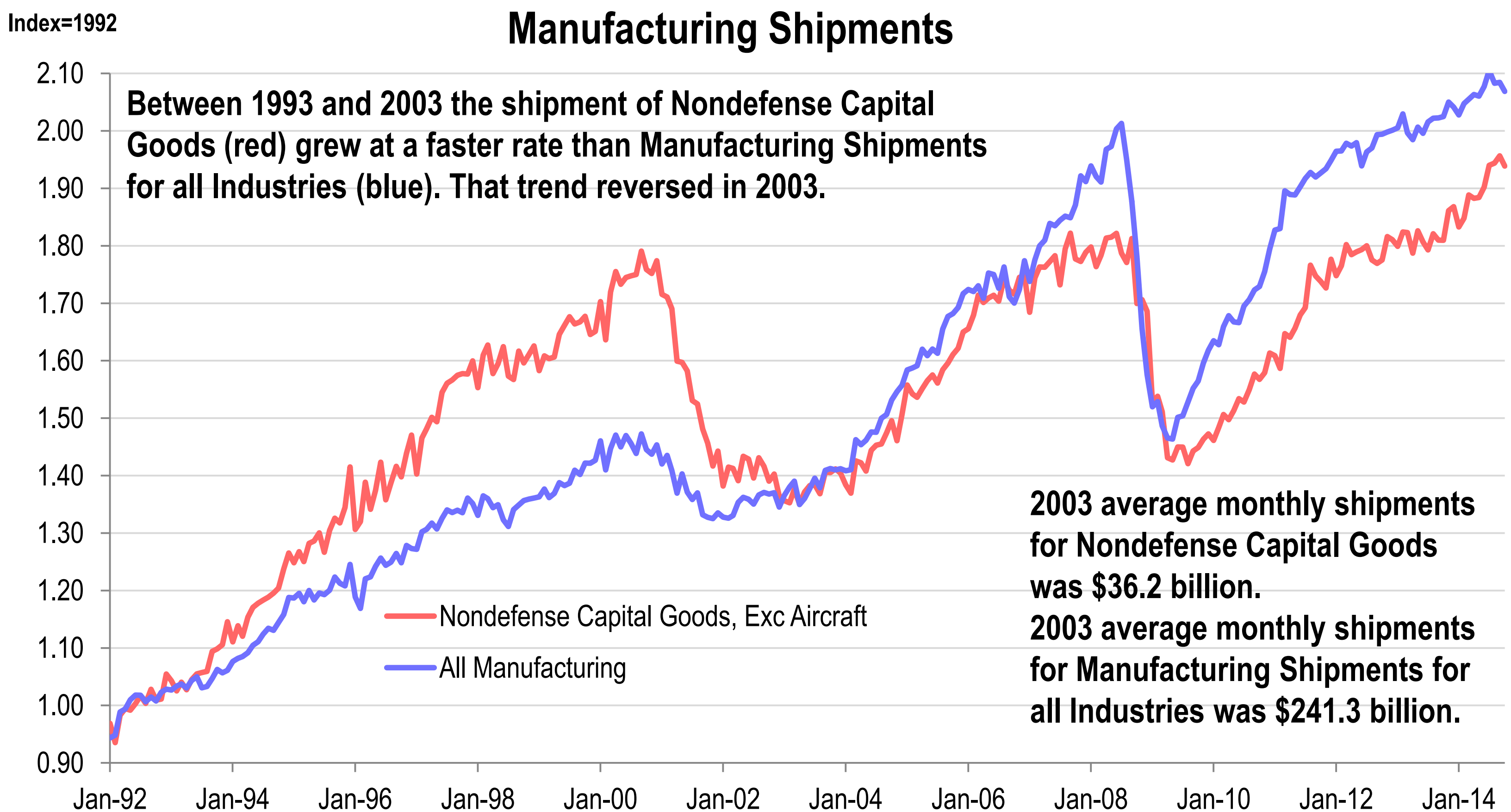




Sources: Institute for Supply Management (ISM), FRED.

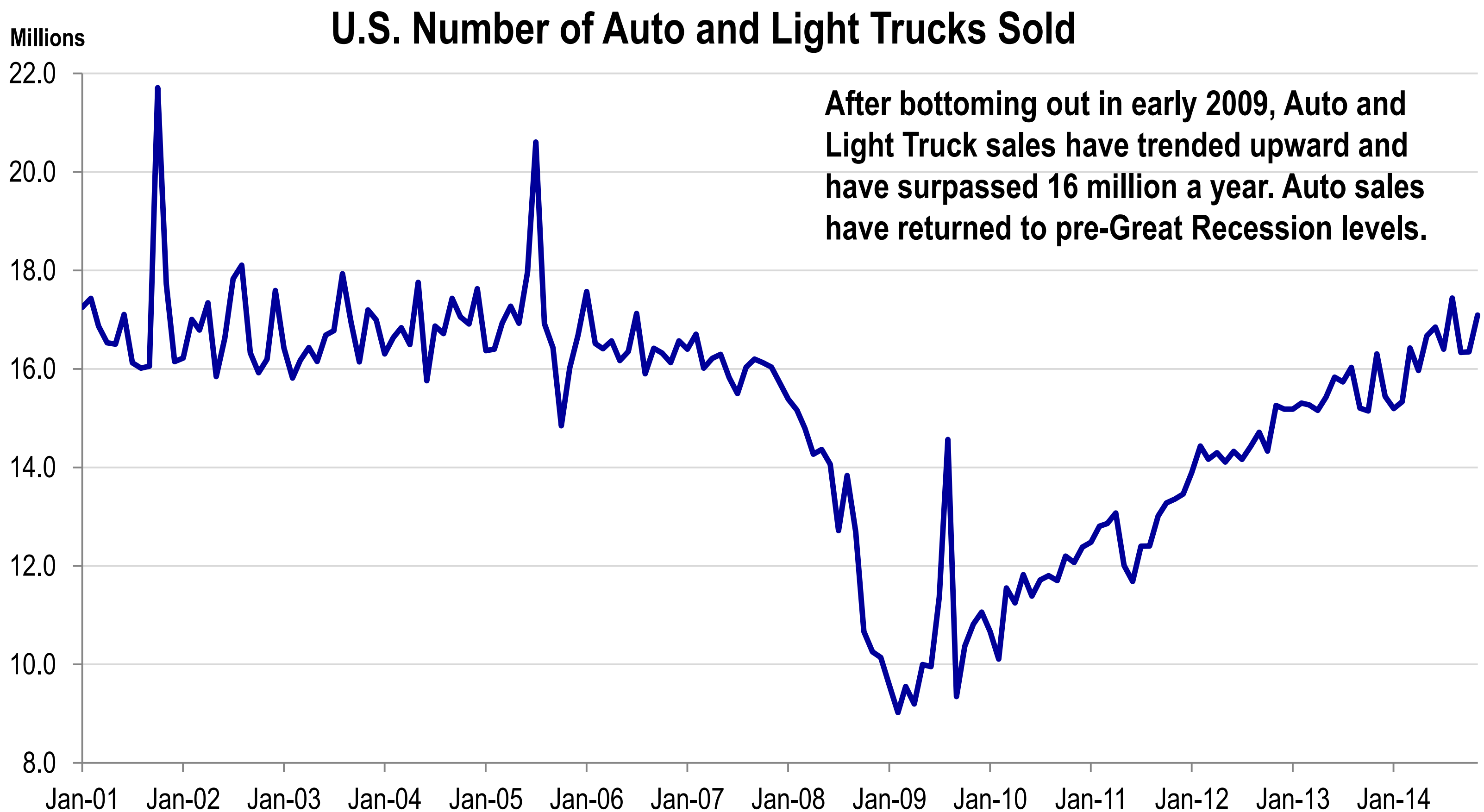
Manufacturing Shipments

All Industries vs. Nondefense Capital, Excluding Aircraft



Source: FRED.

Weekly Auto and Light Truck Sales



Source: FRED, BEA.
Note: Seasonally Adjusted Annual Rate.
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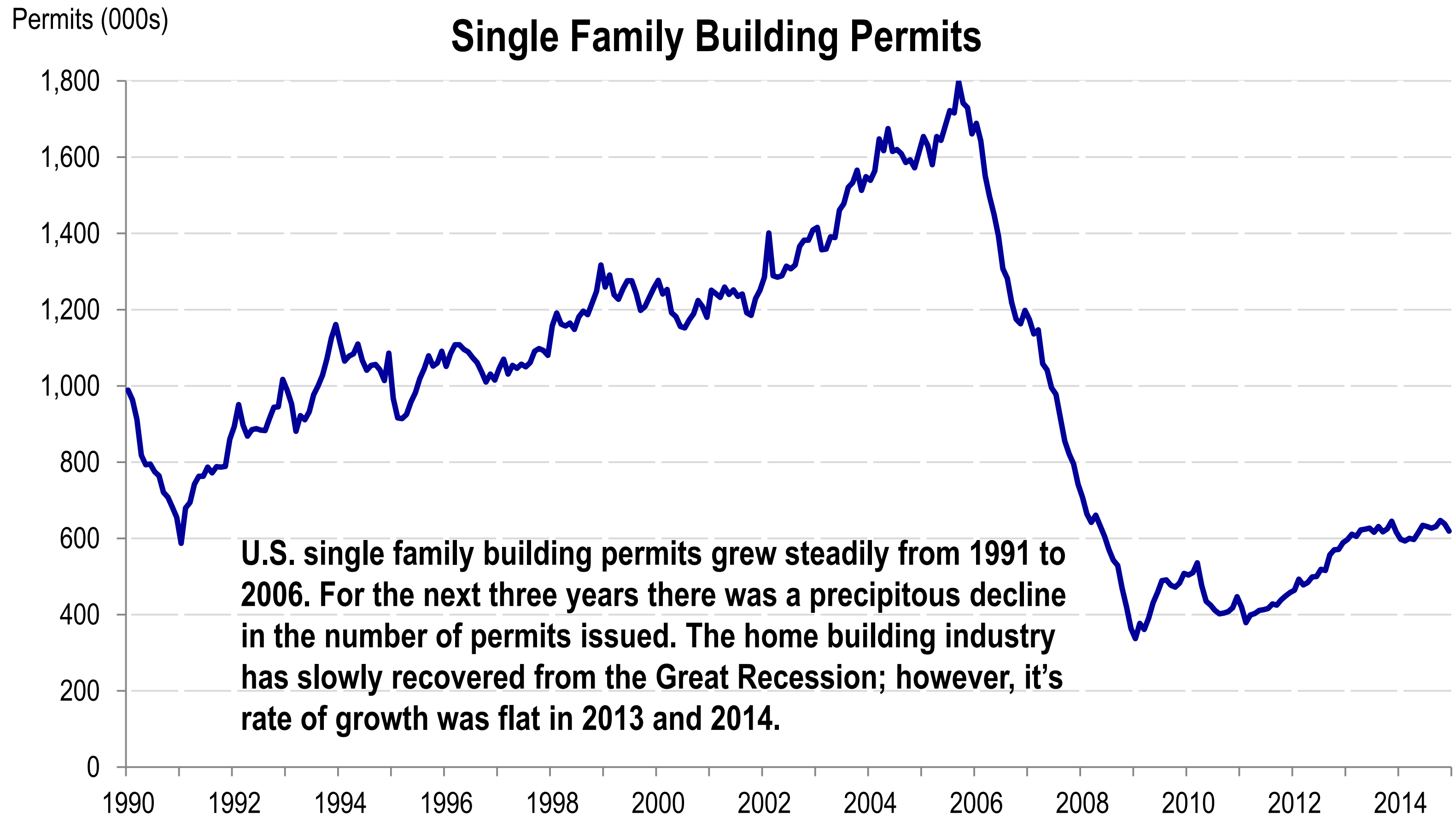
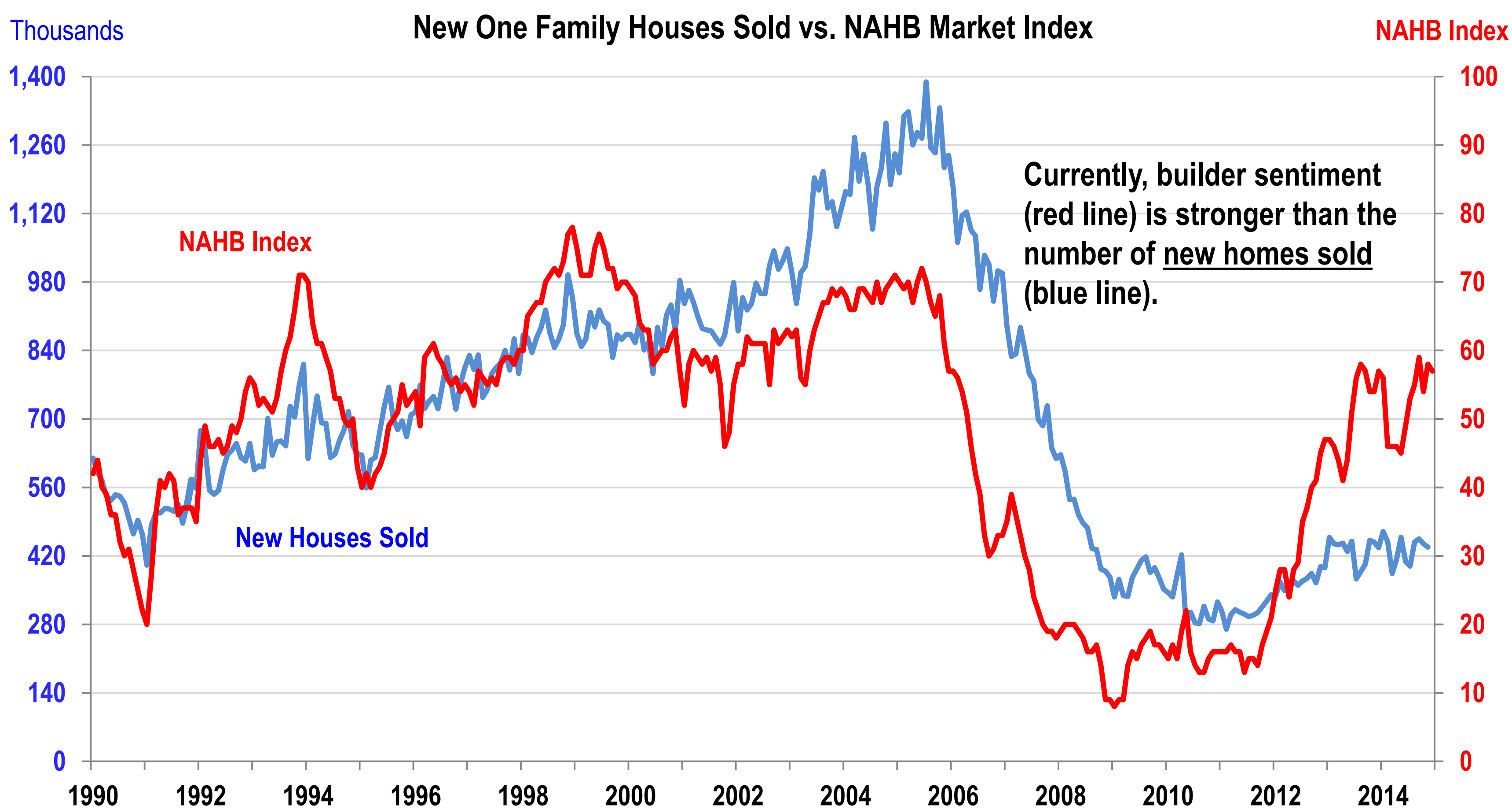
New Single Family Building Permits – U.S.



Source: FRED, U.S. Census Bureau.

New One Family Houses Sold vs. NAHB Market Index



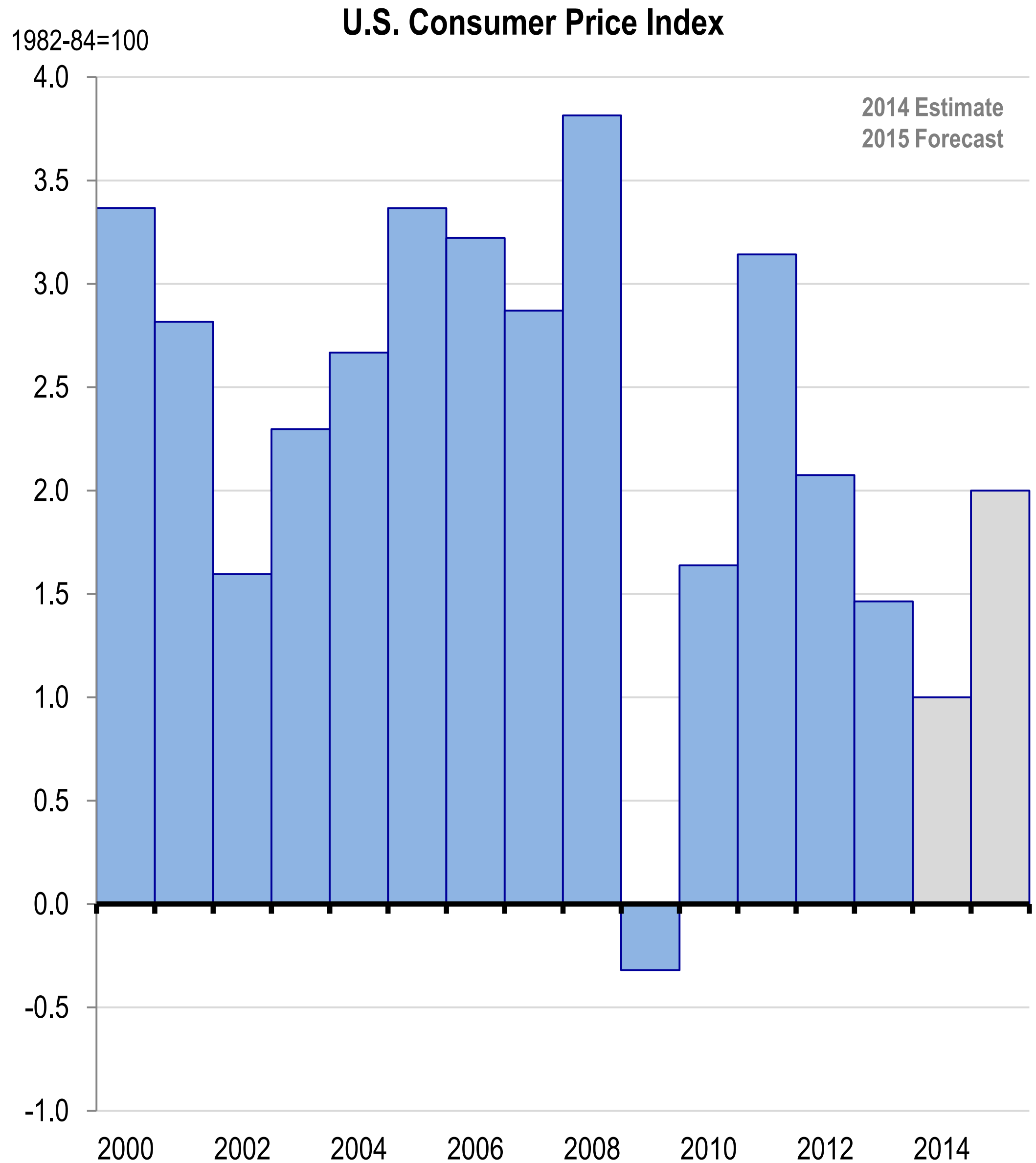
Source: FRED, Census Bureau SA., NAHB.

The U.S. Economy
Inflation and Mortgage Rates

Consumer Price Index (CPI)

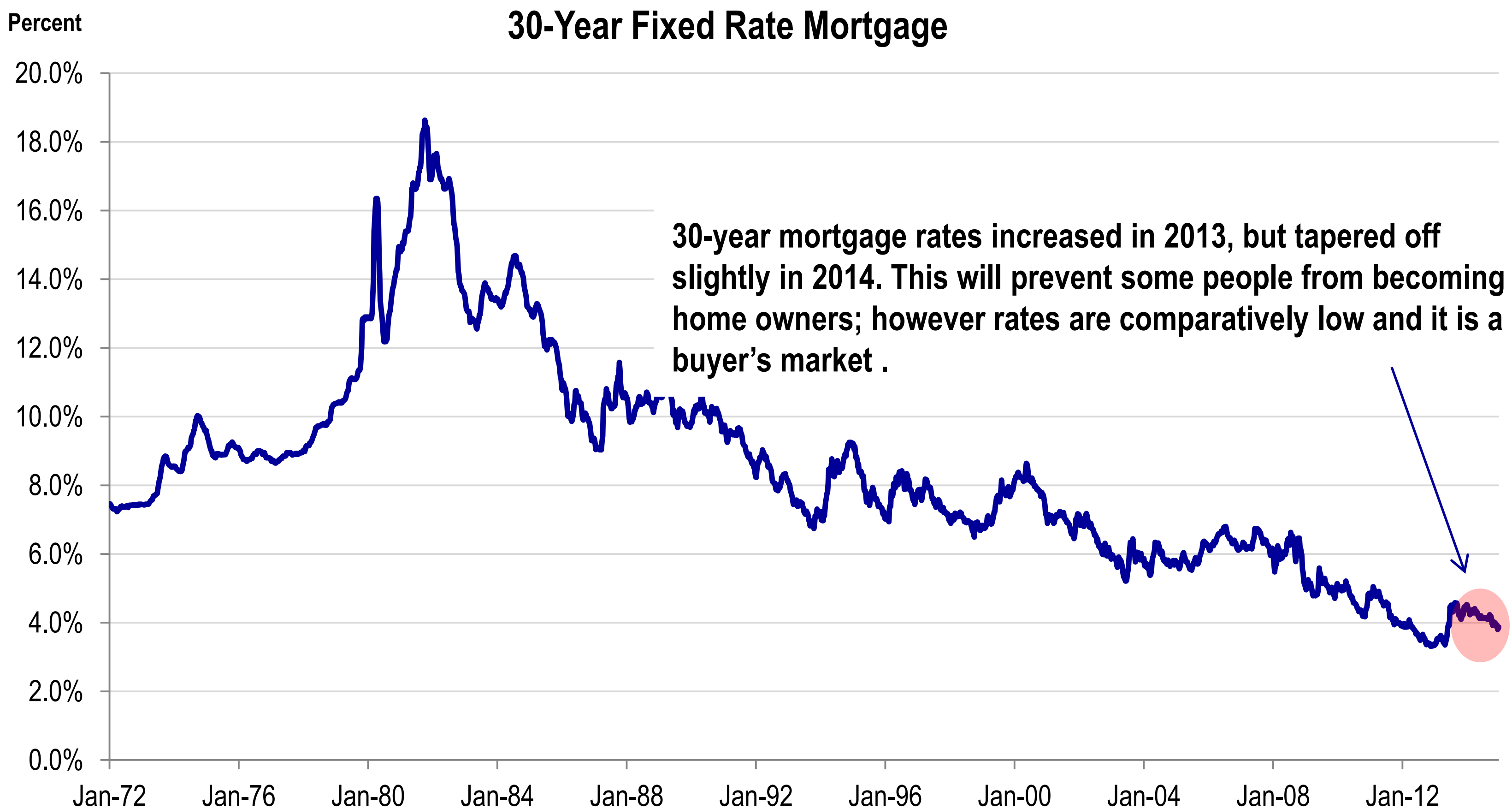
U.S. Inflation, as measured by the CPI, was expected to remain near the Fed's target rate in 2014; however, it dropped precipitously because of lower fuel costs.

The U.S. CPI will increase by 1.0% in 2014 and 2.0% in 2015.



Source: Bureau of Labor Statistics, cber.co.

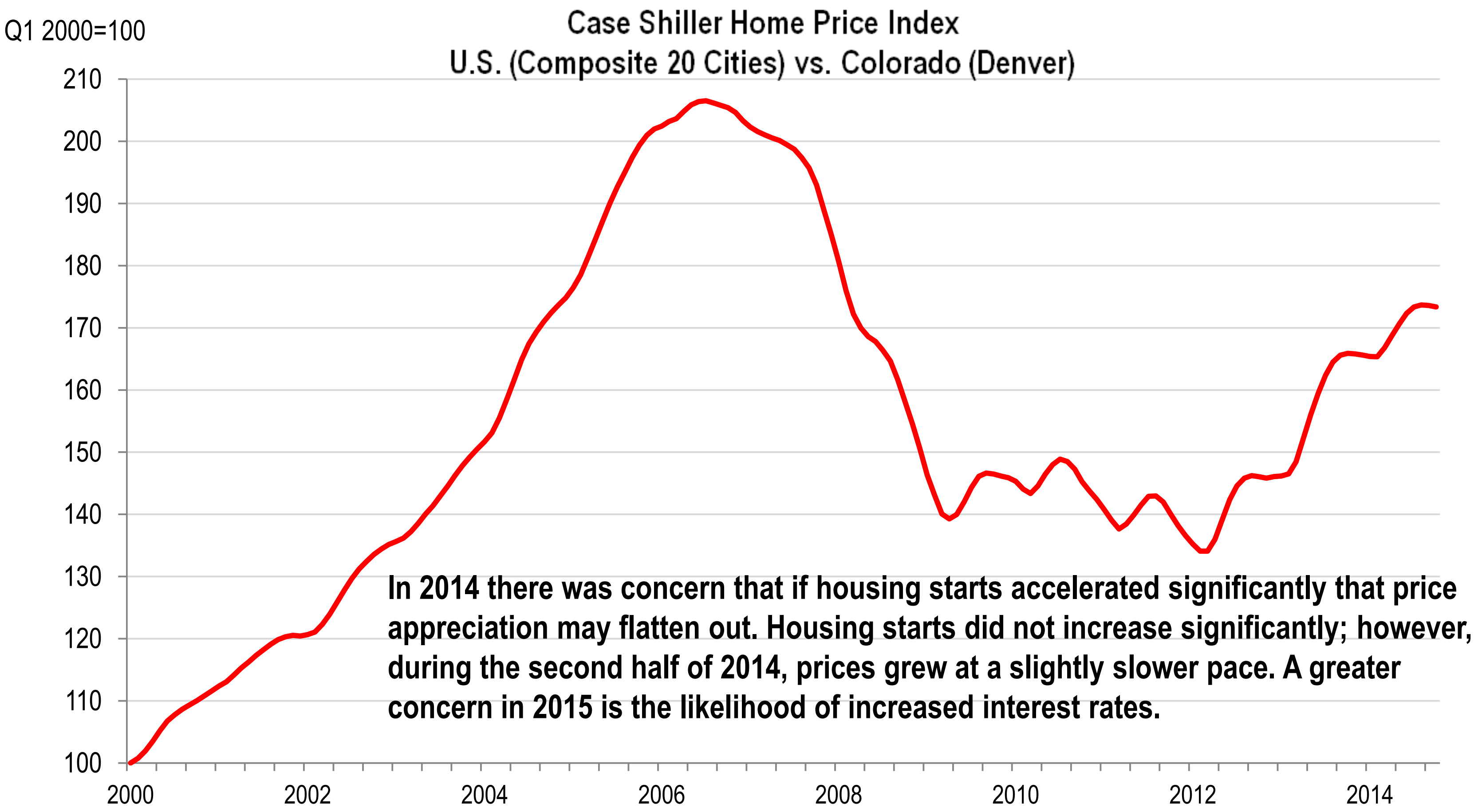
30-Year Fixed Rate Mortgage



Source: FRED, Freddie MAC.

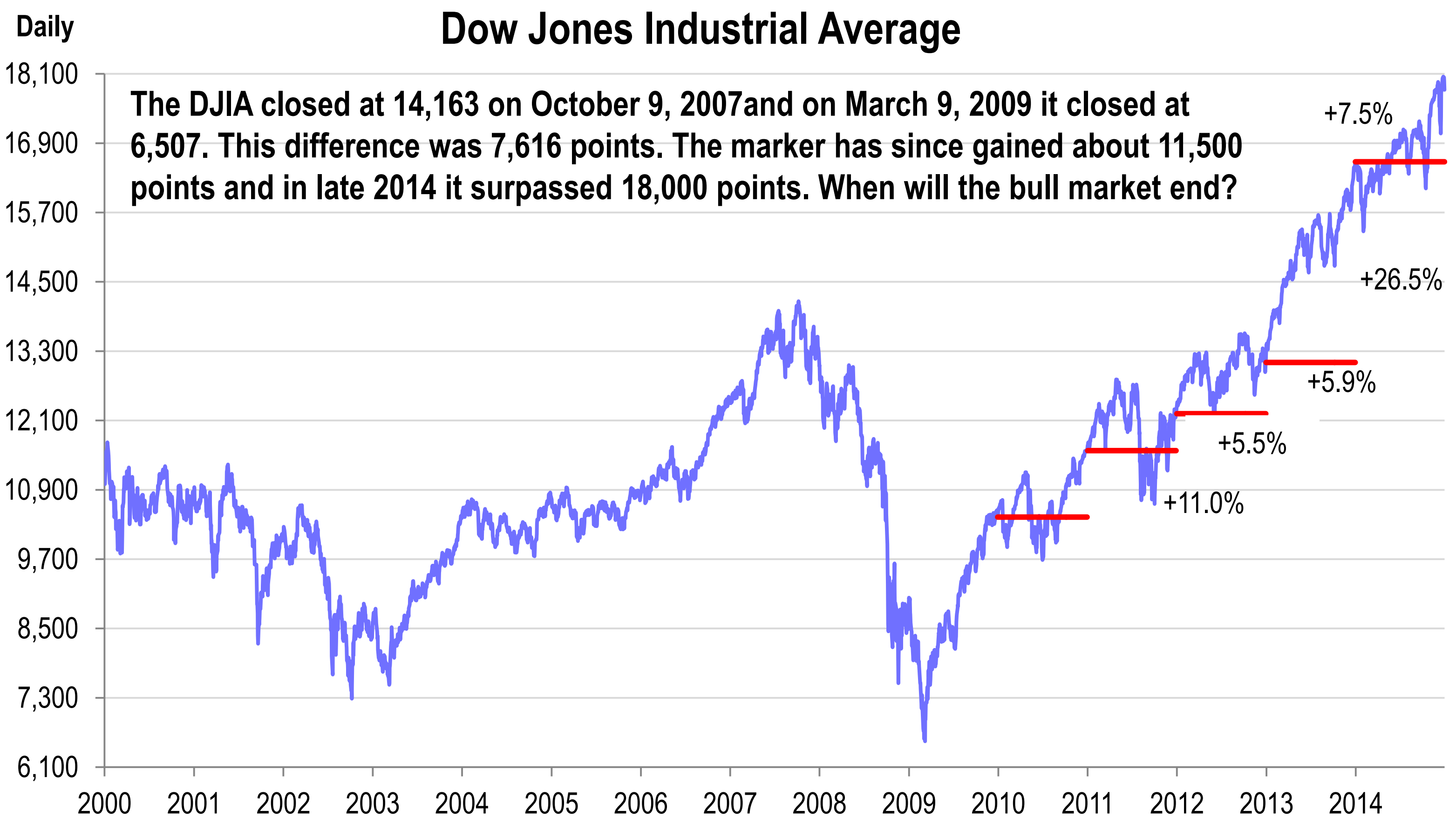
The U.S. Economy
Housing, Equities, and Oil Prices

U.S. Housing Prices – Case Shiller Composite 20 Cities



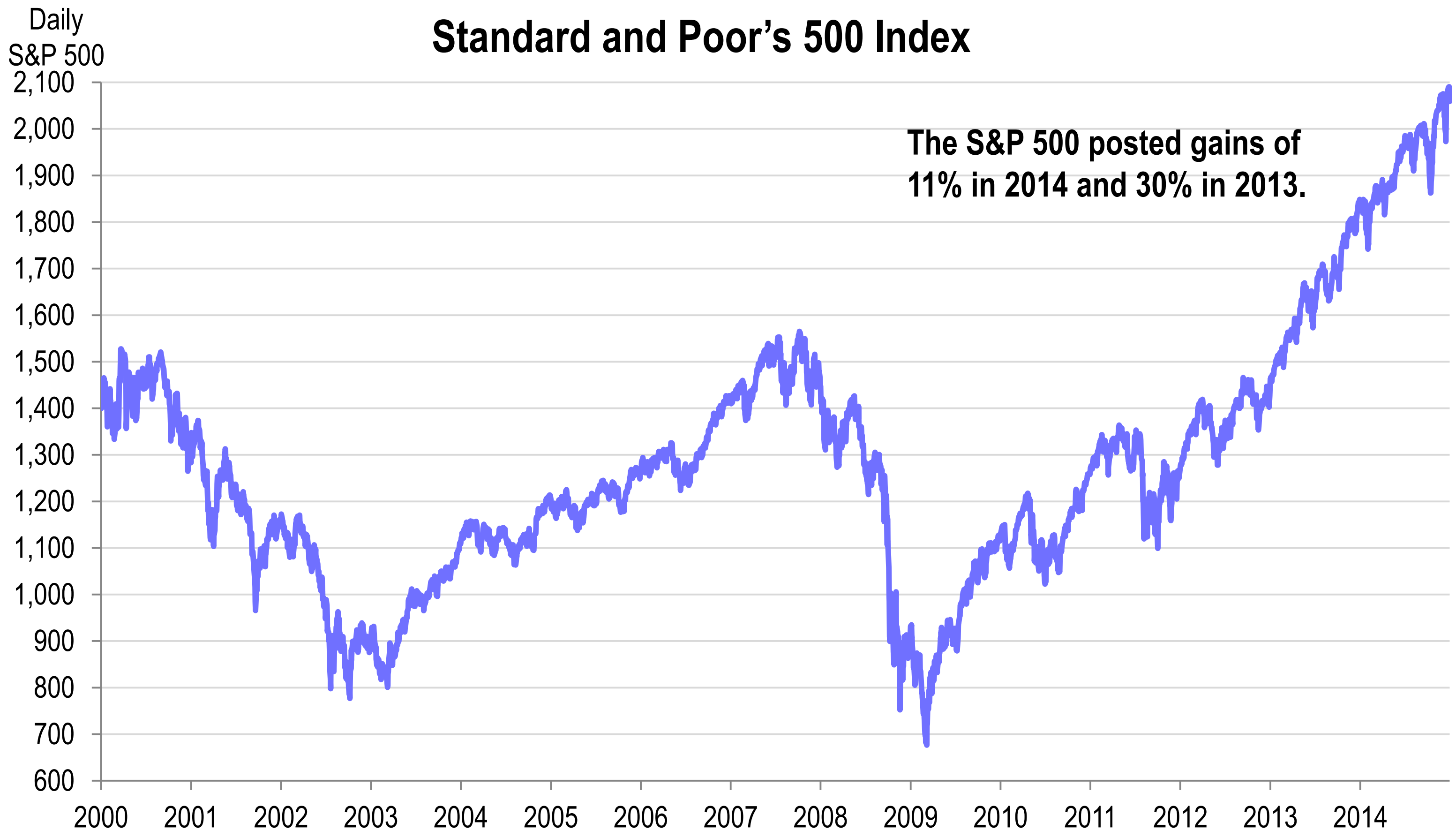
Source: S&P Case-Shiller, FRED.

Dow Jones Industrial Average



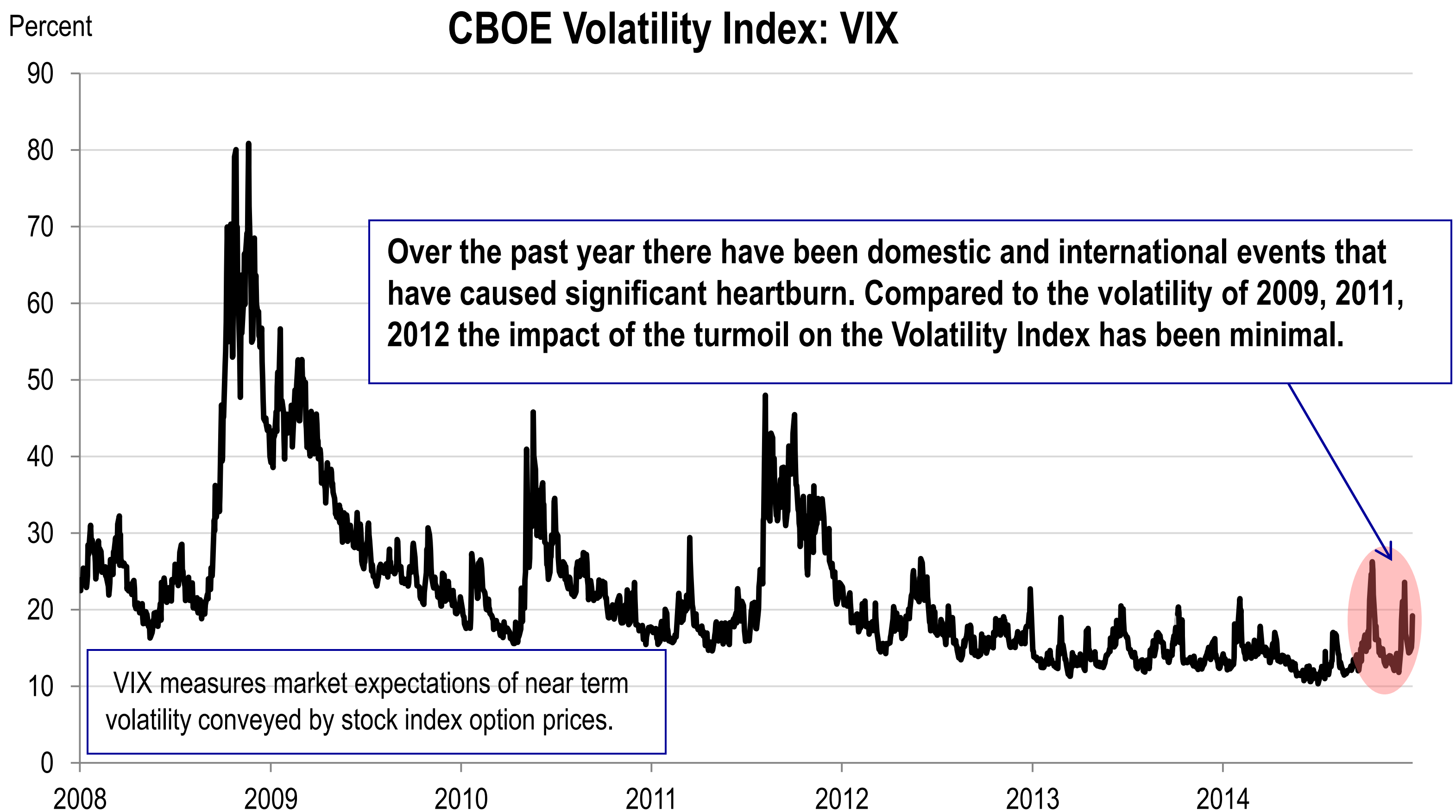
Source: FRED, DJIA

Standard and Poor's 500 Index



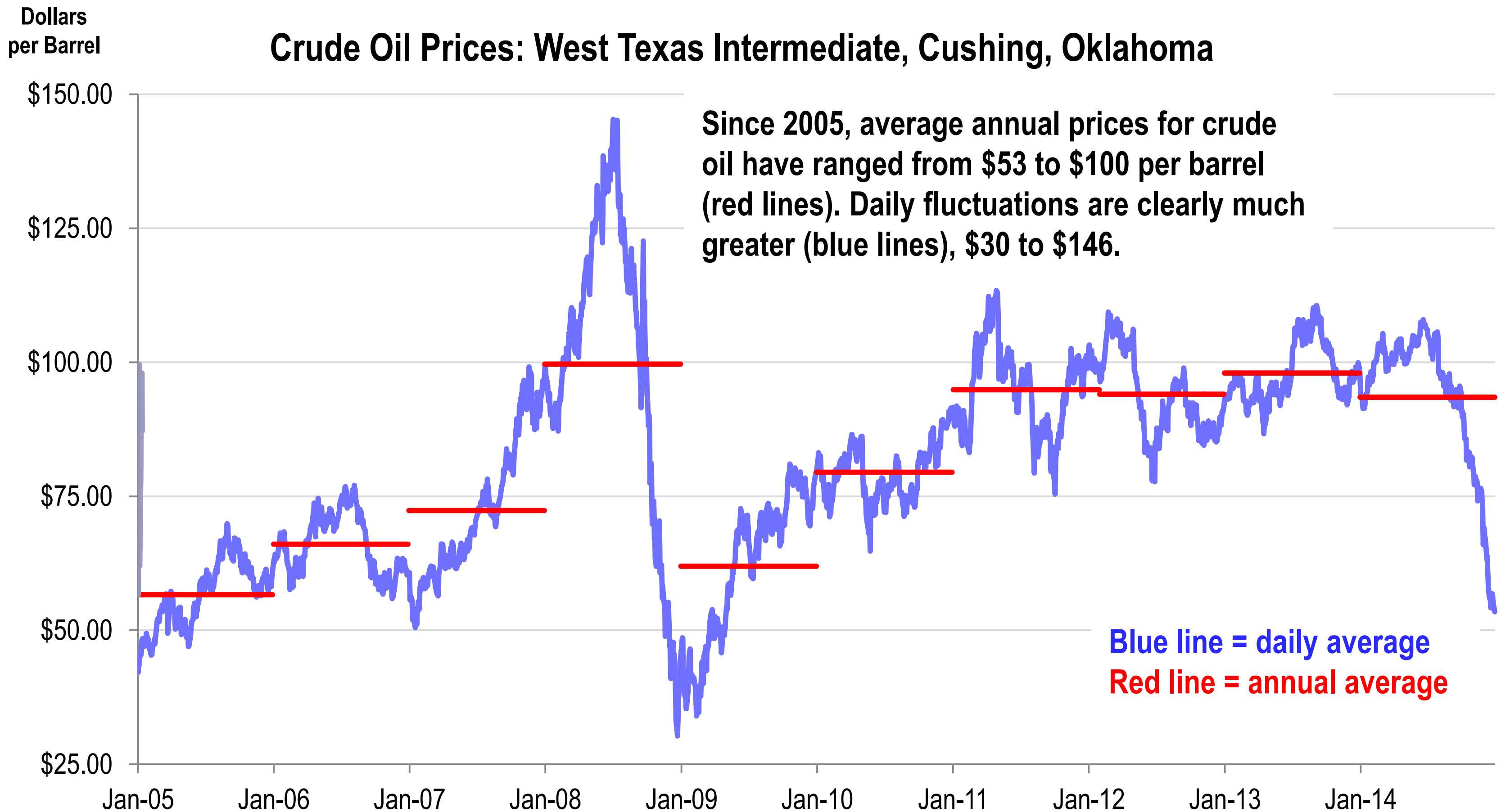
Source: FRED, S&P 500.

CBOE Volatility Index VIX (VIXCLS)



Source: FRED, CBOE.

Crude Oil Prices
West Texas Intermediate



Source: FRED, EIA.

The U.S. Economy Debt

Debt – Reason for Concern

Depending on your perspective

- Debt is good if it is used to make purchases that stimulate consumption and growth.
- Debt can deter growth if debt service obligations prevent consumption and growth.

Whether or not you believe debt is good for the economy, one thing is for sure. Debt has increased!

Federal Debt

- In Q1 2006 the Federal debt was $8.4 trillion.
- In Q3 2014 the Federal debt was $17.8 trillion.

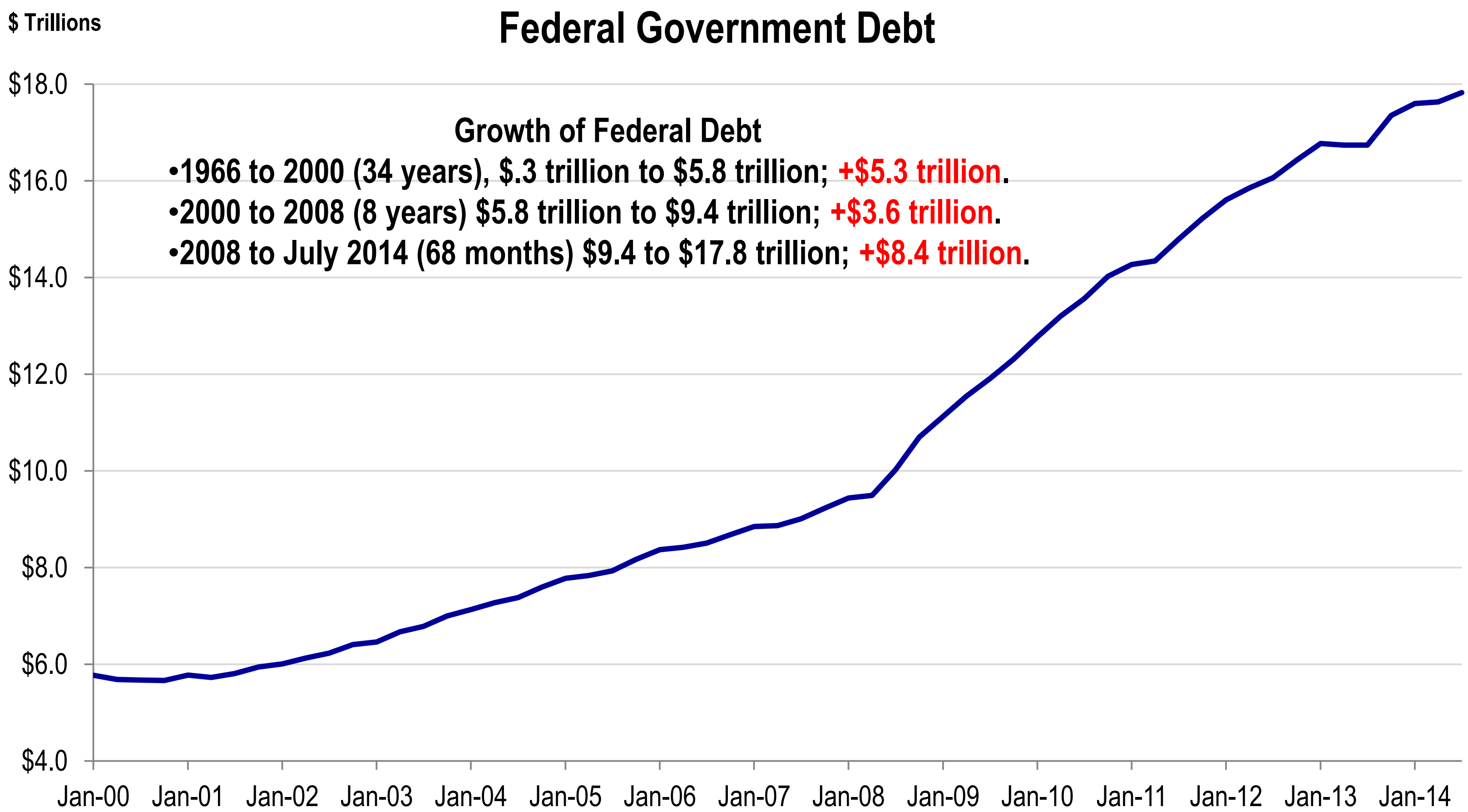
Consumer Credit Outstanding

- In January 2006 Consumer Credit Outstanding was $2.37 trillion.
- In October 2014 Consumer Credit Outstanding was $3.28 trillion.

Student Loans

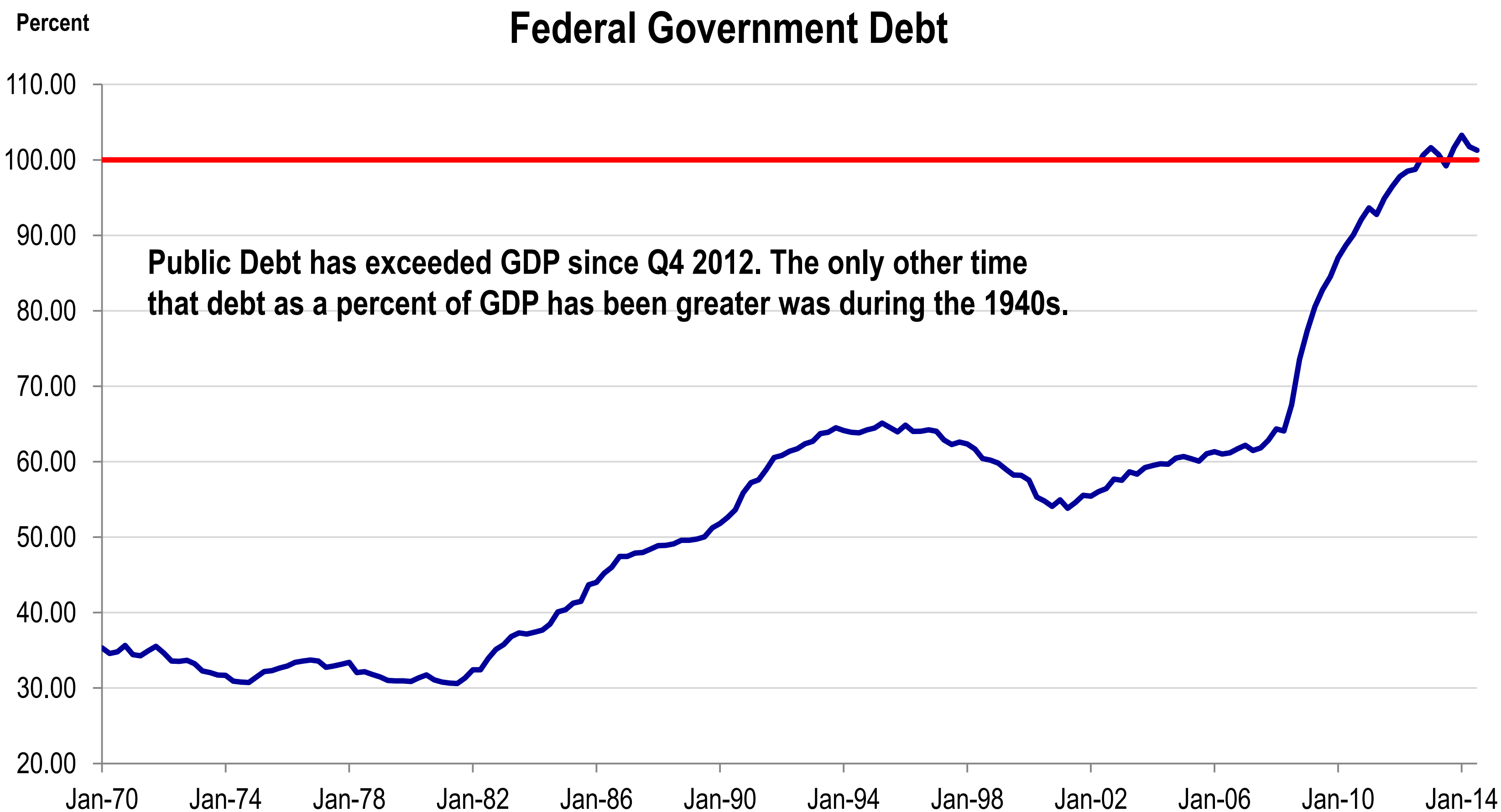
- In Q1 2006 Student Loans Outstanding were $500 billion.
- In Q3 2014 Student Loans Outstanding were $1.3 trillion.

Federal Government Debt



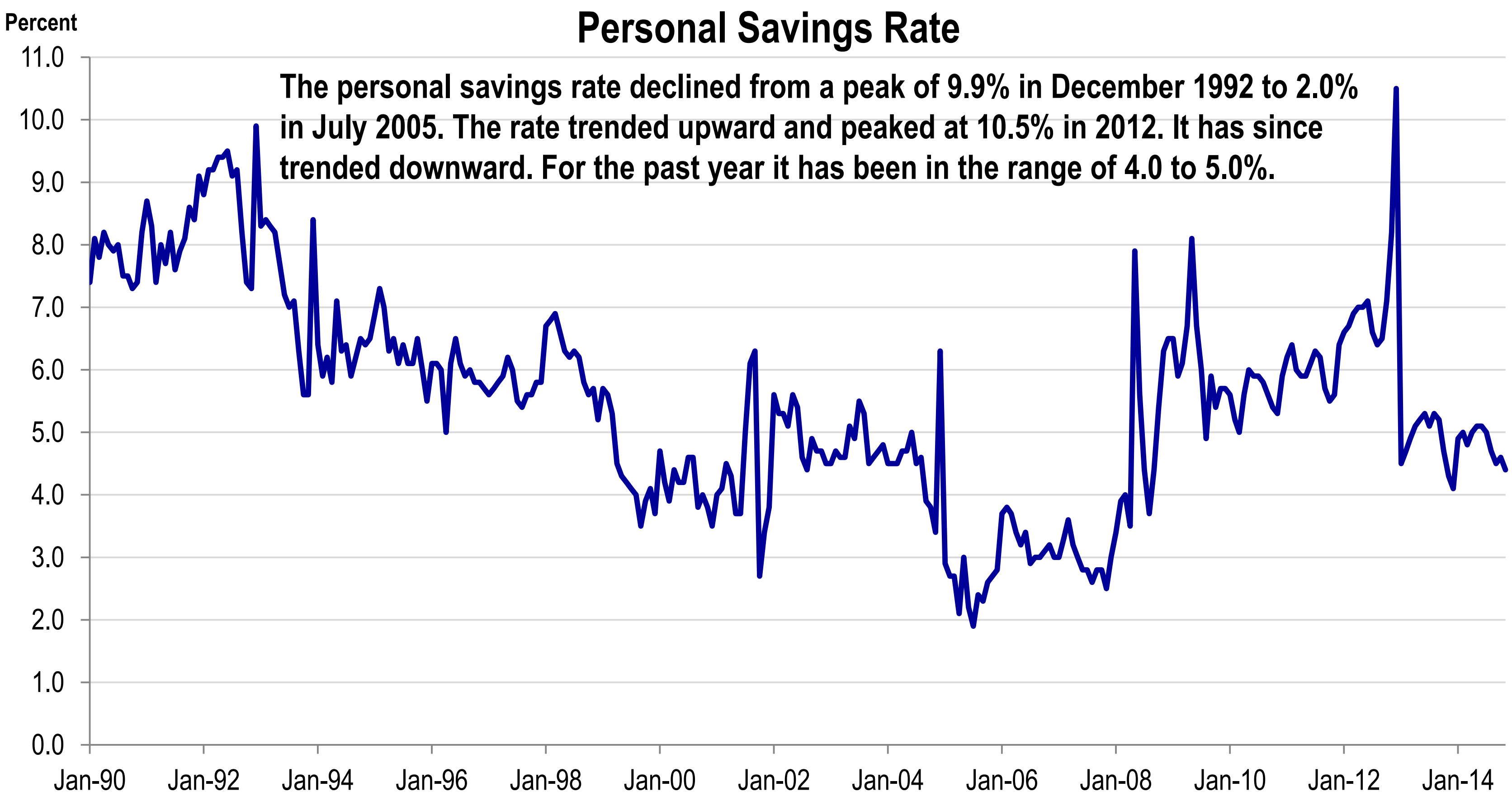
Source: FRED.

Public Debt as a Percent of GDP



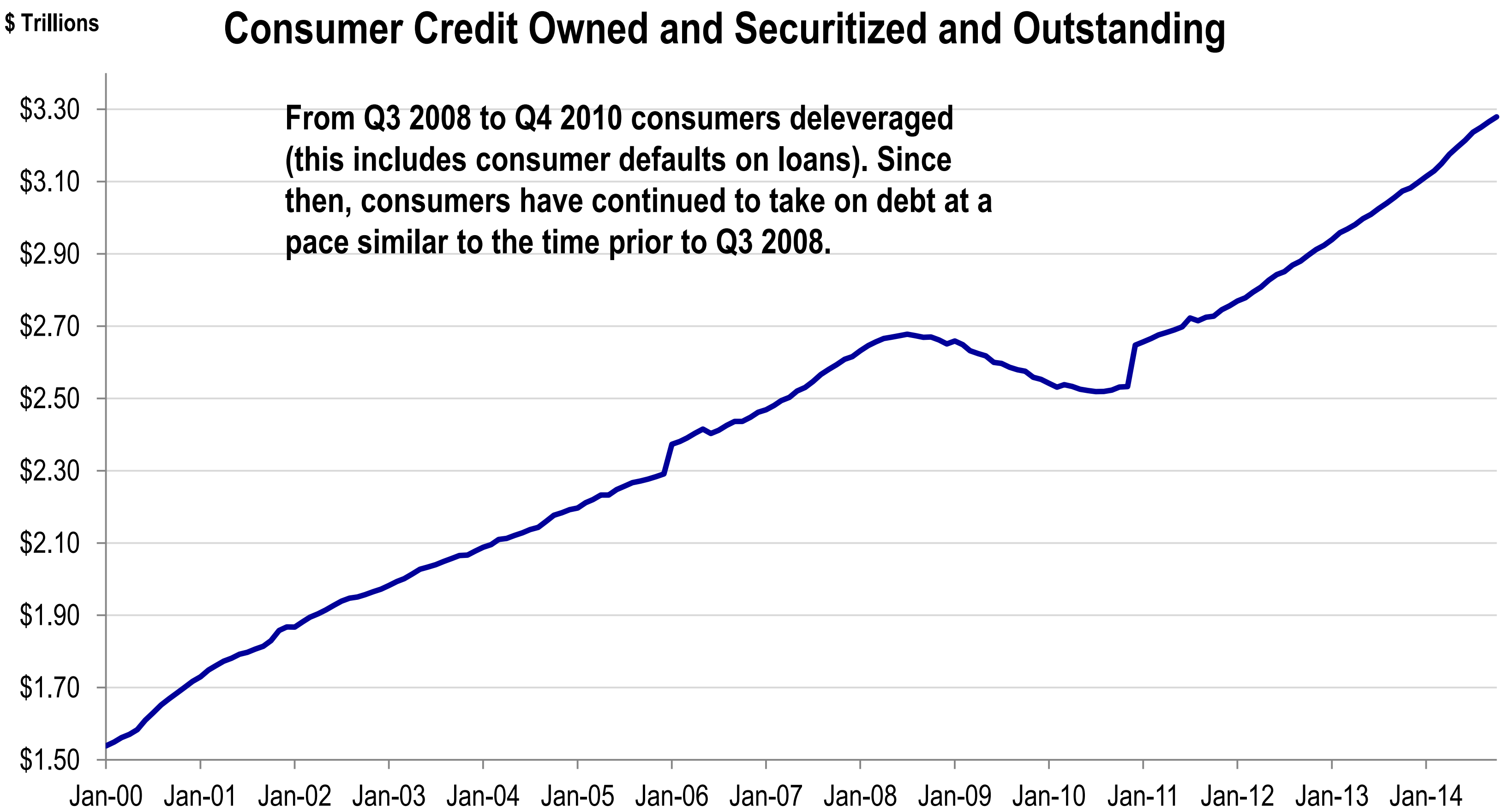
Source: FRED.

Personal Savings Rate
Percentage of Disposable Personal Income



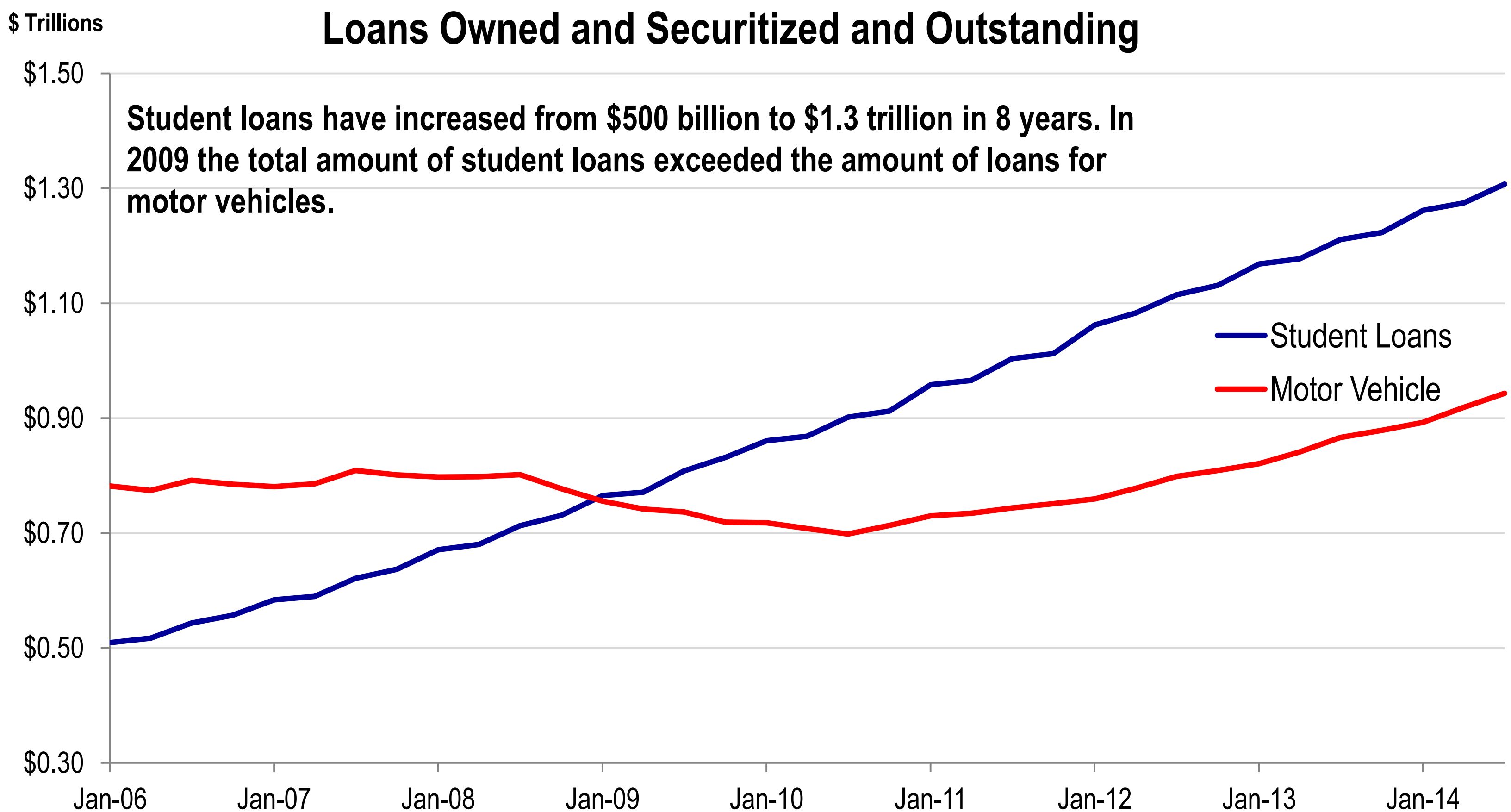
Source: FRED, SA.

Consumer Credit Outstanding



Source: Federal Reserve, G.19, SA.

Loans Outstanding
Student Loans vs. Motor Vehicle Loans



Source: FRED.

The Colorado Economy
Output, Inflation, Income, and Wages

Overview – The Colorado Economy 2015

Continued Solid Growth Ahead

The following charts tell the story about the Colorado economy in 2014 and 2015. In 2014 the state recovered from natural disasters and self-inflicted political wounds incurred in 2013. The 2014 mid-term elections were ugly and Colorado became a purple state. On a positive note, Colorado employment grew at the rate projected by cber.co in 2014. And state employment is expected to continue to grow at the same steady rate in 2015. Happy New Year!

On a Positive Note…

- Population and employment will continue to grow at the current steady pace.
- Slightly more than half of the state's job growth is occurring in 5 sectors; however, all sectors are expected to add jobs or be flat in 2015.
- Colorado new car registrations have risen steadily for the period 2010 to 2014. That trend will continue in 2015.
- The State's general fund will see increased sales and income tax collections as a result of a larger workforce and higher wages.
- There was a surge in the number of establishments in 2014. Establishment growth will continue in 2015. Workers will be added as these establishments expand their business.

Some Mixed News…

- The state will develop a greater appreciation for the extractive industries in 2015.
- In 2015, Colorado's inflation rate will be 2.5% and the U.S. rate will be 2.0%.
- Colorado housing prices have increased at a faster rate than the nation. That is great news for home owners, but not so good news for people wanting to enter the housing market or move to Colorado. That trend will continue in 2015.
- Consumers are delighted that gasoline prices have declined. While it is wonderful to fill the gas tank for under $30, the annual savings for the year will be less than $800.
- The unemployment rate dropped sharply. This is great news for job hunters; however, labor shortages are beginning to occur in key occupations. The rate of unemployment is expected to remain low for several years.
- The lower unemployment rate has increased upward pressure on wages. This is good news for workers, but will cut into corporate profits.

Colorado GDP

A Measure of Economic Performance that Tells a Different Story

Most economic forecasts focus on job growth. It is also important to consider Gross Domestic Product or output because industries contribute to the economy in different ways. Some contribute more to job growth than output growth and vice versa. Highlights from an analysis of the state GDP follow:

- In 2013 (the most current data), Colorado's nominal GDP was $294.4 billion.
- The Private Sector accounted for 89% of the <u>total GDP</u> in 2013.
- In 2013 the Private Sector accounted for 83% of Wage and Salary employment.
- The Private Sector accounted for almost 94% of the <u>change in the GDP</u> between 2009 and 2013.
- In 2013 about 12% to Wage and Salary employment was in the Goods Producing Sectors.
- About 21% of the 2013 <u>total GDP</u> can be attributed to Goods Producing Sectors.
- The Goods Producing Sectors were responsible for about 28% of the <u>gain in the GDP</u> from 2009 to 2013.
- Between 2009 and 2013 the Mining, Real Estate, PST, and Government Sectors accounted for almost half the change in the state's GDP.

Clearly, it is important to consider both employment and output when evaluating the performance of the state economy.

Colorado GDP
Composition of GDP

In 2013, Colorado's nominal GDP was $294.4 billion. The Private Sector accounted for 89% of the total GDP and almost 94% of the change in the GDP between 2009 and 2013. About 21% of the total GDP can be attributed to Goods Producing Sectors; they were responsible for about 28% of the gain in the GDP from 2009 to 2013.

Industry	2013 GDP (Millions)	% Of Total GDP	2013 Minus 2009	% Of Total Increase In GDP
All industry total	$294,443		$46,266	
Private industries	$258,217	89.0%	$43,287	93.6%
Goods Producing	$57,447	20.5%	$12,964	28.0%
Service Producing	$200,771	68.6%	$30,325	65.5%
Government	$36,226	11.0%	$2,979	6.4%

Colorado GDP – Change Between 2009 and 2013

Between 2009 and 2013 the Mining, Real Estate, PST, and Government Sectors accounted for almost half the change in the state's GDP.

Industry	2013 GDP (millions)	% of Total GDP	2013 minus 2009	% of Total Increase in GDP
Mining	$19,848	11.4%	$8,518	18.4%
Real estate, rental. leasing	$40,194	13.6%	$6,895	14.9%
Professional, scientific, and technical services	$26,355	10.2%	$4,233	9.1%
Government	$36,226	11.0%	$2,979	6.4%
Wholesale trade	$15,915	5.0%	$2,606	5.6%
Finance and insurance	$14,480	3.9%	$2,436	5.3%
Health care and social assistance	$17,438	6.7%	$2,262	4.9%
Manufacturing	$21,600	4.2%	$2,171	4.7%
Agriculture, forestry, fishing, and hunting	$4,179	1.7%	$2,067	4.5%
Retail trade	$16,105	4.4%	$1,965	4.2%

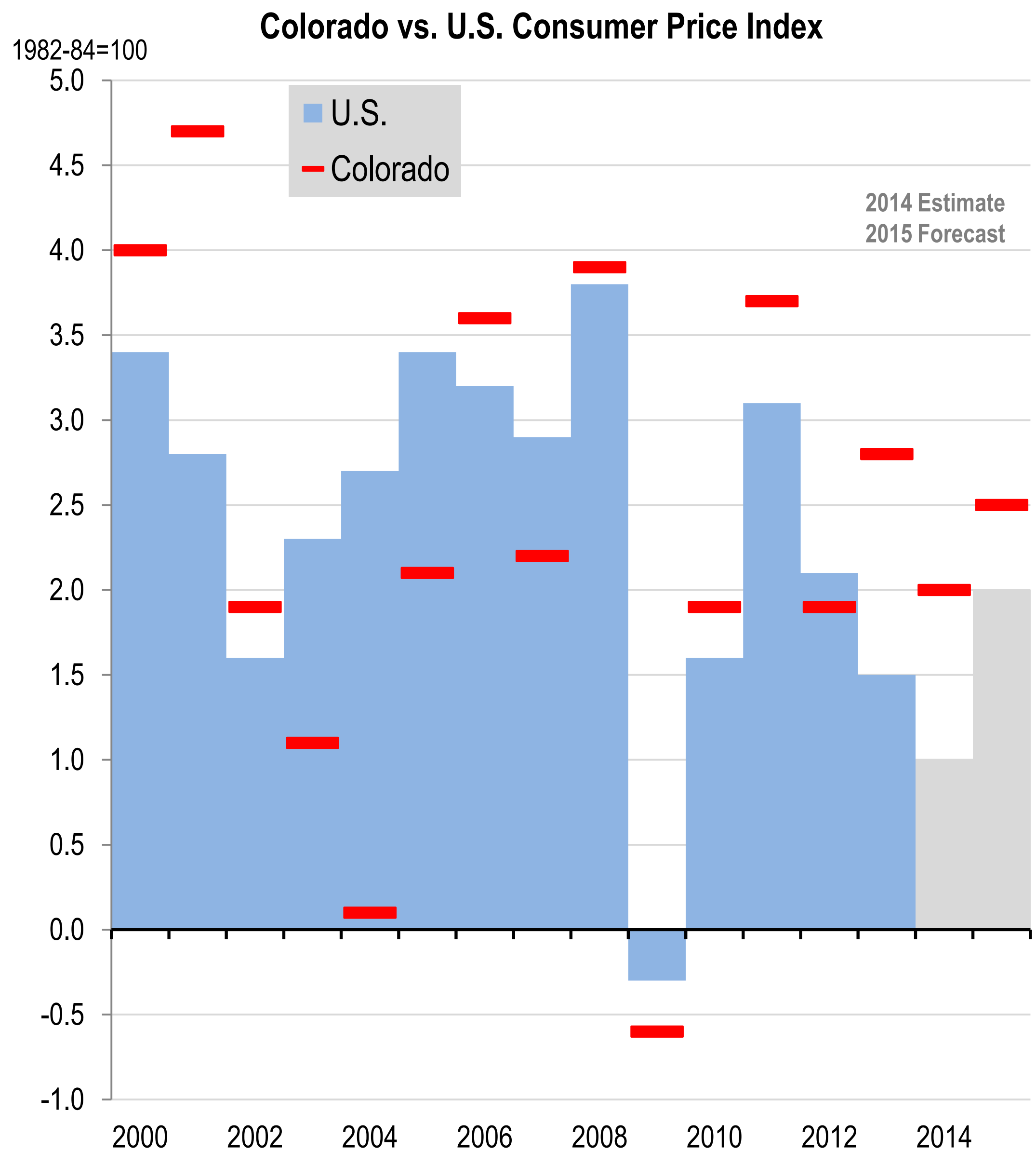
Consumer Price Index (CPI)

The Denver-Boulder-Greeley CPI (red bars) is used as a proxy for Colorado inflation.

The Colorado annual CPI has been greater than the U.S. CPI 10 of 16 times between 2000 and 2015. Five of the six years that Colorado inflation was lower were between 2003 and 2009.

Typically, the DBG inflation is higher than the U.S. value. Frequently, higher housing prices have caused Colorado to be a more expensive place to live.

The Colorado CPI is expected to rise by 2.0% in 2014 and 2.5% in 2015.



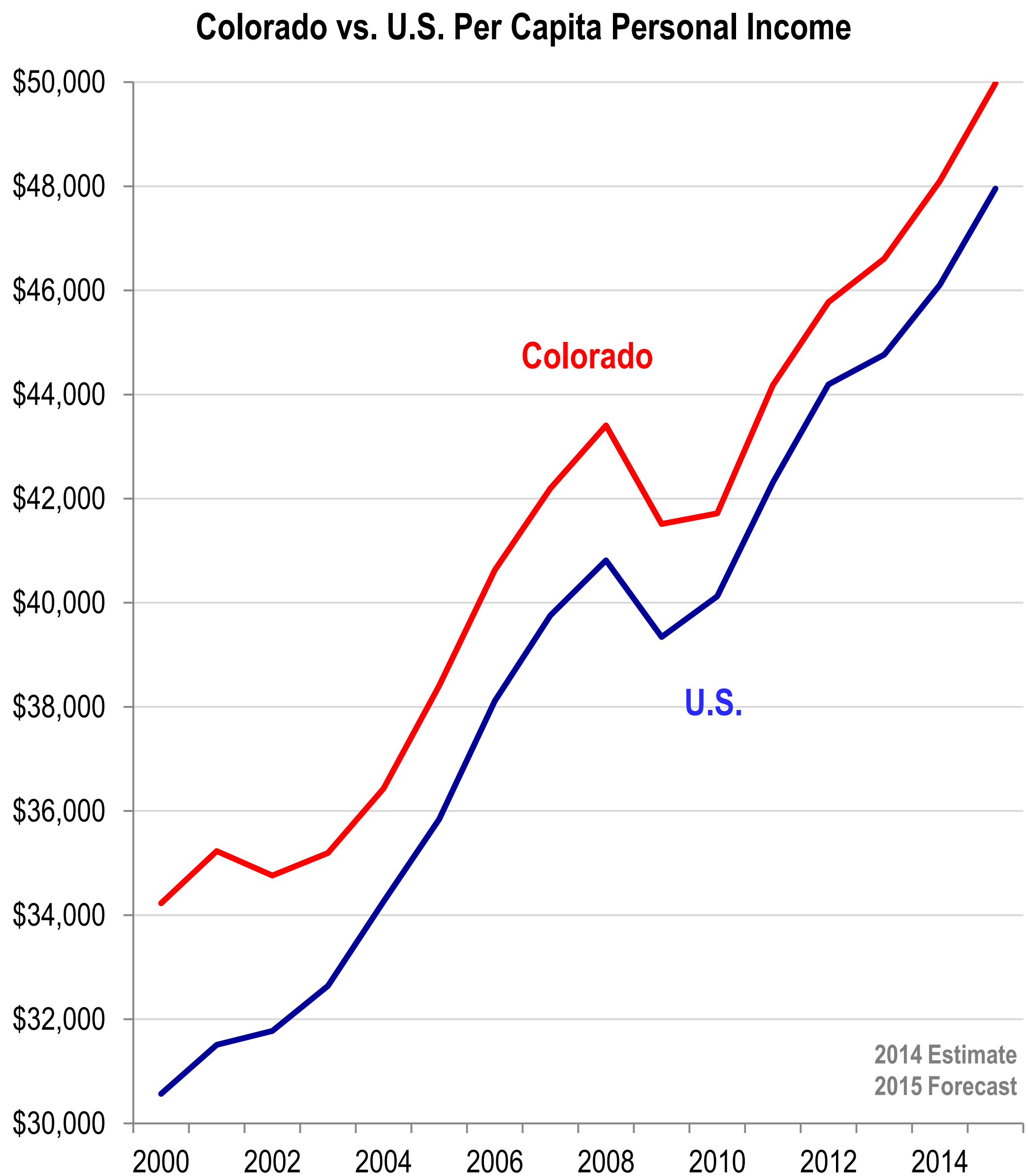
Source: Bureau of Labor Statistics, cber.co.

Per Capita Personal Income (PCPI)

Both the Colorado and U.S. PCPI have posted gains every year since 2009. During that period the U.S. rate increased at a slightly greater rate than the rate for Colorado.

Since 2000, the gap between the state PCPI and the national PCPI has been closing. In 2000 and 2001 that gap was about $3,700. In 2015 it will be about $2,000.

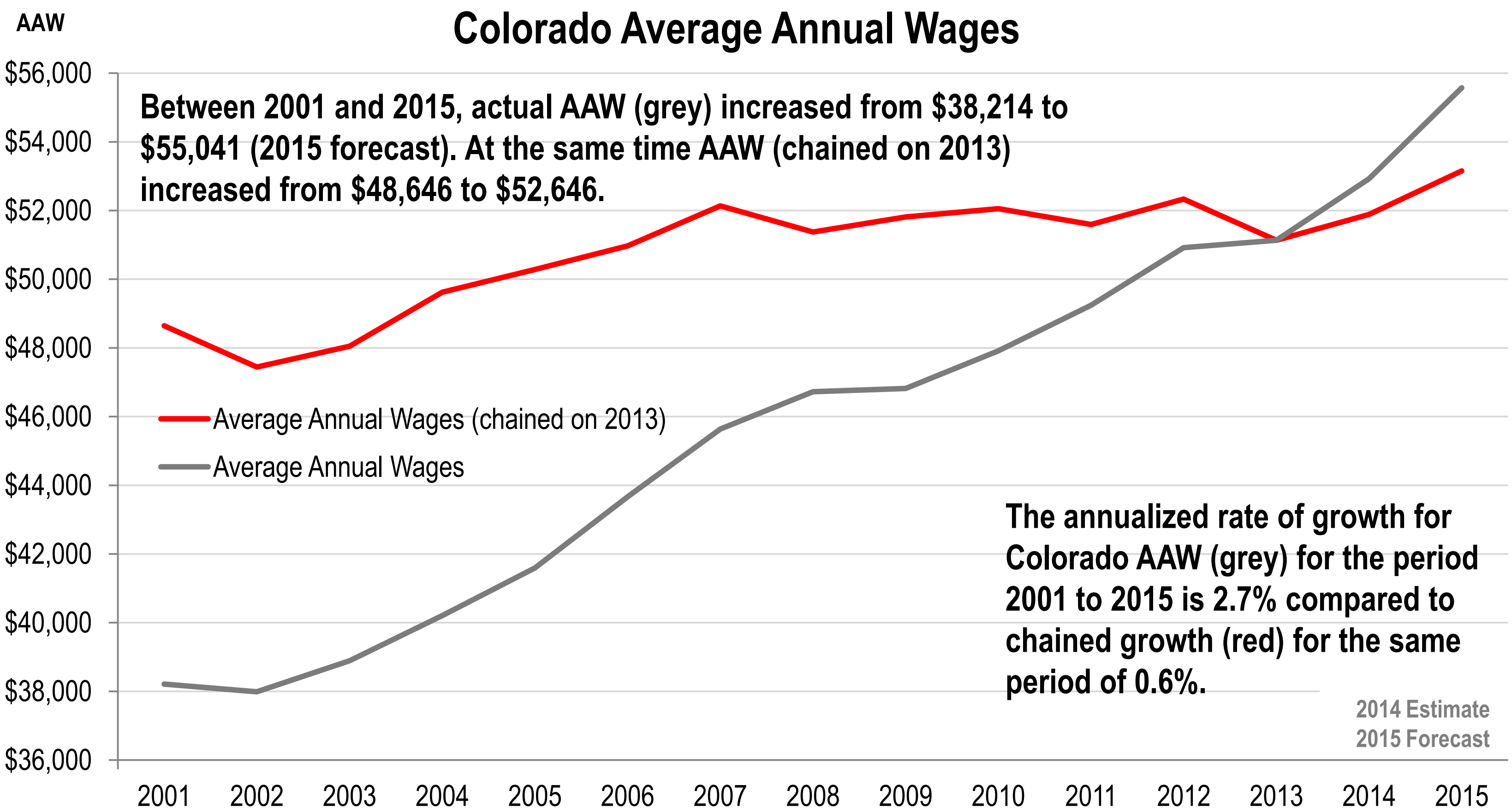
The Colorado PCPI will increase 3.9% in 2015 and the U.S. PCPI will increase by 4.0%.



Source: Bureau of Economic Analysis, cber.co.

Colorado Average Annual Wages

Wages and Wages Adjusted for Inflation (2013=100)



Source: Bureau of Labor Statistics, cber.co.

The Colorado Economy
Population and Unemployment

Change in Population

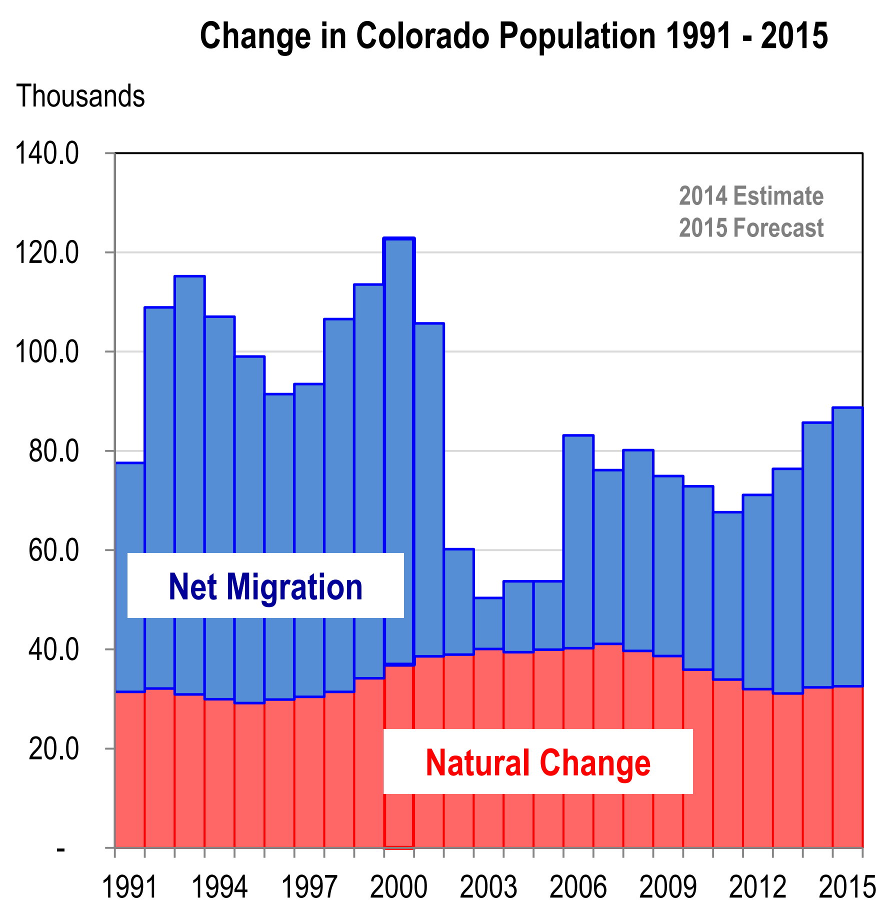
Colorado is an Attractive Place to Live, Work, and Play

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 two decades the natural change (red bars) varied from a low of 29,168 in 1995 to a peak of 41,124 in 2007.

Changes resulting from net migration (blue bars) are closely tied to the strength of the economy. For example, there were five years, from 1986 to 1990, when net migration was negative. More people moved out of state than moved into the state to escape a regional recession. During the past two recessions, net migration declined, but did not turn negative because it was difficult for people to move. Net migration remained positive.

The Colorado population increased by about 86,000 in 2014 and will increase by about 89,000 in 2015. Net migration will increase by 56,000 in 2015, the highest level of change since 2001. In 2015 the state's population will increase by 1.7% to 5.4 million.



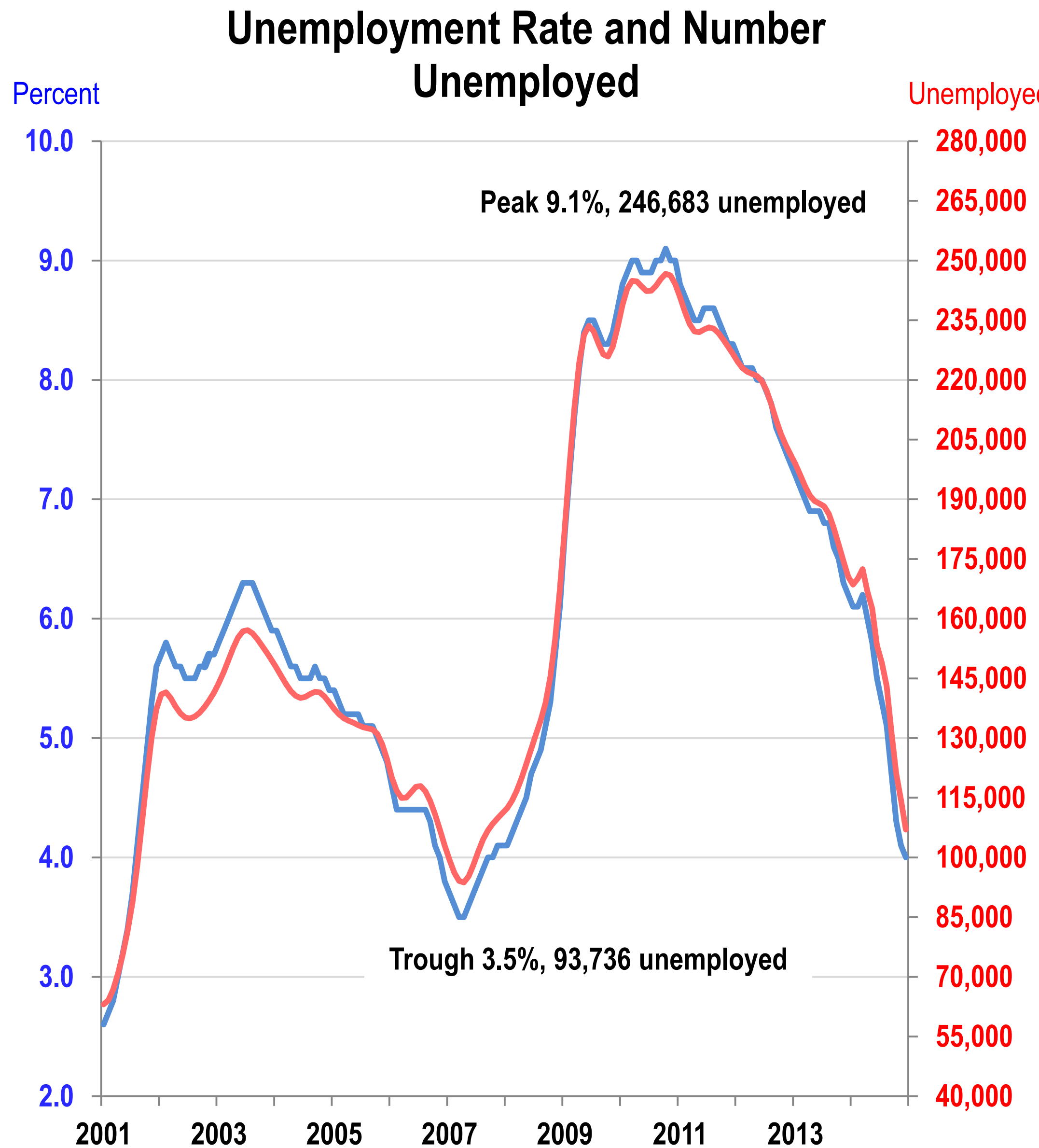
Sources: State Demography Office and cber.co.
Colorado-based Business and Economic Research http://cber.co

Colorado Unemployment Rate and Number of Unemployed

The number of unemployed has slowly trended downward since peaking in late 2010. By the end of 2014, the total number of unemployed workers (red) will be 107,000. The total number of unemployed is 13,264 greater than the trough in April 2007 and 139,683 less than the peak in October 2010.

There is a shortage of trained workers in key sectors and occupations. The year-end 2014 unemployment rate (blue) will be 4.0%, down from 6.2% at the end of December 2013.

The unemployment rate will be between 4.0% and 4.5% at the end of 2015.



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

The Colorado Economy
State Government

State Taxes and Revenue

The Great Recession played havoc with the budgets of state governments across the U.S. The good news is that revenue has improved, although many states are facing a gap between revenues and spending. Colorado's Gross General Fund is projected to improve by about 7.0% in FYE 2015. The FYE 2015 General Fund total is projected to be $9.6 billion.

CLC and OSPB Projections

Since 2001, the Colorado state government felt the same pain in the pocketbook as many Colorado residents. Since 2008 individuals and organizations have dealt with wages or revenues that either declined or remained flat. At the same time, expenses have escalated every year.

The following charts show the revenue projections provided by the Colorado Legislative Council (CLC). The Governor's Office of State Planning and Budgeting (OSPB) is also optimistic about state revenues as CLC. Both CLC and OSPB provide quarterly updates discussing the state economy. They are recommended reading for those anxious to learn more about the Colorado economy.

Sales Tax, Individual Income Tax, and General Fund

Sales Tax Revenue accounts for about one-fourth of the Gross General Fund. The Sales Tax Revenue for FYE 2015 is projected to be approximately $2.6 billion.

Net Individual Income Tax accounts for about two-thirds of the Gross General Fund Revenue. The Individual Income Tax Revenue for FYE 2015 is projected to be about $6.1 billion.

General Fund Revenue for FYE 2015 will be $9.6 billion.

Note: The data in this discussion is not adjusted for inflation. The State Fiscal Year is July 1st through June 30th.

Reason to be Optimistic About the Future

The projections of the Colorado Legislative Council and the Office of State Planning and Budgeting are based on realistic expectations for growth over the next three years.

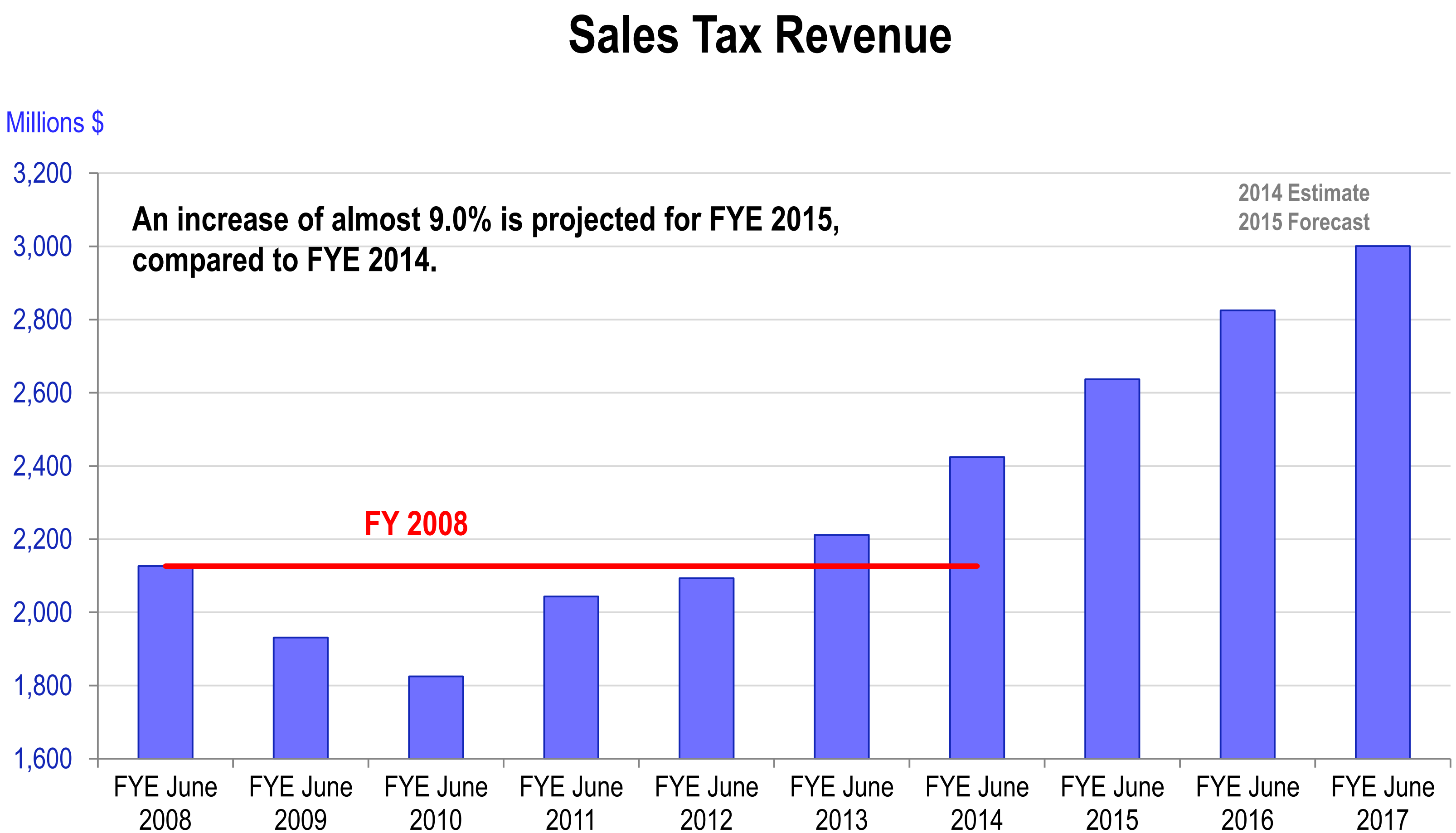
Factors that will have a positive impact on the economy through FYE 2017

- Sustained job growth.
- Solid consumer confidence.
- Strong equity markets, even though they may be volatile.
- If sales tax projections are correct, FYE 2014 to FYE 2017 would be the best four-year period for tax growth since FYE 1997 to FYE 2000.
- Lower gas prices may increase retail sales which could increase tax revenues.

Additional factors that will have a positive impact on the economy through FYE 2017

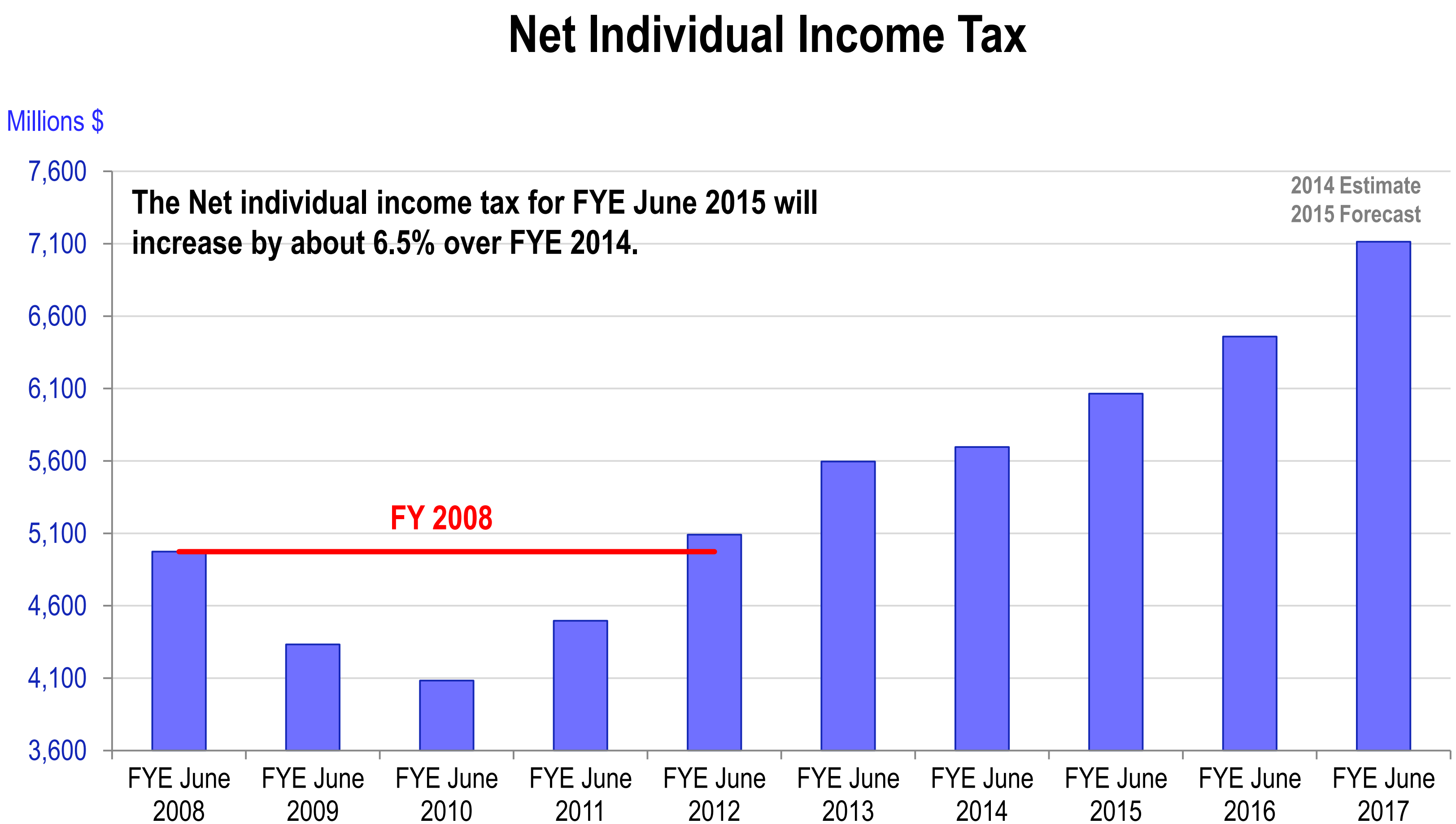
- Improved labor markets will create upward pressure on wages. This will potentially increase individual income taxes, but possibly decrease corporate income taxes.
- There is an expected TABOR surplus that will reduce individual income taxes beginning in FYE 2016.
- Corporate profits may be lower because of increased labor and capital costs and a reduction in tax incentives.

Colorado Sales Tax Revenue



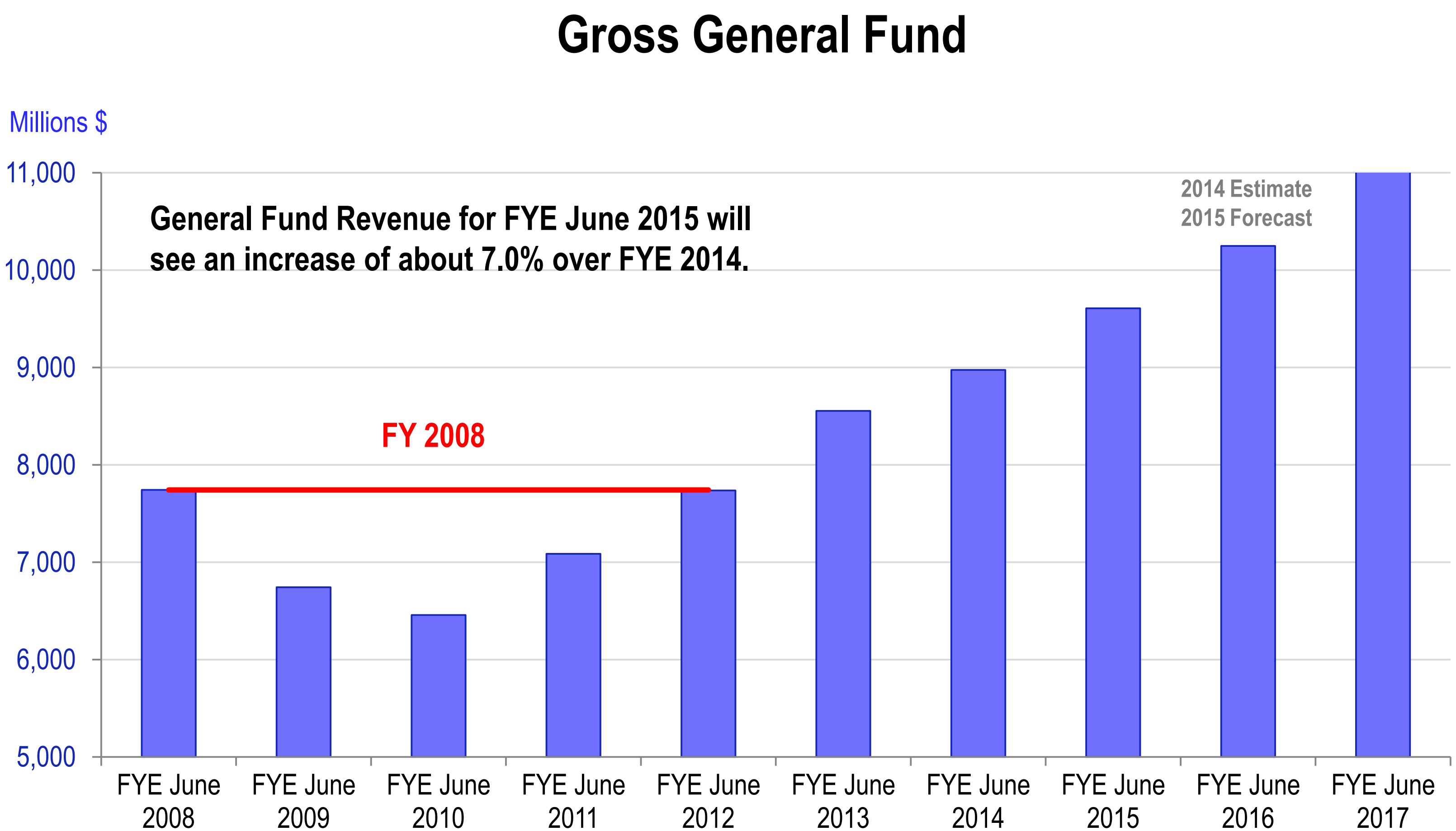
Source: Colorado Legislative Council, December 2014.

Colorado Net Individual Income Tax



Source: Colorado Legislative Council, December 2014.

Colorado Gross General Fund



Source: Colorado Legislative Council, December 2014.

The Colorado Economy

Establishments, Housing, Construction, Consumers

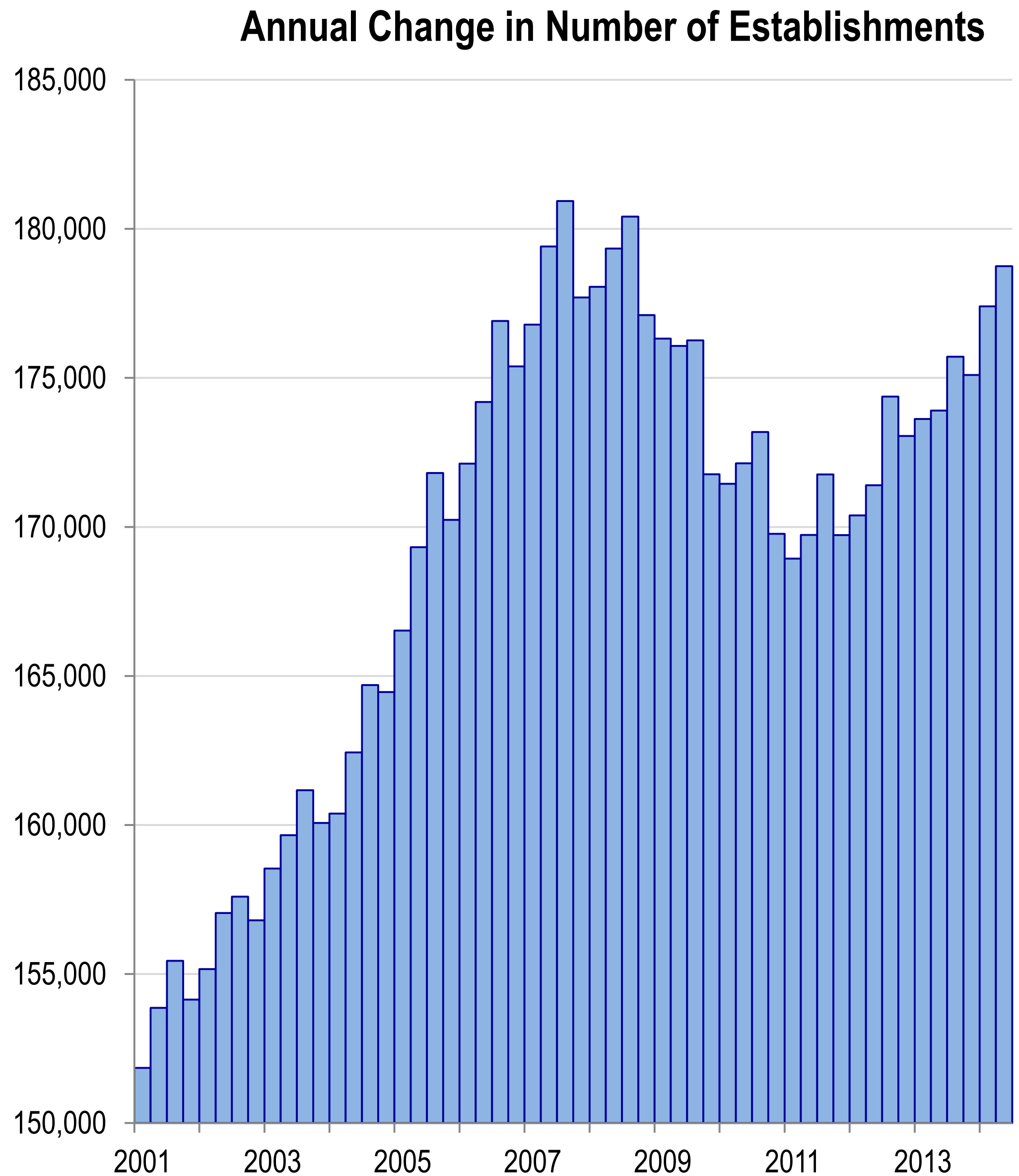
Annual Change in the Number of Colorado Establishments

The number of Colorado business establishments peaked at 180,934 in Q3 2007.

As a result of the Great Recession, the number of Colorado business establishments declined to 168,939 in Q1 2011.

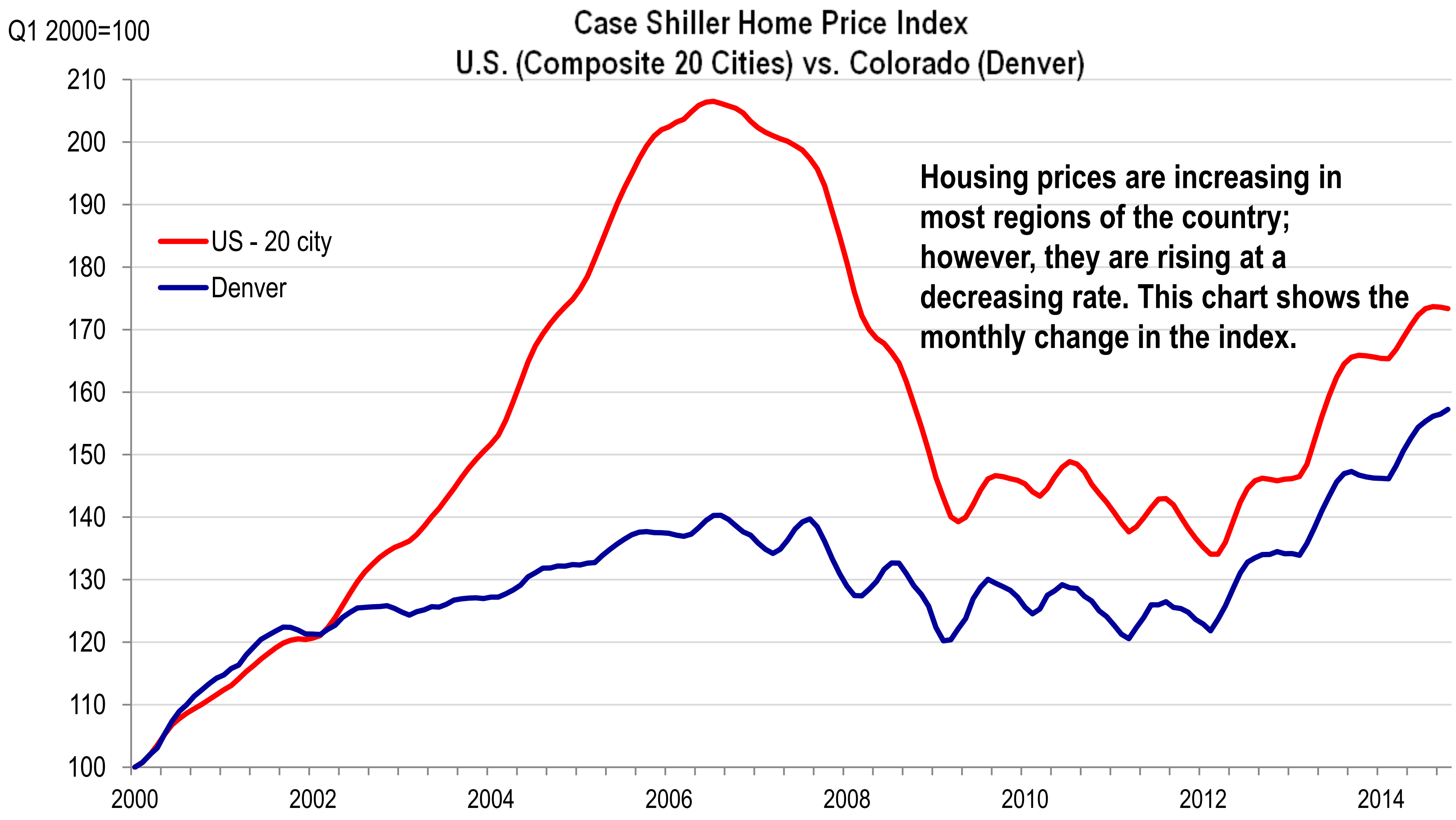
There has been steady growth in the number of business establishments since they bottomed out in 2011. There were 178,751 establishments in Q2 2014.

The creation of new establishments will be a source of job growth in 2015 and beyond.



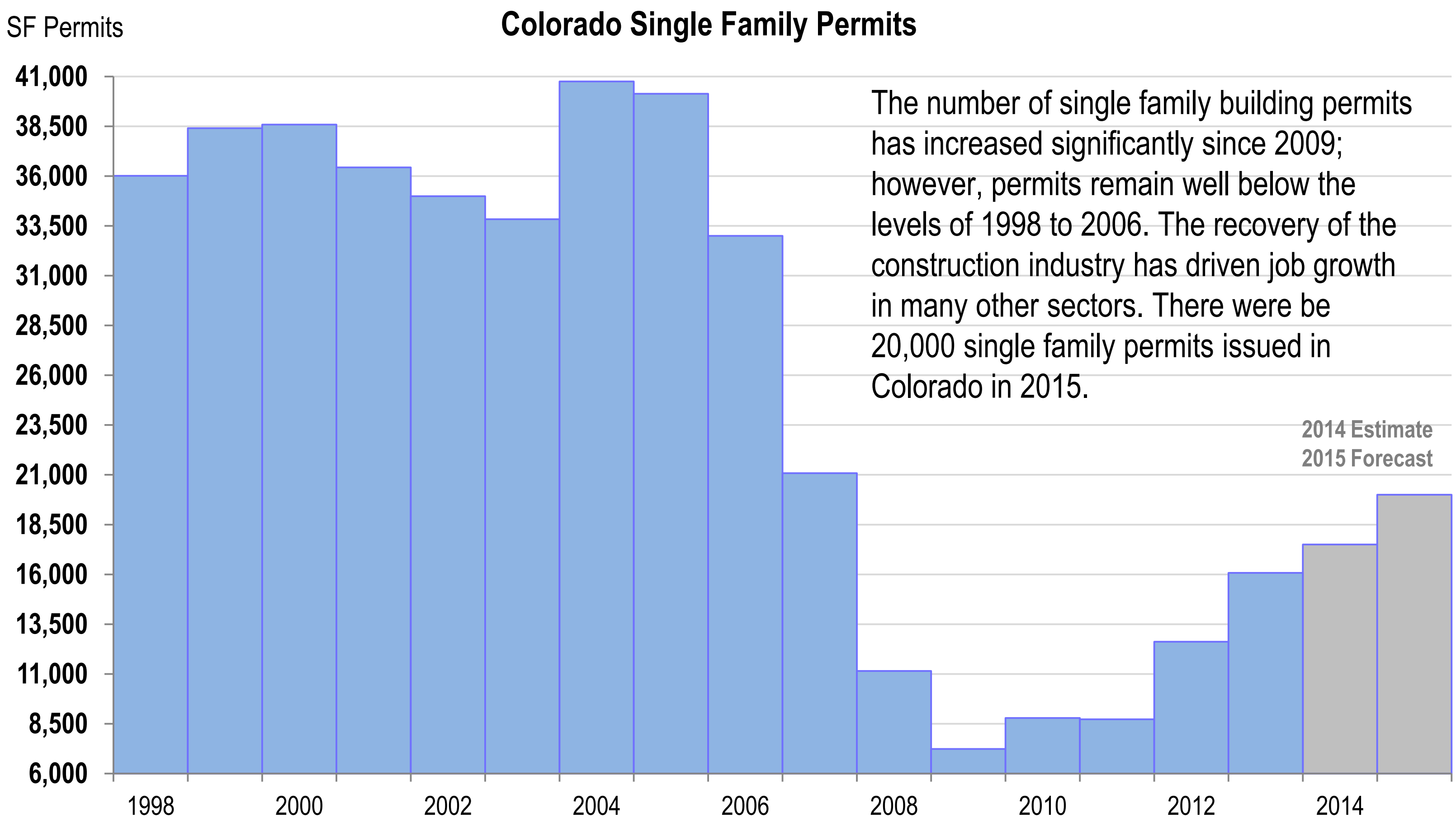
Source: Bureau of Labor Statistics, cber.co.

U.S. Housing Prices – Case Shiller Composite 20 Cities



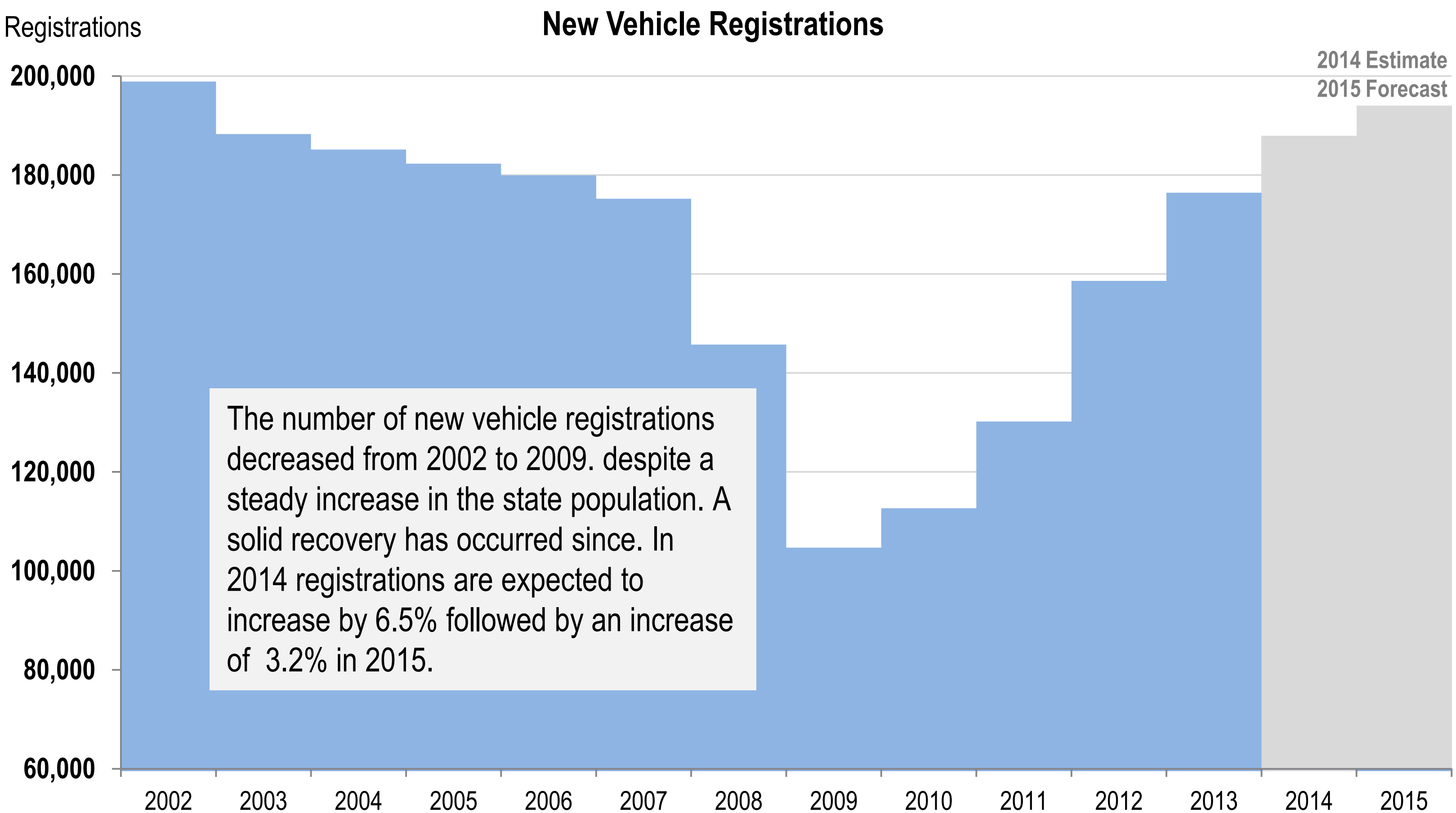
Source: S&P Case-Shiller, FRED.

Colorado Construction
Single Family Permits



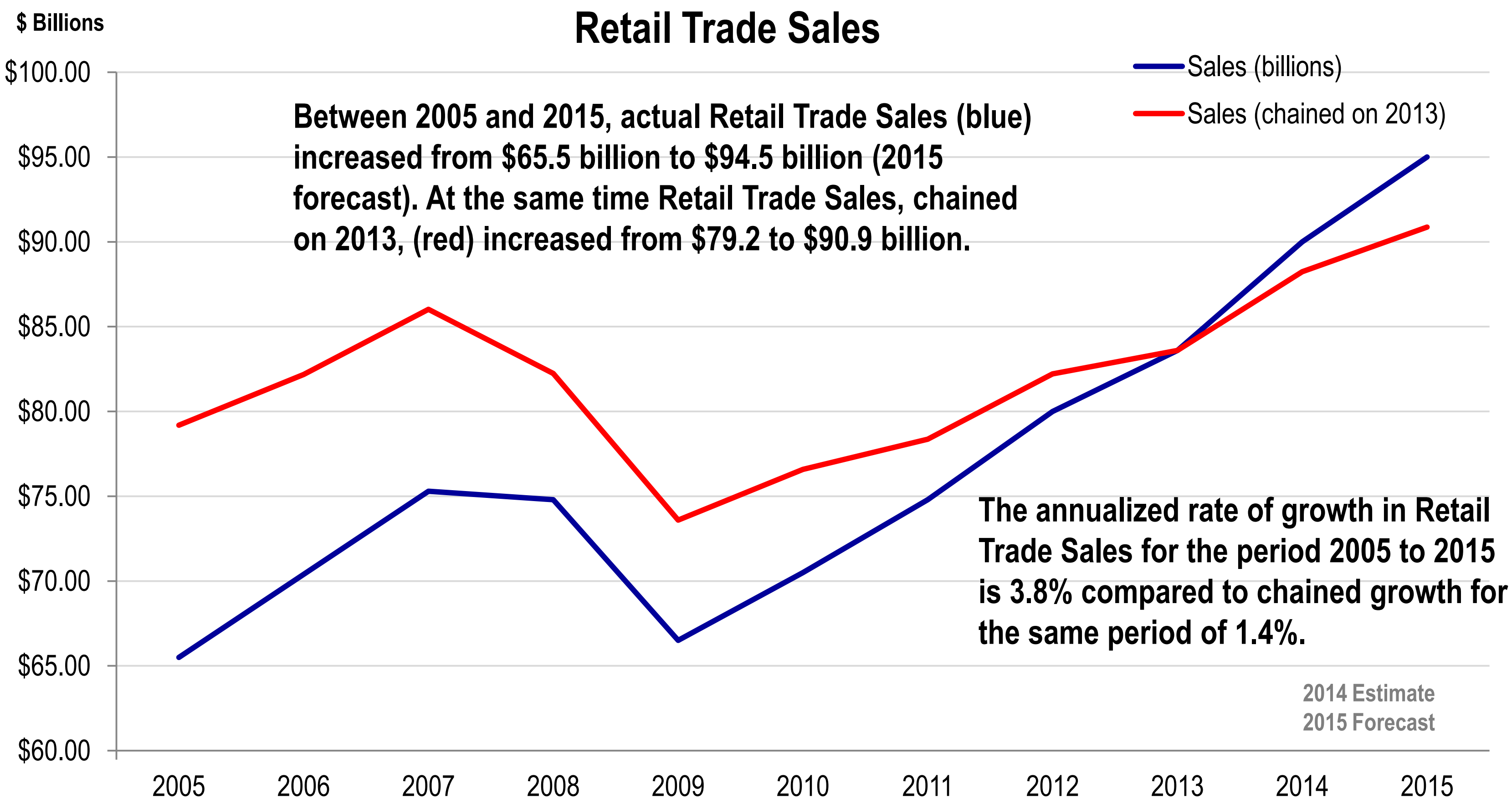
Source: U.S. Census Bureau, cber.co.

New Vehicle Registrations Colorado



Source: Colorado Auto Dealers Association, cber.co.

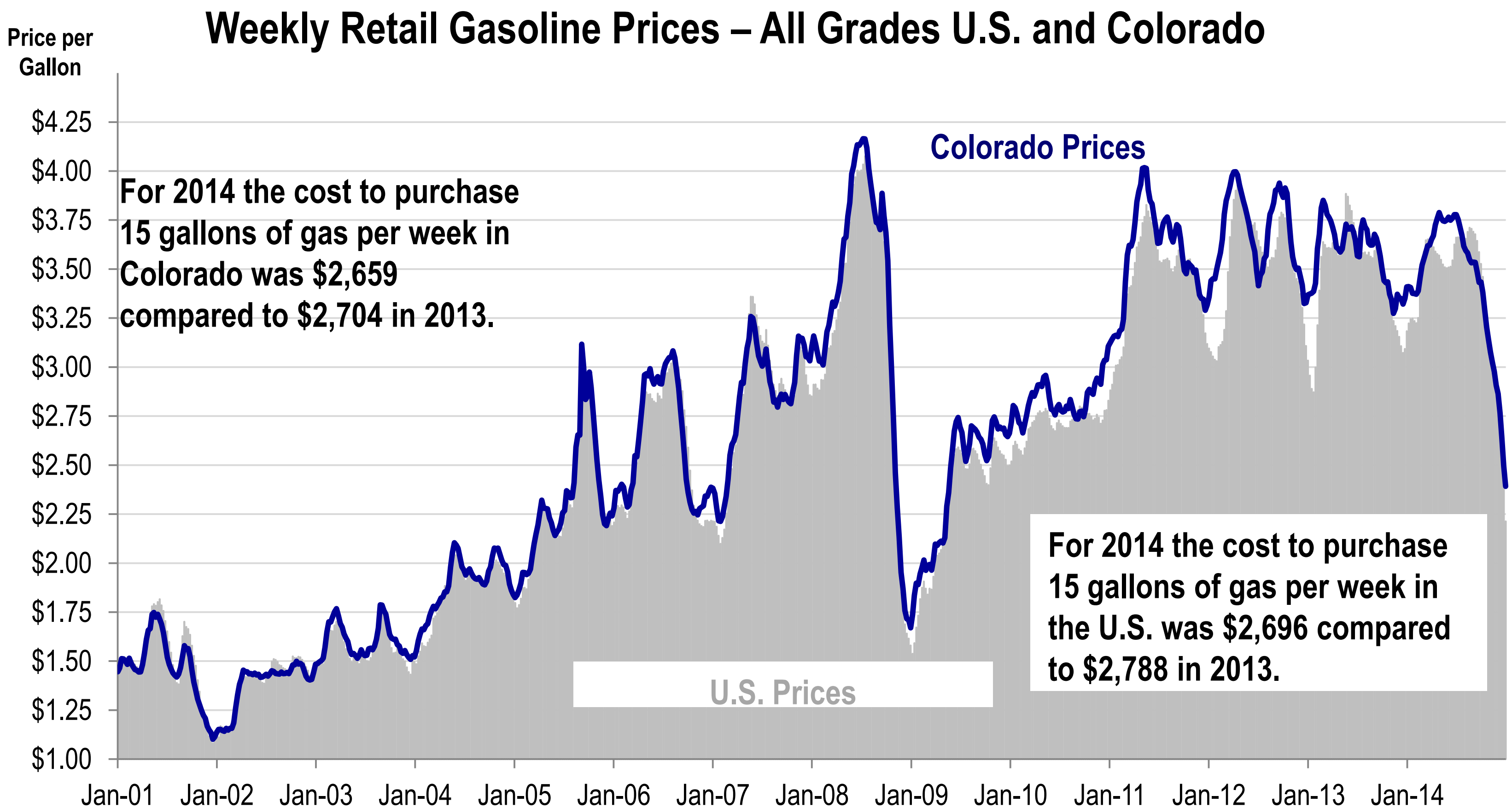
Retail Trade Sales (Including Food Services)
Sales and Sales Adjusted for Inflation (2013=100)



Source: Colorado Department of Revenue, cber.co.

Weekly Gas Prices

Cost to Fill-up Slightly Lower in 2014



Source: eia.gov.

Weekly Gas Savings U.S. and Colorado (2013 vs. 2014)

The following information shows the difference in gasoline prices between 2013 and 2014. The annual cost assumes a person fills a car with 15 gallons of gas per week. The weekly price is provided by EIA for All Formulations and All Grades.

Colorado

2013

- 780 gallons, average price per gallon $3.47
- Total cost = $2,704.25
- The cost in Colorado is $83.95 less than the U.S.

2014

- 780 gallons, average price per gallon $3.41
- Total cost = $2,659.07
- The cost in Colorado is $36.75 less than the U.S.
- The 2014 Colorado cost is $45.18 less than 2013.

2015

- If the average price per gallon is $2.41, or $1.00 less per gallon than 2014, then the savings in 2015 will be $780.

United States

2013

- 780 gallons, average price per gallon $3.57
- Total cost = $2,788.19

2014

- 780 gallons, average price per gallon $3.46
- Total cost = $2,695.82
- The 2014 cost is $92.37 less than 2013.

2015

- If the average price per gallon is $2.46, or $1.00 less per gallon than 2014, then the savings in 2015 will be $780.

The Colorado Economy
The Concentration of Key Industries

The Concentration of Key Industries

This section looks at the location quotient for six industries that are critical to Colorado for different reasons. State leaders have to be asking the question, “How can Colorado ensure the strength of these sectors?”

- **Construction** – Normally states do not have a high location quotient in Construction. Is Colorado’s LQ greater than 1.0 because the state has shown steady growth? Is the LQ high because of the strong relationship between construction and the extractive industries? Is the LQ “too high”, i.e. does Colorado have too many construction workers?
- **Extractive Industries** - The extractive industries provide the state with a distinct competency. Most other states cannot duplicate it. One of two things can happen: The oil, gas, and minerals can be completely extracted or the state can develop a business climate that is not supportive of the sector. Hopefully it is possible to strike a balance between being environmentally responsible and business-friendly.
- **Information** - The Information Sector is an important component of the state’s high-tech cluster. As technology changes, will Colorado lose its edge and critical mass in this sector?
- **Professional, Scientific, and Technical** - Many of the companies in the PST Sector are part of the state’s high tech cluster. The sector pays higher than average wages. The state could increase its potential for growth by educating more PST workers in-state and further developing their industries.
- **Leisure and Hospitality** – The Tourism Sector includes accommodations and food service businesses and those in arts, entertainment, and recreation. The mountains and natural beauty in the state provide a distinctive competency. Are state leaders protecting that asset or is the deterioration in the LQ something that cannot be protected?
- **Manufacturing** – The Manufacturing Sector is an important part of the state’s high tech cluster. How can the state reduce the deterioration in the state’s manufacturing LQ?

Comparative Job Growth in Key Industries

All industries are important to the economy for different reasons. Some generate sales tax revenue, contribute to the quality of life, or they are a source of goods and services that attract outside wealth to the state. The following charts show the change in location quotient (LQ), or ratio of local employment compared to the U.S. ratio, for a select group of industries.

LQ greater than 1.0

The location quotient of the Construction, Extractive Industries; Information; Professional, Scientific, and Technical; and Tourism Sectors have LQs greater than 1.0. In other words, the concentration of these industries in Colorado is greater than the concentration of these industries for the United States. Sectors with LQs greater than 1.25 are considered “export industries”.

The LQ for the Construction Sector is 1.21. In the short term Construction and the Extractive Industries are the only sectors with a LQ > 1.0 to trend upwards. The following sectors have high LQs, but they are trending downwards:

- Information, LQ = 1.45
- Professional, Scientific, and Technical, LQ = 1.32
- Leisure and Hospitality, LQ = 1.17.

LQ near 1.0

Charts are not shown for industries such as Health Care, Trade, Utilities, Government, Other Services, and Finance. The location quotient of these sectors should be near 1.0. In other words, the concentration of these industries in Colorado is similar to the concentration of these industries for the U.S. In other words, states typically don’t develop competencies in these sectors.

LQ < 1.0

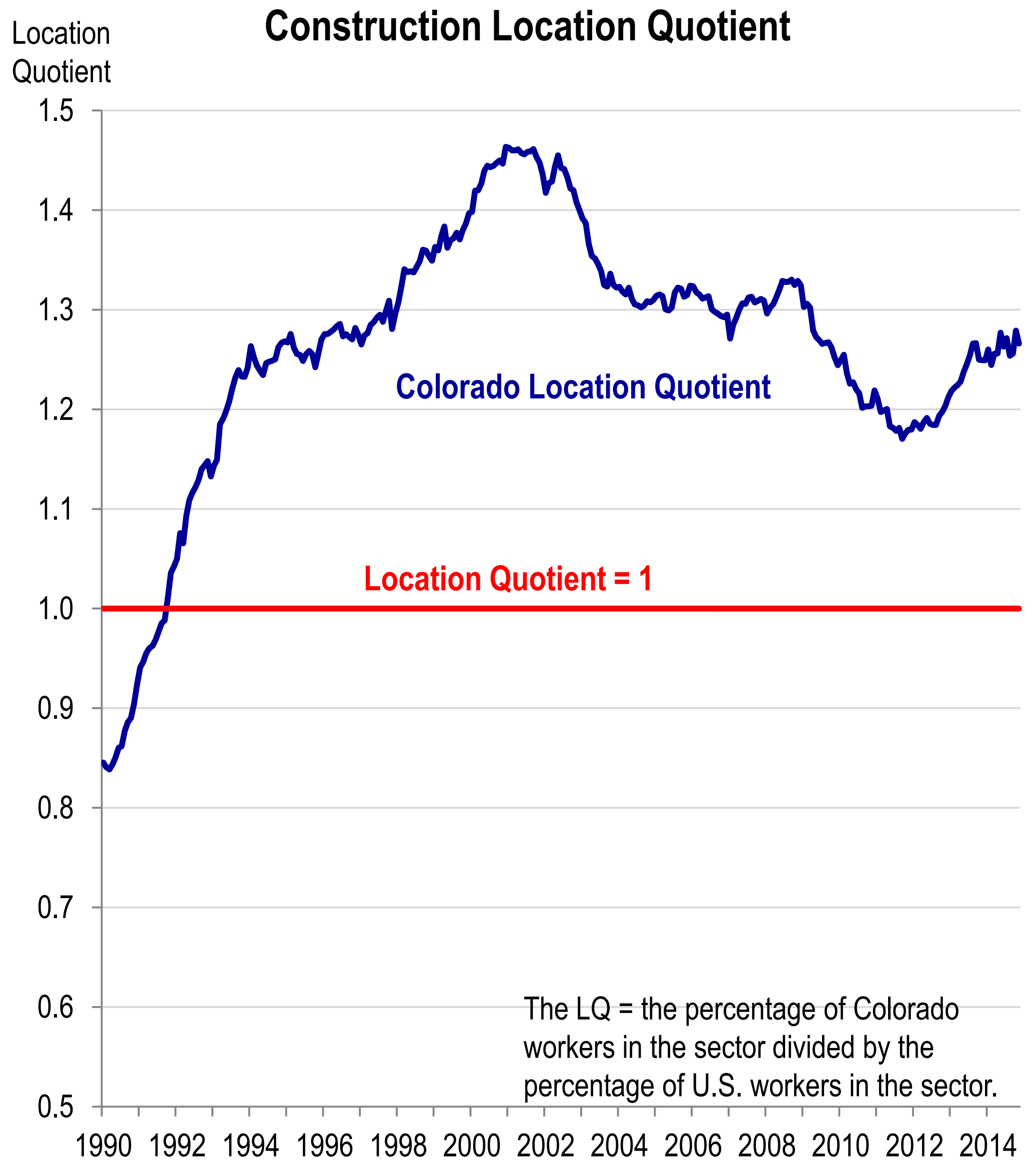
The location quotient of the Manufacturing Sector is < 1.0. In other words, the concentration in Colorado is less than the U.S. concentration. The current LQ for Manufacturing is .65 and the sector has a slight upward trend.

How Has the Construction Sector Performed Relative to the Nation?

It is difficult for geographically large states to develop distinctive competencies in construction. In other words, the location quotient (LQ), or concentration relative to other industries, should be near 1.0.

During the late1980s, the Colorado single family market was overbuilt. As a result, the industry LQ was below 1.0 through mid-1991. Over the next 10 years the LQ increased to about 1.5 in 2001.

In early 2001, the LQ began declining and dropped off sharply for three years (2004). It leveled off for five years, then plummeted again in 2009. It bottomed out in mid-2011 and was flat until 2013. At that time, there was growth in construction jobs relative to the U.S.



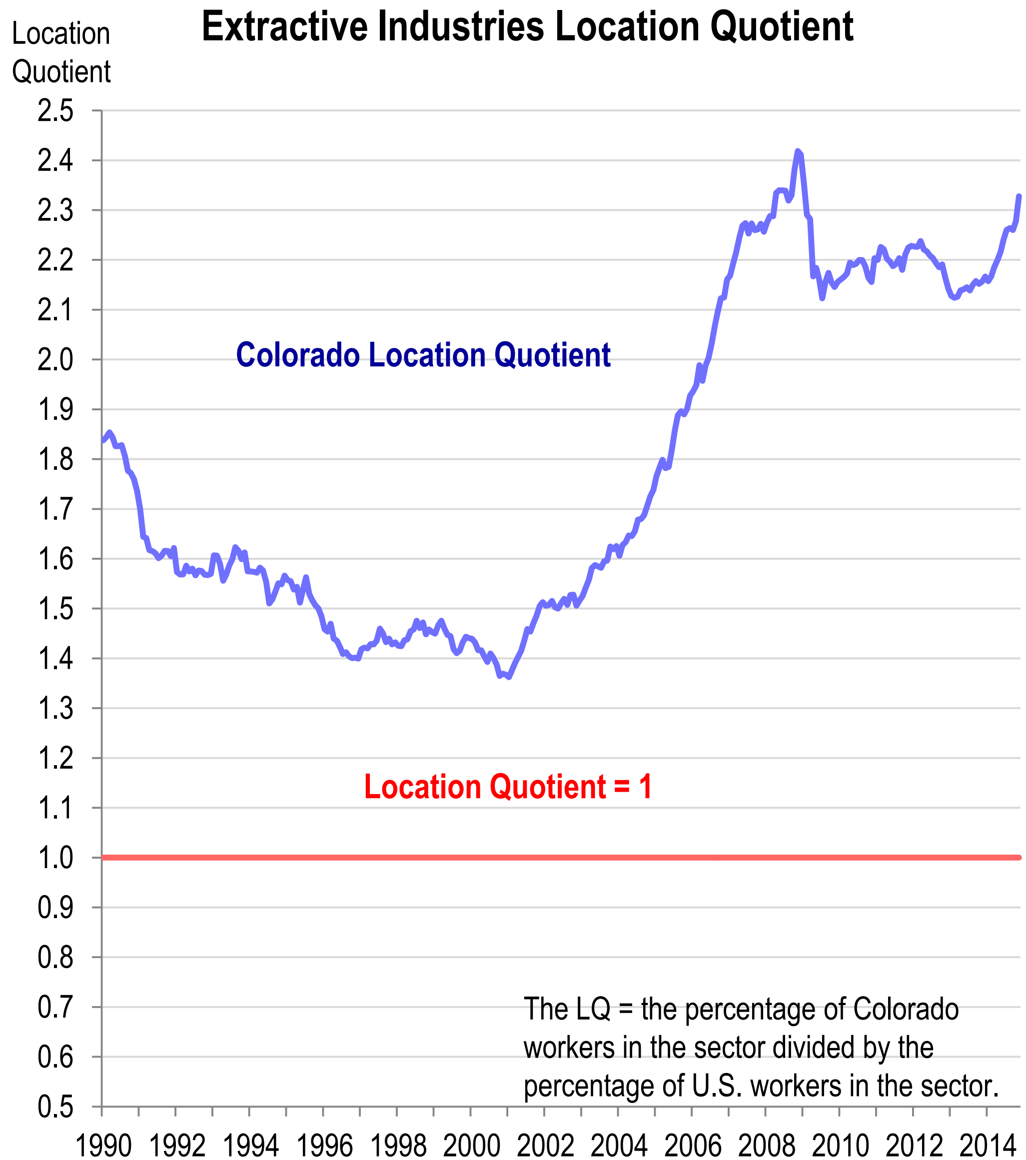
Note: Location quotient based on all wage and salary workers.
Source: BLS, SA, cber.co.

How Has the Mining and Logging Sector Performed Relative to the Nation?

The extractive industries are a source of severance taxes, high paying primary jobs, gross domestic product, and exports. Although the sector is small, it is important to the rural counties where the actual extraction occurs.

Colorado clearly has a higher concentration of workers in the sector. At the end of 2014 the sector employed just over 35,000 workers, or about 1.4% of total wage and salary workers.

Over the past two years, the concentration of workers is trending upwards. Colorado political leaders will be challenged to maintain a regulatory climate that is business-friendly towards the industry, yet sensitive to environmental needs.

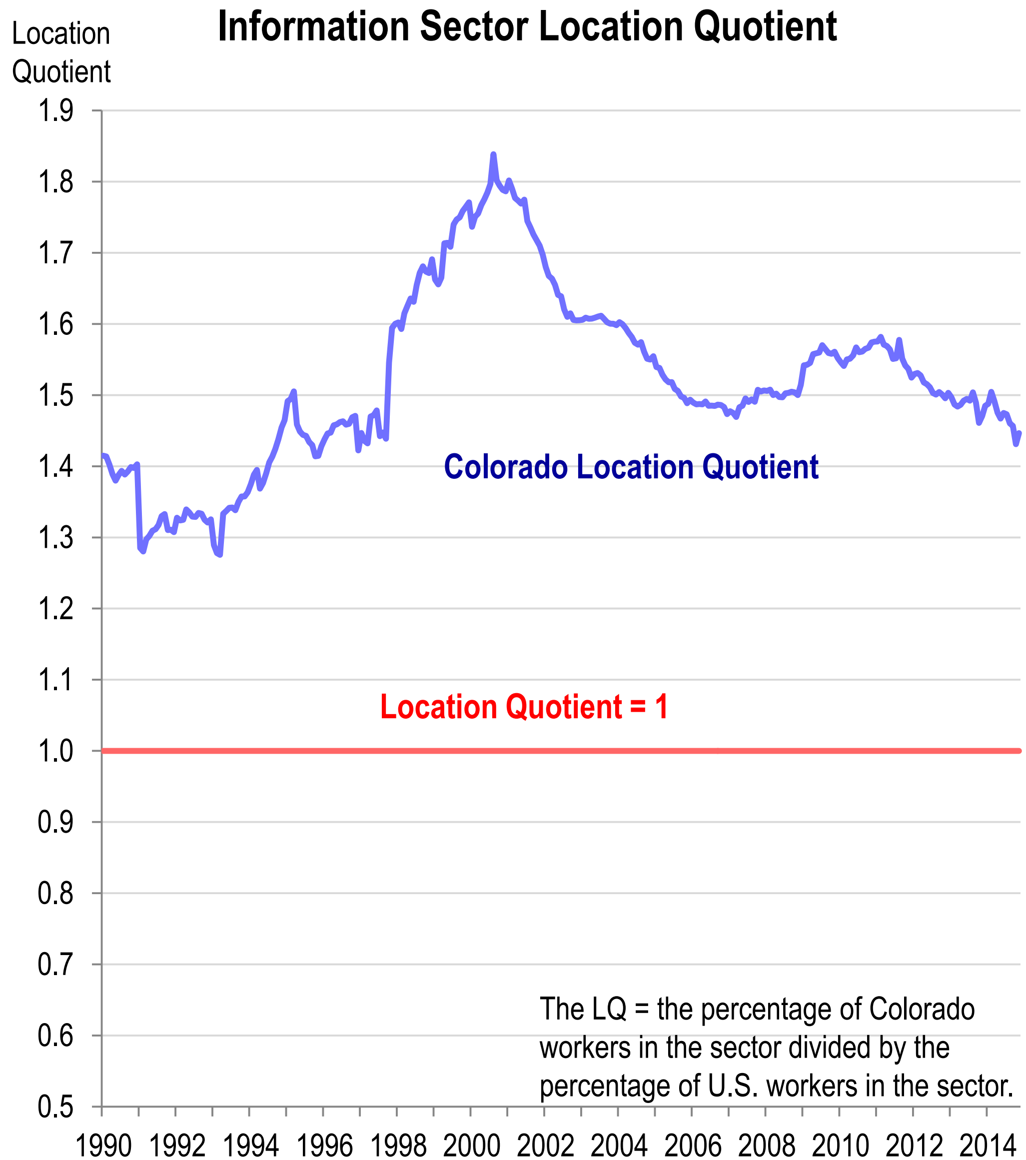


Note: Location quotient based on all wage and salary workers.
Source: BLS, SA, cber.co.

How Has the Information Sector Performed Relative to the Nation?

Many Information companies pay higher than average wages and they are a source of primary jobs. In other words, they bring in revenue from outside the state that is spent in Colorado. As well, they export services outside the region. The Information Sector includes companies in the printed media, telecommunications, software publishing, Internet services, and the film industry.

In 1990 the sector accounted for 3.5% of total state jobs. Today that percentage has declined to 2.8%. Since 2000, the LQ has trended downward as the state has lost jobs at a faster rate than other parts of the country.



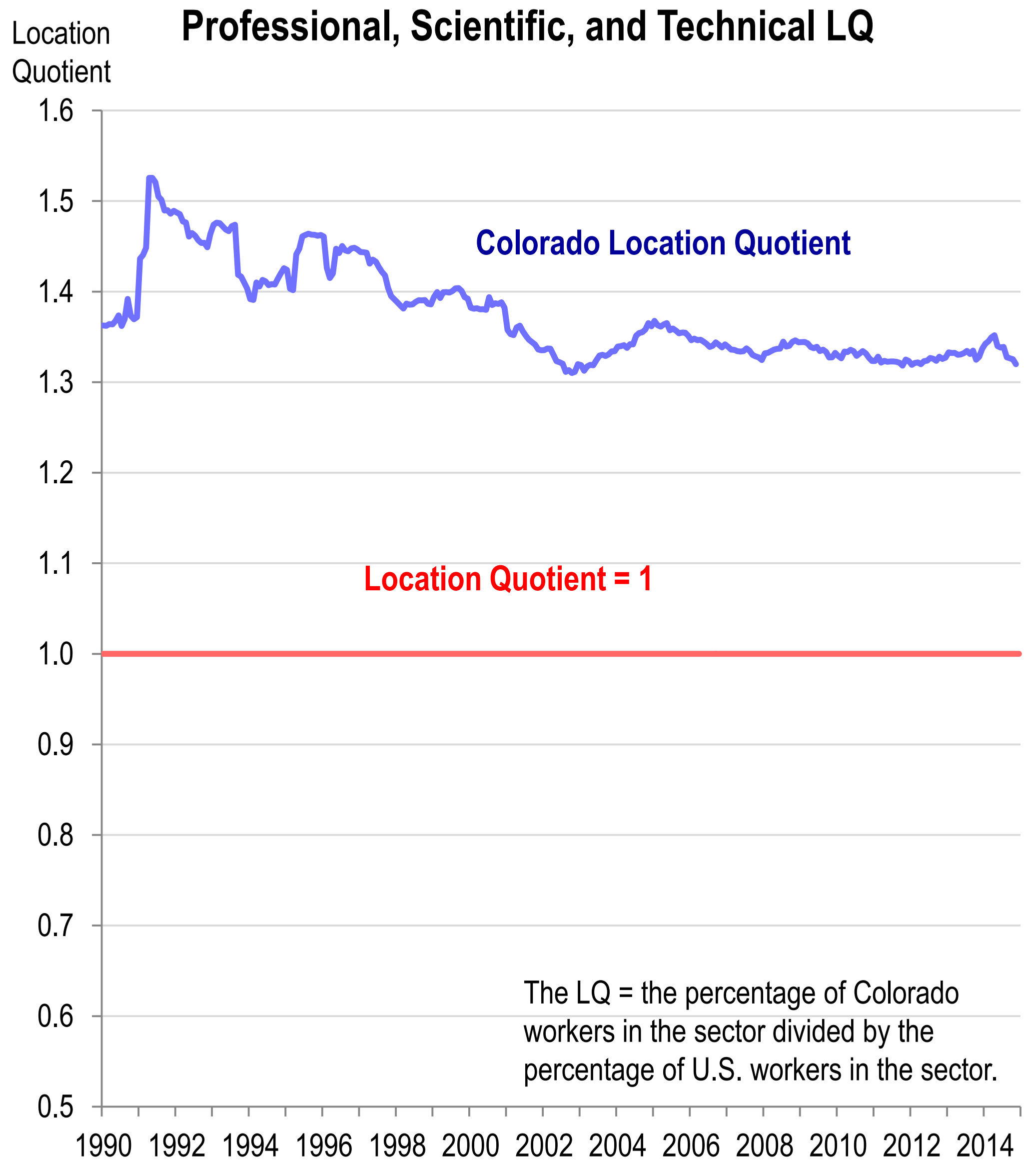
Note: Location quotient based on all wage and salary workers.
Source: BLS, SA, cber.co.

How Has the Professional, Scientific, and Technical Services Sector Performed Relative to the Nation?

Many Professional, Scientific, and Technical Services (PST) companies pay higher than average wages and they are a source of primary jobs. In other words, they bring in revenue from outside the state that is spent in Colorado and they export services outside the region.

The sector has also been a source of solid job growth over the past 20+ years. Between 1991 and 2002 the location quotient (LQ), or its concentration relative to other industries, trended downward. Since 2002 it has been flat.

In 1990 the PST sector was 5.6% of state employment and by 2014 it had increased to 8.0% of total workers.



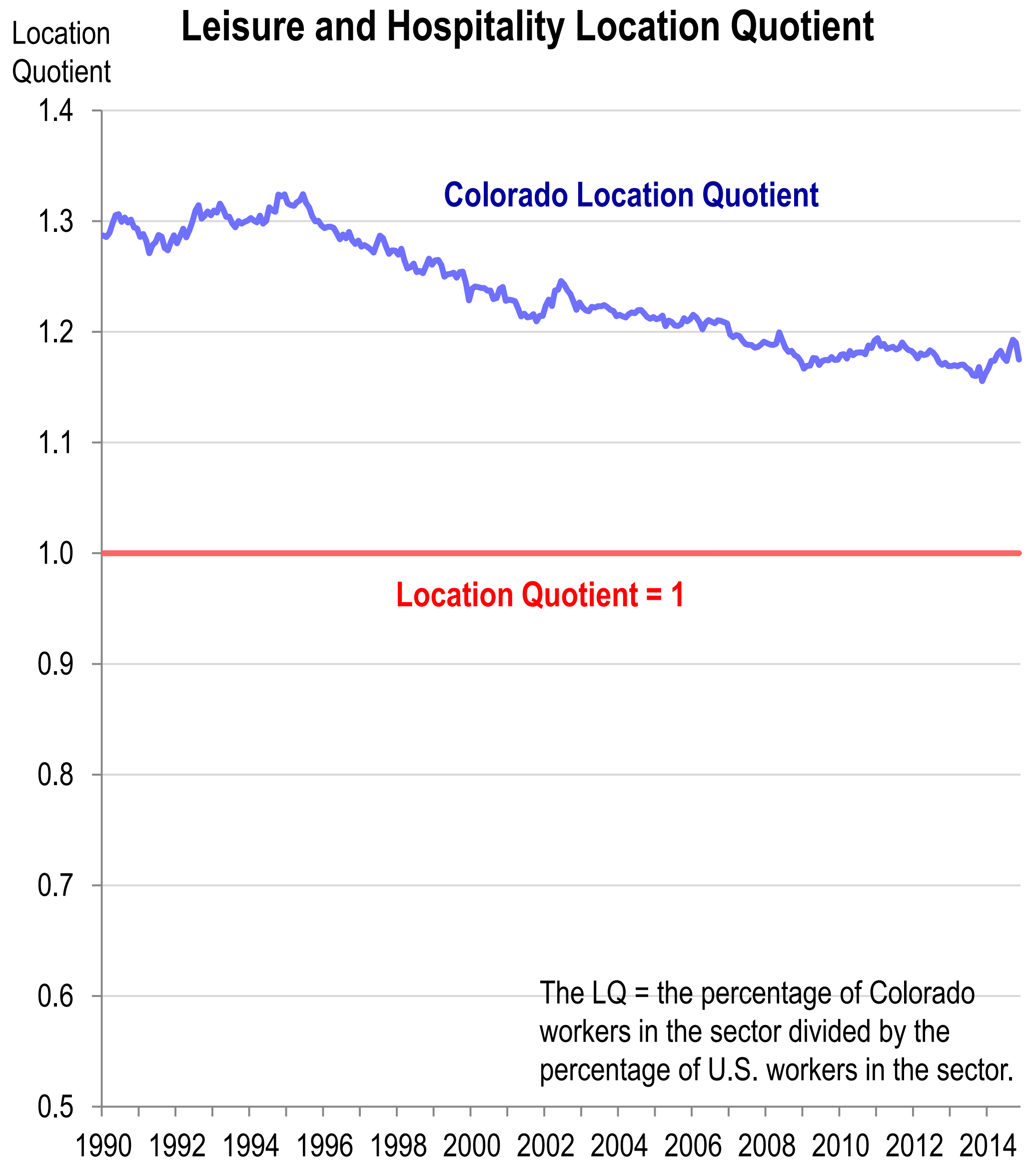
Note: Location quotient based on all wage and salary workers.
Source: BLS, SA, cber.co.

How Has the Tourism Sector Performed Relative to the Nation?

For many rural counties, the Tourism Sector is a source of primary jobs because it attracts outside spending to their region.

The sector has also been a source of solid job growth over the past 20+ years. Since 1996, the location quotient (LQ), or concentration relative to other industries, trended downward. It has been relatively flat since that time.

In 1990 the sector was 11.0% of total state employment. In 2014, the Leisure and Hospitality Sector was 12.4% of the total workers.



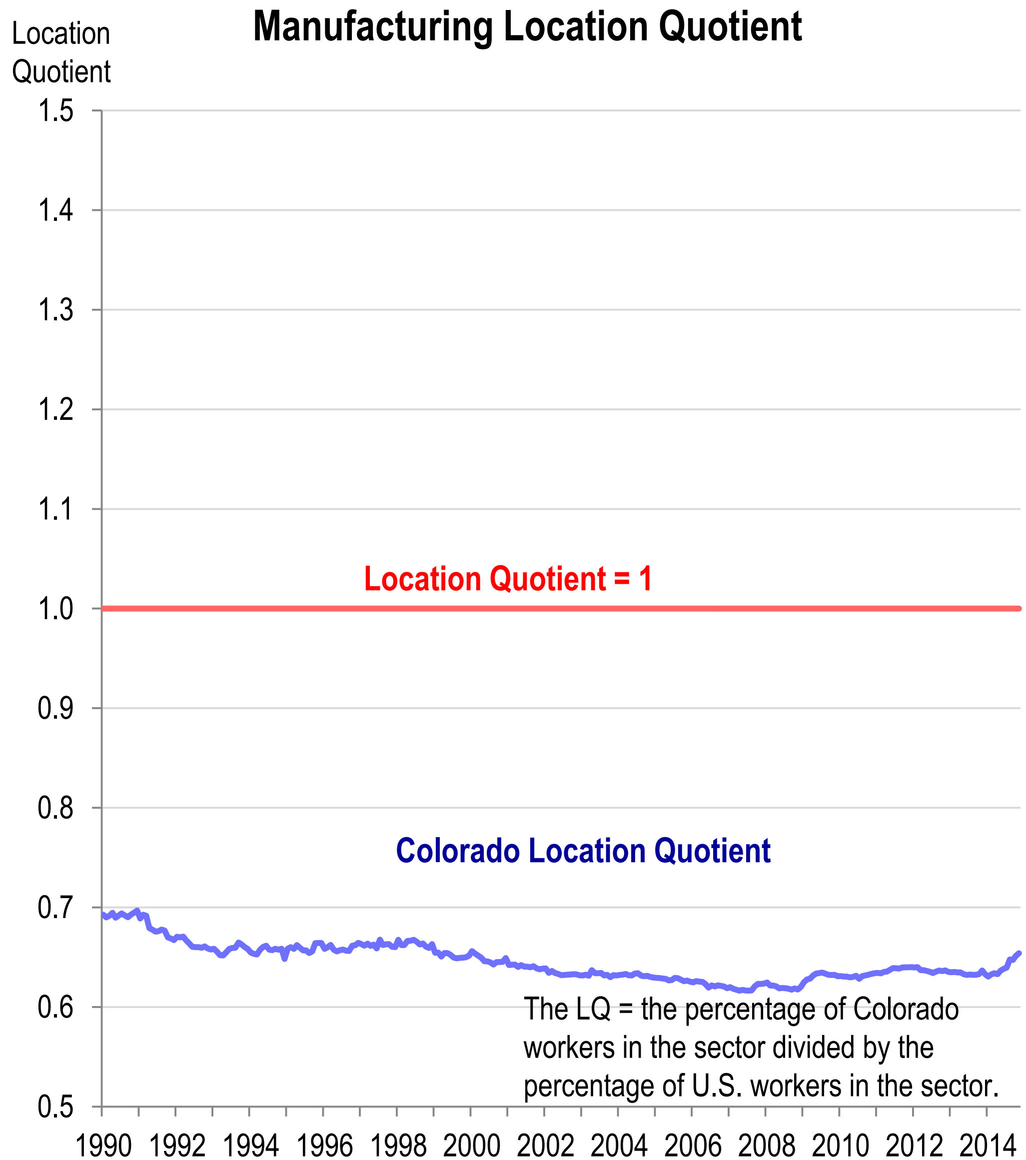
Note: Location quotient based on all wage and salary workers.
Source: BLS, SA, cber.co.

How Has the Manufacturing Sector Performed Relative to the Nation?

Many manufacturing companies pay higher than average wages and they are a source of primary jobs. In other words, they bring in revenue from outside the state that is spent in Colorado and they export goods outside the region.

Colorado has regions with strong manufacturing, such as Boulder County; however the state has never been a strong manufacturing state. The location quotient (LQ), or concentration relative to other industries, is well below 1.0. The state's LQ trended downward from 1990 to 2001 and has been relatively flat since.

In 1990, manufacturers accounted by 11.3% of total state employment. In 2014, only 5.6% of Colorado's employees were manufacturers.



Note: Location quotient based on all wage and salary workers.
Source: BLS, SA., cber.co

Colorado Employment Forecast

Colorado Economic Forecast Sector Portfolio Analysis

Attempt to Improve Forecast Accuracy

The primary focus of most state economic forecasts is to project total employment.

Some economists also produce sector forecasts. They usually add projections for the sectors to derive the state total, an approach that introduces more variables for error.

cber.co feels the most accurate forecast is achieved by projecting total employment based on projections for categories of sectors. Sectors are grouped into three categories based on their past performance.

Projections for the categories and overall employment are based on trends, feedback from business leaders, economic developers, and other economists. The sum of these categories are then compared to the projections for overall total employment . Minor adjustments are made and the final forecast is produced for three scenarios. The most likely scenario is used as the final cber.co forecast. This final step helps create a better understanding of upside and downside risk.

Strong Growth, Solid Growth, and Volatile Categories

This portfolio approach has made it easy to see that some sectors consistently create jobs at a higher rate of growth, some show solid growth, and others are more volatile. Ultimately, the volatile category tends to have a greater influence on the amount of change in total job growth than the sectors with steady growth.

In 2012, 2013, and 2014 cber.co evaluated the performance of 23 sectors over the past two decades and refined the manner in which the sectors are grouped. The evaluation factors for grouping include the rate of growth, number of years with positive job growth, size of the sector, and volatility in job growth. The data used for classifying the sectors is available in the appendix. In this short period that this process has been used, it has produced a high level of accuracy in the final forecast. More importantly, it has produced a better understanding of what is driving the economy.

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 - Business to Business (Not Employment Services)
- Private Education
- Health Care
- Arts, Entertainment, and Recreation
- Other Services.

Total employment for this category was:

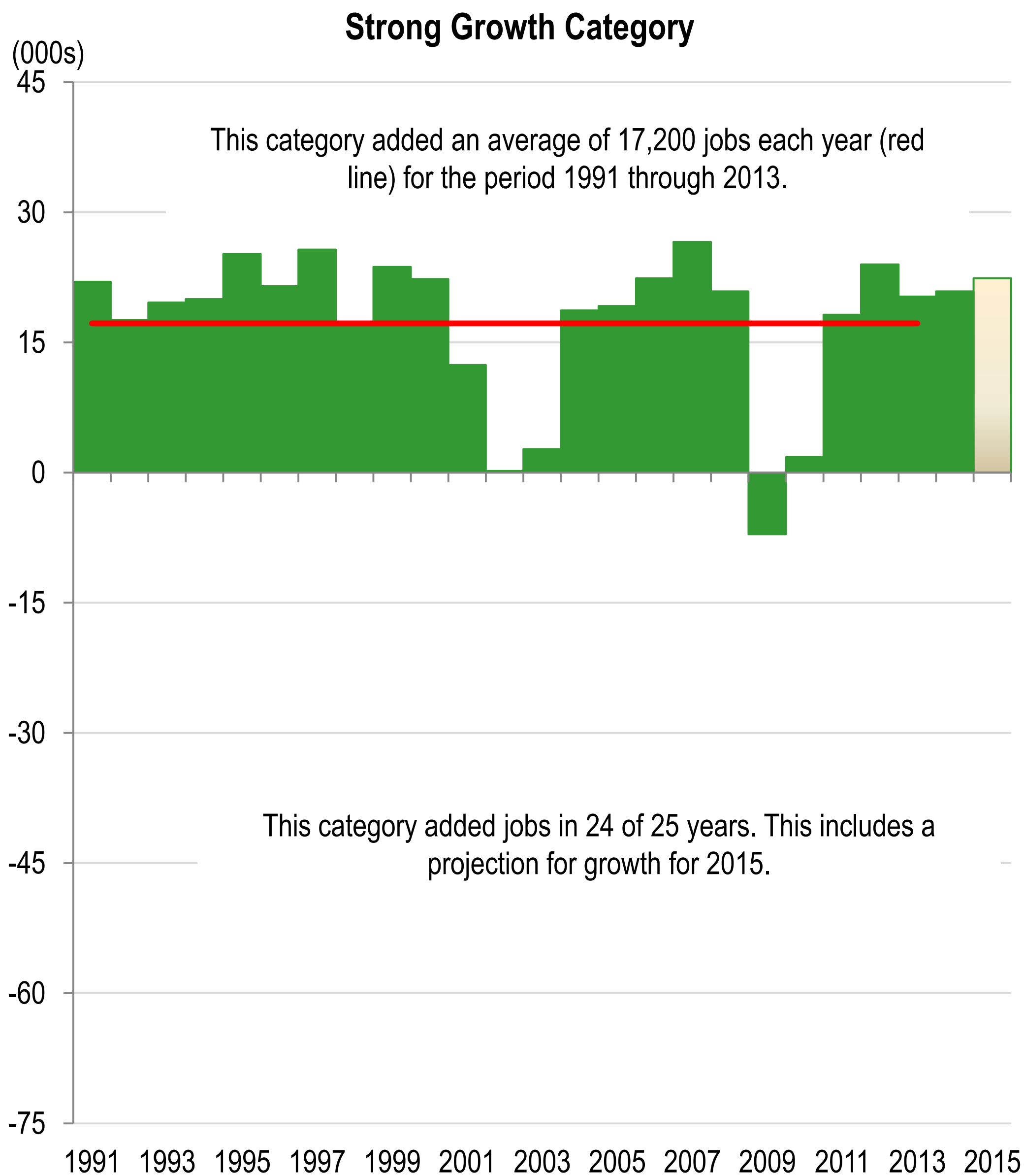
1994 445,200 workers, 25.4% of total employment

2004 615,900 workers, 28.3% of total employment

2014 782,500 workers, 31.9% of total employment

In 2015, absolute job growth of this category will be comparable to most years during the past two decades.

In 2015, between 20,000 and 24,000 workers will be added at a rate of 2.8% to 3.0%. This rate of growth is similar to 2014.



Source: Bureau of Labor Statistics, cber.co.

Three Things to Look for in 2015 Strong Growth Category

Strong Growth Category

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

Three Things to Look For

- The Health Care sector has been a job creation machine, despite critical shortages in key occupations such as nursing. The growth of the population and the Affordable Care Act will drive growth in this sector in 2015. Health care providers are being pressed to provide more and better service at lower prices. At some point that will cause a reduction in the number of workers.
- The growth in the number of establishments will result in growth of the Administrative Sector, as companies need more B-to-B services.
- The PST Sector has benefitted from the growth of the Extractive Industries. The PST Sector may feel the pinch, if the price of oil remains low for an extended period.

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.

- 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:

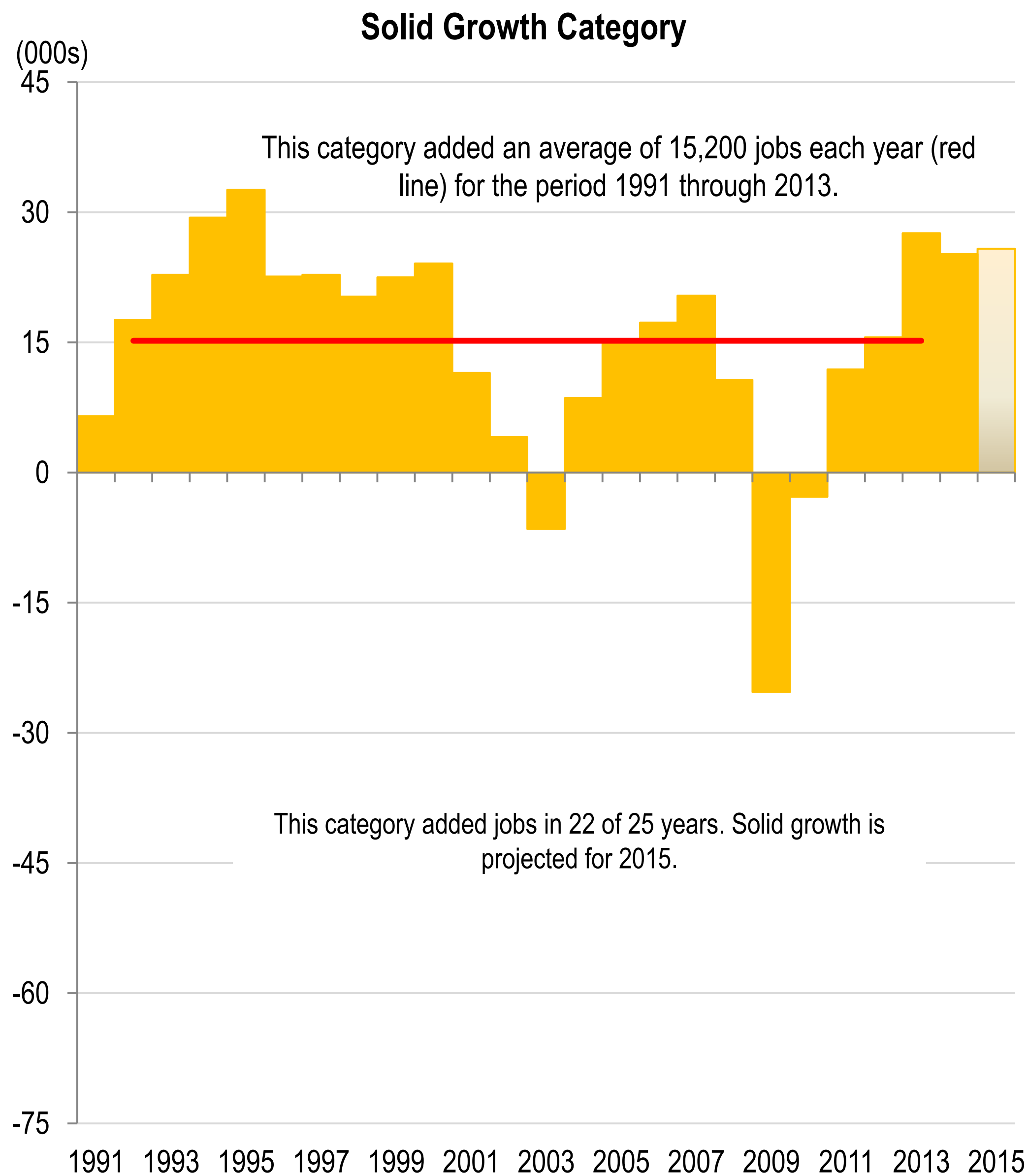
1994 685,400 workers, 39.0% of total employment

2004 848,000 workers, 38.9% of total employment

2014 964,000 workers, 39.3% of total employment

In 2015 absolute job growth in this category will be comparable to most years during the1990s.

In 2015, between 24,000 and 28,000 jobs will be added, at a rate of 2.6% to 2.8%. This rate of growth is similar to 2014.



Source: Bureau of Labor Statistics, cber.co.

Three Things to Look for in 2015 Solid Growth Category

Solid Growth Category

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

Three Things to Look For

- Greater personal consumption will be driven by a larger number of wage and salary workers, an increase in the minimum wage, from $8.00 to $8.23, and an increase in total wages. Gains in retail sales should translate to a larger trade workforce.
- As tax revenues increase, the budgets for state and local governments will increase. Most agencies will benefit from larger budgets, but the increase may not be sufficient to provide needed services, for example, road and bridge maintenance and repairs.
- Public education will benefit from larger budgets. Since 1990 higher education employment has increased almost every year, including recessions. Despite having strong labor unions, K-12 employment has been more volatile than higher education.

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, Warehousing, and Utilities
- Employment Services
- Financial Activities
- Information
- Federal Government

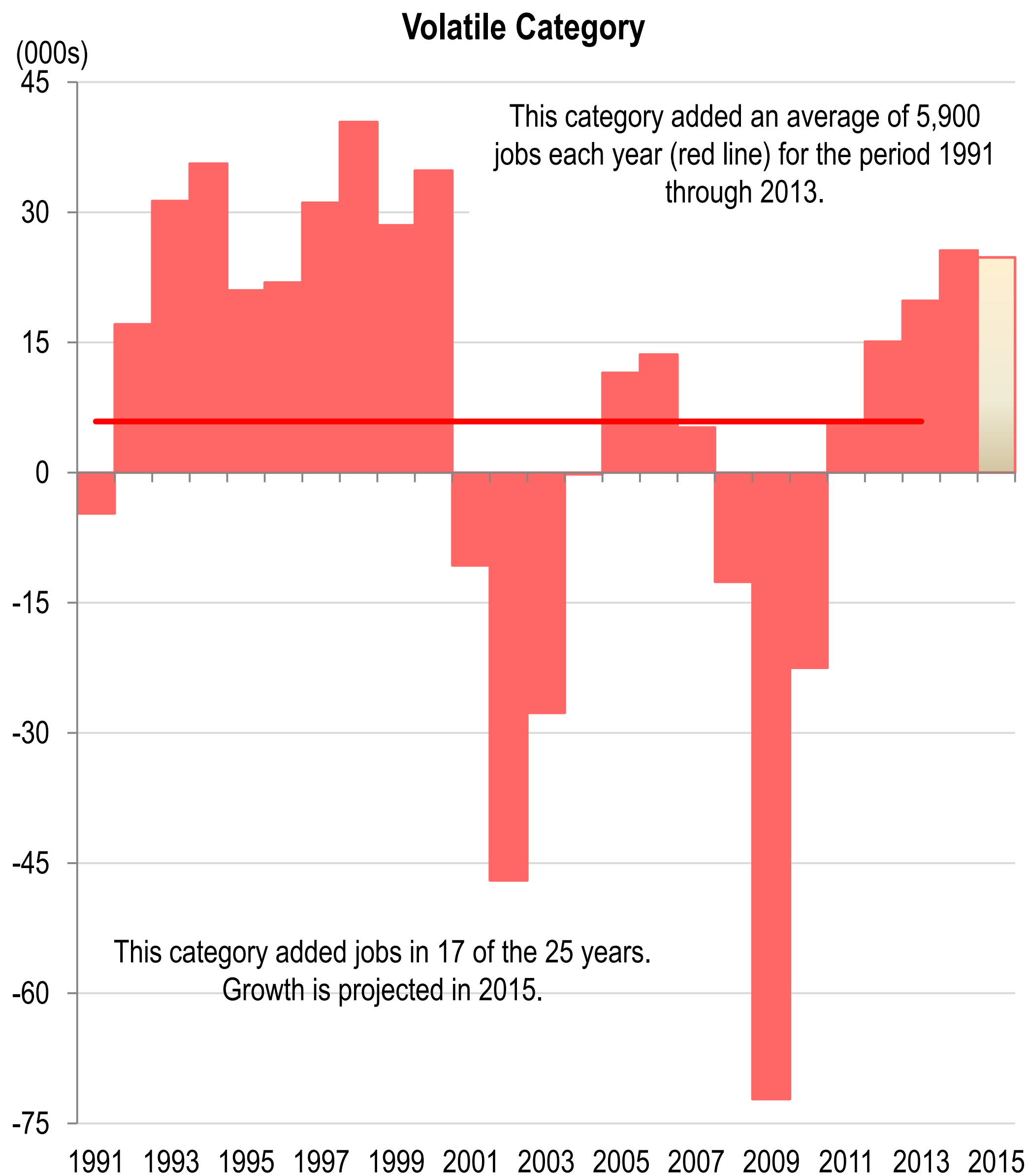
Total employment for this category was:

1994 625,400 workers, 35.6% of total employment

2004 716,000 workers, 32.8% of total employment

2014 706,100 workers, 28.8% of total employment

In 2015 between 23,000 and 27,000 jobs will be added, at a rate of 3.3% to 3.7%. This rate of growth is slightly slower than 2014.



Source: Bureau of Labor Statistics, cber.co.

Three Things to Look for in 2015 Volatile Category

Solid Growth Category

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

Three Things to Look For

- The price of oil dropped sharply in Q4 2014. If prices stay low for an extended period, contractors and exploration workers may be laid off. As time passes it may be necessary to lay off production workers. In turn, this will indirectly impact employees in other industries. Weld and other counties in the Niobrara Oil Field are most vulnerable to the fluctuations in oil prices.
- Despite low interest rates, the construction of single family housing has increased slowly. At the same time realtors in some parts of Denver have stated they are selling houses priced under $500,000 within a week. With the improvement in the economy, the construction industry is challenged to find trained workers.
- For many years Colorado has had a competitive advantage in the Information Sector. There are fears the declines in sector employment may cause the state to lose its competitive advantage and the critical mass of companies and workers in that sector.

Summary of Strong, Solid, and Volatile Growth Categories

In 2015, the growth of the Strong, Solid, and Volatile Growth Categories will be similar to 2014.

The Strong Growth Category of sectors (green) has performed consistently over time. The category added jobs as expected in 2014. The larger sectors (Health Care, PST, and B-to-B, excluding Temp. Services) grew at a rate faster than the state. Arts, Entertainment, and Recreation, a smaller sector, grew faster than the state.

Over time, the Solid Growth Category of sectors (yellow) has been more volatile than the Strong Growth Category. In 2014, this category performed stronger than anticipated. AFS and K-12 Education expanded at a faster rate than the state.

Finally, the Volatile Category of sectors (red) were a significant source of growth in 2013 and 2014. In 2014 the Construction, Employment Services, Transportation and Warehousing, and the Extractive Industry sectors expanded at a faster rate than the overall state average.

Note: This data reflects projected changes to the 2014 data when BLS makes its revisions in March 2015.

Source: Bureau of Labor Statistics, cber.co.

Scenarios for the 2015 Outlook

The recovery from the Great Recession has been less than robust, but it has been **steady**. While there are many potential risks to future growth, the U.S. and state have shown there is enough momentum to show solid, sustained job growth in 2015.

Overall Job Growth
In 2015 Colorado employment will increase by 2.9% to 3.1%. Estimated employment will be 2,525,600 workers in 2015.

Strong Growth Category (About 32% of total employment)
The rate of job growth for this category will be **2.8% to 3.0%.**

Limited Growth Category (about 39% of total employment)
In 2015, the rate of job growth will be **2.6 to 2.8%.**

Volatile Growth Category (29% of total employment)
In 2015, the rate of job growth will be **3.4% to 3.6%.**

The performance of the Volatile Growth Category will most likely determine the accuracy of the cber.co 2015 forecast. There is more downward risk than upside risk to the forecast.

2015 Employment Outlook

Optimistic Scenario
- U.S. Real GDP greater than 2.9%.
- Colorado will add more than 76,000 workers.

Most Likely Scenario
- U.S. Real GDP 2.5% to 2.9%.
- The U.S. will add at least 2.6 million workers.
- Colorado will add 3.0% of total U.S. jobs added.
- Colorado will add 70,000 to 76,000 workers, job growth will be 2.8% to 3.0%.

Pessimistic Scenario
- U.S. Real GDP less than 2.5%.
- Less that 70,000 Colorado workers.

The probability of these scenarios follows:
- Most Likely 55%
- Optimistic 15%
- Pessimistic 30%.

There is slightly more downside risk than upside potential.

Source: cber.co.

2015 Employment Forecast Most Likely Scenario

Twenty-two 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 2015 employment forecast.

Strong Growth Category
+ 20,000 to 24,000 Employees

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

Limited Growth Category
+24,000 to 28,000 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
+23,000 to +27,000 Employees

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

In 2015 Colorado will add 70,000 to 76,000 jobs.

Source: cber.co.

Colorado Employment Forecast
The Main Street Forecast

The Main Street Forecast

The informal forecast from Main Street is as valuable as the analysis of the data, especially when they tell the same story. Both forecasts point to continued steady job growth and the expansion of the Colorado economy at a rate similar to the past two years.

- The lines of people at your favorite restaurant are longer.
- And the prices seem to increase every time you go out for dinner.
- The parking lots at the malls have more cars.
- And the shoppers are carrying more bags.
- There are more cone zones and cranes.
- Congestion on the major thoroughfares is greater, even during non-peak times.
- The fitness centers seem to be more crowded.
- Youth sports leagues seem to have more participants.
- Realtors are canvassing the neighborhoods to find owners who might want to sell their home. The realtors have buyers, but there is not an inventory of homes.

CONCLUSION: The activity on the street matches the analysis of the data. Colorado economic activity is solid and should remain that way through 2015.

Summary, Opportunities, and Challenges

Summary of 2015 cber.co Economic Forecast

The following is a summary of the key data points in the 2015 cber.co Colorado economic forecast. Based on growth on the global and U.S. economies, Colorado will see job growth at a rate similar to 2013 and 2014.

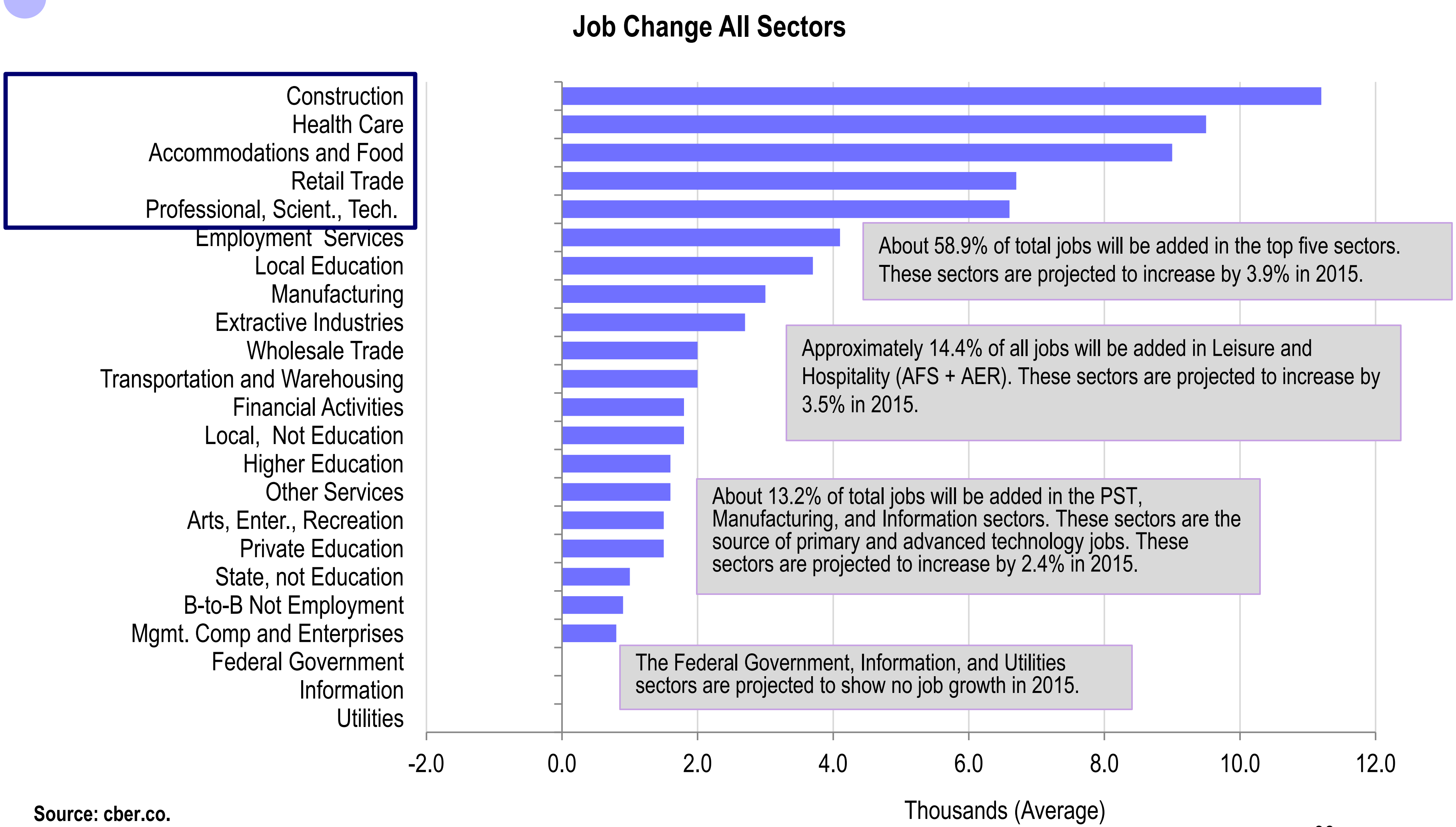
Global and United States

- The rate of Real Global GDP growth will be stronger; it will increase from 3.2% in 2014 to 3.4% in 2015.
- In 2015 U.S. Real GDP growth will be in the range of 2.5% to 2.9%, up slightly from 2014.
- U.S. job growth will increase at a faster rate, at least 2.6 million in 2015. Average U.S. employment will increase to 141,500,000 in 2015.
- The business cycle is in a mature stage and the country is faced with a number of issues with significant economic trade-offs: lower oil prices, higher housing prices, lower unemployment rate, and higher wages.

Colorado

- The steady growth of the global and U.S. economy will be mirrored in Colorado. After showing growth of 71,500 jobs in 2014, the most likely scenario is that the state will see job growth in the range of 70,000 to 76,000 in 2015. Jobs will be added at a rate of 2.9% to 3.1%. In other words, it will continue along the same path that it has been on for 2013 and 2014.
- Growth will be broad based and driven by the Construction; Health Care, Accommodations and Food Services, Retail Trade, and the Professional, Scientific, and Technical Services Sectors. About 58.9% of total jobs will be added in the top five sectors. These sectors are projected to increase by 3.8% to 4.0% in 2015.

Projected Job Changes 2015



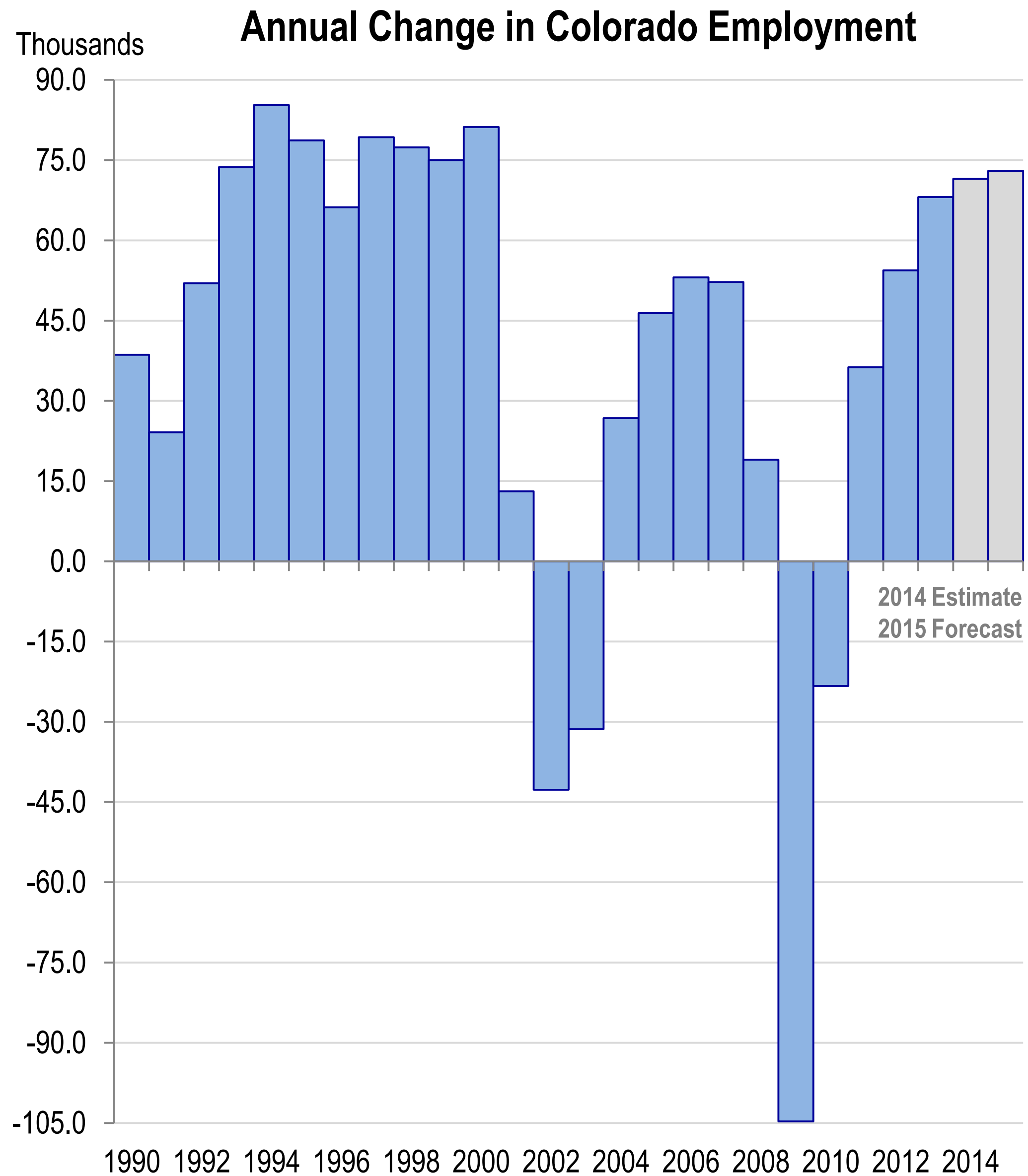
Source: cber.co.

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

Annual Employment Change in Colorado

It is estimated the state will add 71,500 jobs in 2014, an increase of 3.0% on a base of 2,381,000.

The state will add 70,000 to 76,000 jobs in 2015. Colorado employment will increase by 2.9% to 3.1%.



Source: Bureau of Labor Statistics, cber.co.

Looking Ahead
Opportunities in 2015

Broad-based growth of the Colorado economy has occurred as the same time as growth in the U.S. and global economies. As well, Colorado enjoyed accelerating job growth for the 4th consecutive year in 2014. Opportunities associated with continued growth in 2015 are listed below.

Opportunities

1. Both Global and U.S. Real GDP are projected to expand at a greater rate in 2015 than 2014. That should translate into stronger economies and increased employment for most states and MSAs. This includes Colorado and its seven MSAs.
2. Increased payrolls and a lower rate of unemployment will translate into greater upward pressure on wages. Theoretically, the level of disposable income will rise with increased wages. After back-to-back recessions consumer purchasing patterns have changed. They are more frugal, but retail sales are expected to be stronger in 2015.
3. In 2014, the number of Colorado establishments are projected to increase at a rate much greater than 2013. The increases the chances for continued solid job growth in the future as these companies expand.

Additional Opportunities

4. The state has been branded, intentionally or not, as a "hip" place to live, work, and play. This strategy has effectively attracted millennials to the Front Range. Will this prove to be an effective economic development strategy?
5. For the period 2009 to 2013, the Goods Producing Sectors contributed 28% to growth of the GDP. Between 1997 to 2013, they accounted for 20% of the state total. It is important to recognize the importance of these sectors and to continue to appreciate, promote, and support them.
6. Encourage students at all levels to take coursework that allows them to transfer skills between different professions. This will allow them to be qualified for jobs that don't exist today. It will also prevent industries from having labor shortages in key occupations.

Looking Ahead
Challenges in 2015

Challenges associated with continued growth of the Colorado economy in 2015 are listed below.

Challenges

1. At the moment the fear of the unknown is biggest challenge associated with the rapid decline in the price of oil. It has been published that the breakeven price per barrel for the Niobrara field is in the mid-$60s. How low will the prices drop? How long will they be below the breakeven point? If layoffs or reductions are necessary who will be hurt first – contractors, engineers, or production workers? How much will related industries feel the pain (construction, retail, accommodations and food)? How will lower prices impact the economies of countries that are dependent on oil to make their budgets?
2. While lower unemployment rates are a good thing for workers, the down side is labor shortages. Colorado currently has shortages of select construction, health care and high-tech workers. If the unemployment rate stays down for an extended period, as projected, where are companies going to find trained workers?

Additional Challenges

3. Is U.S. public and personal public debt excessive? Will Americans manage their finances more responsibly in the future?
4. What does Mother Nature have in store for Colorado in 2014?
5. Since 2012 housing prices have increased in both the U.S. and Colorado. This is great for home owners, but may be an impediment to growth if there is insufficient housing stock for people moving to the state. The rising prices of single family homes has caused an increase in the cost of rentals. Higher housing prices will cause Colorado to have a higher rate of inflation than the U.S. in 2015.
6. The Government Accountability Office has reported that a gap remains between the revenue and spending for many state budgets. The GAO estimates indicate the elimination of this gap could take several decades.
7. The Fed is expected to begin raising interest rates in mid-2015. What impact will this have on the economy?

Appendix

The cber.co Forecast – A Review of the 2014 Forecast and Related Issues

The Purpose of the cber.co Forecast

The purpose of this chartbook is to present an employment forecast for the state of Colorado based on factors that are driving change in Colorado and the United States. It can be used for economic development, workforce training, and decision making in business. In the end the only certainty is that the forecast will either be wrong or lucky. Either way, the value of the forecast is the "story" that explains the change in 2015 and beyond.

Changes in Gross Domestic Product

The foundation for the forecast is the factors that cause change and projected change in the global and U.S. GDP. As well, attention is paid to the four components of the GDP– consumption, business investment, government spending, and net exports. Because the Colorado economy is closely linked to the national economy, trends in these four components are relevant to Colorado.

Every effort has been made to use reliable information and perform accurate analysis to describe changes in the Colorado economy. This and any other forecast cannot fully account for major shocks to the system, such as unexpected policy decisions, political unrest in other parts of the world, acts of terrorism, and natural disasters.

Wage and Salary Data

This forecast focuses on wage and salary data for the following reasons:

- Everyone understands jobs.
- Employment data is available in the public domain.
- Employment data is produced on a timely basis and its level of accuracy is reasonable.
- From an economic development standpoint, employment is the metric of choice because "it all starts with a job" – demand for goods and services is created, workers are hired, wages are paid, goods and services are purchased and the cycle repeats.

Review of cber.co 2014 Forecast

Review of 2014 Forecast

The first step in the preparation of the 2015 forecast was to review the basic variance from the 2014 forecast. As well, other forecasts were reviewed and an effort was made to understand why they missed the mark.

Preparations for the 2014 forecast began shortly after Thanksgiving in 2013. In early January 2014, the cber.co.co forecast for 2014 was released. At that time the impact of the Great Recession had become less relevant. GDP growth remained weak, the unemployment rate was slowly trending downward, and U.S. and Colorado job growth were solid and slowly improving.

Scenarios for 2014 cber.co Forecast

Optimistic Scenario

- U.S. Real GDP greater than 2.7%.
- Colorado will add more than 74,000 workers.

Most Likely Scenario

- **U.S. Real GDP 2.3% to 2.7%.**
- **The U.S. will add at least 2.3 million workers.**
- **Colorado will add 3.0% of total U.S. jobs added.**
- **Colorado will add 68,000 to 74,000 workers, job growth will be 2.9% to 3.1%.**

Pessimistic Scenario

- U.S. Real GDP less than 2.3%.
- Less that 68,000 Colorado workers.

Source: cber.co.

How the 2014 Data Compared to the Most Likely Scenario Forecast

Estimates for 2014

Part of the process for preparing the 2015 forecast is to estimate values for key 2014 data. The 2014 projections follow:

- Real GDP growth rate will be near the bottom of the projected range at 2.4%.
- The U.S. will add 2.5 million wage and salary workers, slightly greater than projected by cber.co.
- Colorado's contribution to U.S. job growth will be 3.0% - exactly what was projected.
- Colorado will add 71,500 jobs in 2014. This is slightly above the midpoint of the range projected by cber.co.

The basic projections were very accurate.

Scenarios for 2014 cber.co Forecast

Optimistic Scenario

- **U.S. Real GDP greater than 2.7%.**
- **Colorado will add more than 74,000 workers.**

Most Likely Scenario

- **U.S. Real GDP 2.3% to 2.7%.**
- **The U.S. will add at least 2.3 million workers.**
- **Colorado will add 3.0% of total U.S. jobs added.**
- **Colorado will add 68,000 to 74,000 workers, job growth will be 2.9% to 3.1%.**

Pessimistic Scenario

- **U.S. Real GDP less than 2.3%.**
- **Less that 68,000 Colorado workers.**

Source: cber.co.

Other 2014 Economic Forecasts Forecast Accuracy

The assumptions and errors from other forecasts were reviewed as a means of understanding what happened in the economy during 2014.

2014 Colorado Forecasts

cber.co Economic Forecast
- The Real GDP rate will increase from 1.9%-2.3% to 2.3%-2.7%. Colorado will add jobs at an increasing rate.(68,000 to 74,000).

Colorado Legislative Council (CLC)
- Real GDP growth will increase from a rate of 2.2% to 3.1%. Colorado will add a similar number of jobs compared to 2013. (56,800 jobs).

Office of State Planning and Budgeting (OSPB)
- The Real GDP rate will increase from 1.7% to 2.7% and Colorado will add jobs at a similar rate to 2013. (59,900 jobs).

CU Boulder Business Economic Outlook
- The Real GDP rate will increase from 1.6% to 2.9%. Colorado will add jobs at a decreasing rate (61,300).

Accuracy of 2014 Colorado Forecasts

The 2014 BLS Wage and Salary (CES) employment data will not be finalized until March 2016; however, the preliminary update in March 2015 will likely show that Colorado added 71,500 jobs in 2014. The difference between the monthly data and the March revision was most likely a source of error for all forecasts.

The December forecasts for CLC and OSPB were conservative. Both groups projected a significant increase in GDP growth, but a similar rate of job increase compared to 2013. Most likely their error in job growth was a result of errors in the BLS estimates.

The premise of the CU Boulder forecast was that there would be strong output growth at the national level accompanied by a decline in the rate of job growth at the state level. This premise didn’t make sense given that Colorado has been one of the leading states in job growth throughout the recovery.

What was Missed in 2014?
BLS Data Error and Forecast Bias Errors

A review of the cber.co and other state forecasts shows that a possible source of forecast error in the 2014 forecast was the underestimation of the job growth based on data provided by BLS.

BLS Data Error

Short-term employment forecasts use the CES or Wage and Salary data provided by the Bureau of Labor Statistics. There are some ongoing "flaws" in the survey methodology with cause Accommodations and Food Services to be overstated and Construction to be understated. A description of the revision process for correcting these flaws is provided in the Appendix.

The 2014 Data

The monthly Wage and Salary employment data (CES) showed that jobs were being added at a declining rate in the second half of the 2014 and that about 65,000 jobs would be added in 2014.

It is believed that that BLS will revise the data to show that 71,500 jobs will be added in 2014.

Forecast Bias

It is a common practice for forecasters to understate job growth. This may occur for a variety of reasons:

- Many economic models understate growth during periods of expansion and overstate growth during periods of decline. This tendency is called regression to the mean.
- Some economists make conservative forecasts because they believe greater harm may occur from overstating rates of growth than from understating it.
- Some forecasts are understated so the economist can later state that the economy performed better than expected. They feel this puts them and their sponsors in a better light than if they overstate a forecast.

The moral of the story is to look at the track record of employment forecasts to determine their tendencies for errors. The intent of this forecast is to eliminate all sources of bias, including intentional bias.

What was Missed in 2014? Other Factors

Every year there are factors that are unexpected or that cause error in a forecast. Some of the major factors from 2014 are listed below.

United States

- Job growth was more broad-based and stronger than expected. The fact that it is broad-based has created stability which should lead to continued growth.
- The equity markets were more volatile than 2013. Unfortunately the increase wasn't as strong. Surprisingly, this did not hurt consumer confidence.
- Issues such as foreign affairs, increased costs for health care, sequestration, off-year election, QE3, tapering had less of an impact on the economy in 2014 than anticipated.
- The decline in gasoline prices had minimal impact on the economy in 2014. There will be a slight impact in 2015, however, the price of a barrel of oil may have a much greater impact in the U.S. and abroad in 2015.
- International tension was expected in 2014; however, the source of it is often difficult to identify beforehand.

Colorado

- The extractive and real estate industries have had a greater impact on the state economy than realized.
- Job growth is fairly broad-based, i.e. most sectors are adding jobs.
- Construction permits have been flat despite increased demand and rising home prices.
- Job growth has been solid, yet the state was slow to add new business establishments until 2014.
- Wage growth has been weak despite labor shortages in key positions and an unemployment rate that dropped below 4.5%.

The recovery from the Great Recession has been slow, but steady. These observations suggest the economy is stronger than it appears.

Colorado Employment Forecast

Putting the Forecast in Perspective

Putting the Forecast in Perspective
Summary of Tests to Measure Reasonableness of Forecast

This section shows a series of tests to measure the reasonableness of the forecast. The number of jobs added and the rate of growth for categories and sectors were compared to historical data.

Overall Job Growth

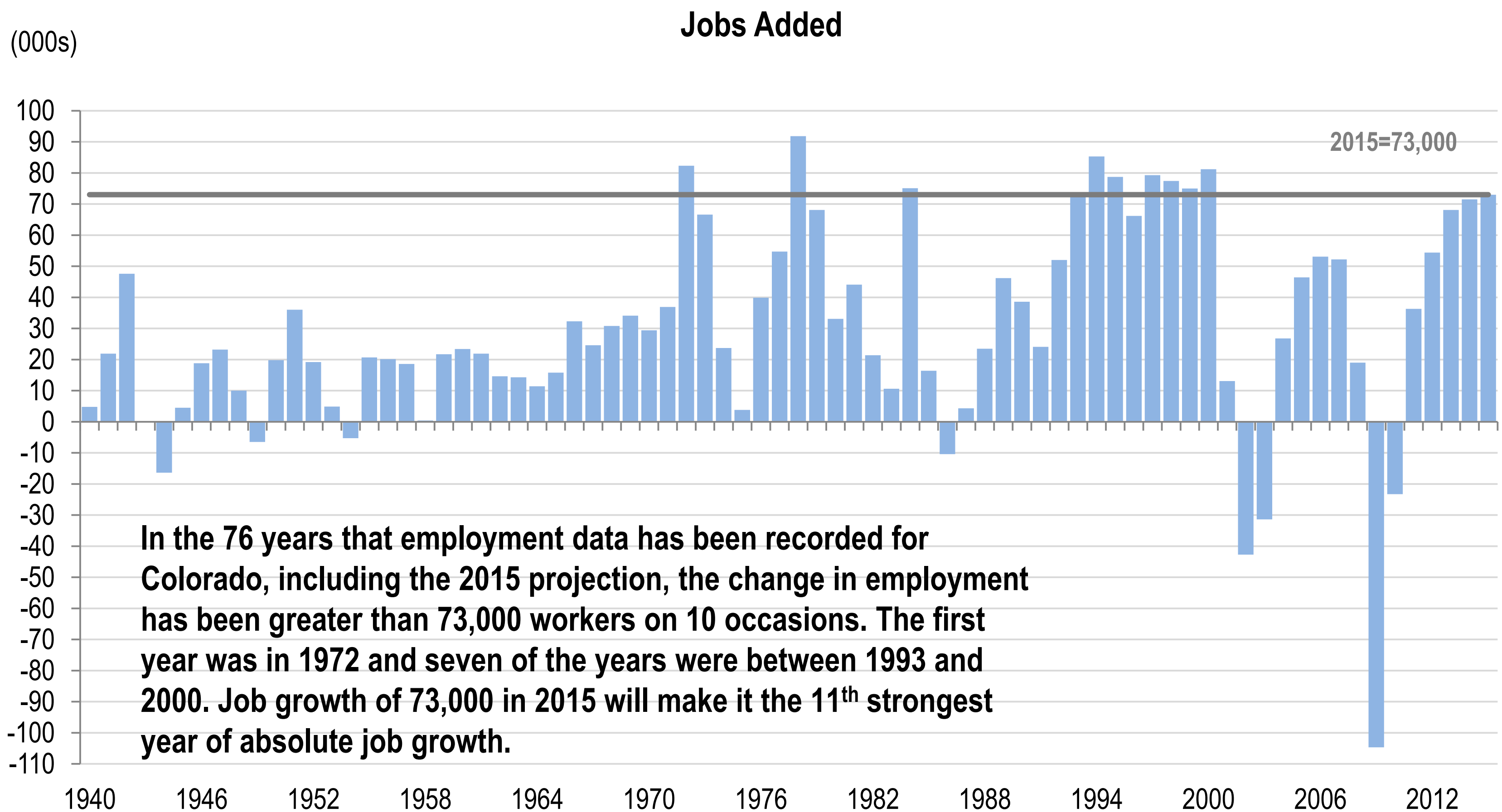
- The top five sectors for growth account for 58.9% of all jobs. Their projected aggregated rate of growth is 3.9%. This is greater than the overall forecast of 3.0%.
- For the period 2012-2014 jobs were added in 19 of the 23 sectors tracked by cber.co. Twenty of the 23 sectors are projected to add jobs in 2015.
- For the 76 years that data has been kept, the projection of 3.0% job growth for 2015 is ranked 38th. In other words, having growth at this level is fairly common.
- The rate of change for the five-year rolling average is much less than historical values suggesting the projected rate of growth is reasonable.

Job Growth of Categories

The analysis of the rate of growth for the three job categories shows the following:

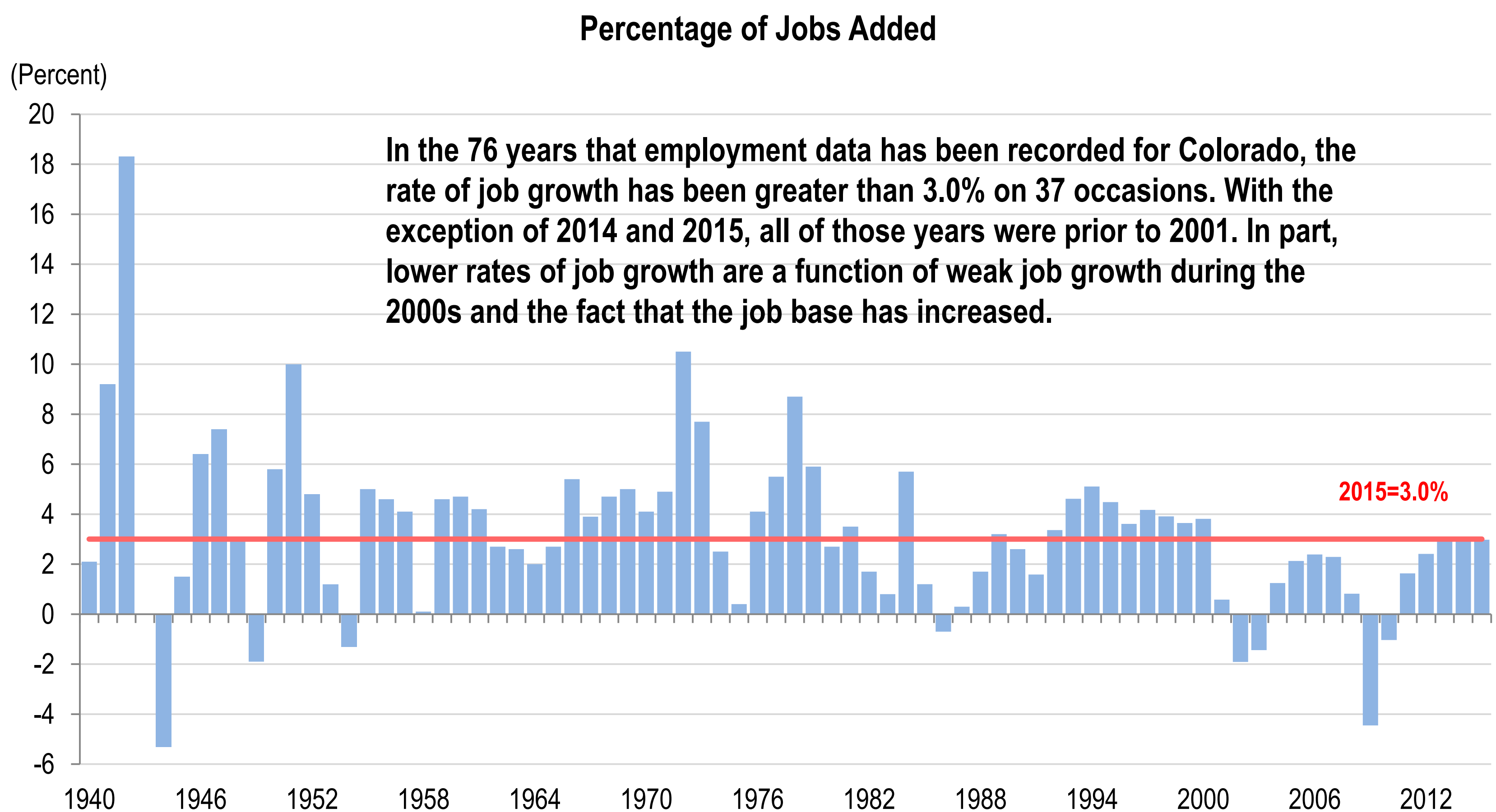
- The projected 2015 rate of job growth for the strong growth category is similar to the rate of growth for the years 2012 to 2014. If anything, the 2015 forecast for strong growth may be slightly understated.
- The projected rate of job growth in 2015 for the solid growth category is similar to the rate of growth for the years 2013 and 2014. The forecast will likely be met if personal consumption is solid in 2015.
- The projected rate of 2015 job growth for the volatile category is similar to the rate of growth for the years 2013 and 2014. The forecast is in line with past performance.

The Projected Absolute Job Growth for 2015 (Total Jobs Added) will be the 11th Strongest in 76 Years.



Source: Bureau of Labor Statistics, cber.co.

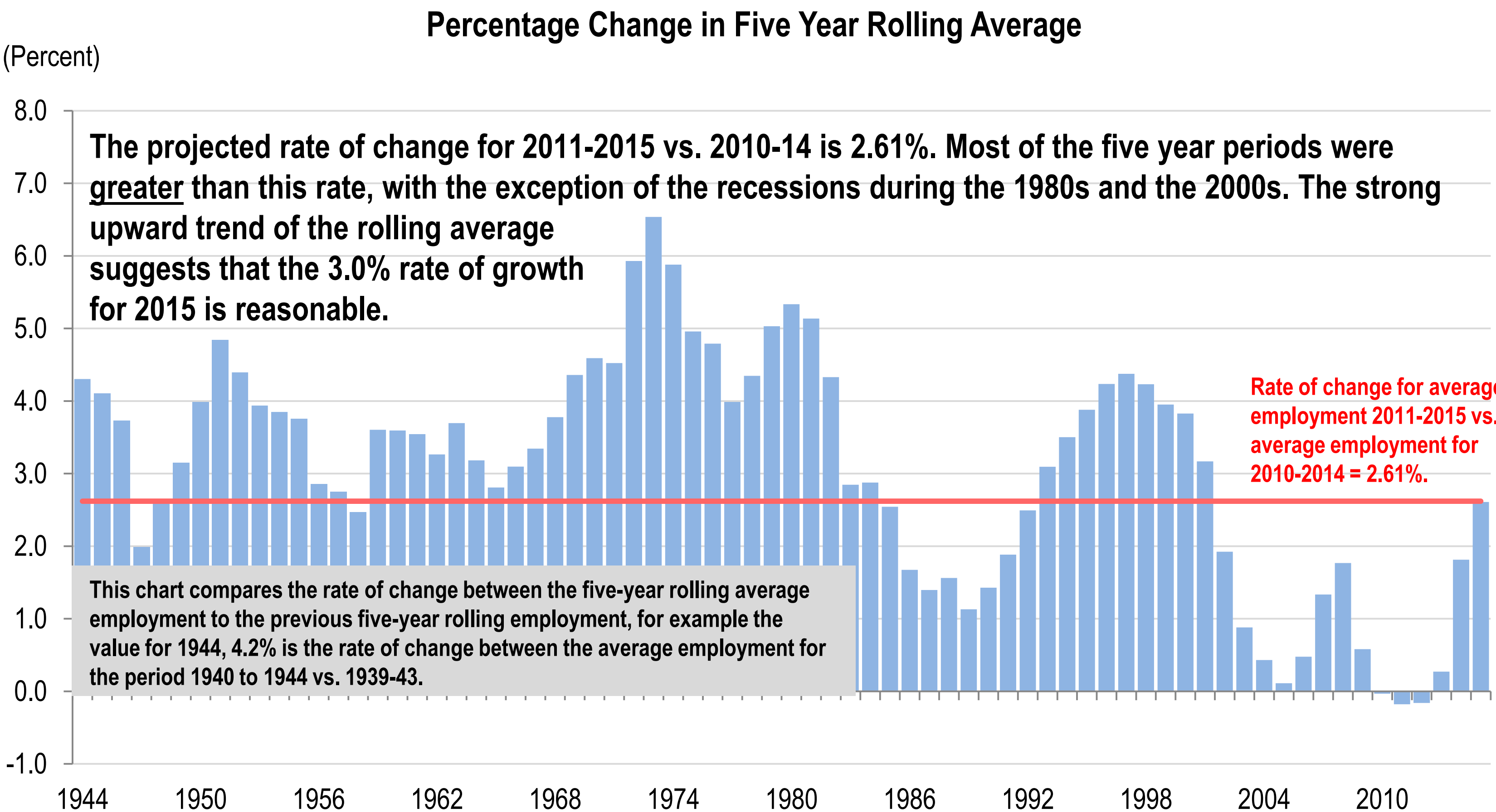
The Projected Rate of Job Growth for 2015 will be the 38th Strongest in 76 Years



Source: Bureau of Labor Statistics, cber.co.

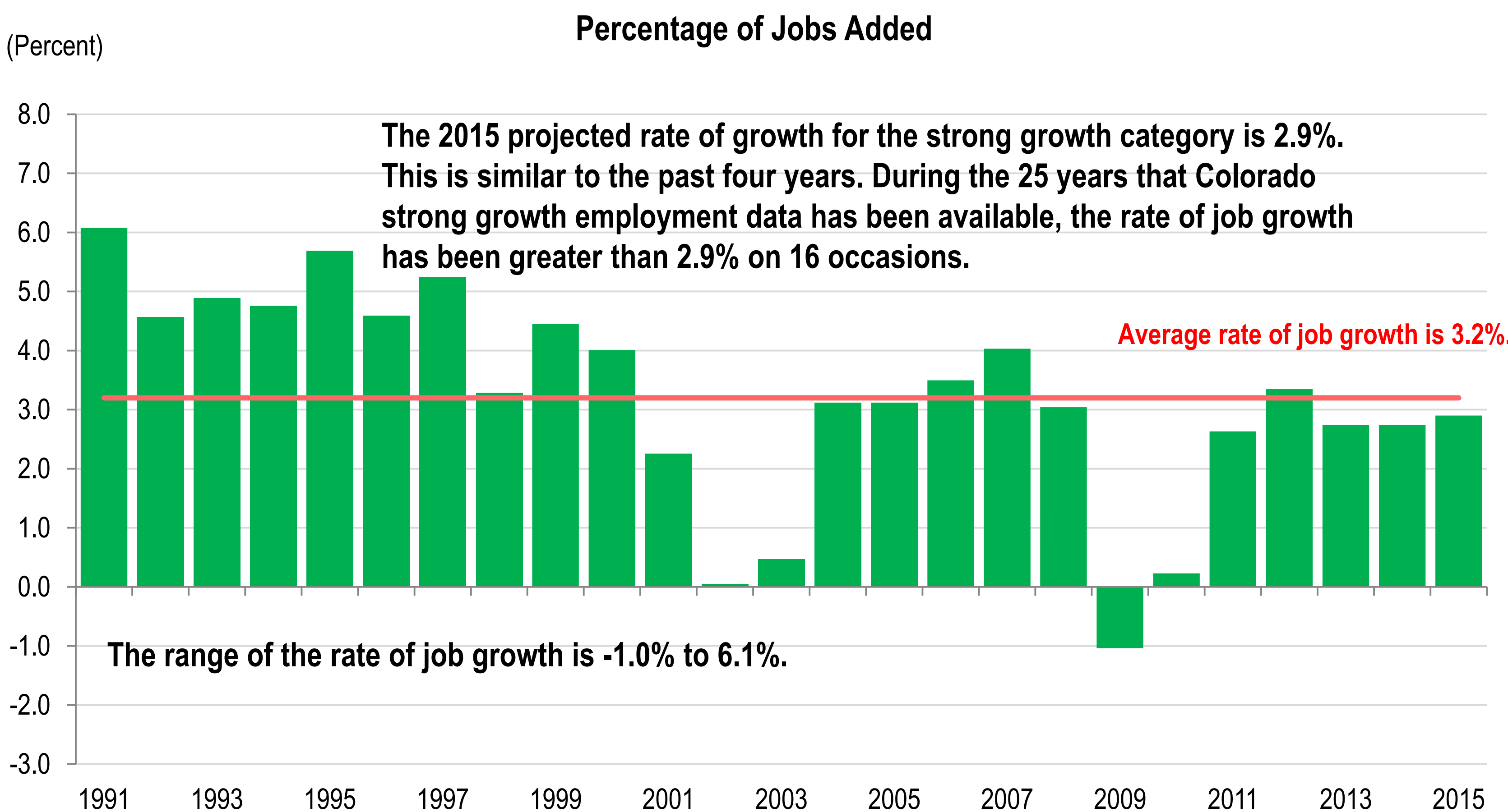
Job Growth of 3.0% in 2015 is a Reasonable Forecast –

Percentage Change for Five Year Rolling Average Employment vs. Previous Five-Year Rolling Average Employment



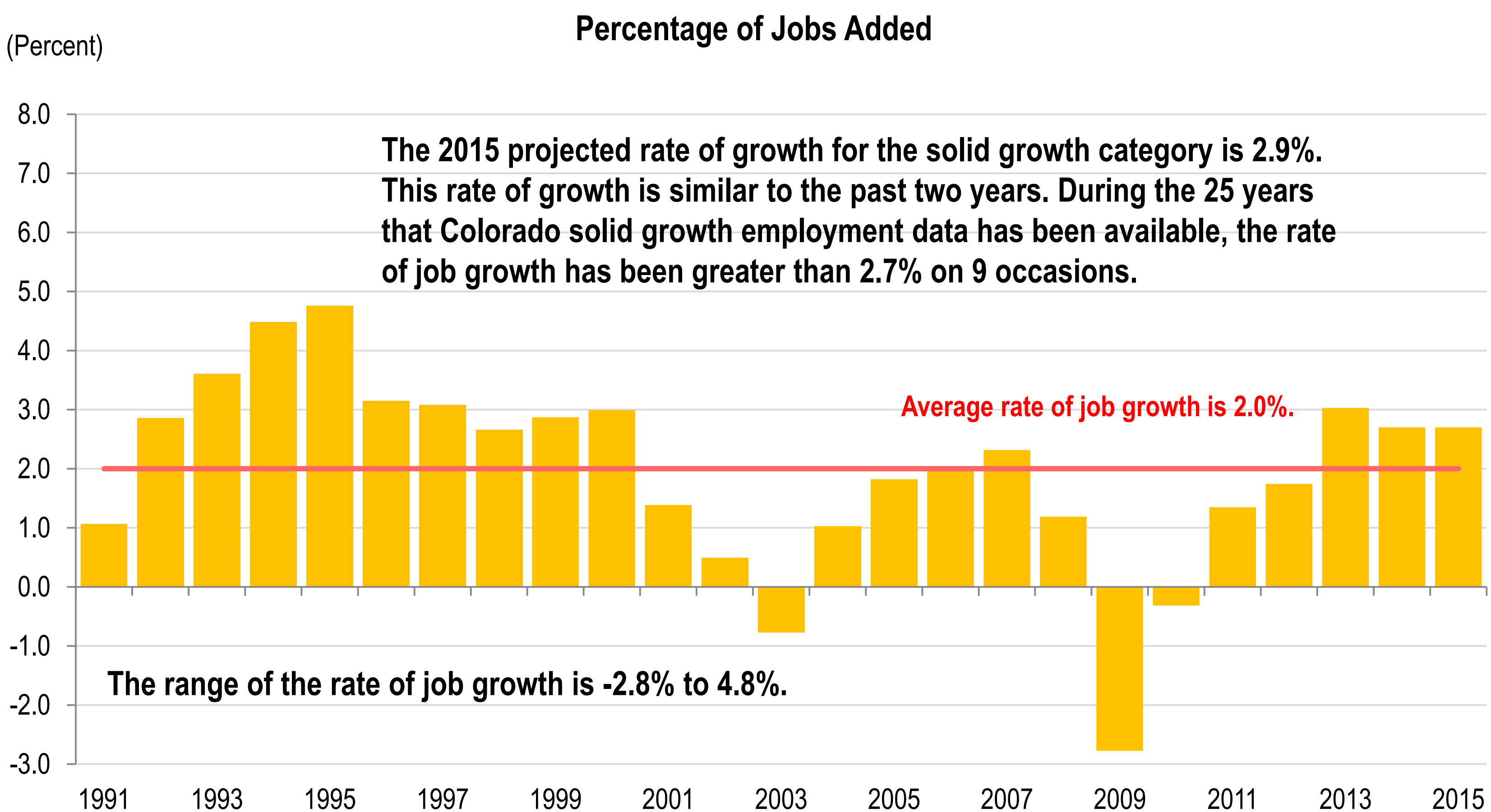
Source: Bureau of Labor Statistics, cber.co

The Projected Rate of Job Growth Strong Growth Category



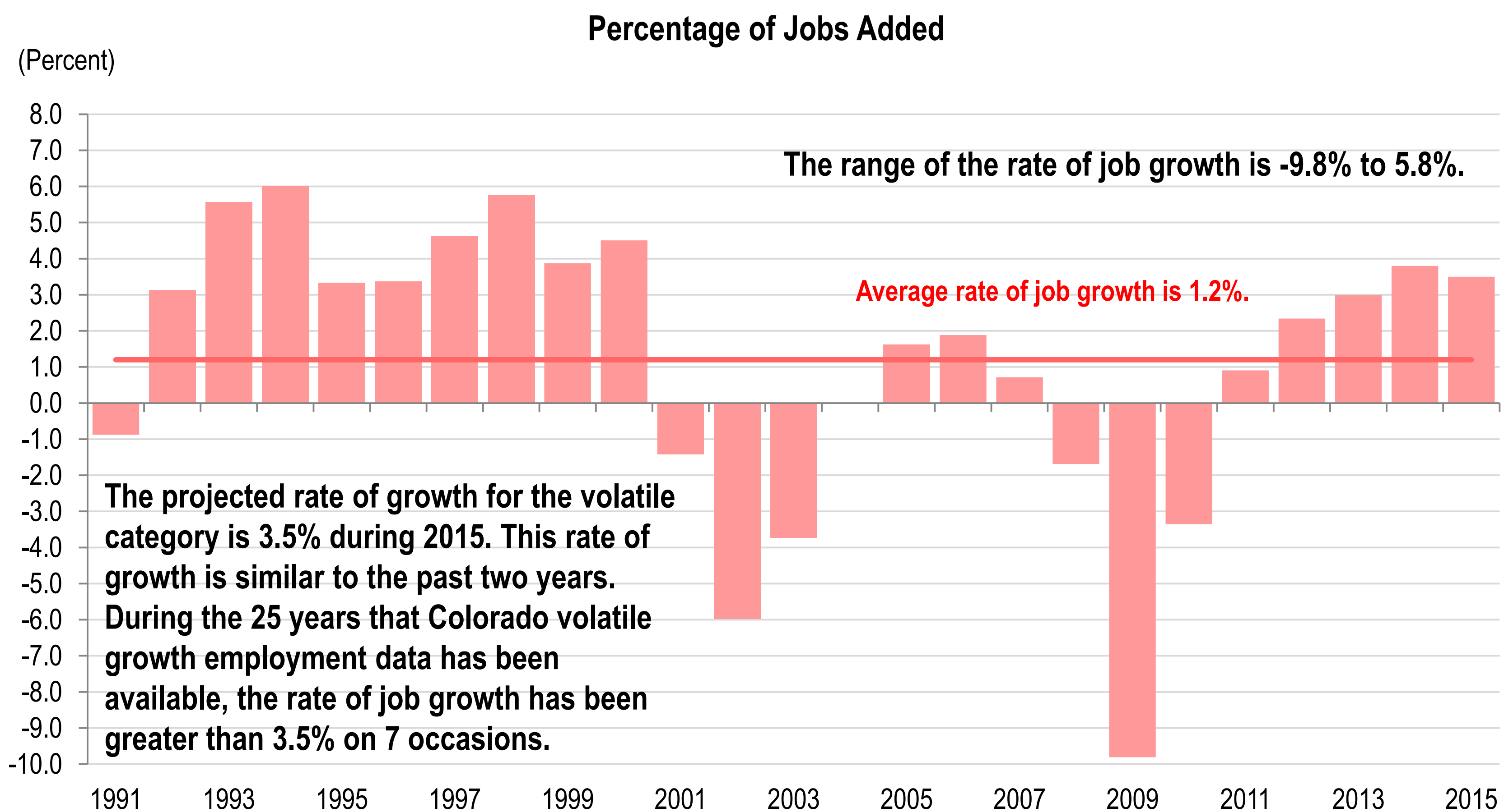
Source: Bureau of Labor Statistics, cber.co.

The Projected Rate of Job Growth
Solid Growth Category



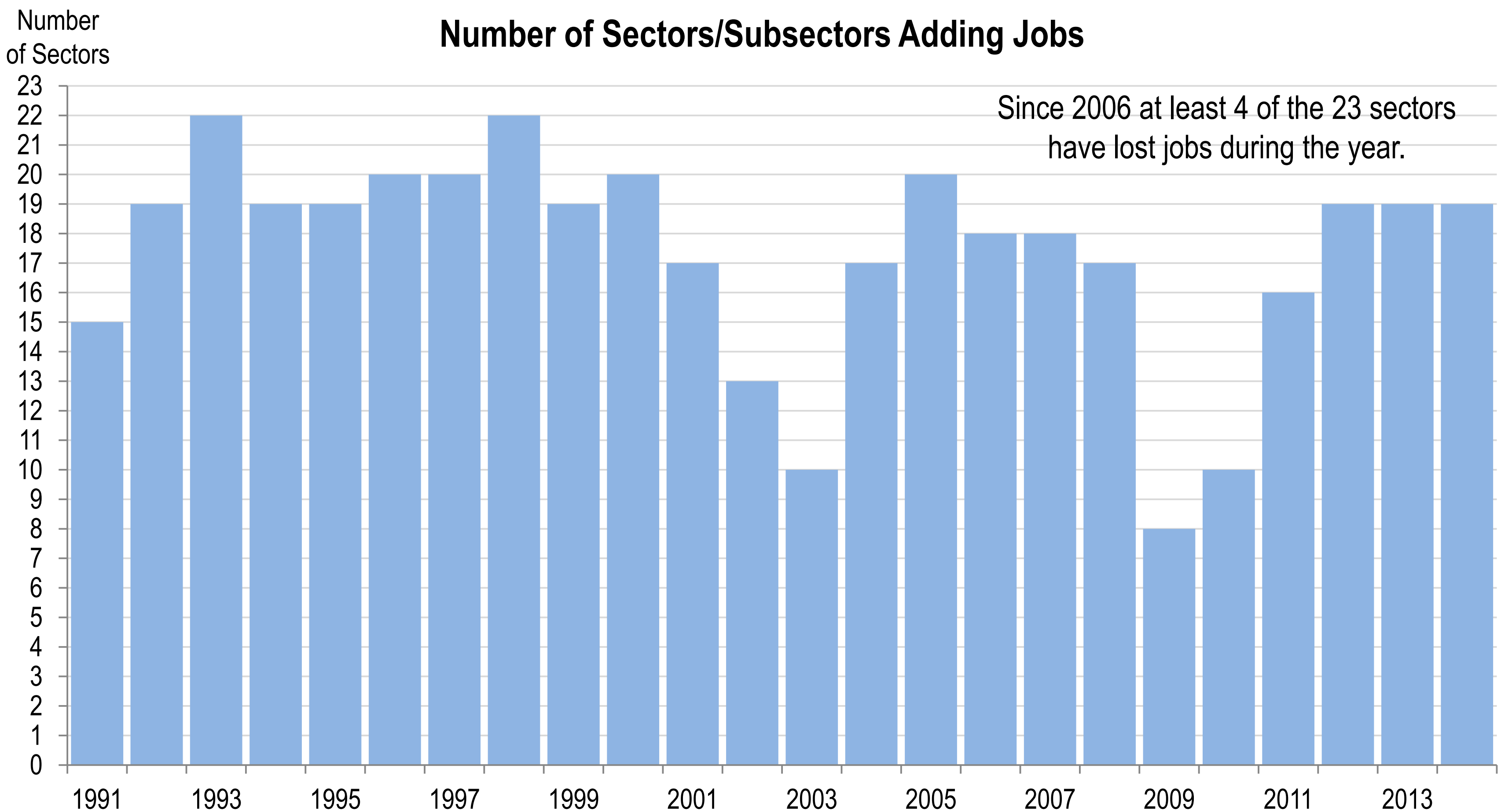
Source: Bureau of Labor Statistics, cber.co.

The Projected Rate of Job Growth
Volatile Category



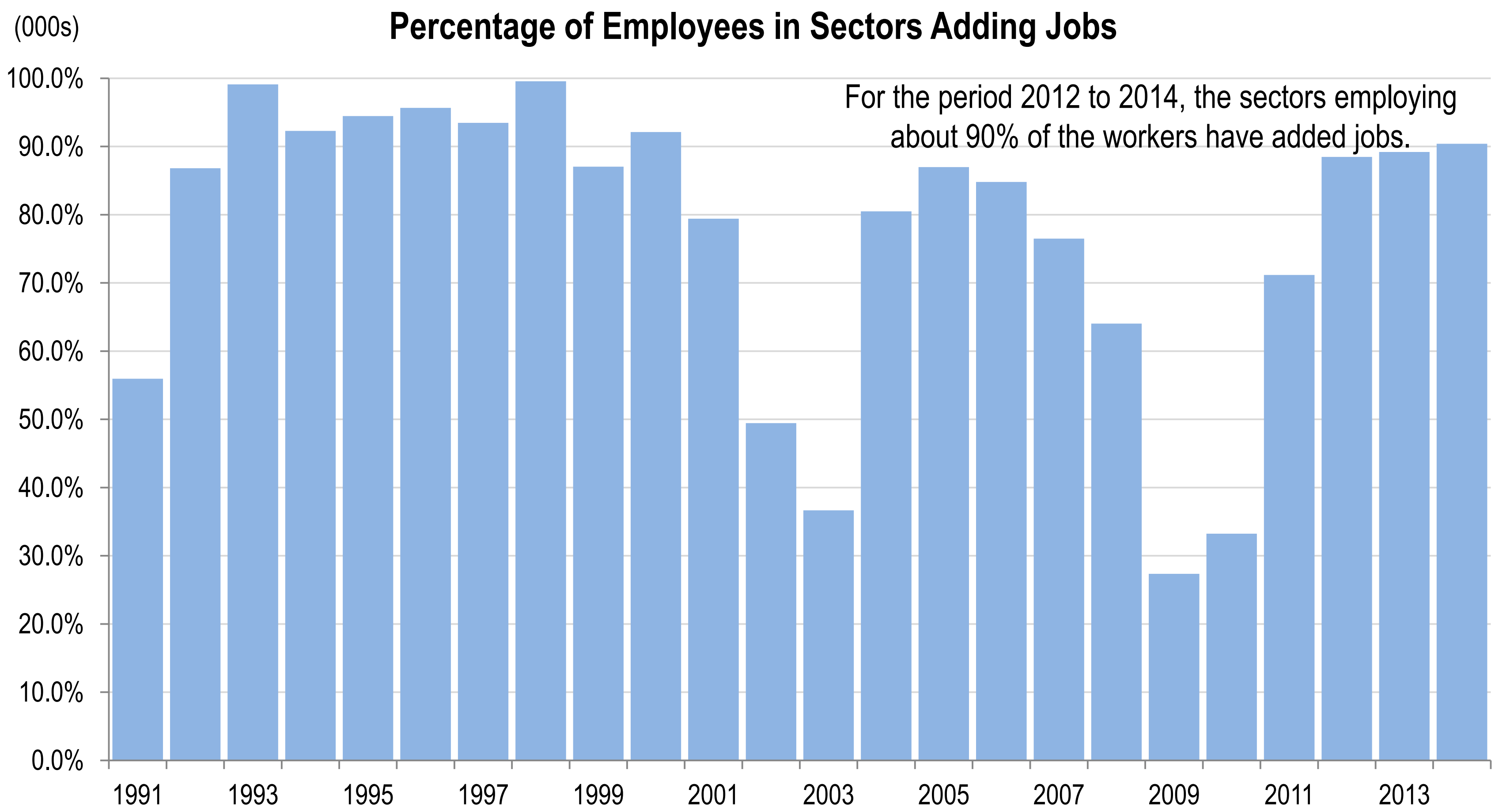
Source: Bureau of Labor Statistics, cber.co.

Diversity of Colorado Job Growth
Number of Sectors/Subsectors Adding Jobs



Source: BLS, cber.co.

Diversity of Colorado Job Growth
Percentage of Employees in Sectors Adding Jobs



Source: BLS, cber.co.

BLS/LMI Data Revision Process

BLS and LMI Data Projections

In recent years, data-producing federal agencies have been asked to deliver more accurate data, in a shorter time frame, using fewer staff, with lower research budgets. The data used for most short-term forecasts is the Current Employment Survey, also called Nonfarm or Wage and Salary data. It is possible for the CES data to be revised up to four times.

BLS and LMI Data Revision Process

The CES projection process is outlined below:

1. Around the 20th of a month, preliminary data for the prior month will be published and the month prior to that will be updated (For example, around June 20th preliminary data for May will be produced and April will be updated.) These revisions are usually minor. Most short-term forecasts use this data.

2. In March of the following year, the previous two years will be revised. (For example, the 2014 employment data will be revised in March 2015 and finalized in March 2016).

3. The initial March update is usually the most significant revision, and the two-year update is often minor (In the case of 2014, some of the monthly totals will see significant upward revisions when revised in March 2015.)

4. Periodically, BLS updates the entire data series back to 1990. This usually occurs when they recalibrate their projection models or redefine NAICS codes.

Analysis for Determining Forecast Categories

The tables in this section show tests that were used to categorize sectors into the strong growth, solid growth, and volatile categories.

As it turns out, there is some logic to the different levels of volatility:

- The Strong Growth category includes sectors that are necessary and less susceptible to business cycles, for example, Health Care and Other Services.
- The Solid Growth category is consumer based. It includes the trade sectors and sectors impacted by retail sales tax revenue, i.e. government agencies and education.
- The Volatile category includes sectors that are susceptible to business cycles and pressures from outside their industry. For example, the price of oil is driven by the amount of oil production around the world. This may cause booms and busts locally, which may directly impact the Extractive Industries and indirectly alter growth in the Construction, Manufacturing, and Retail industries.

Analysis for Determining Forecast Categories

Strong Consistent Growth Sectors

STRONG CONSISTENT GROWTH SECTORS

Category	1990 Employment	2012 Employment	% of Jobs 1990	% of Jobs 2012	Yrs Jobs Added '91 to '12	Change in Jobs '91-'00	Change in Jobs '01-'10	Change in Jobs '11-'12	% Jobs Added '91 to '12	% Jobs Added '91 to '12	CAGR '91 to '12
Arts, Ent, Rec	23.4	47.0	1.5%	2.0%	18	19.1	2.2	2.3	23.6	3.0%	3.22%
Admin Not Em Sv	56.7	104.9	3.7%	4.5%	19	34.7	8.2	5.3	48.2	6.1%	2.84%
Health Care	115.8	247.1	7.6%	10.7%	22	54.3	62.3	14.7	131.3	16.6%	3.51%
Mgmt Corp Ent	13.1	31.8	0.9%	1.4%	19	6.0	9.9	2.8	18.7	2.4%	4.11%
Other Serv	56.0	95.5	3.7%	4.1%	20	24.2	12.2	3.1	39.5	5.0%	2.46%
Private Educ	14.0	35.2	0.9%	1.5%	22	8.7	9.6	2.9	21.2	2.7%	4.28%
Prof, Scien, Tech	86.3	177.8	5.7%	7.7%	18	67.5	13.4	10.6	91.5	11.6%	3.34%
Strong Growth	365.3	739.3	24.0%	32.0%	21	214.5	117.8	41.7	374.0	47.4%	3.26%
State	1,520.9	2,310.0			18	692.9	8.5	87.7	789.1	100.0%	1.92%

Source: Bureau of Labor Statistics, cber.co.

Analysis for Determining Forecast Categories

Solid Growth Sectors

SOLID GROWTH SECTORS

Category	1990 Employment	2012 Employment	% of Jobs 1990	% of Jobs 2012	Yrs Jobs Added '91 to '12	Change in Jobs '91-'00	Change in Jobs '01-'10	Change in Jobs '11-'12	% Jobs Added '91 to '12	% Jobs Added '91 to '12	CAGR '91 to '12
Acc Food Serv	143.9	233.3	9.5%	10.1%	20	59.6	14.8	15.0	89.4	11.3%	2.22%
St-Higher Ed	40.6	63.6	2.7%	2.8%	20	7.4	12.3	3.3	23.0	2.9%	2.06%
Local Ed	81.7	125.6	5.4%	5.4%	19	23.5	21.6	(1.2)	43.9	5.6%	1.97%
Local Not Ed	72.9	117.8	4.8%	5.1%	20	25.5	19.5	(0.1)	44.9	5.7%	2.21%
Retail Trade	172.7	243.5	11.4%	10.5%	16	72.5	(8.3)	6.6	70.8	9.0%	1.57%
St-Not Higher Ed	24.4	33.1	1.6%	1.4%	19	6.2	2.1	0.4	8.7	1.1%	1.40%
Whls Trade	72.9	94.1	4.8%	4.1%	16	26.5	(8.6)	3.3	21.2	2.7%	1.17%
Solid Growth	609.1	911.0	40.0%	39.4%	19	221.2	53.4	27.3	301.9	38.3%	1.85%
State	1,520.9	2,310.0			18	692.9	8.5	87.7	789.1	100.0%	1.92%

Source: Bureau of Labor Statistics, cber.co.

Analysis for Determining Forecast Categories

Volatile Sectors

VOLATILE SECTORS

Category	1990 Employment	2012 Employment	% of Jobs 1990	% of Jobs 2012	Yrs Jobs Added '91 to '12	Change in Jobs '91-'00	Change in Jobs '01-'10	Change in Jobs '11-'12	% Jobs Added '91 to '12	% Jobs Added '91 to '12	CAGR '91 to '12
Construction	63.5	115.1	4.2%	5.0%	15	100.1	(48.5)	-	51.6	6.5%	2.74%
Empl Srvcs	22.8	40.7	1.5%	1.8%	16	31.7	(20.8)	7.0	17.9	2.3%	2.67%
Fed Govt	57.3	54.5	3.8%	2.4%	9	(2.5)	1.4	(1.7)	(2.8)	-0.4%	-0.23%
Fin Activities	104.6	146.1	6.9%	6.3%	15	42.4	(2.7)	1.8	41.5	5.3%	1.53%
Information	52.2	69.7	3.4%	3.0%	11	56.2	(36.4)	(2.3)	17.5	2.2%	1.32%
Manufacturing	170.2	132.1	11.2%	5.7%	9	18.7	(63.4)	6.6	(38.1)	-4.8%	-1.15%
Extractive Ind	17.1	15.3	1.1%	1.3%	12	(4.9)	12.2	5.9	13.2	1.7%	2.63%
Trans,Whs,Util	59.0	60.5	3.9%	3.1%	16	15.3	(4.4)	1.5	12.4	1.6%	0.87%
Volatile	546.7	542.0	35.9%	28.6%	14	257.0	(162.6)	18.8	113.2	14.3%	0.86%
State	1,520.9	1,545.0	100.0%	100.0%	18	692.9	8.5	87.7	789.1	100.0%	1.92%

Colorado Economic Forecast 2015

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