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# Colorado Economic Forecast 2015

Recalibrating the Forecast after BLS Benchmark Revisions

Colorado-based Business and Economic Research  
Prepared  
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# Overview of Document

This chartbook provides a series of charts, graphs, and discussions that make the case for fine tuning the 2015 forecast as a result of the BLS 2015 benchmark revisions to the 2014 employment data. The outline of the information is provided below:

- Purpose for Recalibration
- Colorado Employment Forecast
- Colorado Employment Forecast  
Based on Benchmark Revisions
- Recalibrated Forecast  
Summary and Comments
- Appendix



# Purpose for Recalibration

# Need for Forecast Recalibration

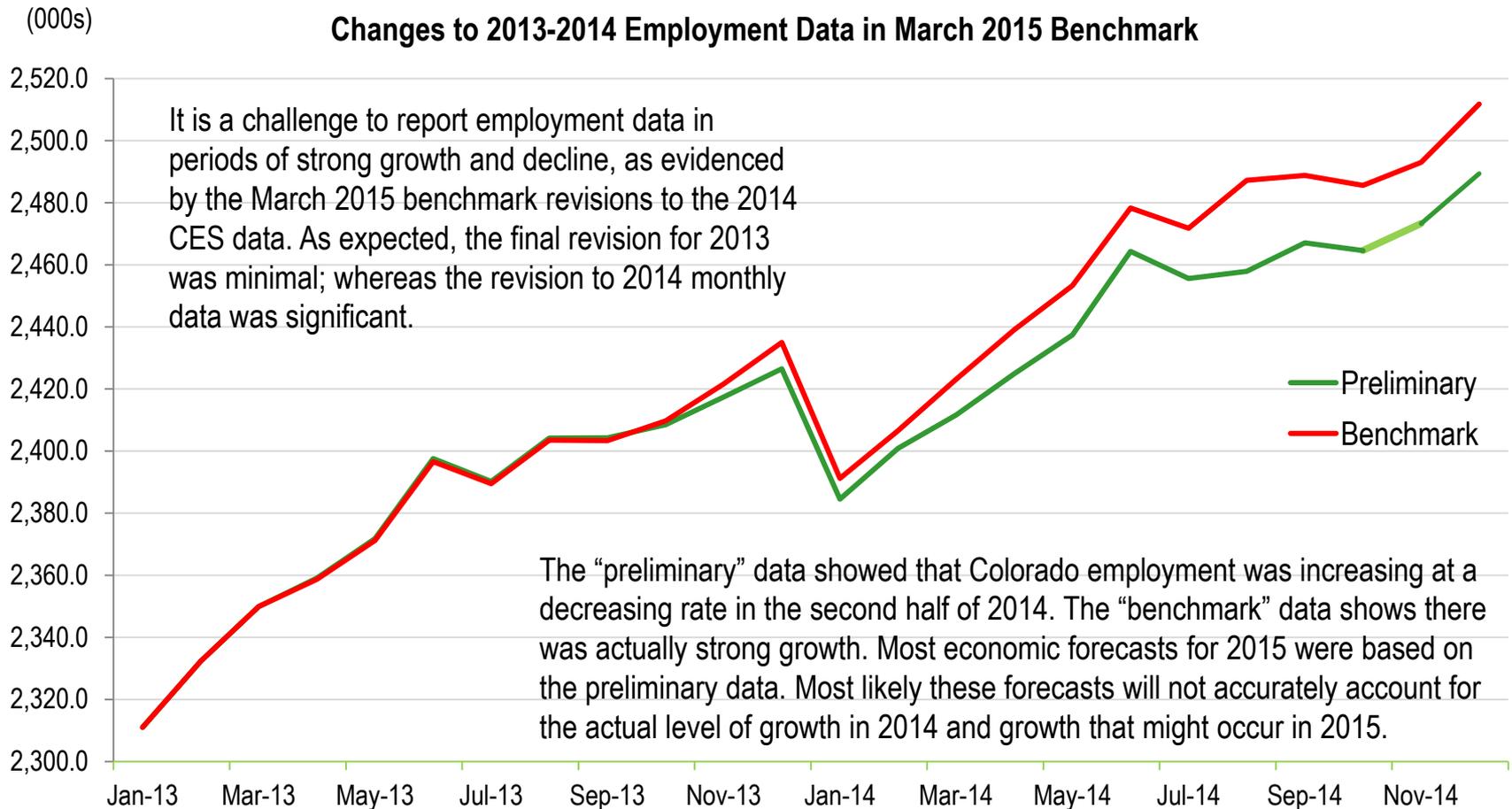
## 2015 Benchmark Revision of 2014 Data was Significant

The 2015 benchmark revision of the preliminary 2014 Colorado employment data was significant. It is appropriate to recalibrate the 2015 cber.co forecast for the following reasons:

- The preliminary data did not accurately identify the categories of sectors that were driving the state economy.
- The preliminary data understated the magnitude of the growth in employment.
- In 2015 employment is likely to plateau or expand at a solid, but slower rate, thus ending a streak of four consecutive years of accelerating growth. A revision to the forecast makes it possible to more accurately understand the reasons employment is changing.

The basic assumptions (global, state, regional, and state metrics) that were used to prepare the 2015 cber.co forecast remain unchanged.

- 2013-2014 Employment Presented in 2014 vs.
- 2013-2014 Employment Benchmarked in March 2015



Source: Bureau of Labor Statistics, cber.co.

Note: “Preliminary” is the 2014 data published in 2014; the “2015 Benchmark” data is the final revision for 2013 and the second revision for 2014.



# Colorado Employment Forecast Based on Benchmark Revisions



# 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 of the original forecast. In the short period 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.

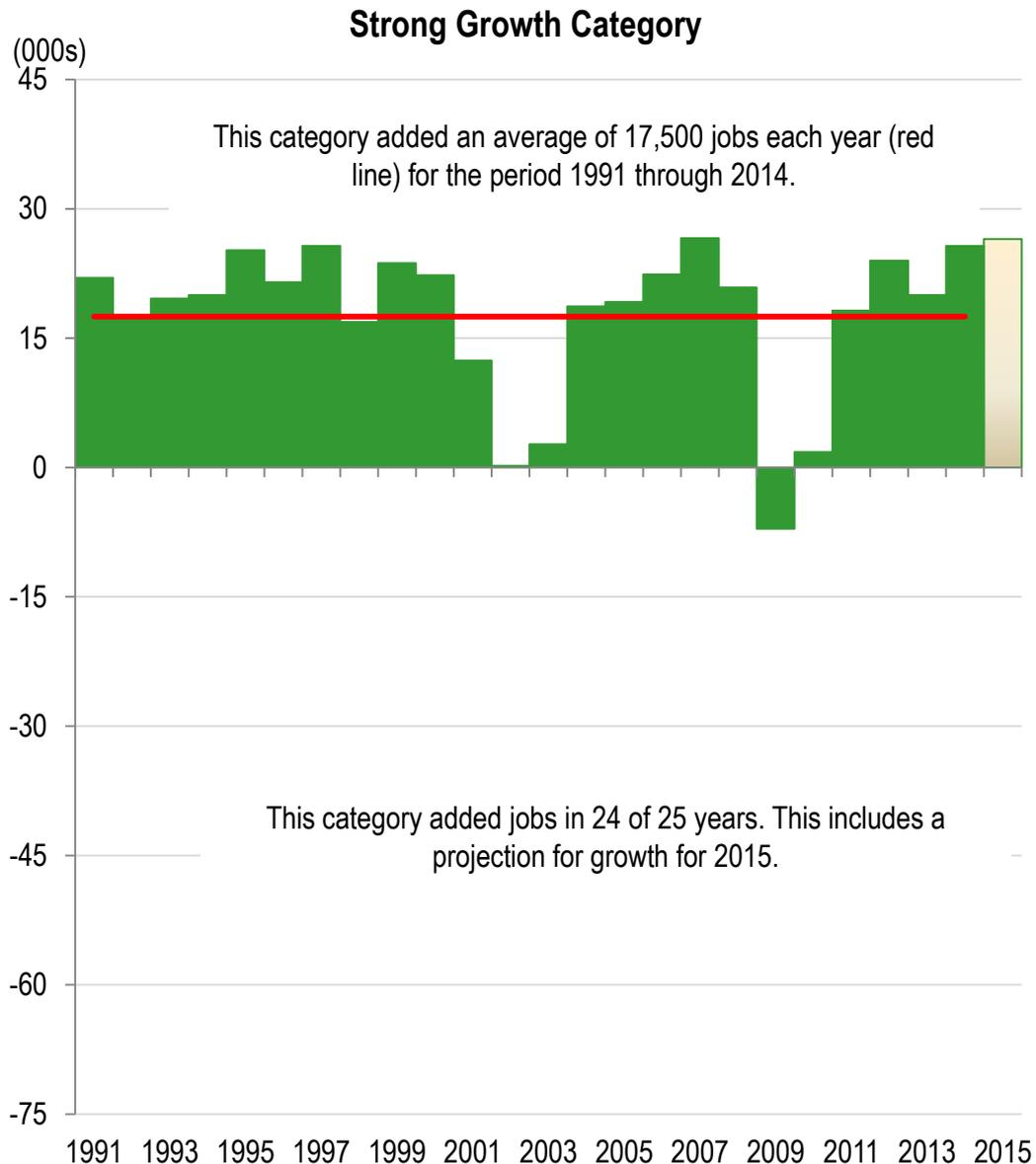
- Professional, Scientific, and Technical Services
- Management of Companies and Enterprises
- Administrative - Business to Business (Not Employment Services)
- Private Education
- Health Care
- Arts, Entertainment, and Recreation
- Other Services.

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 786,700 workers, 32.0% of total employment

In 2015, absolute job growth of this category will be similar to job growth in 2007 and 2014.

In 2015, between 24,500 and 28,500 workers will be added at a rate of 3.1% to 3.6%. This rate of growth is slightly greater than 2014



Source: Bureau of Labor Statistics, cber.co.

# Impact of Revisions Strong Growth Category

## Estimated Job Growth Estimates for January 11 Forecast + 20,000 to 24,000 Employees

- 20,300 jobs added in 2013
- 20,900 jobs added in 2014
- 782,500 employees in 2014

•In 2015, between 20,000 and 24,000 workers will be added at a rate of 2.8% to 3.0%.

*BLS significantly underestimated the growth of jobs in the Strong Growth Category.*

## Estimated Job Growth After Benchmark Revisions + 24,500 to 28,500 Employees

- 20,000 jobs added in 2013
- 25,600 jobs added in 2014
- 786,700 employees in 2014

•In 2015, between 24,500 and 28,500 workers will be added at a rate of 3.1% to 3.6%

*The number of jobs added will be comparable to 2007 and 2014.*

# 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:

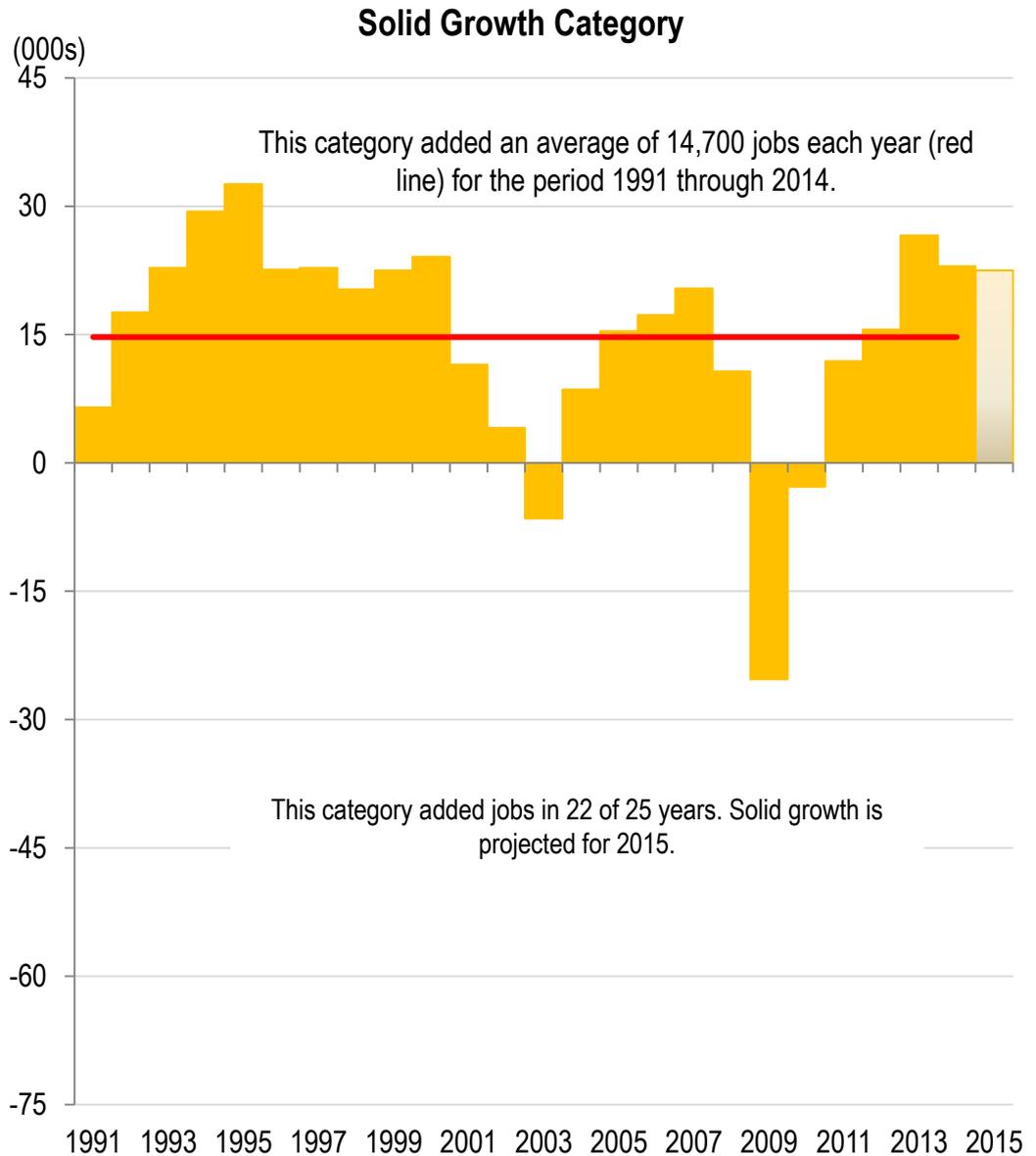
1994 685,400 workers, 39.0% of total employment

2004 848,000 workers, 38.9% of total employment

2014 961,100 workers, 39.0% of total employment

In 2015 absolute job growth in this category will be comparable to most years during the 1990s.

In 2015, between 22,500 and 26,500 workers will be added at a rate of 2.3% to 2.8%. This rate of growth is similar to 2014.



# Impact of Revisions Solid Growth Category

## Estimated Job Growth Estimates for January 11 Forecast + 22,000 to 28,000 Employees

- 27,600 jobs added in 2013
- 25,200 jobs added in 2014
- 964,000 employees in 2014

•In 2015, between 22,000 and 28,000 workers will be added at a rate of 2.6% to 2.8%. The rate of growth is similar to 2014.

*BLS overestimated the growth of jobs in the Solid Growth Category.*

## Estimated Job Growth After Benchmark Revisions + 22,500 to 26,500 Employees

- 26,700 jobs added in 2013
- 23,300 jobs added in 2014
- 961,100 employees in 2014

•In 2015, between 22,500 and 26,500 workers will be added at a rate of 2.3% to 2.8%

*The number of jobs added will be similar to 2014.*

# 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.

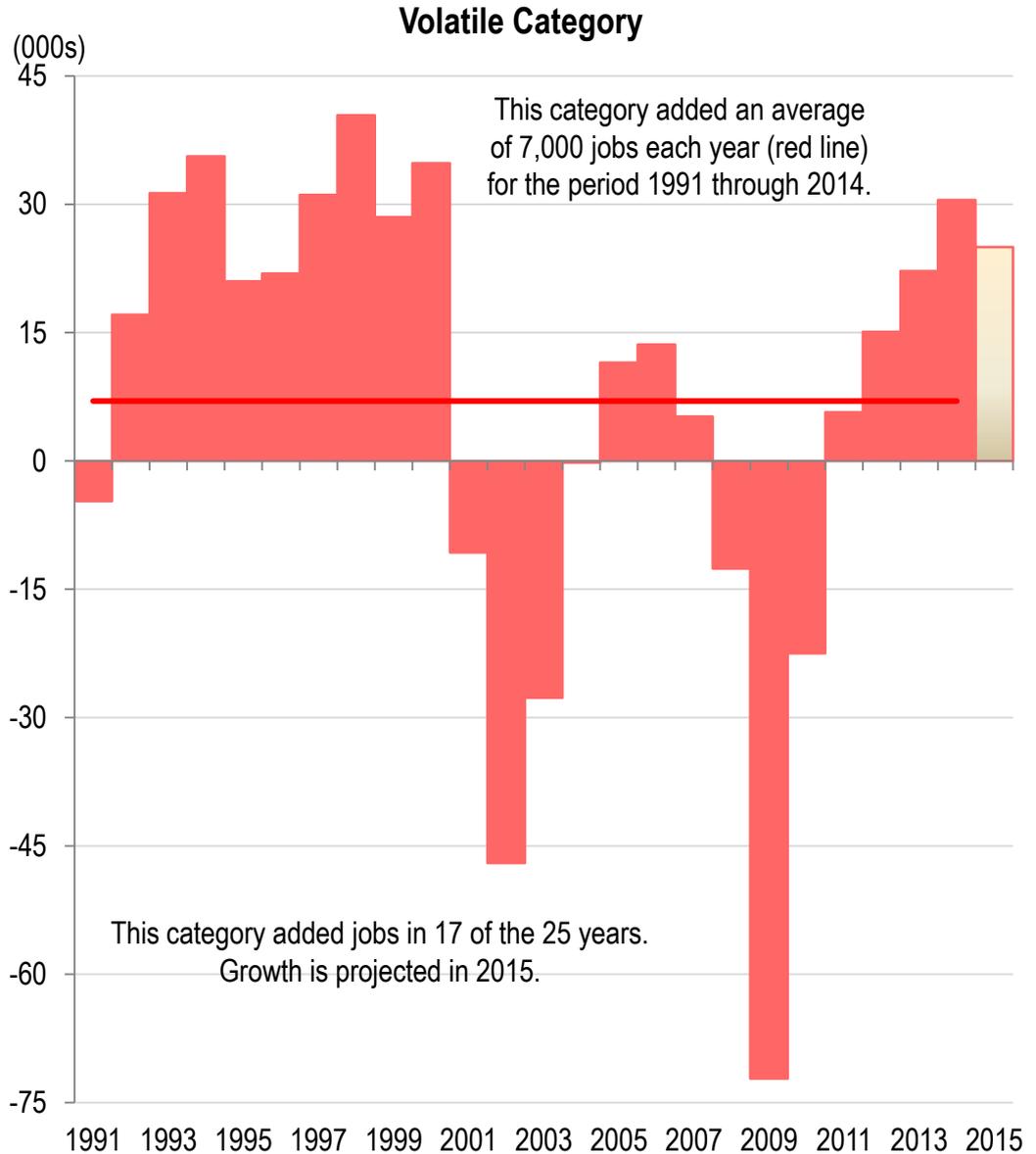
The sectors are:

- 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 713,000 workers, 29.0% of total employment

In 2015 between 23,000 and 27,000 jobs will be added, at a rate of 3.2% to 3.8%. This rate of growth is slower than 2014.



# Impact of Revisions Volatile Category

## Estimated Job Growth Estimates for January 11 Forecast + 23,000 to 27,000 Employees

- 19,800 jobs added in 2013
- 25,600 jobs added in 2014
- 706,100 employees in 2014

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.

*BLS significantly underestimated the growth of jobs in the Volatile Category.*

## Estimated Job Growth After Benchmark Revisions + 23,000 to 27,000 Employees

- 22,200 jobs added in 2013
- 30,000 jobs added in 2014
- 713,000 employees in 2014

•In 2015, between 23,000 and 27,000 workers will be added at a rate of 3.2% to 3.8%. (Note: the rate of growth is different because of a different base.)

*The rate of growth is slower than 2014.*

# The Bottom Line

The recalibration of the 2015 forecast resulted in the following changes:

- The Strong Growth Category was revised upward by 4,500.
- The Solid Growth Category was revised downward by 1,500.
- The Volatile Category remained unchanged.
- The net change to the 2015 forecast was an upward revision of 3,000; however, the 2015 forecast is for total growth slightly below the 2014 total.

# 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 consistently shown strong job growth over time. The category added jobs as expected in 2014. The larger sectors (Health Care and PST,) grew at a rate faster than the state. Arts, Entertainment, and Recreation, a smaller sector, also expanded at a rate greater 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 Wholesale Trade expanded at faster rates than the state.

Finally, the Volatile Category of sectors (red) was 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 faster rates than the overall state average.

Note: This data reflects 2013 and 2014 data benchmarked in March 2015.

### Strong, Solid, and Volatile Growth Categories



Source: Bureau of Labor Statistics, cber.co.

Colorado-based Business and Economic Research <http://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 3.0% to 3.2%. Estimated average employment will be 2,536,800 workers in 2015.

## Strong Growth Category (About 32% of total employment)

The rate of job growth for this category will be **3.1% to 3.6%**.

## Solid Growth Category (about 39% of total employment)

In 2015, the rate of job growth will be **2.3 to 2.8%**.

## Volatile Growth Category (29% of total employment)

In 2015, the rate of job growth will be **3.2% to 3.8%**.

The performance of the Strong Growth Category will most likely determine the accuracy of the cber.co 2015 forecast. There is more upside risk than downside risk to the forecast. If the Volatile Category exceeds forecast, the number of jobs added could possibly exceed 79,000 workers.

Source: cber.co.

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

## 2015 Employment Outlook

### Optimistic Scenario

- U.S. Real GDP greater than 2.9%.
- Colorado will add more than 79,000 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 73,000 to 79,000 workers, job growth will be 2.8% to 3.0%.

### Pessimistic Scenario

- U.S. Real GDP less than 2.5%.
- Less than 73,000 Colorado workers.

The probability of these scenarios follows:

- Most Likely 60%
- Optimistic 25%
- Pessimistic 15%.

There is slightly more upside potential than downside risk.

# 2015 Employment Forecast Most Likely Scenario

## Strong Growth Category

+ 24,500 to 28,500 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

+22,500 to 26,500 Employees

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

*In 2015 Colorado will add 73,000 to 79,000 jobs.*

*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.*

## 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



# Summary of Recalibrated Forecast

# Summary of 2015 Economic Forecast

## The Short Version

This summary provides a basic overview of 2015 economic expectations for Coloradans. For more details see the original 2015 forecast <http://cber.co/economic-forecasts/cber-co-economic-forecast/>.

### 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 78,900 jobs in 2014, the most likely scenario is that the state will see job growth in the range of 73,000 to 79,000 in 2015. Jobs will be added at a rate of 3.0% to 3.2%. In other words, it will continue along a path similar to 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; and Retail Trade. About 64.5% of total jobs will be added in the top five sectors. These sectors are projected to increase by 4.5% to 4.7% in 2015



# Summary of Revisions

## Revisions by Category

The magnitude of the errors in the preliminary BLS data painted an incorrect picture of the strength of the economy and the categories of industries that were driving it. By category, these errors were:

- BLS significantly underestimated the growth of jobs in the Strong Growth category. The sectors in this category have the least volatility of the three sectors.
- BLS overestimated the growth of jobs in the Solid Growth category. The sectors in this category have limited volatility.
- BLS significantly underestimated the growth of jobs in the Volatile Category. Because of the volatility of the sectors in this category, it is somewhat understandable why their growth of the sector was understated.

## Implications

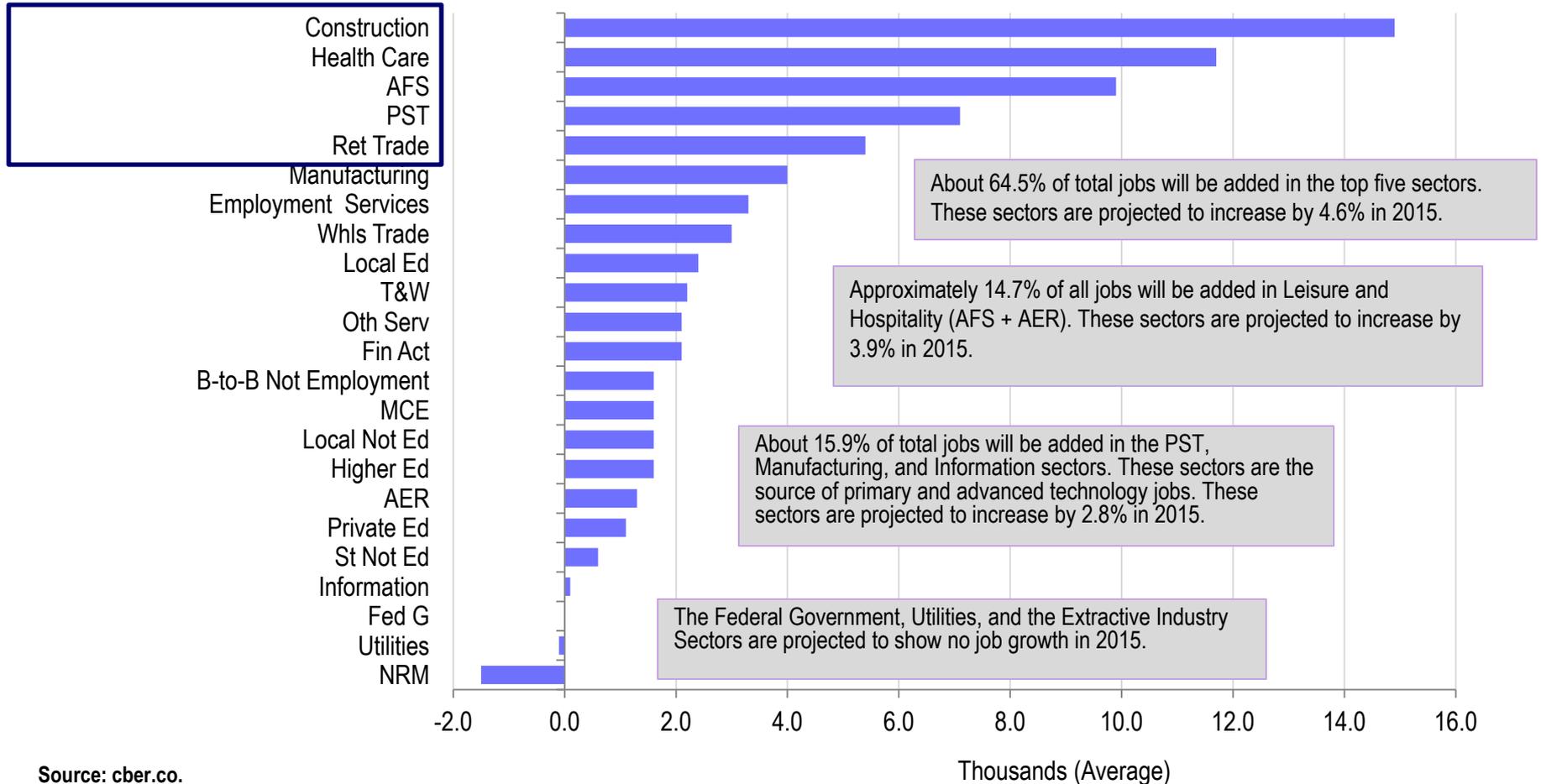
The implications of refining the forecast follow:

- The BLS revisions provided a clearer definition of the strength of the economy and the categories of industries that were driving it.
- The recalibrated forecast increased the probability that the most likely scenario would occur. In addition, it reduced the downside risk in the forecast.
- Many state forecasts for 2015 were based on 2014 preliminary employment data. As a result, they may not accurately reflect the changes in the economy.

# Forecast Change in Employment 2015

## Employment Will Increase by 3.0% to 3.2%

Job Change All Sectors



About 64.5% of total jobs will be added in the top five sectors. These sectors are projected to increase by 4.6% in 2015.

Approximately 14.7% of all jobs will be added in Leisure and Hospitality (AFS + AER). These sectors are projected to increase by 3.9% in 2015.

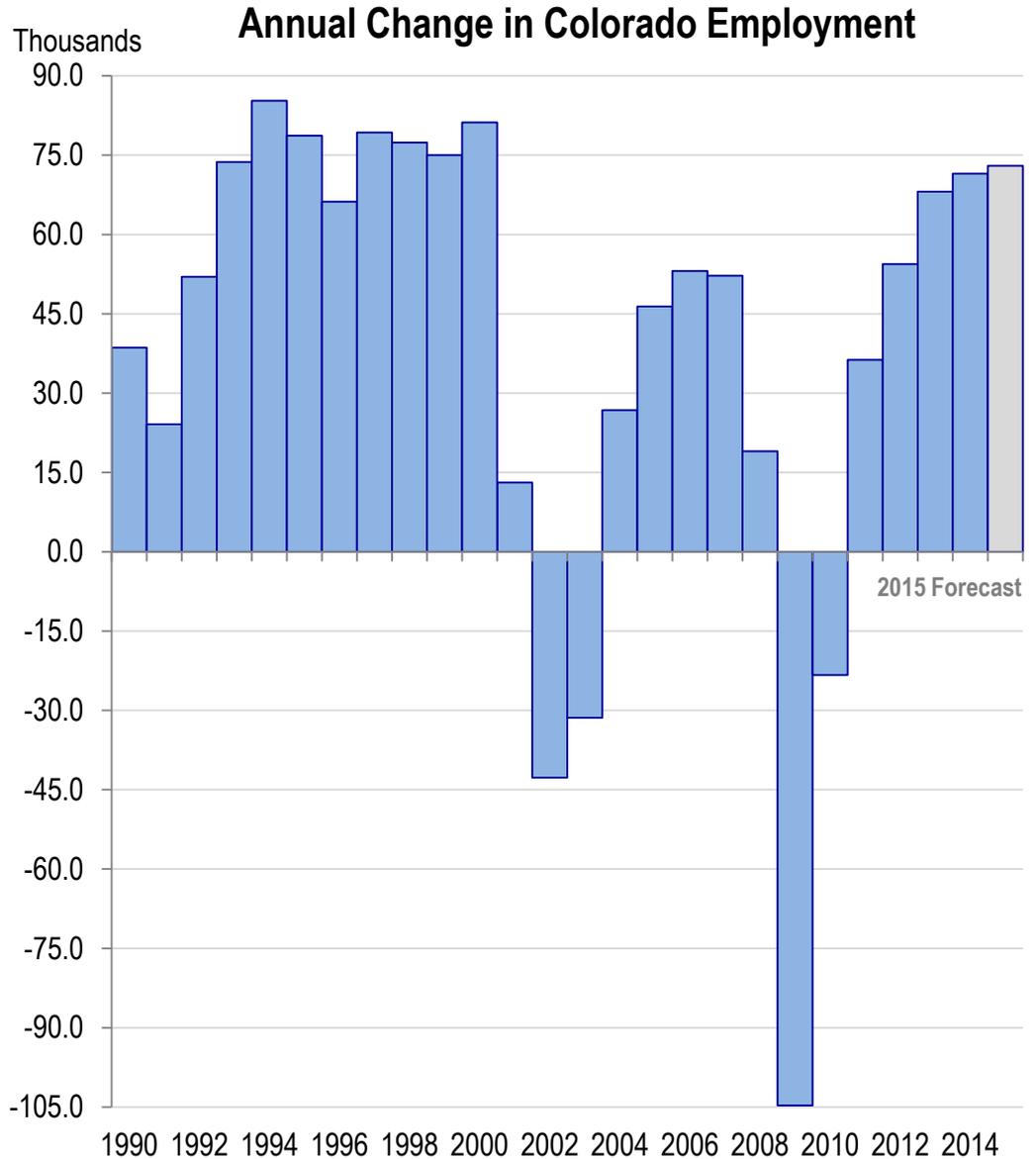
About 15.9% of total jobs will be added in the PST, Manufacturing, and Information sectors. These sectors are the source of primary and advanced technology jobs. These sectors are projected to increase by 2.8% in 2015.

The Federal Government, Utilities, and the Extractive Industry Sectors are projected to show no job growth in 2015.

## Annual Employment Change in Colorado

In 2014, Colorado experienced accelerating job growth for the fourth consecutive year. The state added 78,900 workers, an increase of 3.3% on a base of 2,381,900 (2013).

The state will add 73,000 to 79,000 jobs in 2015. Colorado employment will increase by 3.0% to 3.2%.



Source: Bureau of Labor Statistics, [cber.co](http://cber.co).



# Appendix



# 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 20<sup>th</sup> 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 20<sup>th</sup> 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.



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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, and Broomfield Economic Development Corporation. Horvath has also been the lead for the photonics/electronics cluster, which is part of OEDIT’s early stage and proof of concept programs.