



Review of Colorado Economy Analysis of First Three Quarters of 2015

Colorado-based Business and Economic Research

October 25, 2015



Overview

The focus of the October economic review is on Colorado employment and Gross Domestic Product for the state's seven MSAs. When evaluating the economy it is necessary to consider both employment and GDP because industries contribute to the economy in different ways.

Colorado is on track to add at least 61,000 jobs in 2015. GDP growth is solid to strong in most regions of the state.

This brief analysis is divided into the following sections.

- Summary of Factors Impacting U.S. Growth That Will Directly or Indirectly Impact Colorado.
- Colorado Employment and Unemployment.
- Change in Colorado Employment by Performance Category.
- In the News.
- Colorado Gross Domestic Product by Metropolitan Statistical Area.
- Colorado Gross Domestic Product – MSA vs. U.S. MSA Portion 2001 – 2014.
- Colorado Gross Domestic Product – Size of MSA GDP and Contribution to GDP Growth by Sector.
- Colorado Gross Domestic Product – Real Per Capita GDP Growth.
- Colorado Gross Domestic Product – Government GDP by MSA.
- Summary - GDP, Unemployment, and Employment.
- Appendix.

The 2015 cber.co forecast can be found at <http://cber.co/economic-forecasts/cber-co-economic-forecast/>

Summary of Factors Impacting U.S. Growth

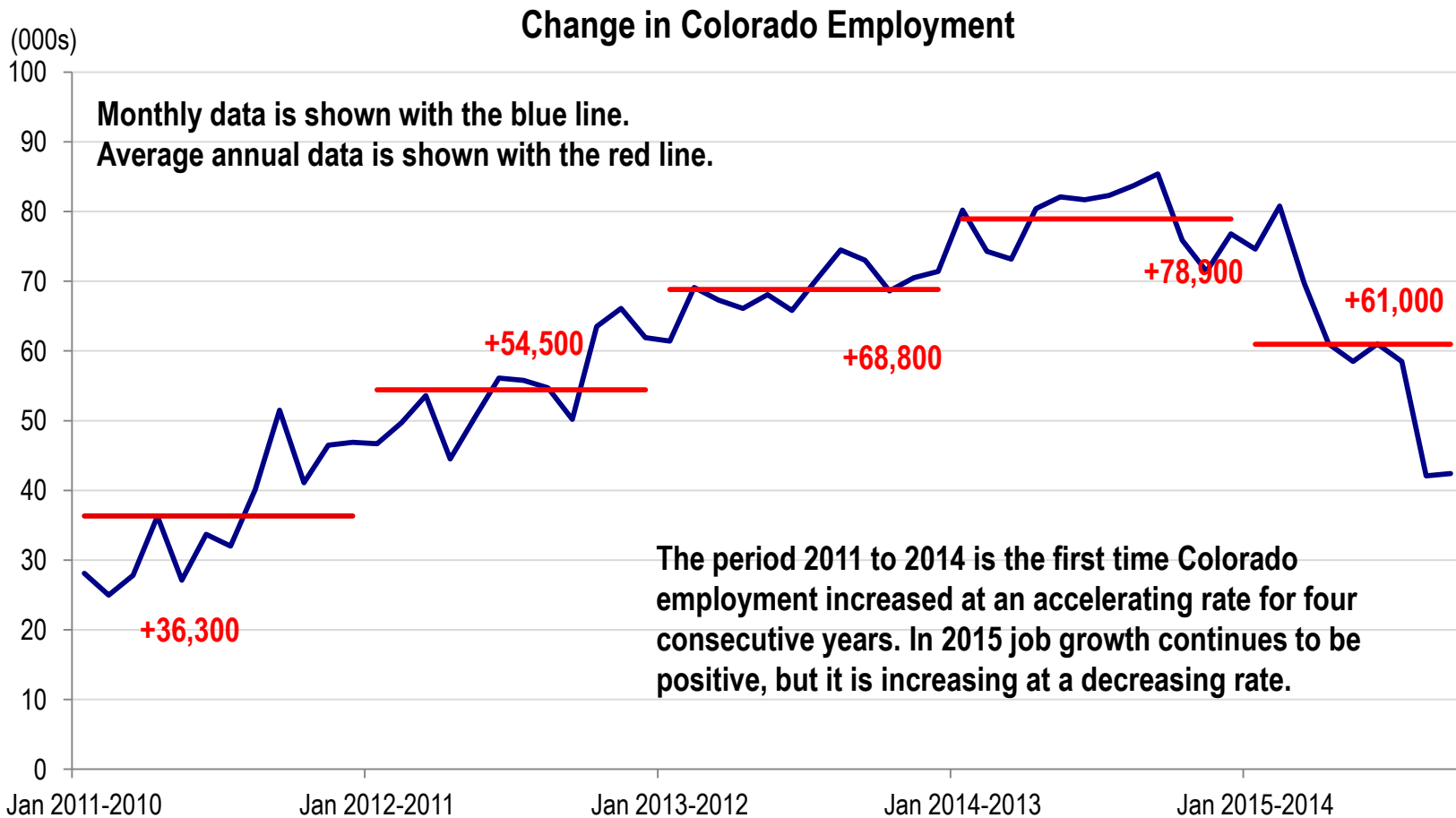
Overall, the U.S. economy is on solid footing. There are factors that have created headwinds that have had an impact on U.S. economic growth and/or will affect it in the months ahead. Ultimately these issues will directly or indirectly impact the Colorado economy.

- The U.S. is on track to add about 3.0 million jobs in 2015. The rate of job growth has declined as the year has progressed.
- Real GDP will expand at a rate of 2.5% in 2015.
- The primary reason for slower growth in the U.S. is the slowdown in the Chinese economy and its immediate impact on trading partners.
- Will U.S. employment and GDP growth be strong enough to keep the global economy from going into a recession?
- There is always uneasiness associated with conflict in other regions of the world. Currently, the Middle East is the location of the most prevalent conflict.
- Since the end of the recession, the services sectors have shown strong and steady growth. Manufacturing has been weaker and more volatile. It will be sluggish through the end of the year.
- Though there is typically a disconnect between the equities markets and the performance of the economy recent volatility in the stock market has caused consumers to be cautious, which in turn affects their willingness to spend.
- The price of oil has remained in the 40s. Tier I oil production states have suffered the most. In Colorado, rig count has dropped, employment has begun to decline, and production has remained solid – but that will change in the near-term. At some point, the industry will move forward on a much smaller scale.
- The Fed – will they or won't they raise interest rates? At this point, does a rate increase of 25 basis points really matter in the short run?



Colorado Employment and Unemployment

Change in Colorado Employment Year-Over-Year



Source: Bureau of Labor Statistics, NSA.

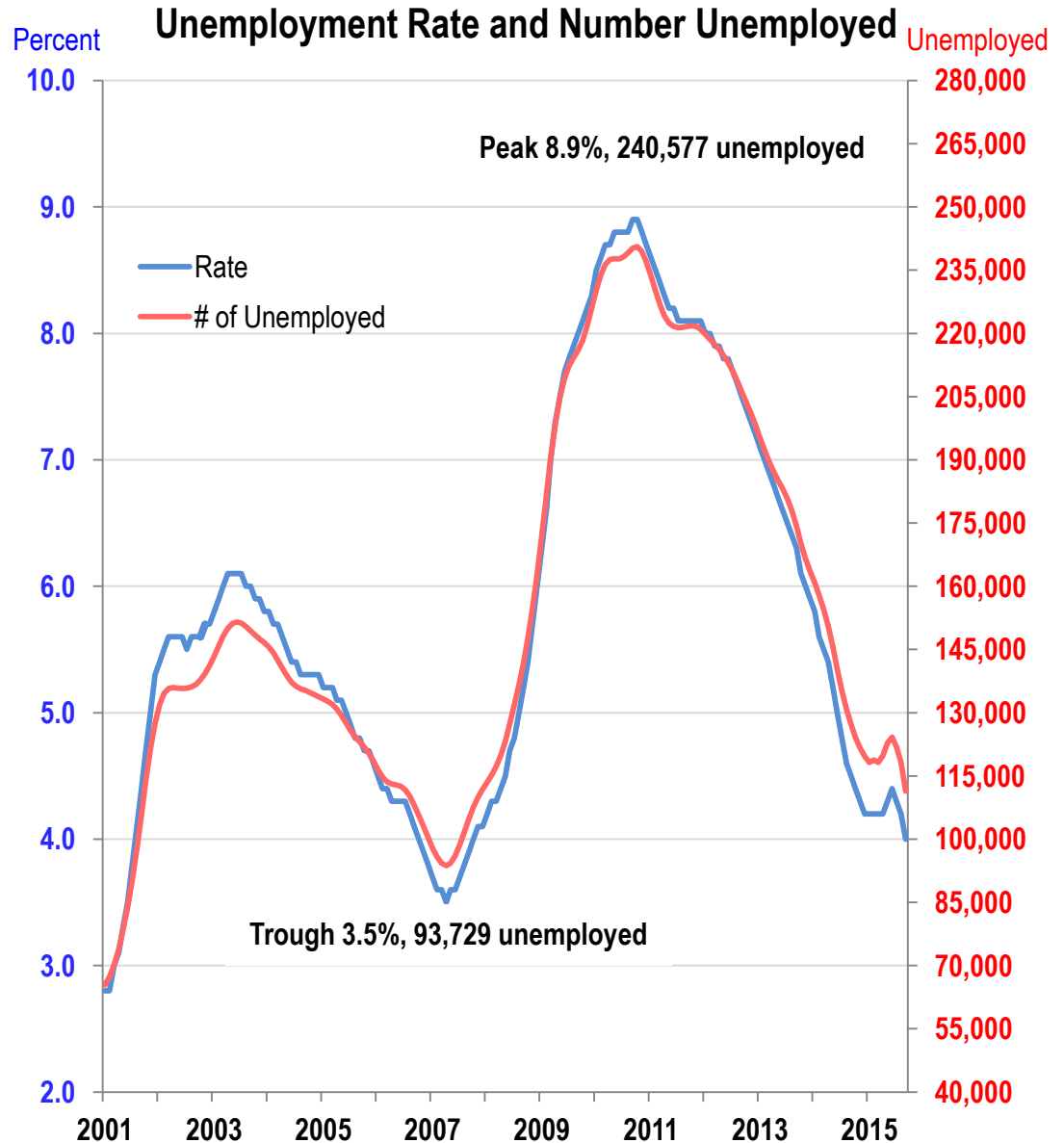
Colorado Unemployment Rate and Number of Unemployed

The number of unemployed has slowly trended downward since peaking in late 2010.

The total number of unemployed workers (red) at the end of September 2015 was 111,380.

The total number of unemployed is 17,651 greater than the trough in May 2007 and 129,197 less than the peak in October 2010.

Lower unemployment rates have brought about shortages of trained workers in key sectors and occupations. The 2015 unemployment rate (blue) of 4.0% is down from 4.5% in September 2014.



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

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Change in Colorado Employment by Performance Category



cber.co Forecast and Analysis

cber.co developed an efficient way to forecast and analyze job employment for Colorado. Twenty-two NAICS industries were divided into three categories based on the consistency, volatility, and the magnitude of their job growth. The categories are:

- Strong Growth – These industries consistently show stronger than average job growth. The focus of these industries is business and personal services.
- Solid Growth – These industries consistently show solid job growth, at levels below the Strong Growth category. Their focus is trade and government.
- Volatile – These industries have consistently been volatile. In many cases that volatility occurs for a variety of reasons such as changes in technology or industry structure.

The process for creating these categories is discussed in greater depth in the Appendix.

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.

Over time, the Solid Growth Category of sectors (yellow) has been more volatile than the Strong Growth Category.

Finally, the Volatile Category of sectors (red) was a significant source of growth in 2013 and 2014 and is projected to do the same in 2015. Prior to that the category was a source of weak job growth or job losses.



Source: Bureau of Labor Statistics, cber.co.

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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:

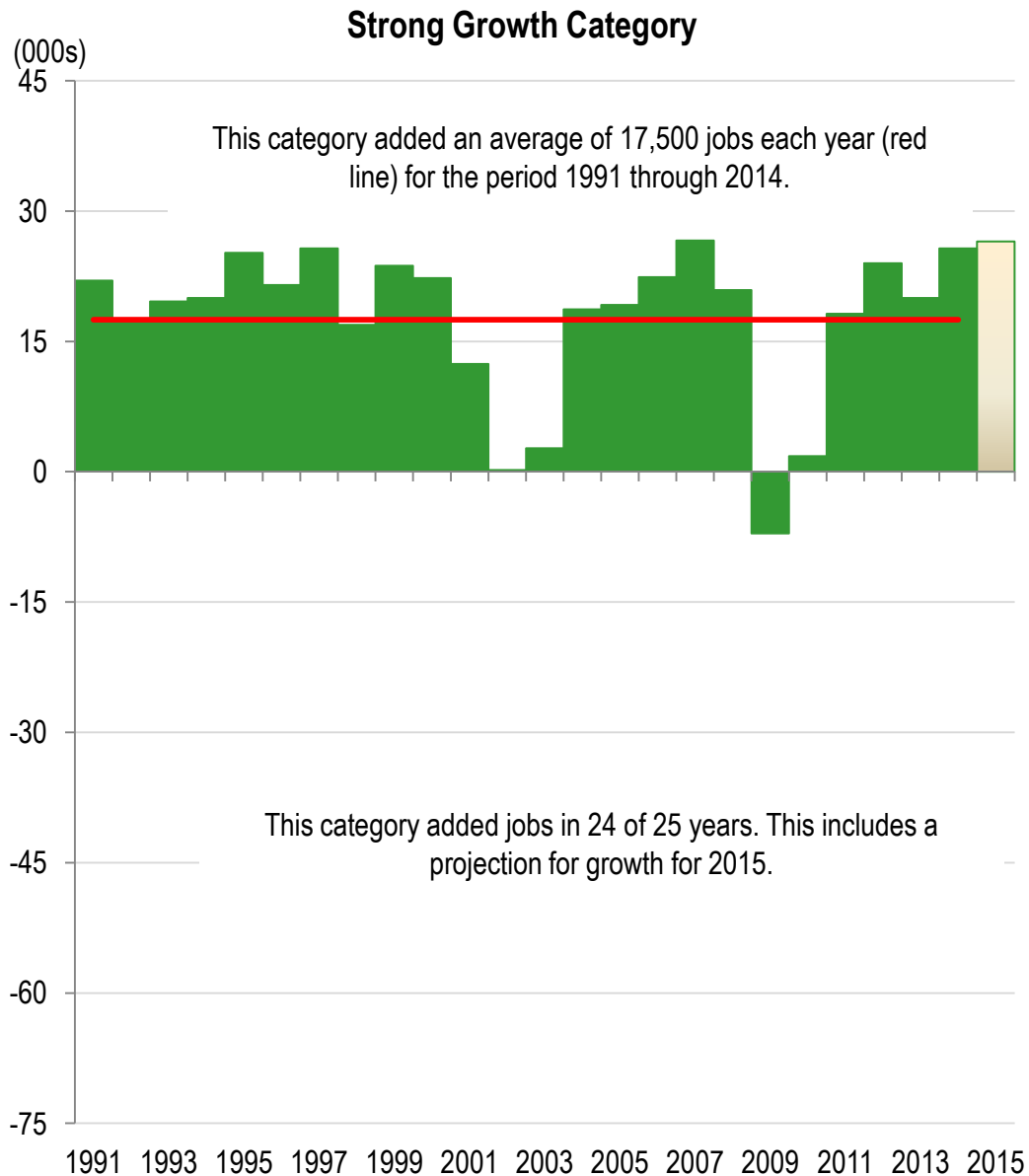
1994 445,200 workers, 25.4% of total employment
 2004 615,900 workers, 28.3% of total employment
 2014 786,700 workers, 32.0% of total employment

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

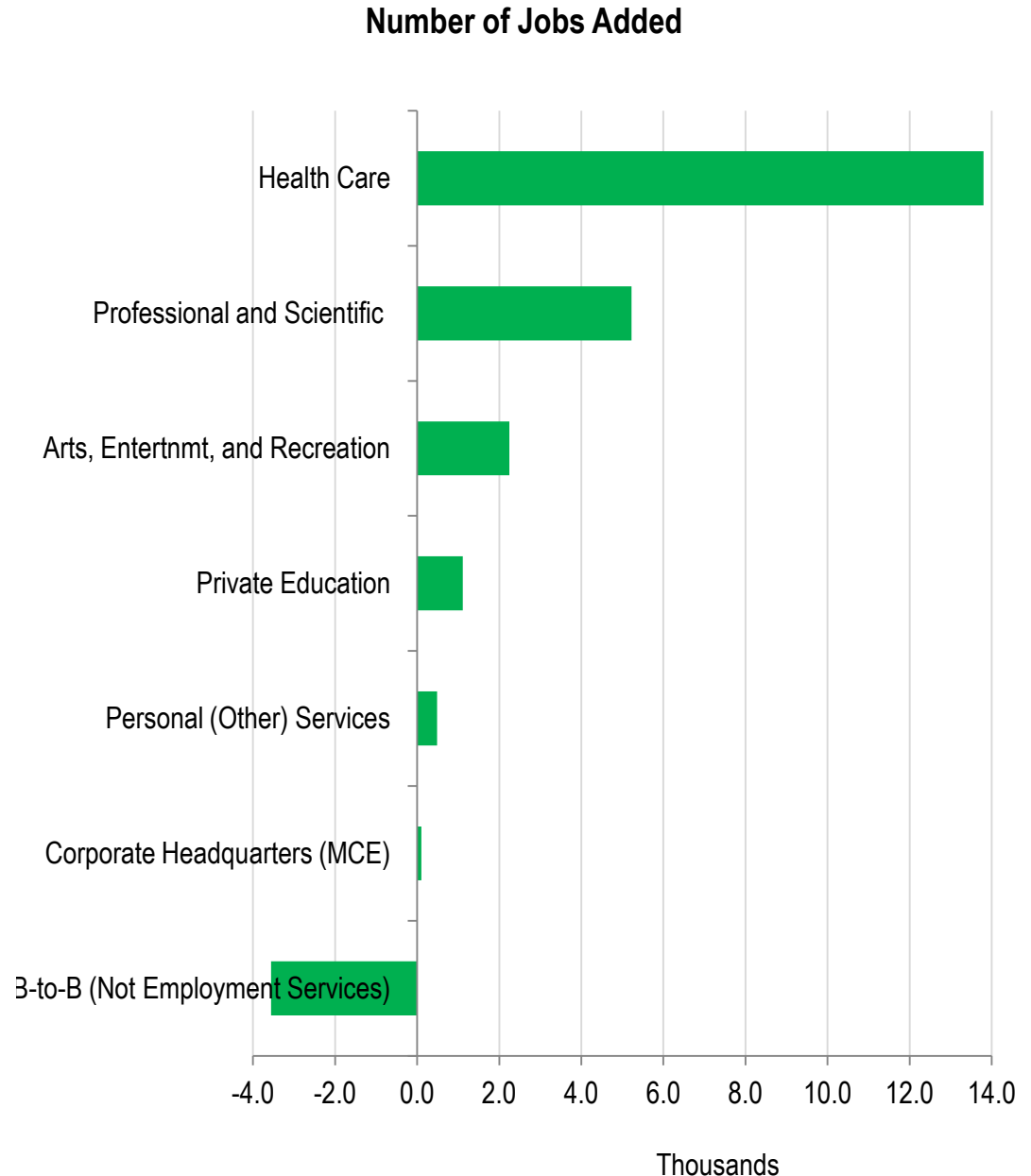
Source: Bureau of Labor Statistics, cber.co.

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● Strong Growth Sectors

- Through the first nine months of 2015 this group of industries added 19,400 jobs compared to the same period in 2014.
- This category is projected to add 24,500 to 28,500 jobs for the year. To date, its performance is below the projected range.
- In 2014, these sectors accounted for 32.6% of the growth and 32.0% of total employees in 2014.
- Health Care and Professional, Scientific, and Technical Services were the sectors with the strongest growth for the first nine months of 2015. Most likely the data for Administrative/B-to-B (Not Employment Services) is understated.



Source: Bureau of Labor Statistics.

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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:

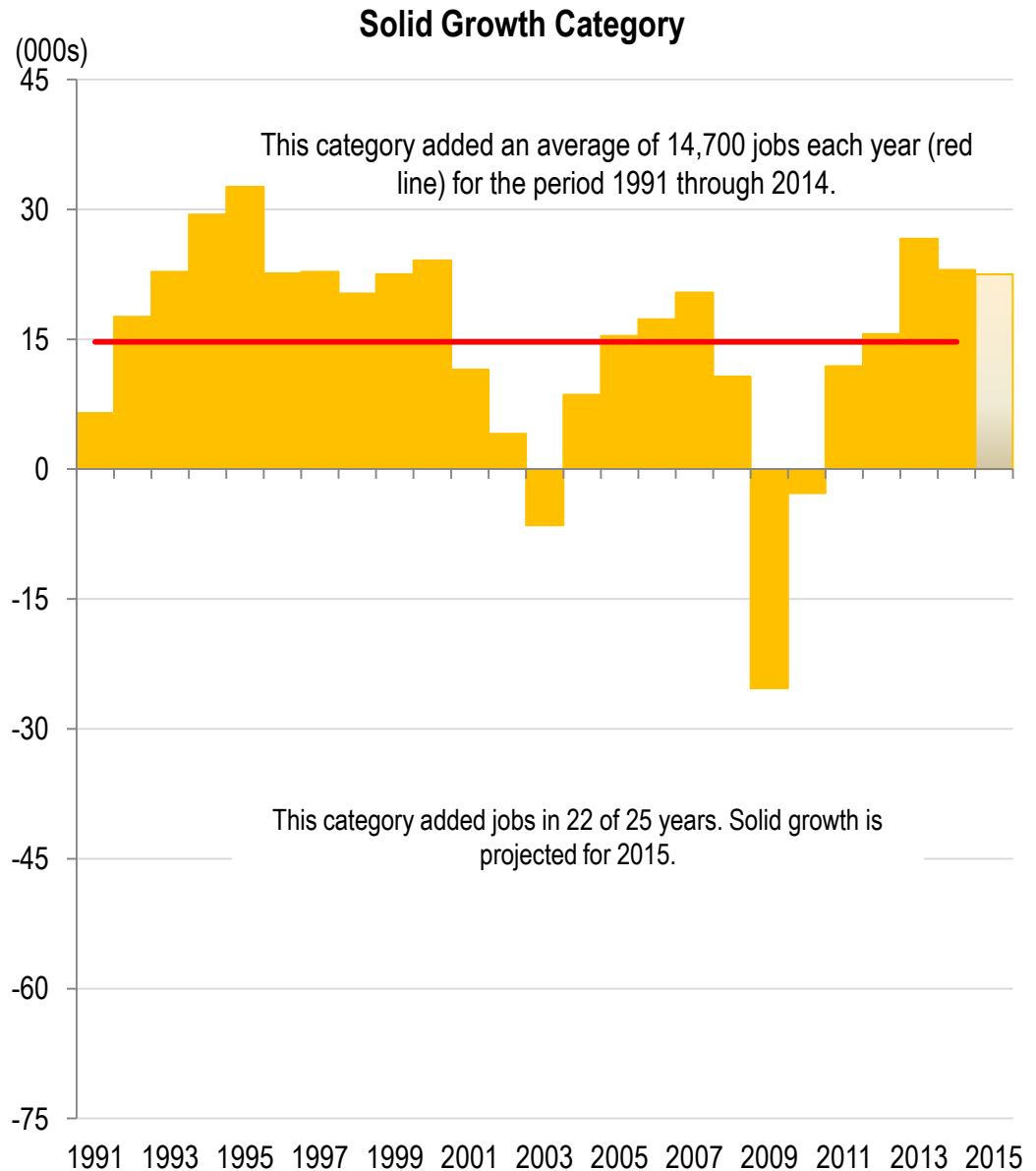
1994 685,400 workers, 39.0% of total employment

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 slightly less than 2014.



Source: Bureau of Labor Statistics, cber.co.

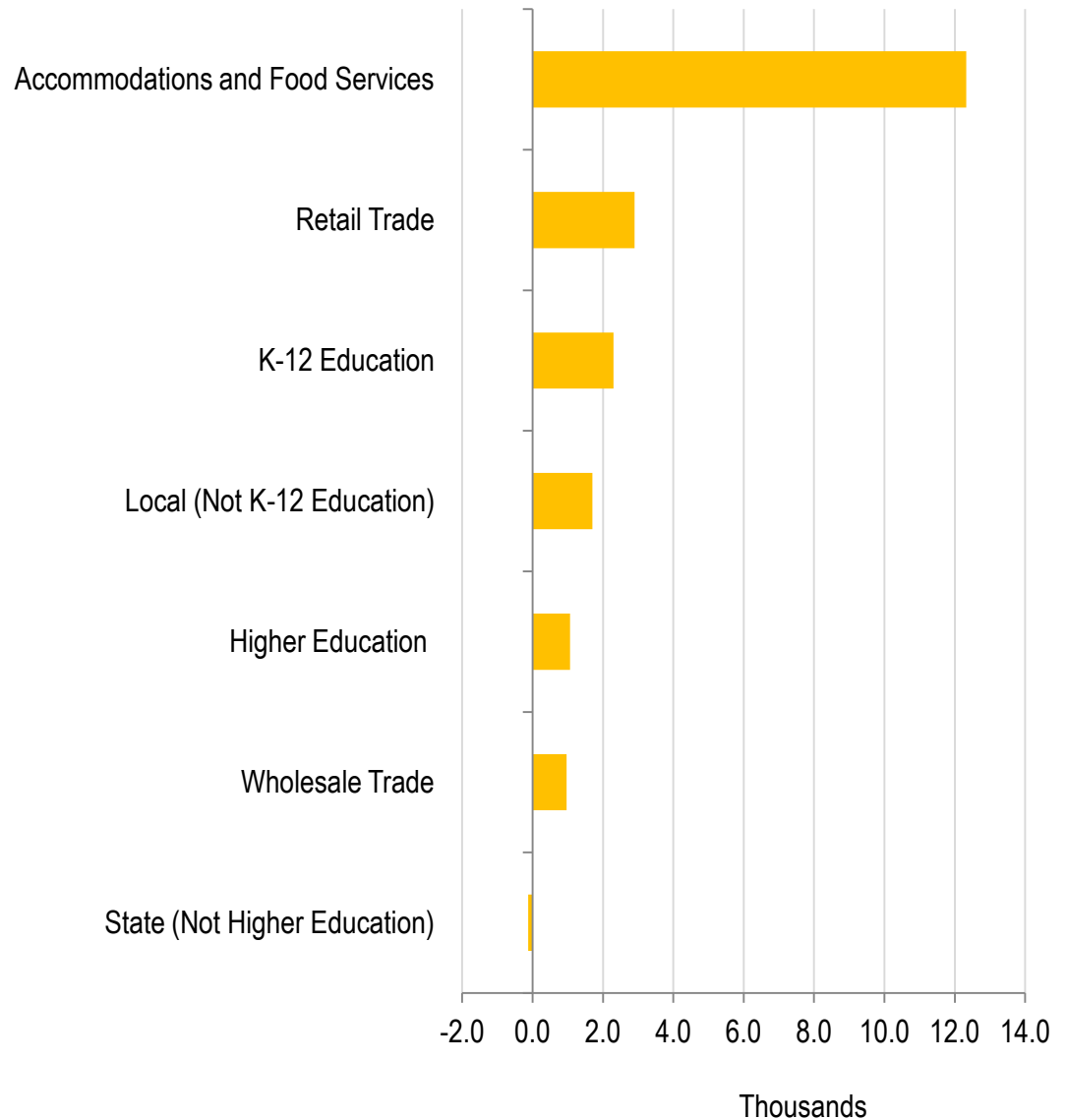
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Solid Growth Sectors

- Through the first nine months of 2015 this group of industries added 21,100 jobs compared to the same period in 2014.
- This category is projected to add 22,500 to 26,500 jobs for the year. To date, its performance is below the projected forecast range.
- These sectors accounted for 29.1% of total job gains and 39.0% of total employees in 2014.
- A majority of the growth for the first nine months of 2015 has occurred in the Accommodations and Food Services, Retail Trade, and Local Government Sectors.

Number of Jobs Added



Source: Bureau of Labor Statistics.

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.

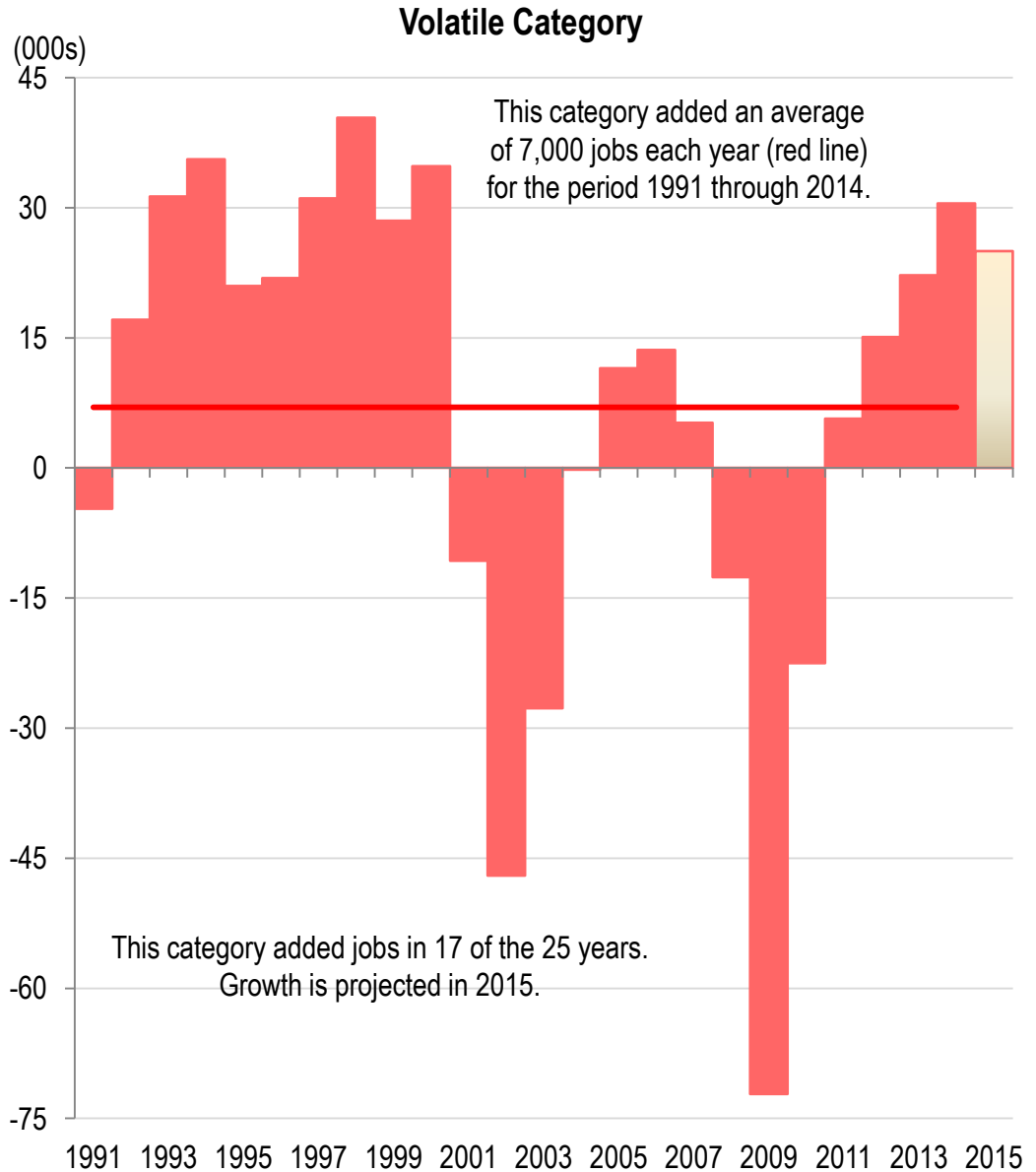
The sectors are:

- 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.



Source: Bureau of Labor Statistics, cber.co.

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● Volatile Sectors

- Through the first nine months of 2015 this group of industries added 20,500 jobs compared to the same period in 2014.
- This category is projected to add 23,000 to 27,000 for the year. To date, its performance is below the projected forecast range.
- In 2014 these sectors accounted for 32.3% of total job gains and 29.0% of total employees.
- The Construction, Manufacturing, and Financial Activities Sectors added the greatest number of jobs and the Information Sector lost jobs during the first nine months.

Number of Jobs Added



Source: Bureau of Labor Statistics.

Summary of Performance to cber.co 2015

Employment Forecast



On the chart, the forecast ranges for the categories are:

- Strong Growth – green box.
- Solid Growth – yellow box.
- Volatile – pink box.
- Total Employment – grey box.

The blue lines indicate the level of employment from the current BLS data.

Through the first nine months of 2015, all three categories were below their respective forecast ranges.

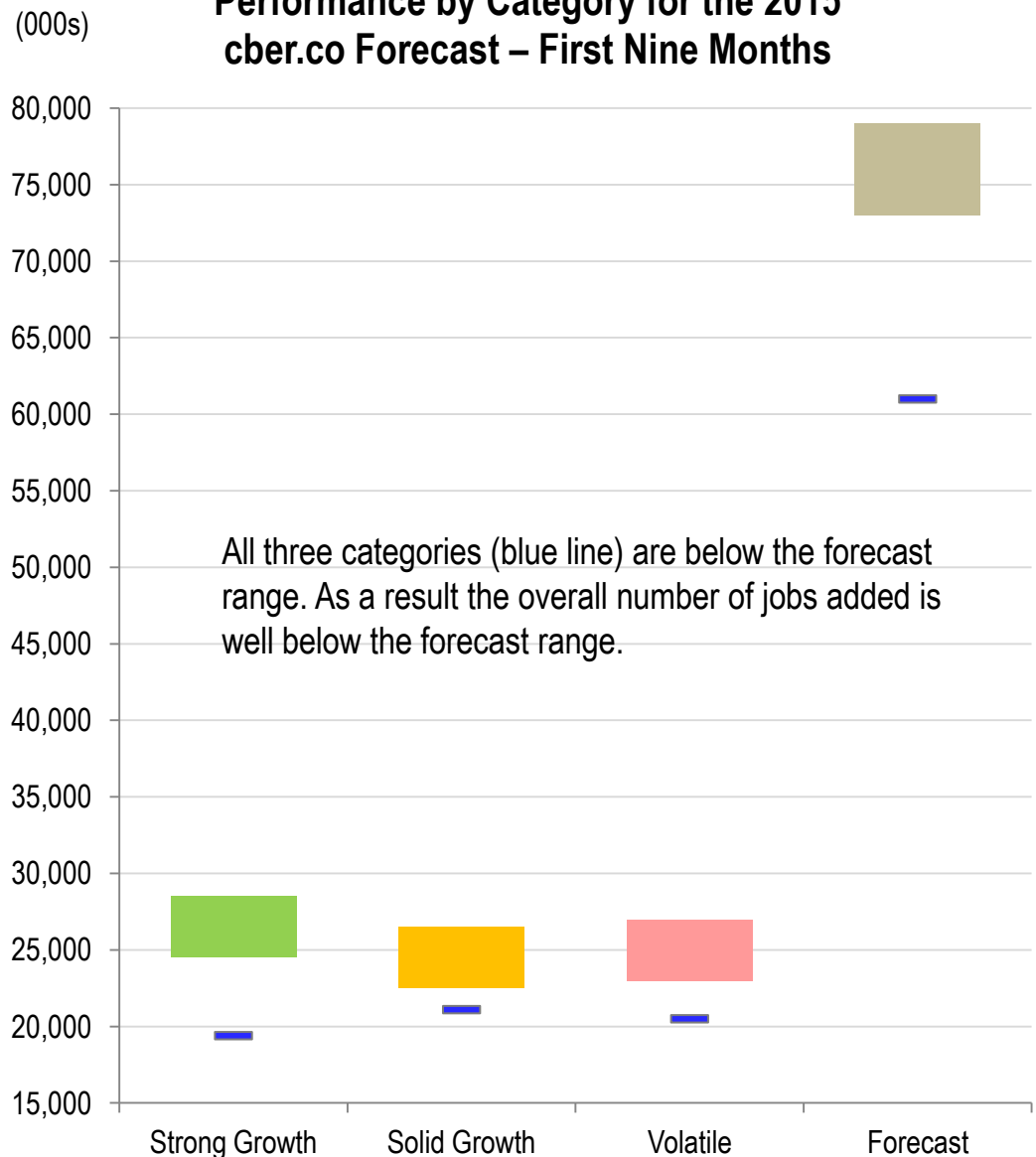
The overall forecast was below the projected range (grey box).

This analysis does not account for projected upward revisions to employment that will take place in March 2016.

Source: Bureau of Labor Statistics, cber.co.

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Performance by Category for the 2015 cber.co Forecast – First Nine Months





In the News

In the News - National

There are mixed messages about the performance of the economy in some of the economic data. It is important to read the headlines and monitor activity on the streets to determine if the data makes sense.

From the Association of General Contractors

- Hot markets included construction of hotels, data centers, and rental housing driven by demand from millennials.
- Sixty percent of displaced construction workers left the labor market or moved into other industries. The shift to other industries was usually made after a long period of not working. During the downturn, fewer young workers were hired and the share of older workers grew faster than in other industries.
- August construction spending was at its highest level in seven years.

From Other Sources

Articles from the Washington Post

- Economists are starting to warn about the risk of a new U.S. recession (within the next two years).
- The global economy is in serious trouble.

On a positive note, companies have a lot of money they are willing to spend. In Q3 there were 1,363 M&A deals valued at \$263 billion. The following mergers and IPOs have ties to Colorado:

- Seagate purchased Dot Hill Systems.
- AB InBev takes over SAB
- CPI Card Group plans IPO.
- Air Methods acquires AirLIFE
- Lionsgate rumored to be merging with Starz
- Cologix (data center) is buying a New Jersey telecom network and data center business.

In the News - Colorado

The Colorado employment data appears to be understating the level of economic activity on the streets. A look at the headlines generally reflects strength in the state economy.

Construction defects

In the last legislative session, Speaker of the House Hollinghurst shut down “construction defects” legislation. Since then, several municipalities have addressed the issue. The passage of the proposed construction defects legislation will help address some affordable housing issues.

Government spending

- The federal government shutdown has been delayed.
- Funding to complete the VA hospital has been approved - again.
- NREL has cut its workforce by 4%.
- Colorado PERA pension plan will miss its full-funding target by 14 years.
- OEDIT has announced that tourism efforts, the National Western, and several companies will receive financial assistance/credits/incentives.

Good News

- Vestas continues to land wind turbine orders.
- DaVita plans major expansion in downtown Denver.
- Delta picks up gates given up by Frontier.

Not so Good News

- Numerous articles claim the oil and gas industry is on life support and it is only a matter of time before there are additional layoffs and reduced production. The oil and gas industry will be smaller and more efficient when the dust settles.
- There were layoffs at Western Forge (150 workers), ECMC (137 workers), EOS CCA (60 workers-closing), Qualcomm (Boulder – 158 workers).
- Frontier Airlines returns to 6 gates at DIA.

In the News - Summary

This look at a mix of the headlines suggests the economy is healthy.

Economic Activity in Colorado is on Solid Footing


- Recent construction spending has been strong and there are commercial and residential areas where there is strong activity.
- There are significant occupational shortages in construction and other industries.
- Companies have money and they are using it to acquire firms that will allow them to strengthen or expand their business.
- Business is good for major Colorado companies and some are talking about expansion.
- Government budgets have improved and they are spending.

There are Concerns about Economic Activity

- The R word is again part of the discussion.
- The slowdown in the global economy, volatility in the stock market, the indecisiveness of the Federal Reserve to raise rates, and lower prices for oil have caused consumers to remain cautious.
- The “mass layoffs” that have been announced are small and across the board. While these layoffs are traumatic to the individuals who are involved, they are not a sign the sky is falling.
- When the dust settles, the oil and gas industry is going to be smaller, but it will be more efficient.



Colorado Gross Domestic Product by Metropolitan Statistical Area



This section looks at the GDP for Colorado's seven MSAs. Industries contribute to the economy in different ways. For that reason it is important to look at both the manner in which employment and gross domestic product impact the growth of the state economy. At the state and MSA level, GDP data is produced once a year.

The information in this section will look at:

- Colorado MSA growth vs. U.S. Metro MSA growth.
- Size of GDP by sector for each MSA.
- Contribution to GDP growth by sector for each MSA.
- Per Capita GDP by MSA.



Colorado Gross Domestic Product

MSA vs. U.S. MSA Portion 2001-2014

Summary of Private Sector GDP Growth by MSA

Colorado MSA Private Sector GDP Growth is **BELOW** the U.S. Metro Portion Private Sector GDP Growth for:

- Boulder
- Colorado Springs
- Pueblo

Colorado MSA GDP Private Sector Growth is **SIMILAR TO** the U.S. Metro Portion Private Sector GDP Growth for:

- Denver
- Fort Collins

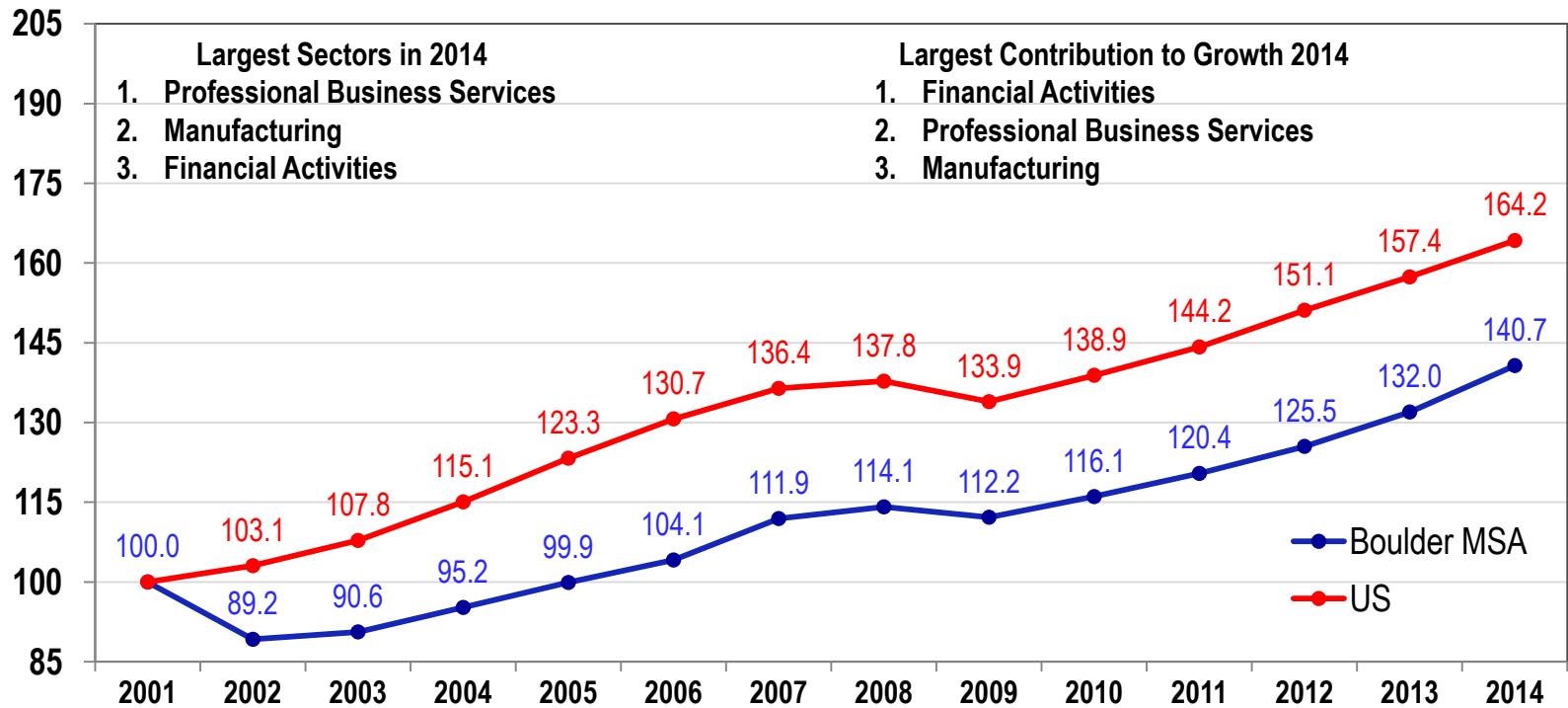
Colorado MSA GDP Private Sector Growth is **GREATER THAN** the U.S. Metro Portion Private Sector GDP Growth for:

- Grand Junction
- Greeley

- Gross Domestic Product Private Sector
- Index of Boulder MSA vs. U.S. Metropolitan Portion (Private)
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Index of Boulder vs. U.S.

Index 2001=100



Source: Bureau of Economic Analysis.

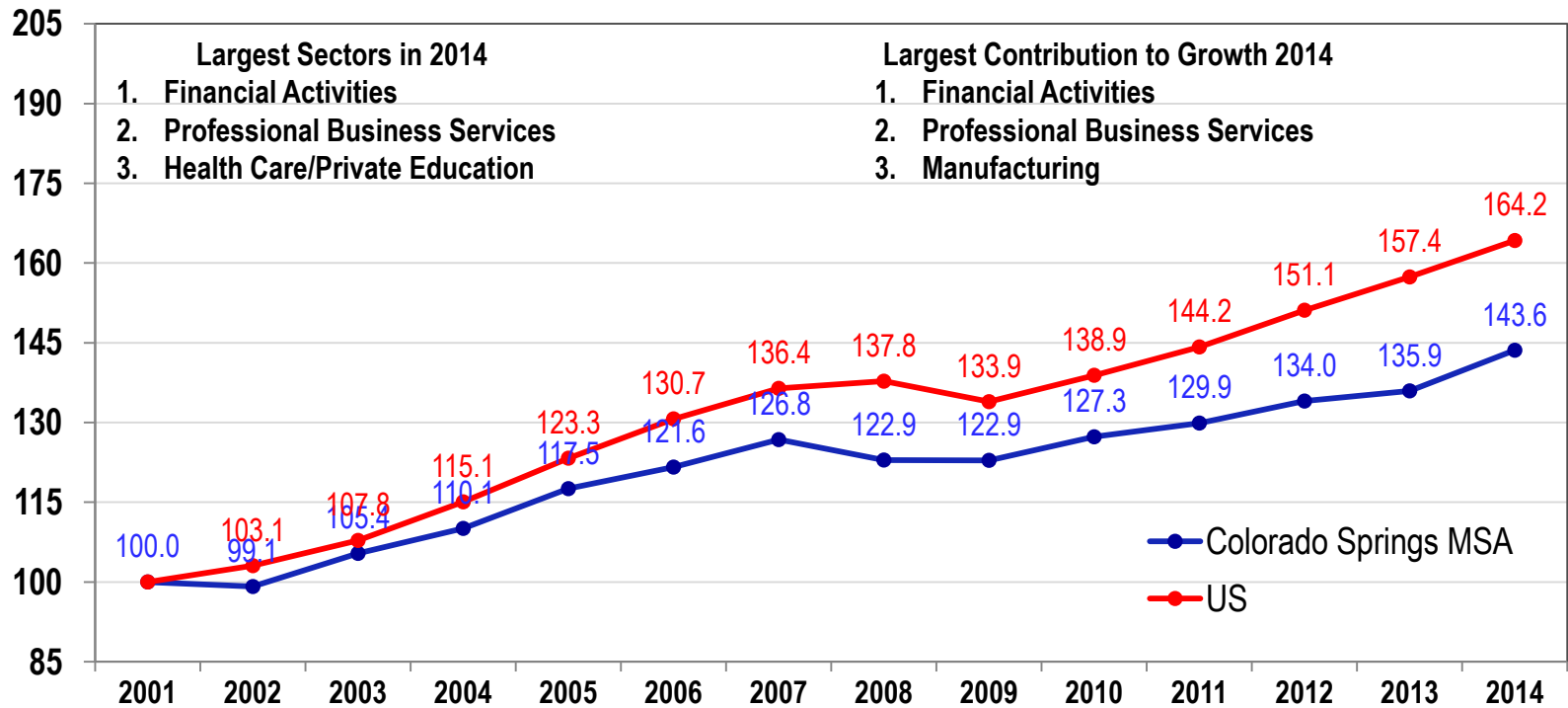
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- Gross Domestic Product Private Sector
- Index of Colorado Springs MSA vs. U.S. Metropolitan Portion (Private)

Index of Colorado Springs vs. U.S.

Index 2001=100



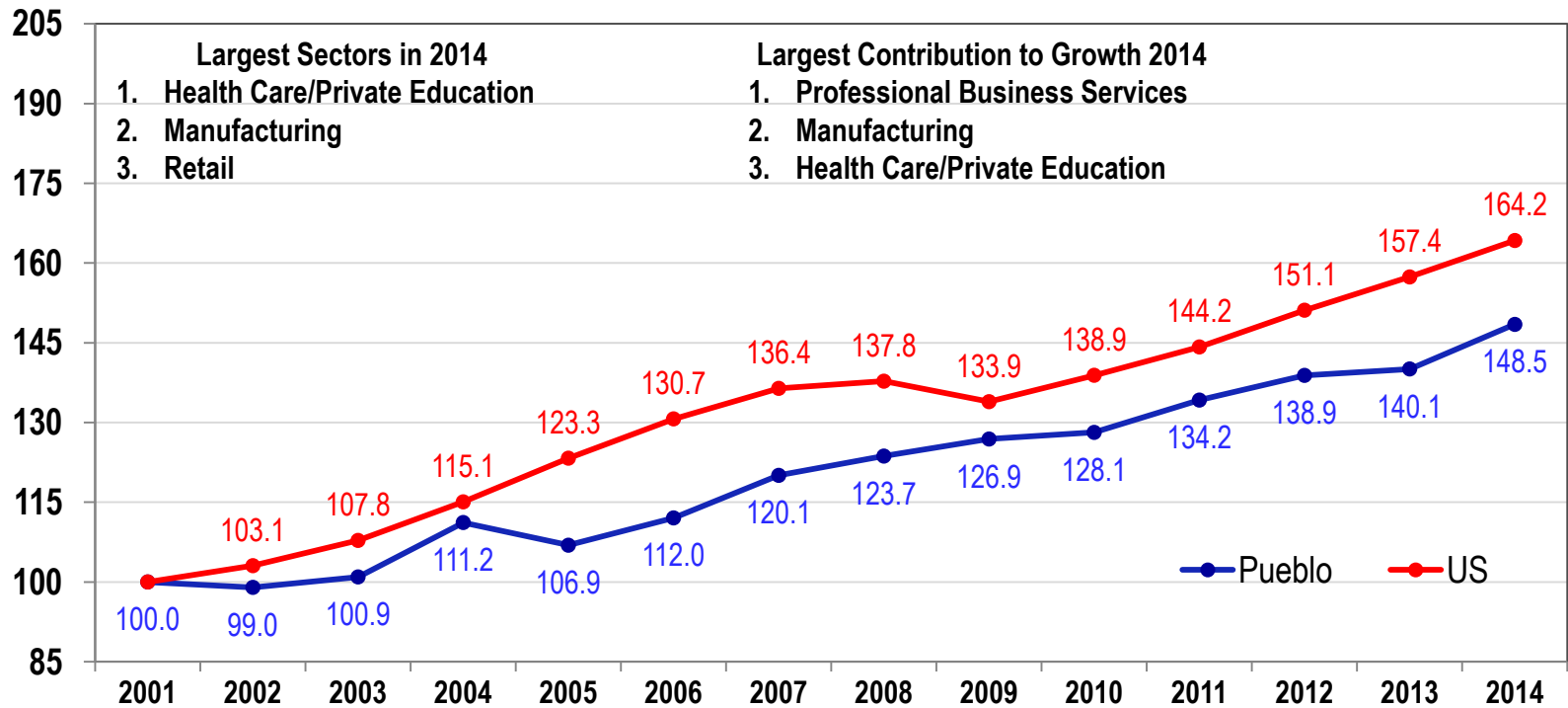
Source: Bureau of Economic Analysis.

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- Gross Domestic Product Private Sector
- Index of Pueblo MSA vs. U.S. Metropolitan Portion
-

Index of Pueblo vs. U.S.

Index 2001=100



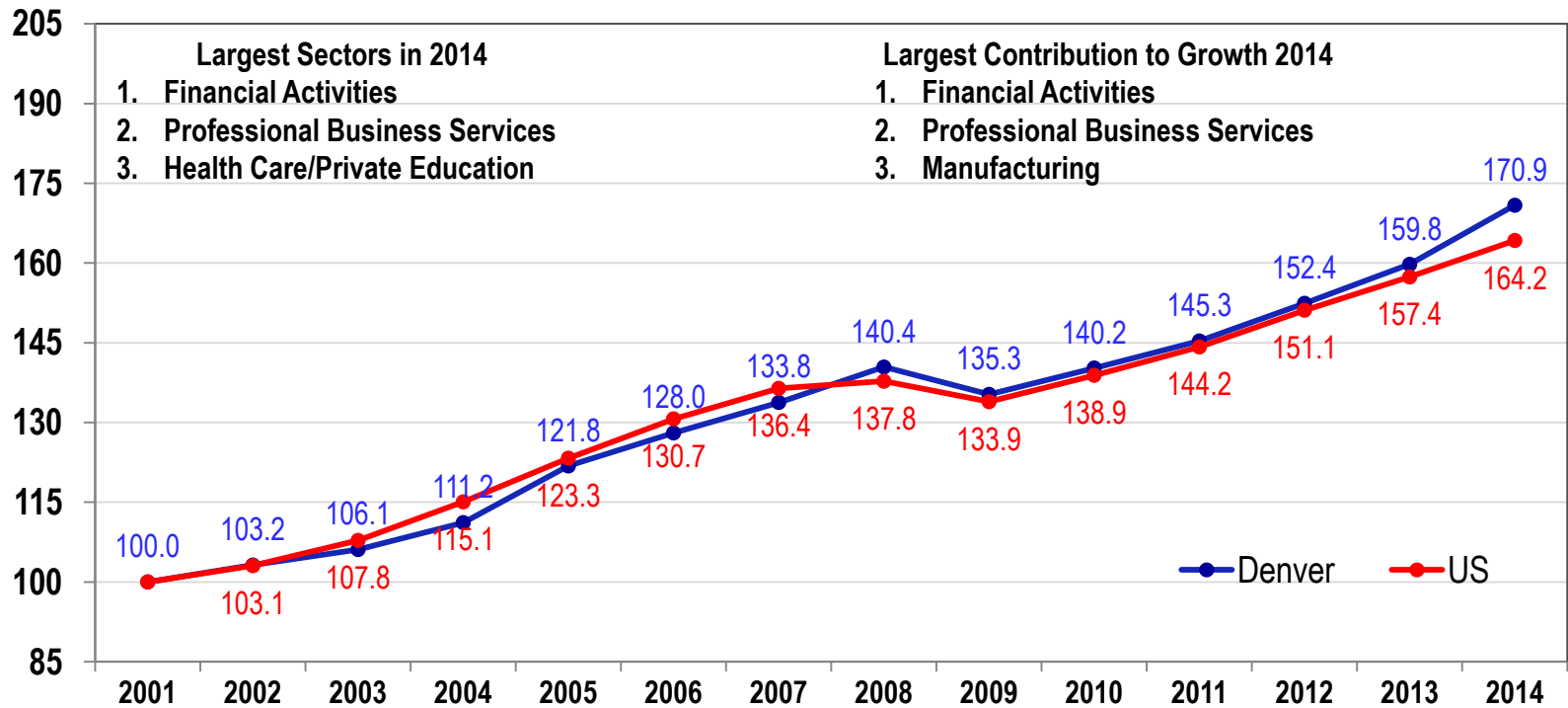
Source: Bureau of Economic Analysis.

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- Gross Domestic Product Private Sector
- Index of Denver MSA vs. U.S. Metropolitan Portion (Private)
-

Index of Denver vs. U.S.

Index 2001=100



Source: Bureau of Economic Analysis.

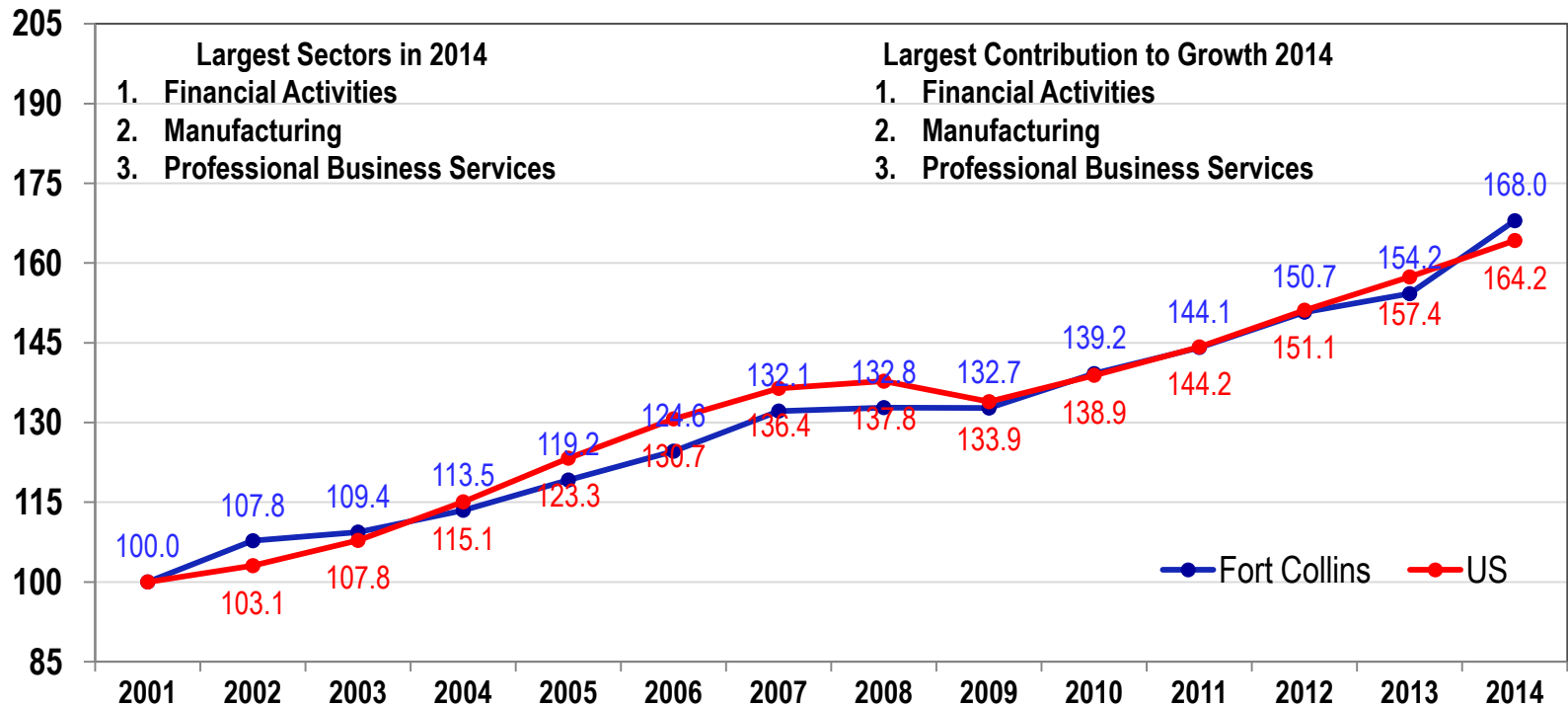
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- Gross Domestic Product Private Sector
- Index of Fort Collins MSA vs. U.S. Metropolitan Portion (Private)
-

Index of Fort Collins vs. U.S.

Index 2001=100



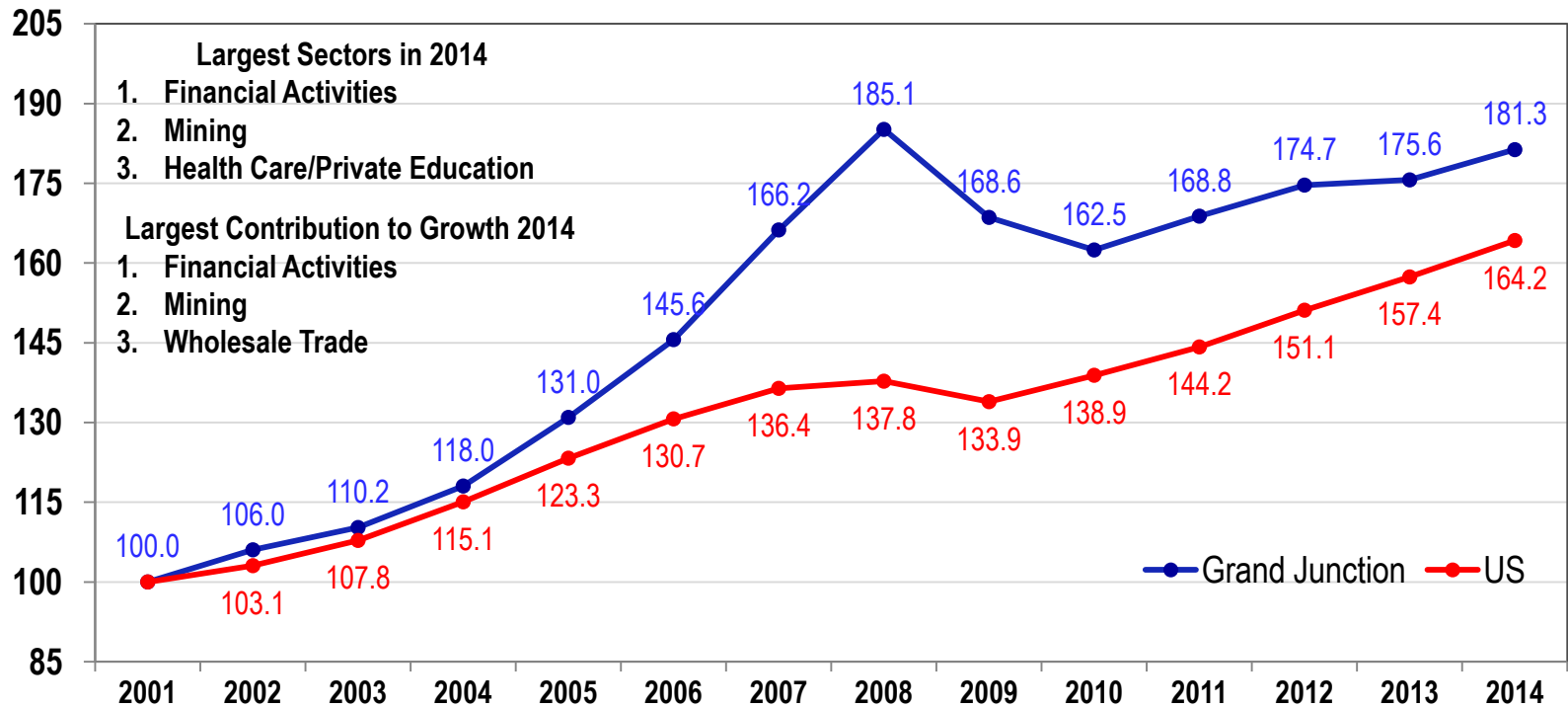
Source: Bureau of Economic Analysis.

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- Gross Domestic Product Private Sector
- Index of Grand Junction MSA vs. U.S. Metropolitan Portion
-

Index of Grand Junction vs. U.S.

Index 2001=100



Source: Bureau of Economic Analysis.

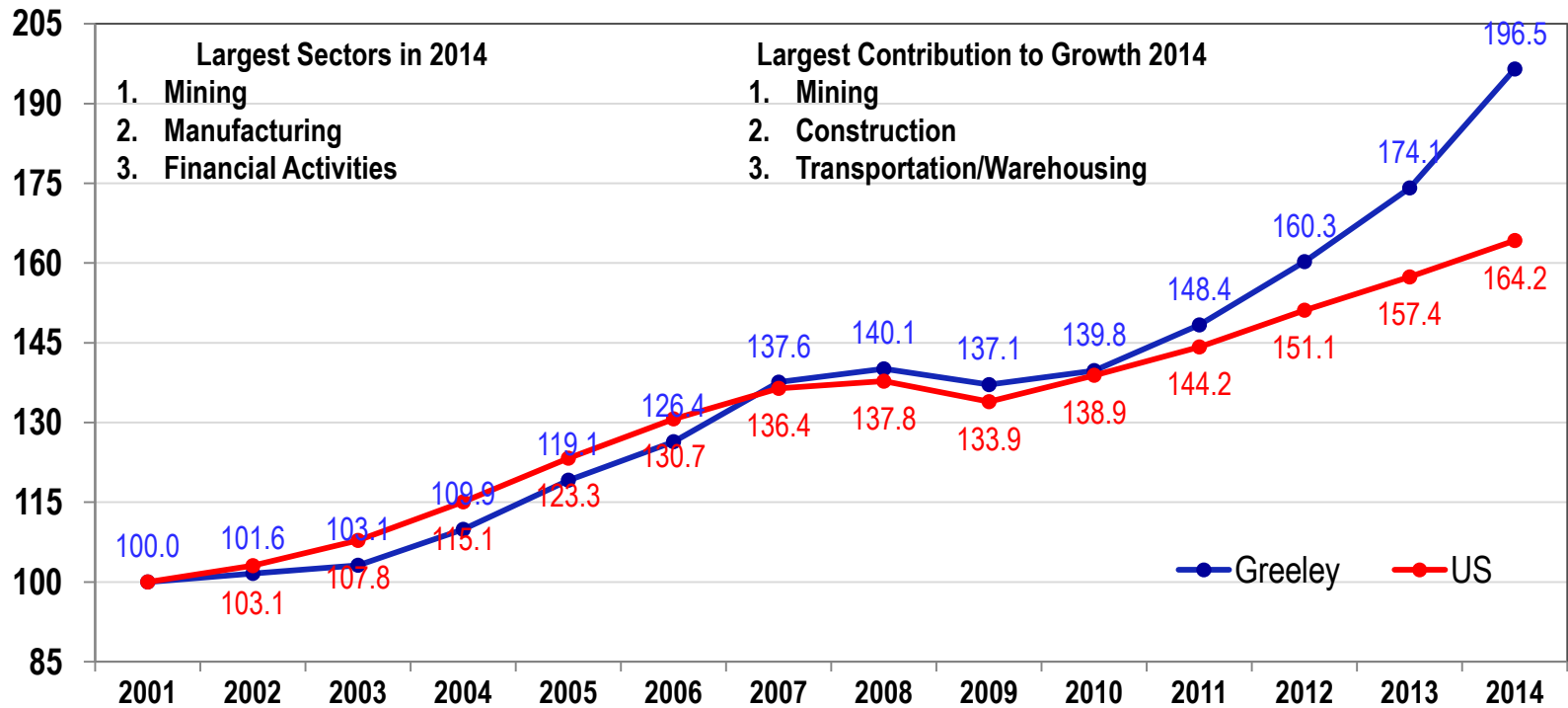
Colorado-based Business and Economic Research

<http://cber.co>

- Gross Domestic Product Private Sector
- Index of Greeley MSA vs. U.S. Metropolitan Portion (Private)
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Index of Greeley vs. U.S.

Index 2001=100



Source: Bureau of Economic Analysis.

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<http://cber.co>



Colorado Gross Domestic Product

Size of GDP and Contribution to GDP Growth by Sector

Summary of 2014 Private Sector GDP

Sector Size and Contribution to Growth

This section shows the top 5 sectors for each MSA in terms of sector size and the greatest contribution to growth.

Largest Sectors

- The Financial Activities and PBS Sectors were in the “top 5” sectors for each MSA.
- Healthcare was in the “top 5” sectors for all MSAs except Greeley.
- Manufacturing was a “top 5” sector for all MSAs except Denver and Grand Junction.
- Retail was a “top 5” sector for Colorado Springs, Fort Collins, Grand Junction, and Pueblo. Each are regional shopping areas.
- Mining was a “top 5” sector for Greeley, Grand Junction, and Denver. Corporate headquarters are located in Denver.
- Information was a “top 5” sector for Denver and Boulder MSAs.

Sectors with Greatest Contribution to GDP

- Financial Activities was one of the “top 5” sectors for contribution to GDP growth in all MSAs except Pueblo.
- PBS was one of the “top 5” sectors for contribution to GDP growth in all MSAs except Grand Junction.
- Manufacturing was one of the “top 5” sectors for contribution to GDP growth in all MSAs except Denver and Greeley.
- Construction was one of the “top 5” sectors for contribution to GDP growth in all MSAs except Boulder and Pueblo.

● 2014 Private Sector GDP

● Percent of Total GDP vs. Contribution to GDP



Percentage of 2014 Private Sector Total

Largest Sectors for Metro Areas

- Financial Activities
- Professional Business Services
- Health Care
- Manufacturing

Secondary Sectors for Metro Areas

- Retail Trade
- Mining
- Information
- Construction

Sectors with Greatest Percentage of 2014 Private Sector Growth

Sectors with Greatest Growth by Metro Area

- Financial Activities
- Professional Business Services
- Manufacturing
- Construction
- Health Care
- Mining

Secondary Sectors for Growth by Metro Area

- Hospitality
- Retail Trade
- Transportation and Warehousing
- Utilities
- Wholesale Trade
- Information

Ranking of Top Five Sectors Based on Percentage of Private Sector GDP

Sector	Boulder	Co. Springs	Denver	Fort Collins	Gr. Junction	Greeley	Pueblo
Construction						4	
Financial Activities	3	1	1	1	1	3	5
Health Care and Educ. Services	5	3	5	4	3		1
Hospitality							
Information	4		3				
Manufacturing	2	5		2		2	2
Mining			4		2	1	
Professional Bus. Services	1	2	2	3	5	5	4
Retail Trade		4		5	4		3
Transportation Warehousing							
Utilities							
Wholesale Trade							

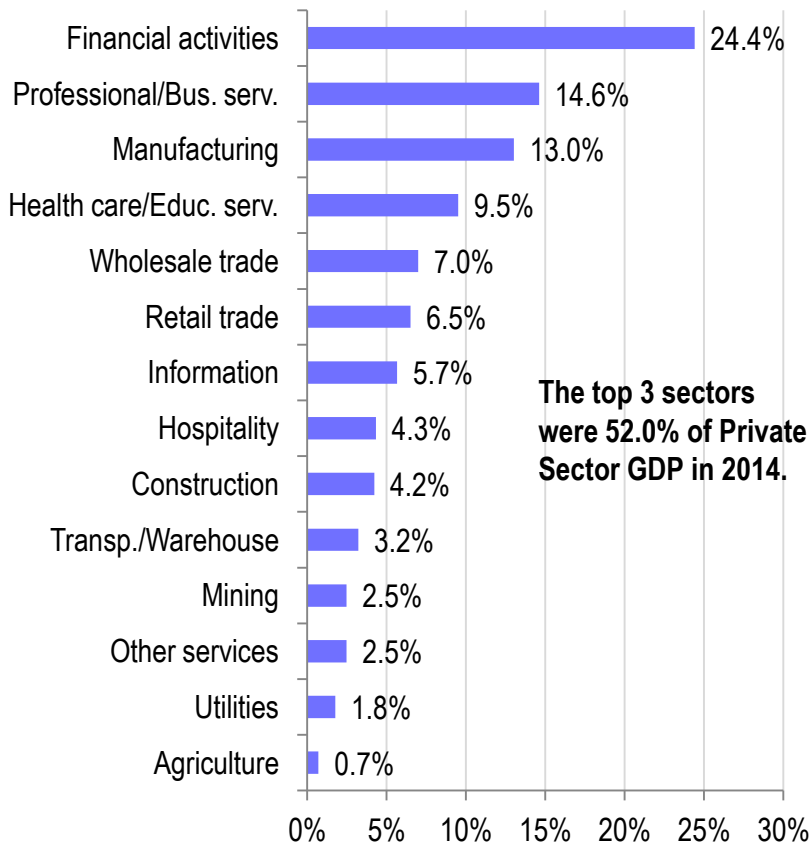
Ranking of Top Five Sectors Based on Percentage of Growth for Private Sector GDP

Sector	Boulder	Co. Springs	Denver	Fort Collins	Gr. Junction	Greeley	Pueblo
Construction		3	4	4	4	2	
Financial Activities	1	1	3	1	1	4	
Health Care and Educ. Services	4	2	5				3
Hospitality				5			
Information	5						
Manufacturing	3	4		2	5		2
Mining			1		2	1	
Professional Bus. Services	2	5	2	3		5	1
Retail Trade							4
Transportation Warehousing						3	
Utilities							5
Wholesale Trade					3		

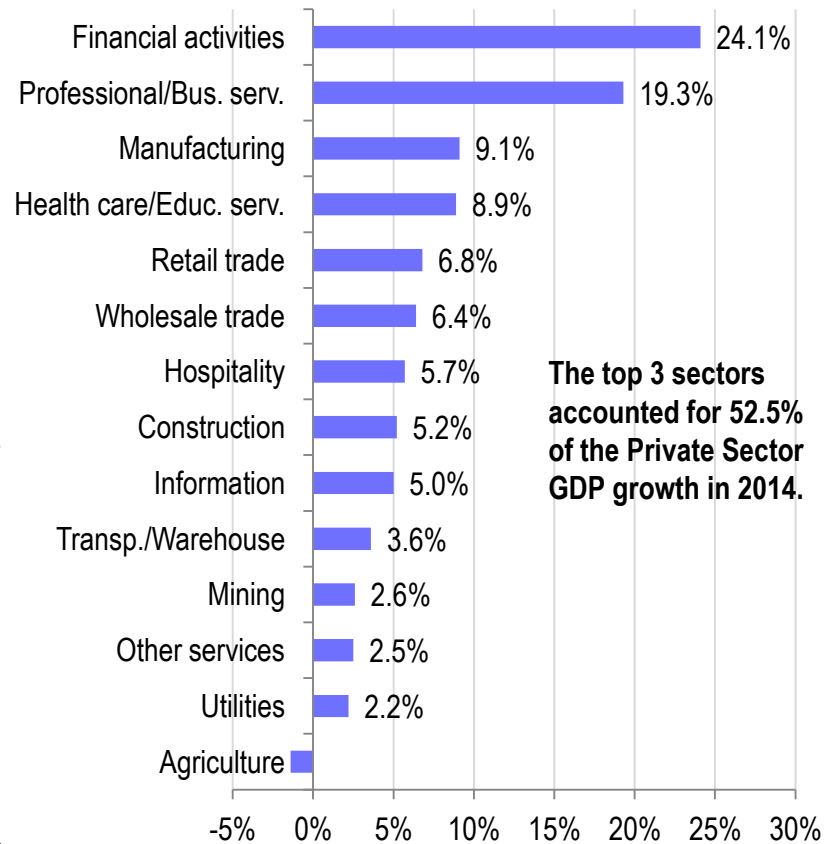
2014 Percent of GDP vs. GDP Growth Rate

U.S. Metropolitan Portion

United States Metro Percent of GDP



United States Metro Percent of GDP Growth

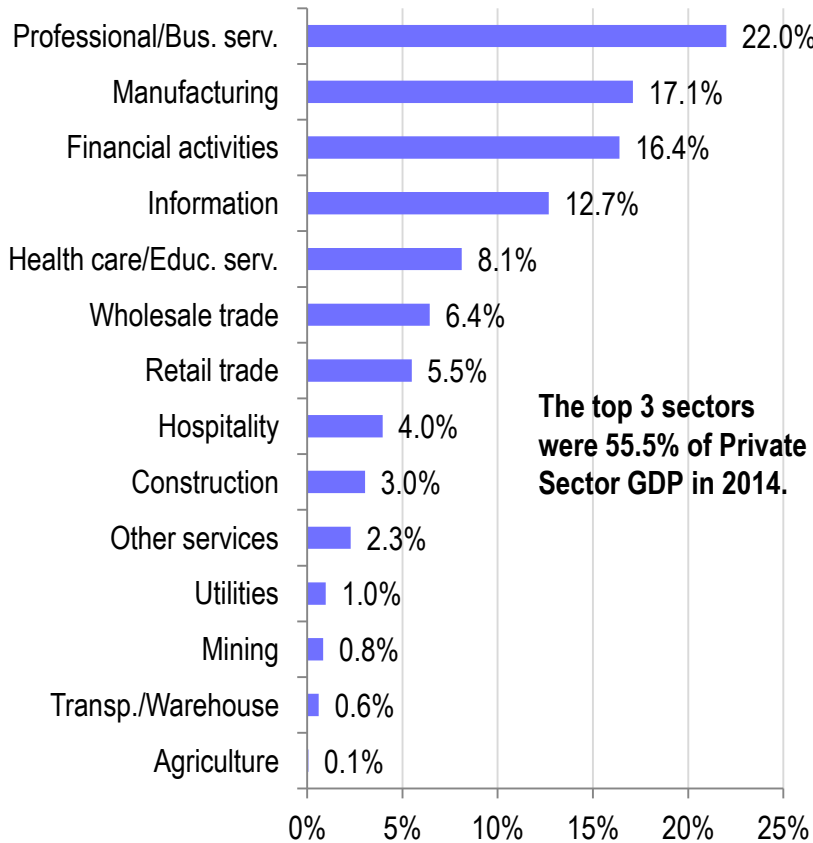


Source: Bureau of Economic Analysis.

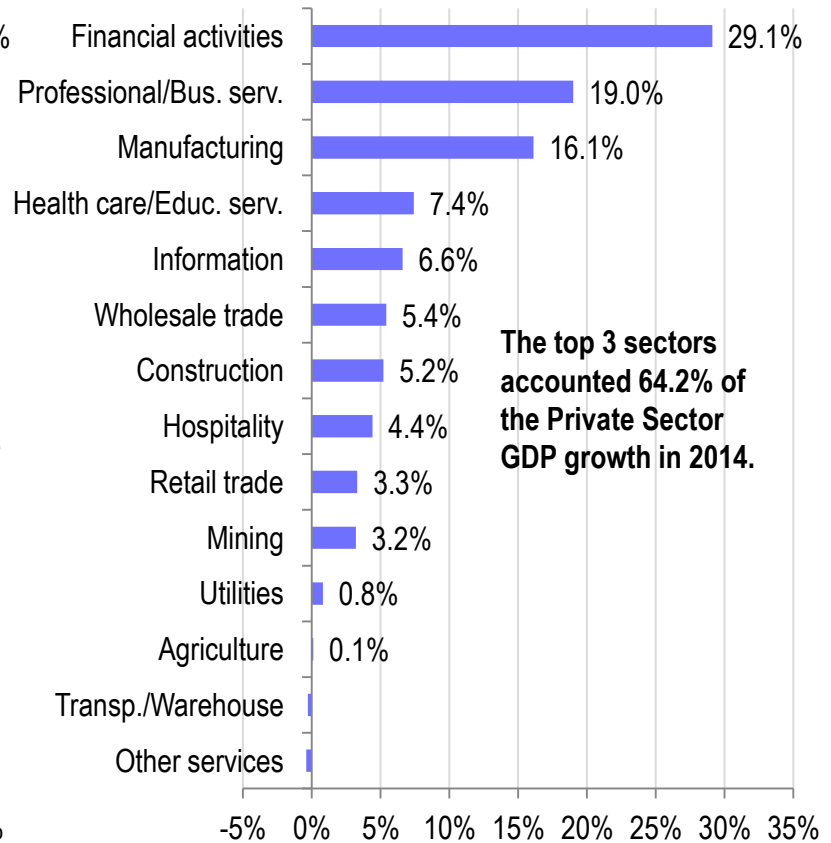
2014 Percent of GDP vs. GDP Growth Rate

Boulder MSA

Boulder Metro Percent of GDP



Boulder Percent of GDP Growth

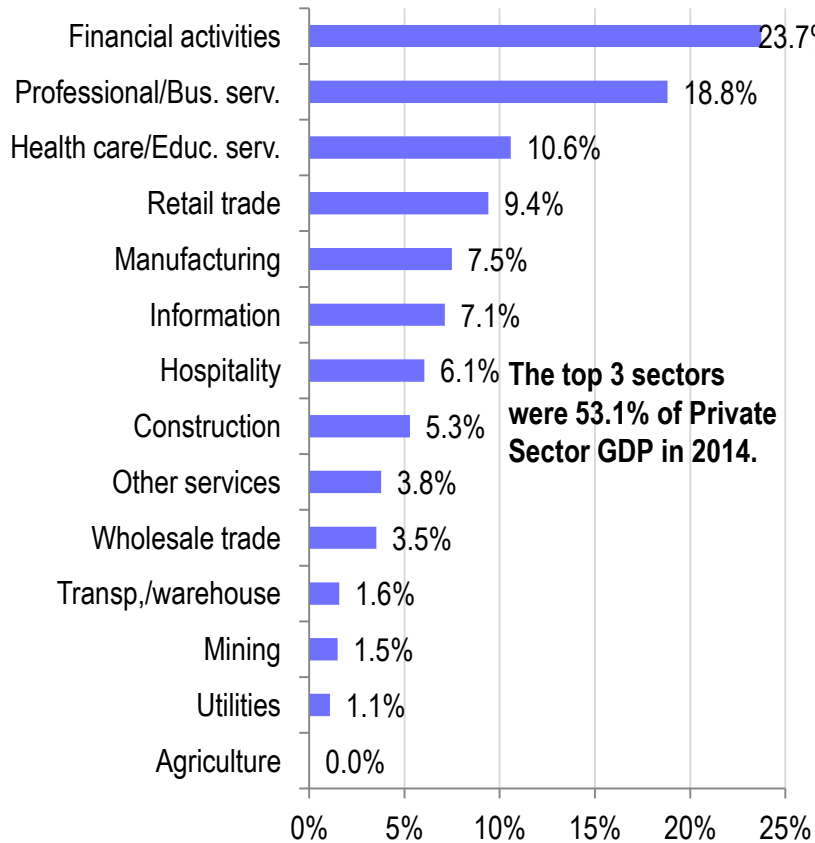


Source: Bureau of Economic Analysis.

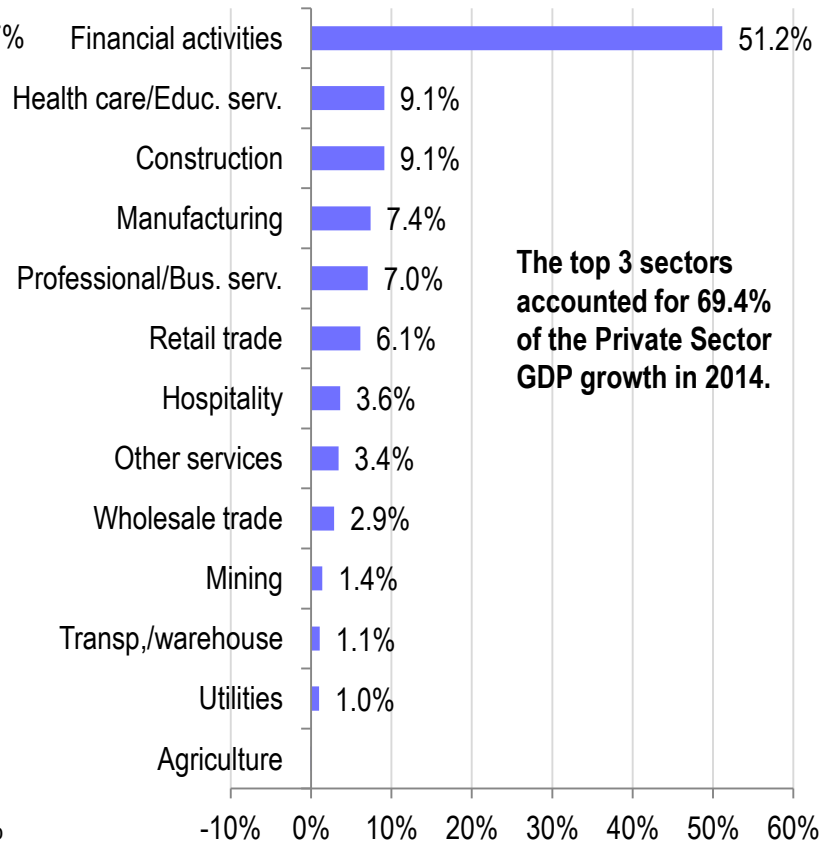
2014 Percent of GDP vs. GDP Growth Rate

Colorado Springs MSA

Colorado Springs Metro Percent of GDP



Colorado Springs Percent of GDP Growth

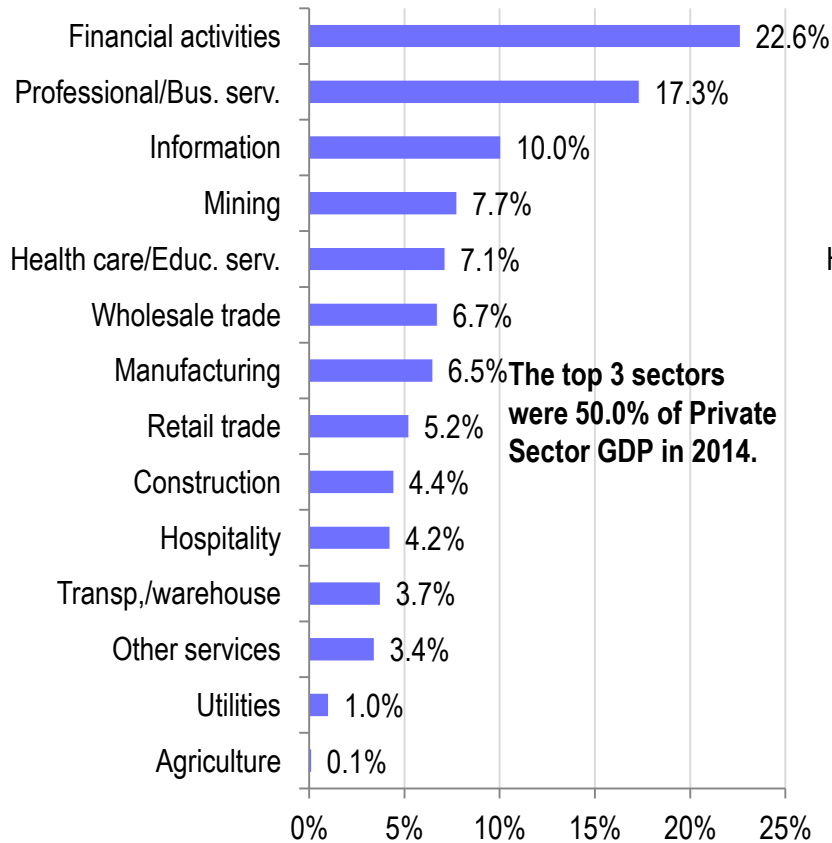


Source: Bureau of Economic Analysis.

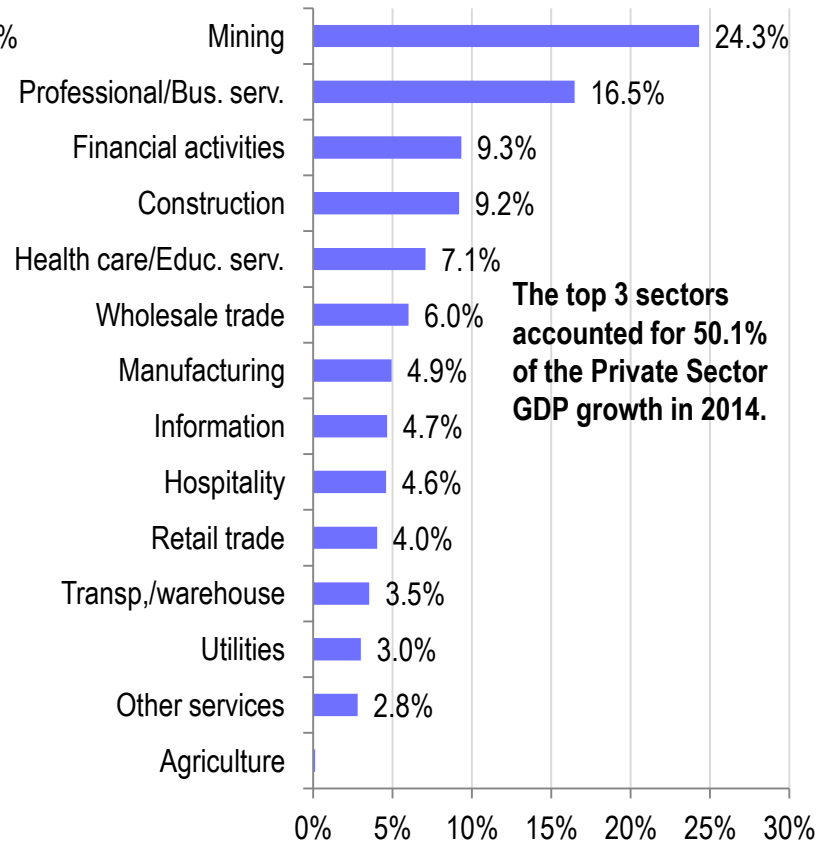
2014 Percent of GDP vs. GDP Growth Rate

Denver MSA

Denver Metro Percent of GDP



Denver Percent of GDP Growth

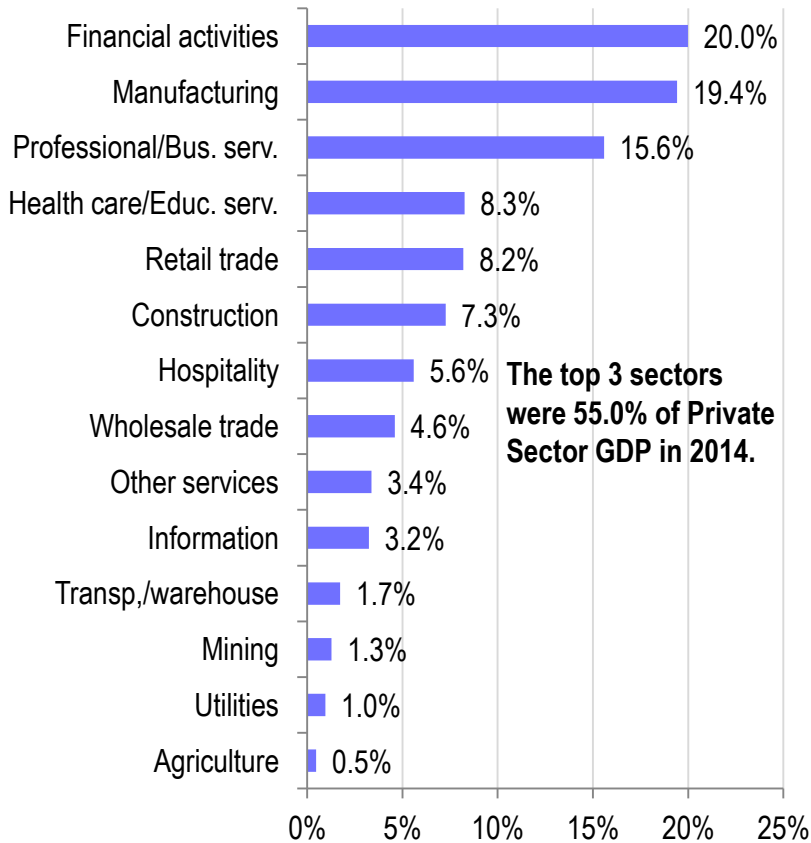


Source: Bureau of Economic Analysis. Note: Utilities, Wholesale Trade, and Other Services estimated.

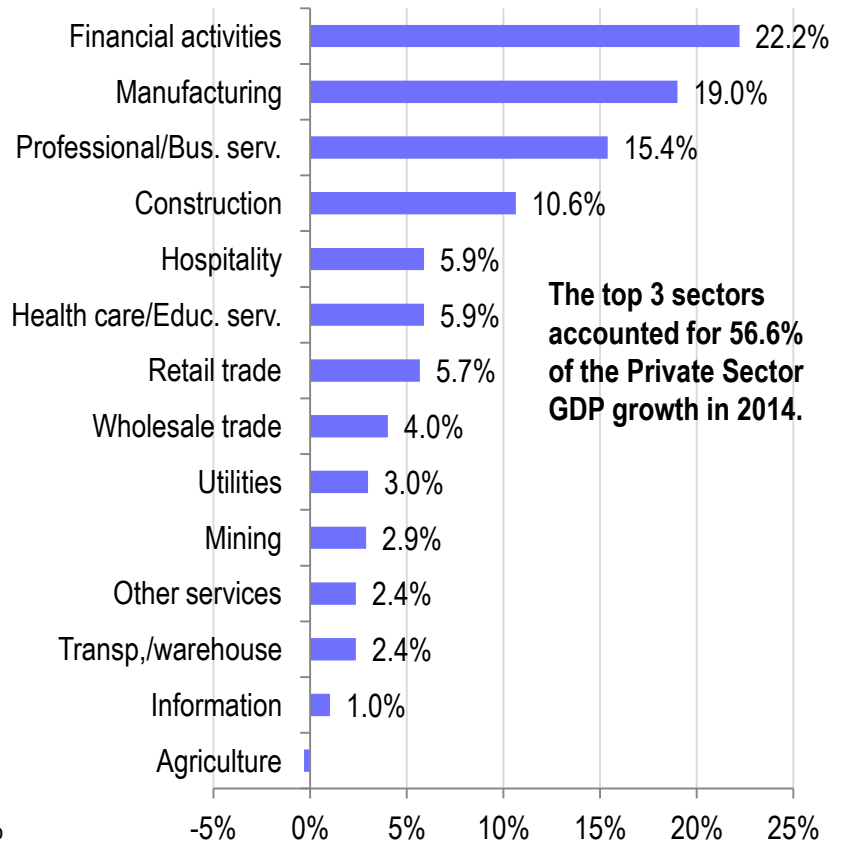
2014 Percent of GDP vs. GDP Growth Rate

Fort Collins MSA

Fort Collins Metro Percent of GDP



Fort Collins Percent of GDP Growth

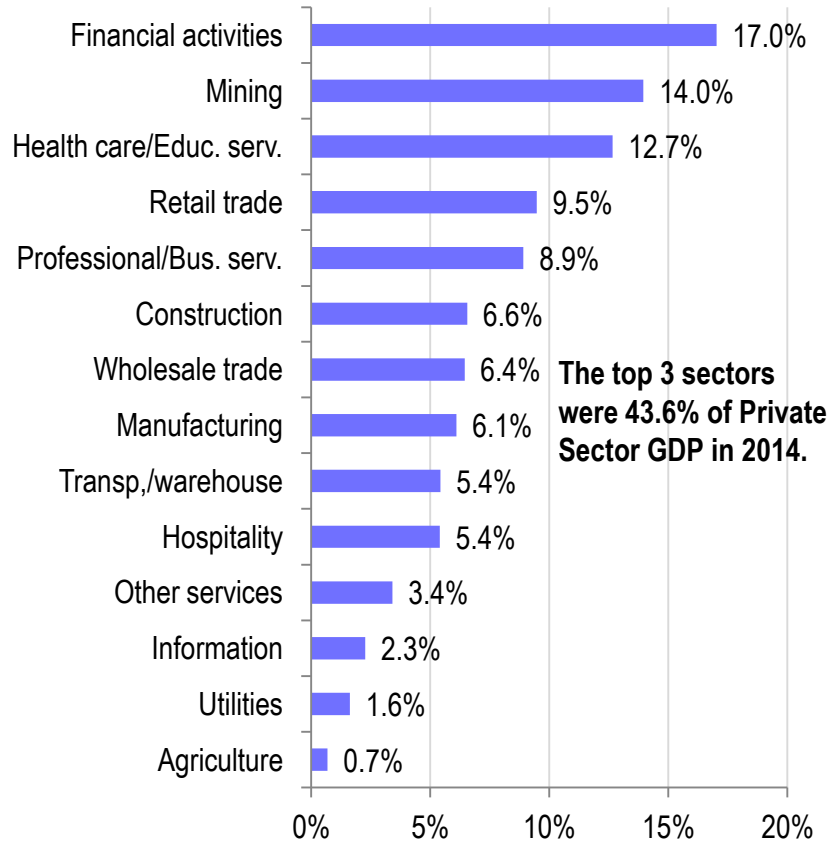


Source: Bureau of Economic Analysis.

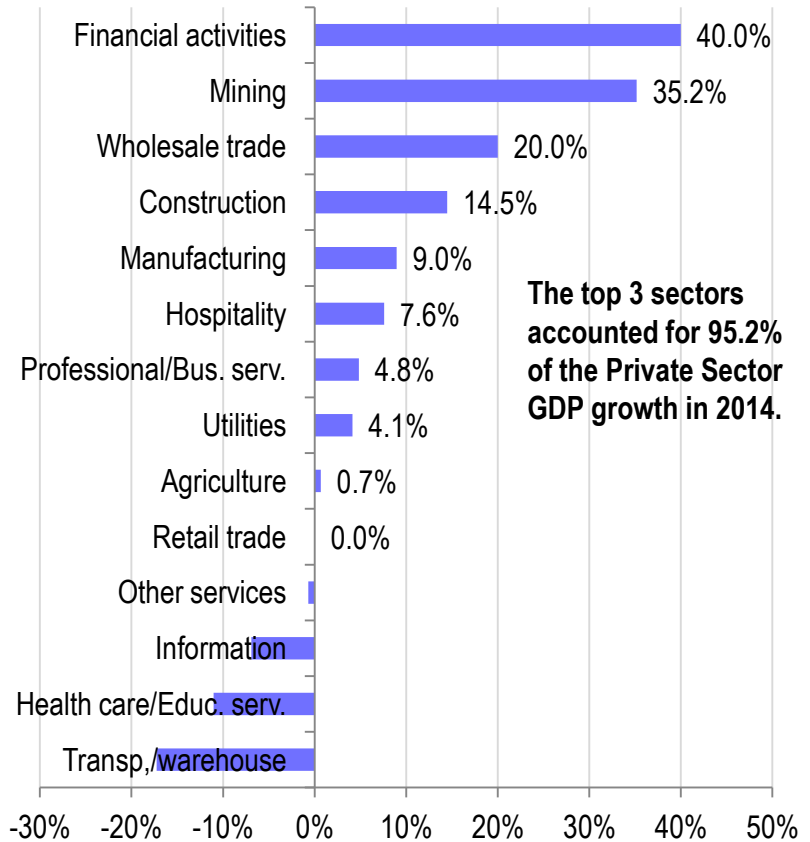
2014 Percent of GDP vs. GDP Growth Rate

Grand Junction MSA

Grand Junction Metro Percent of GDP



Grand Junction Percent of GDP Growth

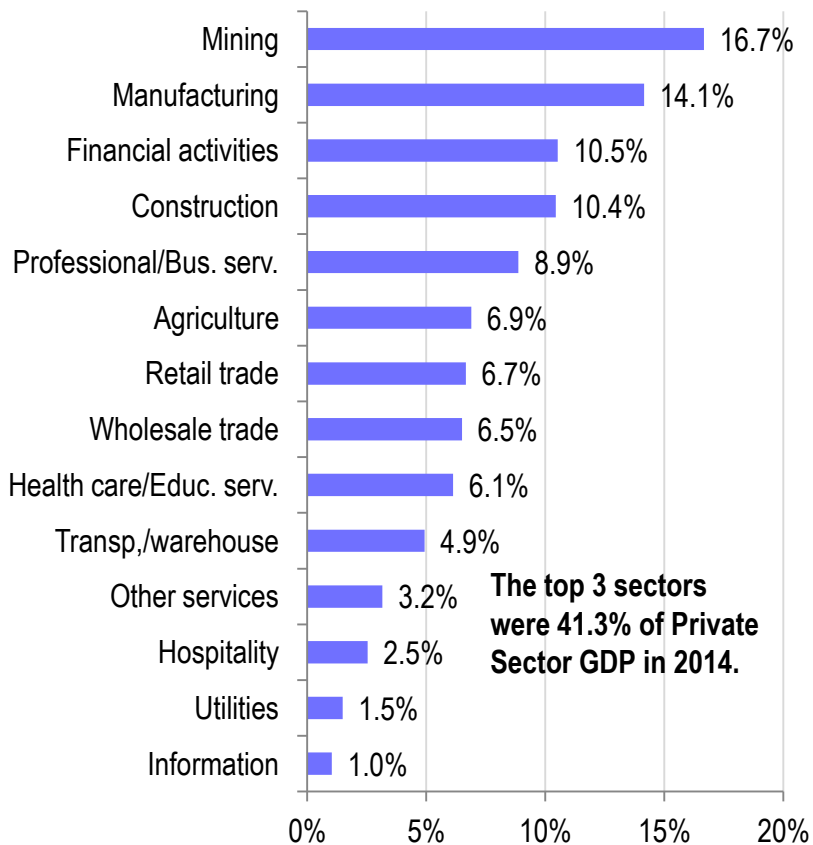


Source: Bureau of Economic Analysis.

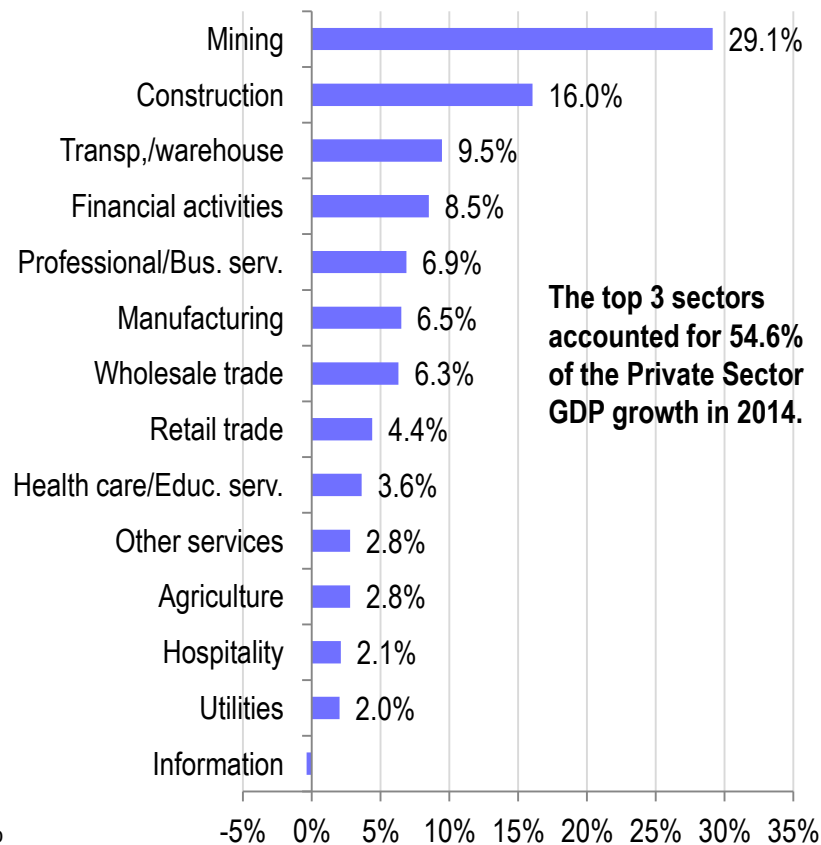
2014 Percent of GDP vs. GDP Growth Rate

Greeley MSA

Greeley Metro Percent of GDP



Greeley Percent of GDP Growth

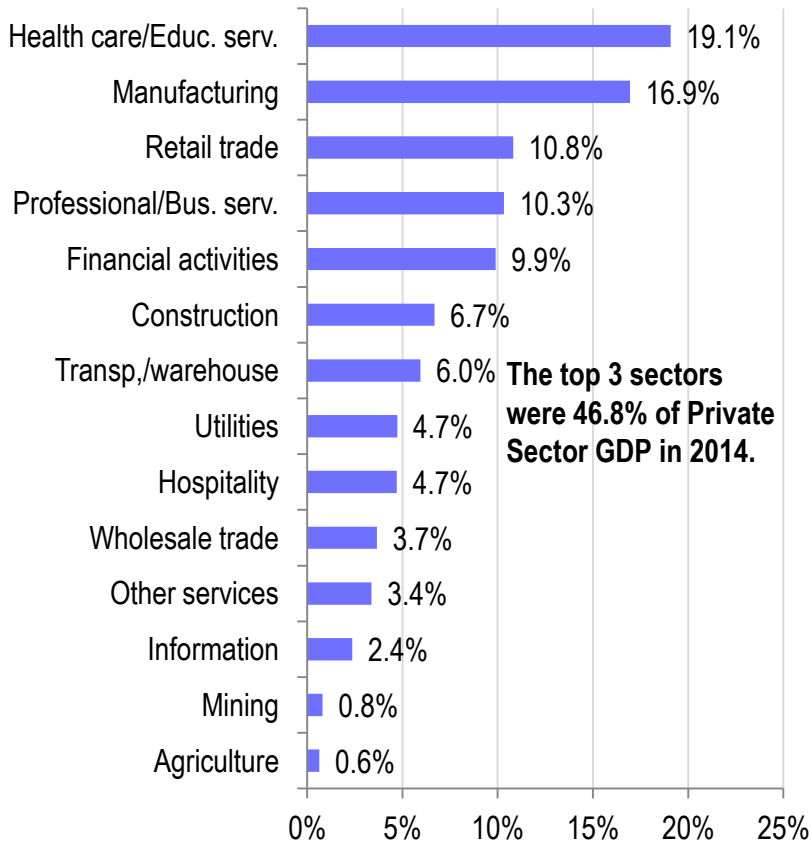


Source: Bureau of Economic Analysis.

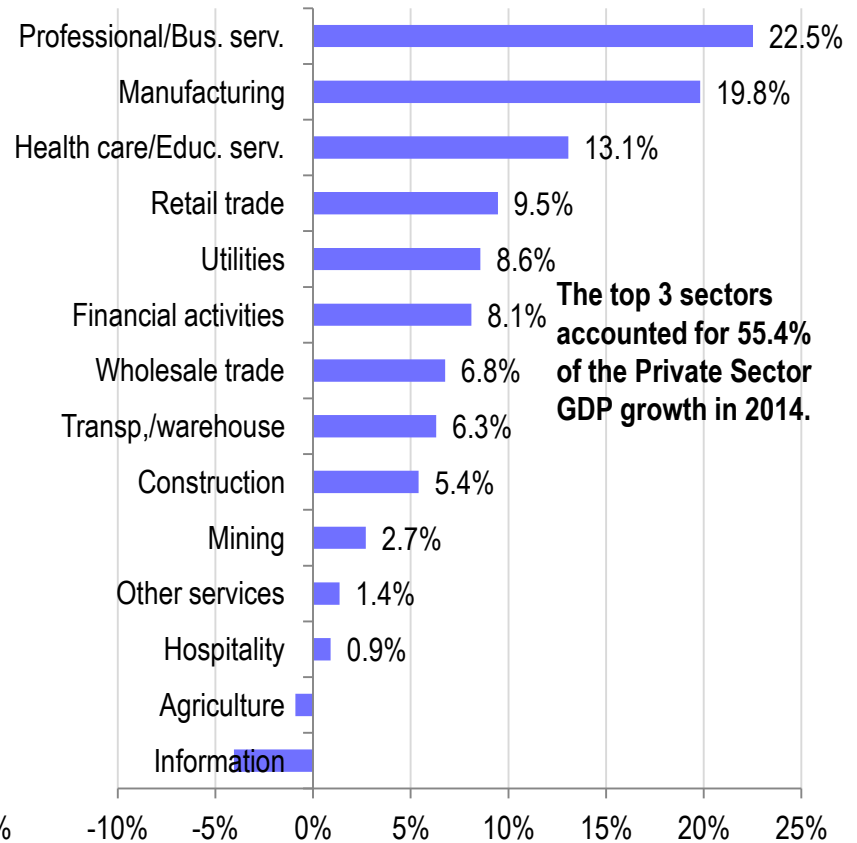
2014 Percent of GDP vs. GDP Growth Rate

Pueblo MSA

Pueblo Metro Percent of GDP



Pueblo Percent of GDP Growth



Source: Bureau of Economic Analysis.



Colorado Gross Domestic Product

Real Per Capita GDP by MSA



Summary

Real Per Capita GDP

Real per Capita GDP for a region is the GDP for that region divided by it's population.

Boulder and Denver were the only MSAs to have Real Per Capita GDP that was above the level of the U.S. Metro Portion.

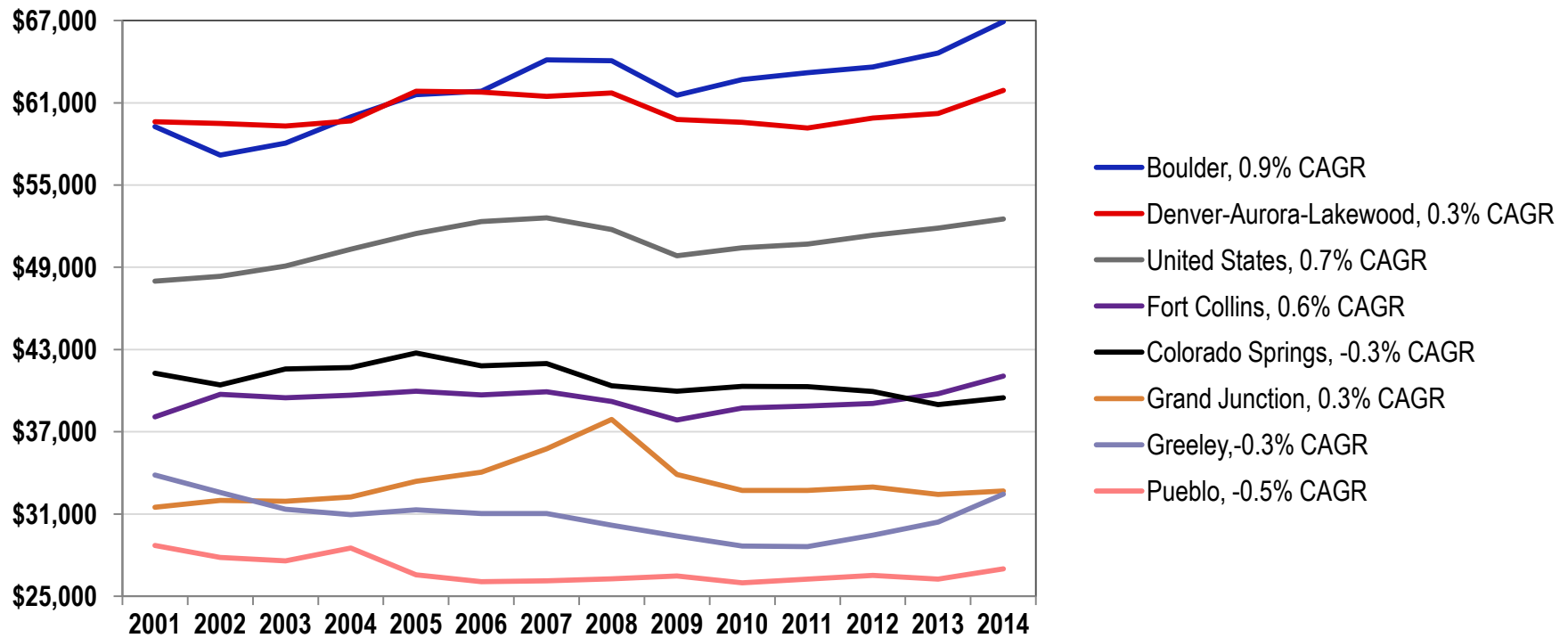
Only Boulder had an annualized growth rate that was above the U.S. This is the result of low population growth for Boulder rather than a high growth rate in GDP.

Greeley, Pueblo, and Colorado Springs showed decreases in their Real Per Capita GDP between 2001 and 2014.

● Real Per Capita GDP by MSA and Annualized Growth Rates

● Growth Rates

Per Capita GDP and Annualized Growth (2001-2014)



Source: Bureau of Economic Analysis.



Colorado Gross Domestic Product

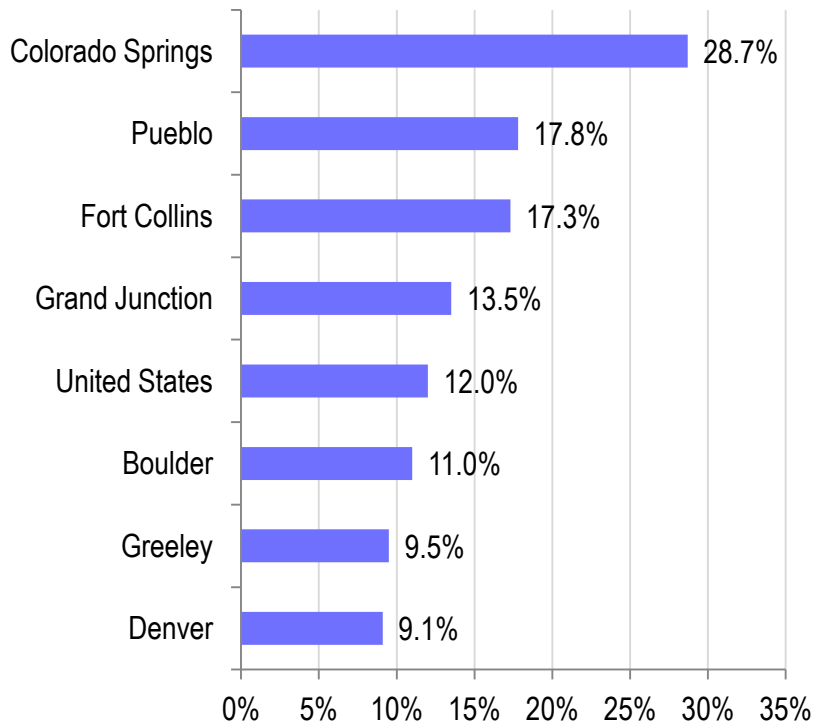
Government GDP by MSA

Government Gross Domestic Product

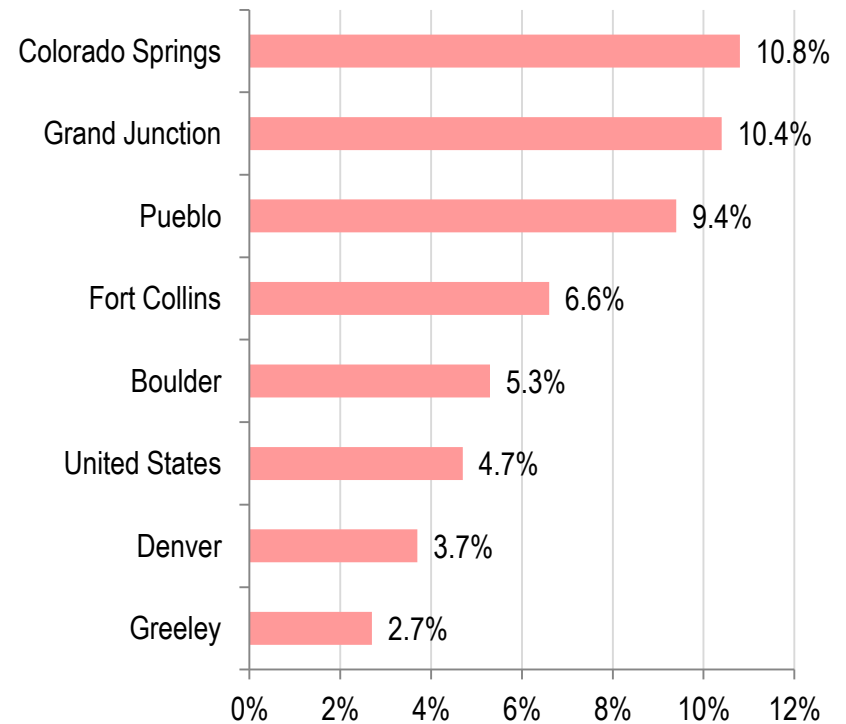
Size of Government GDP/Annualized Growth and 2014 Growth

The government percentage of GDP varies drastically depending upon the MSA and its mix of industries. Likewise the percentage of government contribution to Total GDP varies by MSA.

Percentage of Total GDP - 2014



Contribution to Total GDP - 2014



Source: Bureau of Economic Analysis.

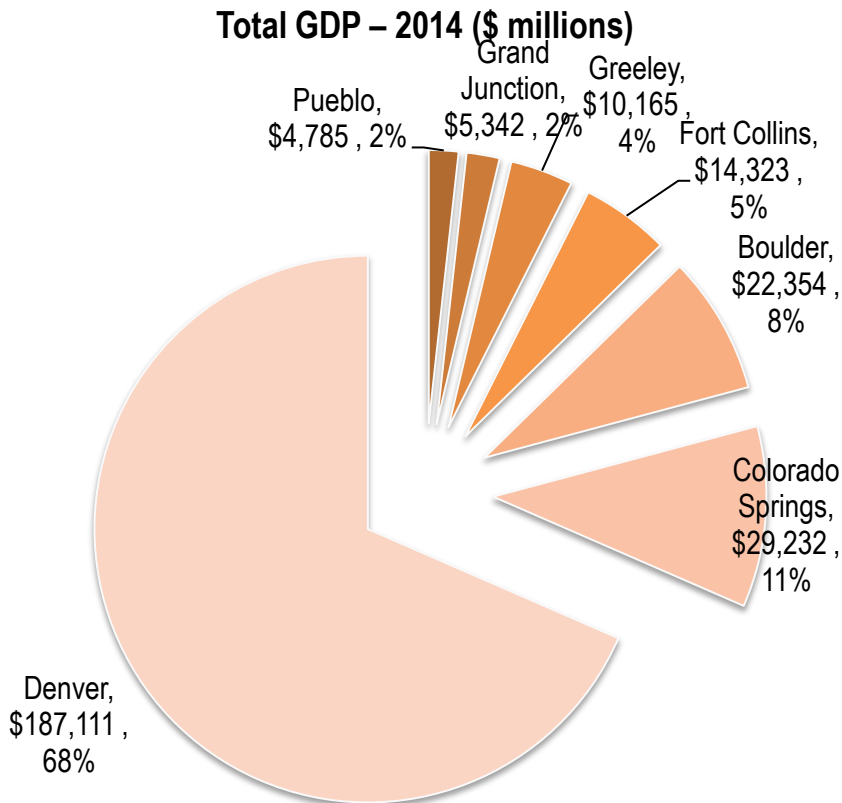


Summary

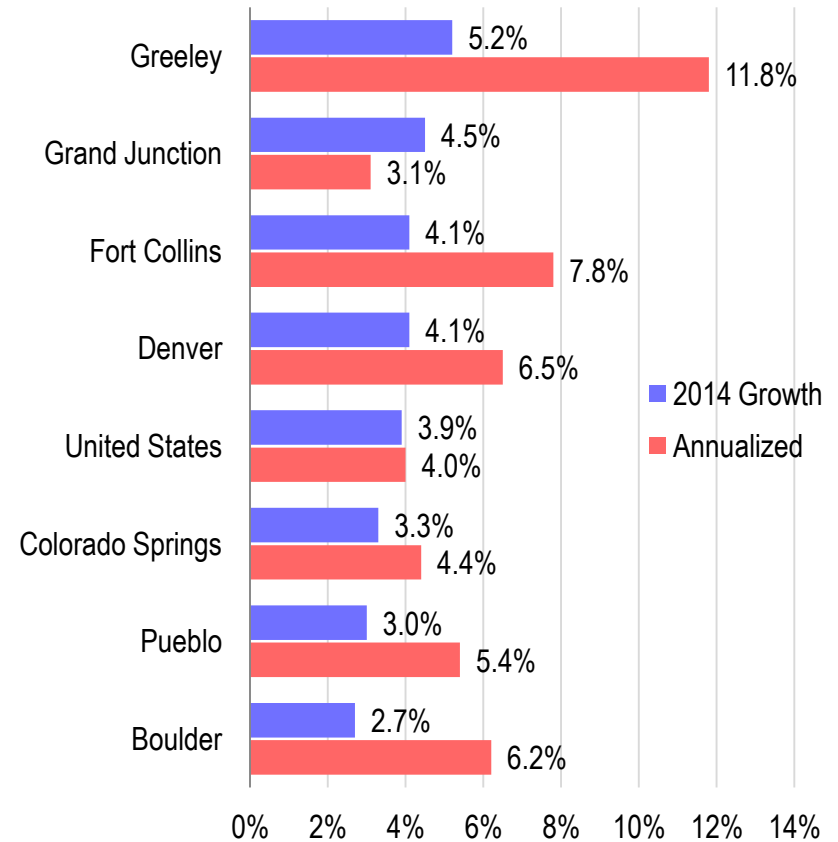
GDP, Unemployment, and Employment

MSA Gross Domestic Product

Size and % of Total Metro GDP/Growth of GDP 2014



Growth of Total GDP – Annualized and 2014

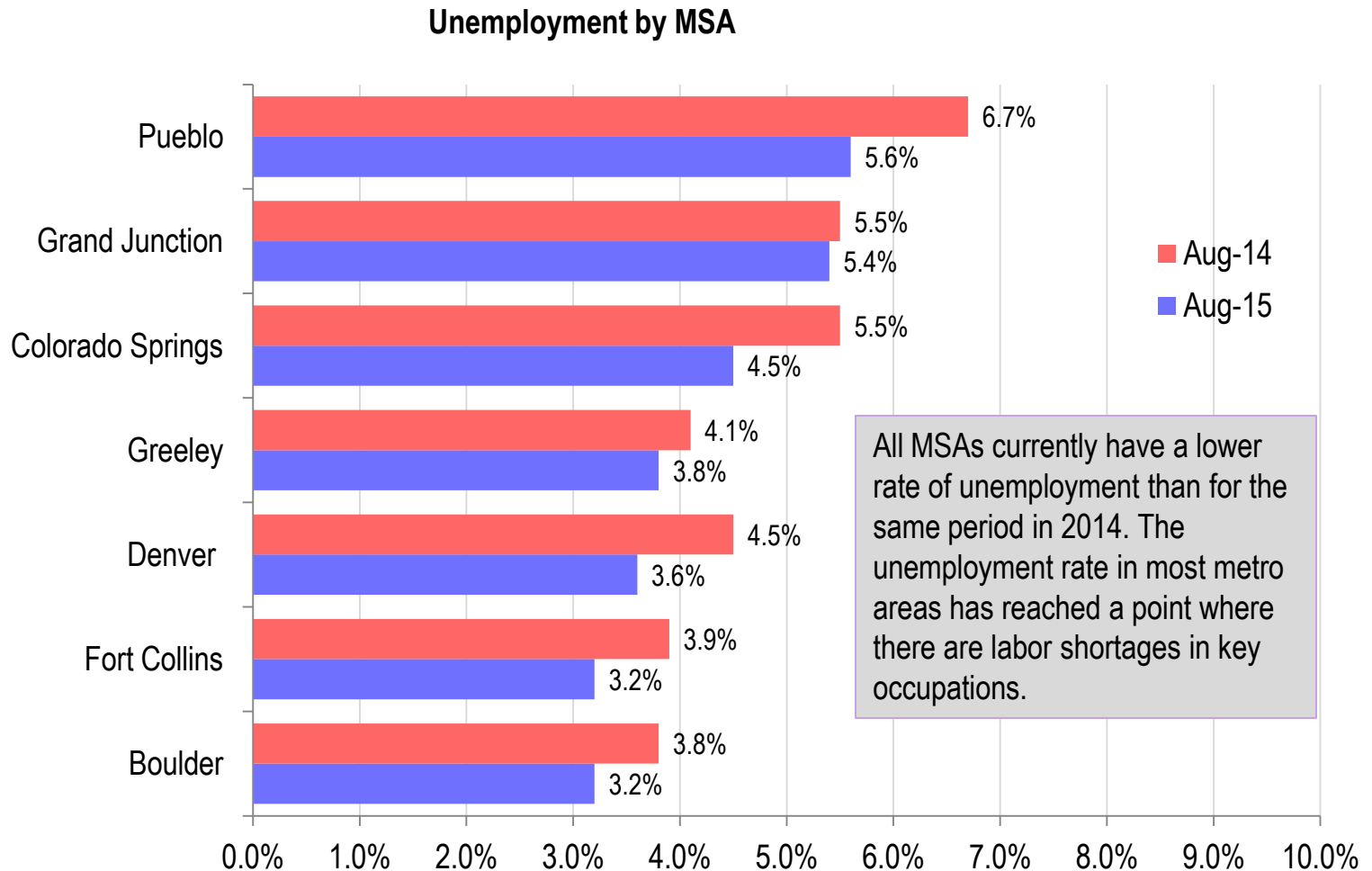


MSA Gross Domestic Product

Key Points

- The 2014 GDP for the Denver MSA is more than twice the GDP of all the other MSAs combined.
- After Denver, the MSAs with the largest GDPs in 2014 were Colorado Springs, Broomfield, and Fort Collins.
- In 2014 the MSAs with the fastest growth in their GDP were Greeley, Grand Junction, and Fort Collins.
- The MSAs with the fastest growth in GDP for the period 2001 to 2014 were Greeley, Fort Collins, and Denver.

Unemployment by MSA 2014 vs. 2015



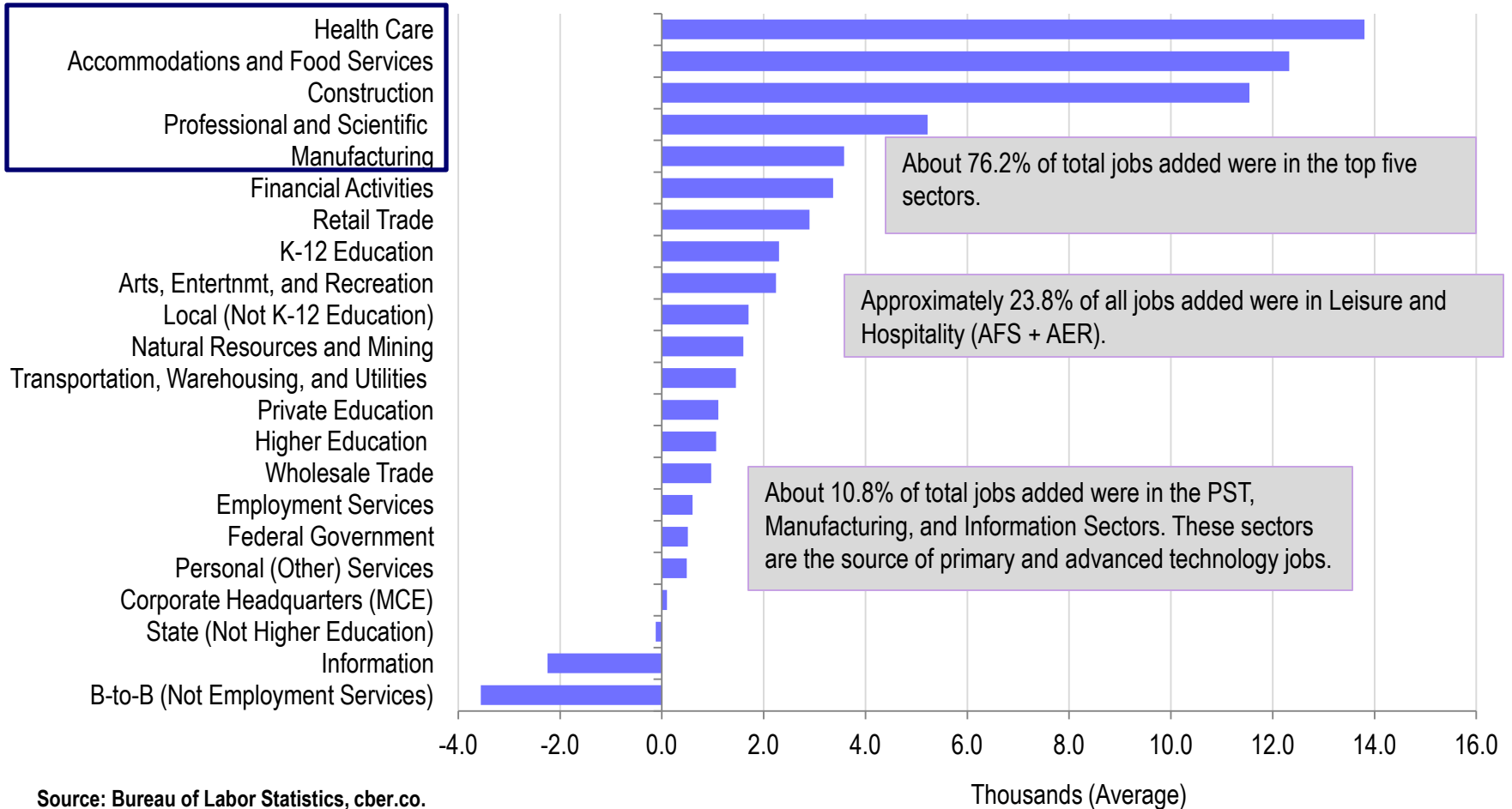
Source: Bureau of Labor Statistics, NSA. Note: MSA unemployment lags by one month and is reported on a non-seasonally adjusted basis.

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Change in Employment First Nine Months 2015

Number of Jobs Added



Source: Bureau of Labor Statistics, cber.co.

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Summary of Factors Colorado Job and GDP Growth

The factors listed below have had an impact on Colorado economic growth and may impact the way Colorado expands in months ahead.

Employment

- About three-fourths of Colorado's job growth has been in the Health Care; Accommodations and Food Services; Construction; Professional, Scientific and Technical Services; and Manufacturing sectors.
- The state is adding jobs at a faster rate than the U.S., but both are adding jobs at a declining rate.
- There is disagreement among local economists about the number of jobs that will be added in 2015. Projected revisions suggest the Colorado economy is stronger than indicated by the current data.
- Through the first half of the year, oil production has remained at record levels; however, the price of oil has remained in the 40s. It is doubtful if the current level of production will continue during the second half of the year, despite the fact the oil and gas industry continues to find new efficiencies.
- Solid job growth is expected to continue through 2015 into next year.

Gross Domestic Product

Colorado MSA vs. U.S. MSA Private Sector Growth

- Greeley and Grand Junction were above the U.S. Metro rate.
- ### *Size of Colorado Sectors for the MSAs (2014)*
- The largest sectors for the metro areas were Financial Activities, Professional Business Services, Health Care, and Manufacturing.

Growth of Colorado Sectors for the MSAs (2014)

- The sectors with the greatest rate of growth were Financial Activities, Professional Business Services, Manufacturing, Construction, Health Care, Mining.

Real Per Capita GDP

- Boulder and Denver had Real Per Capita GDP that was above the level of the U.S. Metro Portion.

Government GDP

- Colorado Springs, Pueblo, Fort Collins, and Grand Junction, had the highest percentage of Government GDP. The percentage for each of these MSAs is greater than the percentage for the U.S. Metro portion.

Annual Employment Change in Colorado

In 2014, Colorado experienced accelerating job growth for the 4th year in a row. The state added 78,900 workers, an increase of 3.3% on a base of 2,381,900 jobs.

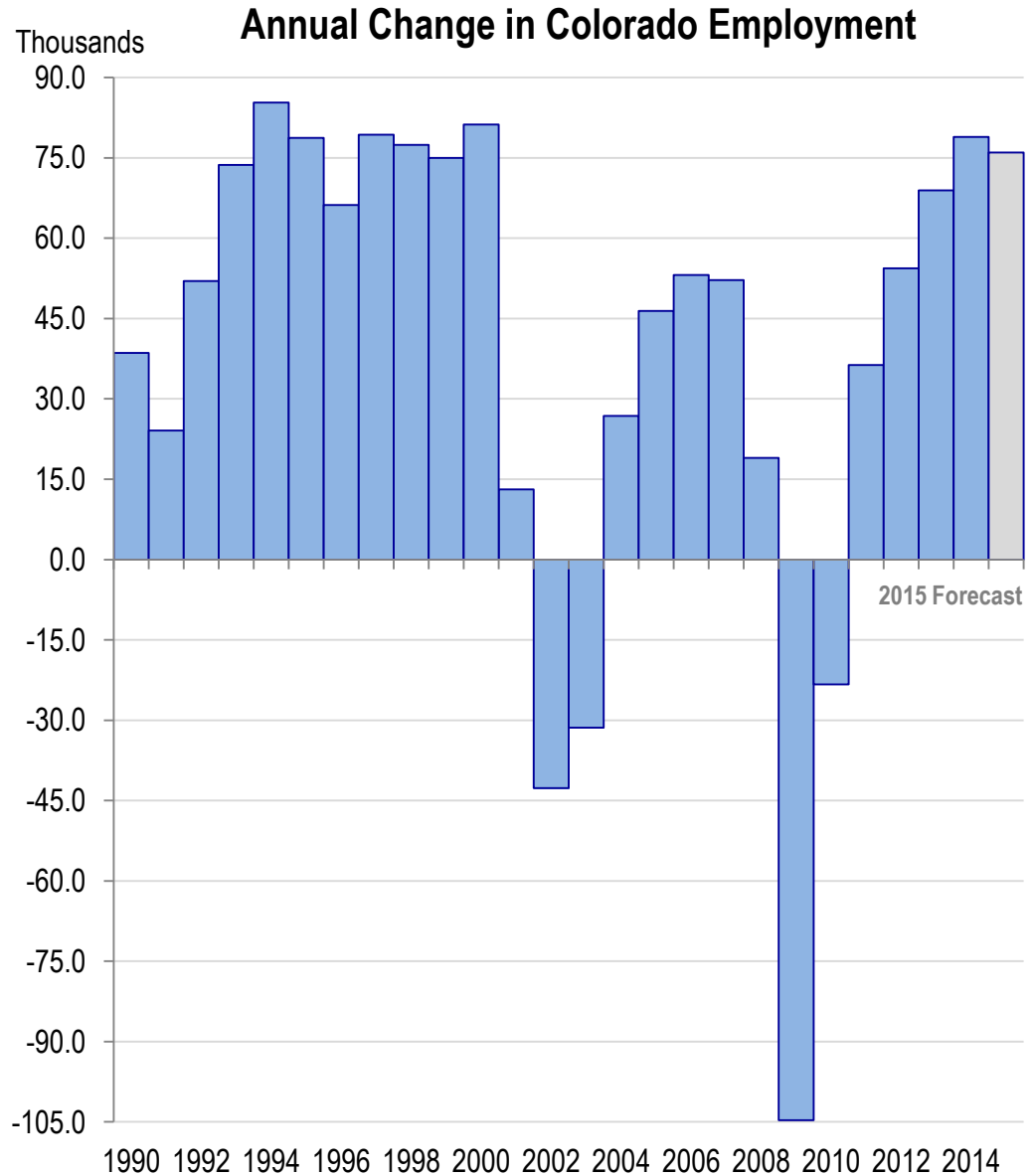
Colorado is projected to add 73,000 to 79,000 jobs in 2015, a gain of 3.0% to 3.2%.

For the first nine months of 2015 Colorado employment is 61,000 jobs greater than the same period last year. The published data shows the state is growing at a solid, but decreasing rate of growth.

CDLE/LMI has projected that a significant upward adjustment will be made to the Q4 2014 data and data for the first four months of 2015. These revisions will be made in March 2016. Total employment for 2015 should be at the lower end of the range of 73,000 to 79,000. This is the level of job growth forecasted by cber.co for 2015.

Source: Bureau of Labor Statistics, cber.co.

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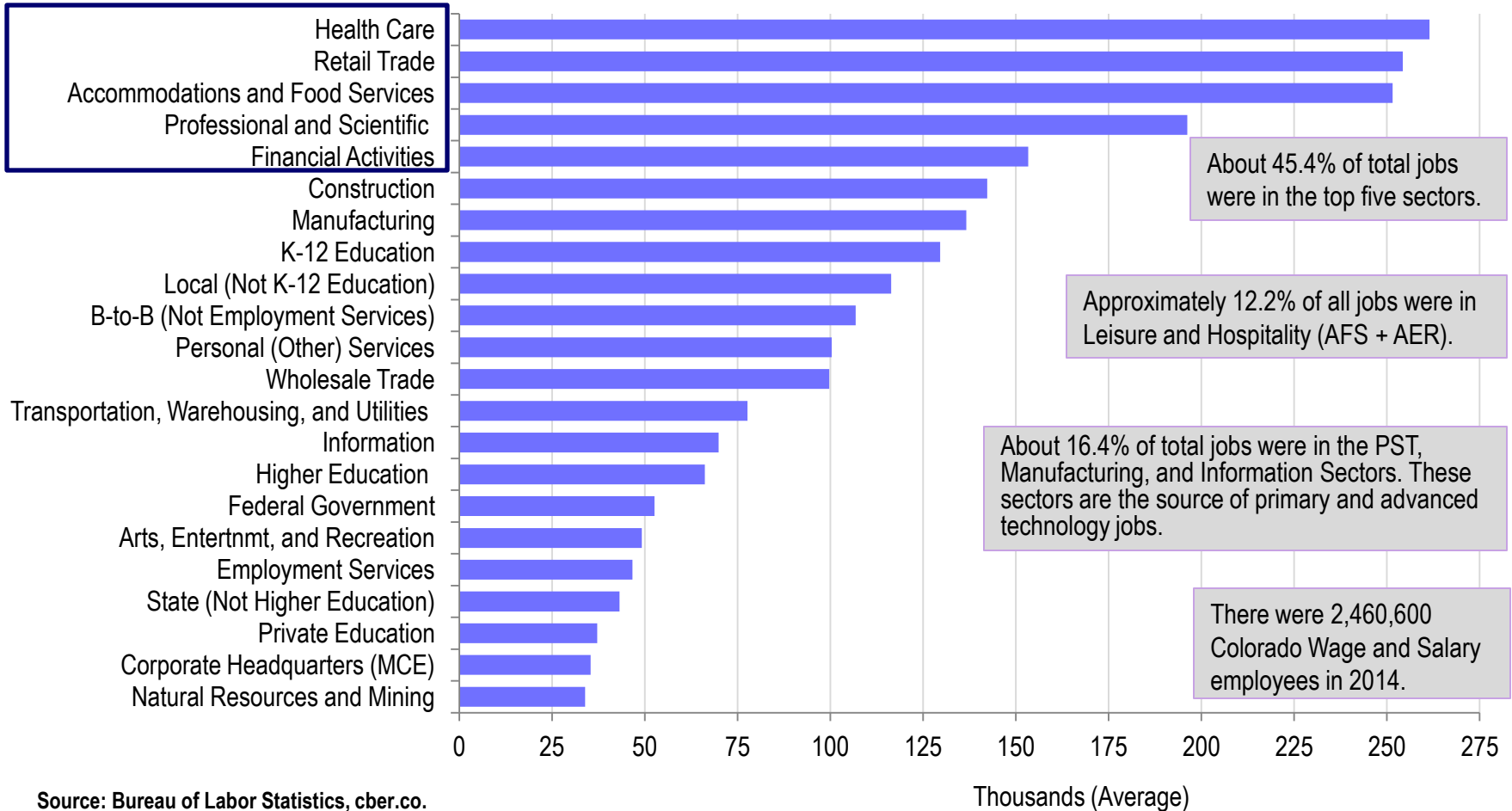




Appendix

2014 Colorado Wage and Salary Employment

Employment



Source: Bureau of Labor Statistics, cber.co.

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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.

Measuring Change in Employment

Methods of Measuring Change in Employment

- Month-over-prior-month – This method can be used only with seasonally adjusted data.
- Year-over-prior-year – This method can be used with seasonally adjusted or non-seasonally adjusted data. The results are usually similar.
- Rolling average – Average employment for a period, such as 12-months, compared to average employment to the average for the prior period of “rolled” data.

Measurement Used by cber.co

- cber.co typically uses a derivative of a rolling average. For example, the average of the first quarter of 2015 will be compared to the average for the first quarter of 2014. It is also important to look for trends.
- This methodology is preferred to seasonally adjusted month-over-prior month data, particularly with employment data. Advances in technology and the past two recessions have made it difficult to accurately adjust for seasonality.



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.



Review of Colorado Economy Analysis of First Three Quarters of 2015

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

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For additional information contact cber.co at cber@cber.co.

ABOUT THE AUTHOR

Gary Horvath has produce annual employment forecasts of the state economy for over 25 years. They have been supplemented by monthly economic updates and indices that track economic performance over the short term. In addition he has directed three statewide analyses that included reviews of all 64 county economies.

In addition, Horvath was the principal investigator for a state and federally funded project to prepare a nanotechnology road map 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.