FIFTY-FIRST ANNUAL

COLORADO BUSINESS ECONOMIC OUTLOOK

2016

Leeds School of Business
UNIVERSITY OF COLORADO BOULDER
BUSINESS RESEARCH DIVISION

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Sponsored by the University of Colorado Boulder, Leeds School of Business

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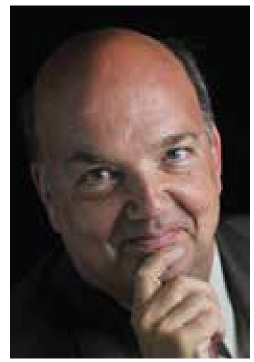
Introduction



The Business Research Division (BRD) in the Leeds School of Business is proud to present our 51st annual Colorado Business Economic Outlook. This 2016 consensus forecast is a product of partnerships that rely on research conducted by our students and staff, and members of the public and private sectors in service and outreach to the state of Colorado.

This forecast analyzes changes that have occurred in all economic sectors during the past year, and looks at the opportunities and challenges that will shape population, employment, and the overall economy in the coming year. The information in this book is initially presented at the fifty-first annual Colorado Business Economic Outlook Forum in Denver, followed by approximately 50 forecast speeches that are held throughout the state during the year, ranging from presentations to industry associations and nonprofit organizations to the Federal Reserve Bank of Kansas City.

Methodology

We are fortunate to have more than 100 individuals from the business, education, and government communities who serve on 13 sector estimating groups. These groups convene at a kickoff meeting in September where members discuss trends and issues that are likely to affect economic growth during the upcoming year. During the second half of September and into October, the committees apply this information to their industry. From this series of meetings, the sector write-ups and forecasts are prepared and submitted to the BRD in early November, when they are edited and published in this book. The following June, the Steering Committee, which is made up of the sector chairs, meets to review their forecasts and identify factors that will positively or negatively drive change in their industry's economic performance during the second half of the year. These updates are published in the summer issue of our quarterly newsletter, the *Colorado Business Review*.

Related Economic Research

The BRD conducts customized business and economic research that expands the knowledge base of decision makers throughout the state and region. The annual Colorado Business Economic Outlook provides the foundation for all research the BRD conducts within the state. Among the other BRD research tools available to businesses and organizations is the Leeds Business

Confidence Index, a forward-looking index that gauges Colorado business leaders' opinions about national and state economic trends and how their industry will perform in the coming quarter, and the *Colorado Business Review*, which explores current topics of importance to the state's economy. Visit colorado.edu/business/brd for more information about BRD offerings.

Acknowledgments

We are humbled and thankful to have dedicated partners in producing this forecast. A complete list of committee members appears at the back of this book. Their efforts are very much appreciated. We also thank the staff of the Colorado Department of Local Affairs and the Colorado Department of Labor and Employment who supply us with much of the employment and population data used in the forecast.

Finally, I would like to thank the many Leeds School of Business and CU-Boulder personnel who worked hard at preparing, presenting, and promoting this project. My sincerest thanks go to Brian Lewandowski, Associate Director; Cindy DiPersio, Project Coordinator; Lynn Reed, Graphic Designer; Denise Munn, Publications Project Manager; and Justin Lau, Jackson Rueter, Ryan Thorpe, Heberto Limas Villers, and Lindsay Weinberg, Student Research Assistants, for their help in assembling and presenting the 2016 Colorado Business Economic Outlook Forum. The assistance provided by Leeds School staff, including Erik Jeffries, director of creative services; Nicole Waldrip, graphic designer; Trisha McKean, assistant dean for advancement; Margaret Bankoff, assistant director of development; and Anna Linn, corporate and board relations program coordinator, is greatly appreciated. I am also appreciative of the help provided by Elizabeth Lock and Dirk Martin with the CU-Boulder Office of News Services.

Colorado Economic Forecast for 2016

The sections that follow provide a summary of 2015, a forecast for 2016, and industry-specific data analysis and insight into the key factors influencing each sector. We believe this information will prove useful in your business and policy decision-making process.

Richard L Wobbekind

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BRD: BUSINESS RESEARCH DIVISION

The Business Research Division conducts economic impact studies and customized research projects that assist companies, associations, nonprofits, and government agencies with making informed business and policy decisions. Among the tools offered are the annual Colorado Business Economic Outlook, which provides a forecast of the state's economy by sector, and the quarterly Leeds Business Confidence Index, which gauges Colorado business leaders' opinions about the economy. The quarterly *Colorado Business Review* e-newsletter offers decision makers in-depth analysis and information about Colorado's economy.

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Leeds School of Business
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BUSINESS RESEARCH DIVISION

Colorado Then and Now

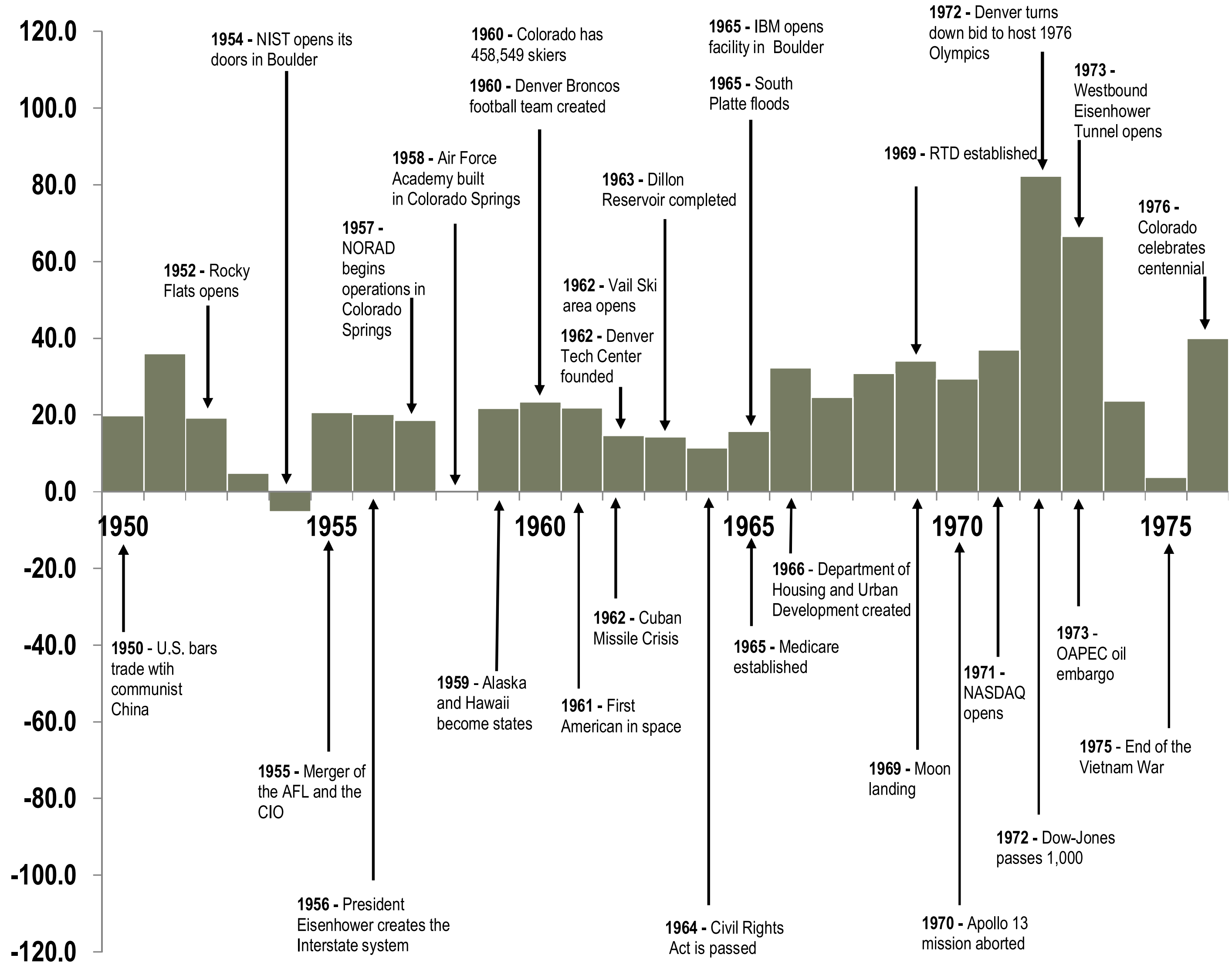
Over the past 45 years, employment and the composition of the labor force in Colorado have changed significantly.

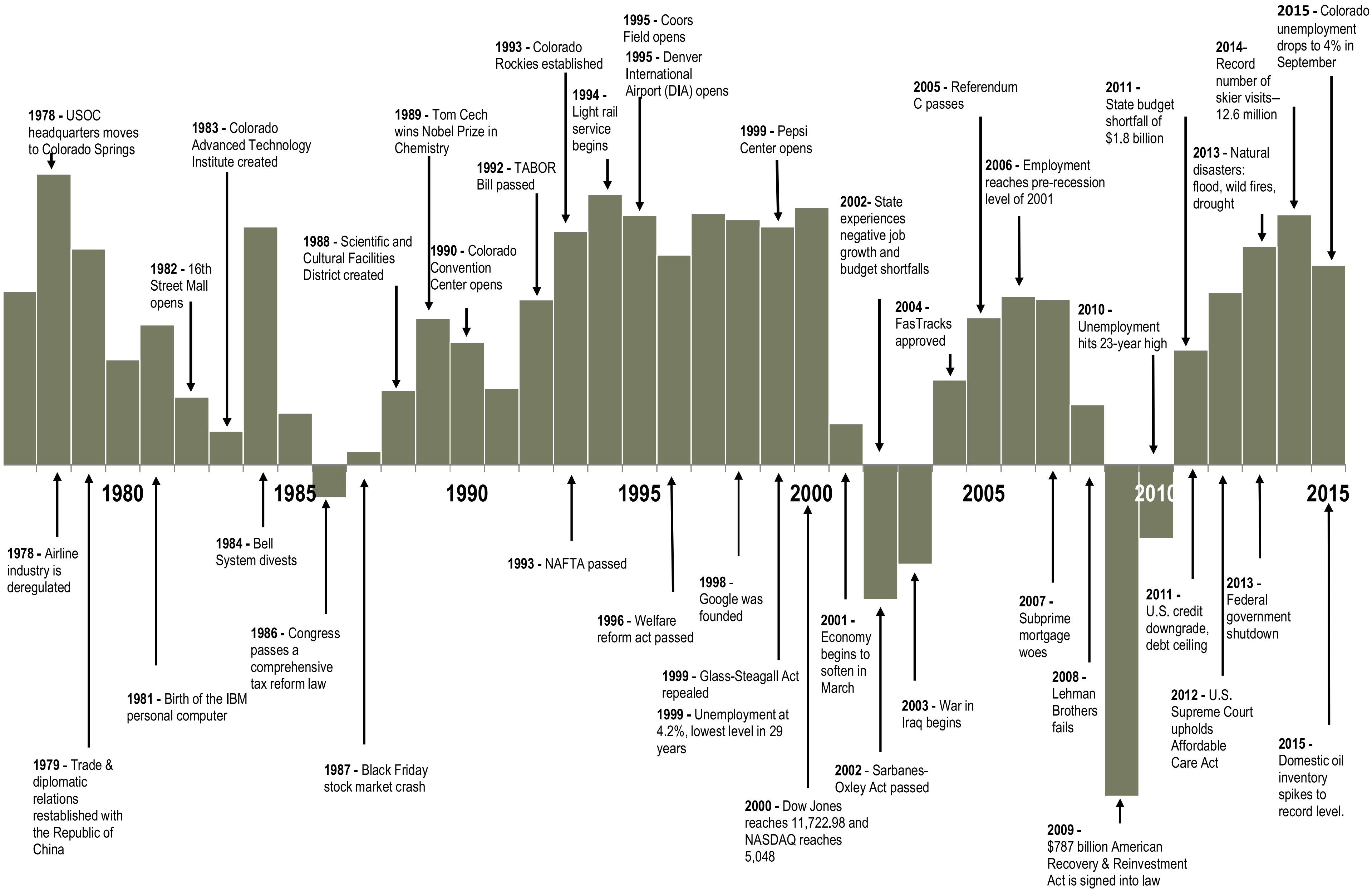
In 1970, just over one million individuals were employed in Colorado and average annual earnings were $6,538. Twenty percent of jobs were in goods-producing industries and proprietor employment represented less than 17% of total jobs. Females made up 37% of Colorado's labor force according to data from the Colorado Demography Office.

Since 1970, wage and salary employment and proprietor employment has grown to more than 3.4 million, and average earnings increased to $48,110, according to data from the Bureau of Economic Analysis. Goods-producing jobs have decreased to 13% of total employment. At the same time, proprietor employment increased to 25% of Colorado jobs, and the share of females in the state's labor force increased to nearly half (46%). The percent of Colorado residents with four or more years of college more than doubled, from 14.9% in 1970 to 38.3% today.

The timeline to the right provides a glimpse into the past, showing the annual change in state employment. Changes in employment have been accompanied by numerous social, economic, educational, and political changes. Colorado events are listed above the line; national events are noted below.

Annual Change in Colorado Employment in Thousands





1978 - USOC headquarters moves to Colorado Springs
1982 - 16th Street Mall opens
1983 - Colorado Advanced Technology Institute created
1988 - Scientific and Cultural Facilities District created
1989 - Tom Cech wins Nobel Prize in Chemistry
1990 - Colorado Convention Center opens
1992 - TABOR Bill passed
1993 - Colorado Rockies established
1994 - Light rail service begins
1995 - Coors Field opens
1995 - Denver International Airport (DIA) opens
1999 - Pepsi Center opens
2002- State experiences negative job growth and budget shortfalls
2004 - FasTracks approved
2005 - Referendum C passes
2006 - Employment reaches pre-recession level of 2001
2010 - Unemployment hits 23-year high
2011 - State budget shortfall of $1.8 billion
2013 - Natural disasters: flood, wild fires, drought
2014- Record number of skier visits--12.6 million
2015 - Colorado unemployment drops to 4% in September
1980
1985
1990
1995
2000
2005
2010
2015
1978 - Airline industry is deregulated
1979 - Trade & diplomatic relations restablished with the Republic of China
1981 - Birth of the IBM personal computer
1984 - Bell System divests
1986 - Congress passes a comprehensive tax reform law
1987 - Black Friday stock market crash
1993 - NAFTA passed
1996 - Welfare reform act passed
1998 - Google was founded
1999 - Glass-Steagall Act repealed
1999 - Unemployment at 4.2%, lowest level in 29 years
2000 - Dow Jones reaches 11,722.98 and NASDAQ reaches 5,048
2001 - Economy begins to soften in March
2002 - Sarbanes-Oxley Act passed
2003 - War in Iraq begins
2007 - Subprime mortgage woes
2008 - Lehman Brothers fails
2009 - $787 billion American Recovery & Reinvestment Act is signed into law
2011 - U.S. credit downgrade, debt ceiling
2012 - U.S. Supreme Court upholds Affordable Care Act
2013 - Federal government shutdown
2015 - Domestic oil inventory spikes to record level.

U.S. Economic Outlook

The U.S. economy grew 2.2% in 2012, 1.5% in 2013, and 2.1% in 2014. In 2015, real gross domestic product (GDP, or the value of goods and services produced) had a slow start with a growth rate of 0.6% in Q1 2015, but ramped up with growth of 3.9% in Q2 and 2.1% in Q3. U.S. output has been on a long-term slowing trend. The total value of goods and services created in the United States has grown at an average rate of 2.2% since the recession ended compared to 3.3% for the period between 1970 and 1999. The average growth rate was 2.6% from 2000 through 2006 leading up to the recession. Expectations for growth in output remain below 3% for 2015 and 2016.

Despite subdued short-term growth, positive economic signals include employment growth, low unemployment rates, higher personal spending, and increased business investment. The economic uncertainty that persisted following the recession has abated, with increasing consumer confidence and the willingness to move residences, increase spending, and in general take more risks. Two components of the economy targeted by Fed policy are employment and inflation (the dual mandate). Employment growth is healthy, but inflation has remained almost uncomfortably low, partially due to depressed energy prices. Overall, consumer prices increased an average of 0.9% year-over-year since January 2014, while core inflation (all items less food and energy) averaged 1.8%.

However, the U.S. dollar and U.S. exports are being affected by slower economic growth in some global markets. Domestically, Federal Reserve policies and low commodity prices, particularly energy prices, pose a risk to the pace of economic growth. Fiscal drag has ended. Economic recovery remains uneven among the states.

The price for West Texas Intermediate crude oil has dropped by 59% since June 2014 and decreased 43% year-over-year—a boon for consumers through lower gasoline prices but a risk to domestic oil production. Domestic gasoline prices are 23% below mid-November a year ago.

Internationally, the eurozone continues to recover from recession and will show growth in 2016. China's growth slowed from 10% in 2010 to 6.9% in 2015, and growth is expected to decline further. China is trying to address its slowdown with monetary and fiscal stimuli, but if the trend continues it could cause a further decline in commodity prices. Middle Eastern conflicts were reignited with the rise of ISIS, and the uncertainty of future U.S. action in the region is another danger to the domestic economy.

With this backdrop, the following sections examine forecasts of output and the key components of GDP.

REAL GROSS DOMESTIC PRODUCT
2007–2016
(In Millions of Chained 2009 Dollars)

Economic Indicator	2007	2008	2009	2010	2011	2012	2013	2014	2015[a]	2016[b]
Real Gross Domestic Product	$14,873.7	$14,830.4	$14,418.7	$14,783.8	$15,020.6	$15,354.6	$15,583.30	$15,916.70	$16,314.6	$16,755.1
Percentage Change	1.8%	-0.3%	-2.8%	2.5%	1.6%	2.2%	1.5%	2.1%	2.5%	2.7%
Fixed Investment	$2,609.6	$2,432.6	$2,025.7	$2,056.2	$2,186.7	$2,400.4	$2,501.9	$2,633.7	$2,723.2	$2,840.3
Percentage Change	-2.0%	-6.8%	-16.7%	1.5%	6.3%	9.8%	4.2%	5.3%	3.4%	4.3%
Personal Consumption	$10,041.6	$10,007.2	$9,847.0	$10,036.3	$10,263.5	$10,413.2	$10,590.4	$10,875.7	$11,212.8	$11,549.2
Percentage Change	2.2%	-0.3%	-1.6%	1.9%	2.3%	1.5%	1.7%	2.7%	3.1%	3.0%
Government Expenditures	$2,914.4	$2,994.8	$3,089.1	$3,091.4	$2,997.4	$2,941.6	$2,854.9	$2,838.3	$2,858.2	$2,889.6
Percentage Change	1.6%	2.8%	3.1%	0.1%	-3.0%	-1.9%	-2.9%	-0.6%	0.7%	1.1%
Net Exports	-$712.6	-$557.8	-$395.4	-$458.8	-$459.4	-$447.1	-$417.5	-$442.5	-$542.1	-$590.0

[a]Estimate. [b]Forecast.

Note: Components do not sum to total since the fixed investment component excludes changes in inventories.

Sources: Bureau of Economic Analysis, Economy.com, National Association for Business Economics, and Colorado Business Economic Outlook Committee.

Total Output

The National Bureau of Economic Research (NBER), the organization chartered with dating the recessions, pegged the last recession at 18 months, ending in June 2009—the longest contraction since the Great Depression. U.S. GDP declined in Q1 2008, from Q3 2008 through Q2 2009, in Q1 2011, and in Q1 2014. The worst decline was 8.2% in Q4 2008 during the official recession. Through Q4 2013, the United States recorded 11 consecutive quarters of GDP growth, but Q1 2014 saw a 0.9% decrease. Annual growth in 2014 was 2.4%. Growth in 2015 started off slow (0.6% in Q1) but rapidly picked up in Q2 (3.9%) and remained healthy in Q3 (2.1%). The year 2015 should end with growth of around 2.5%. Annual GDP growth for 2016 is estimated at 2.7%, barring unforeseen external shocks.

Consumer Spending

Personal consumption of goods outpaced growth in services in 2014, 3.3% to 2.4%, and this pattern persisted in Q2 and Q3 2015. Durable goods saw the sharpest decline during the recession, but exhibited the most robust growth from 2011 through 2014 (6.1%, 7.4%, 5.8%, and 5.9%, respectively). On a quarterly basis, this trend continues to hold with strong gains especially in durable goods and modest gains in services and nondurables.

Growth is being spurred by confidence on the part of consumers, fueled by growing employment, income, and wealth. National employment fell 6.3% in 25 months after peaking in January 2008. After 88 months, national employment has surpassed the previous peak by 3.1%, setting new record employment in the United States. Private employment stands 4% above the pre-recession peak. October 2015 employment data show that 35 states are above pre-recession peaks.

The national unemployment rate continues to improve, standing at 5% in October 2015—the lowest level since April 2008. The U-6 unemployment rate, reflecting unemployed as well as underemployed, dropped to 9.8% in October compared to 17.4% in October 2009. All but 7 states now have unemployment rates below 6%, and all 50 states have unemployment rates below 7%. Compared to 2014, the labor force increased 0.8% year-to-date in October 2015, while the labor force participation rate has continued on the slow descent that began in 2000. Labor force participation decreased 4.9 percentage points from April 2000 to October 2015. Unemployment is plaguing age cohorts and educational cohorts differently—the lowest unemployment rates are observed for individuals with a bachelor's degree and higher (2.5% in October 2015) and those 55 year and over (3.5%).

Personal income increased 4.2% year-over-year in Q3 2015. This builds on growth observed in 2012 (5%), 2013 (1.1%), and 2014 (4.4%). Real disposable personal income decreased 1.4% in 2013 but rebounded 2.7% in 2014 and 3.3% year-over-year in Q3 2015. Per capita personal income has increased at a slightly slower rate—falling 2.1% in 2013, rebounding 2% in 2014, and 2.6% year-to-date in 2015, resting at record levels. Wage and salary income shows a similar trend—aggregate incomes are at record levels, but average incomes are increasing more slowly (2.6% in 2012, 1.1% in 2013, 3.1% in 2014, and 2.7% in Q1 2015).

Data from the Federal Housing Finance Authority show every state recording year-over-year gains in home prices according to the purchase only index, which helps with homeowner liquidity and labor mobility. The personal savings rate increased year-over-year in September 2015.

Household balance sheets remain healthy in 2015, with a financial obligation ratio (financial obligations as a percentage of disposable personal income) of 15.4% in Q2 2015 compared to 18.1% in Q4 2007. Consumers have demonstrated a return to the market, with greater levels of consumption and a resumption of growth in revolving credit. Retail sales increased 3.7% in 2013 and 3.9% in 2014, but slowed to 2.1% growth year-to-date in September 2015 compared to the prior year. With the consumer fundamentals in place, growth will continue in 2016,

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U.S Economic Outlook

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while consumer prices remain below target (less than 1% in 2015, less than 2% in 2016).

Investment

Residential construction will continue a slow improvement, increasing from about 1 million units in 2014 to 1.1 million in 2015 and 1.3 million in 2015, barring an unusually large reaction to rising mortgage rates. Regional demand and consumer preferences will continue to dictate the type of additions to the housing stock.

Fixed investment includes investment in residential structures, as well as nonresidential structures, equipment, software, and changes in inventory. Excluding changes in inventory, real business fixed investment is expected to increase 3.4% in 2015 and 4.3% in 2016. In 2014, roughly 80% of fixed investment (excluding inventory) was business related.

Government Expenditures

Real government consumption and investment continued a fourth consecutive year of decline in 2014, but grew in Q2 and Q3 2015, signaling an end to the fiscal drag. Government consumption and investment is expected to increase slightly in 2015 and 2016. More than 60% of total government expenditures and investment are state and local, and roughly one-quarter are allocated to national defense and 15% to nondefense programs.

The deficit peaked at $1.4 trillion in fiscal year 2009. The federal deficit decreased to -$439 billion in fiscal year 2015, but expectations are for a wider deficit in fiscal year 2016 (-$470 billion).

Net Exports

The trade imbalance will continue to be impacted by global economic growth and political dynamics. The United States maintains a net deficit on goods and a net surplus on services. The magnitude of the imbalance remains significant; it had been relatively stable through 2014. Net exports are expected to be between -$500 billion and -$600 billion in 2015 and 2016, respectively.

STATE AND NATIONAL ECONOMIC COMPARISON, 2004–2014

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Colorado											
Real GDP ($ billions, chained 2009 dollars)	229.9	240.2	244.3	249.5	253.9	250.3	253.5	256.2	261.6	267.2	279.7
Nominal GDP ($ billions)	205.3	222.4	233.1	245.3	256.1	250.3	258.2	266.6	276.8	288.3	306.7
Total Personal Income ($ billions)	167.8	179.1	192.2	203.0	213.3	206.4	211.4	227.1	240.9	246.4	261.7
Per Capita Personal Income ($)	36,676	38,665	40,709	42,265	43,631	41,508	41,877	44,349	46,402	46,746	48,869
Employment (thousands)[a]	2,179.6	2,226.0	2,279.1	2,331.3	2,350.3	2,245.6	2,222.3	2,258.6	2,313.0	2,381.9	2,460.8
Unemployment Rate (percent)	5.5	5.0	4.3	3.7	4.8	7.3	8.7	8.3	7.8	6.8	5.0
United States											
Real GDP ($ billions, chained 2009 dollars)	13,773.5	14,234.2	14,613.8	14,873.7	14,830.4	14,418.7	14,783.8	15,020.6	15,354.6	15,583.3	15,961.7
Nominal GDP ($ billions)	12,274.9	13,093.7	13,855.9	14,477.6	14,718.6	14,418.7	14,964.4	15,517.9	16,155.3	16,663.2	17,348.1
Total Personal Income ($ billions)	10,047.9	10,610.3	11,381.4	11,995.4	12,492.7	12,079.4	12,459.6	13,233.4	13,904.5	14,064.5	14,683.1
Per Capita Personal Income ($)	34,316	35,904	38,144	39,821	41,082	39,376	40,277	42,453	44,266	44,438	46,049
Employment (thousands)	131,749	134,005	136,398	137,936	137,170	131,233	130,275	131,842	134,104	136,393	139,042
Unemployment Rate (percent)	5.5	5.1	4.6	4.6	5.8	9.3	9.6	8.9	8.1	7.4	6.2

[a]Revised.

Note: Unless noted, figures are not inflation-adjusted.

Sources: Bureau of Labor Statistics and Bureau of Economic Analysis.

Colorado Economic, Employment, and Population Outlook

State GDP and Income

Colorado continued to post faster economic growth than the nation in 2014, ranking fifth in real GDP growth, behind North Dakota, Texas, Wyoming, and West Virginia. The pace of employment growth ranked the state third in 2014, behind only North Dakota and Nevada. The notion of an outperforming economy is not new to the state—even viewing longer-term growth statistics, Colorado tends to be above the median for growth in GDP, employment, population, and the labor force. Per capita personal income and average annual pay remain above the national average in terms of both absolute growth and growth rates.

Nominal GDP in 2014 increased to $306.7 billion in Colorado. Real GDP increased 4.7% year-over-year compared to 2.4% growth nationally. Personal income jumped 6.2% in 2014. Per capita personal income rose 4.5% compared to 3.6% nationally.

COLORADO RANK AMONG OTHER STATES

Metric	1-Year	3-Year	5-Year	10-Year
Real GDP Growth	5	3	9	9
Employment Growth	21	6	5	5
Population Growth	4	3	4	6
Personal Income Growth	7	1	3	9
PCPI Growth	9	12	23	29
PCPI	14	16	13	12
Average Annual Pay Growth	8	16	20	20
Average Annual Pay	13	12	12	12
Unemployment Rate	13	27	29	22
Labor Force Growth	38	17	12	7
FHFA Home Price Index	1	5	6	4

Sources: Bureau of Economic Analysis, Bureau of Labor Statistics, U.S. Census Bureau, Federal Housing Finance Agency, and the Colorado State Demography Office. BRD calculations. Note: 3-year, 5-year, and 10-year are based on the compound annual growth rate.

The state is measurably outperforming due to the talented workforce, key infrastructure for entrepreneurship, diverse industries, and the aggressive efforts by state and local economic development. Colorado boasts the second-highest rate of bachelor's degrees according to U.S. Census Bureau data, with 38.3% of people 25 years and older attaining a bachelor's degree or higher. The Colorado Office of Economic Development and International Trade launched Colorado Blueprint 2.0, with a focus on rural economic development and leveraging resources.

Inflation

The U.S. city average all items Consumer Price Index for All Urban Consumers (CPI-U) increased by 1.5% in 2013, followed by growth of 1.6% in 2014. Inflation is expected to average less than 1% in 2015 and 1.7% the following year. Core inflation—all items less food and energy—increased nationally 1.8% in 2013 and 1.8% in 2014.

Inflation is reported by the Bureau of Labor Statistics for the Denver-Boulder-Greeley combined metropolitan statistical areas, which is often used as a proxy for Colorado. The state typically tracks closely with national inflation, although prices increased faster than the rest of the nation, at 2.8% in 2014. In 2015 and 2016, Colorado prices are expected to rise 1% and 1.9%, respectively. Core inflation in the Denver-Boulder-Greeley region increased 3.2% in 2013, 2.9% in 2014, and 3.2% in the first half of 2015. Shelter prices increased 4.5% in 2013, 5% in 2014, and 5.5% for the first half of 2015.

Population Overview

Total State Change and U.S. Comparison

The July 2014 Colorado population is estimated by the State Demography Office to be 5,353,471. This is an increase of 82,485, or 1.6%, since 2013, ranking Colorado eighth in total population change in the nation and fourth fastest in percentage change behind North Dakota, Nevada, and Texas. Population change comprises net migration (those moving in minus those moving out) and natural increase (births minus deaths). Net migration is estimated at 50,778, and natural increase is estimated at 31,707. Although Colorado is growing relatively fast within the United States, for comparative purposes, one county in Texas, Harris County (Houston), increased by more than 83,000.

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CONSUMER PRICE INDEX, U.S. AND DENVER-BOULDER-GREELEY 2006–2016 (1982–1984=100)

	United States		Denver-Boulder-Greeley	
Year	CPI	CPI Rate	CPI	CPI Rate[a]
2006	201.6	3.3%	197.7	3.6%
2007	207.3	2.8	202.0	3.6
2008	215.3	3.8	209.9	2.2
2009	214.5	-0.4	208.5	3.9
2010	218.1	1.6	212.4	-0.6
2011	224.9	3.2	220.3	3.7
2012	229.6	2.1	224.6	1.9
2013	233.0	1.5	230.8	2.8
2014	236.7	1.6	237.2	2.8
2015[b]	237.0	0.1	239.6	1.0
2016[c]	241.0	1.7	244.1	1.9

[a]Consumer Price Index (CPI-U) is not calculated for the state of Colorado. This is the CPI-U for the Denver-Boulder-Greeley CMSA, often used as a proxy for the inflation rate of Colorado (it is calculated semiannually).

[b]Estimated. [c]Forecast.

Sources: Bureau of Labor Statistics, and Colorado Business Economic Outlook Committee.

Colorado Economic, Employment, and Population Outlook

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Change by County

Eighty-three percent of Colorado's population live in the 12 counties that make up the Front Range, 10% live in the 21 counties that encompass the Western Slope, 3% live in the 16 counties that form the Eastern Plains, 2% live in the 9 counties that constitute the Central Mountains, and 1% live in the 6 counties that make up the San Luis Valley.

Colorado's 2014 county population ranges in size from El Paso, with 665,070, to Mineral County, with 697. Twenty-six, or 40% of Colorado's counties, have fewer than 10,000 people. Eleven, or 17% of the counties, have greater than 100,000 residents.

Denver was the fastest-growing county in Colorado for total population growth, adding more than 15,000 from 2013 to 2014. This places the county 34th in the nation for county-level population growth. Arapahoe County ranked 2nd in the state and 50th in the nation for total growth. The growth in the Denver Metro area accounted for 70% of the total population growth in the state. The county with the fastest growth rate in Colorado was Crowley due to prison population increase, and second was Gilpin County (ranked 9th nationally), at 5%, adding 258 people. The county with the next fastest growth rate was Broomfield (3%).

Weld and Larimer counties are still in the top 10 Colorado counties for population growth in both percentage and total growth, continuing their strong population growth trends.

Despite the high-ranking population growth nationally, growth throughout the state has been disparate. Forty-four counties gained and 20 (just under 30% of Colorado counties) lost population between 2013 and 2014. Counties with declines are primarily rural counties on the Eastern Plains, San Luis Valley, and western parts of the state. Delta County lost the most population, 329 people, followed by Las Animas and Prowers. Counties losing population have eased from a peak of 33 in 2011.

Births and Deaths

Statewide births and deaths between 2013 and 2014 were 65,700 and 34,000, respectively. Sixteen counties had natural decline (more deaths than births) between 2013 and 2014, up from 11 the previous year. The counties experiencing natural decline are primarily along the central mountains and southeast Colorado. Births have started to pick up after slowing with the recession. Births are still about 5,000 below what they were in 2008. The Denver Metro area has had the largest slowing in births but in percentage terms the largest slowing has primarily been in mountain counties. Research shows that during a recession and for several years following, births slow due to lack of confidence in the economy. Additionally, a statewide health initiative to reduce teen birth rates has been in place since 2009 and has helped to decrease teen births by 40%. The recession has had little impact on deaths; they have steadily increased over time as the state's older population has increased.

Migration

Migration flows have changed since 2010. Net out-migration seems to be slowing from 37 counties between 2010 and 2011 to 24 counties between 2013 and 2014. Total cumulative out-migration from 2010 through 2014 impacted 32 counties. The counties with out-migration are diverse, ranging from mountain counties still

POPULATION CHANGE BY COUNTY, 2014

	Rank	County	Percent Change	Rank	County	Change
Growth	1	Crowley	5.13%	1	Denver	15,242
	2	Gilpin	4.63%	2	Arapahoe	10,903
	3	Broomfield	2.75%	3	Adams	10,381
	4	Douglas	2.63%	4	Douglas	8,068
	5	San Juan	2.57%	5	El Paso	7,967
Loss	1	Hinsdale	-4.23%	1	Delta	-328
	2	Dolores	-4.16%	2	Las Animas	-314
	3	Mineral	-4.13%	3	Prowers	-258
	4	Bent	-2.77%	4	Moffat	-228
	5	Kit Carson	-2.54%	5	Kit Carson	-204

Source: Colorado Demography Office.

STATE TO STATE MIGRATION FLOWS IN AND OUT OF COLORADO BY STATE, 2014

Rank	State	In Migration	Rank	State	Out Migration
1	California	24,506	1	Texas	18,277
2	Texas	24,431	2	California	17,500
3	Arizona	12,304	3	Arizona	9,663
4	New York	9,519	4	Florida	9,260
5	Florida	9,304	5	Washington	6,779
Rank	State	Net In Migration	Rank	State	Net Out Migration
1	New York	7,371	1	Oregon	-3,382
2	California	7,006	2	South Carolina	-1,865
3	Texas	6,154	3	Kentucky	-1,372
4	Illinois	5,015	4	Utah	-1,185
5	Arizona	2,641	5	Alabama	-1,015

Sources: Census, ACS 2014 and the Colorado Demography Office.

COMPONENTS OF COLORADO RESIDENT POPULATION, 2007–2016
(In Thousands)

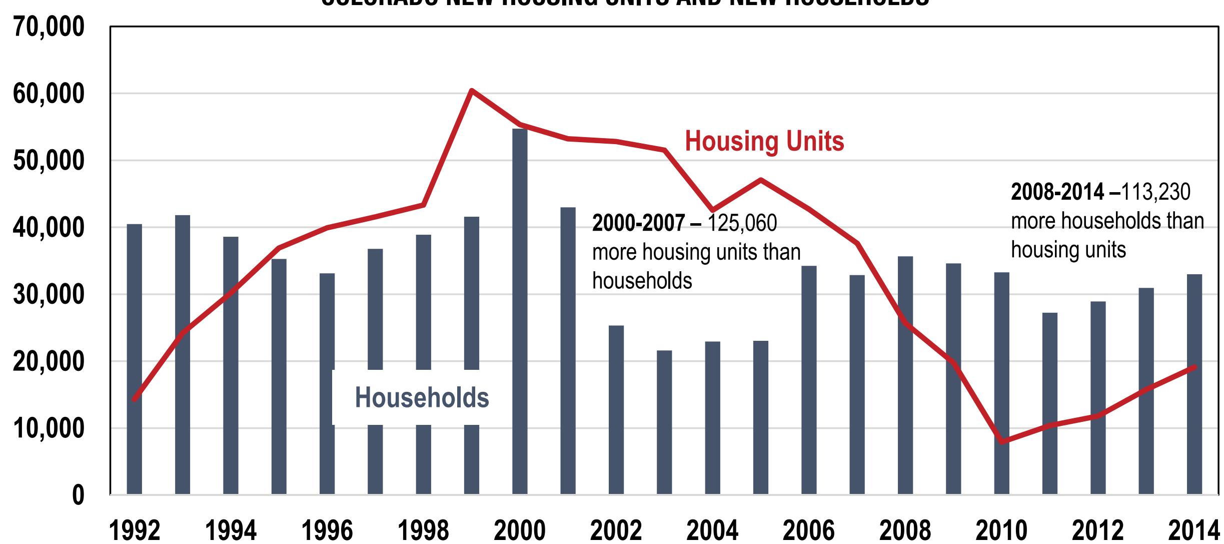
Year	Births (Resident)	Deaths (Resident)	Natural Increase	Net Migration	Population Change	Total Population[a]
2007	70.8	29.7	41.1	35.0	76.1	4,821.8
2008	70.7	31.0	39.7	40.5	80.2	4,901.9
2009	69.1	30.5	38.6	36.3	74.9	4,976.9
2010	67.3	31.4	35.9	37.5	73.4	5,050.3
2011	65.9	32.0	33.9	36.0	69.9	5,120.2
2012	64.7	32.8	32.0	39.8	71.8	5,192.0
2013	64.7	33.6	31.1	47.9	79.0	5,271.0
2014	65.7	34.0	31.7	50.8	82.5	5,353.5
2015[b]	67.2	34.9	32.3	57.8	90.1	5,443.6
2016[c]	68.6	35.7	32.9	62.1	95.0	5,538.6

[a]Due to rounding, the sum of the individual items may not equal the total.

[b]Estimated.

[c]Forecast.

COLORADO NEW HOUSING UNITS AND NEW HOUSEHOLDS



Source: Colorado State Demography Office. Data as of November 2015.

struggling with the recession to the Eastern Plains and the San Luis Valley. The declines in Fremont and Logan were due in part to declines in the prison population.

In-migration to Colorado was estimated at 218,728 and out-migration was 173,332 using the American Community Survey, 2014 State to State Migration Flows (not the same source the State Demography Office uses for creating estimates). The top five donor and receiver states are listed in the table on page 10, as well as the largest *net* donor and receiver states. Four of the top five states receiving Colorado migrants were also top donor states: Texas, California, Arizona, and Florida. In terms of net migrants, three of the top donor states are also top net migrant states (California, Texas, and New York).

Housing Units

Colorado housing units increased by slightly over 19,000 from July 2013 to June 2014 while households increased by almost 33,000. For seven years there has been greater growth in households versus housing units that helped to decrease the oversupply of housing units present since the mid-2000s leading into the recession. Estimates indicate that statewide vacancy rates have fallen from 13.2% in 2007 to 7.6% in 2014. Local housing conditions vary across the state; however, statewide conditions indicate that new housing construction needs to increase to keep up with household formation.

Population Forecast

The short-term population growth forecast for Colorado is an increase of 90,000, or 1.7%, for 2015; 95,000, or 1.7%, for 2016; and 97,000, or 1.8%, for 2017. The total population was forecast to be 5,443,000 in July 2015. Growth rates of 1.7% are similar to what Colorado experienced prior to the recession. Over the next five years, annual growth rates are forecast to vary from a high of 1.9% per year along the north Front Range to less than 1% on the Eastern Plains. The forecast is for Colorado to reach 6 million by 2020.

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Colorado Economic, Employment, and Population Outlook

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In the longer run, Colorado is forecast to grow at a slower rate, age rapidly, and become more racially and ethnically diverse. Colorado is currently growing around 1.6% per year, forecast to increase to 1.7% per year, and then slow to around 1.2% per year by 2040. Although Colorado's growth rate is forecast to slow, total population change is forecast to increase to approximately 100,000 per year through 2025 and then slow to around 75,000 per year by 2040. The Colorado 2014 forecast for 2040 is 7.9 million.

Colorado's 65+ population is forecast to increase from 555,000 to 900,000 between 2010 and 2020. Colorado's median age is expected to continue to increase from 36.1 in 2010 to 39.4 by 2040. The increasing share of the state's older population will be most significant this decade, increasing by 61%. A continued slowing in the labor force growth rate is expected as a result of the shift of population to older age groups with lower participation rates.

Colorado will also become more racially and ethnically diverse by 2040 due to the aging of the more diverse younger population in Colorado. Over 40% of the population under 18 is nonwhite compared to less than 20% for the population over 55. The Hispanic population is forecast to increase 1.5 million, from 20% of the population in 2010 to 33% in 2040.

Leeds Business Confidence Index

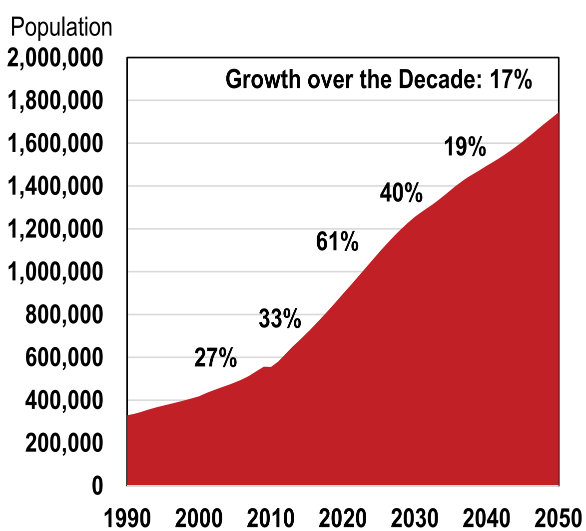
The Business Research Division produces a quarterly leading indicator that measures the expectations of Colorado business leaders. For more than a decade, the Leeds Business Confidence Index (LBCI) has been asking business leaders about their expectations for the national and state economies, hiring, capital expenditures, sales, and profits. These metrics are reported in an aggregated index, as well as individually.

Looking back at the results through 2015, the forward-looking LBCI reflected optimism among Colorado business leaders. The composite index has been positive (50=neutral) for 16 consecutive quarters.

One measure that is consistent is confidence in Colorado's economy outperforming the nation's economy. In the Q4 2015 survey, expectations for sales, profits, hiring, and capital expenditures all remained above neutral. Large firms and young companies tended to be more optimistic than small firms and companies that have been in business longer than 10 years.

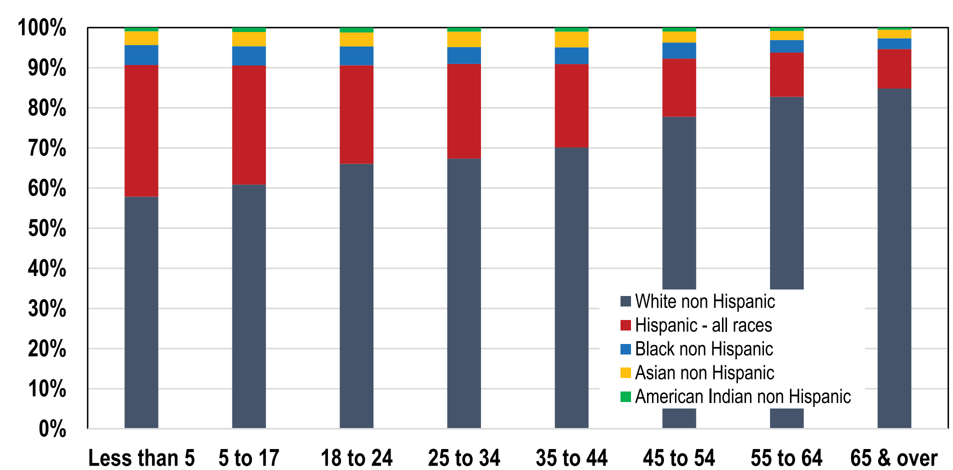
As a supplement to the information gained in this book, business leaders are invited to track the performance of the Colorado economy throughout the year via the LBCI. For additional information about how to participate as a panelist or receive survey results, go to www.colorado.edu/business/brd and select Leeds Business Confidence Index.

FORECAST FOR THE POPULATION 65+ IN COLORADO



Sources: Census and the Colorado State Demography Office.

SHARE OF 2010 COLORADO POPULATION BY RACE/ETHNICITY AND AGE



Source: Colorado State Demography Office.

Colorado Labor Force and Employment

For more than 50 years, the Colorado Business Economic Outlook has been compiled by industry leaders in the state, and presented by the Business Research Division (BRD) of the Leeds School of Business at the University of Colorado Boulder. This book presents historical data and forward-looking estimates on employment for each sector of the economy. It also offers discussion on other relevant economic metrics, ranging from sales and cash receipts to building permits and airport enplanements. This section lays the foundation for the each of the NAICS supersectors by providing an overview of labor force and wage and salary employment totals.

Labor Data Sets

The data for this forecast are derived from two U.S. Bureau of Labor Statistics (BLS) sources: Current Employment Statistics (CES) and Local Area Unemployment Statistics (LAUS).

The CES data set is the most frequently cited labor series and is typically used to evaluate sector trends. Compiled from a survey of companies, it includes full-time and part-time workers, temporary workers, employees on paid holiday or sick leave, and those who worked for only part of a pay period. It does not include sole proprietors. CES data for a particular year are revised twice—3 months and 15 months after the end of the year—based on the Quarterly Census of Employment and Wages (QCEW) that all firms are required to submit.

The LAUS labor series provides an estimate of the size of the total labor force and is used to calculate the unemployment rate. The LAUS data considers the labor force as everyone of working age who is actively employed or looking for a job. Students, retirees, stay-at-home parents, institutionalized individuals, and discouraged workers are not included in the workforce. This data series, which is more inclusive than the CES data set, is compiled from a survey of households. It includes farm

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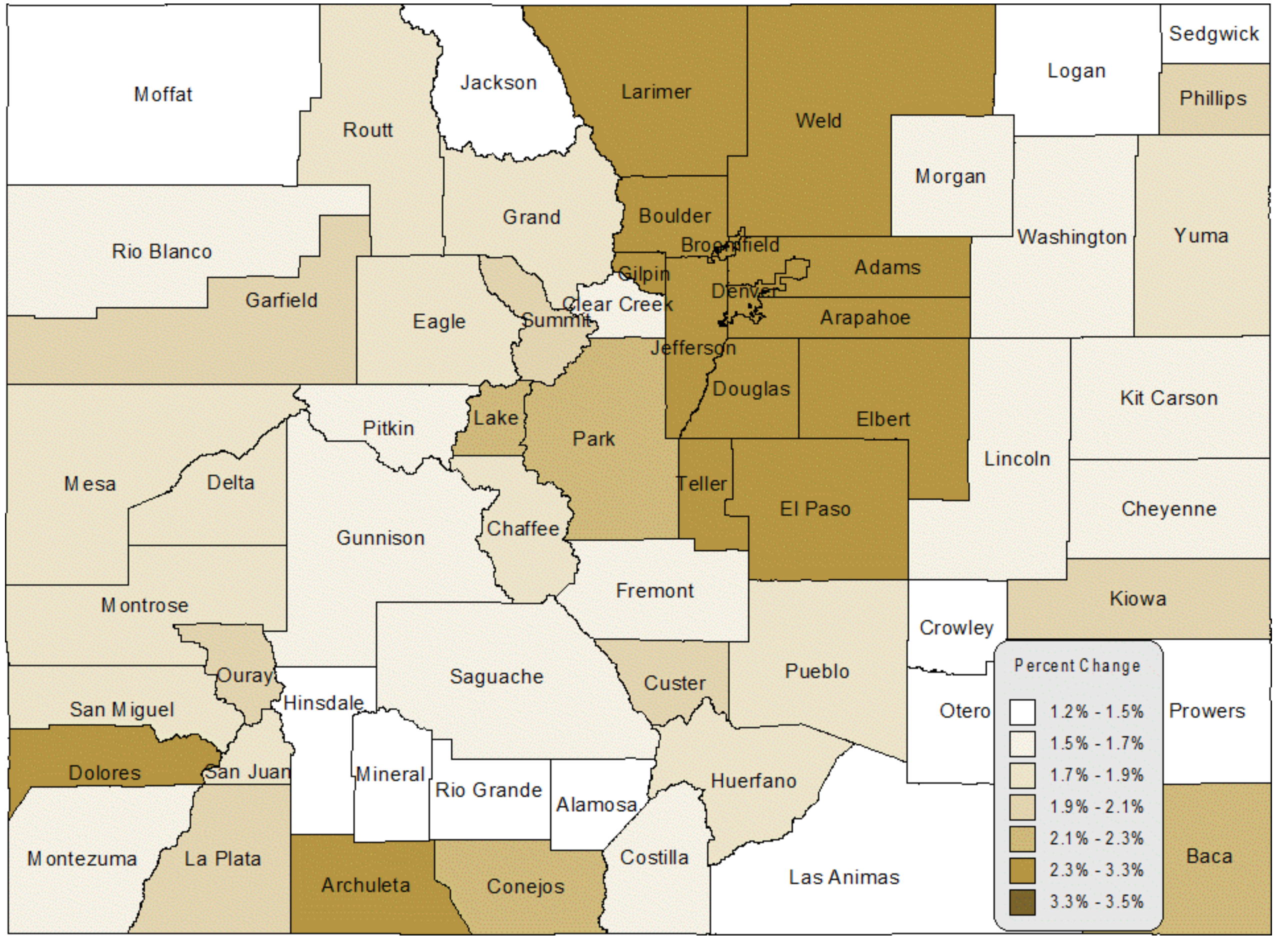
PROPORTION OF NEW FIRMS BY COUNTY, 2010 TO Q1 2015



Source: Colorado Department of Labor and Employment; Governor's Office of State Planning and Budgeting calculations.

Colorado Economic, Employment, and Population Outlook

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COLORADO RESIDENT LABOR FORCE, 2007–2016
(Not Seasonally Adjusted) (In Thousands)

Labor Force	2007	2008	2009	2010	2011	2012	2013	2014	2015[a]	2016[b]
Colorado Labor Force	2,664.7	2,716.6	2,723.0	2,724.4	2,734.4	2,757.1	2,779.6	2,817.3	2,819.6	2,847.8
Total Employment	2,565.2	2,585.2	2,524.4	2,486.4	2,507.8	2,542.5	2,590.6	2,675.9	2,701.4	2,740.5
Unemployed	99.5	131.4	198.5	238.0	226.6	214.6	189.0	141.4	118.3	107.3
Unemployment Rate	3.7%	4.8%	7.3%	8.7%	8.3%	7.8%	6.8%	5.0%	4.2%	3.8%

[a]Estimated. [b]Forecast.

Note: There are slight differences between the LAUS data series and the CES employment data series that is used throughout the rest of this book.

Source: Colorado Department of Labor and Employment (LAUS data) and Colorado Business Economic Outlook Committee.

COLORADO NONAGRICULTURAL WAGE AND SALARY EMPLOYMENT
2007–2016
(In Thousands)

Sector	2007	2008	2009	2010	2011	2012	2013	2014	2015[a]	2016[b]
Natural Resources and Mining	25.2	28.5	24.2	24.4	27.9	30.3	30.6	33.9	31.1	29.8
Construction	167.8	161.8	131.3	115.1	112.5	115.8	127.5	142.3	150.5	160.2
Manufacturing	145.2	142.3	128.0	124.2	128.1	130.9	132.8	136.6	140.3	142.5
Trade, Transportation, and Utilities	429.2	429.3	403.8	397.6	401.7	409.7	420.2	431.8	444.0	454.8
Information	76.4	76.8	74.7	72.0	71.4	69.8	69.8	69.9	70.1	70.4
Financial Activities	159.5	155.6	148.0	144.3	143.9	146.7	151.0	153.3	157.3	159.9
Professional and Business Services	349.7	353.7	331.8	330.8	341.5	356.9	372.6	385.2	397.5	413.0
Educational and Health Services	240.4	250.5	257.2	264.7	273.7	282.6	286.7	298.8	312.1	323.0
Leisure and Hospitality	270.4	272.9	262.4	263.0	271.4	279.7	289.4	300.7	311.4	320.4
Other Services	92.9	94.8	93.7	92.4	93.7	96.0	97.7	100.4	102.0	103.9
Government	374.7	384.1	390.5	393.8	392.9	394.8	403.7	408.0	414.7	418.2
Total[c,d]	2,331.4	2,350.3	2,245.6	2,222.3	2,258.7	2,313.2	2,382.0	2,460.9	2,531.1	2,596.1

[a]Estimated. [b]Forecast.

[c]Nonagricultural self-employed, unpaid family workers, and domestics are excluded from the total.

[d]Due to rounding, the sum of the individual sectors may not equal the total.

Sources: Colorado Department of Labor and Employment (CES Data) and Colorado Business Economic Outlook Committee.

workers, self-employed individuals, and full-time or part-time employees.

Labor Force

Beginning in 2004 and continuing through 2007, Colorado experienced four consecutive years with a falling unemployment rate as household employment growth outpaced the growth in the labor force. This marked the first time in the history of the series dating back to 1976 that the state's unemployment rate declined four straight years. In 2010, three years after the start of the Great Recession, Colorado's unemployment rate reached a record level of 8.9%, with 240,000 residents unsuccessfully looking for work. The unemployment rate has declined steadily over the past five years due to a slowly growing (and sometimes declining) labor force, persistently lower numbers of unemployed, and continuous employment gains. The unemployment rate is projected to fall by 0.8 percentage points, averaging 4.2%, in 2015. The unemployment rate will drop for a sixth consecutive year, but the pace of the decline will slow in 2016, to an average of 3.8% as Colorado reaches full employment.

Employment

The pace of employment growth moderated in Colorado in 2015, with the state adding 70,200 jobs, or 2.8% growth over 2014. Incomes rose in the state, real estate prices spiked, and the value of construction grew year-over-year. New companies were lured to the state, and many more grew organically as demand for goods and services improved. This trend will continue in 2016, with the state adding 65,100 jobs, or 2.6% growth.

Colorado, like the nation, is predominently comprised of small businesses. In the state, 89% of establishments have fewer than 20 employees. The 1.6% of Colorado establishments that have more than 100 workers represent 37% of statewide employment.

The Importance of New Businesses for Economic and Job Growth

New firms are vital for job creation and economic growth. Data on net job creation by age of business from the U.S. Census Bureau, Business Dynamics Statistics (BDS), show that new firms are responsible for almost all net new jobs in the economy every year. Although older businesses employ the greatest proportion of overall workers by far, they do not add as many new jobs to the economy, on average, compared with new firms.

From 1990–2013, the latest data available, new businesses added an average of about 57,600 jobs each year in Colorado based on BDS data. Though some new businesses and the jobs they create do not survive, the data indicate that, on average, about 45% of the new businesses created over the 1990–2013 period still existed after five years. Also, new businesses that survive add jobs at a more rapid pace than older businesses. Having a constant supply of new businesses in an economy is critical for sustained job growth.

Not only are new firms important for job creation, research also indicates that a large portion of productivity gains in an economy are driven by the displacement of less productive businesses by new businesses (Davis, Haltiwanger, and Jarmin, "Young Businesses, Economic Churning, and Productivity Gains," *Turmoil and Growth*, 2008). Also, new firms have been responsible for a disproportionate share of the innovations that improve living standards (Baumol, Litan, and Schramm. *Good Capitalism, Bad Capitalism, and the Economics of Growth and Prosperity*, 2009, Yale University Press).

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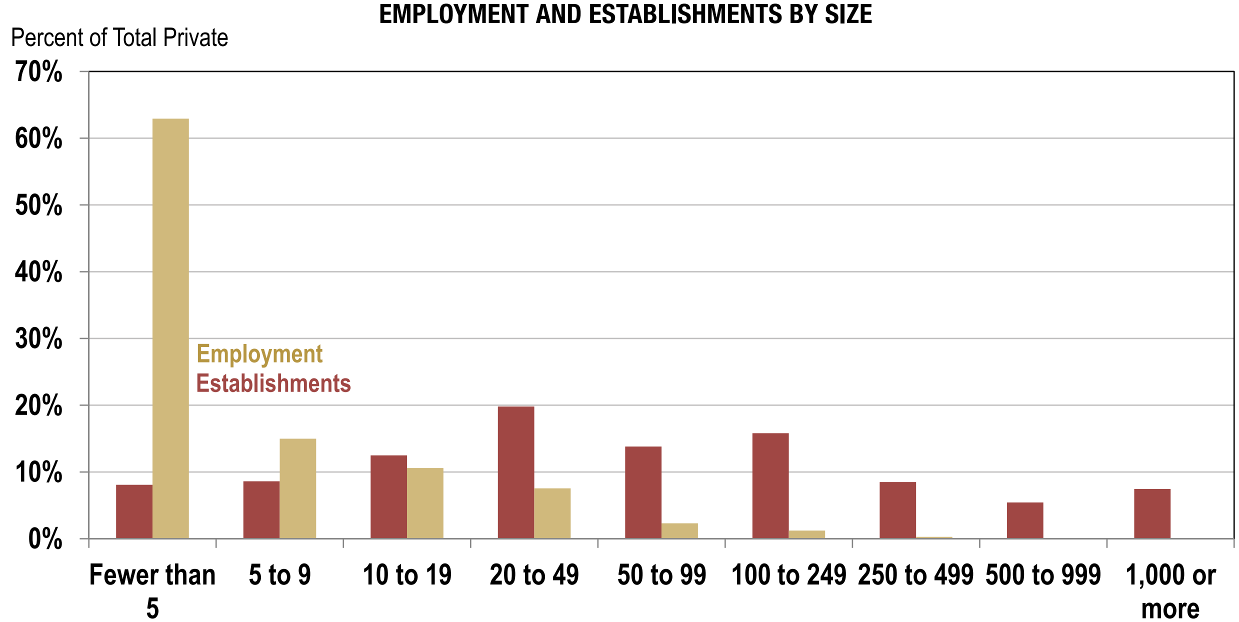
EMPLOYMENT AND ESTABLISHMENTS BY SIZE



Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages. Based on Q1 2015 data.

Colorado Economic, Employment, and Population Outlook

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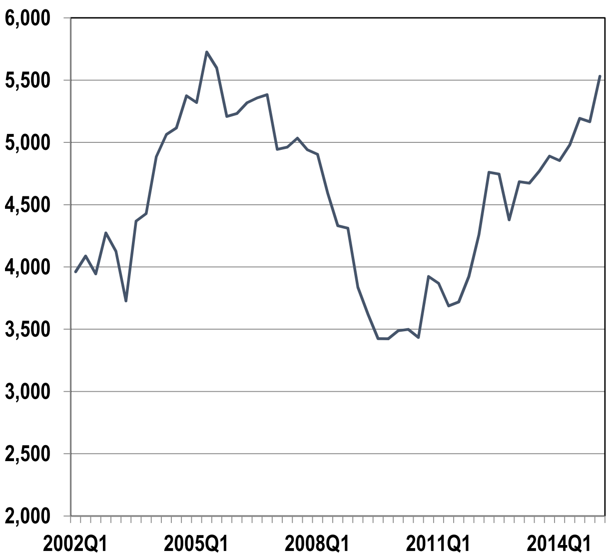
Colorado has a higher level of new business activity compared to the nation overall, and many statistics show Colorado among the top states for entrepreneurship. Colorado had a higher proportion of new and young firms—firms five years old and under—than other states on average during the 1990–2013 period. Colorado's proportion of young firms was fifth-highest among states over this period. During the current recovery, from 2010–2013, Colorado had the seventh-highest concentration of young firms.

There are several reasons for Colorado's higher level of new business formation. The state has an entrepreneurial population and culture, as well as a business climate that supports new businesses. It also has had more favorable age demographics for entrepreneurship and a growing population of people who have successfully created businesses who can provide their expertise and knowledge to help others.

Networking opportunities for entrepreneurs are one of the most important ingredients for new business activity to occur and sustain itself. Such networks enable entrepreneurs to collaborate, find investors and employees, share knowledge and information, and learn from others. Coloradans' collaborative attitude helps foster such networks of people and institutions throughout the state, a phenomenon that is helping new businesses start and grow.

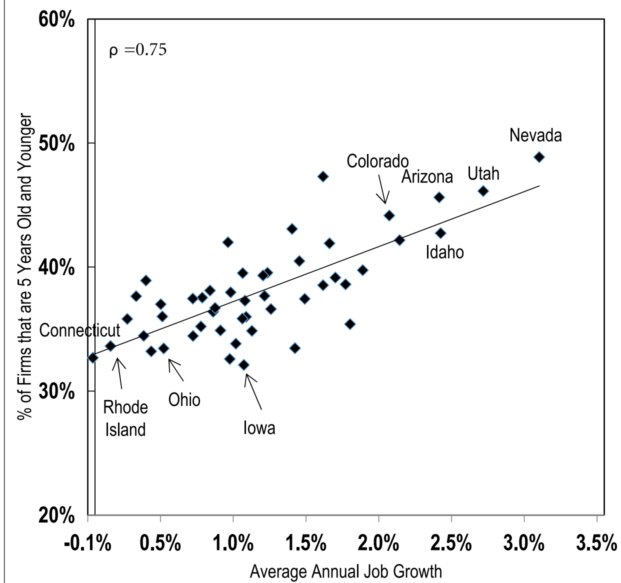
Because of the importance of new businesses to job creation, the portion of a state's businesses that are young—firms five years old and under—correlates strongly (ρ=0.75) with a state's overall job growth over time. (The correlation analysis excludes North Dakota because of the unique circumstance of its job growth in recent years that makes it an outlier among states.) Therefore, Colorado's higher proportion of young firms is one important factor explaining the state's relatively high overall job growth rate. The scatterplot below shows the relationship

NEW BUSINESS FORMATION IN COLORADO 2002–Q1 2015 SEASONALLY ADJUSTED



Sources: U.S. Census Bureau, Business Dynamic Statistics; U.S. Bureau of Labor Statistics; and Governor'sOffice of State Planning and Budgeting calculations.

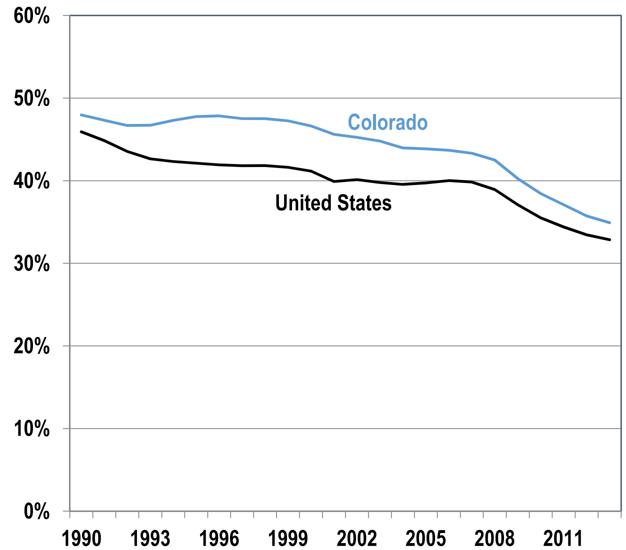
RELATIONSHIP BETWEEN PROPORTION OF YOUNG FIRMS IN STATE AND AVERAGE ANNUAL JOB GROWTH, 1990–2013



Note: Excludes North Dakota because of the unique circumstances of its job growth in recent years.

Sources: U.S. Census Bureau, Business Dynamic Statistics; U.S. Bureau of Labor Statistics; and Governor's Office of State Planning and Budgeting calculations.

PERCENT OF FIRMS THAT ARE FIVE YEARS OLD OR YOUNGER BY YEAR, 1990–2013



Source: U.S. Census Bureau, Business Dynamic Statistics; U.S. Bureau of Labor Statistics; and Governor's Office of State Planning and Budgeting calculations.

between a state's proportion of young firms and its average job growth during the 1990–2013 period.

Sustained growth in new business formation in Colorado overall since the Great Recession has helped generate economic and job growth for the state. Based on data from the Colorado Department of Labor and Employment on businesses that file with the state's unemployment insurance system (generally, every new business with at least one paid employee must file with the state's unemployment insurance system), the number of new businesses grew 59.1% from the first quarter of 2010, when about 3,800 new businesses started, to the first quarter of 2015, when about 6,000 new businesses started, the latest data available at the time of publication.

The number of new businesses in Colorado increased 14.1% in the first quarter of 2015 over the level in the first quarter of 2014. Additionally, data on filings of new business entities with the Colorado Secretary of State's Office suggest continued growth through the third quarter of 2015. New business growth indicates that entrepreneurs in Colorado see increased opportunities and are pursuing more projects, which is leading to new jobs and a broader increase in economic activity.

After falling precipitously starting in 2007, new business growth rebounded starting in 2010. The three-year decline in new businesses was a major contributor to the high level of job losses and weak jobs recovery during and subsequent to the Great Recession. In Q1 2015, the level of new business formation in Colorado finally had returned to near its pre-recession levels.

As with differences across states, not all areas within Colorado have the same levels of new business formation. Areas with larger, growing populations and more diverse economies with more skilled workforces tend to have higher concentrations of new businesses. As a result, these areas also have more job growth. The map below shows the proportion of all firms in each county that were new during the current expansion from 2010 through the first quarter of 2015, the latest data available at the time of publication.

Broomfield, Douglas, Denver, and Boulder counties have had the highest level of new business formation during the current economic expansion. Other Front Range counties with the high levels of new business formation include Arapahoe, El Paso, and Larimer. However, Dolores, Teller, Gilpin, and Archuleta counties are also among the counties in the state that have had high levels of new business concentration despite their lower populations. The rural counties in the most northern and southern parts of the state, such as Otero, Mineral, Sedgwick, Jackson, Crowley, and Logan, tend to have had the lowest levels of new business concentration.

Several factors point to continued growth in new business formation in the state overall that will help fuel job creation in 2016. This growth will occur despite the contraction in the oil and gas industry, sluggish global conditions, and higher housing costs. Colorado has a diverse mix of industries that are producing goods and services that are in high demand in today's economy. This provides business creation opportunities not only from new product ideas but also by providing products and services to other expanding businesses. The state's growing population, especially a skilled and entrepreneurial workforce, also will support new business formation.

Additionally, the pool of resources available to support entrepreneurs to bring their ideas to fruition, such as business funding, managerial talent, and technical expertise, has grown as a result of the ongoing efforts of community leaders and entrepreneurs. Also, the state's growing reputation as a place where entrepreneurs can succeed has helped to attract more resources to support new businesses. Finally, broader and deeper networking activities that are connecting entrepreneurs will help build the resources and support necessary for continued new business formation.

However, despite these favorable characteristics, there are some constraints on new business growth. Some businesses report difficulty obtaining financing for growth and enough skilled workers to build and grow their businesses. In addition, many sparsely populated areas across the state have fewer necessary ingredients to support higher levels of new business growth, and thus will continue to have slower growth.

There are concerns about a lower level of new business activity across the nation due to its importance to job growth and economic vitality. Colorado was 1 of only 11 states that experienced growth in new businesses in 2013, based on the most recent BDS data. Again, as shown in the graph on new business formation trends in Colorado, new business formation in Colorado only recently returned to its levels before the Great Recession.

The proportion of businesses that are young has steadily declined in the United States and Colorado over time, even before the Great Recession. The graph below shows the proportion of young firms—firms five years old and under—in Colorado and the United States overall during the 1990–2013 period. Possible factors cited for lower new business activity nationwide include changes in demographics, higher levels of regulation, and insufficient financing available for new businesses. Continued lower levels of new business formation may have adverse consequences to future economic vitality and job growth.

Talent Pipeline

Colorado has one of the highest educational attainments in the nation. According to the Colorado Workforce Development Council's *2015 Colorado Talent Pipeline Report*, 68% of Colorado's adult population has some level of college training credential, with 72.7% of that population born outside of the state. The high percentage of adults with postsecondary education can be attributed to Colorado's ability to attract an educated workforce of in-migrants but also the native population's level of education. In 2013, 29% of Colorado's natives living in state attained a bachelor's degree or higher; this compares to the national average of 25% according to the Colorado Department of Local Affairs.

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Colorado Economic, Employment, and Population Outlook

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From 2012 to 2014, the four-year high school graduation rate in K–12 education improved from 76.9% to 77.3%. In 2012–13, more than 52,000 degrees were awarded in Colorado across all levels of higher education, with around 9,600 in science, technology, engineering, and math (STEM) subjects. STEM specialization is crucial as Colorado ranks fourth in high-tech share of all businesses according to the U.S. Chamber of Commerce. In 2014, the Colorado Technology Association launched a foundation to encourage kids to take interest in STEM subjects.

Today, the majority of the change in Colorado population is due to net migration. A growing economy, above-average wages, a high quality of life, and a moderate cost of living are key factors driving in-migration. In 2014, Moneyrates.com ranked Colorado the fourth-best state in which to make a living, and the Organization for Economic Co-operation and Development ranked Colorado the sixth-best state for quality of life. Additionally, Colorado currently ranks fourth in startup activity and is the fourth-most entrepreneurial state according to the Kauffman Foundation.

Today, only one in five Colorado 9th grade students will earn a college degree, putting the state in the bottom quartile nationally. In higher education, Colorado ranks 49th in funding per student, almost four times less than Wyoming according to the College Board. It is crucial for Colorado to continue to import out-of-state talent, but it is also important for the state to nurture local talent as well. A continued effort to attract out-of-state candidates with further development of instate talent will provide a robust talent pipeline for the future. ✜

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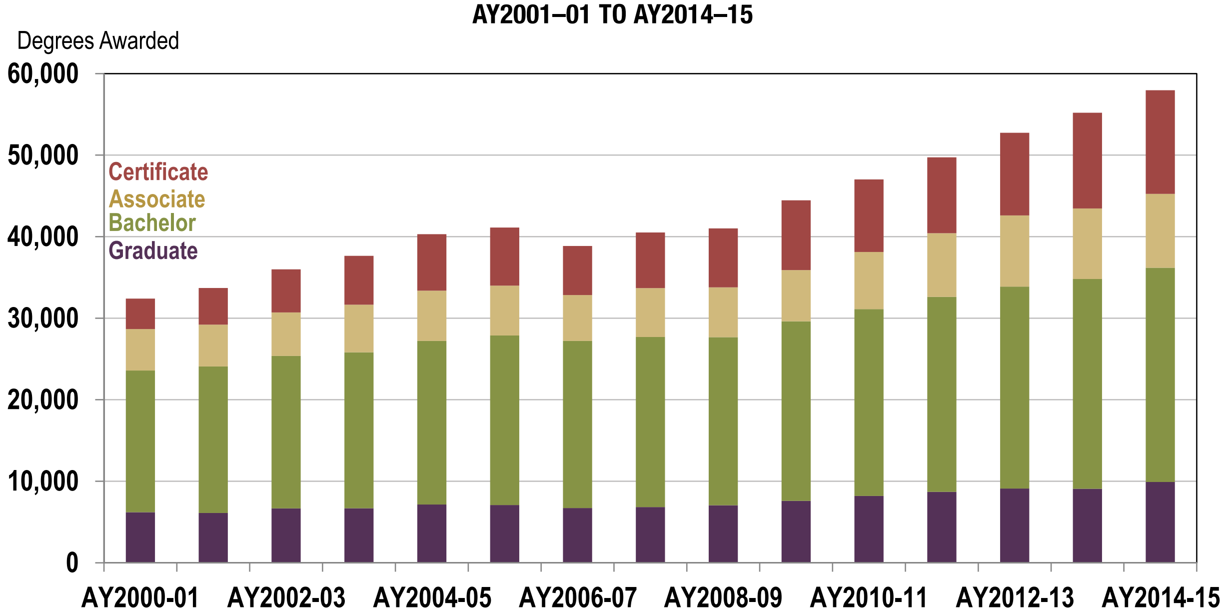
DEGREES AWARDED IN COLORADO
AY2001–01 TO AY2014–15



Source: Colorado Department of Higher Education, Degrees Awarded (Academic Year).

2014 AVERAGE ANNUAL PAY BY SECTOR
COLORADO AND UNITED STATES

Sector	Colorado	United States
Agriculture, Forestry, Fishing, Hunting	$32,454	$30,614
Mining	113,004	102,137
Utilities	89,910	98,123
Construction	53,668	55,037
Manufacturing	65,168	62,976
Wholesale Trade	77,131	71,043
Retail Trade	29,096	28,742
Transportation and Warehousing	50,524	48,708
Information	95,830	90,823
Finance and Insurance	82,936	97,380
Real Estate and Rental and Leasing	50,559	51,820
Professional and Technical Services	87,131	86,391
Mgmt of Companies and Enterprises	133,906	112,901
Administrative and Waste Services	35,819	35,843
Educational Services	38,664	46,580
Health Care and Social Assistance	46,791	45,857
Arts, Entertainment, and Recreation	33,092	34,867
Accommodation and Food Services	19,444	18,676
Other Services	36,221	33,936
Government	50,922	51,733
All Industries	52,724	51,364

Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages.

Agriculture

Recent "Sweet Spot" Has Passed for Colorado Agriculture

Colorado's net farm and ranch income is projected to fall to $824 million in 2015, well below the 2011 record high of $1.9 billion and the lowest level since 2009. Lower cattle prices are the main contributor to the decrease after several years of gains, although almost all commodities are experiencing significant price falloffs in 2015.

Looking back, the five-year period of 2010–2014 is likely to be viewed as a "sweet spot" for agriculture in Colorado and across the United States. As the rest of the state economy accelerated during 2015, the agriculture economy was slowing, maybe earlier than expected, with $1 billion less in annual net farm income than just five years ago, which means less money rippling through Colorado's rural communities and certainly lower tax receipts from farmers and ranchers.

The last two years were peak years for cattle prices, but 2016 will see significant declines across all segments of the beef complex. Renewable fuel standards, drought, and global growth all helped to fuel corn to record-high prices in recent years and other crops followed. These same droughts reduced the cattle herd, resulting in higher profits for producers able to retain their herds. However, as cattlemen began rebuilding herds in 2015, feeders were drawing on drastically cheaper corn to put heavier weight cattle onto market, bringing about a steep sell-off that saw the nearby live cattle futures fall from about $150 per hundredweight (cwt) to roughly $130 per cwt during August and September.

Farmers and ranchers will need to keep expenses in check to compensate for lower prices for everything from cattle to corn. Farm balance sheets should be in good shape after several years of high net income if individual producers managed their income and expenses. The current financial position of most producers should be good, but how they react to this cyclical decline will determine whether they are able to generate profits and operate in the black.

Prices for wheat, corn, hay, and potatoes, as well as almost all of Colorado's other crops, declined in 2015. But even these much lower current prices are still higher than generally received historically.

Lower milk prices offset lower feed prices for dairy producers, decreasing cash receipts for 2015, to $650

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COLORADO FARM INCOME AND PRODUCTION EXPENSES
2007–2016
(In Millions of Dollars)

Year	Gross Value of Farm Revenue	Total Farm Production Expenses	Net Farm Income
2007	$7,478.2	$6,203.1	$1,275.1
2008	6,875.2	5,879.7	995.5
2009	6,804.9	6,041.9	763.0
2010	6,978.4	5,856.9	1,121.5
2011	8,478.1	6,608.7	1,869.4
2012	8,272.6	7,003.2	1,269.4
2013	8,551.5	7,205.1	1,346.4
2014	9,094.3	7,960.0	1,134.3
2015[a]	8,323.8	7,500.0	823.8
2016[b]	7,718.5	7,000.0	718.5

[a]Estimated.
[b]Forecast.
Source: Colorado Business Economic Outlook Committee.

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million, a level almost $200 million less than 2014. One bright spot is egg production. Avian flu in other parts of the country decreased egg production and raised prices for Colorado egg producers. Greater rainfall helped most of the state with drought conditions in spring 2015, improving yields for crop producers; however, higher yields across the United States and world meant lower prices for almost all commodities.

Cattle and beef prices are predicted to continue to weaken as producers rebuild their herds and feeders feed cattle to heavier weights on cheaper hay and corn. Barring a weather event that would affect a large portion of the world's crops, there is little rationale to support a scenario for higher commodity prices.

In whole, farm and ranch net income for 2015 and 2016 is estimated to decline, to $824 million and $719 million, respectively, after surpassing the $1 billion mark in each of the previous five years. After helping lead the Colorado economy out of the recession, farm and ranch income will soften in 2016 to a level not seen since 2002.

Cattle Prices Lead the Way Down

Although cattle prices have decreased and will continue to erode, livestock will still account for 70% of total cash receipts in 2016, steady with the 2015 level and slightly ahead of 66% in 2014. Fed cattle prices continued to wane from the record high in 2011, and average feeder cattle prices dropped slightly, to $150 per cwt, although 2015 price levels are still higher than any previous year. Lower market prices reflect cattle producers rebuilding their herds and a weaker export market due to the relative strength of the U.S. dollar.

The number of Colorado fed cattle sales continued to slide, declining the previous three years, and is anticipated to drop to a new record low in 2015 of 1.64 million head, indicating that Colorado ranchers are still rebuilding their herds by retaining heifers rather than selling them. Prices for steers and heifers are forecast to descend in 2016 to an average of $144 per cwt, dropping cash receipts from cattle and calves to $3.5 million, the lowest figure since 2011.

The peak year for cattle prices was 2014 as lower corn prices, improved hay production, and better grazing conditions allowed ranchers to begin rebuilding their herds and inexpensive feed grains and hay allowed feeders to feed livestock to heavier weights more cheaply. Lower priced chicken and pork, whose production can be increased more quickly than beef, will continue to pressure higher beef retail price points.

Milk prices are well under 2014's prices, but dairy producers' lower prices are somewhat offset by lower feed costs due to the greater supply of corn. High milk prices drove expansion and herd additions and now the milk supply from the larger herd is entering the market and lowering prices, causing a 25% reduction in dairy cash receipts from 2014. Colorado producers benefit from strong local producer demand allowing them to be in a better position than most dairy producers across the United States.

Prices for Colorado lamb continue to trend lower, and producers continue to struggle with labor matters, federal land issues, and the prevalence of comparatively inexpensive imported lamb.

The U.S. pork supply has bounced back from the impacts of porcine epidemic diarrhea virus (PEDV), which devastated Midwest pig numbers in 2014. Nationwide, prices were dramatically lower in 2015 and hog numbers are increasing. Colorado producers escaped the virus and enjoyed higher prices in 2014 but will see lower sales in 2015 and 2016, in part due to lower exports caused by the stronger U.S. dollar.

Colorado poultry and egg producers will see a record $300 million in cash receipts, 47% higher than 2014, because of a doubling of wholesale egg prices caused by avian flu in other states. Egg-laying hens in the United

VALUE ADDED BY COLORADO AGRICULTURAL SECTOR
2007–2016
(In Millions of Dollars)

Year	Livestock	Crops	Total Value of Production	Value of Services and Forestry[a]	Government Payments[b]	Gross Value of Farm Revenue
2007	$4,324.0	$2,111.6	$6,435.6	$845.2	$197.4	$7,478.2
2008	3,730.0	2,166.3	5,896.3	717.9	261.0	6,875.2
2009	3,357.7	2,249.3	5,607.0	1,006.1	191.8	6,804.9
2010	3,720.1	2,249.1	5,969.2	737.6	271.6	6,978.4
2011	4,320.2	2,740.8	7,061.0	1,181.7	235.4	8,478.1
2012	4,490.7	2,577.3	7,068.0	988.9	215.7	8,272.6
2013	4,682.4	2,284.6	6,967.0	1,345.5	239.0	8,551.5
2014	5,342.8	2,413.5	7,756.3	1,052.1	285.9	9,094.3
2015[c]	5,095.9	2,057.9	7,153.8	1,000.0	170.0	8,323.8
2016[d]	4,670.1	1,848.4	6,518.5	1,000.0	200.0	7,718.5

[a]Includes sales of forest products, custom feeding fees, custom harvest fees, and other farm income. [b]Includes farm program payments directly to producers. [c]Estimated. [d]Forecast.

Source: Colorado Business Economic Outlook Committee.

States generally total 305 million, and 35 million hens, or 12% of the flock, were lost to avian influenza in spring 2015. Colorado egg producers have increased biosecurity to protect against an outbreak in the state.

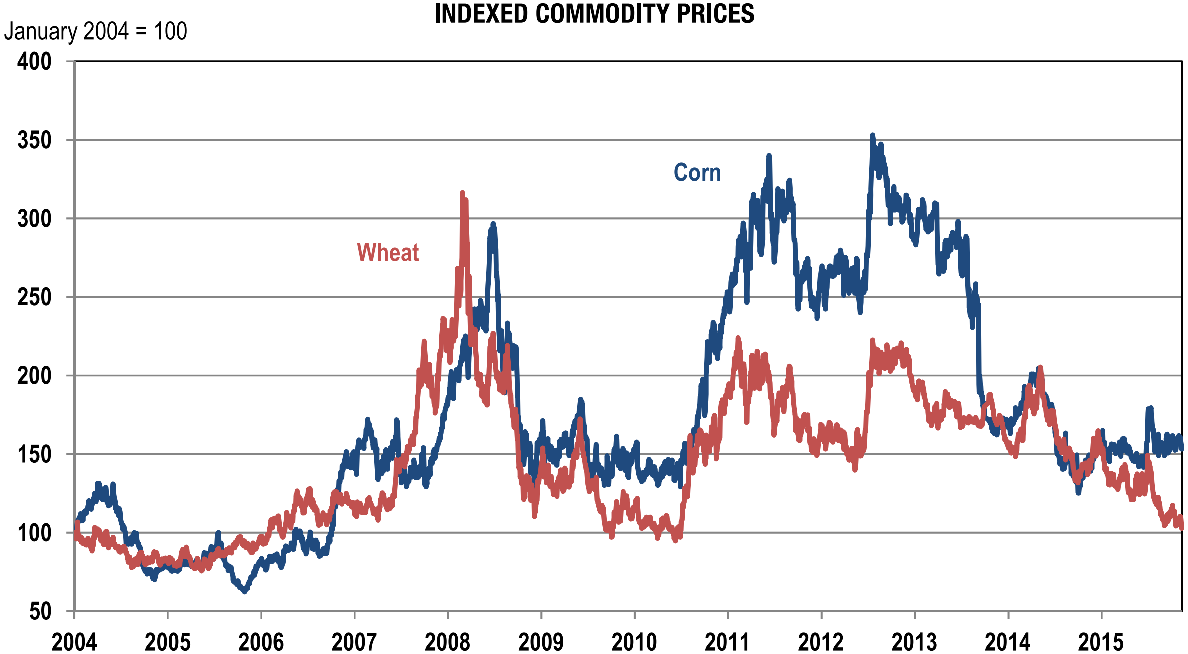
Colorado Crops—Nationwide Strong Yields Bring Weak Markets

Following several years of high cash receipts, **corn** joined beef and most of the rest of Colorado's crops in a downward price trend across Colorado and the nation. Record U.S. corn crops in 2013 and 2014 and an estimated similar 2015 crop dropped corn prices to the lowest in five years. The strong U.S. dollar is hurting corn exports and farmers are more likely to see a path to profitability in other crops. Season average prices for 2015 are estimated to fall to $3.75 from $4.10 in 2014, and will continue to drop to $3.65 in 2016, well below the cost of production for many farmers.

Colorado acres planted to corn dropped 5% from 2014 to 2015, declining for the fifth year in a row.

Colorado's 2015 corn crop is estimated at 152 million bushels, creating cash receipts of $517 million. Corn production for 2016 is projected at 145 million bushels. Projected lower prices, combined with fewer acres, will reduce total estimated cash receipts for corn to $480 million, approximately half of record high receipts of $979 million in 2012.

INDEXED COMMODITY PRICES



Sources: Bloomberg (USDA Toledo No. 2 Yellow Corn Not on the River Spot Price, USDA No. 1 Hard Red Winter Wheat Spot Price/ Kansas City Missouri).
As of 11/11/2015.

Colorado farmers harvested a **winter wheat** crop slightly larger than the five-year average, and winter wheat plantings are expected to increase, to the detriment of corn plantings, because of lower input costs. Higher U.S. and world wheat supply and the stronger U.S. dollar are also hurting wheat prices as U.S. wheat will be less competitive globally.

Similar to other crops, **hay** production benefitted from better weather conditions, but prices were also hurt by increased production nationwide. Yields increased while prices decreased and cash receipts for hay fell 16%.

Barley prices remained steady and production increased due to beneficial rains in the San Luis Valley. Barley quality was good in 2015 with most of the crop suitable for use in malting.

Dry bean production continued a slight upward trend in reaction to low corn prices, with 49,000 acres planted in 2015 compared to 46,000 in 2014. Prices were hurt by a good crop in Mexico, Colorado's main export market, and the strong U.S. dollar.

Potato acreage was down about 4% in the San Luis Valley, but beneficial spring rains helped farmers attain above-average yields. Potato prices are currently higher than in 2014 in late fall. Access to the Mexican market beyond the 26-kilometer border trade zone is still closed, but fresh potato exports to Mexico increased 37% from 2013 to 2014 and from January–June 2015 were 20% higher than for the first half of 2014. Aquifer levels continue to be a concern. Season average prices for potatoes are expected to average $6.50 per cwt for 2015, with forecasted cash receipts of $146 million.

Sunflower acres increased and **millet** acres remain steady as farmers view wheat as a better alternative to corn than sunflower and millet. Both experienced better yields in 2015 and lower prices, similar to other field crops.

Colorado **grape** growers experienced a bumper crop in 2015, with probably the largest production total ever, estimated at 2,500 tons. Plentiful grapes mean that all

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wineries in Colorado that want to make wine with Colorado grapes should be able to do so.

Cantaloupe farmers had another rough start in 2015 due to late rain in the spring and early hail. The moisture was beneficial to the remaining acres, which produced higher yields. Cantaloupe, watermelon, and honeydew yields were all higher per acre in 2015. The season was compressed due to weather, but retailers ordered more cantaloupe in 6 weeks in 2015 than they did in 10 weeks the previous year. Prices were higher for all melons, and growers anticipate planting about the same acreage of cantaloupe, a slight increase in honeydew, and a 20% increase in watermelon.

It was an excellent year for many **peach** growers on the Western Slope, with most peach orchards producing at nearly full potential, while others suffered from early freeze damage. In October, the United States Department of Agriculture (USDA) designated Delta County as a primary disaster area due to damage caused by severe periods of freezing in April. Gunnison, Mesa, and Montrose counties were designated as contiguous disaster areas.

Sweet corn planting was delayed in the spring by rain and cool weather, so sweet corn was not available as early in July as is usual. Once in harvest, demand was good and prices were above average.

The state's **green** industry continues to grow with Colorado's economy as new housing starts mean steady demand for floral, nursery, and sod products. One of the few bright spots in the Agriculture Sector in 2015, green industry cash receipts are expected to grow 5% in 2015 and continue upward in 2016.

Government payments to producers have shrunk in recent years with the elimination of direct payments and less drought and disaster-related losses. Government payments to Colorado farmers are estimated to drop 41% in 2015, to $170 million, the lowest level in recent years, and rebound slightly, to $200 million, in 2016, due to Agricultural Risk Coverage and Price Loss Coverage programs enacted in the 2014 Farm Bill.

Exports have helped Colorado farmers and ranchers become more diversified. Exports tripled in the last decade, to about $2 billion in 2014. Beef accounted for nearly half of those exports but there was also growth in processed food products, potatoes, direct shipments of wheat, dairy products, and seeds. The strong dollar is currently hurting U.S. exports, as well as the weakness in Asian markets and competition from other growing regions. Exports are likely to continue to decrease into 2016.

Total cash receipts to farmers and ranchers are expected to decline significantly into 2016 while expenses decrease modestly. Interest rates remain low, and fuel prices continue to trend downward. Lower commodity prices should drive some decrease in land costs. These factors will help farmers and ranchers weather this cyclical downturn but good management and controlling expenses will be essential to making money in this new environment.

While Colorado's food and agriculture industry may be headed toward a more challenging environment, agriculture will remain one of the state's most important economic drivers. Going forward, innovation is expected to play an ever-increasing role in helping to foster growth. A recent study by Colorado State University (Graff, Berklund, and Rennels, *The Emergence of an Innovation Cluster in the Agricultural Value Chain along Colorado's Front Range*, November 2014) suggests there is a convergence of agriculture on a significant scale and scope, the synergies of corporate and public research, and a growing and diverse population along the Front Range to foster leading-edge innovation for the benefit of Colorado's entire food and agriculture value chain. The potential of this emerging ag innovation cluster inspired Governor Hickenlooper to speak of Colorado as the "Silicon Valley of agriculture." Indeed, the future of Colorado's agricultural and food systems remains bright!

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Natural Resources and Mining

Colorado is an energy- and mineral-rich state. In the U.S. Energy Information Administration's (EIA) most recent assessment of 2013 proved reserves, Colorado ranked 8th for petroleum liquids and 5th for wet natural gas. Colorado continues to be home to all, or part of, 12 of the top 100 natural gas fields in the nation and has the 4th-largest oil field (Wattenberg). In 2014, Colorado ranked 10th among the states in the production of coal, 4th in gold production, and 1st in the production of molybdenum. The Henderson Mine was again the nation's largest primary producer of molybdenum in 2014.

In addition to traditional energy resource development, Colorado is also one of the nation's leading renewable energy states, developing a portfolio mix of wind, solar, biomass, and hydroelectric energy resources. Colorado law now mandates that investor owned utilities (IOUs) generate 30% of electricity from renewable energy by 2020. Cooperatives must achieve a 20% standard by that same year.

The Natural Resources and Mining (NRM) industries make a significant contribution to Colorado's GDP, and generate some of the highest per worker income levels in the state. Despite the increases in crude oil production, driven by continued development of the Niobrara resource play in the Denver Basin, the low commodity price environment has significantly decreased the value (noninflation adjusted) of the NRM Sector, to $13.5 billion, a decrease of nearly 30% from the 2014 value. With the assumption of commodity-price stabilization in 2016, one can cautiously expect the NRM Sector to have roughly the same or a slightly increased value in 2016.

Oil and Gas

Crude oil production will continue as Colorado's single-most valuable commodity in 2015—a title it took from natural gas in 2013. The remarkable drop of around 50% in spot oil prices in 2015 compared to 2014 will result in a state oil production value between $5.1 and $5.6 billion in 2015. The value of state's natural gas production will range between $4.1 million and $4.6 billion due to weaker gas prices. This represents a nearly 35% decline in gross value from 2014. Assuming market conditions remain unchanged, Colorado natural gas and crude oil are expected to have a comparable valuation in 2016. The Colorado Office of State Planning and Budgeting (OSPB) September 2015 economic outlook estimated preliminary severance tax collections for fiscal year 2015

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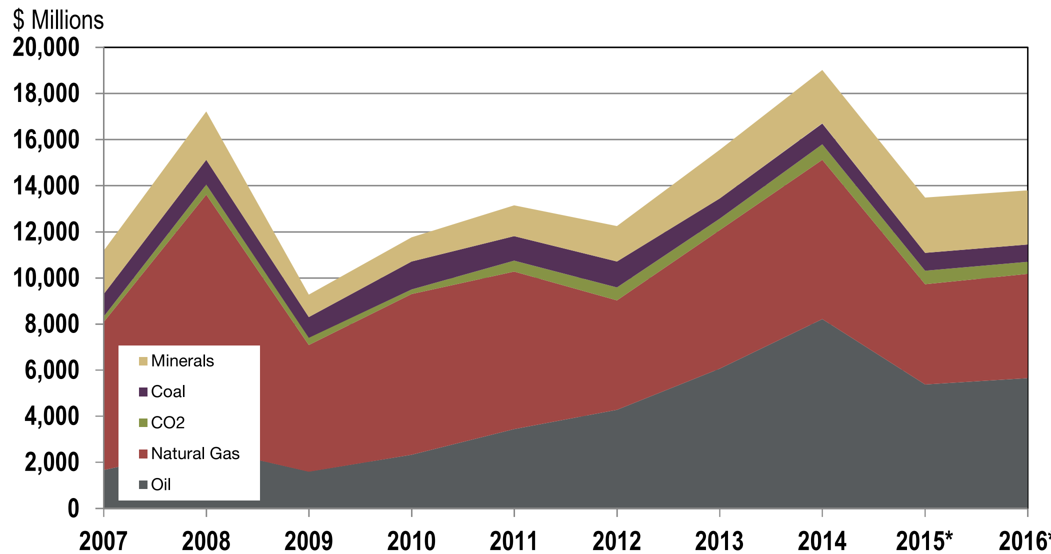
COLORADO NATURAL RESOURCES AND MINING EMPLOYMENT 2007–2016 (In Thousands)

Year	Employment	Percentage Change
2007	25.2	19.4%
2008	28.5	13.1
2009	24.2	-15.1
2010	24.4	0.8
2011	27.9	14.3
2012	30.3	8.6
2013	30.6	1.0
2014	33.9	10.8
2015[a]	31.1	-8.3
2016[b]	29.8	-4.2

[a]Estimated. [b]Forecast.

Sources: Colorado Department of Labor and Employment and Colorado Business Economic Outlook Committee.

VALUE OF COLORADO NATURAL RESOURCES AND MINING



*2015 estimate and 2016 forecast.
Sources: Colorado Geological Survey Mineral and Minerals Fuel Activity Reports, Colorado Oil and Gas Conservation Commission, Department of Minerals and Geology, and Colorado Business Economic Outlook Committee.

Natural Resources and Mining

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(July 1, 2014–June 30, 2015) at approximately $280.2 million, a 4.3% increase from fiscal year 2014 taxes. Going forward, however, the forecast is for a greater than 60% decrease in fiscal year 2016, to $109 million, and then a modest rebound in 2017, to $162.9 million.

Colorado's rapid development of the Niobrara shale oil play will continue in 2016 with optimizations in wellbore lateral length and drilling times being critical to economic viability. No doubt, oil prices below $50 per barrel are making it challenging for many operators to continue drilling, especially those with assets in more marginal areas. In Colorado, the final shake out of the industry from current prices may occur when many of the current hedges expire at the end of 2015 or in early 2016. Cash flow, including support for continued production, is becoming difficult for heavily leveraged operators. In spite of the financial community's complicity in missing demand signals, loans will come due and the realities of the current market will have to be faced. This situation will force many in-ground assets into stronger hands with the capability to develop and produce them when the market indicates that it is ready and at a price these stronger hands can accept.

The total revised value of Colorado's oil, gas, and carbon dioxide production for 2014 is $15.8 billion, a 26% increase from the 2013 value of $12.6 billion. The value of oil, gas, and carbon dioxide production for 2015 is projected to be between $9.5 billion and $10.5 billion, a roughly 40% decline from 2014. For 2016, the value of Colorado's production is estimated to remain flat or increase modestly based on an assumption of stabilized oil prices in the $50–$60 per barrel (bbl) range and gas prices remaining in the $2.50–$3.50 per thousand cubic feet (Mcf) range. The complexities of current market supply and demand, coupled with macroeconomic and geopolitical uncertainties, make predictions of value especially difficult for 2016.

A 21-member Governor's Task Force, established in fall 2014, approved nine recommendations in February 2015 that include goals of improving collaboration among local governments, the Colorado Oil & Gas Conservation Commission (COGCC), and operators in the planning process for oil and gas locations; increasing attention to air quality and emission issues; and providing better regulatory guidance to operators, coupled with better

VALUE OF COLORADO NATURAL RESOURCES AND MINING, 2007–2016
(In Millions of Dollars)

	Oil and Gas Extraction					Mining				
Year	Crude Oil	Natural Gas	Carbon Dioxide	Subtotal	Percent Change	Coal	Minerals	Subtotal	Percent Change	Total
2007	$1,669	$6,412	$246	$8,326	-9.8%	$974	$1,886	$2,860	11.1%	$11,186
2008	2,619	10,993	475	14,087	69.2	1,075	2,100	3,175	11.0	17,262
2009	1,600	5,461	356	7,417	-47.3	887	971	1,858	-41.5	9,275
2010	2,323	6,998	371	9,692	30.7	995	1,050	2,045	10.1	11,737
2011	3,438	6,828	475	10,741	10.8	1,061	1,336	2,397	17.2	13,138
2012	4,278	4,745	560	9,583	-10.8	1,129	1,530	2,659	10.9	12,242
2013	6,057	6,012	500	12,569	31.2	873	2,110	2,983	12.2	15,552
2014	8,209	6,911	678	15,798	25.7	900	2,320	3,220	8.0	19,018
2015[a]	5,377	4,351	586	10,314	-34.7	770	2,400	3,170	-1.5	13,484
2016[b]	5,645	4,526	527	10,698	3.7	751	2,350	3,101	-2.2	13,799

[a]Estimated. [b]Forecast.

Sources: Colorado Geological Survey Mineral and Minerals Fuel Activity Reports, Colorado Oil and Gas Conservation Commission, Departmert of Minerals and Geology, and Colorado Business Economic Outlook Committee.

transparency to all oil and gas industry stakeholders. The COGCC will be implementing, through its rulemaking process, two of the nine recommendations by late 2015 or early 2016.

Not surprisingly, employment in the Colorado oil and gas industry has taken a hit in 2015. Both service companies and operators, especially in Denver and along the Front Range, have reduced staff and/or shifted operations to locations outside Colorado in response to the downturn. Despite operations becoming quite lean already, continued depressed prices may force further cuts in 2016.

Oil

For 2015, the U.S. petroleum benchmark known as West Texas Intermediate (WTI) has fluctuated between $38 and $61 per barrel, with a mean daily spot average of $50 per barrel as of the end of October. This is a 46% decrease from the 2014 WTI mean daily price of $93 per barrel. Future energy prices depend on a myriad of factors across multiple scales, including economic and geopolitical situations, technological developments, and new resource discoveries. Abundant supply driven in large part by the boom in U.S. oil production and Saudi Arabia's desire to keep market share points to continued soft oil pricing in 2016. A wide price range of $50–$75 per barrel for 2015 is estimated, although a number of supply/demand forecasts suggest prices below $50 per barrel will continue well into the first half of 2016. For the first time in many decades, consumers appear to have the upper hand in market dynamics.

After dramatic annual increases in Colorado production from 2012 to 2015, crude output is expected to plateau in the second half of 2015. Development of the prime Niobrara shale assets in the Greater Wattenberg Area will continue, but the rapid decline rates of recently drilled laterals (estimates of 50% to greater than 70% in the first year are not unreasonable) versus the current rate of new wells being drilled means the state's total production is not likely to grow further in 2016. In fact, the expectation is that the state will see a 1%–4% decrease in the annual produced liquids in 2015. For the longer term,

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COLORADO PHYSICAL OUTPUT OF FOSSIL FUELS
2007–2016

Year	Coal	Crude Oil	Natural Gas	Carbon Dioxide	Index (Base Year: 2007 = 100)			
	Millions of Short Tons	Millions of Barrels	Billions of Cubic Feet	Billions of Cubic Feet	Coal	Crude Oil	Natural Gas	Carbon Dioxide
2007	36.1	25.6	1,329	373	100.0	100.0	100.0	100.0
2008	32.3	29.9	1,519	369	89.5	116.8	114.3	98.9
2009	28.6	30.0	1,561	406	79.2	117.2	117.5	108.8
2010	25.2	32.6	1,617	268	69.8	127.3	121.7	71.8
2011	27.0	38.8	1,648	469	74.8	151.6	124.0	125.7
2012	28.8	48.7	1,658	439	79.8	190.2	124.8	117.7
2013	24.2	65.1	1,567	268	67.0	254.3	117.9	71.8
2014	22.8	94.7	1,581	355	63.2	369.9	119.0	95.2
2015[a]	19.5	114.0	1,554	390	54.0	445.3	116.9	104.6
2016[b]	19.0	107.5	1,475	374	52.6	419.9	111.0	100.3

[a]Estimated. [b]Forecast.

Sources: Colorado Geological Survey Mineral and Minerals Fuel Activity Reports, Colorado Oil and Gas Conservation Commission, Department of Minerals and Geology, and Colorado Business Economic Outlook Committee.

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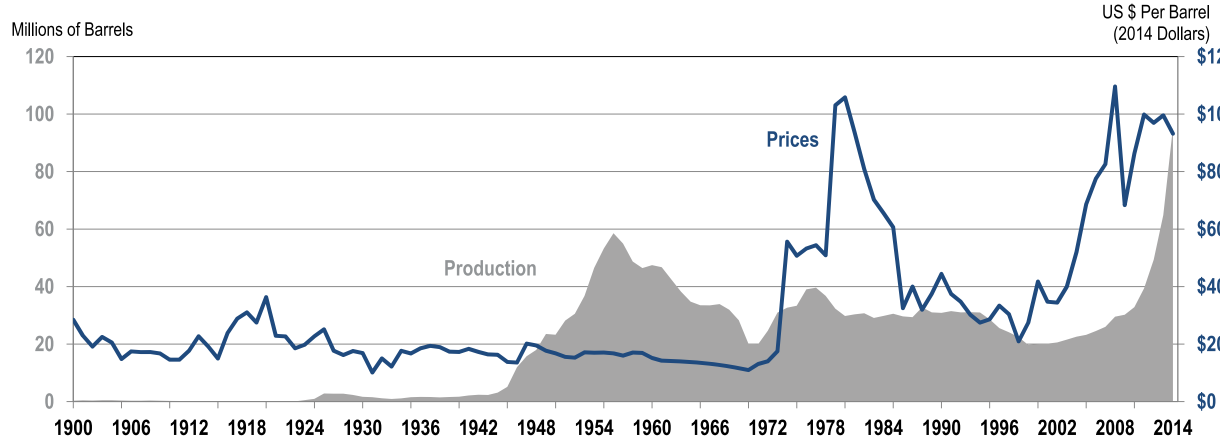
however, it is worth noting the Niobrara shale resource is estimated to contain between 2 and 3.5 billion barrels of oil cumulatively, only a small fraction of which has been exploited.

The International Energy Agency (IEA) is forecasting 2016 global oil demand to continue marginally higher, from a mean of 94.5 million barrels per day in 2015 to 95.7 million barrels per day in 2016. According to the U.S. Energy Information Administration (EIA), consumption in the United States is projected to have increased modestly (1.7%) in 2015, by 0.33 million barrels per day to 19.44 million barrels per day, and will increase again in 2016, to 19.59 million barrels per day. Continuing employment and economic growth, along with lower petroleum product prices, are important factors in the increased consumption. EIA currently estimates that the average WTI will end up, at $50 per barrel average for the 2015 calendar year and $54 per barrel in 2016.

ANNUAL COLORADO OIL PRODUCTION AND PRICE 1900–2014



Source: Colorado Geological Survey (based on RMAG, EIA, IHS, & COGCC data). Crude oil prices: 1900-1944 US average; 1945-1983 Arabian Light; 1984-2014 Brent.

Retail Gasoline

The Colorado average retail price of automotive gasoline at all grades through October 2015 was $2.48, a 28% decline from average prices seen in 2012–2014. For 2015, the EIA expects the national average for regular grade will be $2.38 per gallon. Regional prices for diesel (averaging $2.73 for 2015) have been at a roughly 10% premium compared to the price of unleaded gasoline. Expectations are for Colorado gasoline to remain at a similar or slightly lower average price in 2016 (between $2.00 and $2.60 per gallon average for all grades).

Natural Gas

Forecasts from the EIA suggest that the average American household using natural gas for heating will see a total winter (October through March) price decrease of 10% (approximately $64) over 2014–15. Just under than 50% of all households in the United States depend on natural gas as a primary heating fuel; for Colorado, this number climbs to 75%. This projected decrease is in part due to lower forecasted spot prices and a potentially warmer winter, although spot prices are not directly correlated with residential prices. The National Oceanic and Atmospheric Administration (NOAA) estimates that the total heating degree days for the entire nation in winter 2015–16 will be 7% fewer than 2014–15 winter. In the West, however, partly due to El Niño effects, the forecast is for 12% more heating degree days.

Colorado was ranked seventh for natural gas production in the United States in 2014. EIA estimates that conventional and unconventional output from Colorado basins in 2014 accounted for nearly 5.2% of the annual U.S. natural gas production. The residential sector is the largest natural gas-consuming sector in the state, accounting for roughly 27% of the total 481,000 million cubic feet consumed in 2014. Other significant end-uses include lease and plant fuel (22%), electric power (20%), industrial consumption (16%), and commercial consumption (12%). At $8.89 per thousand cubic feet, average residential gas prices in Colorado for 2014 were the fourth-lowest in the country, behind Idaho, Nebraska, and North Dakota. For 2016, Colorado natural gas is likely to continue in the range of $2.50–$3.00 per thousand cubic feet with 80% confidence. The EIA is currently forecasting the Henry Hub spot price average to be $3.14 per thousand cubic feet in 2016, up from a $2.89 average price in 2015.

In December 2014, active "gas" wells in Colorado totaled more than 19,000. These wells, with additional gas generated from the state's "oil" wells, produced an estimated 1.58 trillion cubic feet in 2014. Due to the significantly lower gas prices in 2015, it is estimated that Colorado will see the value of natural gas fall more than 35% from 2014. If gas prices remain lower (below $3/Mcf) in 2016, oil will remain the position as the state's most valuable single commodity.

Carbon Dioxide

Colorado's carbon dioxide production is marketed almost exclusively for enhanced oil recovery (EOR) operations. In 2014, just over 350 million cubic feet of CO_2 were produced in three counties (Montezuma, Dolores, and Huerfano), with the total production value grossly estimated at $678 million, a 35% increase over 2013. For 2015, CO_2 production levels are expected to grow modestly, to 390 million cubic feet, although the overall value may decrease.

Drilling Permits and Rig Activity

COGCC reports 4,190 drilling permits were approved in 2014, representing a 4% increase over 2013. For 2015, the commission has approved 2,294 permits as of early October—nearly 24% below the level of permitting for the same period in 2014. More than 61% of 2015's permitted wells are located in Weld County. The COGCC recorded 2,235 well starts in 2014 and only 1,145 so far in 2015 (as of October 2). Considering the economic climate, this slowdown in activity was not unexpected.

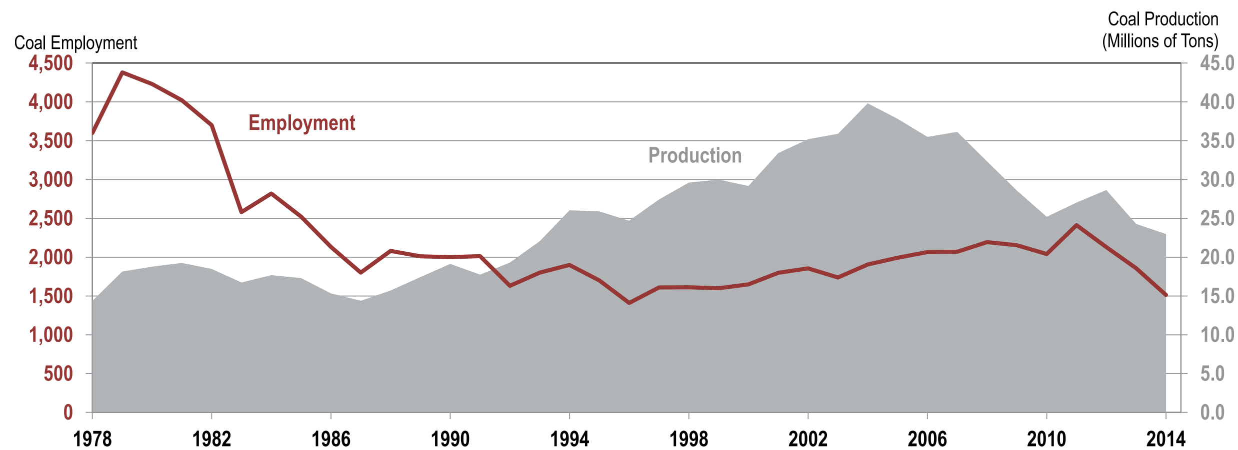
The weekly active drill rig count in Colorado has averaged 40 rigs per week for 2015, a significant decrease from the average of 68 active rigs the previous year. August through October 2015 recorded only 33 rigs per week active on average. It should be noted that operators have been improving drilling times and increasing average lateral lengths. These optimizations will allow for more production per active drilling rig on average, but only to a limited extent.

Horizontal drilling and hydraulic stimulation continue to be integral to Colorado's oil and gas activity. In 2010, only 5.6% of all Colorado drilling permits issued were for horizontal wells. In 2015, that number is on track to be greater than 65% of all issued permits. Of the horizontal wells permitted in 2015, 90% were located in Weld County. Horizontal well starts totaled 849 through the beginning of October 2015—74% of the state's total.

Coal

Coal mining in Colorado dates back to 1864. Colorado's clean, high-quality coal reserves help utilities meet the stringent requirements of the Clean Air Act. Production peaked at 40 million tons in 2004. Data provided to the Colorado Mining Association indicate that in 2014, the industry accounted for $900 million in sales. According to the National Mining Association's survey Economic Contributions of Mining (2012), the industry contributed $2.75 billion to Colorado's economy and direct employment (including transportation) of 6,200, and 23,700 jobs in the general economy. Federal royalties on Colorado coal production in fiscal year 2014 totaled nearly $40 million, about half of which is returned to Colorado to support public education and other activities. Coal mines also paid property taxes, state royalties, and severance and sales taxes of more than $30 million in 2014.

ANNUAL COLORADO COAL PRODUCTION AND EMPLOYMENT, 1978–2014



Source: Colorado Division of Reclamation, Mining, and Safety, 2014. Employment totals based on December levels.

Coal is the fastest-growing major source of electricity worldwide, and sales of Colorado coal outside the United States increased to over 20% of total production in 2013 but fell to 9% of total production in 2014. Domestic sales both within Colorado and to other states have also dropped over the past decade. The state's total production rose from 27 million tons in 2011 to 28.8 million tons in 2012 before declining to 22.8 million tons in 2014. These are the lowest production levels since the mid-1990s. Colorado coal production is expected to fall to 19.5–20.0 million tons in 2015.

Coal must now compete in an environment where governmental mandates for renewable energy could limit sales in Colorado. The slated and government mandated closure or conversion to natural gas of nearly 1,000 megawatts (MW) of electricity currently generated by coal-fired plants along the Front Range will also cause annual production losses of up to 4 million tons. This is due to legislation enacted in 2010. New Environmental Protection Agency (EPA) regulations, including the Clean Power Plan, will also significantly curtail future production.

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Mines

In 2014, Colorado coal mines produced bituminous and sub-bituminous coal for electricity generation at power plants, and to a lesser extent, cement and coking operations. Coal was produced in eight Colorado counties: Routt, Moffat, Rio Blanco, Delta, Gunnison, Montrose, La Plata, and Las Animas. Routt County has been the leading coal-producing county for years while Gunnison County ran a close second in 2013 and 2014. In 2014, Peabody Energy's Foidel Creek Mine produced 6.7 million tons, making it the highest-producing mine in Colorado. In 2011, Peabody Energy initiated development of a new mine, the Sage Creek Mine, also in Routt County, but has delayed production while it evaluates market conditions. In 2013, the Elk Creek Mine experienced geologic problems resulting in a dramatic drop in production; the mine was idled in December 2013. Production at Elk Creek fell from 3.0 million tons in 2012 to 0.4 million tons in 2013 and no production in 2014. In 2014, the Bowie Mine #2 in Delta County cut back production and laid off 150 miners due to the cancellation of a contract to supply coal to the Tennessee Valley Authority. In October 2015, Bowie announced that an additional 97 employees were being furloughed as it developed a new longwall panel. As the result of a lawsuit filed by WildEarth Guardians against the U.S. Office of Surface Mining (OSM), OSM was ordered to rework the environmental assessment (EA) of a mine permit issued to the Colowyo Mine in 2007. The OSM was given 120 days to complete the assessment. Colowyo avoided closure when the OSM completed the review, finding no significant environmental impact on climate change from the mine and validated the permit. As a result of the lawsuit, the Trapper Mine is undergoing a new EA and the Bowie Mine in Colorado, plus mines in other states, are faced with EA reassessments.

Production

In 2014, Colorado ranked as the 10th-most productive coal mining state, producing 22.9 million tons of coal. Using the Mine Safety and Health Administration's data for the first three quarters of 2015, along with EIA data and Colorado coal production reports, the state's total coal production by year-end 2015 is estimated at 19.5–20.0 million tons.

Value

While production fell, the price for coal increased in 2014. In 2013, the total value of coal sold in Colorado was estimated at $873 million, with an average coal price of $36.06 per ton. Based on data obtained by the Colorado Mining Association, prices increased to $39.38 per ton in 2014. The value of Colorado coal sold in 2014 was $900 million, while the estimated value of Colorado coal sold in 2015 is expected to fall to $770 million–$800 million.

Employment

The Colorado Division of Reclamation, Mining and Safety tracks coal production and the employment of coal miners on a monthly basis. In 2011, employment at Colorado's coal mines was at a 25-year high of 2,411 miners in December. This was due, in part, to the employment of coal miners at the New Elk Coal Mine in Las Animas County. In December 2013, employment slid to 2,047 miners, and declined further due to the Bowie Mine layoffs. According to the Colorado Division of Reclamation, Mining and Safety, the number of persons employed at Colorado coal mines was 1,448 at the end of August 2015.

Export Coal

Based on EIA data, between 2009 and 2014 approximately 35% of the coal produced in Colorado was shipped by rail or truck to power plants in 21 other states, with destinations as far as Florida. In 2014, the five states that use the most Colorado coal were Utah, Nevada, Tennessee, Kentucky, and Alabama. Sales to Alabama, Kentucky, and Tennessee have fallen significantly as the Tennessee Valley Authority reduced its take of Colorado coal by over 7 million tons per year between 2008 and 2014. Sales to Nevada power plants in 2014 were unusual as Colorado coal had not penetrated Nevada markets for several years and what sales had occurred in the past were limited to less than 500,000 tons per year.

The EIA reports that 6.5 million tons of Colorado coal were exported abroad in 2012. These international exports fell to 2.1 million tons in 2014.

VALUE OF COLORADO NONFUEL MINERALS AND URANIUM PRODUCTION 2007–2016 (In Millions of Dollars)

Year	Nonfuel Minerals	Uranium	Total
2007	$1,886	$<1.0	$1,886
2008	2,084	16.0	2,100
2009	965	6.0	971
2010	1,050	0.0	1,050
2011	1,336	0.0	1,336
2012	1,530	0.0	1,530
2013	2,110	0.0	2,110
2014	2,320	0.0	2,320
2015[a]	2,400	0.0	2,400
2016[b]	2,350	0.0	2,350

[a]Estimated. [b]Forecast.

Source: U.S. Geological Survey, Mineral Survey Reports.

Consumption and Generation

According to EIA data (Form EIA-923, EIA-860), 57% of the 18.5 million tons of coal delivered to electric utilities in Colorado in 2008 came from Colorado mines, with the remainder from Wyoming. In 2014, tons delivered totaled 17.2 million while the percentage that came from Colorado mines fell to 47%. According to the EIA Electricity

Data Browser, coal-fired power plants in Colorado consumed 18 million tons of coal in 2014, supplying the state with 60% of its electricity. Annual electricity generated at Colorado's 12 coal-fired power plants increased by 1.6% from 2011 to 2012 before falling back to the 2013 level of 34 million megawatt hours (MWhs). It fell again, to 33 million MWhs, in 2014. Natural gas consumption for electricity has increased almost 20% from 2011, growing from 10 million MWhs in 2011 to 12 million MWhs in 2014. Wind-generated electricity saw a 2 million MWhs generation increase between 2011 and 2014.

Minerals and Uranium

Colorado's mining sector was stable in 2014 compared to the previous year. Nonfuel mineral production included metals, industrial minerals, and construction materials. The total value of Colorado's nonfuel minerals in 2014 is estimated at $2.32 billion, a 10% increase from the 2013 estimated value of $2.11 billion. Colorado now ranks 32nd out of 122 national and state jurisdictions for attracting mineral investment according to the Fraser Institute's annual survey of mining executives. Production of industrial minerals, primarily construction materials, increased in 2014 and is estimated to increase further in 2015, correlating with the increased construction activity in the state. It is anticipated that the value of mineral materials, especially construction materials (e.g., sand and gravel, cement, gypsum, and crushed stone), will increase in 2015 between 3% and 5%, but may see a slight overall decrease in 2016.

The production value of metal mining in Colorado in 2014 is estimated at $893 million, which includes gold, molybdenum, and silver. This is approximately 7% over the 2013 production value of $835 million. Colorado is the largest molybdenum producer in the United States and second largest in the world (China is the largest). Approximately 51 million pounds of molybdenum were produced from two mines in 2014. Increased molybdenum production at the Climax and Henderson mines, owned by Freeport-McMoRan (Freeport), accounted for the 2014 gain in value.

Freeport's Climax molybdenum mine, located 13 miles northeast of Leadville, restarted open pit commercial operations at Climax in 2012 after the mine had been shut for 17 years. Freeport also operated the Henderson underground mine located west of Denver, near the town of Empire. The combined Climax and Henderson molybdenum oxide production totaled about 51 million pounds in 2014, an increase of about 4% over the 2013 production of 49 million pounds. Together, these facilities, including the Henderson Mill in Grand County, employ more than 950 workers. Most of the concentrate from the Climax and Henderson mills is sent to a refining facility in Fort Madison, Iowa.

It was announced in November 2015 that the Henderson Mine will curtail molybdenum production by an additional 45% in 2016, to a 10-million-pound per year rate from the 18-million-pound rate announced in August. The annual production rate was 27 million pounds in 2014. Consumption of high-grade and stainless steels, of which molybdenum is a key component, has been declining in large part due to decreased heavy equipment demand associated with less oil and gas drilling. Not surprisingly, the Henderson Mine is putting its development of new mining areas on hold in 2016. Of greater consequence is the continuing reduction of its workforce—another 130 jobs will be lost in addition to the 80 jobs already announced in August. Other mines, including Freeport's Sierrita Mine in Arizona, have announced reductions in copper and molybdenum production as well.

The average price of molybdenum ranged from $10.36 per pound in 2013 to $12.20 per pound in 2014. The price of molybdenum has declined to approximately $4.50 per pound as of early November 2015.

Colorado ranked fourth nationally among the gold producing states during 2014. The Cripple Creek and Victor Gold Mining Company, a wholly owned subsidiary of

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AngloGold Ashanti Ltd., operated the only major producing gold mine, the Cresson Mine, within Colorado in 2014. In 2015, Colorado-based Newmont Mining Corp. completed the acquisition of the Cripple Creek and Victor Gold Mine from the majority owner AngloGold Ashanti Ltd. The Cresson Mine employs more than 500 people in Teller County. The open pit gold mine, located southwest of Colorado Springs in the town of Victor, produced 200,000 ounces of gold and 110,373 ounces of silver in 2014. During 2014, gold production decreased by 13% compared to the 2013 total of 230,373 ounces. Lower gold prices in 2014, combined with lower gold and silver production, contributed to a decrease in production value of about 18%, from $328.1 million in 2013 to an estimated $269.3 million in 2014. Also, gold production at the Revenue Mine, located in Ouray County and now owned by Fortune Minerals Ltd., was initiated at the end of 2014. The mine produces silver primarily, with byproduct credits of gold, lead, and zinc.

Gold and silver production continue to decline due to lower gold and silver prices. Gold prices averaged about $1,269.45 per ounce in 2014, and the 2015 year-to-date average through September is about $1,178.50. Silver prices averaged about $19.35 per ounce in 2014, and the 2015 average between May and July was about $16.35 per ounce. Average gold and silver prices are expected to decline for the rest of 2015 and into 2016. This could lead to a lower production value from Colorado mines.

Colorado had very little uranium exploration or development activity reported in 2014 and 2015. Although there were no operating uranium and vanadium mines or mills in 2014 and 2015, there are currently several active mine permits and development projects. Continued low uranium prices primarily account for the lack of uranium mining in the state. State laws restrict the in-situ development of uranium reserves. Despite low prices, company consolidations were ongoing in 2014, continued into 2015, and will proceed into 2016. In November 2014, Energy Fuels Inc. sold its Pinon Ridge Uranium Mill (San Miguel County) and associated uranium properties to a private investor group. Later in November 2014, the mill and properties were acquired by Western Uranium Corporation. Energy Fuels, Inc., retained its Whirlwind Property, on standby since 2009, located in Mesa County.

In 2014, Colorado consumed approximately 41 million tons of aggregate. According to the Colorado Stone, Sand & Gravel Association (CSSGA), the production of construction aggregate, including crushed stone, sand and gravel, was slightly down from 2013 levels due to the high temporary demand after the 2012 flooding. CSSGA currently estimates the industry's value at $665 million annually. Indications for 2016 suggest a slight decrease in production in Colorado, primarily in the central and northern regions, due to a slowdown in the oil and gas segment.

COLORADO ELECTRIC POWER INDUSTRY GENERATION BY PRIMARY ENERGY SOURCE
2007–2014
(In Millions of Megawatt Hours)

Year	Coal	Natural Gas	Hydroelectric[a]	Wind	Solar	Biomass	Petroleum	Other[b]	Total
2007	35.9	15.0	1.7	1.3	0.002	0.031	0.028	0.041	53.9
2008	34.8	13.5	2.0	3.2	0.018	0.045	0.019	0.033	53.4
2009	31.6	13.8	1.9	3.2	0.026	0.056	0.013	0.053	50.6
2010	34.6	11.1	1.6	3.5	0.042	0.058	0.017	0.070	50.7
2011	34.0	10.2	2.1	5.2	0.105	0.062	0.022	0.063	51.4
2012	34.5	10.5	1.5	6.0	0.165	0.058	0.011	0.055	52.6
2013	33.7	10.7	1.2	7.2	0.248	0.081	0.010	0.046	52.9
2014	32.5	12.0	1.8	7.4	0.253	0.079	0.010	0.047	53.8

[a]Includes pumped storage.

[b]Includes blast furnace gas, propane gas, other manufactured and waste gases derived from fossil fuels, non-biogenic municipal solid waste, batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, tire-derived fuels, and miscellaneous technologies.

Source: U.S. Energy Information Administration.

Colorado is also home to the world's largest known nahcolite deposit located in western Colorado's Piceance Creek Basin. Natural Soda, the second-largest producer of sodium bicarbonate in North America, has operations in the basin that recover pure, naturally occurring sodium bicarbonate for use in food, personal care, pharmaceutical, animal nutrition, agriculture, pool and water treatment, and other industrial markets. An expansion project at its processing facility was completed in 2013, which doubled production capacity to 250,000 tons per annum.

Renewables

Colorado's abundance of renewable energy resources includes wind, solar, hydroelectric, geothermal, and biomass resources. These additional electricity resources accounted for 17.8% of Colorado's net generation in 2014, an increase from the 16.6% generated from these sources in 2013. Most of this generation comes from wind (13.7%) and hydroelectric (3.3%) resources. Colorado's windy plains, high mountains and rivers, active subsurface heat flow, and abundant sunshine give it one of the highest potentials for renewable energy growth in the United States. In terms of overall renewable energy technical potential, the U.S. Department of Energy's National Renewable Energy Laboratory (NREL) ranked Colorado sixth nationally in 2012.

Colorado's Renewable Portfolio Standard (RPS) requires investor-owned electric utilities to provide 30% of their generation from renewable energy resources by 2020, with 3% coming from distributed generation. This is one of the most ambitious renewable portfolio goals in the nation, and the Colorado Public Utilities Commission states that the existing wind and solar installations have already achieved this electricity goal, mostly by purchases through Xcel Energy. Notably, in July 2015, the Tenth Circuit Court of Appeals upheld the constitutionality of Colorado's RPS, saying it would not harm interstate commerce as a 2011 federal lawsuit alleged.

As of August 2015, residential electricity rates in Colorado were 12.47 cents per kilowatt hour (kWh), which is a 2.5% decrease compared to the prior year. This is just below the national average at 12.93 cents per kWh and is the third highest in the eight-state Mountain West Region, which averages 12.29 cents per kWh. Colorado commercial rates are 10.18 cents per kWh, which is below the national average of 10.90 cents, yet one of the higher rates in the region. Colorado's industrial rate averages 7.34 cents, which tops the national average of 7.32 cents. Averaging across all consumer sectors, Colorado's year-over-year electricity rate increase was 3.8% from August 2014 to 2015.

Wind Energy

As of 2014, Colorado ranked 10th nationally for total MWs installed and 13th for overall wind energy potential. The U.S. Department of Energy estimates that installed wind power in Colorado grew by nearly 80% from 2011–2014. Cumulative wind power generating capacity has increased by more than a gigawatt during this period, to reach 2,593 MW. Colorado wind farms cumulatively produced almost 7.4 million MWhs of electricity in 2014.

Most of Colorado's wind stations operate in rural areas with limited economic development opportunities,

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providing local jobs to hard-pressed areas. While hard numbers regarding the economic impact of renewable energy sources are difficult to come by, the wind industry adds to local economies through new lease payments to landowners, local income from taxes, wages of wind farm employees (about 300 construction jobs per new project and operating crews of about 25 per farm), and sales and use taxes arising from spending by these workers.

Colorado also has a significant wind turbine manufacturing presence. According to the U.S. Bureau of Labor Statistics and AWEA, Colorado's industry concentration in this manufacturing sector was 2.5 times the national average, with 23 distinct manufacturing facilities located in the state. Denmark-based Vestas Wind Systems, after a round of Colorado layoffs in 2012, added 800 jobs in Colorado in 2014 and additional 400 jobs in 2015 to meet global demand for wind turbines. Colorado had nearly 400 MW of wind capacity under construction in 2015.

Solar Energy

Colorado is a leader in solar energy. In terms of cumulative installed solar electric capacity, Colorado ranks ninth nationally, with 430 MW of installed capacity. Of that power, 67 MW was installed in 2014, a 20% increase over 2013. For 2015, the Solar Energy Industries Association (SEIA) estimates the annual installed capacity will increase another 100 MW. According to the NREL's Open PV Project, Colorado has 2,600 individual photovoltaic (PV) installations that generate more than 135 MW of power. The state ranks 13th in total count of PV installations. More than 380 solar companies currently operate in Colorado, employing around 4,200 people. The 2014 investment in solar installations totaled $212 million according to SEIA.

SunPower, a developer of solar power plants, began construction of its utility-scale Hooper Solar Project in the San Luis Valley in late 2014. Scheduled to be completed in mid-2016, this project will add 64 MW of solar electric capacity, with a future build-out potential totaling more than 150 MW.

Like many states, the rooftop solar community in Colorado has been thriving with installation costs dropping approximately 18% from 2014 to 2015. In fact, for 2013, Colorado had some of the lower installation costs nationally—$3.99 per watt for a system less than 10 kilowatts. Continuing is the debate about net metering and changing commercial utility policies to pay less than the going residential rate of about 11 cents per kWh to rooftop solar customers for excess electricity.

Hydroelectric Power

For the past decade, Colorado's hydroelectric plants have been providing between 2.5% and 3.5% of the state's total electricity. For 2013, 2.4% of the state's total electrical output came from 48 hydroelectric generating stations with around 1.3 million MWhs of electricity generated. Most of these stations are owned by the U.S. Bureau of Reclamation, but some are privately owned or operated by local mountain towns such as Aspen, Nederland, Ouray, and Telluride. This renewable resource provides a constant but seasonably variable source of electricity. The industry employs several hundred individuals for operations and maintenance.

Geothermal Energy

Colorado does not have any geothermal power plants as of late 2015, but projects near Mt. Princeton and Poncha Hot Springs in Chaffee County are advanced to the stage where drilling targets have been identified for deep test wells. Other areas potentially favorable for geothermal power production have been identified, including Waunita Hot Springs in eastern Gunnison County and the Raton Basin west of Trinidad in Las Animas County. House Bill 14-1222 enacted in 2014 provides flexibility in financing for geothermal and other renewable energy projects—a key factor in moving projects forward. While no electricity generation from geothermal resources is occurring in Colorado presently, many cities and commercial businesses are already using direct heat, such as the hot springs resort in Glenwood Springs and the town of Pagosa Springs. A new geothermally heated greenhouse project is also under construction in Pagosa Springs in Archuleta County.

Biofuels

Biofuel technologies outside the traditional hydro, solar, and wind paradigm appear to have stagnated a bit in Colorado. The state's first biomass plant in Gypsum, which began delivering electricity at the end of 2013, was badly damaged by a fire in December 2014. Developed by Eagle Valley Clean Energy, the plant is utilizing wood biomass (including beetle-killed trees) to generate more than 10 MWs through heat conversion of water to steam for turbines. Other biomass plants of this type include a 5-MW plant in Pagosa Springs that may possibly go online in 2016, and Xcel Energy is exploring options for a 2-MW demonstration plant. Two of the more promising biomass companies in Colorado, Solix Biosystems in Fort Collins and OPX Biotechnologies in Boulder (acquired by Cargill in April 2015), have abandoned their previous biofuels focus to produce algae-derived ingredients for dietary supplements, personal care products, lubricants, and agrichemicals.

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Construction

Construction activity in 2015 has been very high and experiencing robust increases. The total construction value of new permits will grow 17%, to $15.3 billion, in 2015. The figures are a little overstated, as discussed in the narrative below, but the condition of this sector of the economy is very healthy. Growth of 10%, to $16.8 billion, is expected in 2016. All subsectors within construction are showing increased demand. Employment has risen to 154,000 and will be higher in 2016 on a seasonally adjusted basis at 163,000.

Residential

Single-Family Housing

Metro Denver and Northern Colorado typically account for about two-thirds of Colorado's new home sales, and through the first half of 2015, activity in these areas (sales contracts and closings) increased by about 16% statewide over 2014. The year should finish with 19,800 permits. Continued recovery in 2016 will see another 16% increase, to 23,000 single-family permits.

While that pace is robust by recent standards, single-family homebuilding has been as high as 40,000 a year (in 2005). Homebuilding has shown a recovery from the recessionary trough of 2009, when only 7,261 permits were issued. In other words, although single-family permits have been rising steadily and will finish the year 2015 up by 173% from 2009, this level will still be only 49% of the 2004 peak of 40,753. Colorado continued to outperform the nation, which saw a 2% increase in single-family permits in 2014 and a 7% increase though Q3 2015.

The demand for housing is driven in large part by net in-migration. The Colorado State Demography Office expects a total net migration of 57,840 in 2015 and another 62,118 in 2016. Those numbers are higher than the population increases from births over deaths, and if the population trend continues, it will mean that the homebuilding industry will face a need for roughly 35,000 new single- and multifamily units per year.

Colorado's foreclosure rate is on track for 2015 to be the lowest in 20 years, and the resale housing market has been undersupplied in many Colorado market areas since 2013. In Metro Denver-Boulder, the 5,892 resale home listings as of mid-year 2015 represented just a 1.2-month supply. Housing demand has not exceeded supply to this extent for more than 15 years.

Colorado's housing market improvement cannot be fully attributed to the state's economic recovery. The 5.2% to 3.6% decline in 30-year mortgage interest rates from 2010 through mid-2013 made housing more affordable and helped increase sales of both new and existing homes. After 30-year mortgage interest rates increased by 100 basis points during 2013, new home sales in the Metro Denver area once again declined for three straight quarters, then recovered as rates fell again.

The housing market recovery's reliance on historically low mortgage interest rates is of particular concern as the Federal Reserve moves toward higher interest rates. Home loan underwriting policies also continue to suppress housing demand, with most lenders requiring higher down payments and strong credit.

High consumer confidence in the region continued a four-year trend of improvement, undoubtedly influenced by reports of continued home price increases, including Case Shiller's report of a nationally high 10.7% increase in Metro Denver for the 12-month period through August 2015.

Rental occupancy rates remain in relative balance for single-family homes despite large supply increases, but

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VALUE OF CONSTRUCTION IN COLORADO BY TYPE
2007–2016
(In Millions of Dollars)

Year	Residential	Nonresidential	Total Building	Nonbuilding	Total Construction
2007	$7,417.0	$5,259.5	$12,676.5	$2,003.6	$14,680.1
2008	4,041.8	4,116.7	8,158.4	2,542.4	10,700.8
2009	2,501.3	3,126.2	5,627.4	1,648.4	7,275.8
2010	2,903.0	2,967.3	5,870.3	2,214.4	8,084.7
2011	3,363.1	3,932.1	7,295.2	2,289.2	9,584.4
2012	5,368.2	3,675.2	9,043.5	3,329.2	12,372.7
2013	7,089.2	3,609.7	10,698.9	3,679.9	14,378.8
2014[a]	6,479.5	4,239.0	10,718.5	2,319.0	13,037.5
2015[b]	7,489.0	4,620.5	12,109.5	3,150.0	15,259.5
2016[c]	8,780.0	4,851.5	13,631.5	3,150.0	16,781.5

[a]Revised. [b]Estimated. [c]Forecast.

Sources: McGraw-Hill Construction Research and Analytics and the Colorado Business Economic Outlook Committee.

Construction

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RESIDENTIAL BUILDING PERMITS BY TYPE 2007–2016

Year	Single Family	Multifamily	Total Housing Units
2007	20,516	8,938	29,454
2008	11,147	7,851	18,998
2009	7,261	2,094	9,355
2010	8,790	2,801	11,591
2011	8,723	4,779	13,502
2013	12,617	10,684	23,301
2013	15,772	11,745	27,517
2014[a]	17,095	11,591	28,686
2015[b]	19,800	12,500	32,300
2016[c]	23,000	13,750	36,750

[a]Revised. [b]Estimated. [c]Forecast.

Sources: U.S. Census Bureau and the Colorado Business Economic Outlook Committee.

some submarkets are experiencing a shortage of rental housing. The strong in-migration is resulting in rental rate increases in some submarkets, making home ownership a more attractive housing option for those who can qualify for a loan.

The earlier decline in housing demand significantly impaired the supply capacity of the housing industry. Although homebuilders are opening new projects and new lot development in the pipeline is adequate to meet current levels of demand, builders continue to report that a shortage of skilled labor is limiting their capacity to meet demand.

Colorado's average single-family permit value increased by 3% in 2014 and declined by 1% through Q3 2015. This seems to contradict the labor shortages and increasing materials costs reported by builders, and the committee attributes this disparity to a shift in consumer demand toward smaller homes, as well as to the fact that single-family permits are typically issued for the base cost of a home, excluding optional features and upgrades selected by the homebuyer. The forecast for calendar year 2015 is for a modest 1% increase in permit value, to $305,000 per unit, followed by a 2% increase in 2016, to $310,000.

Multifamily Housing

Multifamily construction activity continued to increase in 2015, with permits at their highest level since 2002. By year-end, a total of 12,500 multifamily units are expected to be permitted, an 8% increase from 2014. For the past three years, more than 95% of new multifamily units have been built in the corridor extending from Colorado Springs north to Fort Collins.

New multifamily units overwhelmingly consisted of apartments rather than for-sale condominiums. A study commissioned by the Denver Regional Council of Governments largely attributed this to Colorado's litigious construction defects environment. According to the report, developers of for-sale condos and townhomes report paying $15,000 per unit just for the builder liability portion of their insurance policies.

Strong demand continues for rental housing. Many Gen Xers (ages 34–49), who were first-time new homebuyers in the past decade, are now post-foreclosure renters. Some Gen Ys (or millennials, adults ages 35 and under) continue to rent while they struggle to find professional jobs and incomes sufficient to support homeownership in addition to increased levels of student loan debt.

For more than two years, apartment vacancy rates in Denver, Fort Collins-Loveland, and Greeley have been commonly below 5%. In Colorado Springs, Pueblo, and Grand Junction, where demand has been less strong, vacancy rates declined as well, ranging from 3.7% to 5.9% as of mid-year 2015.

The strong demand also increased rental rates, in some cases dramatically, and concessions are very rare. In 2015, average rents in Denver-Boulder have increased more than 12% from a year earlier compared to 18% in Fort Collins-Loveland and 14% in Greeley according to Apartment Insights.

Multifamily construction is expected to remain strong in 2016. In addition to the more than 20,000 units completed in 2015 or already under construction, nearly 25,000 units are in various stages of planning. Demographic and migration trends support demand for new apartments, but new construction may be reaching the maximum level of production that some markets can absorb. Time lags between construction starts and occupancy have grown longer because skilled construction labor left during the recession. The committee forecasts 13,750 multifamily units will be permitted in

CONSTRUCTION EMPLOYMENT 2007–2016 (In Thousands)

Year	Employment	Percentage Change
2007	167.8	0.0%
2008	161.8	-3.6
2009	131.3	-18.9
2010	115.1	-12.3
2011	112.5	-2.3
2012	115.8	2.9
2013	127.5	10.1
2014[a]	142.3	11.6
2015[b]	150.5	5.8
2016[c]	160.2	6.4

[a]Revised. [b]Estimated. [c]Forecast.

Sources: U.S. Department of Labor, Colorado Department of Labor and Employment, Bureau of Labor Statistics, and Colorado Business Economic Outlook Committee.

2016, an increase of 10% from 2015. The value per unit is expected to increase, due in part to rising labor and materials costs. After rising by 20% in 2013, the average value per multifamily unit remained flat in 2014, but rose about 5%, to $116,000 in 2015. In response to increasing construction costs, the value per unit is expected to climb again in 2016, but at a slower pace, to approximately $120,000.

Nonresidential Building

This sector tracks new, remodeled, and rehabilitated offices, retail, medical facilities, colleges, churches, schools, and government buildings. Activity in 2015 is forecast to increase 9%, to $4.6 billion. The value of nonresidential building in Colorado is expected to rise another 5% in 2016, to $4.9 billion.

This year saw ongoing construction of several major developments, including a new Charles Schwab campus for several thousand employees in Lone Tree. Other 2015 multiyear projects include a campus project by Google in Boulder, Union Tower West, and significant new commercial work along Brighton Boulevard in north Denver. The committee expects that the statistics will be driven higher in 2015 by the start on the replacement stadium for Colorado State University. Tracking another multiyear project means that numbers are overstated for the current year, and statistics likely will not capture the volume of construction put in place in the out-years. Much of 2015's increased activity is driven by demand for office space, a relatively recent occurrence after years of comparatively quiescent activity. Many new hospitals were built in recent years, and there is a need for related new medical facilities, such as doctors' offices, so demand in that subsector is still catching up. Demand for hotels and the financing of new institutional projects have added to the volume of work as have both the half-billion-dollar school bonding in Boulder and ongoing state funding of K–12 facilities.

It is noted that preconstruction work of bidding and estimating has become very busy, and people working with those early indicators are anticipating even more activity.

The year 2016 will be active with projects already started, and construction on many of these will extend for years. It is anticipated that new projects that will start in 2016 will include the expansion by DaVita of its headquarters in downtown Denver, a new facility for Panasonic Enterprise Solutions near the commuter rail station at 61st and Peña Boulevard, the redevelopment of Market Street Station transit center in downtown Denver, and new buildings at the Denver Water Operations Complex. At the former University of Colorado Hospital site at 9th and Colorado, where the old CU biomedical building was imploded in 2015, plans are ramping up quickly for a significant mixed-use project. Two towers are scheduled to start in Sun Valley, and St. Anthony's Hospital will add another $150 million project. The multiyear project with the single-largest impact on construction values will be the Gaylord Conference Center, which secured private funding and government subsidies in 2015 and will eventually cost $824 million.

There is a large off-set of the overstatement of volume in these years from multiyear projects. Statistics are likely to understate the volume of work at the Veterans Administrative Hospital as a multitude of change orders may not be captured by data that report only bid values.

Voter approval of redevelopment of the National Western Center project will add $1.1 billion in construction activity, but the start of that work is beyond the time horizon of this forecast.

The lack of skilled construction labor will likely dampen the pace of construction activity. The committee observes that an anticipated migration of workers from oil and gas exploration to the construction sector has yet to materialize.

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Construction

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Nonbuilding Construction

Nonbuilding measures new construction in infrastructure projects. This sector tracks work in roads and highways, water and wastewater facilities, power plants, reservoirs, mass transit, and similar projects.

Statistical data collected about this subsector fail to adequately capture the current level of activity due to the role of multiyear megaprojects, even more so than for nonresidential building. The recorded numbers are expected values reported when a project is started (permitted). As such, a megaproject valued in the billions of dollars is recorded during year one, but construction of such a project typically continues over several years. Since statistical reporting does not track work put in place, the data have a tendency to overstate activity during the year that a mega-project has been awarded, and then understate activity during the years of actual construction.

Official numbers from the past three years demonstrate this phenomenon. The official numbers spiked in 2013 due in large part to the fact that RTD awarded multiple FasTracks rail projects that year. Although the sector remained busy as construction continued on those and other projects throughout 2014 and into 2015, projects that were awarded in 2014 were more modest in size. This indicated an apparent lull that did not actually exist, followed by a rebound in 2015. In reality, the committee believes that the pace of construction for the nonbuilding subsector has been and will continue to be around $2.8 billion to $3.2 billion.

This fact is borne out by a review of year-to-date "call before you dig" statistics, which shows double-digit increases in the volume of requests for identifying buried utilities each year since 2012. That trend appears to be accelerating, with 2015 volume up 20% when compared to 2014, and on pace to be the busiest year since 2006. This suggests steady growth in the overall construction industry, and especially in the nonbuilding subsector.

However, with few mega-size projects awarded in 2015, the forecast of the statistics for this year will be $3.15 billion, falling between the recent peak of 2013 and the comparative lull in 2014.

Looking forward to 2016, the committee expects to see the value of nonbuilding to be boosted some by groundbreakings on RTD's $207 million Southeast Rail Extension and the $269 million that the Colorado Department of Transportation (CDOT) will spend on the C-470 Express Lanes project, both in Douglas County. These projects will be in addition to a sector that remains busy with public works projects, including ongoing permanent flood repair projects in Northern Colorado, which will continue for the next few years. Boulder Water will enter year two of its $352 million, six-year plan involving 156 projects. Wastewater treatment plant upgrades will also continue to keep the nonbuilding subsector busy.

Power plant upgrades to meet federal regulations were up sharply in 2015, to about $500 million. In 2015, PSCo invested roughly $729 million in electric generation but of that amount, around $340 million is for electric transmission and distribution that are tracked in another industry. Black Hills Electric will add roughly another $50 million in Construction work. PSCo's 2016 capital expenditures for construction work will be significantly lower due to the completion of most of the larger projects in 2015, so the committee added a smaller $200 million for 2016.

Another major upcoming event in the nonbuilding subsector that has been widely reported is expected to show in the statistics in 2017, one year beyond this forecast. CDOT intends a fall 2016 announcement of the public-private partnership (P3) team selected for the highway reconstruction of I-70 between I-25 and Peña Boulevard. Financial close for the project is expected to occur in 2017, and actual construction is expected to last about five years, with construction costs estimated at $1.2 billion.

Other major construction projects that will not begin until a time beyond this forecast are development of two major reservoirs.

Employment

Workers are responding to the opportunities for construction employment, but at a slower pace than demand would indicate. Companies are competing for new entrants into the industry, so some churning is going on that makes employment gains seem higher. From the seasonally adjusted average in 2014 of 142,000 workers, Colorado likely has enjoyed an increase of about 5.8%, to around 150,500 construction workers in 2015. The committee is not optimistic that sufficient numbers of laborers, especially skilled craftsmen, can be located to fulfill demand. ✤

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Manufacturing

Manufacturing in Colorado is a $21.7 billion industry, representing about 7.1% of the value of all goods and services produced in the state according to 2014 statistics from the Bureau of Economic Analysis. Colorado was home to nearly 5,600 manufacturing establishments employing roughly 139,100 workers during Q1 2015, which represented 6.7% of the total employment base in the state. Most of these companies were small businesses. Indeed, 78% of the manufacturing companies employed fewer than 20 workers, whereas only 31 companies had 500 employees or more. However, manufacturing companies tend to be larger on average than those in other industries as nearly 90% of companies in Colorado have fewer than 20 workers.

At the national level, the Institute for Supply Management's Purchasing Managers Index reached 50.2 in September 2015. The September index level marked the 33rd consecutive month of expansion as measured by a value greater than 50. Of the 18 manufacturing industries tracked in the index, seven industries reported growth. Survey respondents reported that business has slowed, aided by a strongly valued dollar, falling crude oil prices, and declining customer orders.

Total manufacturing employment in the United States increased 1.4% in 2014 and continued to expand at that same rate in 2015. The Internet of Things (IoT) is ushering in new technologies and new opportunities for improved productivity. Indeed, the global landscape for manufacturing is changing dramatically due to 3D printing and intelligent robotics, along with the so-called fourth industrial revolution driven by IoT. However, the Manufacturing Committee expects that the pace of growth will slow in 2016 due to some overarching trends affecting the sector:

- The strength of the dollar is challenging U.S. exports.
- There is concern over a potentially weakening global economy, although the International Monetary Fund forecasts a 3.1% increase in world output in 2015 followed by 3.6% growth in 2016.

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COLORADO MANUFACTURING EMPLOYMENT BY INDUSTRY
2007–2016
(In Thousands)

Industry	2007	2008	2009	2010	2011	2012	2013	2014[a]	2015[b]	2016[c]
Food	17.5	18.3	18.4	18.5	19.4	19.3	19.9	20.6	21.1	21.5
Beverage and Tobacco	5.7	5.6	5.2	5.2	5.4	5.6	5.9	6.3	6.9	7.2
Printing and Related	7.6	7.2	6.1	5.6	5.3	5.3	5.3	5.4	5.5	5.5
Other Nondurables	18.2	17.3	15.5	15.0	15.2	15.5	15.7	16.0	16.0	16.0
Subtotal, Nondurable Goods	49.0	48.4	45.2	44.3	45.3	45.7	46.8	48.3	49.6	50.2
Nonmetallic Minerals	9.8	9.2	7.2	6.8	6.8	6.9	7.3	7.7	8.2	8.7
Fabricated Metals	15.4	15.3	13.1	12.5	13.3	14.1	14.8	15.6	16.0	16.3
Computer and Electronics	24.6	23.7	21.8	21.4	22.1	22.4	21.8	21.5	21.3	21.3
Transportation Equipment	10.2	9.5	9.2	8.8	8.9	8.8	8.8	8.9	9.3	9.5
Other Durables	36.3	36.2	31.5	30.4	31.7	33.1	33.3	34.6	35.9	36.5
Subtotal, Durable Goods	96.2	93.9	82.8	79.9	82.8	85.2	86.0	88.3	90.7	92.3
Total, All Manufacturing	145.2	142.3	128.0	124.2	128.1	130.9	132.8	136.6	140.3	142.5

[a]Revised. [b]Estimated. [c]Forecast.

Note: There was a reclassification of employees from the Computer and Electronics sector in Manufacturing to the Computer Systems and Design Services sector in Professional and Business Services in 2013.

Sources: Colorado Department of Labor and Employment and Colorado Business Economic Outlook Committee.

Manufacturing

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- The decline in the price of oil is resulting in lower company operating and shipping costs, but it also is leading to a decline in drilling equipment and related goods manufacturing.
- Although the Federal Reserve has refrained from an interest rate increase as of November 2015, it is likely to occur in 2016. Increased business financing costs may dampen business activity.
- The Trans-Pacific Partnership (TPP) is moving closer to approval, but there is disagreement as to whether this will be a positive or a negative for U.S. manufacturing.
- Businesses often delay major business and investment decisions during U.S. presidential election years.

An ad hoc survey of Colorado manufacturers revealed that many of these overarching concerns above are also top of mind for them. However, the most widely mentioned challenge is attracting and retaining the labor needed to run their businesses successfully. These workforce challenges range from skills development to work ethic issues. Despite the workforce concerns, employment in the Manufacturing Sector in Colorado expanded each year from 2011 to 2014. The Manufacturing Sector continued to expand at a brisk pace in 2015, then is expected to grow at a slower rate in 2016.

Nondurable Goods

About 35% of Manufacturing employment is found in the nondurable goods industries, which include the production of goods that generally last for less than one year. Nondurable goods employment increased by 2.7% in 2015 and is expected to post a smaller increase of 1.2% in 2016, averaging about 50,200 workers for the year.

The largest nondurable goods subsector is food manufacturing. Colorado food manufacturers process meat, grains, sugar, milk, cheese, and other dairy products and produce candies, baked products, tortillas, burritos, coffee, and animal feeds. Beyond the large food manufacturers, Colorado is home to many boutique manufacturers making specialty products. Colorado food and kindred product exports totaled nearly $1.6 billion in 2014 and are expected to remain strong in 2015. Canada and Mexico are major purchasers of Colorado-produced food products. The strong dollar is hurting exports and is likely to impact future growth in this subsector, but for those who are increasing the manufacture of Colorado Proud products and for the many entrepreneurs with small food startups, the strength of the dollar will not have the same negative impact. Employment is expected to increase by 500 jobs in 2015 and by another 400 jobs in 2016, reaching total employment of 21,500 workers.

Firms in the beverage subsector produce soft drinks, ice, bottled water, beer, wine, and liquor. Numerous small wineries are located along the Western Slope of the state, primarily in Mesa County. Most of the subsector employment is located along the Front Range, with three large breweries, one large soft drink manufacturer, and numerous microbreweries. According to the Brewers Association, Colorado ranks third in the country for the number of craft breweries, with 235, and first in the nation for output per capita. The state produced nearly 1.7 million barrels of craft brew, the third-highest production in the country in 2014. The state's expanding economy should support more production, and the continued popularity and strength in microbreweries and niche beverages will support subsector employment growth in 2015 and 2016, although the numbers added by microbreweries are small. Employment in the beverage subsector is expected to increase by about 600 workers in 2015 and another 300 workers in 2016, reaching 7,200 workers.

Employment in the printing and related products subsector has shown minor growth in the last three years. Consolidation seems to be complete, and those in printing are finding ways to expand their services, in part by reaching more targeted audiences. While the Colorado Department of Labor and Employment projects that employment in Colorado's printing industry will decline by 26% from 2014 through 2024, or about 2.3% per year, it is projecting an average of 1.3% annual growth in the short term, with most of it coming in 2015.

There are many competitors to print material. Magazines and newspapers can be accessed online instead of in print. Declining readership affects advertising expenditures for traditional print media as more advertisers switch to digital and social media. Downloaded audio books capture a small share of all book revenues, but they continue to grow at a very rapid pace, with 26.8% revenue growth in 2014. E-books continue to capture a large share of all book revenues, with 510 million sold in 2014. E-book sales increased by 3.8%, to about $3.4 billion, in 2014 while total revenue from print and digital increased 4.2%, to $15.4 billion, according to a report by the Association of American Publishers.

While the long-term picture for printing and related products is not rosy, there are positive signs in Colorado for 2015. After so many years of decline in this subsector, even remaining stable in 2016 may be considered an improvement. Employment is expected to increase by 100 in 2015, to 5,500, and remain unchanged in 2016.

The other nondurable goods subsector includes textiles, textile products, clothing, paper, petroleum and coal products, chemicals, and plastics and rubber products. Other nondurable goods employment should remain consistent, at 16,000 jobs, as most subsectors are expected to stabilize.

There are about 225 textiles and apparel companies in Colorado, employing approximately 2,400 people. Employment has been stable for the past five years, and is expected to remain at the same level in 2015 and 2016. Colorado has a number of small niche apparel startups, but finding workers with sewing, cutting, and pattern-making skills remains a challenge.

Paper manufacturing contracted steadily throughout the 2000 decade, but has remained relatively stable, at about 1,400 workers, over the past five years. Petroleum and coal products manufacturing in Colorado primarily consists of refinery operations. While refinery activity may slow in response to the low price of oil, production of other products, such as asphalt and roofing materials, may benefit from the lower price. Employment is expected to drop from 700 workers in 2015 to 600 in 2016.

Chemical manufacturing is the largest of the other nondurable goods subsectors, with about 6,000 employees, and primarily consists of pharmaceuticals and related biotechnology drug companies. This industry has been relatively stable to slightly improving over the past year, with some employment gains resulting from cannabis products. Companies manufacturing plastics and rubber products are a diverse mix, ranging from window frames to plastic credit cards. Broad-based demand has resulted in an increase of 200 workers in 2015, to about 5,500 workers, to be followed by another 100 additional jobs in 2016.

Durable Goods

Durable goods industries represent about 65% of the employment in the manufacturing sector. Durable goods manufacturing includes the production of goods lasting longer than one year, such as nonmetallic minerals, fabricated metals, computer and electronics, transportation equipment, and other durable goods. Durable goods employment is expected to increase 2.7% in 2015 and

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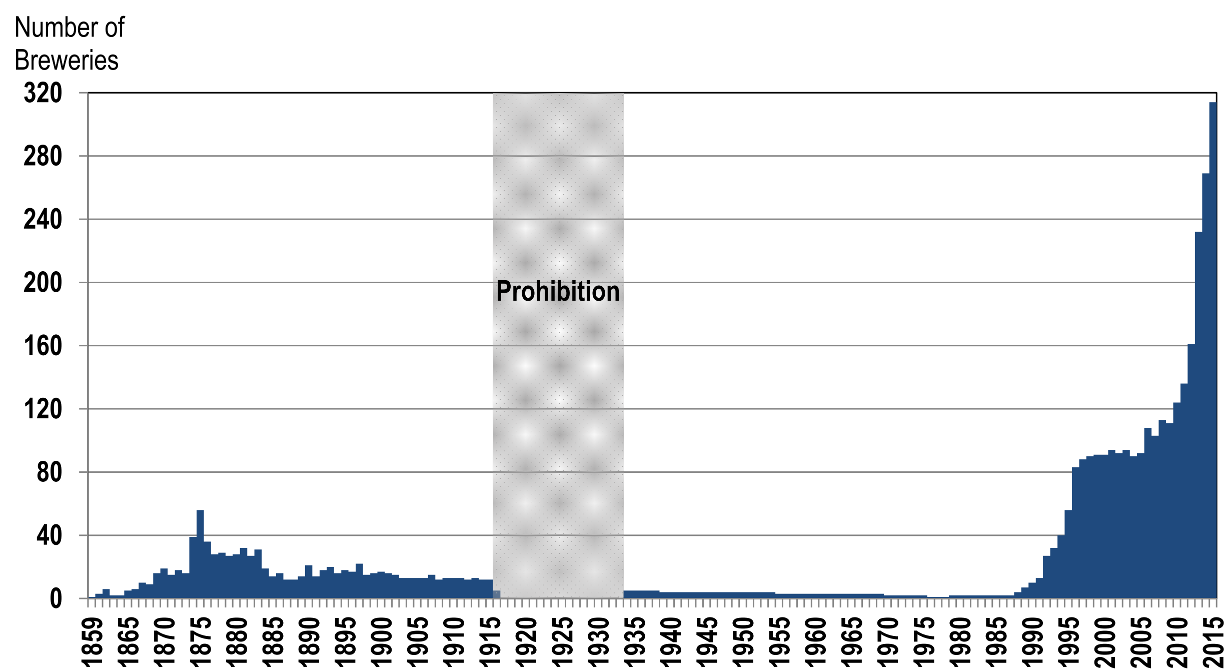
COLORADO BREWERIES, 1859–2015



Source: Colorado Brewers Guild. Total of 314 breweries as of November 6, 2015.

Manufacturing

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1.8% in 2016, representing the addition of 4,000 workers over the two years.

The nonmetallic minerals subsector employed approximately 8,200 workers in Colorado in 2015. Companies classified in this subsector are engaged in producing a diverse array of products from pottery and ceramics to sophisticated porcelain electrical products. Most of the state's jobs in the industry, however, are producing plumbing fixtures, glass products, and concrete and stone products. Employment in this subsector tends to track closely with construction and building activity. Because such activity is likely to continue to expand, job growth will as well. Nonmetallic mineral product manufacturing added 500 jobs in 2015 and will add 500 more jobs in 2016, reflecting healthy construction activity in which many nonmetallic mineral products are used.

The fabricated metals subsector is one of the larger manufacturing subsectors in Colorado in terms of jobs, employing about 16,000 workers in more than 850 establishments. The industry transforms metals into intermediate or end products such as metal containers, tools and hardware, pipes and structural components, and other products used in construction and industry. Overall economic growth has supported job gains in this subsector. Demand in this subsector continues to be challenged by softening oil and gas activity, and exports are hurt by the sluggish global economy and strong U.S. dollar. However, strength in industries using fabricated metals components domestically will offset the weaknesses so that employment gains in the subsector should continue into 2016. Employment is expected to average 16,300 in 2016, an increase of 300 jobs over the 2015 level.

Before it heads to Mars, NASA's MAVEN spacecraft tests its solar arrays during environmental testing at Lockheed Martin's facility near Denver, Colo. MAVEN will perform the first dedicated mission to survey the upper atmosphere of Mars.

The computer and electronic products manufacturing subsector includes industries such as communications equipment, audio and visual equipment, semiconductors, navigational equipment, laboratory measuring instruments, and optical media products, among other things. However, nearly half of the employment in the subsector comprises navigational, measuring, electromedical, and control instruments. In Colorado, aerospace and health care largely influence this industry group. Indeed, this is the only industry group in the subsector that has increased over the past 10 years. The subsector in general has declined by 27% from 2004 to 2014. Global competition and consolidation have challenged the computer and electronic products subsector. In particular, semiconductor and other electronic component manufacturing fell nearly 40%, from 8,360 employees in 2004 to 5,040 employees in 2014. Similarly, communications equipment manufacturing employment declined over 35%, from 2,740 employees in 2004 to 1,770 employees in 2014.

The pace of decline in computer and electronic products is likely slowing. At the national level, the subsector increased slightly over the year in Q1 2015. At the state level, the number of establishments in the subsector increased in Q1 2015 for the first time in several years. Positive indicators for the subsector include growth in aerospace and medical devices, as well as an increase in venture capital investments in the industry groups. While employment in the subsector is expected to decline by 200 jobs from 2014 to 2015, it is projected to stabilize, at 21,300 jobs, in 2016.

Large aerospace companies dominate the transportation equipment subsector, which includes the manufacture of everything from spacecraft, satellites, launch pads, and aircraft parts to electric vehicles and mountain bike frames. Declines in defense spending and government contracts continue to be a challenge for the aerospace industry, and although space flight and space operations remain important parts of the Colorado manufacturing economy, aerospace in 2016 will continue to grow at a pace similar to the overall economy. An increased presence of Lockheed Martin in Denver and United Launch Alliance in Pueblo will help add some momentum to employment numbers. Also of significance in this industry is the interest in metal additive manufacturing, which will have an enormous impact on aerospace in the coming years. Metal additive manufacturing promises to revolutionize the aerospace industry in the long term, and companies are hiring engineers and machinists to perform research and prototype work in the short term.

The largest number of small to medium companies in this subsector are in motor vehicle parts, trailers, golf-carts, and "other," which in Colorado includes specialty bicycle and bicycle parts. The demand is growing for these parts and products. Many of these businesses are labor intensive, and growth can be slowed by a shortage of workers as seen in many manufacturing subsectors in the state. Although small businesses such as these make up a fraction of the subsector by employee count, aggregated they can add to minor employment gains in Colorado. Overall employment in transportation equipment is forecast to rise from 9,300 employees in 2015 to 9,500 in 2016, a 2.2% increase.

The other durable goods subsectors include wood products, primary metals, machinery, electrical equipment and appliances, furniture, and miscellaneous manufacturing. All six of the other durable goods subsectors are expected to expand in 2015 and 2016, with employment increasing by 1,900 workers during the two years, to reach 36,500 workers in 2016.

Employment in the wood products manufacturing subsector has seen steady employment growth since 2012. Meanwhile, wage growth in 2014 increased 6.4%, the largest annual increase in the last nine years. According to the Federal Housing Finance Agency, home prices in Colorado have risen more than any other state in the first two quarters of 2015, at a rate of 10.6% compared with the national average of 5.4%. The appreciation in home values will drive wood product activity, pushing the subsector's employment to 3,300 employees in 2015 and 3,400 in 2016.

Colorado's primary metals subsector employs about 2,400 workers. The state has about 50 establishments making various metal products using iron, steel, and aluminum. Much of the subsector's sales are to businesses outside of Colorado. In spite of the recent reclassification of two firms in this subsector to fabricated metals manufacturing, primary metals manufacturing eked out a small gain in employment. However, gains in output in primary metals can be achieved without adding workers as the industry becomes more automated. Employment is expected to average 2,400 in 2015 and remain at that level 2016.

Machinery manufacturing is defined by products that apply mechanical force and includes wind turbines, jet engine turbine controls, compressors, and other manufacturers in the state, and represents about 8% of the manufacturing workforce. As would be expected in a state with a large agricultural economy as well as major oil and gas resources, this subsector is dominated, in terms of number of companies, by three industry groups: farm equipment, oil and gas equipment, and food product machinery. Tracking with many manufacturing subsectors in Colorado, most companies have fewer than 100 employees, with many in the 10–50 employee range.

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Manufacturing

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The downturn in oil and gas has had a significant impact on these small companies, and has resulted in generally flat to declining employment numbers in some regions (especially northeast and far western Colorado). Those employees have generally found employment in other companies in similar industries, but the drag on overall employment has been significant.

Included in this subsector are wind-energy equipment manufacturers, with the presence of one major international player, Vestas. Wind energy employment has been volatile in the last few years as tax credits have expired and been renewed on a year-to-year basis. Vestas was a major net hirer in 2014, accounting for most of the job growth in this subsector. Overall employment in machinery manufacturing is forecast to grow from 12,300 in 2015 to 12,400 in 2016.

Companies in the electrical equipment, appliances, and components subsector manufacture diverse products, including lighting and fixtures, motors and generators, electric power equipment, batteries, wiring, cable, and other communications equipment. The subsector has a relatively small employment base in Colorado, averaging about 2,300 employees in 2014. However, employment in the subsector has increased consistently since 2009 and recently has reached levels not posted since the early 2000s.

The electrical equipment, appliances, and components subsector is influenced by construction activity, household growth, and consumer spending activity. Household growth in Colorado continues to increase at a robust pace and construction activity in the state remains strong, especially along the Front Range. In addition, demand for electrical equipment and appliances appears to remain strong based on indicators such as exports, which are up 8.4% year-to-date through the Q3 2015 compared with 2014. Employment gains for individual industries within the subsector are broad based. In 2015, the subsector is expected to remain at 2,300 jobs and increase to 2,400 in 2016.

Furniture and related products employment continues to rebound from the Great Recession, posting a 7.3% employment growth rate in 2014. Although the employment growth rate has been positive since 2012, this subsector's current employment is 28% smaller than the employment size in 2007. Furniture and related products employment depends on housing starts, population, demographics, and income growth. In 2014, the average annual wage in Colorado increased 3.7%, housing permits rose 4.2%, and population climbed 1.6%. These factors will drive employment to 5,200 employees in 2015 and 5,300 in 2016.

Industries in the miscellaneous manufacturing subsector create a wide range of products not readily classified elsewhere, from medical equipment and office supplies to toys and sporting goods. Total employment in the miscellaneous manufacturing stood at about 10,200 employees in 2014 and is expected to add about 200 jobs per year in 2015 and 2016.

Summary

Many Colorado manufacturers are innovative and use advanced processes to produce their goods. Colorado's Manufacturing Sector is highly productive and boasted an average annual wage of $65,200 in 2014, which was 24% higher than the average annual wage for all industries.

Several organizations exist in Colorado to assist manufacturers with their business operations. First, Manufacturer's Edge is a statewide manufacturing assistance center, partially funded by the NIST Manufacturing Extension Partnership (MEP). Manufacturer's Edge encourages the strength and competitiveness of Colorado manufacturers by offering onsite technical assistance through coaching, training, and consulting, collaboration-focused industry programs, and leveraging government, university, and economic development partnerships.

Second, the Advanced Industries (AI) Accelerator Programs promote growth and sustainability in Colorado's advanced industries by helping drive innovation, accelerate commercialization, encourage public-private partnerships, increase access to early-stage capital, and create a strong ecosystem that increases the state's global competitiveness. The Colorado Office of Economic Development and International Trade administers four types of grants and two global business programs. Grants are available for Proof of Concept, Early-Stage Capital and Retention, Infrastructure Funding, and AI Exports. A network of consultants and export training programs are also available as part of the AI Global Business Programs to support these industries as they strive for worldwide markets.

Third, the Colorado Advanced Manufacturing Alliance (CAMA) is a member-driven organization that shares a common goal of advancing manufacturing in the state of Colorado and making it better and easier to do business in the state. CAMA serves as a conduit for information on everything from grants, tax credits, and capital resources to job training and workforce development.

Following job losses throughout the 2000 decade, expected expansion in the Manufacturing Sector in 2015 and 2016 will result in six consecutive years of growth. Employment is estimated to increase 2.7% in 2015 with the addition of 3,700 jobs, with growth in all subsectors except computer and electronics. Manufacturing employment is expected to continue expanding in 2016, albeit at a slower pace. About 2,200 jobs will be added, a 1.6% growth rate, consisting of an additional 1,600 durable goods jobs and 600 jobs in the nondurable goods subsectors.

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Trade, Transportation, and Utilities

The Trade, Transportation, and Utilities Sector is the largest provider of jobs in Colorado. Higher wholesale and retail sales will help push up the number of jobs in the sector by 2.8%, to 444,000, in 2015. Slower gains in wholesale and retail, and transportation are expected to hold job gains to 2.4% in 2016.

Trade

Wholesale

Wholesale trade is expected to add 3,500 jobs in 2015 and 3,100 in 2016, which represent increases of 3.5% and 3%, respectively. The Wholesale Trade industry currently employs roughly 100,000 Coloradans and tallied $15.2 billion in sales in 2014. About 91% of these employees work for merchant wholesalers, or firms that sell to retail outlets. More than 50,000 of these are in firms selling durable goods, particularly computers, peripherals, and electronic equipment. The largest number of jobs among nondurable wholesalers is with businesses selling groceries and related products. The remaining wholesale employment is in business-to-business sellers, electronic marketers, and agents and brokers.

Retail

The outlook for Colorado retail sales in 2016 is generally positive as retailers should be able to capitalize on a strong couple of years in housing and employment that will fuel above-average growth in consumer spending. Total retail sales are expected to grow 5.9% in 2015 and 5.6% in 2016, slightly slower paces than the 7.3% growth recorded in 2014. Retail Sector employment is expected to grow by 5,700 jobs, or 2.2%, in 2016, about on par with growth rates since 2013. The biggest risks to this generally upbeat outlook include a potential deceleration in the housing market and tighter financial conditions on the national and global levels. In addition, a growing Internet-sales market could continue to dampen growth in consumer-goods sectors, such as for electronics and clothing. In Q2 2015, national e-commerce retail sales grew 14.1% year-over-year compared to 1% growth in total retail sales. Over the past five years, e-commerce has grown 103.3% compared to 23.4% for total retail sales according to the U.S. Census Bureau. E-commerce has increased from 4.3% of total retail sales in Q2 2010 to 7.3% in Q2 2015.

Overall, retail sales grew steadily in the first third of 2015, notching a 6.2% gain over the first four months in 2014. This followed a year in which retail sales in Colorado grew 7.3% from 2013 to 2014, to total $79.5 billion. The state's sales growth rate in 2014 was twice the nation's 3.6% increase, likely because Colorado's labor and housing markets improved more quickly than the rest of the country's. Auto sales drove increases in both years, posting 11.4% growth in 2014 and 13.1% growth in the first four months of 2015. In both years, Colorado's economy has outperformed the nation in several critical areas, including a stronger labor market and one of the hottest housing markets in the nation. These factors contributed to higher consumer spending in the state despite a significant slowdown in the energy sector as a result of falling oil prices.

Looking forward, these generally positive statewide trends will allow Colorado to stay ahead of the country in retail activity and retail employment gains through 2016. Lower gasoline prices in 2015 helped spur auto sales, which are on track to post their biggest gains since 2000. They will continue to drive growth in the sector as consumers buy more and bigger cars. Categories that are driven by home building and purchases, like electronics, furniture and home furnishings, and appliances, are also expected to follow an upward trajectory, though the

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TRADE, TRANSPORTATION, AND UTILITIES EMPLOYMENT
2007–2016
(In Thousands)

Year	Wholesale Trade	Retail Trade	Total Trade	Transportation and Warehousing	Utilities	Total TTU
2007	99.3	253.5	352.8	68.5	7.9	429.2
2008	100.1	252.6	352.7	68.3	8.2	429.3
2009	93.3	238.3	331.6	63.9	8.4	403.8
2010	90.8	236.9	327.7	61.7	8.2	397.6
2011	91.9	239.9	331.8	61.8	8.1	401.7
2012	94.1	243.7	337.8	63.9	8.0	409.7
2013	96.5	249.1	345.6	66.8	7.9	420.2
2014[a]	99.7	254.3	354.0	69.6	8.1	431.8
2015[b]	103.2	260.2	363.4	72.2	8.3	444.0
2016[c]	106.3	265.9	372.2	74.2	8.4	454.8

[a]Revised. [b]Estimated. [c]Forecast.

Note: Components may not sum to total due to rounding.

Sources: Colorado Department of Labor and Employment and Colorado Business Economic Outlook Committee.

Trade, Transportation, and Utilities

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WHOLESALE TRADE EMPLOYMENT
2007–2016
(In Thousands)

Year	Wholesale Trade Durable Goods	Wholesale Trade Nondurable Goods	Other Wholesale	Total
2007	54.4	33.7	11.2	99.3
2008	54.8	33.4	11.9	100.1
2009	50.1	31.5	11.7	93.3
2010	48.6	30.7	11.5	90.8
2011	49.4	31.0	11.5	91.9
2012	51.0	31.8	11.3	94.1
2013	53.6	33.0	9.9	96.5
2014	56.3	34.3	9.1	99.7
2015[a]	59.1	35.5	8.6	103.2
2016[b]	61.7	36.4	8.2	106.3

[a]Revised. [b]Estimated.

Sources: Colorado Department of Labor and Employment and Colorado Business Economic Outlook Committee.

potential for a less robust housing market after over two years of healthy growth poses a risk. Lower gas prices have reduced sales at service stations: year-to-date sales through April 2015 were down 26.5% from the previous year. Most forecasts predict low prices at the pump through late 2016, indicating that retail sales growth at gas stations will remain a drag on the sector's sales figures.

As of January 2015, retail establishments employed more than 258,000 Coloradans, or 10.3% of the state's workforce, making retail trade the second-largest employer behind the health care and social assistance sector. Historically, roughly 40% of these workers are employed in food and beverage stores and general merchandise shops. While the number of retail jobs in the state is about 10% higher than recession-era lows, the sector has been among the slowest to recover: annual job growth from 2011–2015 has averaged only 1.9% compared with overall growth of 2.7% in Colorado. Gains have been slowed to some degree by increased automation and productivity-enhancing technologies in the sector; one especially visible example is in grocery stores, where self-service kiosks are replacing traditional cashier jobs. Retail employees also earn relatively low wages; average annual retail wages were about $29,100 in 2014 while average wages for all private-sector employees stood at $53,100. Nationally, 30% of retail workers are part-time (work fewer than 35 hours per week). In addition, retail wages grew by only 8.5% between 2010 and 2014 compared with 10.8% overall wage growth.

Transportation and Warehousing

The Transportation and Warehousing Sector includes air, railroad, and water transportation; trucking; taxi service; urban transit; couriers; warehousing; and pipelines companies. These industries are expected to contribute more than 72,000 jobs in 2015, with slower increases in 2016.

Transportation

Denver International Airport

Denver International Airport (DIA) is owned and operated by the City and County of Denver. The city's Department of Aviation employs approximately 1,000 people at the facility.

DIA served more than 53.4 million passengers in 2014, ranking it the 5th-busiest airport in North America and the 17th-busiest in the world. This was the most annual passengers in DIA's history. Passenger traffic increased by 1.7% in 2014 compared to 2013, primarily driven by capacity increases by Southwest and United Airlines. For the year-to-date period August 2015, DIA's passenger traffic was down by less than 1% but is forecasted to end the year flat compared to 2014.

DIA's largest carrier, United, accounts for 42% of DIA's passengers; the carrier provides nonstop service to more than 140 destinations from Denver. Denver ranks as the fourth-largest hub in United's network, behind Houston, Chicago, and Newark. It is important to note that Denver is the second-largest hub in the carrier's network in terms of domestic destinations served, solidifying both Denver's local market strength and competitive advantage as a central point for transcontinental connecting passengers. In December 2015, United will introduce once-per-week nonstop service to San Jose, Costa Rica, and to Liberia, Costa Rica. Frontier Airlines had been the sole carrier to both of these destinations at DIA before ending Denver service to both markets in early 2015.

Southwest Airlines ranks as Denver's second-largest carrier, accounting for 29% of DIA's passengers. DIA ranks as the fourth-largest station in the Southwest network in terms of capacity, and the airline serves 60 nonstop destinations from Denver. In November 2015, Southwest expanded its international network from Denver to

RETAIL SALES, 2007–2016
(In Billions of Dollars)

Year	Motor Vehicle and Parts	General Merchandise	Other Retail	Total Retail Trade Sales[a]	Percentage Change
2007	$14.1	$11.0	$42.1	$67.3	7.4%
2008	12.1	11.3	43.1	66.5	-1.1
2009	10.2	11.0	37.1	58.3	-12.3
2010	11.3	11.1	39.9	62.3	6.8
2011	13.0	11.7	42.0	66.7	7.1
2012	14.4	12.2	44.1	70.7	6.0
2013	15.7	12.4	46.1	74.1	4.8
2014	17.4	12.9	49.2	79.5	7.3
2015[b]	19.7	13.2	51.3	84.2	5.9
2016[c]	21.9	13.5	53.5	88.9	5.6

[a]Motor Vehicle and Parts and General Merchandise are the two largest Retail Trade categories. The total also includes gas stations, food/beverage, building materials/home improvement, furniture, clothing, electronics, and other retail stores. The total does not include food services.

[b]Estimated. [c]Forecast.

Sources: Colorado Department of Revenue and Colorado Business Economic Outlook Committee.

RETAIL TRADE EMPLOYMENT, 2007–2016
(In Thousands)

Year	Motor Vehicle and Parts Dealers	Food and Beverage Stores	General Merchandise Stores	Other Retail	Total
2007	31.8	44.8	50.9	126.0	253.5
2008	31.2	45.9	51.6	123.9	252.6
2009	28.1	44.7	50.7	114.8	238.3
2010	27.9	45.0	50.0	114.0	236.9
2011	28.6	45.1	50.7	115.5	239.9
2012	29.8	46.1	50.6	117.2	243.7
2013	31.2	48.0	49.8	120.1	249.1
2014	32.6	49.2	49.6	122.9	254.3
2015[a]	35.0	50.3	49.4	125.5	260.2
2016[b]	36.5	51.4	48.9	129.1	265.9

[a]Estimated. [b]Forecast.

Sources: Colorado Department of Labor and Employment and Colorado Business Economic Outlook Committee.

include Puerto Vallarta, Mexico; Southwest now serves three destinations in Mexico from Denver.

Frontier Airlines ranks as DIA's third-largest carrier, accounting for 12% of DIA's passengers. The carrier has transformed itself into an ultra-low-cost carrier (ULCC), which has led Frontier to diversify outside of the Denver market in 2015. Although Frontier's capacity at DIA declined by more than one-third in calendar year 2015 compared to calendar year 2014, DIA remains the largest station in Frontier's network. Fort Lauderdale-based Spirit and Mexico-based Volaris, also ULCCs, continue to rank among DIA's newest and fastest-growing carriers. Through the year-to-date September 2015 timeframe, Spirit experienced a 41% increase in passengers while Volaris saw an 82% increase at DIA.

In 2015, DIA served more than 20 international nonstop destinations in nine countries. In March 2015, British Airways announced its daily London Heathrow service would benefit from a capacity increase of more than 20% due to using larger Boeing 747 aircraft. Air Canada, Aeromexico, Frontier, Icelandair, Lufthansa, Southwest, and United also offer nonstop international service from

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COLORADO AIRPORT STATISTICS
2007–2014
(In Thousands)

Passengers and Cargo	2007	2008	2009	2010	2011	2012	2013	2014[a]
Passengers (in thousands)[b]								
Denver International Airport (DEN)	49,863.4	51,245.3	50,167.4	51,985.0	52,849.0	53,156.3	52,556.4	53,472.5
Colorado Springs Municipal Airport (COS)	2,067.4	1,993.0	1,864.0	1,738.3	1,621.1	1,639.1	1,299.7	1,238.3
Grand Junction Regional (GJT)	340.9	425.2	457.7	443.7	444.2	439.3	422.2	438.5
Eagle County Regional Airport (EGE)	463.4	426.0	363.3	402.2	378.6	335.8	334.3	330.0
Aspen-Pitkin County Airport (ASE)	364.5	426.6	433.7	445.4	442.5	429.8	413.4	435.3
Yampa Valley Airport (HDN)	279.3	273.2	245.0	220.1	213.1	119.9	183.6	184.5
Durango-La Plata County Airport (DRO)	232.6	268.7	296.2	327.2	351.3	373.1	385.6	387.5
Montrose Regional Airport (MTJ)	185.1	171.8	184.4	193.2	174.5	150.6	169.2	181.3
Gunnison-Crested Butte Regional Airport (GUC)	85.2	72.1	84.3	74.6	73.0	62.4	61.6	63.5
Fort Collins-Loveland Municipal Airport (FNL)	56.6	62.2	62.2	71.3	90.0	69.6	5.5	4.2
Telluride Regional Airport (TEX)	32.9	26.7	13.5	18.5	22.0	15.7	12.9	7.2
Cortez Municipal Airport (CEZ)	20.4	16.8	15.4	12.7	14.0	15.1	16.4	7.7
San Luis Valley Regional/Bergman Field (ALS)	15.0	14.3	12.6	13.5	14.2	13.9	14.0	7.8
Pueblo Memorial Airport (PUB)	9.8	8.7	10.4	23.3	44.9	19.6	13.5	13.6
Total Passengers	54,016.5	55,430.6	54,210.1	55,969.0	56,732.4	56,840.2	55,888.2	56,771.8
Cargo, Freight, and Air Mail (in millions of lbs.)								
DIA Freight and Express	573.9	527.1	468.2	517.7	511.8	488.1	470.1	486.6
DIA Air Mail	15.5	26.4	26.6	37.5	35.4	33.7	28.8	32.9
DIA Total	589.4	553.5	494.8	555.2	547.2	521.8	498.9	519.4
Colorado Springs Cargo	27.0	24.0	23.0	22.3	21.7	23.8	23.0	20.7
Colorado Springs Air Mail	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0
Colorado Springs Total	27.0	24.0	23.0	22.3	21.7	23.8	23.0	23.8

Note: Excludes airports with fewer than 2,000 enplanements.

[a]Estimated. [b]Passengers include enplanements and deplanements.

Sources: Denver International Airport, Colorado Springs Municipal Airport, Grand Junction Regional Airport, Federal Aviation Administration, and Colorado Business Economic Outlook Committee.

DIA. Through August 2015, international passenger traffic at DIA declined 2.5% compared to the same period in 2014, primarily due to the cancellation of service to Regina and Saskatoon, Canada, in February 2015. The expansion of nonstop flights to international destinations remains a high priority for DIA. In late October 2015, DIA announced the resumption of nonstop flights to Munich, Germany, beginning in May 2016. The flights will operate five times per week on Lufthansa German Airlines. Service between Denver and Munich previously operated between March 2007 and October 2008.

DIA is finalizing work on the Hotel and Transit Center Project that includes the construction of a Westin hotel with 519 rooms and a conference center, RTD FasTracks commuter rail station, and improvements to the existing concourse baggage and train systems. In addition, the program will incorporate an open-air plaza, complete with new concessions and leasable space that connects the development to the existing Jeppesen Terminal. The Westin Hotel Denver International Airport opened in November 2015, and trains are scheduled to begin operating on April 22, 2016.

Motor Freight Transportation and Warehousing

The trucking industry provides over-the-road transportation and delivery of a wide variety of commodities and cargo using motor vehicles. In 2014, the American Trucking Associations, along with the IHS Global Insight, projected that overall freight tonnage will grow an estimated 23.5% by 2025.

The average annual trucking industry salary was $48,114. As of 2014, there were over 12,660 trucking companies located in Colorado, most of them small, locally owned businesses. These companies are served by a wide range of supporting businesses both large and small.

Overall, the trucking industry remains the dominant mode of freight transportation, collecting 80.3% of all freight revenue in 2014.

Within Colorado trucks transport about 89% of total manufactured tonnage in the state or 350,696 tons per day. With a limited rail network within the state, currently more than 79% of Colorado communities depend exclusively on trucks to move their goods. While rail service in the state may be somewhat limited, its importance and close tie-in to trucking has grown as intermodal shipments have risen and are expected to continue to grow in the years ahead.

With the economy stronger, finding qualified drivers and diesel mechanics has created a major challenge for the trucking industry in Colorado. Based on this tight labor market, wages for both drivers and mechanics have risen significantly. Despite these higher pay levels, the state is still witnessing a significant shortage of drivers and mechanics. This factor has adversely affected the growth of many trucking operators within the state. This situation has slightly improved in 2015 with driver turnover, which often determines the driver shortage. Turnover was 87% in Q2 2015, falling below 90% for the second time since 2011.

As a result of higher labor costs and tighter supply in the marketplace, shipper rates have risen. Those rates would probably have been higher if not for low fuel prices over the past year that are expected to continue into 2016. A second major challenge has been growing congestion on major highways within the state. This has translated into additional travel time and costs to motor carriers. This congestion has also created greater delays and has affected delivery times.

A new problem, particular to Colorado, has risen with the legalization of marijuana in the state. This development led to an unforeseen shortage of terminal and warehouse space over the past year. This change in the law created a demand for space for marijuana dispensaries, "grow houses," and warehouse space. This has contributed to an extremely tight commercial real estate market, with rents for warehouses and terminals,

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TRANSPORTATION AND WAREHOUSING EMPLOYMENT
2007–2016
(In Thousands)

Year	Truck Transportation	Couriers and Messengers	Warehousing and Storage	Air Transportation	Other Transportation	Total
2007	19.0	9.7	7.0	14.2	18.6	68.5
2008	18.6	9.5	6.8	14.6	18.8	68.3
2009	17.3	8.7	6.6	13.4	17.9	63.9
2010	17.1	8.5	6.2	12.5	17.4	61.7
2011	17.9	8.5	6.2	12.3	16.9	61.8
2012	18.7	8.6	6.2	13.0	17.4	63.9
2013	19.4	8.9	6.3	14.2	18.0	66.8
2014	20.3	9.3	6.5	14.8	18.7	69.6
2015[a]	21.5	9.9	6.5	14.7	19.6	72.2
2016[b]	22.3	10.3	6.6	14.7	20.3	74.2

[a]Estimated. [b]Forecast.

Note: Due to rounding, the sum of the sectors may not equal the total.

Sources: Colorado Department of Labor and Employment and Colorado Business Economic Outlook Committee.

especially in the Denver area. The greater demand, along with the ability of the marijuana industry to afford higher rents, has led to a steep rise in lease costs that has forced some trucking companies out of properties where they had resided for many years. A tight market is anticipated for industrial and warehouse space over the next year, until additional industrial and warehouse space may be built out.

Other transportation providers, including couriers, which provide more local transport using cars and bikes, saw a 4.9% increase in 2014, and growth remained strong in early 2015. Likewise, taxi and limousine service climbed 4.9% in 2014, despite industry disruptions by companies like Uber and Lyft.

Utilities

Natural gas and electric rates have fallen in 2015 due to lower natural gas prices.

Lower fuel prices have more than offset cost increases to support renewable resources and energy efficiency. Growing domestic natural gas production, large underground storage volumes, and adequate access to pipelines has continued to drop the price of natural gas below 2014 levels. Wholesale natural gas prices have fallen by more than 40% in Colorado compared to 2014, averaging around $2.50 per MMBtu.

Both residential natural gas and electricity consumption have seen increased demand in the nation in 2015 because of faster economic growth, more gas generation, lower prices, and weather patterns. Gains in energy efficiency and onsite solar help keep electricity consumption nearly flat in Colorado, with an increase of just 0.4% from 53,474 million kWh in 2014 to an estimated 53,662 million kWh in 2015. Colorado natural gas consumption fell by 3.4% from 480.7 BCF in 2014 to an estimated 464.5 BCF in 2015 due to increases in energy efficiency and warmer weather compared to 2014.

Colorado's utilities are actively pursuing ways to reduce demand for natural gas and electricity in response to environmental concerns and legislative action. In the six years since the passage of energy efficiency legislation, the state's electric utilities have reported $1.3 billion in net economic benefits. Utilities have continued efforts to meet the Renewable Energy Standard set by the state and upheld by the Public Utilities Commission, including higher percentages of on-site solar, renewable energy credit requirements, and a reduction in greenhouse gas emissions. These efforts are expected to result in stable or slightly decreased demand for electricity and natural gas in the long term.

Efforts are also being made on the production side, with continued installation of carbon-free generating resources. The state now has more than 2,700 MW of wind generation in service. Solar generation continues to grow through on-site solar installations and utility-scale central solar systems. Natural gas power generation continues to play a role in the renewable portfolio with peaking facilities and the ability to balance load with renewable energy.

Utilities continue implementing projects approved as part of the Colorado Clean–Air Clean Jobs legislation. Xcel Energy announced the completion of a new 580-MW gas-fired generator in the Denver Metro area to replace retiring coal-fired generation. Black Hills Energy has started construction on a gas-fired turbine to replace its closed coal-fired plant in Cañon City. At the same time, selective catalytic reduction was installed to reduce nitrogen oxide emissions on one unit at the Hayden coal fired generator.

The EPA released the final Clean Power Plan (CPP) in August 2015. The plan applies to existing coal and natural gas combined cycle plants over 25 MW in size. The CPP sets standards to reduce national carbon dioxide emission by 32% from 2005 levels by 2030. Emission reduction goals start in 2022 and run through 2030. States can comply with mass (tons) or rate (pounds/MWh) based plans to limit emissions. State implementation plans (SIPs) are due September 2016 with extensions available through September 2018. Colorado will need to reduce carbon dioxide emissions by 31% (mass base) or 38% (rate base) by 2030. CPP compliance will require large investments in renewable and gas fired generation and likely retirements of coal-fired generation. As a result, Colorado utilities face risk based on project execution, stranded cost, and the uncertainty of state SIPs.

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COLORADO NATURAL GAS CONSUMPTION
2007–2016
(In Billions of Cubic Feet)

Year	Total Gas Consumption	Percentage Change
2007	504.8	12.0%
2008	504.8	0.0
2009	523.7	3.7
2010	501.4	-4.3
2011	466.7	-6.9
2012	443.8	-4.9
2013	467.8	5.4
2014	480.7	2.8
2015[a]	464.5	-3.4
2016[b]	481.8	3.7

[a]Estimated. [b]Forecast.

Source: Colorado Business Economic Outlook Committee.

COLORADO ELECTRIC POWER CONSUMPTION
2007–2016
(In Millions of Kilowatt Hours)

Year	Nonresidential	Residential	Total	Percentage Change
2007	33,665	17,634	51,299	3.1%
2008	34,422	17,720	52,142	1.6
2009	33,623	17,412	51,035	-2.1
2010	34,816	18,102	52,918	3.7
2011	35,181	18,277	53,458	1.0
2012	35,465	18,220	53,685	0.4
2013	34,913	18,529	53,442	-0.5
2014	35,320	18,154	53,474	0.1
2015[a]	35,348	18,314	53,662	0.4
2016[b]	35,852	18,410	54,262	1.1

[a]Estimated. [b]Forecast.

Sources: *Edison Electrical Institute Statistical Yearbook,* Xcel Energy, and Colorado Business Economic Outlook Committee.

Information

Overview

Companies in the Information industry are responsible for the creation, distribution, and transmission of information. In 2014, the Information industry added 100 jobs, with growth in film, telecom, broadcasting, and data processing more than offsetting declines in publishing. The industry is expected to grow by 200 jobs in 2015 and 300 jobs in 2016 as losses taper in the publishing industry. Information real GDP increased 2.3% in 2014, and despite the reduction in jobs, industry output records one of the fastest long-term growth rates among the state's industries.

Publishing

The Publishing Sector employed close to 20,100 people in 892 establishments in 2014. The industry includes any firm that issues print or electronic copies of original works for which they own a copyright, excluding Internet firms. Products include software, newspapers, periodicals, books, directories, databases, calendars, and greeting cards. The types of products produced by the publishing industry has evolved in recent years to include an increasing amount of electronic and Internet-based products, such as audio, downloadable files, digital books, and mobile device applications.

The rise of the Internet and its attendant social media explosion has driven a structural evolution in the publishing industry that began before the turn of the century and has yet to fully play itself out. Individuals worldwide continuously have more control not only over the information they consume, but also over the production and dissemination of that information. As a result, the industry directly employs fewer people in fewer businesses each year even as the value of its output grows with the overall economy. In addition, business innovation and consolidation has blurred the lines between traditional publishing sectors and between publishing and other forms of media.

Publishing industry GDP increased nearly 36% in Colorado between 2001 and 2013 (the most recent data available). Meanwhile, Colorado's publishing industry lost close to 15,000 jobs and more than 600 businesses between 2001 and 2014, representing decreases of 42% and 40%, respectively. Between 2009, which marked the end of the Great Recession, and 2013 the industry's GDP increased 10% while its employment fell 15%. Most of these lost jobs did not disappear from the economy but are instead performed by individuals and organizations outside of the traditional publishing industry. These trends of increased output and reduced employment are expected to continue in 2015 and 2016.

Newspaper Publishing

The newspaper industry's long-run structural shift to a mobile digital platform has left infancy and is maturing. The majority of both content and advertising are now online and accessed by mobile devices, such as smartphones and tablets. According to the Newspaper Association of America, 179.3 million people, or 83% of U.S. adults, accessed news online in August 2015, up from 80% in August 2014. Among those accessing their news online, half did so exclusively via mobile tablets and smartphones. The traditional model, which provided low-cost print information subsidized by advertisers, has been obsolete for several years.

The Internet has caused the dissemination of information to be increasingly fragmented and democratic. A new generation of bloggers hailing from the traditional journalism industry, private firms, nonprofit organizations, and the general population has harnessed social media to provide diverse, targeted, and sometimes real-time news. Consumers have embraced this explosion of information on social media, demanding instant access to news on rapidly changing communication platforms. Traditional media outlets, including newspapers, televisions, and radio, continue to converge, sharing resources and information both in print and online.

The industry's revenue structure is likewise evolving toward digital sources and readership revenue rather than advertising revenue. While total revenue decreased 2.6% in 2013 (the most recent data available), revenue from digital sources increased 5.8%. After several years of decline, total circulation revenue rose 5% in 2012 and 3.7% in 2013. Print-only circulation fell 20%, but digital-only circulation increased 47%.

Employment at traditional Colorado newspapers has been declining since 2005. Colorado newspapers employed 3,301 people in 144 establishments in 2014, down from 3,430 people in 149 establishments in 2005. Newspaper employment is expected to continue to fall in both 2015 and 2016.

Book Publishing

The book publishing industry is also in the midst of a transformation. Previously, the U.S. book publishing industry was dominated by a handful of large firms, primarily located on the East Coast, that controlled which books went to print and provided a one-stop set of services including editing, production, marketing, and distribution. Access to online markets is increasingly chipping away at this model, significantly reducing barriers to entry for authors' and small publishers' niche markets, including unbundling the services required to publish a book, and providing new forums for social interaction among authors, readers, and publishers.

Crowdfunding sites, such as Unbound and Kickstarter, have further reduced authors' barriers to entry, eliminating the need to seek funding from traditional publishing firms altogether. Another crowdfunding site, Pubslush, closed in October 2015 and is expected to be reengineered in early 2016 as PubLaunch, where authors will be able to both seek funding directly from their readers and connect with professionals within the traditional book publishing industry. According to Bowker, the number of self-published titles increased 17% in 2013 to just under

459,000 titles. This represents a 43% increase over the number of self-published titles in 2008.

Although the rise of e-books and distributors such as Amazon has altered the way books are published and distributed, the shift in demand from traditional print to e-books appears to, at least for now, be stabilizing. According to the Pew Research Center, the number of Americans who read e-books and listen to audio books remained flat in 2014, at around 27% and 12%, respectively. Indeed, successful book publishing firms market both e-books and traditional print books, since the bulk of demand continues to be for traditional print books. PricewaterhouseCoopers reports that audio and traditional print books account for about 70% of consumer book sales in the United States, with e-books accounting for the remainder. According to Nielsen, book sales overall were up 2.4% in 2014, and publishers were expecting slow growth in 2015. Strong sales growth is not expected to reoccur until there is more tablet and smartphone penetration in global markets.

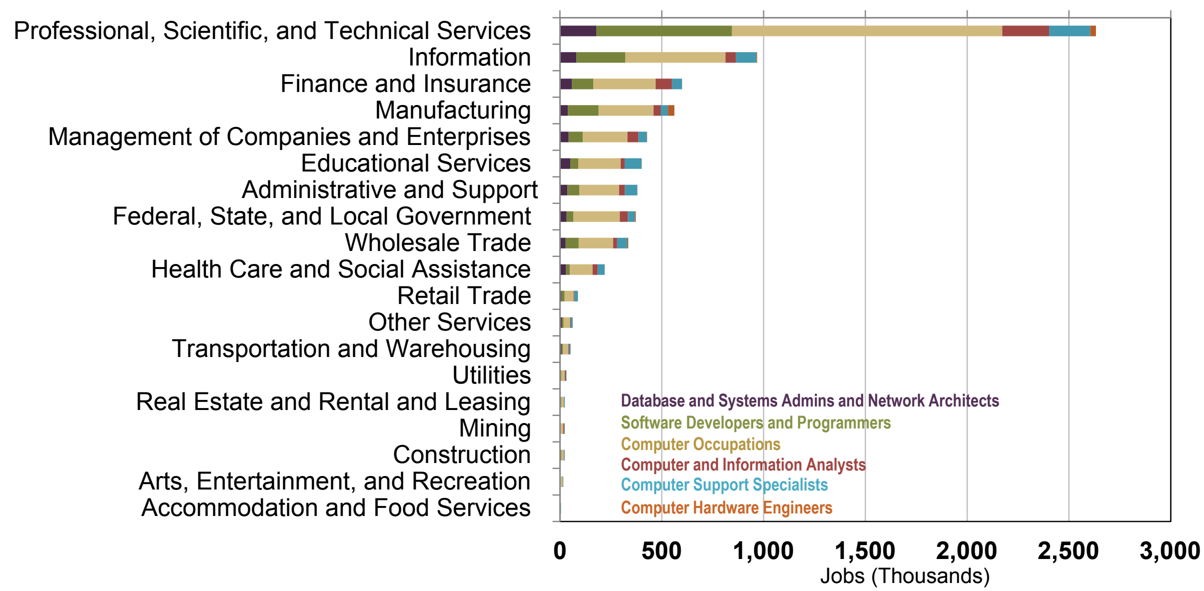
Jobs in traditional publishing firms generally include editors, marketers, production staff, and general administrators. Most authors are freelance workers and are classified in the services industry. Authors who publish their own books have an ever-increasing presence but may not be captured as employed within any industry. However, both small and large book publishing firms actively collaborate with these authors.

The traditional book publishing industry employed 868 people in 2014, down 8% from 2013 and down 40% since 2001. As this evolution of the publishing industry continues, further consolidation and business failures will continue to reduce employment in the traditional book publishing industry in 2015 and 2016.

Directory Publishing

Employment in Colorado's directory publishing industry has decreased by 748 jobs, or more than 32%, since 2006. With most consumers now taking for granted the availability of online and mobile directory applications, the traditional directory publishing industry has focused on targeted niche products. Although employment in this industry increased 1.8% in 2014, it is expected to fall in 2015 and 2016.

NATIONAL COMPUTER AND IT JOBS BY OCCUPATION ACROSS INDUSTRIES, 2014



Source: Bureau of Labor Statistics, Occupational Employment Statistics, May 2014. Note: Some data is not available (NA) or not disclosed (ND).

Software Publishing

In 2014, software publishing companies totaled 411 with 11,700 employees. This represents a year-over-year increase in total companies of 4.8%, but a marginal reduction in jobs.

Companies in the software publishing industry design/develop; provide documentation for; install; and provide support services for and distribute software. (Note: Some additional employment is likely captured in the closely related custom computer programming services sector in Professional and Business Services.) The software publishing industry controls a large reach. Its products include business analytics and enterprise software; database, storage, and backup software; design, editing, and rendering software; operating systems and productivity software; security software; smartphone apps; and video games.

This book provides data based on the North American Industry Classification Systems (NAICS), which quantifies employment and industry activity by company function. For example, all of the employees and occupations working in a software company are considered software employees. However, software developers work in other

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Information

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industries, too. According to data from the Bureau of Labor Statistics, most software developers and programmers (78%) reside in four industries nationally: Professional, Scientific, and Technical Services; Information; Manufacturing; and Finance and Insurance.

The Metro Denver Economic Development Corporation publishes cluster studies prepared by Development Research Partners. According to the *Information Technology-Software* report, the nine-county Denver Metro region boasted 46,470 software employees in 2014. Four-fifths of statewide IT-software employees are in the Denver Metro region, and Denver ranks ninth out of the 50-largest metro areas in software employment concentration.

Telecommunications

The Telecom Sector employed close to 27,400 people in 686 establishments in 2014. The industry includes any firm that provides telephone, television (cable and satellite), and Internet access. Broadcasting and telecommunications combined recorded 3.4% GDP growth in 2013 (newest available data) after declining in both 2011 and 2012.

Nationally, industry mergers and acquisition activity has been at a record-setting pace in 2015. This activity has been driven by companies' desire for scale as telecommunication companies have been racing to build high-speed networks for current and future mobile and video offerings. The $55 billion merger of Charter Communications and Time Warner Cable is the largest U.S. merger and the second-largest global merger of 2015. It should be noted that the last attempt to acquire Time Warner Cable, by Comcast, was dropped after the U.S. Department of Justice attempted to halt the merger on the grounds of an antitrust lawsuit. The Time Warner Cable and Charter Communications merger is pending regulatory approval. Another high profile deal was the $48.5 billion merger of AT&T and DirecTV, making the combined firm the largest pay television company in the nation.

Telecommunications industry employment in Colorado remained constant in 2014 after a 0.7% increase in 2013. Employment is expected to increase marginally in both 2015 and 2016, increasing 0.7% each year and remaining below pre-recession levels.

Broadband

Broadband has emerged as a critical component of economic development. Economic research shows the introduction of broadband services boosts employment growth, reduces unemployment rates, and helps attract and retain high value-added firms and workers. These positive impacts are particularly large in rural or isolated areas.

Broadband provision in Colorado communities located outside the Front Range presents unique challenges. More than 83% of the state's population lives in urban areas along Colorado's Front Range. Colorado's mountainous and rugged terrain is also extremely challenging to broadband infrastructure projects, which are reliant on a large population to offset the costs of upfront investments. State legislation, such as Senate Bill 05-152 that was intended to proscribe unfair competition between publically and privately provided broadband, has presented barriers to broadband efforts in rural parts of the state.

Efforts to improve communication infrastructure for families in rural and low-income communities continue to expand in Colorado. After a 2008 broadband survey of Colorado's K–12 school districts ranked the state 42nd

INFORMATION EMPLOYMENT
2007–2016
(In Thousands)

Year	Publishing	Telecommunications	Other	Total[a]
2007	27.9	29.4	19.1	76.4
2008	26.6	29.3	20.9	76.8
2009	24.1	30.2	20.4	74.7
2010	22.9	28.5	20.6	72.0
2011	22.5	28.0	20.9	71.4
2012	21.6	27.2	21.0	69.8
2013	20.6	27.4	21.8	69.8
2014	20.1	27.4	22.4	69.9
2015[b]	19.8	27.6	22.7	70.1
2016[c]	19.7	27.8	22.9	70.4

[a]Due to rounding, the sum of the individual sectors may not equal the total.

[b]Estimated. [c]Forecast.

Sources: Colorado Department of Labor and Employment and Colorado Business Economic Outlook Committee.

in the nation in broadband connectivity and revealed market forces would not be able to drive technological investment in these communities, the Centennial Board of Cooperative Educational Services (CBOCES) developed the Educational Access Gateway Learning Environment Network, or EAGLE-Net, as a cost-sharing consortium for the state.

In 2009, CBOCES began connecting the 78 underserved school districts to Internet services, and in September 2010 received a $100.6 million grant to continue expanding broadband infrastructure. A Q1 2015 project update indicates that the project has established a total of 795 new network miles in Colorado and leased 1,997 network miles. The project is now at 99% completion as only 79 miles are budgeted for completion. The project is estimated to be finished in 2015.

Additionally, expanding broadband provision is a key focus of Colorado economic development, information technology, and local government capacity-building efforts. When the state was creating the Colorado Blueprint, local communities were asked about the keys for economic growth. Improved broadband access and capacity was laid out as an indispensable feature. To that end, Colorado is developing and implementing a program to help local regions assess their current broadband environment and plan for future expansion.

In November 2015, a total of 44 Colorado cities and counties approved municipal broadband. The municipalities now have authority to build broadband networks. The referendum does not require the areas to build the network, but gives them the power to do so. These 44 new areas will join about a dozen areas that have chosen municipal broadband in the past years.

Telephone

Efforts to improve communication infrastructure in Colorado have come from federal grants to expand emergency communication capabilities. In 2010, the Adams County Communications Center was awarded a $12.1 million grant to deploy a 700 MHz interoperable wireless broadband network for approximately 2,000 first responders in 15 service agencies within Adams County and airport service areas. A Q2 2015 update indicates the project is 91% completed, with approximately 98% of the network finished. The project is awaiting permitting approval from the City of Denver to deploy Long Term Evolution (LTE) equipment to the three Denver International Airport sites.

Television

Changes in the way Americans watch television have spurred fluctuations in U.S. cable subscription activity. In an August 2015 article by Business Insider, pay TV companies lost 560,000 subscribers in 2015 through Q2. Over recent years customers have been diverging from traditional cable and satellite services into new over-the-top content sources, such as Netflix, Hulu, Roku, and Apple TV. Over-the-top is the delivery of video content through the Internet. Although many believe that traditional cable services are past their prime, new technologies, like high-definition, online, mobile, and multicasting, are helping develop alternative revenue streams for cable companies.

Wireless

As more consumers look to enhance their wireless capabilities with bandwidth-intensive devices, providers are trying to expand their spectrum holdings to accommodate increased usage. The resurgence of spectrum auctions, as a result of Congress' approval of the Middle Class Tax Relief Job Creation Act of 2012, will boost competition, construction, and growth of wireless facilities. The next auction of broadcast incentive auction is expected to take place in 2016. The goal of the auction is to reallocate space from the TV broadcast spectrum for wireless broadband. According to the FCC, "Specifically, the first ever incentive auction of television broadcast spectrum will permit television broadcasters

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to voluntarily go off the air, share their spectrum or move channels in exchange for receiving part of the proceeds from auctioning that spectrum to wireless providers to support 21st century wireless broadband needs."

Film, Television, and Media

In May 2012, Colorado passed a law providing $3 million in content creation incentives for fiscal year (FY) 2012–13. The law allows for production incentives, with a 20% rebate for films, television, commercials, and video games produced in Colorado. Since the incentives began, the increase in inquiries and applications has been palpable. From the program's inception in May 2012 to October 2015, a total of $12.7 million was awarded to productions to incentivize a total of $85.6 million in production spend. The program will generate more than $10.3 million in tax for the state and create 4,177 jobs for Coloradans.

The 20% incentive program has attracted several feature films, including Quentin Tarantino's highly anticipated new film *The Hateful Eight* (released worldwide in 2016); the action-packed international hit *Fast & Furious 7*; a thriller starring Kevin Bacon titled *Cop Car*; *Dear Eleanor*, directed by Kevin Connelly and starring Jessica Alba; and *Heaven Sent*, a family friendly Christmas film directed by Michael Landon Jr. In addition to narrative features, seven documentaries have been incentivized, all of which are helmed by Colorado directors. Several reality shows have been incentivized, including five different shows for Discovery Communications and two locally produced reality series airing on the Weather Channel and the Outdoor Channel. Colorado continues to be a hub of commercial production and has incentivized big brands, such as Coors Brewing Company, Hyundai Motors, and Toyota.

Colorado has a substantial crew base, many of whom worked on major feature films and television shows in Colorado during the 1990s. Thanks to recently incentivized production in the state, a new, younger crew population is gaining the experience and education necessary to thrive in the industry. Anecdotally, producers who have worked in the state were so pleased that several have elected to return with new projects.

In FY 2015–16, the Colorado Office of Film, Television and Media was allocated $3 million for incentives. This continued funding reflects the success of the program thus far. As long as the state keeps the incentives flowing, content creation will build to a significant Colorado business within the next few years.

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Financial Activities

The Financial Activities Supersector consists of two sectors that make up 6.3% of statewide employment: (1) Finance and Insurance, and (2) Real Estate and Rental and Leasing. Beginning in 2006, the Financial Activities industry lost 16,500 jobs, or 10.3% over five years before bottoming out in 2011. The industry has recorded three consecutive years of jobs growth beginning in 2012. Growth accelerated in 2015—the industry is expected to end the year with 157,300 jobs, an increase of 2.6%. Employment growth will continue in 2016, increasing 2,600 jobs, to 159,900, on the foundation of an improving overall economy that supports more banking, insurance, and real estate employment.

Approximately 70% of the employees in the Finance Activities industry work in the Finance and Insurance Sector (i.e., banks, credit unions, securities and investment firms, insurance carriers, etc.). About 30% of the workers are employed in the Real Estate and Rental and Leasing Sector. It includes real estate-related payroll jobs and companies that lease anything from real estate to equipment to formal wear.

Finance and Insurance

Finance and Insurance will grow by 2.3% in 2015 and 1.9% in 2016.

Capital Markets

With the announced conclusion of quantitative easing by the U.S. Federal Reserve in October 2014, the capital markets have been focused on "when" the fed funds rate will be increased. Many believed it would occur in Q1 2015 and certainly within the first half of the year. It has not. To understand when this might occur, we must understand the Federal Reserve's mandate: "The Board of Governors of the Federal Reserve System and the Federal Open Market Committee shall maintain long run growth of the monetary and credit aggregates commensurate

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**FINANCIAL ACTIVITIES EMPLOYMENT
2007–2016
(In Thousands)**

Year	Finance and Insurance	Real Estate and Rental and Leasing	Total
2007	110.1	51.8	159.5
2008	107.4	48.6	155.6
2009	103.8	46.6	148.0
2010	101.7	45.9	144.3
2011	101.4	44.9	143.9
2012	103.4	45.7	146.7
2013	106.8	47.3	151.0
2014[a]	107.5	45.8	153.3
2015[b]	110.0	47.3	157.3
2016[c]	112.1	47.8	159.9

[a]Revised. [b]Estimated. [c]Forecast.

Note: Due to rounding, the sum of the sectors may not equal the total.

Sources: Colorado Department of Labor and Employment and Colorado Business Economic Outlook Committee.

**FINANCE AND INSURANCE EMPLOYMENT
2007–2016
(In Thousands)**

Year	Credit Intermediation and Related Activities	Securities, Commodities, and Finance and Insurance Activities	Insurance Carriers and Related Activities	Total
2007	51.8	19.1	39.2	110.1
2008	48.6	19.9	38.9	107.4
2009	46.6	18.7	38.5	103.8
2010	45.9	18.1	37.7	101.7
2011	44.9	18.6	37.9	101.4
2012	45.7	18.7	39.0	103.4
2013	47.3	19.4	40.1	106.8
2014[a]	45.8	20.2	41.5	107.5
2015[b]	46.7	20.9	42.4	110.0
2016[c]	47.7	21.4	43.0	112.1

[a]Revised. [b]Estimated. [c]Forecast.

Note: There was a reclassification of employees from the Other Finance and Insurance Activities Sector to the Securities, Commodities, and Other Activities Sector in 2013.

Sources: Colorado Department of Labor and Employment and Colorado Business Economic Outlook Committee.

Financial Activities

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with the economy's long run potential to increase production, so as to promote effectively the goals of maximum employment, stable prices and moderate long-term interest rates." Amended by Congress in 1977, this is known as the "dual mandate" of price stability and full employment. Therefore, an increase in the federal funds rate would suggest that the rate of growth within the economy has exceeded its long-run potential to increase production. This would have wide-ranging implications both nationally and to the Colorado economy. The fact that as 2015 draws to a close and the Federal Reserve has yet to raise the federal funds rate (as of November 9, 2015) suggests a belief by our central bank that the U.S. economy is not as robust as many believed in the early days of 2015.

The very same factors that concern the Fed are of concern to the capital markets as the capital markets act as a discounting mechanism, reflecting their interpretation of the available information as voted on with real capital flows. What are the capital markets saying now as we head into the final weeks of 2015? As of November 9, 2015, the year-to-date return of the major U.S. equity indices are as follows: the Dow is negative for the year, the S&P 500 is up less than 1.5%, and the Russell 2000, which is often looked to as a proxy for the health of small business America, is negative for the year. Hardly robust returns. The only bright spot is the NASDAQ, which is up more than 7% for the year; however, more than 5% of that has occurred within the last month so a lot could change as 2015 closes out. Looking at the equity indices, it would appear that the broader economy is treading water. There are exceptions, notably some of the larger tech and biotech companies that make up the NASDAQ composite index.

INTEREST RATES BY COUNTRY AND BOND RATINGS

Country	2 Year	10 Year	Moody's Rating
USA	0.88%	2.35%	Aaa
Germany	-0.34	0.66	Aaa
Japan	-0.10	0.32	A1
Slovakia	0.03	0.75	A2
Portugal	0.27	2.81	Ba1
Italy	0.57	1.74	Baa2
Ireland	-0.20	1.23	Baa1
Greece	7.08	7.48	Caa3
Spain	0.04	1.95	Baa2
Switzerland	-1.08	-0.35	Aaa

Note: Interest rates and ratings are as of November 9, 2015.

Source: Bloomberg.

Turning to the debt markets, also known as the bond or interest rate markets, we find persistently low yields—not what one would expect if the economy was seen as exceeding its long-run growth potential. Why? Because it would be inflationary and inflation is the archenemy of bonds. A bond is a loan to be repaid in the future and if inflation rises, then the value of the monies to be repaid is diminished and a higher interest rate would be demanded to mitigate the inflation risk. An indicator of the bond market's view of inflation is to look at what are known as the "breakeven rates." The breakeven rate is determined by looking at the difference between the yield of an inflation-adjusted bond and the yield of a comparable traditional noninflation adjusted bond. As of October 2015, the breakeven rate over the next three years was below 1%. Even looking out 30 years, the breakeven rate remains below the Fed's inflation target of 2%. In 2015, the high yield on the 10-year treasury bond was 2.49% set on June 10, at a time when Fed policy action was thought to be imminent. Since then, the 10-year yield dipped as low as 1.97% on October 14 and climbed back above 2.35% in early November on the expectation that the Fed will take action before year-end at its December 16 Federal Open Market Committee (FOMC) meeting.

Other factors participants of the capital markets should take note of as they try to glean insight into the well-being of the national economy include the capacity utilization rate. This measure tracks the extent to which the installed productive capacity of a country is being used in the production of goods and services. At the end of Q3 the September reading was at 77.5%. Over the last 20 years it has averaged 78.3%, with the high being 84.8%, set in 1997, and the low being 66.9%, set in 2009. The current reading hardly suggests an economy that is exceeding its long-run productive potential. Meanwhile, the Fed's preferred measure of inflation, the personal consumption and expenditure core rate, (or PCE Core for short) was reported at 1.3% for Q3, down from 1.9% in Q2 and closer to the 1% reported in Q1. If we remember the Fed's stated goal is 2% inflation here, too, the economy appears comfortably below the Fed's intended target. This leaves us to look at employment. As of early November, national employment growth has pushed the implied probability of a policy move by the Fed at its December 16 meeting to nearly 70%. On November 6, 2015, we received the October employment report, which had a consensus forecast of 185,000 jobs added and an unemployment rate of 5%, with 271,000 jobs reported, along with modest upward revisions to the prior two months and an unemployment rate of 5%. This last piece of economic data, coupled with comments from Fed Chair Yellen that a December policy move remains on the table, will place a tremendous amount of focus on the final employment report for 2015. The November employment report will be released on Friday, December 4.

Whether or not the Fed makes a policy change in December 2015 or sometime in 2016, the degree of the move is apt to be minimal for the reasons previously cited. Furthermore, at a time when the European Central Bank is actively discussing extending its quantitative easing program due to economic malaise and disinflation, its government bond yields remain well below those in the United States. In fact, the global disparity in government bond yields observed in 2014 remains heading into 2016. Similar to what was experienced in 2004 when the Fed last initiated a tightening of monetary policy, we may again see long-term U.S. interest rates cycle lower in contrast to any action the Fed takes. As global capital seeks a low risk return, the positive differential in U.S. yields will continue to attract foreign investment.

Beyond central bank policy, what is another factor apt to distract the capital markets in 2016? It is a presidential election year. A new president and members of Congress will presumably bring new ideas and policies. Changes to the tax code and income disparity have already been a topic of the primaries, as well as education, health care, and ideas for stimulating the economy. Good or bad, the capital markets abhor uncertainty. Consequently, there may be periods of muted action, accentuated by periods of volatility, depending on if any significant or extreme ideas appear to gain traction.

Here in Colorado we are fortunate to be enjoying a decidedly more robust economy in contrast to the national average. While the state has a significant energy sector that is down more than 15% year-to-date, it is not solely dependent on it. Looking at the performance of public companies domiciled within Colorado with a market capitalization of $100 million or more, several large sectors of the local economy are posting positive returns. The communications, consumer noncyclical, financial, and technology sectors are all posting high single-digit to low double-digit returns as year-end 2015 approaches.

The year 2016 will be a year of change. There are expectations for more restrictive U.S. monetary policy and easier European monetary policy. The United States will have a newly elected leader, and he or she will likely move to implement a cornerstone policy change. Such change will not occur in 2016, but the markets will begin to factor them in toward the latter part of the year. In the meantime, Colorado is expected to remain a bright spot of the national economy in 2016.

Commercial Banking

The current makeup of banks operating in Colorado consists of roughly 55% of deposits residing in the four largest banks. In this context, deposits can serve as a rough proxy for loans, too. Conversely, community banks with less than $100 million face a situation where those 59 banks (40.7% of all banks doing business in Colorado) collectively hold $3.3 billion in deposits (2.8% of the industry total). Again, deposits can serve as a rough proxy for loans.

Capital and Earnings

The year 2015 saw continued improvements in banks' capital structures. Loan portfolios continued to improve as nonperforming loans declined, but intense competition limited interest income. Banks boosted lending to small businesses and further reduced their dependency on brokered deposits.

However, banks continue with capital challenges. Loan reserves have rebounded and are stable but industry consolidation often requires new outside capital, which is expensive to raise for community banks.

Bank regulators continue to increase capital requirements, and noncompliance with these best practices results in regulatory consequences. Concern has grown that capital requirements that are too high increase risk in a bank as management strives to produce the return on investment demanded by shareholders. A common source of earnings is higher risk lending.

Loan Demand

Many Colorado bankers say that loan demand is solid, especially among the most creditworthy borrowers with equity to fund new ventures. While bank lenders to small

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FINANCIAL MARKETS: STOCKS
2006–2015 YTD
(Year-End Close)

	Index				Annual Percent Change			
Year[a]	S&P 500	Dow Jones	NASDAQ	Russell 2000	S&P 500	Dow Jones	NASDAQ	Russell 2000
2006	1,418.3	12,463.2	2,415.3	787.66	13.6%	16.3%	9.5%	17.0%
2007	1,468.4	13,264.8	2,652.3	766.03	3.5	6.4	9.8	-2.7
2008	903.3	8,776.4	1,577.0	499.45	-38.5	-33.8	-40.5	-34.8
2009	1,115.1	10,428.1	2,269.2	625.39	23.5	18.8	43.9	25.2
2010	1,257.6	11,577.5	2,652.9	783.65	12.8	11.0	16.9	25.3
2011	1,257.6	12,217.6	2,605.2	740.92	0.0	5.5	-1.8	-5.5
2012	1,426.2	13,104.1	3,019.5	849.35	13.4	7.3	15.9	14.6
2013	1,848.4	16,576.7	4,176.6	1,163.6	29.6	26.5	38.3	37.0
2014	2,058.9	17,823.1	4,736.1	1,204.7	11.4	7.5	13.4	3.5
2015	2,083.6	17,737.2	5,075.2	1,171.8	1.2	-0.5	7.2	-2.7

[a]Indices represent year-end values, except 2014, which is the value at market close on November 18, 2015.

Source: Bloomberg.

Financial Activities

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business are busy, it is often a race among several banks to the lowest rate and that results in very little net new business. Often banks are trading business among themselves, frequently resulting in unprofitable loan pricing for the successful bank and great rates for the borrower. Fee income is pressured greatly due to competition and price fixing by the federal government in the formerly profitable line of debit and credit card interchange fees. Fee income from various sources will continue to deteriorate.

On mergers and acquisitions (M&A), a decline in acquisitions by large banks continues. According to SNL Financial data, between 2000 and 2008, there were 92 acquisitions by 26 of the largest banks. Since 2008, there have only been 11. The number of M&A transactions nationwide in 2015 was expected to end around 239 transactions compared to 253 the prior year.

Regulation

Banks continue to grapple with ever-changing and ever-growing regulations that increase the pressure to raise capital. Regulatory burdens have escalated compliance costs. Those greater costs must be spread over a larger asset base to achieve the needed return on investment in order to attract capital. That needed larger asset size and the cost, difficulty, and even inability to raise capital are fueling consolidation among community banks nationwide and in Colorado. When faced with the need for greater size and challenges in raising capital, the only viable option for some community banks is to sell. This trend is expected to continue past 2015.

Last—and most important—the Dodd-Frank Act (DFA) has left banks in an environment full of uncertainty as rulemaking by the Consumer Financial Protection Bureau is incomplete and ongoing. Enforcement by "zero tolerance" bank regulators results in extreme compliance caution by banks. Regulatory risk may outweigh credit risk for some banks. Customers are "protected" to the point of losing access to credit since the cost and complexity of regulation incents the bank to either discontinue that type of lending or tighten underwriting to the point marginal customers are excluded from credit or priced out of it. As detailed below in Qualified Mortgages, other customers often lose access to credit.

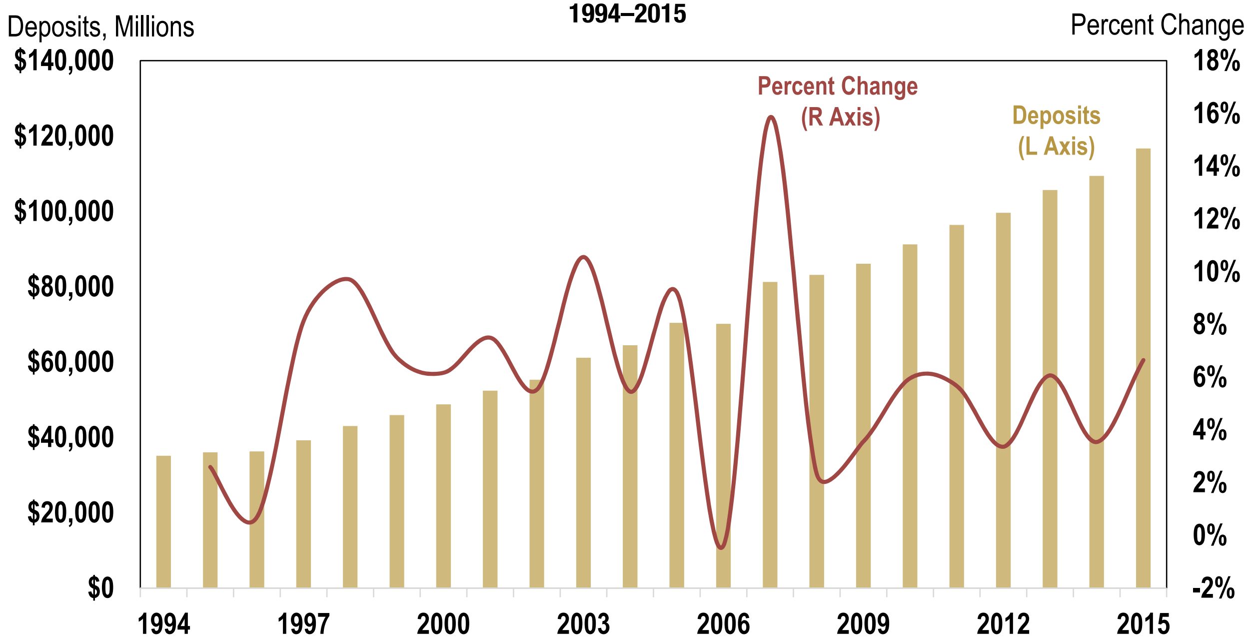
Under the new rules it is harder for certain customer groups to find loans they need. For example, 6,000 pages of new mortgage rules were put into effect by the Consumer Financial Protection Bureau in January 2014. A full 4,000 pages were effective then, and 1,900 pages of Truth in Lending Act and Real Estate Settlement Procedures Act reform (TILA-RESPA) real estate disclosures went into effect in August 2015. The scope and complexity required expensive personnel and procedures to comply with the requirements and that precludes smaller banks that can spread that cost only over a small book of loans. Thus, it is unprofitable, and the bank often decides to discontinue mortgage lending—not due to credit risk but due to regulatory compliance risk.

Smaller community banks often are forced to buy others to grow larger to get the necessary scale or exit the business by selling to another institution.

Regulation Impact on Lending

Lenders facing uncertain rules are cautious and restrict lending until rules and resulting risks are clear, hurting customers. Similar negative impacts could occur in community development lending, including financing of affordable housing (loans, bonds).

COLORADO BANK DEPOSITS
1994–2015



Source: FDIC, Deposit Market Share Report.

Dodd-Frank 2015 Update

Passage of the 2,300-page DFA in 2010 created the Consumer Financial Protection Bureau and required creation of 398 separate new rules, some of them enormously complex. As of November 2015, the DFA rulemaking had these results:

- 390 rules required
- 249 (64%) have been finalized
- 83 (21.2%) have not yet been proposed
- The 390 rules easily will exceed 30,000 pages of new regulations

There is concern about the pace and complexity of potentially conflicting rules under the DFA. For example, seven separate rules with substantial impact have been adopted or proposed covering real estate lending:

- Qualified Mortgages (QM) and Ability to Repay (ATR)
- Qualified Residential Mortgages (QRM)
- TILA-RESPA Reform
- Servicing
- Mortgage Loan Origination Compensation
- Appraisals
- HOEPA Standards for High Cost Loans

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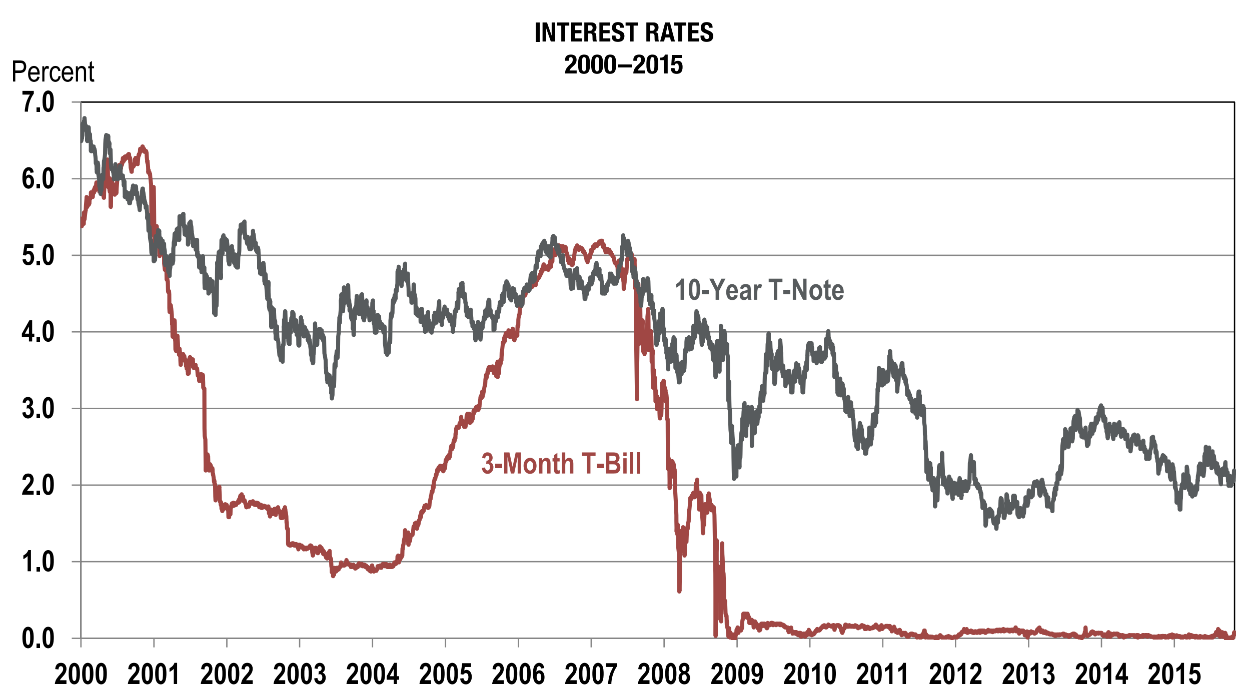

Source: Federal Reserve.

Financial Activities

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Qualified Mortgages

The new TILA-RESPA integrated disclosure rule (TRID)—also known as the "know before you owe rule"—took effect October 3. The rule, intended to help borrowers understand the terms of home buying transactions, poses significant compliance and litigation risks unique to each financial institution.

Just days later, the U.S. House passed H.R. 3192, which would provide a safe harbor from enforcement actions and private civil actions for lenders making good-faith efforts to implement the new TILA-RESPA integrated disclosures. The safe harbor would extend to Feb. 1, 2016.

The compliance challenges associated with TRID are not new. Since 2012, banks have grappled with acquiring and implementing software design, changes in internal policies and procedures, legal and compliance review, and staff training due to QM and other real estate rules stemming from the DFA.

Those changes are costly in both time and money. That, coupled with an burdensome regulatory environment, has caused some banks to opt out of making mortgage loans after the implementation date. Adding to that, the litigation risks imposed by new standards in the DFA have added a new, larger area of risk analysis that plays into whether or not some smaller banks will continue in mortgage lending.

When banks exit the mortgage business and their customers find an alternative lender at a larger institution, often all of the customer's business flows to the new lender—increasing pressure on smaller institutions.

The Colorado Bankers Association (CBA), working with an alliance of other state banking associations and the American Bankers Association, is seeking to address the problem of mortgage loan access with a pair of legislative proposals.

H.R. 1210, introduced by Rep. Andy Barr (R-KY), would deem any loan made by a lender and held in that lender's portfolio as compliant with ATR and QM requirements under the DFA. Banks have 100% of the repayment risk for loans held in portfolio, and the secondary market has no risk since the loans are never sold by the originator. Portfolio loans are, by their very nature, loans that can be repaid; the bank with 100% of the risk should not make them otherwise, and prudential regulators require solid repayment ability for bank safety and soundness reasons. Critically, this change greatly helps customers hurt by existing restrictions. Banks report daily on the inability to make loans to creditworthy customers but who do not meet ATR and/or QM requirements.

These include low-income individuals who do not meet debt-to-income requirements and small business owners and small professional firms with fluctuating income who have great difficulty (and delay, frustration, and expense) in meeting the requirement for income verification by a third party. It also includes rural residents for whom there are few or no alternative lenders if a local community bank no longer makes mortgage loans due to compliance and risk management issues. H.R. 1210, which was headed to the House floor for consideration in mid-November 2015, is a solution to fine-tune the DFA that will help these customer groups without imposing additional challenges for borrowers and lenders in the lending process. The bill has broad support in the U.S. House and among the Colorado members of Congress.

Also in 2015, bankers saw a ray of hope with the introduction of the TAILOR Act by U.S. Rep. Scott Tipton, a Republican from Colorado. The bill would give financial regulators the ability to appropriately tailor regulations to fit a bank or credit union's business model and risk profile.

Banks and credit unions are currently regulated under a "one-size-fits-all" approach, regardless of size or risk profile. This often means that regulations designed and intended for big banks are also applied to small community and independent banks or credit unions, imposing compliance regimens and costs that many of them find unbearable. H.R. 2896 has the support of cosponsors, including Reps. Mike Coffman (R-CO) and Ken Buck (R-CO) Ed Perlmutter (D-CO) and more than 55 state bank and credit union associations.

Highly Capitalized Banks

Another proposal that regulators are considering is an exemption from extensive, expensive, and tedious capital calculations for those banks that are very highly capitalized. Using a 14% risk-based capital level, the proposal says any bank that meets or exceeds that level does not have to spend the time and money to do the extensive capital calculations. There are just under 7,000 banks in the United States, and more than 4,000 of them meet this definition of 14%. This demonstrates the solid capital condition of U.S. banks.

Marijuana Banking in Colorado

No discussion of banking in Colorado in 2015 would be complete without addressing banking of marijuana businesses. While marijuana businesses are legal in Colorado, federal rules continue to preclude banks from serving these businesses. Guidance issued by the Department of Justice and Financial Crimes Enforcement Network (FinCEN) in February 2015 makes it absolutely clear banks can be prosecuted for serving marijuana businesses, imposes new Bank Secrecy Act reporting requirements on banks, and requires banks to perform extensive due diligence.

It is the Colorado Banking Association's (CBA's) understanding that bank regulators are permitting financial institutions to service the marijuana industry if the financial institution is in compliance with the February FinCEN guidance. Out of the 148 banks operating in Colorado, CBA estimates a dozen small banks are doing so.

Any institution serving the industry would be doing so at its own risk. Even if bank regulators are permitting the activity, the federal law has not changed and could be enforced, meaning prosecuted, at any time.

An act of Congress is the only true and lasting solution to the issue of conflicting state and federal laws. A bipartisan group of senators—Oregon's Senator Jeff Merkley (D-OR), Senator Cory Gardner (R-CO), Senator Ron Wyden (D-OR), Senator Michael Bennet (D-CO), and Senator Patty Murray (D-WA)—introduced the Marijuana Businesses Access to Banking Act of 2015, legislation to ensure that legal marijuana businesses can access banking services.

The CBA is supportive of the legislation, which would bar regulators from punishing banks that serve legitimate, state-sanctioned marijuana businesses, while maintaining banks' right to choose not to offer those services.

The bill would require banks to comply with current FinCEN guidance, while allowing FinCEN guidance to be streamlined over time as states and the federal government adapt to legalized medicinal and recreational marijuana policies.

Since the passage of Amendment 64, CBA has been in favor of a carve-out from federal law for banks operating in states where marijuana has been legalized, and there is an appropriate regulatory plan in place.

It is important that this issue be resolved because it is only a matter of time before something goes wrong at one of these cash-heavy businesses. These businesses and their customers deserve to conduct themselves like another legal business. Finally, Colorado cannot effectively tax or regulate an industry for which it cannot follow the money.

Headwinds

Colorado banks will continue to face the following headwinds:

- Continued tight loan interest margins resulting from intense competition will continue to limit earnings. While larger non-Colorado domiciled banks have other diversified revenue streams to help, most local community banks do not.
- Both Colorado and non-Colorado domiciled banks continue to hire and devote resources dedicated to the increased regulatory and compliance burdens, and to greater IT needs. This will be a problem for community banks as these new compliance burdens cannot be spread over a large asset base. Thus industry consolidation is significantly being driven by government policy (extremely detailed regulation) and not only by market forces.

Finally, for many of the state's community banks that came through the crisis but must face these headwinds, they may need to choose between years of slow growth, being acquired by a better capitalized bank (often larger) with the compliance and IT resources to address today's burden, or raising their own capital to enable purchases of other banks to attain the needed mass to compete effectively.

Small Business Administration

U.S. Small Business Administration (SBA) guaranteed loans make up a tiny fraction of all small business lending in Colorado. Because they are made to the most marginal small business borrowers, they are a bellwether for economic growth in general. SBA provides partial guarantees to lenders to encourage them to make loans that would otherwise be too risky. Borrowers pay an SBA guarantee fee that acts as an insurance premium, offsetting the potential loss resulting from default.

A variety of factors go into the decision to use an SBA loan rather than some other mode of financing, including the availability of conventional credit products, perceived risk, and the specific terms available under the various SBA programs. Therefore, a rise or fall in SBA loans is not a perfect indicator of economic activity, but it is one piece of the puzzle.

Comparing the 12-month period ended September 30, 2015, to the prior period, the dollar value of loans made under the 7(a) general business loan program were up

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9%. Dollar volume increased from $531 million to $581 million, with average loan size decreasing $51,421 (12%), to $366,539.

Insurance

As projected in the 2015 forecast, the insurance industry overall has experienced a net gain in employment through the first three quarters of 2015 across both property-casualty (P-C) and health and benefits (H&B) areas. This sector has realized some economic bolstering and moderate job growth that should carry through the end of 2015. When looking ahead to 2016, it is easiest to break down a forecast into P-C and H&B, then examine the individual and commercial markets.

Personal Lines P-C

The P-C area has experienced growth as the economic upturn has increased property values and consumer spending on new cars, toys, and second homes, necessitating the placement of more policies and more premium volume. The population and economic growth of Colorado will not subside any time soon and will contribute to the need for construction of additional housing and cause more vehicles to be on roads—both of which create the need for insurance.

A looming problem in the personal auto insurance industry will most likely come to a head in 2016. Currently, most policies contain exclusion for commercial use of a personal automobile. Individuals providing commercial "ride services" through Uber and similar companies will minimally require modification of their current policy or the purchase of commercial auto coverage.

The direct writers, All-State, State Farm, American Family, Nationwide, Farmers Insurance, and so forth, continue to dominate the personal lines marketplace and are opening new agencies and policy service centers in Colorado on an ongoing basis. They are continually recruiting locally and nationally for agents and service/support positions to be based in Colorado.

Commercial P-C

The commercial P-C segment has felt, and will continue to feel, hardening or increasing premiums for the Colorado market. These increases are due mainly to increased property values and booming sales and payroll figures, which are the factors, when multiplied by the rate, that establish annual commercial premiums. In addition, record numbers of new business are starting and numerous companies are being attracted to Colorado due to economic development efforts. Recent events have created new insurable exposures, causing the purchase of additional commercial policies and increased limits to cover cyber crimes, kidnap and ransom, and violence in the workplace. Couple these factors with numerous incidents of hail, wind, fire, and flood claims that also influence rates, premium volumes are projected to increase in the foreseeable future.

Employment in the entire P-C segment, both commercial and personal, is on the upswing as the new exposures, economic factors, and growth in insurable values create an increase in the number of policies that will need to be serviced by insurers and agents.

Health and Benefits

After five years of implementation, the Patient Protection and Affordable Care Act (PPACA) continues to generate unintended consequences as employers still have a major hurdle looming: the excise or "cadillac tax" will go into effect in 2018. Employers need to prepare for the cadillac tax now as it is not a matter of *if* but *when* they will hit the threshold for the tax. As brokers and consultants guide employers through PPACA, they have cited some interesting potential economic scenarios, most of which will be created by the 40% employer tax. The scale and scope of the potential financial burden on employers is still to be determined.

Large premium increases are again expected in 2016 for both the group and individual health plans, especially for those sold to consumers through the individual and SHOP exchange, Connect for Health Colorado. Legislated changes in underwriting, rating, mandated coverage, and increased utilization are now fully realized after a full and mature claims cycle, causing these increases.

The insurance company side of the H&B business will look radically different in the near future as the temporary increase in employment due to the roll out of PPACA and the new jobs created to support the Colorado exchange and staff the health CO-OP will not be present. The effects on hiring associated with the legislation were already realized in 2014–15. Currently, there is a potential of job loss on the insurance company side. With two major mergers underway, Aetna-Humana and Anthem-CIGNA, and the January 1 disbanding of Colorado HealthOP, layoffs and job losses will be likely at these large Colorado employers.

Overall, the H&B segment of the insurance sector will experience a slight growth in jobs, mainly due to expansion in broker and agent in 2016. Agents have had to bolster their expertise in partial self-funded plans, exchanges, and professional employer organizations. These strategies represent areas of relative safe harbor from PPACA for qualifying employers and will continue to be major areas of emphasis going forward.

An explosion of insurance agency mergers and acquisitions occurred in 2015 and will continue for the foreseeable future. Regardless of size, all agencies have had to refocus or reinvent themselves in order to continue to deliver a high level of service to their clients. The addition of value-added services, such as risk management, safety, loss control, and ergonomics on the P-C side, along with payroll, human resource/total rewards, and wellness consulting in the H&B segment, is causing increased hiring for some agencies. Most job creation and hiring have been limited to this noncore, insurance-related complementary service area.

In 2016, look for the Colorado-based insurance industry to have rising premiums and increased revenues, but modest employment gains. The jobs outlook for 2016 appears flatter than it did in 2015, but there will be an average net gain in employment when looking at the entire insurance sector. Most organizations will grapple with the unknowns of legislation, the economy, and the 2016 presidential election. This will cause what was once a very stable industry to search for new profit streams and ways to rebound from recent catastrophic loses and the PPACA.

Real Estate and Rental and Leasing

The Real Estate and Rental and Leasing Sector will grow 1.9% in 2015 and 1.8% in 2016.

Real Estate

Commercial Real Estate

In October 2015, the U.S. Chamber of Commerce Foundation ranked Colorado fifth in the nation for overall economic performance and fourth for both high-tech performance, and innovation and entrepreneurship. It also noted the state is fourth-best prepared to thrive in the rapidly progressing science, technology, engineering, and math (STEM) focused economy. The state has been effective in recruiting healthy businesses that bring high-wage jobs and encouraging the expansion of others. Equally impressive, the *Denver Business Journal* reported in 2015 that the Front Range commercial real estate (CRE) markets rank among the best in the nation. A thriving and diverse economic base, including alternative energy, aerospace, health care, and others, such as craft brewing, has driven the state's unemployment rate down to 4% as of September 2015 compared to the nation's rate of 5%. The CRE industry is a direct beneficiary of this positive economic activity.

The **Metro Denver** real estate market is one of the strongest in the nation. Local employment data continue to show gains in the manufacturing, wholesale trade, residential construction, and technology industries. According to CBRE, office vacancy in Q3 2015 was 12.9% from 12.6% in Q3 of the previous year despite positive absorption due to significant delivery of new space in response to elevated demand. Industrial vacancy increased to 4.6% from 4.2% in Q3 2014 ago due to increased construction activity, which is in response to demand for industrial space remaining in excess of supply. Retail vacancy dropped to 5.9%—the lowest rate recorded post-recession—from 6.5% the previous year, driven primarily by grocery and health and wellness companies. Denver's economic momentum is attracting employers and continued net in-migration, which is a major thrust behind the new construction; however, lenders are getting cautious. Expect speculative development to soften, with pre-leasing becoming a priority.

Northern Colorado has been a white-hot star on the Front Range economy for several years, primarily due to the Niobrara oil production and the multitude of supporting businesses and industries. But recent low crude prices, budget cuts, and layoffs are combining to send a ripple effect through the region. The Group Inc. reported commercial vacancy rates for industrial, retail, and office at June 2015 were 2.8%, 5.4%, and 4.1%, respectively in Fort Collins; 3.1%, 5.4%, and 5%, respectively, in Greeley; and 11.4%, 4.4%, and 6.8%, respectively, in Loveland. When compared to June 2014, vacancy rates in industrial, retail, and office, were 3.5%, 6.3%, and 4.8%, respectively, in Fort Collins; 7.5%, 6%, and 5.6%, respectively, in Greeley; and 11.8%, 4.1%, and 8.1%, respectively, in Loveland. Notwithstanding the solid CRE performance, slumping oil production and falling energy prices will impact the local market. Expect CRE activity to moderate in 2016.

Southern Colorado's economy is strongly dependent on the military and high-technology business sectors, including defense contractors (Boeing, Raytheon, Ball Aerospace & Technologies, United Launch Alliance, and others). Since the beginning of Q4 2005, the average annual growth rate for office-using employment in Colorado Springs has been 0.5%, representing the average annual addition of 400 jobs. The unemployment rate in December 2014 was 5.2%, dropping from 7.7% the prior year. CBRE notes that several years with relatively little office development, coupled with increasing demand for space, has slowly diminish vacancy. In Q3 2015, office vacancies decreased to 12.4% from 12.8% the prior year, yet rent growth remained flat due to availability of large blocks of space. Lease rates are expected to increase in 2016 with steady employment growth and barring changes to the Department of Defense austerity measures. The retail segment turned the corner in 2015, reporting positive net absorption, increasing rates, and decreasing vacancies. Retail vacancy was 6.3%, a decrease of 80 basis points year-over-year. In the absence of near-term new local defense spending cuts and economic

REAL ESTATE AND RENTAL AND LEASING EMPLOYMENT 2007–2016 (In Thousands)

Year	Real Estate	Rental and Leasing	Total
2007	35.4	14.0	49.4
2008	34.3	13.9	48.2
2009	31.9	12.3	44.2
2010	31.2	11.4	42.6
2011	31.1	11.4	42.5
2012	31.7	11.5	43.2
2013	32.6	11.6	44.2
2014[a]	33.6	12.2	45.8
2015[b]	34.7	12.6	47.3
2016[c]	35.1	12.8	47.8

[a]Revised. [b]Estimated. [c]Forecast.

Note: Due to rounding, the sum of the sectors may not equal the total.

Sources: Colorado Department of Labor and Employment and Colorado Business Economic Outlook Committee.

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troubles at the national level, local economic and employment growth should remain slow but positive.

The **Western Slope** represents nearly 40% of the state's total land mass and only 11% of the total employment according to the State Demography Office. Employment grew 2.4% year-over-year in early 2015. In the past few years, political and civic leaders have joined efforts in attracting and promoting nonenergy-related businesses as a way to diversify the economy. Agriculture, of course, is a sustaining economic engine for the region, and the area has also attracted medical and outdoor manufacturing businesses. Certainly, energy firms are substantial employers, but industry activity is waning. Through Q2 2015, Heritage Title Company reports year-over-year real estate sales transactions for the Mesa County area increased 15% (1,937 versus 1,677), with dollar volume increasing 27% ($466 million compared to $367 million). The median price of a Grand Junction area home rose to $189,000 in June 2015 from $178,000 in September 2014. On an equally positive note, completed foreclosures decreased 53% through Q2 2015 (140 versus 295). Expect small, positive gains in CRE activity in 2016.

Political and civic leaders across the state have worked together to diversify the state's economy. Colorado is attracting a broad spectrum of businesses, bringing high-paying jobs with benefits in the manufacturing, health care, technology, and alternative energy, among others. Generally, all CRE product types report decreasing vacancies and rising rents. Lenders are beginning to raise the caution flag. Expect the collective foot to ease off the gas pedal in 2016.

Residential Real Estate

Residential market fundamentals strengthened in 2015 due to strong demand for housing spurred by new household creation. Colorado's population swelled by nearly 84,000 people from 2013 to 2014. The 1.6% annual increase in population was the fourth-largest population increase in the United States. The State Demography Office forecasts Colorado's population will increase by 90,100 people in 2015, bringing the total population to 5.44 million residents. Net migration from other states is driving population growth and accounted for more than 50,700 new residents in 2014. Net migration is projected to increase to 57,800 in 2015 and 62,100 in 2016.

In addition to demographics, the low cost of borrowing, job growth, and overall economic growth in Colorado also supported new residential development and price appreciation. Development activity remains uneven as condominium defect legislation continues to limit housing options, although recent project announcements in the Denver region suggest condominium development activity will improve, albeit mostly at high price points.

For-Sale Existing

The U.S. for-sale residential market continues to see healthy activity according to the National Association of Realtors (NAR), despite consistently low inventory levels. Existing home sales rebounded in September 2015 to an annual rate of 5.55 million homes for an 8.8% increase over the pace of sales the previous year. Home price appreciation moderated slightly from August to September but remained high, at 6.1% year-over-year. The national median sales price registered $209,100 in September and has steadily increased on a year-over-year basis for 43 months. National inventory levels are down 3.1% from September 2014, to 2.21 million homes on the market.

Denver Metro

Low inventory concerns are also relevant in Metro Denver. However, sharp increases in homes prices are another likely factor contributing to modest sales activity as homeowners struggle to trade up despite gains in equity. Existing home sales in Metro Denver are up only 3.2% year-to-date through September 2015 while the average sales price has increased 11.9% for single-family product and 15.1% for condominium product. The number of unsold homes on the market dipped 6.7% year-over-year, to 7,705 homes, according to REcolorado and Development Research Partners. As of September

FHFA HOME PRICE INDEX

	Compound Annual Growth Rate			
Colorado MSA	1 Year	3 Year	5 Year	10 Year
Boulder	10.3%	8.5%	5.0%	2.8%
Colorado Springs	4.9	4.6	2.0	0.8
Denver-Aurora-Lakewood	11.6	10.5	6.2	2.6
Fort Collins	9.7	7.9	5.0	2.2
Grand Junction	5.8	4.6	-0.1	1.2
Greeley	11.9	9.4	6.2	1.2
Pueblo	7.6	3.2	1.4	0.2
Colorado	10.4	8.8	4.9	2.2

Source: Federal Housing Finance Agency, All Transactions Index (NSA), through Q2 2015.

2015, the median single-family home sales price registered $340,000 and $211,500 for a condominium.

The latest S&P/Case-Shiller home price index confirms the spike in Denver home prices. The Denver home price index posted a 10.7% year-over-year increase in August compared to a 4.7% increase at the national level. The 20-city composite index, which features the 20-largest metropolitan markets, saw a 5.1% increase in home prices.

Fort Collins

In spite of upward pressure on prices, Fort Collins homeowners are holding onto their assets, evident by decreased sales activity. A report from the Fort Collins Board of Realtors reveals a 4.4% decline in year-to-date single-family detached homes through August 2015. Demand is strong for detached homes, with average prices increasing 13.7% over the same period, and a median sales price of $325,000, up 18.2% since October 2014. Single-family attached homes and condos have experienced increased sales activity, up 4.7% year-to-date through August 2015, with average sales prices rising 18.7%. The median single-family attached home price is $220,000.

Colorado Springs

The Colorado Springs residential market improved in 2015, with existing home sales increasing 18.8% through October 2015 on a year-to-date basis according to the Pikes Peak Association of Realtors. This includes both single-family attached and detached homes. The average sales price for single-family homes increased 2.7% on a year-to-date basis, and the median home price is just below $235,000, increasing nearly $10,000 since October 2014.

High Country

Colorado Association of Realtors data indicate the housing recovery has extended to high-country markets (Eagle, Garfield, Grand, Gunnison, Jackson, Pitkin, Routt, San Miguel, and Summit counties) as seen in increased sales activity and price appreciation. Year-to-date home sales through September 2015 were up by 22.9% over 2014. The average sales price for this region has increased 3.9% year-over-year, and the median sales price is $490,000.

New Home Activity

The post-Great Recession era of healthy but restrained new homes sales activity was the status quo in 2015. At both the national and local level, the limited availability of construction workers is partly behind the restrained activity levels. August new-home sales increased to 552,000 homes at an annual rate, which was a solid 5.7% gain over the July sale's pace, according to the U.S. Census Bureau.

The latest National Association of Homebuilders/Wells Fargo Housing Market Index suggests that U.S. homebuilders are generally optimistic about the strength of the residential market and future sales. The September 2015 index registered 62—one of the highest values since Q3 2005.

Builder optimism is evidenced by heightened building activity. The number of residential permits issued through September in the nation increased 13.6% compared to the same period the previous year due to heightened building activity in both single-family and multifamily product. At the state level, Colorado new home permits are up 3.2% year-to-date through September 2015 according to the U.S. Census Bureau. More than 23,100 residential permits have been issued in the first three quarters of 2015 of which 66% are single-family detached units. Single-family detached home permits are up 9.8% year-to-date while multifamily permits declined 9% after several years of expanding activity. The slowdown in multifamily building is also taking place in Metro Denver, noted by a 4.4% decline in year-to-date permits through September 2015. Comparatively, single-family detached permits issued were up 16.4%. Overall, the number of residential permits issued has increased 7.1% year-to-date through Q3 2015.

Foreclosures

U.S. foreclosure activity remained muted in 2015. Only 19 states saw foreclosure starts increase from the prior year with the rest showing improvement in year-over-year trends. Just above 898,000 homes were in some stage of foreclosure (including default, auction, or bank-owned) in September 2015, which was on par with the prior month and 2% higher than the previous year. One in every 1,210 U.S. homes has a foreclosure notice on it, and Realty Trac's Vice President Daren Blomquist stated that overall activity was generally back to pre-housing bubble levels.

According to Realty Trac, the foreclosure rate in Colorado currently rests at 0.04% or well below the national average, at 0.08% in September. Foreclosure activity in Colorado declined 13% year-over-year through September. The counties with the highest foreclosure rates are Moffat, Mesa, Lake, Pueblo, and San Juan.

Data for the Metro Denver region from the Colorado Division of Housing and public trustees indicate a 33.4% decline in initial foreclosure filings in 2015 through September compared to the same period in 2014. All seven Metro Denver counties are reporting declines on a year-to-date basis, led by Broomfield and Adams counties. Through third quarter, only Arapahoe County posted more than 1,000 initial foreclosure filings.

Rental and Leasing

Rental Market

The rental market benefited from a growing population and demand base for housing similar to the for-sale side. Colorado's multifamily sector recorded increasing average rents in 2015, along with a modest uptick in vacancy, according to a joint report by the Colorado Division of Housing, Apartment Realty Advisors, and Pierce-Eislen that covers Metro Denver, Colorado Springs, Fort Collins-Loveland, Grand Junction, and Pueblo. The average vacancy rate in Q3 2015 was 4.8%, up 100 basis

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points from Q3 2014 but still below what is considered the equilibrium rate of 5%. In fact, statewide vacancy has stayed below 6% for five years. The average apartment rent in Colorado was $1,219 in Q3 2015, up $132, or 12.1% from Q3 2014.

Colorado markets reported the healthiest vacancy rates in metropolitan and central mountain regions compared to softer market conditions in more rural areas like Fort Morgan and Sterling. In Colorado Springs, average vacancy decreased by 10 basis points, to 4.2%, in Q3 2015 while Pueblo saw a decline, from 8% to 6.1%, compared to the prior year. Greeley, which has been impacted by the oil and gas sector's contraction in 2015, has seen an increase in vacancy, to 5.7%, up from 2.3% in Q3 2014. Fort Collins' 2.4% vacancy rate in Q3 2015 is up from 1.3% the previous year, still indicating a very tight market despite new deliveries. Grand Junction's vacancy rate of 3.7% is down from 4.7% in Q3 2014 and 15.7% in Q3 2013.

Most markets saw rent appreciation on average over the past four quarters with the exception of a handful of smaller markets in the high country and on the Western Slope. The average monthly rental rate across all unit types increased 13.5% in Greeley, to $957; 16.3% in Fort Collins-Loveland, to $1,268; 65.8% in Colorado Springs, to $932; and 8.7% in Pueblo, to $627.

Apartment Insights data reveal that the Denver Metro apartment market readily absorbed new product throughout 2015 and recorded significant increases in rent. Over the past four quarters (Q4 2014 to Q3 2015), 6,500 units have been absorbed of which 20% of the leased units were located in downtown Denver. Absorption levels have slipped slightly from the record high of 7,327 units between Q2 2014 and Q1 2015. Rental rates increased 12.3% annually as of Q3 2015 to an average rate of $1,313 per unit or $1.52 per square foot. The average vacancy rate increased slightly, to 4.2% in Q3 2015, reversing a six-year downward trend. A large pipeline of 46,000 units is either under construction or planned in the region (46% are underway), which may temper rent growth but also lead to oversupply if absorption does not keep pace.

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Professional and Business Services

Professional and Business Services (PBS) aggregates a wide variety of sectors that include Professional, Scientific, and Technical Services; Management of Companies and Enterprises; and Administrative Support, Waste Management and Remediation Services. Across Colorado, PBS typically delivers high compensation, strong employment growth, and critical knowledge, skills, and roles needed by the customers PBS companies serve. Demand for PBS jobs appears set for sustained growth due to continued underlying demand for core services. Supporting the expanding business economy, Colorado's educated workforce and fast-pace job growth were cited in Colorado's No. 5 ranking for 2015 Best States for Business by *Forbes*.

Colorado is increasingly known for attracting highly educated PBS workers, and remains the second-most educated state in the country. According to the U.S. Census Bureau, 38.3% of Colorado residents hold a bachelor's degree or higher compared to 30.1% nationally.

Additionally, 55.3% of Colorado's 2013 high school graduating class went on to enroll in a postsecondary institution immediately after graduation according to the Colorado Department of Higher Education's *2015 Legislative Report on the Postsecondary Progress and Success of High School Graduates.*

In addition to the great quality of life, outdoor recreation, and other benefits of living in Colorado, many initiatives are underway to further develop the PBS skills in the workforce that will be required in the future. Programs that focus on education beyond high school are important for establishing pipelines for technical workforces. Innovative programs, such as the Colorado Department of Higher Education's Colorado Completes!, and the U.S. Department of Labor's Ready to Work Partnership grants, have proven crucial for providing staffing agencies' access to a pool of trained Colorado candidates.

PBS added an estimated 12,600 jobs in 2014 (3.4% growth). After accounting for revisions projected by the Colorado Department of Labor and Employment, the industry is expected to record growth of 3.2%, or 12,300 jobs, in 2015. The PBS Committee projects a slightly higher growth rate of 3.9% in 2016.

PBS Employment

Professional and Business Services Concentration by County

As expected, the more populated counties along the Front Range corridor have higher levels of PBS employment than counties outside of the Front Range. In addition, the counties along the Front Range corridor also have the largest concentrations of PBS employment. The map on this page illustrates the proportion of total county employment made up by the PBS industry in 2014. The county with the highest concentration of PBS employment is Broomfield, with 28% of the workforce working in the industry. Arapahoe, Denver, and Boulder counties also have high concentrations of PBS employment—21%, 20%, and 20%, respectively—illustrating the clustering effect of industry employment.

Professional, Scientific, and Technical Services

The Professional, Scientific, and Technical Services (PST) Sector comprises establishments that provide services that require high levels of expertise and training, including legal advice, engineering, computer and design services, and advertising services. As of October 2015, the sector accounted for 52% of PBS employment. The PST Sector will increase employment by 3.5%, or 6,900 jobs, in 2015, with a projected 2016 growth rate of 4.3%.

Legal Services

Legal Services employment is estimated to have grown at 1.7% in 2015. This moderate pace is anticipated to continue into 2016, with 1.5% growth.

The Legal Services profession continues to evolve as globalization and technology play an increasingly larger role in legal analysis, operations, and organizations. Employment in Legal Services declined in 2014 and is expected to be flat in 2015.

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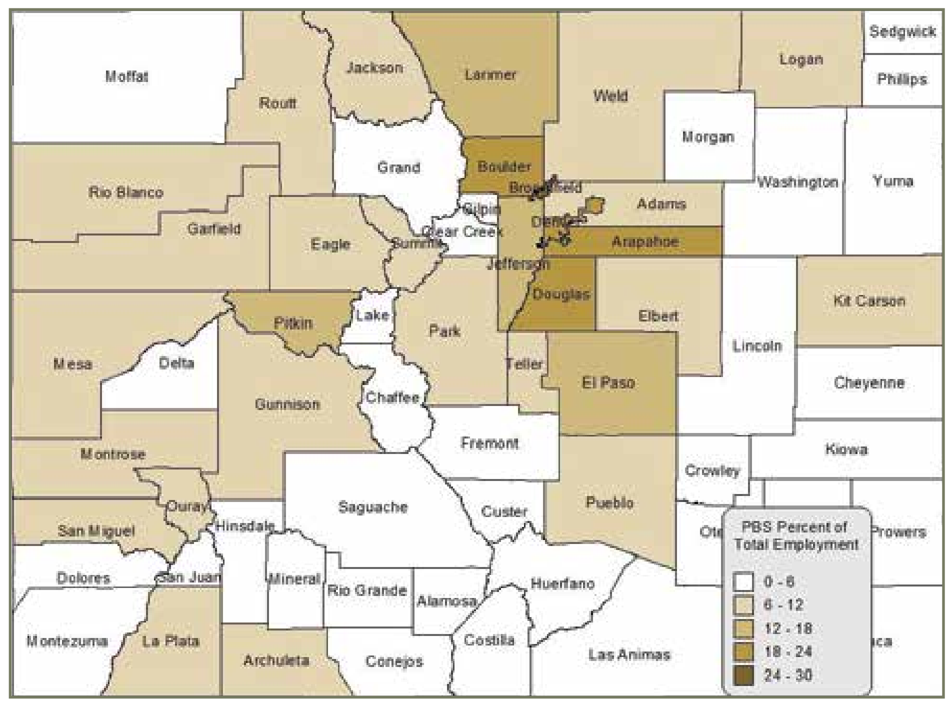
PROFESSIONAL AND BUSINESS SERVICES EMPLOYMENT AS A PROPORTION OF TOTAL COUNTY EMPLOYMENT



Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages.

Professional and Business Services

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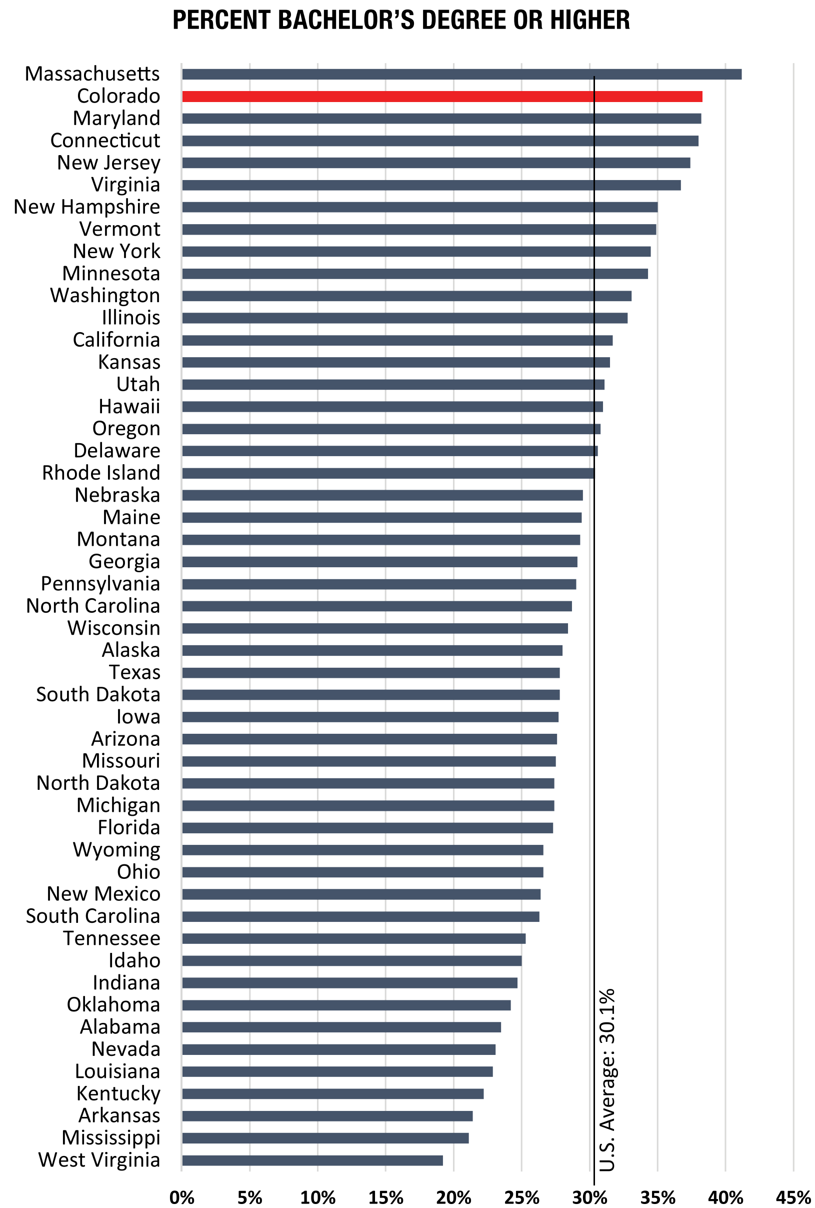

Source: U.S. Census Bureau, Educational Attainment, 2014 ACS.

In addition to some evidence that law schools are graduating more attorneys than are needed, both currently and over the next 10 years, other factors such as licensing and the Internet are also reducing the demand for legal services.

In fact, state licensure has proven to be a barrier to the growth and development of telework in Legal Services. Clients may use online document providers to produce certain kinds of legal documents such as wills and trusts, or to file a patent or trademark. However, providers run the risk of being found to have engaged in the unauthorized practice of law if they start offering a broader set of legal services than they are authorized to in a particular state. In an interesting development that may portend change to this sector, a California study indicated that 67% of defendants in family law cases were unrepresented, and 90% of eviction cases were not represented by counsel (Greacen, *Self Represented Litigants and Court and Legal Services Responses to Their Needs, What We Know,* 2003). In an effort to help address these issues, Washington State recently adopted a rule that created a new category of legal practitioners, limited license legal technicians (LLLTs), to provide certain limited kinds of legal service, such as preparing court documents and performing research. Interestingly, it might require only one year of training, a streamlined exam process, and some limited work experience requirements. If this trend spreads, the legal industry could face a new wave of competition by more nimble organizations.

An article in *Bloomberg* (Kitroeff, "Are Lawyers Getting Dumber?" *Bloomberg*, August 20, 2015) highlights the battle between law schools and the bar exam over the future of the industry. In short, the overall performance of bar exam participants has been flagging in recent years, and the supply/demand question is whether there is an undersupply of qualified candidates or a need to reduce the difficulty of the exam to increase the number of lawyers in the country. Summarizing, Paul Campos, a professor at the University of Colorado Law School, the article notes that, "He predicts that pumping out more JDs will only lead to more under- or unemployed attorneys." Essentially, law schools are raising expectations for new attorneys that are often not practical, meaning more budding attorneys may be on the wrong side of the bar.

According to a Department of Treasury occupational licensing report (*Occupational Licensing: A Framework for Policymakers*, prepared by the Department of the Treasury Office of Economic Policy, the Council of Economic Advisers, and the Department of Labor for the White House, July 2015), modern technological advances and the outsourcing of legal research is allowing law firms to perform these functions more timely and cost efficiently, which results in fewer employees. Also, clients can now use online document providers to produce certain kinds of legal documents, such as wills and trusts, or to file for a patent or trademark instead of using law firms for those products.

Architectural, Engineering, and Related Services

Architectural, Engineering, and Related Services (AER) is realizing 3% job growth in 2015. The committee anticipates momentum to continue into 2016, with 3.6% growth. Economic recovery and growth have led to increased revenue for many government agencies, which is expected to increase their outlays for roads, bridges, water, wastewater, and other public services as jurisdiction populations grow and increase demand for local services.

The most recent multiyear transportation appropriations, MAP-21, sunset in October 2014, and with only a 27-month life, did not provide the long-term funding needed for several large multiyear projects. To complement MAP-21, the Colorado Department of Transportation (CDOT) will implement the $1.5 billion Responsible Acceleration of Maintenance and Partnership (RAMP) Program over the next five years. The program will provide for multiyear funding of several large projects, such as the widening of I-25 from the Longmont exit to Fort Collins, mitigating the deterioration of highways around the state, bolstering bridges and culverts, and preventing rock slides. RAMP has resulted in some job growth at engineering companies that provide design and construction phase services for this work. Engineers with specific highway and bridge design skills are becoming scarce locally, resulting in firms looking outside of Colorado for talent or having the design performed outside of the state.

The Regional Transportation Department's (RTD's) FasTracks light rail expansion projects—I-225, the Gold and East Lines to DIA, Wheat Ridge, and Westminster—are almost completed or in the testing phase. Construction of the North Line to Brighton is well underway. Several large projects related to the continuing expansion of Denver International Airport (DIA) will buttress strong demand for architectural and engineering services. Additionally, Denver citizens voted in the November 2015 election to provide funds to improve the Western Stock Show Complex and surrounding area.

TOTAL PROFESSIONAL AND BUSINESS SERVICES SUPERSECTOR EMPLOYMENT
2007–2016
(In Thousands)

Year	Professional, Scientific, and Technical Services	Management of Companies and Enterprises	Administrative and Support and Waste Management and Remediation Services	Total[a]
2007	172.6	28.4	148.8	349.7
2008	178.9	28.9	145.9	353.7
2009	171.7	28.5	131.5	331.8
2010	169.0	29.0	132.8	330.8
2011	173.7	30.2	137.5	341.5
2012	180.2	32.3	144.4	356.9
2013	189.2	34.6	148.8	372.6
2014	196.2	35.4	153.5	385.2
2015[b]	203.1	36.1	158.3	397.5
2016[c]	211.8	37.0	164.1	413.0

[a]Due to rounding, the sum of the individual items may not equal the total. [b]Estimated. [c]Forecast.

Sources: Colorado Department of Labor and Employment and Colorado Business Economic Outlook Committee.

The construction of residential housing and commercial office buildings and warehouses continues at a frantic pace to keep up with pent-up demand that extends back to 2008. Current trends indicate more private financing to update and increase the number of college dormitory buildings. Additionally, apartments, instead of condominiums, are being designed and built around the metro area. Construction defects legislation adopted in 2008 is one factor driving fewer developers and contractors building affordable residential condominiums and mixed commercial-residential multifamily buildings. The legislation has meant that developers and contractors either cannot obtain builders insurance or the premiums are extremely high for construction of condos in Colorado. Additional factors include extremely low capitalization rates and rebounding demand for single-family homes. Condominiums that start in the $500,000 range and higher are being built but are not considered affordable. The rate of new multifamily starts was as high as 26% in 2007 but dropped to 2% recently due to this legislation. As stated in an October 2015 *Denver Business Journal* article, "'It's indisputable that builders have largely quit putting up owner-occupied attached housing over the past eight years. Where condos comprised 25 percent of the new housing stock in metro Denver in 2007, they make up just 3.4 percent of it so far this year—and most of those are luxury units above $400,000,' said Patty

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PROFESSIONAL, SCIENTIFIC, AND TECHNICAL SERVICES SECTOR EMPLOYMENT 2007–2016 (In Thousands)

Year	Legal Services	Architectural and Engineering Services	Computer Systems Design Services	Management, Scientific, and Technical Consulting Services	Other	Total[a]
2007	17.9	43.3	41.1	16.9	53.4	172.6
2008	18.1	44.8	43.1	17.9	55.0	178.9
2009	17.8	41.5	41.7	17.3	53.4	171.7
2010	17.8	39.0	41.3	18.0	52.9	169.0
2011	18.3	39.2	43.0	19.4	53.8	173.7
2012	18.8	40.4	45.3	20.6	55.1	180.2
2013	19.5	42.0	47.9	22.5	57.2	189.1
2014	19.2	43.3	50.6	23.7	59.4	196.2
2015[b]	19.5	44.6	52.7	24.5	61.7	203.1
2016[c]	19.8	46.2	55.3	25.8	64.7	211.8

[a]Due to rounding, the sum of the individual items may not equal the total. [b]Estimated. [c]Forecast.

Note: There was a reclassification of employees from the Computer and Electronics sector in Manufacturing to the Computer Systems and Design Services sector in Professional and Business Services in 2013.

Sources: Colorado Department of Labor and Employment and Colorado Business Economic Outlook Committee.

Silverstein, president and chief economist for Development Research Partners."

Colorado saw the drop in new multifamily starts decrease significantly in 2009 but did not see the lowest numbers until two years ago. That level is expected to stay low for the next few years regardless of legislative action by municipalities or the Colorado legislature. Despite the efforts at the state level, some legislation in construction defects reform has been passed in the metro municipalities of Lakewood, Lone Tree, Littleton, and Aurora. For the third time, meaningful reform at the state level will be tried in 2016.

As one of the largest integrated engineering companies in Colorado, CH2M announced it was awarded a five-year global indefinite delivery, indefinite quantity (IDIQ) contract for architect-engineer services with the U.S. Agency for International Development. The IDIQ contract has a $600 million ceiling focusing on water, environmental, energy, and telecom services in developing countries to improve the quality of life. While most of this spending will occur overseas, these kinds of contracts illustrate the global scope of Colorado-based engineering talent and resources.

Computer Systems Design and Related Services

The Computer Systems Design subsector continues to see increased investments in information security, social networks, and mobile and cloud computing. Businesses within this subsector create software, design computer systems, integrate technologies, and manage computer systems. Sector employment is estimated to have grown 4.2% in 2015 and is expected to continue to grow 4.9% in 2016.

Demand for highly skilled information technology (IT) workers is expected to grow with information security, cloud computing, and software app development. That said, there are some notable challenges, particularly in software, hardware, and related services.

The Denver Post in October 2015 reported that in an effort to balance costs and growth strategy, DigitalGlobe cut 2% of workforce, marking the second round of job losses at the space imaging company in 2015, but officials say growth continues. The company derives 62% of its total revenue from the U.S. government. Most of this income is recurring revenue from long-term (20-year) contracts. Despite Department of Defense budget cuts, DigitalGlobe's revenue from the federal government has more than doubled since 2010.

DigitalGlobe reported it is now positioned to help create air traffic control for drones. Reportedly, the new system, developed by Raleigh, N.C.-based PrecisionHawk, will use DigitalGlobe's satellite imagery and surveillance and Verizon's cellular network to create virtual boundaries for unmanned aerial vehicles or drones to identify and avoid obstacles and safely navigate the airspace.

DigitalGlobe's geospatial big data harnesses the power of the company's fleet of satellites, which captures photos of about 2 million square miles per day. Each image contains topographical and other information that can be used to guide drones. DigitalGlobe affirms this will result in job gains in Colorado, although an exact number cannot be specified.

The AP reported in September 2015 that Hewlett-Packard's spinoff of its technology divisions (e.g., software, consulting, and data analysis) will reduce the company's workforce by 30,000 jobs. The announced cuts will be within the newly formed Hewlett Packard Enterprise, which is splitting from the personal computer and printing operation. HP Enterprises is trimming its payroll as part of an effort to reduce its expenses by $2 billion annually. Even before the spinoff, Hewlett-Packard had been jettisoning tens of thousands of employees during the past few years to help boost its declining profits as a technological shift from personal computers to smartphones reduced demand for many of its products. The *Coloradoan* reported in September 2015 that Hewlett-Packard has about 2,000 employees in Larimer County, making the company the county's second-largest private employer, behind University of Colorado Health.

Management, Scientific, and Technical Consulting Services

Management, Scientific, and Technical Consulting Services realized 3.5% job growth in 2015, and stronger growth of 5.1% is anticipated in 2016.

The myriad organizations across Colorado that rely on the expertise of management, scientific, and technical consultants continues to grow. These individuals include executives, planners, developers, managers, and many others. Importantly, new and emerging businesses that have typified the latest round of entrepreneurs are increasingly important to growth for this sector.

Consulting talent in Colorado continues to grow and diversify for a variety of reasons. Of those, startups have played an outsized role of late. The state is consistently ranked as one of the top locations for startups and has maintained a ranking in the top five states for venture capital as a percent of state GDP. According to PricewaterhouseCoopers, Colorado recorded more than 50 deals worth over $516 million in the first three quarters of 2015. However, at $70 million, Q3 was notable for being the weakest in more than five years.

ADMINISTRATIVE AND SUPPORT AND WASTE MANAGEMENT AND REMEDIATION SERVICES SECTOR EMPLOYMENT 2007–2016 (In Thousands)

Year	Employment Services	Services to Buildings and Dwellings	Business Support Services	Other	Total[a]
2007	44.0	40.3	22.7	41.8	148.8
2008	40.1	40.6	24.9	40.3	145.9
2009	30.0	38.0	25.2	38.3	131.5
2010	33.7	36.8	25.0	37.3	132.8
2011	37.0	37.0	24.9	38.6	137.5
2012	40.7	37.8	26.7	39.2	144.4
2013	43.0	38.9	28.5	38.4	148.8
2014	46.7	40.9	27.0	38.9	153.5
2015[b]	49.2	42.7	26.5	39.9	158.3
2016[c]	52.7	44.7	26.2	40.5	164.1

[a]Due to rounding, the sum of the individual items may not equal the total. [b]Estimated. [c]Forecast.

Sources: Colorado Department of Labor and Employment and Colorado Business Economic Outlook Committee.

Despite the most recent dip, Colorado is a hot venture market, typically ranking third in the most venture capital invested per capita. Based on the Kauffman Foundation's ranking of top metro areas for tech startups, the top 2 metro areas and 4 of the top 10 are in Colorado. Denver Startup Week is growing in popularity and may be one indication of why Colorado is the second-most entrepreneurial state in the nation, behind Utah. According to NerdWallet, Colorado ranked second in its *Most Entrepreneurial States* report, based on such metrics as venture capital funding, SBA loans, and growth in small businesses.

In addition to private venture capital, the Colorado Office of Economic Development and International Trade (OEDIT) plays a pivotal role in funding new ventures. In September 2015, OEDIT announced grantees for the Advanced Industry Accelerator Grant Program. More than $2.4 million will be awarded for the Proof-of-Concept, and Early Stage Capital and Retention grants to support Colorado's advanced industries. According to the Advanced Industry Accelerator (AIA) website, accelerator programs promote growth and sustainability in Colorado's advanced industries by driving innovation, accelerating commercialization, encouraging public-private partnerships, increasing access to early-stage capital, and creating a strong infrastructure that increases the state's capacity to be globally competitive. AIA encompasses three distinct grant programs: Proof of Concept, Early Stage Capital and Retention, and Commercialization Infrastructure.

The space industry in Colorado continues to be a significant source of job growth. In fact, Colorado's space and defense industry, as a percentage of the state's payroll, ranks fifth nationally according to the Computer Technology Industry Association. Jobs in the state range from protection and exploration to innovation. Exploration achievements include the Lockheed Martin Orion spacecraft test flight, the New Horizons' Pluto fly-by, and the Ball Aerospace instruments aboard the

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Deep Space Climate Observatory (DSCOVR). The Orion space capsule successfully completed a test flight and is back in Colorado for analysis. One function tested was a 3D-printed vent to determine if parts could be made in space rather than on Earth. The Sierra Nevada Dream Chaser is hot on Orion's plume trail with a second free-flight test scheduled for early 2016. Both travel on Denver-based United Launch Alliance rockets. The world watched New Horizons' phone home from Pluto, sending images of ice cliffs and canyons. The probe includes space-dust analysis tools built by University of Colorado (CU) students. Colorado State University students have been analyzing the effects of cosmic ray radiation on astronauts. The NASA-sponsored project helps prepare for trips to Mars. Innovation in space includes infrared satellite sensors spotting forest fires, DigitalGlobe images helping with earthquake damage assessments, and CU researchers exploring light-weight optics.

The AIA Grant Program continues to help small business in the space industry. Awards include $250,000 to QuSpin in Louisville that develops high-sensitivity magnetometers for use in scientific research, space exploration, defense, and biomedical imaging. Space innovations benefit multiple industries in Colorado.

Management of Companies and Enterprises

One of the most diverse PBS sectors is Management of Companies and Enterprises, which includes a very broad cross-section of company headquarters and regional offices for businesses. Many of these businesses are company headquarters. The sector continues to represent about 2% of Colorado's economy and has generally produced modest job growth over the last few years. Companies in this sector essentially manage other businesses and include Vail Resorts, Sports Authority, Comcast, MDC Holdings, and Prologis. Growth in 2016 will be driven by the continuation of company headquarter acquisition.

The PBS Committee expects the sector to grow 2% in 2015 and 2.5% in 2016.

Administrative and Support and Waste Management and Remediation Services

This sector comprises establishments that perform routine support activities for the day-to-day operations of other organizations. It includes office administration, hiring and placing personnel, cleaning, document preparation and clerical services, and waste disposal, among others. Expectations are for this sector to grow by 3.1% in 2015 and 3.7% in 2016.

Employment Services

The PBS Committee anticipates Employment Services to grow 5.3% in 2015 and 7.1% in 2016.

One of the most concerning trends in national employment continues to be a factor in Colorado. Americans are dropping out of the workforce at a rate not seen in more than 30 years. According to Tatiana Bailey, Southern Colorado Economic Forum director at the University of Colorado Colorado Springs, "The U.S. economy as a whole is doing quite well now. Things are finally looking up after the really harsh recession. But there are problems, including too many people who aren't participating in the workforce." One root cause is the workforce skills gap. Bailey highlighted that "About 12% of U.S. college graduates are being schooled in science, technology, engineering, and mathematics, yet about 40% of all jobs will require such backgrounds by 2020" ("Colorado Springs economy on the upswing, but still has challenges," October 21, 2015, *The Gazette*).

According to the U.S. Census Bureau, median household incomes in Colorado (in 2014 dollars) were $60,940 in 2014 compared to $69,812 in 2007 and $66,316 in 2000. On October 25, 2015, an article in *The Denver Post* reported that the income declines reflect smaller household sizes, wage cuts following the Great Recession, and importantly, a smaller share of adults working. Looking back, more than 72% of adults age 16 and older in Colorado were active in the workforce during the previous two periods of robust growth according to the U.S. Bureau of Labor Statistics. But today, that ratio stands at 66.5%. Moreover, it is expected to continue to drop as more baby boomers, the generation born between 1946 and 1964, reach retirement age.

Mark Harden at the *Denver Business Journal* reported on August 5, 2015, that unduplicated online ads to fill Colorado jobs dropped for two consecutive months in June and July, but increased year-over-year according to The Conference Board's monthly *Help Wanted OnLine Data Series* report. This report is an indicator of future employment trends. A large percentage of the nation's total job openings are now advertised online. The organization reviews thousands of Internet job boards, corporate boards, and smaller job sites to find ads. The numbers are seasonally adjusted to account for normal monthly employment-ad fluctuations. Nationwide, online job ads rose by 83,700 in July 2015, to 5,384,400, following a decline of 144,300 in June.

Although jobs that were lost in the Great Recession have been regained, Colorado and Denver's job ad supply-demand ratios in September dropped to 0.82 and 0.68, respectively, indicating more jobs are available than unemployed workers to fill them (The Conference Board, *Help Wanted OnLine*, November 4, 2015). Colorado's supply-demand ratio in September 2014 was 1.1 and the national ratio was 1.48. (The supply-demand ratio is the number of unemployed persons divided by the number of total ads.)

These data support Wanted Technologies' findings that places Denver in the top three U.S. cities where the employment recovery and emerging skills gap are not playing out evenly. The report measures job vacancy and unemployment rates for the pre- and post-recession period and found that science, technology, engineering, and mathematics (STEM) fields grew twice as fast as the overall average, and companies in industries that were not software driven before the recession emerged with new needs for those skills. Silicon Valley, Boston, and Minneapolis emerged from the recession relatively stable and able to meet demand.

Shawn Torkleson, director of Business Development in Denver for North Highland, a global consulting firm serving a variety of industries and clients across Colorado, has indicated that recruiting professionals for business services has shifted from an employer's market to an employee's market. Torkleson noted that most interviewees in the sector from August through October were pursuing two to four additional opportunities and were getting the leverage to negotiate higher compensation or other benefits.

The U.S. temporary staffing industry is projected to grow 6% in 2016 to reach an all-time high of $123 billion according to the U.S. Staffing Industry Forecast, a semi-annual report published by Staffing Industry Analysts (SIA).

Staffing employment has continuously increased since the Great Recession, when the temporary labor penetration rate fell to 1.3%. This was faster than overall non-farm employment, which reached 2.9 million temporary help workers and set a new record penetration rate of 2.05% in June 2015. Staffing employment will continue to rise as regulatory changes, such as the Patient Protection and Affordable Care Act (PPACA), increase the cost of carrying full-time employees for employers as the benefits of just-in-time workforces outweigh higher bill rates associated with the pass through of PPACA costs.

Nationally, economists surveyed by the *Wall Street Journal* in September 2015 expect unemployment to decline, to 5% by year end, and drop further in 2016, to 4.8%. According to the Colorado Department of Labor and Employment, the state's unemployment rate is down half a percentage point, from 4.5% in September 2014 to 4% in September 2015.

A declining unemployment rate would seem to be good news but the American Staffing Association (ASA) reports a swell of speculation that the unemployment rate may be decreasing because more people are disengaging from the workforce. Colorado's workforce in September 2015 declined from the previous year.

The labor force participation rate—the share of the working age population either employed or seeking a job—peaked at 67.3% in April 2000 but has been on a downward trend since reaching 62.6% from June through August 2015. The Congressional Budget Office (CBO) estimates that the more than three-point decline since the Great Recession is mostly attributable to the aging population and a slower growing economy. The CBO estimates project that the labor force participation rate will drop to 62% by the end of 2019.

ASA reports that U.S. staffing companies employed an average of 3.24 million temporary and contract workers per week in Q2 2015, up 2.9% from the same time period in 2014.

Temporary staffing is on the rise as a percentage of total U.S. employment, with the highest demand growth for professional workers. Within the professional segment, technology is the largest category and one of the fastest growing. The tech industry accounted for 5.7% of the private-sector workforce in 2014 according to SIA. According to an October 8, 2015, IT Staffing Report, SIA projects growth in the information technology staffing market will continue at least through 2016, when it is estimated it will reach a record $28.9 billion.

Since total U.S. employment bottomed in late 2009, roughly 9% of the nearly 14 million net jobs created have been filled by temporary employees according to a June 2015 report by SIA. The increasing adoption of contingent workforces by larger companies, widespread talent shortages, persistent retention issues, and the appeal of working independently, especially for millennials, is clearly benefiting the staffing industry and increasing wages for the most in demand skill sets. Total staffing and recruiting industry sales (temporary, contract, search, and placement) reached $130 billion in 2014, and conservative estimates project the market for "human cloud" models, such as Upwork, will grow 40% annually, reaching $16 billion by 2020.

Temporary employment is clearly on the rise, and there is no doubt that a significant portion of any economic growth in the country is attributable to the staffing of temporary workers. The majority of the temporary workforce, however, earns low wages, has limited benefits, works fewer hours (in jobs with higher turnover), and suffers higher injury rates. This "new normal" in the structure of the workforce is drawing the attention of regulators and unions that have historically not been sympathetic to picket line-crossing temps. Manpower, Adecco, and Kelly Services, known for staffing mostly low-wage jobs, are now among the largest employers in the United States, which explains why annual earnings per temporary worker in 2014 were $33,596 ($37,041 in tech-heavy Colorado) and the average tenure was 11 weeks according to an ASA fact sheet.

ProPublica says the temp system insulates the host companies from workers' compensation claims, unemployment taxes, union drives, and the duty to ensure that their workers are citizens or legal immigrants. "We're seeing just more and more industries using business models that attempt to change the employment relationship or obscure the employment relationship," said Mary Beth Maxwell, a top official in the Labor Department's Wage and Hour Division.

Further illustrating this point, in August 2015, the National Labor Relations Board (NLRB) made it easier for contract workers and other temporary employees in the "gig" economy to unionize following a landmark ruling. The NLRB's decision to revise its joint-employer standard represents a big shift in the way the employer/employee relationship is defined. The case was brought by a Teamsters local union that asked the NLRB to consider a staffing agency that provided a group of subcontractors to Browning-Ferris Industries (BFI) as "joint-employers." The union said it could not adequately bargain for the workers unless BFI was at the bargaining table. In the past, to be considered joint-employers, two companies generally had to share and exercise control of

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the terms and conditions of employment which include: hiring, firing, discipline, supervision, wages, hours, number of employees, scheduling, overtime, and work assignment. Under the revised standard, a company does not need to exercise authority or have direct and immediate control over these terms and conditions; it must only have a right, or reserve the right, to share in direct or indirect control of the terms of conditions of employment (to permit meaningful collective bargaining) to be defined as a joint employer. Consequently, organizations must decide whether or not to relinquish actual or potential control in order to avoid joint employer status that could drive jobs offshore, outside of the jurisdiction of the NLRB. If a business is considered a joint employer, other federal, state, and local administrative agencies could piggyback and test if other statutes could sufficiently mimic the National Labor Relations Act. Topics that could be related are occupational safety and health, equal employment opportunity, responsibility for wage and hour compliance, medical and pension plans, payroll withholdings and deductions, workers' compensation, immigration, the misclassification of independent contractors, and others according to the *National Law Review* ("Joint-Employer Status: New NLRB Standards Reset the Stage and Redefine the Players," September 14, 2015).

According to an August 27, 2015, *Wall Street Journal* article, "the NLRB felt it has not kept pace with an evolving workplace in which an increasing number of U.S. workers are employed through temporary staffing agencies." According to the article, the NLRB cited a "dramatic growth in contingent employment relationships" that "potentially undermines the core protections of the act for the employees impacted by these economic changes."

Services to Buildings and Dwellings

Just a couple of years ago the Services to Buildings and Dwellings subsector was recording high vacancy rates that led to employment consolidation and layoffs. Now these buildings are leased, and more warehouses are being designed and built. Office building vacancy rates in both downtown and in the Denver Tech Center are very low again as demonstrated by increasing lease rates. The demand for maintenance for these buildings is stimulating increased job growth in this subsector. Many open spaces, and even older building pads, are being scraped and renewed. Based on this dynamic, the PBS Committee expects Services to Buildings and Dwellings to grow 4.5% in 2015 and 4.7% in 2016.

Waste Management and Remediation Services

In the waste handling services industry, waste collection accounts for about 50% of industry revenue; treatment and disposal, 15%; and remediation, 15%. Remediation involves the cleaning of crude oil spills and ground contamination, removal of asbestos and lead paint, and restoration of strip-mined areas. Data from Hoovers indicate that small companies typically operate in only one of these segments while larger companies often have vertically integrated operations that include all of these components.

In Colorado, Waste Management and Remediation Services will see a fifth-straight year of employment gains as these services are a trailing indicator of overall population growth and, to a certain extent, of new and replacement (infill) commercial development. The committee expects this subsector to provide job growth as high as 3.5% in 2015 and 2.5% in 2016. Industry consolidation among major players has slowed and regional haulers are adding slightly more staff as recycling, composting, and more sophisticated customer-service protocols are evolving.

PBS Sector Summary

PBS continues to be a major driver of employment growth for Colorado. However, the decline in real median individual incomes and rising costs in housing, health care, day care, taxes, and other challenges to businesses and governments may curb some demand for PBS professionals. While the boom in residential housing and apartments should match demand for current residents in 2016, individual ability to afford the next step up in housing may dissuade some of the historically strong net inflows of PBS talent. In short, PBS will continue to grow, but the upside appears constrained to the 3%–4% range over the short term.

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Education and Health Services

The Education and Health Services Supersector includes private-sector education, as well as four health care and social assistance sectors, including ambulatory care, hospitals, residential and nursing facilities, and social assistance. This industry represents almost one of every eight jobs in the state of Colorado. Nearly 88% of industry employment is made up of Health Care and Social Assistance, while slightly more than 12% is related to private education. Education and Health Care added 13,300 jobs in 2015, a growth rate of 4.5%. In 2016 jobs are projected to grow by 10,900 (3.5%), to 323,000.

Educational Services (Private)

Private-sector educational services can be classified as private not-for-profit, private for-profit, religious exempt, and private occupational, as well as private companies delivering training and development and other ancillary and support services. Public elementary and secondary educators are in local government; public higher education is in state government. Employment numbers for the private education sector for 2014 showed marginal growth of 1,100 jobs over 2013, totaling 37,200 for the year. The sector is projected to see flat to marginal growth, adding only 400 jobs in 2015 and 300 jobs in 2016.

Economic contributions from this sector are substantial. According to the Association of Private Sector Colleges and Universities' (APSCU) 2015 Fact Sheet, private-sector institutions provide higher education access and opportunity to nearly 3.5 million students at more than 3,000 institutions. In 2014, they accounted for nearly 250,000 jobs in the nation, with another 161,981 employed in supplier and induced positions for a total economic impact of more than $47 billion. In 2014, in Colorado private-sector institutions provided a $1.3 billion total economic impact on the state, producing $541 million in wages. In 2011–12 APSCU institutions trained 23,178 graduates in technical fields with mid-level skills.

The education sector is typically countercyclical relative to the economy; the growth in this sector during the last two economic downturns supports this theory. As such, as the economy continues to improve, for-profit education revenues are expected to increase at a slower rate over the next five years, and overall employment growth in this sector will continue be flat or modest at best. Private nonprofits and other related business will be slightly stronger and provide the counterbalance needed to attain mild growth.

COLORADO EDUCATION AND HEALTH SERVICES EMPLOYMENT 2007–2016 (In Thousands)

Year	Educational Services	Health Care and Social Assistance	Total
2007	29.6	210.9	240.4
2008	30.6	219.9	250.5
2009	31.3	226.0	257.2
2010	32.3	232.4	264.7
2011	33.7	239.9	273.7
2012	35.4	247.2	282.6
2013	36.1	250.7	286.7
2014[a]	37.2	261.5	298.8
2015[b]	37.6	274.5	312.1
2016[c]	37.9	285.1	323.0

[a]Revised. [b]Estimated. [c]Forecast.

Note: Due to rounding, the sum of the individual sectors may not equal the total.

Sources: Colorado Department of Labor and Employment and Colorado Business Economic Outlook Committee.

Concerns that May Limit Employment Growth

Driving the cautious optimism are several hurdles, including the following:

- Reported enrollments are down across the private-college sector, with reported declines of as much as 55% between 2011 and 2015.
- Closures related to legal difficulties will also limit growth.
    - Following an investigation by the U.S. Department of Education, Corinthian Colleges is closing and/or selling off 85 campuses in the United States, including three Everest College campuses in Colorado.
- In April 2015, Jones International University announced that it would close, a move affecting approximately 115 full-time staff over 12–15 months.
- Zenith Education Group reduced the staff at its Thornton call center by 131 beginning in May 2015.

While revenue growth in parts of this sector, mainly in the supporting services side, is expected to continue modestly, for-profit colleges will continue to face

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increasing cost challenges due to the economy and legislative pressures. Business can be expected to increasingly rely on technologies that provide efficiencies to keep costs and employment to a minimum. Overall employment will be flat or up only modestly 2015.

Description of the Private Education Sector

The state's private postsecondary institutions account for approximately one-third of all postsecondary enrollments. The largest employers in the private education services subsector come from private postsecondary education. Among Colorado's more prominent private nonprofit schools are the University of Denver, Regis College, and Colorado College.

The for-profit sector had been the fastest-growing group in the education sector, but has had setbacks in the last three years. Contributions to Colorado's employment have come from many schools. A total of 103 private accredited colleges are listed on the Colorado Department of Higher Education website, and 347 (down from 354 in 2014) schools are registered with the Colorado Department of Private Occupational Schools. Colorado-based private accredited colleges include Alta Colleges, which is a privately held for-profit education company based in Denver, and the now-closed Jones International University. Private occupational schools include Denver-based Bel-Rea Institute. Among out-of-state organizations with campuses in Colorado are private accredited colleges such as Arizona-based University of Phoenix, which has three locations in Colorado. An example of a private occupational school is the Colorado holdings of Education Affiliates (a Maryland-based company), which includes the Denver School of Nursing (DSN) and Fortis College Online.

Employment in the private education sector is driven by both business demand for continuing education programs and consumer demand for training that improves quality of life. In the corporate and business sector, skill development of employees through learning curricula continues to play a critical role in developing competitive competencies of businesses, especially in the high-tech and consulting arenas. Corporations consider reinvestment in their employees a required business development function. Furthermore, certification within specific industries drives both corporate and consumer consumption of learning in order to remain competitive. In the recent environment, many schools have experienced declining enrollments and thus jobs, while increased demand in specific skill areas, including nursing, has resulted in modest growth for schools such as DSN.

Colorado is also home to paraeducation organizations, for example Pearson Learning Technologies Group (LTG), located primarily in Colorado, which has shown modest growth in 2013 and 2014 in online higher education services. Growth is anticipated to continue in 2015 and into 2016. Other software businesses in the learning and education delivery sector in Colorado include Disney's Kerpoof and Knowledge Factor. As education companies such as these continue to create more content, learning technologies, and educational analytics opportunities, Colorado is positioned to be a strong player in eLearning. However, there are setbacks. In 2014, Disney closed the Kerpoof business, eliminating 700 jobs nationally and closing its Boulder office in the process.

Education is in the midst of significant transformation and reform, including an increase in adoption of online high school classes. This kind of heavy reliance on technology both requires more strategic thought specific to pedagogy, as well as instructional design, but also provides tremendous opportunities for data-driven education. When this "big data" can provide at-risk reports on behaviors such as dropped classes within a week of course starts, an understanding of how students learn best, and the development of courses that are tailored to student needs in real-time, personalized learning is very close becoming reality.

Another major, disruptive innovation that could drive lower-cost education in a personalized fashion is the development of open educational resources (OEC), with the most familiar being massive open online courses (MOOCs). These are bringing content from prestigious universities (Harvard, MIT, and Stanford) through such for-profit businesses as Coursera, EdX, and Udacity. MOOCs are being discussed and strategized at almost every higher education institution, both private and public. The idea of tens, if not hundreds, of thousands of students taking online courses could prove to be a change agent as the next iteration of MOOCs is created. Some ideas for this new model include a global experience with a local flavor, which means the inclusion of local faculty, regardless of whether the course is created at Harvard or at a local university. This model has yet to live up to its hype and has not had a notable impact on traditional education enrollments.

Health Services

The Health Care and Social Assistance Sector provides employment to about 300,000 private and government workers (the latter are covered in the Government section in this book). Colorado has a larger percentage of employees in the ambulatory care and hospitals subsectors and a lower percentage in the residential and nursing facilities and social assistance subsectors compared to the nation.

The average annual wage for employees in this sector (as of Q1 2015) was about $46,800, 11% below the overall annual average wage in Colorado. The top three counties with the highest average wages were Pitkin, Eagle, and Denver.

Annual wages in the ambulatory care and hospitals subsectors, which account for two-thirds of total employees, averaged $57,600 in 2014 while the remaining employees in nursing and residential facilities and social assistance averaged $26,600.

Health Care and Social Assistance employment continues to grow each year. From 2008–14, the sector has added more than 41,600 jobs at an annual average growth rate of 3.1%. By year-end 2015, growth is expected to be 5% or 13,000 jobs. This sector experienced above-average growth in 2014 and 2015, and this trend is anticipated to continue in 2016.

The Health Care Landscape

Demand for health care services and workers is expected to increase primarily from:

- A growing and aging population.
- Expansion in the number of persons eligible to receive health insurance coverage as a result of the passage of the Patient Protection and Affordable Care Act (PPACA).
- Residents who increasingly suffer from obesity and chronic diseases.
- The repositioning of health and wellness organizations to meet consumer-driven expectations.

At the same time, the supply of care providers, especially physicians and nurses, is anticipated to lag compared to demand. Forty percent of physicians and advanced practicing registered nurses are over 55 and 26% are over 60. These practitioners will soon transition from providing care to consuming health care. In some counties this retirement exposure will be extreme. People who live in those counties may have difficulty finding replacements for their health care provider. Workforce expansion may prove difficult as supply levels are impacted by expected annual retirement rates among current practitioners, limited professional interest in primary care, and restricted capacity to train new health care professionals.

The disruption in the industry offers opportunities for new entries and care methods, such as free-standing emergency departments and telehealth. It also creates challenges for organizations and policymakers on how best to ensure that the right care and service at the right time in the right setting by the right type of provider is available, delivered, and affordable.

These trends will impact the size and characteristics of the workforce.

Select Populations and Health Status

Currently, Colorado attracts businesses seeking to hire a healthy and therefore more productive workforce. States with a healthy workforce, all else being equal, provide companies with an economic advantage over those states with a less healthy workforce. With the leanest adult population of any state and low incidences of death from cancer, diabetes, and heart disease, Colorado is well positioned to continue to attract and retain businesses.

Even though Colorado has one of the lowest overweight or obese rates in the nation, policymakers must not remain complacent. Nearly 60% of adults and one in four children are obese or overweight. This trend has doubled the last 20 years. These rates vary widely by race, ethnicity, and location throughout Colorado.

Health risks associated with obesity, especially children, include high blood pressure and high cholesterol, insulin resistance and type 2 diabetes, breathing problems, and social and psychological problems. The costs attributed to overweight and obesity are a significant burden on our health care system and economic output.

To remain economically competitive, interested citizens, business leaders, policymakers, and health care experts have come together to support programs to advance the health of Colorado residents. For example, in the Health Colorado: Shaping a State of Health five-year plan (2015–2019), multiple stakeholders across the state are collaborating to reverse the upward obesity trend by developing a culture of health, creating conditions to achieve healthy weight across one's lifespan, and increasing capacity for coordinated obesity surveillance.

Aging

As of 2015, Colorado has more than 5.4 million people of which 13%, or 714,000, are 65 or older. It is expected that the senior population will grow by 76%, to nearly 1.3 million, by 2030 just from aging. Life expectancy has increased from 77.2 years to 80.4 years since 1990, the third-highest growth rate in the nation. The amount and intensity of health services are highly dependent on how older Coloradans can age in healthy ways to maintain their independence, quality of life, and a longer life. The 2015 *Colorado Health Report Card* suggests this population is currently managing well overall; however, with the expected 1 million workers aging out of the workforce over the next 20 years, Colorado must prepare its health care infrastructure for this demographic shift.

Factors that determine overall good health are 70% controllable by individuals, their friends and families, and the larger community. Influencing behaviors, policy, and the management of physical and medical environments can significantly impact the health of citizens. As Coloradans begin to age in healthy ways, the expected outcome is less use of intensive resources devoted to health care. This result will influence the makeup of our health care workforce.

Health Insurance Coverage

Employer Sponsored

The expansion of the insured population in Colorado creates the need for more available health providers and infrastructure support. According to the Colorado Health Institute's 2015 *Colorado Health Access Survey* (CHAS), 51%, or 2.3 million, of Coloradans have insurance through their employer. The vast majority of employers are large companies, defined as having 50 or more employees. Colorado has seen a nearly eight-point drop in employer-sponsored insurance from 2009, mirroring national trends.

Small group employers (2–50 employees) offering health care coverage have decreased 60% between 2000 and 2014, or on average 7% per year. In 2014, a significant number of business groups-of-one (21,300) migrated to the individual purchasing market. Small employers often cite the lack of affordability for not offering health insurance.

As part of PPACA, Colorado is changing the small group definition for plan years beginning in 2016. Groups with

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51–100 employees will now be included and face the small group rating rules, including additional benefit and cost-sharing requirements that may increase premiums for small groups and reduce them for others. The business definition requirement was repealed at the federal level; however, Colorado's new small group definition is a statutory requirement. Small group employers have the ability to purchase coverage either privately or at Colorado's public exchange, the Marketplace (also known as Connect for Health Colorado).

A growing phenomenon is the accelerated increase of employers turning to private exchanges to provide health coverage to their employees. Employer-sponsored insurance covers nearly 149 million people, or 56% of the U.S. nonelderly population. Experts suggest that the private exchange market in 2018 may approach 40 million lives. Characteristics of private exchanges include the offering of their own set of health plans; a PPACA-compliant environment; and employers providing employees a fixed amount of money, called *defined contribution*, to spend on health benefits within the exchange. This environment is different from the traditional approach where the employer pays a portion of the employee-selected health plan option. A private exchange enables employers to shift responsibilities to the employee and perhaps cap the amount of its contribution, thereby limiting the employer's risk to rising health care costs. Employees are able to shop in this environment and choose the right type of coverage and benefits specifically for them. Creating private exchanges requires significant startup investment, especially in the technology areas. Large national firms are becoming early adopters while private exchanges developed specifically for Colorado firms are underway.

HEALTH CARE SERVICES EMPLOYMENT, 2007–2016
(In Thousands)

Year	Ambulatory Care	Hospitals	Nursing Care	Social Assistance	Total[a]
2007	86.7	52.0	36.5	35.6	210.9
2008	90.5	53.7	37.7	38.0	219.9
2009	93.3	54.9	39.1	38.7	226.0
2010	96.8	55.7	39.3	40.5	232.4
2011	101.1	56.5	40.3	42.1	239.9
2012	104.6	57.9	40.8	44.0	247.2
2013	106.8	55.9	41.1	46.8	250.7
2014	112.8	57.7	41.7	49.4	261.5
2015[b]	118.7	60.3	43.4	52.1	274.5
2016[c]	123.3	62.5	45.0	54.2	285.1

[a]Due to rounding, the sum of the individual items may not equal the total.

[b]Estimated. [c]Forecast.

Sources: Colorado Department of Labor and Employment and Colorado Business Economic Outlook Committee.

Individual Coverage

With more than 156,000 individuals enrolled in health coverage through the state's online Marketplace, Colorado's state-based exchange has been in operation for two years. PPACA's goal is to ensure most Americans have health insurance or pay a penalty. To help realize that goal financial subsidies are only available to many low- and middle-income consumers purchasing coverage through the federal or state-based exchanges. Subsidies generally are available to people with incomes ranging from one to four times the poverty level ($11,490 to $45,960 for a single person and $23,550 to $94,200 for a family of four). The intent of Colorado's Marketplace is to make comparison shopping for insurance easier. Forty-three percent of the 365,000 individual market purchased coverage through the Marketplace in 2015 while the remainder purchased their coverage privately. Individual purchasers are less likely to report good health status or get preventative care than Coloradans with job-based coverage.

In 2016, about 125,000 purchasers will have to seek coverage with other carriers. With the decertification of the Colorado Health Insurance Cooperative to sell policies and the exit of New Health Ventures and Time Insurance Company, small group and individual purchasers have been forced to find other coverage. However, several established insurance companies are expanding into the small and individual markets in 2016 to offset the departing carriers. Along with the small group definition change, the additional PPACA coverage regulations rolling out in the next few years, and the continuing political uncertainty around health care reform, the stability of insurance coverage, especially for small group and individual purchasers, remains unsettling.

Medicaid and Uninsured

Colorado opted to increase eligibility for the Medicaid public insurance program as part of PPACA. Nearly 450,000 new Medicaid beneficiaries are covered since 2013, bringing the total to 1.2 million. According to the

Colorado Hospital Association (CHA), this increased volume of Medicaid patients being seen in Colorado hospitals is presenting more complicated conditions and thus need more resources. Trends in the decline of billed hospital charges to insurance companies, which reimburse higher than Medicaid, are more pronounced than the national trend, particularly through the first two quarters of 2014, the most recent data available

CHAS reports the rate of enrollees continuing to have difficulty getting care due to the lack of medical providers accepting Medicaid has not materially changed since 2009, remaining around 20%. Yet Medicaid enrollees have increased their use of medical services since 2013. These include visits to a provider, which rose 4 percentage points, from 78% to 82%, and an 8-point increase, from 29% to 37%, in visits to specialists. The proportion of Medicaid enrollees using the emergency department has remained stable despite an increase of 166,000 visits.

With the advent of PPACA and Medicaid's expansion, the uninsured rate, according to CHAS, dropped to under 7% from a high of nearly 16% in 2011. A higher percentage of the uninsured population of 353,000 tend to live in the Western Slope. Considerable progress in coverage has been made but the northwest corner of Colorado, including Steamboat Springs, and the Four Corners region, including Durango, continue to have the highest uninsured rates, 13% and 11%, respectively. In contrast, Jefferson County residents have an uninsured rate of 2.8%, a decrease from 11.6% in 2013.

The composition of the new uninsured population tend to be adults ages 19–39 with a high school diploma or the lack of one. Hispanics make up 21% of the total population but account for 38% of the uninsured pool. Eleven percent of Coloradans at or below the poverty line have the highest uninsured rate among income groups. Conversely, those individuals who are four times above the poverty level have doubled their rate and now make up a greater percentage of the total uninsured population.

Targeting young adults who generally are healthy to enroll in coverage is a priority both nationally and in Colorado. Lowering the current uninsured rate further may be difficult. The most cited reason for not enrolling is that coverage is just not affordable even with the availability of subsidies. Other barriers include the following:

- Confusion about Medicaid and private insurance subsidies.
- A stigma around the use of Medicaid.
- The lack of a compelling consumer message.
- Insurance is not required due to one's good health status.
- Political objections.
- Continuing technical issues with the online Marketplace, making website navigation difficult.

The health environment offers a myriad of opportunities and challenges as job-based coverage is eroding and one in three Coloradans have public insurance (Medicare, Medicaid, and Child Health Plan Plus). Coupled with a growing and aging population, and increasing obesity and chronic diseases, policymakers and industry experts are working diligently to respond to the health care workforce predicament.

The Health Care Workforce

Health policy conversations in Colorado are shifting from coverage to access.

A record 4.9 million Coloradans, 93.3% of the state's population, now have health insurance according to the CHAS. Two years ago, that figure stood at 85.7%. This historic change is primarily a result of expanded eligibility for Medicaid under the PPACA.

The question now is how to ensure that all Coloradans—including those who are newly insured—have access to affordable and high-quality health care services when they need them and where they need them.

The health care workforce is an essential piece of the access-to-care puzzle. Does Colorado have enough health care providers and are they located where they are most needed?

Physicians

Colorado is above the national average for the number of physicians relative to the state population. Colorado has 15,155 active, licensed physicians across all specialties in 2015, which translates to 278.6 physicians for every 100,000 residents. The national average is 260.5 physicians for every 100,000 people.

Colorado has an above-average rate of primary care physicians—those in family medicine, internal medicine, pediatrics, or general practitioners. There are 94.6 primary care physicians for every 100,000 Coloradans, which is slightly higher than the national rate of 90.1 primary care physicians per 100,000. This translates to a panel size of 1,873 patients for each full-time primary care physician in Colorado, which is near the ratio deemed reasonable by experts—1,900 patients per primary care physician.

Still, the distribution of primary care physicians is not even. Cheyenne, Elbert, and Kit Carson counties, located on the Eastern Plains, need three times their current number of primary care physicians to reach the 1,900 residents-to-primary care physician benchmark. More urban and populous regions, including Denver, Boulder, and Broomfield counties, tend to have relatively high primary care capacity.

While Colorado ranks fairly well overall in primary care capacity, demand for services in the state, and nationally, is on the rise. Experts cite several reasons for this increase, including an aging population, the increasing prevalence of chronic conditions, reduced financial barriers to care due to health reforms, and system-induced demand, which is generated by practitioners referring

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patients for further tests, procedures, and follow-up visits.

Greater demand is creating competition for talent. Many of today's primary care physicians are heading into retirement, but their ranks are not being filled by enough recent graduates, who increasingly opt for more lucrative specialties. This creates a challenge to recruit and retain primary care physicians, particularly in rural and underserved areas of the state.

Nurse Practitioners

Nurse practitioners (NPs), one type of advanced practice registered nurses (APRNs), represent the fastest-growing segment of the health care workforce, both in Colorado and nationwide.

The number of APRNs licensed in Colorado has nearly doubled in recent years, from just over 2,500 in 2000 to 4,521 in 2015. Looking specifically at NPs, the number has increased 40.1% in the past seven years, from 2,433 in 2008 to 3,408 in 2015. Between 2014 and 2015, a total of 266 new NPs obtained a license to practice in Colorado.

In addition to the general requirements to become a registered nurse, NPs complete advanced coursework and clinical education that qualifies them to provide more direct patient care, including diagnosing symptoms, ordering treatments, and making referrals.

APRNs can also obtain a prescriptive authority license depending on the laws and requirements of the state in which they practice. Prescriptive authority enables APRNs to prescribe drugs and medical devices and services without collaborating with a physician.

More than half the APRNs in Colorado—2,832—hold a prescriptive authority license. This number is expected to increase following the passage of 2015 legislation easing the requirements. The new law permits APRNs to prescribe medication after completing 1,000 hours of training under a physician or another APRN who has prescriptive authority and at least three years of clinical experience. Prior to the new law, the time requirement had been 3,600 hours, and mentors had to be physicians.

An expanded APRN workforce with the ability to prescribe medication, make referrals, and diagnose ailments has the potential to alleviate both Colorado's primary care shortages in underserved communities and regional disparities in access to care.

Physician Assistants

While physician assistants (PAs) account for a smaller portion of the health care workforce, their numbers are growing. Nearly 40% of PAs practice in a primary care setting.

Colorado has 2,473 licensed PAs in 2015, an increase of 62 from 2014. PAs provide some of the same services as physicians, but are supervised by physicians and paid less, which could result in lower costs for some health services

Registered Nurses

Based on Colorado Health Institute's analysis of Colorado Department of Regulatory Affairs data, Colorado has 59,305 licensed registered nurses (RNs), which translates to 1,090 RNs for every 100,000 residents. However, despite a 35.8% increase in licensed RNs since 2006, a nursing shortage could be on the horizon.

More than 30% of Colorado's RNs are older than 55, approaching their retirement years at a time when demand for nurses continues to increase. The Colorado Department of Labor and Employment estimates that employment of RNs will grow nearly 20% by 2022, which is faster than the average growth rate for all occupations

Long-Term Services and Supports Workforce

Colorado is on the brink of a senior tsunami. The number of residents age 65 and older is projected to increase by more than 50% between 2015 and 2025—from 714,464 residents to more than 1.1 million, with that level of growth expected to continue in the decades to follow.

As many as 70% of these older residents—or 771,894 Coloradans in 2025—will require long-term services and supports (LTSS) care at some point. These trends are driving demand for more direct care providers, including home health aides, personal care aides, and nursing and medical assistants.

Colorado's direct care LTSS workforce includes nearly 50,000 people who are employed in home, community-based, or residential care settings according to the Paraprofessional Health Care Institute. This includes 14,133 home health aides; 18,841 nursing aides, orderlies, and attendants; and 13,819 personal care aides in Colorado.

However, nearly 70,000 additional direct care workers will be needed by 2020 to meet the LTSS demand, which would constitute a 48% increase in direct care worker jobs in just 10 years. This would translate to an additional 9,196 home health aides (up to 23,329 by 2020); 4,728 more nursing aides, orderlies, and attendants (up to 23,569); and 8,507 more personal care aides (up to 22,326).

While there is increasing demand for direct care workers, these jobs are difficult to fill. Nursing assistants, medical assistants, and personal care aides often earn just a few dollars above the state minimum wage in Colorado. These are relatively low-skill jobs that are open to those without advanced training who are interested in working in health care.

Oral Health Care Providers

Colorado is working to expand the capacity of its oral health workforce. This includes dentists, dental hygienists, and dental assistants, as well as primary care providers who have received special training to perform certain oral health services.

Colorado has 3,747 licensed dentists in 2015, down from 3,880 in 2014. The Colorado Department of Public Health and Environment estimates that Colorado needs an additional 87 dentists to meet the need for dental care in underserved areas of the state.

Colorado's 3,612 licensed dental hygienists can provide many services without the supervision of a dentist, including routine checkups and cleanings and the application of dental sealants and topical fluorides. This ability to practice independently can increase access to preventive oral health care.

Colorado is working to expand the capacity of dental hygienists. In the 2015 session, the Colorado General Assembly passed House Bill 15-1309, which allows qualified dental hygienists to place a temporary filling on a tooth under supervision through a teledentistry model.

Little data are available on how many dental assistants work in Colorado because they are not licensed separately. The duties and responsibilities of dental assistants in Colorado are outlined in the Dental Practice Act. These tasks include gathering information about a patient's history, conducting oral inspections, and providing preventive care, such as applying fluoride or other topical agents. Dental assistants can only perform these and other tasks under the indirect supervision of a licensed dentist.

Outside of the traditional oral health workforce, some primary care physicians are able to provide preventive services to children after receiving special training. Colorado Medicaid reimburses for such services as fluoride varnishes and screenings.

Behavioral Health Workers

The behavioral health workforce—psychologists, social workers, marriage and family therapists, professional counselors, addiction counselors, and others—continues to grow.

The Colorado Health Institute's analysis of Colorado Department of Regulatory Affairs data reveals that Colorado added more than 100 licensed psychologists between 2014 and 2015, reaching 2,479. Colorado also added 300 actively licensed clinical social workers for a total of 4,257. The number of marriage and family therapists increased from 618 in 2014 to 692 in 2015. The number of licensed professional counselors grew from 4,777 to 5,265, and the number of certified addiction counselors rose from 3,115 to 3,474 over that same time period.

Still, there is unmet demand for behavioral health care and a shortage of providers, particularly in Colorado's rural communities and among children, minorities, and non-English speakers.

As Colorado moves toward new integrated care models that incorporate physical and behavioral health, demand for behavioral health practitioners will continue to grow.

With support from the State Innovation Model grant, Colorado is working to provide access to integrated primary and behavioral health care for at least 80% of the state's residents by 2019. Achieving this goal will require reconsidering how and where behavioral health services can be provided, along with the roles that various providers serve on integrated care teams.

Hospitals

Colorado hospitals are significant contributors to the state's economy, employing thousands of people in communities throughout the state each year. A March 2015 report from the American Hospital Association (AHA) found that Colorado hospitals employed 75,129 individuals in 2013. As employers, Colorado hospitals also provided $5.3 billion in payroll and benefits that year. The report also found that spending by both hospitals and their employees helped support an additional 177,357 nonhospital jobs in the state. In rural parts of Colorado, hospitals are often the largest employers in communities.

Additional economic contributions that are often overlooked include the following:

- Colorado hospitals contributed $21.6 billion to the Colorado economy in 2013, which includes calculations for compensation, facilities, spin-off jobs, and other parameters. This figure represents 7.4% of the state's total employment supported by hospital employment.
- During the recent recession, Colorado's hospitals did not experience the depth of job losses that affected many other industries.
- Average annual employee compensation at Colorado hospitals is fair and competitive.
- Hospitals provide a variety of stable job opportunities to workers regardless of education level—from physicians with graduate degrees and advanced training to service and maintenance workers with high school diplomas.

In the PPACA environment, many assumed hospitals would have difficulty navigating these new waters of expanded coverage where financial incentives and increase regulations drive usage to alternative venues. However, for the third consecutive year, Denver area hospital systems have continued to increase their profit margins according to *The Colorado Health Market Review* (2015), despite a decline of occupancy rates from 69.2% in 2008 to 63.5% in 2014.

Joining the metropolitan Denver hospital systems in January 2018 is the new Veterans Affairs Medical Center in Aurora. A final contract was awarded to finish this controversial replacement hospital that will serve more than 400,000 veterans in Colorado and neighboring states. The new 184 bed hospital is a collection of a dozen buildings located on the Anschutz Medical Campus.

Total costs of this medical complex is expected to reach $1.7 billion, significantly above the earlier $604 million construction target. Cited reasons for the gap include multiple design changes, a new complex contracting process, repeated delays, and inadequate planning.

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Rural hospitals face unique challenges as many are the single source of care in their communities. They continually struggle to attract and retain medical staff especially physicians. Patients in rural areas tend to be sicker, older, and have a lower income than their counterparts in urban areas. Rural hospitals that have fewer resources do not always have the opportunity to participate in arrangements that tie hospital payments to the quality of the care delivered.

Yet, Colorado rural hospitals are seeking innovative ways to deliver improved quality of care and lower costs. As reported in Hospitals and Health Networks (January 2015), Yuma District Hospital in 2013 received the patient-centered medical home (PCMH) certification from the National Committee for Quality Assurance. With help from the Commonwealth Fund and a group of Colorado safety net clinics, the hospital was able to create care transition teams made up of physicians, nurses, and patient navigators to guide patients through their care plans. Patient satisfaction is up, and hospital admissions are down. Still, rural hospitals worry how this shift to value-based reimbursements will impact them—especially those independent hospitals that are not affiliated with a hospital system.

Free-Standing Emergency Departments

Free-standing emergency departments (EDs), fueled by an increasing demand for emergency services, have been called "private practice for emergency care." Free-standing EDs are operated by physicians or by hospitals. They offer an opportunity to serve a variety of communities, build their brand, and grow revenue.

Independent free-standing EDs (not affiliated with hospital systems) provide 24-hour care from common ailments to more severe conditions such as heart attacks. For nonemergent care, visits can often run 5 to 10 times the cost of a typical visit to an urgent care center or doctor's office. Independent EDs do not usually bill for public insurance (e.g., Medicaid and Medicare) because they typically are not affiliated with a sanctioned Medicare hospital. Therefore, public insured patents are responsible for incurred charges in these situations.

Free-standing EDs are locating closer to where potential patients live and work for convenience. Many are situated in suburban areas with growing populations, high incomes, and commercial insurance coverage. The *Denver Post* reported ("Free-standing ERs abound in affluent Colorado neighborhoods," September 15, 2015) that in the Denver metropolitan area 16 community clinic/emergency facilities have been built in the suburbs but just 2 in the city of Denver. Many of these facilities are within a few minutes of each other.

Colorado, like many states in the west, does not require a certificate of need to build a new hospital building, thereby allowing hospitals to compete for patients. Legislation sponsored by Senator Irene Aguilar, Denver Democrat, failed in 2014 to limit the rapid growth of free-standing EDs.

The fear is that patients receiving expensive bills for services that could have been handled in a lower acuity venue will drive higher costs in the overall health system. Patients pay large copayments for services received, and insurance companies and public payers pay the remaining costs, which, in turn, increases costs and medical premiums.

Colorado's Safety Net Centers

As of 2014, a total of 10 of Colorado's community health centers had received PPACA New Access Point grants that support new sites that operate full time providing comprehensive primary care services, oral health care, and behavioral health care to underserved and vulnerable populations. Coloradans who are most likely to use the safety net are low-income, uninsured, or underinsured, as well as those with public health insurance. Some Colorado communities have multiple safety net clinics, others have none.

Since Colorado's recent expansion of Medicaid, the landscape has changed for the state's safety net clinics. Safety net clinics might be either federally funded or community funded. They may provide physician medical, mental, or oral health care, or any combination of the three. Average monthly Medicaid enrollment has increased by 60% since Medicaid's expansion in 2014. Nearly one in five Coloradans is now enrolled in Medicaid. Many Colorado safety net clinics are seeing more patients, particularly more patients with insurance.

Safety nets have been forced to change their processes due to the increased accountabilities that come along with those who are insured. More back office staff has been required, and the demand for primary care providers has increased. At least one clinic that previously only accepted the uninsured now offers free services to those having difficulty finding adequate care.

Safety net clinics also provide coordinated, integrated care and patient navigation. Many patients struggle to understand how to use their new benefits appropriately. Additionally, there is more demand for specialty appointments. These were always scarce and are more so now.

Once clinics have managed the current challenges, they will need to reassess their communities' needs. The decline in uninsured patients may prompt clinics to shift their outreach approach to focus on vulnerable populations that may be insured but still face barriers to care such as language, culture, and lack of transportation. One thing has not changed: safety net clinics continue to be front-line providers for patients who have trouble finding care.

Other Trends

Effect of Rising Health Premiums

According to the 2014 *Medical Expenditure Panel Survey* compiled by the Agency for Healthcare Research and Quality, between 2003 and 2014 employer-sponsored premiums for all types of coverage increased substantially. Premiums grew by 67.5% for single coverage ($3,481 to $5,832), 73.1% for employee-plus-one coverage ($6,647 to $11,503), and 80.1% for family coverage ($9,249 to $16,655). These increases represented average annual growth rates of 4.8% for single coverage, 5.1% for employee-plus-one coverage, and 5.5% for family coverage. The percentage paid by employees did not change in 2014 from 2013; however, the increases in overall premiums resulted in employees paying an additional 5% for their medical premium share.

Colorado's experience is similar to overall national results. In 2015, according to Lockton's Colorado Employer Benefits Survey, employers estimated merit pay increases of approximately 2.7%; however, medical premium increases are expected to be 5.3% (after plan changes). Seventy-nine percent of employers indicated they would pass on at least some percentage of the premium increase to their employees in the form of higher premiums and reduced benefits, thus diluting the merit pay increase. This may result in more employees waiving medical coverage due to cost and a perceived lower value of the benefit. For 2016, merit pay and medical premium increases are anticipated to be similar or slightly higher than 2015.

For small group employers and individual purchasers, the statewide average increase in premiums is forecast to be 7% higher in 2016 than in 2015. Specifically for individual plans, the statewide average increase is 9.8% while for small group plans it is 3.2%. The rise in individual premiums may prove burdensome for those who are presently uninsured and considering coverage and for those wishing to continue their coverage. For example, the average monthly premium in Colorado for a bronze-level plan in 2015, after tax credits, is $127. CHAS reported that nearly half of uninsured Coloradans are only willing to pay up to $99 a month for coverage.

A challenging trend to note with the expansion of insurance is the increase of underinsurance. Colorado and the nation are seeing an increase in the rate of people who have coverage but their out-of-pocket medical financial responsibilities requires 10% or more of their annual income. Nearly 16% of Coloradans are now underinsured. This may result from those having plans with low premiums but high deductibles and cost sharing. Recent data from CHAS suggest that Medicaid and CHP+ underinsurance grew the most. Still, Coloradans with individual insurance have the highest rate of underinsurance. Young adults, rural residents, and low-income earners are also more likely to be underinsured.

A broad economic impact for employer labor costs, especially for retail, hospitality, and seasonal workers, is the PPACA-mandated "pay or play" insurance coverage for workers who work more than 30 hours per week. Many employers in these sectors have not provided health insurance coverage in the past. Due to this rule, two divergent scenarios will emerge: either employers will reduce hours for part-time workers and increase the number of persons employed, or they may offer insurance coverage to these workers and employ fewer persons as the cost of labor is now greater. The business impact, not yet fully understood, varies with each company depending on the size of its workforce, its industry sector, and the type of insurance it provided (or did not provide) in the past.

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Education and Health Services

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Pharmacy

Trend rates for prescription drug coverage are expected to be significantly higher in 2016.

Price inflation for prescription drugs and hospital stays are the overwhelming driver of cost increases, especially for prescription drugs, where trend is approaching double digits (9.8%), well above the current Consumer Price Index for all goods and services. "Whether it is new high-tech surgical or diagnostic procedures replacing lower-cost options, or extremely high-cost specialty biotech drugs growing in popularity, plan sponsors still face significant challenges to manage medical plan cost trends to more sustainable long-term levels," commented Edward Kaplan, National Health Practice Leader at The Segal Group. "Plan sponsors have already put cost-management strategies, such as adding narrower provider networks and using specialty pharmacy management, into place."

Top trends facing pharmacies in 2015, according to *Drug Store News*, include:

- Generic drug prices are recording nearly double-digit growth mostly because of specialty drugs and price inflation.
- Consumers and their physicians are embracing technologies that monitor many physical conditions (e.g., heart rate, medication adherence, motion). The Center for Intelligent Maintenance Systems puts the market for wearable devices at a minimum of $6 billion by 2016.
- Specialty and biotech drugs have high price tags and an increasing share of the pharmaceutical market. The sustainability of the drug-cost paradigm is in question. "By 2019 or 2020, specialty drugs are expected to represent 50% of plan sponsors' overall drug spend," Express Scripts reported ("Rx trends 2015: Specialty drug costs," *Drug Store News*, January 21, 2015). Medicaid is certainly not equipped to handle these high drug costs.
- Specialty oncology medications account for the single-most expensive therapeutic class of pharmaceuticals. Those specialty drugs used for treating autoimmune diseases have significantly increased.

The role of pharmacists is changing. More and more unmet demand for primary care providers, along with advances in diagnostic technology, have led to a changing role for pharmacists. Pharmacists can easily swab a patient's cheek and send the sample to a lab for a nearly instant diagnosis of most diseases. Pharmacists are accessible, engaged, and willing to take on the challenge of frontline health service. Their scope of practice is expanding as it is for NPs and PAs.

Telemedicine

As consumers continue to absorb the increasing costs of health care premiums and cost-sharing payments in the form of copays, coinsurance, and deductibles, they are demanding easy and convenient access to necessary health services. Public and private insurers are continuing their efforts to optimize the use of expensive emergency department and hospital services to lower expenses. Providers want to deliver affordable and high-quality care to their patients. The emerging use of telehealth services may be one tool to achieve these goals.

Telehealth allows patients and health care providers to connect via information technology over short or long distances. In addition to clinical care, it can also include related education, public health, and health administration type services. Telehealth services are delivered by computers, tablets, smartphones, Internet broadband services, videoconferencing, and wireless communication. Common uses of telehealth are video consultations, transmission of medical information, and remote observations using mobile equipment of patient vital signs (e.g., blood pressure and blood sugar levels).

According to a 2014 brief prepared by the Colorado Health Institute, nearly 200 hospitals, clinics, and behavioral health centers in underserved and rural areas have received financial support to connect securely with

Internet broadband through the Colorado Telehealth Network (CTN) since its launch in 2008. These systems are connecting Front Range medical specialists with care providers and patients across Colorado and neighboring states. Efforts are underway to double capacity by 2018, including offering this service to Medicaid clients.

Literature suggests that telehealth can increase access to high-quality care yet there is no demonstrated consensus around its cost-saving potential. Barriers to the adoption of telehealth include the lack of influence in most provider's daily clinical practices, expensive technology startup costs, and reimbursement and regulatory issues.

Conclusion

Controlling health care costs and finding value in health care continues to be of increasing interest for policymakers as state and national health reform represents a significant advancement in the number of covered lives among uninsured Americans. To remain economically competitive, the state's health system must continually evolve to support the growing number of individuals with insurance coverage, our aging population, and residents' health status so that Coloradans continue to lead full and productive lives.

Having health insurance does not always guarantee that an individual will have access to needed health care. Recruitment and retention of the right composition of health care professionals is key in building an efficient and effective health care delivery system. Workforce recruitment will need to address personnel shortages in sectors defined by practice type as well as by geography in order to ensure adequate coverage. Steering new health care workers into high-need positions presents a special challenge. Potential shortages will require continually reassessing what level of health professional is best suited for particular tasks. It will be important to understand the proper and appropriate roles for the full spectrum of health care workers. The health care sector is expected to continue adding workers to meet demand.

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Leisure and Hospitality

Overview

This report reviews trends in key sectors that are the primary economic drivers for Colorado's robust and dynamic tourism industry: conventions and meetings, hotels, restaurants, gaming, skiing, and outdoor recreation. The analysis reviews the infrastructure, events and marketing activities that have shaped the industry in 2015 and looks ahead to the challenges and opportunities that will steer future growth. The Leisure and Hospitality Supersector includes performing arts, entertainment, sports, recreation, accommodations, and food services used by Colorado residents, tourists, and business travelers.

The Leisure and Hospitality industry accounts for more than one in eight jobs in Colorado. The industry was one of the first to add jobs following the recession, and 2015 marks six years of consecutive employment growth. Leisure and Hospitality saw a 3.9% increase in jobs in 2014. The industry is expected to finish 2015 with 311,400 jobs (3.6% growth), and grow to 320,400 jobs in 2016.

National Trends in the Tourism Industry

At the Travel and Tourism Research Association's annual Travel Outlook Forum held in Philadelphia October 2015, Adam Sacks, president of Tourism Economics, reported the U.S. economy will see continued growth with GDP expected to increase by 2.6% in 2016. Travel in 2015 has been enjoying an unprecedented performance, supported by strong corporate earnings, buoyant consumer confidence, and a healthy labor market—all resulting in an increase double the pace of growth in GDP in 2015. Typically, travel growth mirrors growth in GDP, and this is expected in 2016, with domestic travel growth strong and international more modest. Negative factors are the strong dollar, recessions in key emerging markets, a slowdown in China, and financial market volatility. While these factors are concerns, the solid fundamentals in the U.S. economy will sustain economic growth.

Other forum highlights include:

- An executive roundtable focused on current and potential opportunities and challenges faced by travel marketers. Key developments are the impact of falling gas prices that will put an additional $1,000 per household in consumer pockets. A strong dollar will encourage U.S. travel and discourage international visitors. The sharing economy will continue its remarkable growth. Millennials continue to be a growing travel market.
- The U.S. Department of Commerce projects international travel to the United States will continue to experience growth through 2020 based on the National Travel and Tourism Office's 2015 Fall Travel Forecast. Visitor volume in 2015 is expected to end the year up 0.4% to produce a record of 75.3 million visitors who stay one or more nights in the United States. Building on this growth, an increase of 2.6% is anticipated in 2016 for a new volume record, 77.3 million visitors. According to the forecast, the United States will see 0.4%–4.2% annual growth rates in visitor volume over the 2015–2020 timeframe. By 2020, this growth will record 90.3 million visitors, a 20% increase and more than 15 million additional visitors compared to 2014. The latest forecast produces a compound annual growth rate of 3.1% over the forecast period.
- Arun Sundararajan, New York University, spoke on the "Sharing Economy," describing how the current wave of digital innovation is altering how travelers experience familiar services such as short-term accommodations (airbnb, onefinestay),

LEISURE AND HOSPITALITY EMPLOYMENT
2007–2016
(In Thousands)

Year	Arts, Entertainment, and Recreation	Accommodation	Food Services	Total Accommodation and Food Services[a]	Total Leisure and Hospitality[a]
2007	44.6	41.7	184.1	225.8	270.4
2008	45.7	42.3	184.9	227.3	272.9
2009	44.6	39.9	178.0	217.9	262.4
2010	44.7	39.5	178.8	218.3	263.0
2011	45.6	41.0	184.8	225.8	271.4
2012	46.5	41.8	191.4	233.2	279.7
2013	47.3	42.8	199.3	242.1	289.4
2014	49.2	43.8	207.8	251.5	300.7
2015[b]	50.9	45.3	215.1	260.4	311.4
2016[c]	52.7	46.7	221.1	267.8	320.4

[a]Due to rounding, the sum of the individual items may not equal the total. [b]Estimated. [c]Forecast.

Sources: Colorado Department of Labor and Employment and Colorado Business Economic Outlook Committee.

point-to-point urban transportation (Uber, Lyft), and car rental. An array of new marketplaces are creating a wide variety of new consumption experiences. Uber and Airbnb are billion-dollar companies impacting the marketplace.

- Carter Wilson, STR Analytics, provided a very optimistic hotel industry outlook. The industry had a record year in 2015, and growth is expected to continue in 2016. The STR forecast for 2015 calls for supply to increase 1.2%; occupancy, 1.7%; average daily rate (ADR), 5.1%; and revenue per available room (RevPar), 6.8%. The 2016 forecast expects supply to increase 1.4%; demand, 2.2%, occupancy, 0.8%; ADR, 5.2%; and RevPar, 6%.

Tourism in Colorado

There are two basic tenets in marketing destinations at the state level. First, it is really difficult to get people to visit places they do not want to go. And second, you can be guaranteed one thing: if you do not invite people, they are not coming.

Regarding the first, Colorado is in the enviable position of being one of the top "aspirational destinations" in the country, with 21% of Americans indicating they were interested in visiting the state in 2015. Colorado is truly a destination that people want to visit. As reported in *Portrait of American Travelers* (MMGY Global/Harrison Group 2015), people ranked Colorado high among all 50 states, behind only California (39%), Florida (39%), Hawaii (31%), and New York (28%) when asked "Where do you want to visit?" Furthermore, this list of top aspirational destinations clearly defines Colorado's competitive set—it is not among other western states but is broader domestically. In fact, the percentages of people indicating that they were interested in visiting other western states include: Nevada (19%), Washington and Arizona (18% each), Oregon (12%), New Mexico (10%), Wyoming and Utah (8% each), and Idaho (6%).

Colorado Tourism Highlights

With the above indicators in mind, Colorado's tourism industry has experienced four consecutive years of record-setting performance according to marketing and public opinion research firm Longwoods International's *Colorado Travel Year 2014*. Total trips in 2014 jumped to 71.3 million, a 7% increase over 2013 and the highest total reported. Overnight trips in 2014 were up 8% compared to 2013, totaling 33.6 million stays. Furthermore, according to *Colorado Travel Impacts 1996–2014p* conducted by Dean Runyan Associates, direct travel spending totaled a record $18.6 billion, up 7.4% over 2013, with commercial lodging generating about 64% of all spending. In addition, $1.1 billion in state and local taxes were created in 2014 from visitor spending, surpassing the billion-dollar mark for the first time, which equates to approximately $860 in tax revenue per household in the state.

In addition, the Colorado Tourism Office's (CTO) marketing efforts have generated the highest number of incremental trips, visitor spending, and return on investment (ROI).

- The 2014 marketing effort generated over 1.7 million incremental trips and $2.6 billion in visitor spending.
- Every dollar invested returned $361 in visitor spending.

In terms of the future, the CTO will continue the same research efforts that have helped shape its marketing campaigns and report results. Anecdotally, informal queries of the industry by CTO board, committee members, and others indicate that visitation statewide during summer 2015 surpassed that of 2014.

Colorado Tourism Challenges

Regarding the second tenet, "inviting people" is the main purpose of any state-level destination marketing program. This positions and maintains Colorado as a preferred vacation destination on consumer "shopping lists" and is accomplished by creating as many "ad aware households" nationally as possible within a given budget. Even with CTO's great success over the past four years, Colorado's marketing campaign reaches only 29% of domestic households (32.9 million of 113.4 million total U.S. households), highlighting the fact that deeper household penetration nationally should be an important goal. However, that effort will require more marketing resources—including a larger budget.

Colorado's $17 million marketing budget is dwarfed by those of the other "aspirational states." According to the Survey of U.S. Tourism Office Budgets by the U.S. Travel Association, budget estimates for California, Florida, Hawaii, and New York range from $60 million–$80 million. The importance of factoring in Colorado's top ranking as an aspirational destination is driven home by the fact that Michigan, with an annual budget in excess of $30 million and probably the most touted state tourism marketing effort in the past five years, is mentioned as a place they would like to visit by only 8% of people.

The significant difference between these budgets and Colorado's marketing resources could be a major factor in what the *Portrait of American Travelers* terms the *opportunity gap*—the difference between those interested in visiting a state and those who actually visit. Colorado has the second-largest opportunity gap of any of the aspirational destinations. Of the 21% of people saying they were interested in visiting Colorado, only 9% actually visited in the last two years. Arguably, Colorado's comparatively modest marketing budget is a major contributor to the state's significant opportunity gap.

Tourism and Conventions in Denver 2014–15

Denver had its best tourism year ever in 2014, and trends show that 2015 is on pace to be another strong year for both conventions and leisure tourism.

Longwoods International indicated that in 2014 (the latest figures available) Denver had a record 15.4 million overnight visitors, an increase of 10% from 2013 and

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exceeding national growth of 3%. Travel spending grew 15%, to a record \$4.6 billion. Much of the increase was driven by a 9% climb in "marketable" visitors—those travelers who could travel anywhere but were convinced to come to Denver by marketing efforts.

Denver set a record for lodging tax collections in 2014, with \$75.6 million generated, up 19% from 2013. Through the end of August 2015, lodger's tax collections in Denver were up 10.8%. Since 2005, when Denver voters approved an increase in the lodger's tax would go toward tourism marketing, Denver has seen a 65% increase in leisure visitors. Over the same time period, the rest of the nation has seen only an 18% increase in tourism.

Denver also had a very strong year in 2014 for both conventions held and future bookings. The number of people coming to Denver for conventions and business travel in 2014 was 2.4 million, up 5% over 2013 versus a national business travel increase of only 2% according to Longwoods. Through the end of July 2015, the number of future room bookings totaled 528,072 room nights booked, attracting 286,828 delegates who will spend \$626.7 million. Denver and the Colorado Convention Center (CCC) are both ranked among the top five cities and centers by meeting planners in the latest DestinationMAP (D-MAP, formerly Metropoll) and Watkins studies of meeting planners.

Helped by a strong convention calendar, great snow in the mountains, a number of national and international sporting events, and a summer free of fires and floods, the first three quarters of 2015 were very strong in Denver. According to research firm STR, from 2014 to 2015, hotel occupancy increased from 77.7% to 78.4%, the average room rate climbed from \$123.18 to \$133.35, and RevPar rose from \$95.77 to \$104.60. In 2014, Denver ranked second in the Top 25 Market Cities for largest increases in occupancy and RevPAR. Like much of the world's travel industry, Denver is subject to increased competition and a fluctuating world economy that could impact the industry's performance at any time. Other unknown factors, such as a government shutdown, a drop in oil and gas pricing, and corrections in the stock market, could also have an unexpected impact. However, Denver is experiencing an unprecedented period of great tourism growth.

Tourism Highlights, 2014–15

Some of the top Denver convention and tourism industry stories for 2014–15 include:

- A master plan for expansion and upgrades at the Colorado Convention Center (CCC) was launched in spring 2015 based on a feasibility study conducted by Strategic Advisory Group (SAG) in 2014. The CCC celebrated its 25th anniversary in 2015 and new meeting space, enhanced technological capabilities, and an outdoor terrace will continue to keep the CCC competitive for conventions in the future.
- On November 3, 2015, Denver voters approved ballot measure 2C by a margin of 66% to 34%. The measure extends an existing tax of 1.75% each on hotel stays and car rentals to finance upgrades and expansion at the CCC, as well as the redevelopment of the National Western Center into a year-round event, equestrian, and educational facility that will also be home to the National Western Stock Show.

- The city's tourism product continues to expand. The 112-room Crawford Hotel in the renovated Denver Union Station opened in July 2014, followed by the 140-room Aloft Hotel in December 2014. The 165-room boutique Art Hotel opened in June 2015.
- New exhibitions, such as Mythic Creatures: Dragons, Unicorns & Mermaids at the Denver Museum of Nature & Science; Deborah Butterfield: The Nature of Horses at the Denver Botanic Gardens; and Toys of the '50s, '60s and '70s at History Colorado Center, all helped increase tourist visits as did major sporting events, including the 2015 NCAA Division I Men's Lacrosse quarterfinals, the 2015 MLS All-Star Game, and the USA Pro Challenge.
- This momentum will continue with exhibitions that open in late 2015 or 2016, including Marilyn Minter: Pretty Dirty at the Museum of Contemporary Art; Samurai: Armor from the Ann and Gabriel Barbier-Mueller Collection at the Denver Art Museum; and Chocolate: The Exhibition at the Denver Museum of Nature & Science.
- VISIT DENVER's new Tourist Information Center is outfitted with modern, interactive touch-screen technology and offers a new way to connect with visitors from around the world.
- The new 519-room Westin Denver International Airport opened in November 2015, offering 37,000 square feet of meeting space with direct pedestrian access into the airport terminal. The hotel has easy access to the new commuter rail line scheduled to open in 2016.

Upcoming enhancements to Denver's tourism infrastructure and appeal in 2015 and 2016 include:

- The opening of the rail line between Denver International Airport (DIA) and downtown Denver will create a new, fast, and affordable means for visitors to get downtown and will address one of the chief issues that meeting planners have had with Denver's tourism infrastructure.

- Denver Union Station, which has been lauded nationally and internationally as a model development, will build on its success.
- Innovations in Denver's food and nightlife scene, including the opening of innovative "food halls" like Avanti F&B and The Source, add to the city's appeal. As well, Denver's craft beer market has gained a significant national reputation.
- The Denver Center for Performing Arts, which has become a primary stop for touring Broadway shows, consistently outperforms markets of similar size in terms of attendance.
- The Kirkland Museum of Fine & Decorative Art announced an ambitious new project to relocate to a new facility adjacent to the Denver Art Museum to open in 2017.
- Further bolstering Denver's appeal in 2016 will be the 75th anniversary celebration for Red Rocks Park & Amphitheater, the hosting of a National Hockey League outdoor match between the Colorado Avalanche and the Detroit Red Wings, and the hosting of the NCAA Men's Division I Basketball Tournament rounds one and two.

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Challenges to Denver's Tourism Industry

At the same time Denver is enjoying these successes, competition for tourism and convention business is increasing. New convention facilities were recently completed or just announced for Seattle, San Francisco, and San Diego while the demand for meetings has remained essentially flat.

- Denver continues to add small, luxury boutique hotels downtown that add rooms and character to the hotel package but do not necessarily add room blocks for citywide conventions. This was a principal observation of the SAG Feasibility Study, which suggested that future hotel, large convention development be considered and located as close to the Colorado Convention Center as possible.
- The 16th Street Mall continues to present challenges for residents and visitors alike. While the mall ranks as the number one visitor attraction, it also ranks number one on the complaint list from meeting planners for homelessness and panhandling. In addition to the perception of safety, the physical condition of the mall is deteriorating, with huge gaps in the grouting, chipped pavers, and inadequate lighting. Public consumption of marijuana on the mall is also a concern to visitors and meeting planners. A security action plan for the mall is currently being developed by KPMG, and Gehl Architects is studying the infrastructure and activation of the mall.

Denver Hotel Supply

New and under-construction hotels add to Denver's lodging package for leisure and convention visitors.

- The 140-room Aloft hotel in downtown Denver opened in December 2014, including 4,413 square feet of meeting space.
- The ART, a hotel, a 165-room boutique hotel located in the Golden Triangle arts neighborhood, opened in June 2015.
- A dual-brand HYATT House/Hyatt Place with a combined 361 rooms will open at 14th and Glenarm in November 2015.
- The Westin Denver International Airport is also slated to open in November 2015 with 519 guest rooms. The hotel will have easy access to the new airport commuter rail line scheduled to open in 2016.

The following properties are under construction:

- Opening in late 2016, Hotel Indigo will be a 180-room hotel as part of the Union Tower West mixed-use development project near Denver Union Station.
- A dual-branded AC Hotels/Le Meridien Hotel broke ground in downtown Denver in September 2015. The 491-room development will open in early 2017.
- The Source Hotel, the first hotel in the River North (RiNo) neighborhood, will open in Q1 2017 with 100 rooms adjacent to the revitalized artisan food market, The Source.

Denver Transportation

Denver International Airport

DIA remains the 5th-busiest airport in the United States and is now 17th-busiest in the world, with nearly 1,500 daily flights to more than 170 worldwide destinations. It serves the third-most domestic destinations of any U.S. airport. Air traffic at DIA set a record in 2014, serving nearly 53.5 million passengers and making it the busiest year for passenger traffic in Denver's aviation history. It was also the 7th-consecutive year with more than 50 million passengers. The number of passengers traveling on international flights also set a record for Denver as total international passenger traffic increased by 12% over 2013.

DIA is actively working to increase international air service. Denver currently enjoys nonstop service to Canada and Mexico/Central America, as well as daily flights to London, Frankfurt, and Tokyo and seasonal daily flights to Reykjavik.

DIA received significant accolades in 2015. It was named the eighth-best large airport in the world by Skytrax and was also ranked the eighth-largest "megahub" in the world, a nod to the airport's robust connectivity.

Regional Transportation District

FasTracks is a multibillion dollar transit plan to build 122 miles of new commuter rail and light rail, 18 miles of bus rapid transit, and 21,000 new parking spaces at light rail and bus stations. Downtown Denver's Union Station is a hub for rail lines that branch out to all parts of the metro region. Currently, RTD has 81 miles of rail and bus rapid transit in, or soon-to-be-in, construction, and has invested $4.7 billion in the region.

Current progress includes:

- The A Line, which will offer direct commuter rail service from DIA to Union Station, begins in 2016 with trains leaving every 15 minutes for a 35-minute trip to the heart of downtown.
- In addition to the A Line, three new rail lines will open in 2016: Wheat Ridge, Westminster, and Aurora via I-225. A new North Line to Thornton will open in 2018.
- Commuter bus service from Denver to Boulder on dedicated lanes will also be added in 2016.

Skiing Industry

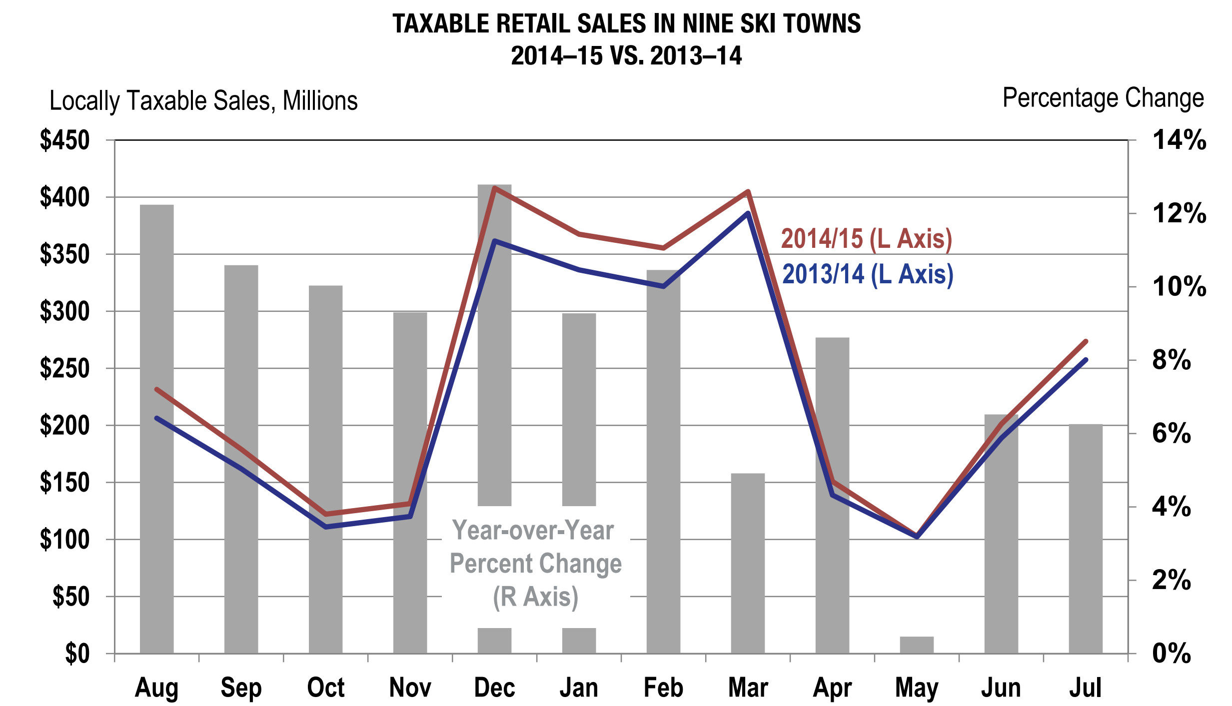
According to the National Ski Areas Association (NSAA), the United States recorded 53.6 million downhill skier and snowboarder visits during the 2014–15 season, down from 56.5 million visits during the 2013–14 season, primarily because of a lack of snow in California and the Pacific Northwest.

By contrast, Colorado's 30 ski areas saw a second-consecutive record of 12.7 million skier/snowboarder visits in the 2014–15 winter season. Visits were up 0.2% from the 2013–14 season. Colorado resorts benefited from well-timed storms that provided consistent snow conditions, as well as a steadily improving state and national economy and robust travel sector generally. Strong season pass sales; a now well-established reputation for reliable, consistent snow conditions relative to the West Coast (which experienced unusually poor snow in winter 2014–15); and the visibility of the sport associated with the 2015 World Alpine Championships in Vail/Beaver Creek, among other factors, likely contributed to the uptick. Visits were up among the economically important out-of-state/international visitor segment, which is a testament to Colorado's reputation for reliable snow conditions.

Colorado continued to maintain its dominance as the leading skiing destination in the United States in 2014–15, capturing 23.7% of total U.S. resort skier visits, far ahead of the next closest state (Vermont at 8.4% share, when historic snows in New England edged out drought-impacted California, at 7.6% share). Colorado was home to 8 of the country's 10 most visited ski resorts in 2014–15, and has 10 of the 20 top-rated ski resorts in western North America (as ranked by the 2016 *SKI Magazine Resort Guide*).

The Colorado ski industry, like the North American resort industry generally, has been characterized by relatively flat to modest visitation growth over the past 10 seasons, with snow conditions and the economy having an important influence on visits and revenues year-to-year. While Colorado maintains a preeminent position within the skiing industry, evolving generational preferences, vigorous competition from ski resorts in other states and from other vacation and leisure options, climate change, and concerns about the impact of congestion and travel delays along the I-70 corridor remain top of mind for those in the Colorado resort industry.

With record visitation in 2014–15, Colorado resorts have strong momentum going into the 2015–16 ski season. Additionally, resorts are likely to benefit from a relatively strong, improving macroeconomic environment (an important influence on visitation, visitor mix, and spend per visitor). Early indicators of business volumes are favorable, including announcements of strong preseason



Note: Includes Aspen, Breckenridge, Crested Butte, Frisco, Snowmass Village, Steamboat Springs, Telluride, Vail, Winter Park.

Source: City of Steamboat Springs Finance Department.

pass sales from leading ski resort companies and new flights adding capacity to mountain airports from key domestic destinations. Resort town lodging bookings for the 2015–16 season, as reported by the firm DestiMetrics, are pacing at a strong but not record-setting pace. A somewhat earlier Easter in 2016 (March 27) than 2015 (April 5) may bolster spring break visitation, although a strong U.S. dollar is expected to impact international visits. Weather remains less predictable as the National Oceanic and Atmospheric Administration's October 14, 2015, climate outlook anticipates a strong El Niño, which can impact the position of the jet stream and exert a potent influence on winter weather in Colorado. Located in between the northern areas projected to be warmer and drier and the southern areas projected to see higher than average precipitation during an El Niño, Colorado and its snow and weather advantage relative to other regions of the country, such as Utah, Wyoming, and California is unknown at this time. Other forecasts predict an average snowfall year for Colorado.

While Colorado's downhill snow sports visits edged up 0.2% in 2014–15 from the prior season, the revenue

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impacts were more dramatic as reflected in the sales tax collections of ski towns. Taxable sales rose by 9% in winter 2014 (November 2014–April 2015) across a selection of nine ski communities. Sales were largely driven by increased spending per visitor, which was, in turn, fueled by growing economic confidence, higher prices for items such as lodging and lift tickets, and a higher-spending visitor mix (including an increased share of out-of-state and foreign visitors in the 2014–15 ski season).

The importance of skiing to the economies of ski resort communities is evident in the seasonality of retail sales. Across the same sample of nine ski communities, the six-month November–April period accounted for 62% of annual taxable sales in the most recently reported 12-month period, with skiing the dominant cause of the winter sales peak. Sales in tourism-impacted sectors exhibit a particularly pronounced winter peak, including lodging, food services and drinking places, retail trade and real estate, and rental and leasing services (e.g., condominium rentals).

The summer period (encompassing May through October) is also important to ski resort communities, accounting for a lower, secondary sales peak in ski towns. The lower summer sales volumes are typically due to a combination of lower spend per visitor and lower volumes of key visitor segments (particularly paid lodging guests as lodging occupancies are typically lower in summer than winter). Nevertheless, growth in summer sales activity has been strong, increasing by 5% across the selected communities in the May–July 2015 period after jumping by 12% in summer 2014 (May–October). Ski resort communities are increasingly looking at summer as a growth opportunity by leveraging a wide variety of activities and offerings and pursuing new types activities as enabled by the 2011 Ski Area Recreational Opportunity Enhancement Act, which allows for more recreational uses on public land.

Parks and Outdoor Recreation

Millions of people each year, both residents and out-of-state visitors, take advantage of Colorado's extraordinary outdoor recreation opportunities. Colorado offers outdoor enthusiasts a variety of recreational pursuits, including hiking, fishing, birding, camping, climbing, hunting, mountain biking, motorized trails, boating, and skiing to name a few. Outdoor recreation represents a significant portion of the Colorado economy. According to a 2013 study by Southwick Associates (*The Economic Contributions of Outdoor Recreation in Colorado: A Regional and County-Level Analysis*), the total economic output associated with outdoor recreation in Colorado was $34.5 billion in 2012, contributing $19.9 billion to the state's GDP.

Public Lands

Public land constitutes more than 45% of Colorado and accounts for the majority of outdoor recreation. The Colorado Division of Parks and Wildlife (CPW) manages 42 state parks throughout the state. State parks are on track to surpass 12.4 million visitors in 2015, an increase of 4%.

In Colorado, the national park system manages four premier national parks, five national monuments, a national historic site, and a national recreation area. These national park lands recorded over 5.8 million visitors in 2015. Additionally, Bureau of Land Management (BLM) lands sees 7 million visitors a year, and U.S. Forest Service lands have more than 25 million visitors per year (skiing accounts for 8.5 million visits), with the White River National Forest accounting for nearly half of all national forest visits in Colorado.

Wildlife-Related Recreation

Wildlife-related recreation continues to be an important part of the state's economy, especially in rural communities, contributing more than $5.1 billion in total economic impact and supporting more than 46,000 jobs. Angling remains a popular pastime in Colorado and is often seen as a gateway to other outdoor activities, such as boating, hiking, and hunting (*The 2014 Colorado Statewide Comprehensive Outdoor Recreation Plan* [SCORP] 2014). The number of people fishing has been stable to slightly increasing over the last several years, and the growth rate should continue for 2015.

Resident and nonresident big game hunters each contribute about $300 million to Colorado's economy each year. Hunting in Colorado has been slowly declining for many years. Although this decline follows national trends, the reasons for Colorado's decline are complex. As big game populations reach population objectives, Colorado Parks and Wildlife issues fewer licenses. However, the numbers of hunters applying for big game hunting licenses in the annual draw/lottery are increasing slightly, indicating that the demand to hunt in Colorado is greater than the supply.

More than 1.1 million people participated in wildlife watching within the state in 2013 (SCORP 2014). Although current estimates are not available, trends show continued growth in wildlife viewing.

Bicycling

Bike participation and the bike tourism industry are growing everywhere, and Colorado is no exception. In September 2015, Governor Hickenlooper announced his Colorado Pedals Project Plan to spend $100 million over the next four years to make Colorado "the best state for biking." The money will be spent on biking infrastructure, including safe routes to schools, paved paths, and mountain bike trails.

Both mountain bike and road bike events attract visitors and economic benefits to communities throughout Colorado. The USA Pro Cycling Challenge is now the largest single spectator event in Colorado. It was responsible for approximately $130 million in direct visitor spending in 2014, and spending for the 2015 event is expected to be about the same. For the 2016 event, the organizers are restructuring and are currently seeking members for a new community investment group to take the place of the previous single-family backers. This change puts the entire 2016 event in question as there will certainly be a learning curve that could result in a smaller scale event or no event at all if the organizers

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Leisure and Hospitality

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COLORADO PUBLIC LAND VISITS
2007–2016
(In Thousands)

	2007	2008	2009	2010	2011	2012	2013	2014	2015[a]	2016[b]
Colorado State Parks[c]	11,300.0	11,800.0	12,000.0	12,300.0	12,300.0	12,200.0	11,500.0	11,900.0	12,500.0	12,300.0
National Parks and Sites										
Bent's Old Fort NHS	24.0	25.0	28.1	29.1	26.8	25.8	23.3	24.6	24.9	24.9
Sand Creek Massacre NHS[d]				4.1	3.9	4.4	4.8	7.4	4.1	4.6
Black Canyon of the Gunnison NP	219.6	160.2	171.5	176.3	168.3	192.6	175.9	183.0	170.9	173.3
Colorado NM	395.3	391.0	400.3	433.6	435.5	454.5	409.4	419.9	452.1	438.4
Curecanti NRA	964.6	1,007.4	953.2	969.5	924.5	862.6	814.2	931.4	934.8	933.1
Dinosaur NM[e]	170.9	149.3	150.9	146.4	158.0	224.1	203.1	185.4	162.5	167.1
Florissant Fossil Beds NM	56.0	57.0	64.3	65.4	61.3	62.6	58.0	63.3	65.6	64.0
Great Sand Dunes NP	285.1	273.9	290.0	283.3	280.1	254.7	242.8	271.8	271.7	276.7
Hovenweep NM[e]	11.6	11.2	12.3	12.1	11.4	11.7	11.0	11.8	11.9	11.8
Mesa Verde NP	541.1	551.4	550.4	559.7	572.3	488.9	460.2	501.6	544.8	540.7
Rocky Mountain NP	2,895.4	2,757.4	2,822.3	2,955.8	3,176.9	3,229.6	2,991.1	3,434.8	3,177.0	3,122.3
Total Visitors to Parks and Sites	5,563.6	5,383.8	5,443.3	5,635.3	5,819.0	5,811.5	5,393.8	6,035.0	5,820.4	5,756.8
Bureau of Land Management	5,516.0	6,000.0	5,576.0	6,448.0	6,844.0	7,310.0	6,963.0	7,536.0	7,019.5	6,839.9
National Forest[f]	24,000.0	24,000.0	24,000.0	27,000.0	27,000.0	27,000.0	27,000.0	27,000.0	27,000.0	27,000.0
Total Public Land Visitation[g]	51,943.2	52,567.6	52,462.6	57,018.6	57,782.0	58,133.2	56,250.4	58,506.1	58,160.2	57,653.6

[a]Estimated. [b]Forecast. [c]42 state parks managed by Colorado Parks and Wildlife. [d]Sand Creek Massacre NHS was dedicated as an official park unit in April 2007.

[e]Dinosaur NM and Hovenweep NM cross into Utah, but the number of visitors reported in this table is only for the Colorado portion of the parks.

[f]Yearly visitor numbers were not available; reported numbers based on limited data.

[g]Due to rounding, the sum of the individual items may not equal the total.

Note: Yucca House National Monument does not report visitations, therefore it is not included.

Definition: NHS = national historic site, NP = national park, NM = national monument, and NRA = national recreation area.

Sources: National Park Service Visitor Use Statistics and Colorado Business Economic Outlook Committee.

cannot adequately fill all the seats on this new investment group.

Opportunities

The outdoor recreation industry will continue to see growth over the next few years. The National Park Service (NPS) is celebrating its centennial during 2015–16. Additionally, the NPS started the Every Kid in a Park Program that gives every fourth-grade student a free annual park pass. Both the centennial celebrations and the Every Kid in a Park Program should draw increased visitation not only to national parks but also to Colorado state parks, local parks, and open spaces, and public land in general. As individuals and families look for affordable and healthy ways to spend their leisure time, the outdoor recreation industry will see an increase in visitor participation.

Casinos

Colorado's casino and gaming industry experienced growth in 2013 and 2014 now that the residual effects of the recession have diminished and customers are more comfortable spending entertainment dollars. New ownership of properties and capital construction projects in Central City and Black Hawk have increased the market to some extent, and Colorado's gaming towns (Black Hawk, Central City, and Cripple Creek) are exploring nongaming amenities to increase visitation. Since the industry is taxed on gross revenues rather than net revenues, the industry continues to honor its commitment to the recipients of gaming tax revenues, such as the state's historic preservation program and the community college network that continue to receive significant revenues. These gaming tax revenues help bolster their budgets and maintain their commitments to preserving Colorado landmarks, as well as assuring students a quality higher education. The gaming tax also continues to fund the entire tourism promotion budget for the CTO, which in previous years has been an average of $15 million but most recently was increased to more than $19 million due to tourism's large return on investment.

For the fiscal year ending in June 2015, Colorado casino adjusted gross proceeds (AGP), which is defined as the amount wagered by bettors less payout from the casinos, were $766.2 million, and gaming taxes paid to the state were $110.1 million. This reflects an increase of 3% in AGP over the fiscal year 2014 AGP of $740.6 million, and a 5% increase in gaming taxes over the fiscal year 2014 taxes of $104.9 million.

Black Hawk continues to dominate the Colorado casino sector with 18 casinos, approximately 8,400 gaming devices, and about 75% of the industry's AGP. Cripple Creek has 12 casinos, roughly 3,800 gaming devices, and 17% of AGP, while Central City has 6 casinos, 1,900 devices, and about 8% of AGP. Both Central City and Cripple Creek have had two casino closings since 2013.

While the gaming industry experienced its largest revenues in August 2015 since the 2008 smoking ban, it remains threatened by the continued attempts to expand gaming to the Front Range, either by authorizing video lottery terminals and keno machines, or instant racing machines at racetracks and other locations. A ballot initiative in November 2014 to allow slot machines at Arapahoe Racetrack lost 71% to 29%. The industry's annual polling on these types of gaming expansion continues to reflect that 75% of state voters oppose casinos located outside the historic towns of Black Hawk, Central City,

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COLORADO CASINOS
CALENDAR YEAR 2007–2016

			Adjusted Gross Proceeds[a] (In Millions)			
Year	Casinos Open	Devices (Thousands)	Black Hawk	Central City	Cripple Creek	Total[b]
2007	43	16.8	581.4	79.8	155.0	816.1
2008	41	16.8	514.8	66.5	140.9	722.2
2009	40	16.1	530.0	64.3	140.4	734.7
2010	40	15.4	559.4	65.7	134.4	759.6
2011	39	14.7	550.8	67.8	131.4	750.1
2012	41	14.9	558.5	74.5	133.1	766.2
2013	40	14.6	553.0	67.5	128.0	748.7
2014	36	14.1	560.5	62.3	123.4	745.8
2015[c]	36	14.1	545.7	58.0	123.0	726.7
2016[d]	36	14.2	550.1	58.0	124.4	732.5

[a]AGP calculated on an annual basis, hence different from the state fiscal year.

[b]Due to rounding, the sum of the individual AGPs may not equal the total.

[c]Estimated. [d]Forecast.

Sources: Colorado Division of Gaming and Colorado Business Economic Outlook Committee.

Note: This table provides calendar year metrics, not fiscal year metrics as reported in the text.

Leisure and Hospitality

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and Cripple Creek. In addition, the recent popularity of sports-betting sites, such as DraftKings and FanDuel, and other forms of convenience gaming may impact casino revenues going forward. However, the Colorado gaming industry continues to work with regulators to stay abreast of new gaming technology, so it can offer its customers the newest and exciting games

Restaurant Industry

Driven by an improving economy and elevated pent-up demand among consumers, Colorado's restaurant industry is again projected to register sales of more than $10 billion in 2016. Colorado Department of Revenue 2014 data show growth of 8% leading to sales exceeding $10.7 billion, and 2015 is expected to see similar numbers.

Leading the growth are restaurants in Northern Colorado, the Denver Metro area, and Boulder with areas in Southern Colorado and the mountain regions growing at a more modest rate.

Nationally, the economy has added more than 12 million jobs since trough of the Great Recession. Colorado has seen nearly 30,000 restaurant and foodservice jobs added during that time. However, despite the steady improvements, consumers appear to have barely noticed.

According to a national survey conducted in September 2015 by ORC International for the National Restaurant Association (NRA), 8 in 10 adults described the current state of the national economy as either "fair" (42%) or "poor" (39%). Sixteen percent of consumers gave the economy a "good" rating, while only 2% said it is in "excellent" condition. It is clear that from the perspective of consumers the economy still has plenty of room for improvement.

With the personal economies of many households trending sideways, it is not surprising that consumer spending has remained generally lackluster during the economic recovery. However, on the aggregate, households are in a much better position than they were in 2010. Debt burdens are lower, jobs are more plentiful, and low gasoline prices continue to leave a few extra dollars in their pocketbooks at the end of the month.

As the economic fundamentals continue to improve, an increasing number of consumers will find themselves on a firmer footing—whether they realize it or not. This bodes well for restaurants. In fact, for the first time on record, national monthly sales at restaurants exceeded grocery store sales in December 2014. This highlights a change in how consumers are spending their money.

One of the brightest spots in the post-recession economy has been an increase in consumer spending at restaurants. Despite the steady sales growth, NRA research indicates that one-half of consumers have yet to get their fill of restaurants. According to a national survey conducted in September 2015 by ORC International for the NRA, 48% of adults say they are not eating on the premises of restaurants as frequently as they would like. Similarly, 50% of consumers say they are not purchasing takeout or delivery as often they would like. This statement relates to both lower-income households and higher-income households.

Along with positive sales growth, the restaurant industry has added jobs at a solid pace since the end of the recession. Although restaurant job growth shows no signs of slowing, there are clear indications that job vacancies are becoming much more difficult to fill.

The average monthly job openings rate in the restaurants and accommodations sector rose to a post-recession high during the first half of 2015 according to Job Openings and Labor Turnover (JOLTS) data from the Bureau of Labor Statistics. End-of-month job openings in the sector averaged 650,000 during the first half of 2015, representing an increase of nearly 70,000 job openings over the first half of 2014.

At the same time, the pace of hiring in the hospitality sector is also on the rise. Restaurants and lodging filled an average of 773,000 positions each month during the first half of 2015, which represented the strongest pace of hiring since 2007.

The recession and its aftermath had a significant impact on the U.S. labor force. The labor force participation rate fell to a 37-year low, with many people who lost jobs deciding not to return to the workforce. Contributing to this decline is the retirement of baby boomers, as well as a growing proportion of teenagers choosing to remain on the sidelines. As the nation's second-largest private-sector employer, the restaurant industry has been directly impacted by these shifting labor demographics.

Today's consumers make lifestyle choices in a "big picture" way and apply those preferences to a wide range of situations, including dining out. As Americans lead ever-busier lives with little leisure time, they want and expect menu options that allow them to adhere to their chosen life philosophies without sacrificing convenience.

Trends to watch in 2016 include an increased focus on food waste reduction tied to sustainability and cost management; hyperlocal sourcing extending further into house-made and artisan items; new twists on pickling and fermenting; integration of more ethnic cuisines and flavors into mainstream menus; and more sophisticated children's meals, both in nutrition and flavor profiles.

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Other Services

The Other Services Supersector comprises establishments that provide services not specifically categorized elsewhere in the classification system. As a result, the three sectors under this category are highly fragmented and diverse. Car washes, beauty salons, religious organizations, funeral homes, grantmaking foundations, and labor unions are some examples of the type of industries in the Other Services Supersector. In 2014, more than 13,000 businesses were classified in Other Services. Industry growth is influenced by the demographics of the population and disposable income. In 2014, Colorado total employment for this supersector was 100,400, a 2.8% increase from the previous year. The supersector is expected to end 2015 with just over 102,000 jobs and add approximately 1,900 in 2016, a 1.9% gain. The improvement is mainly attributable to the increase in jobs from the repair and maintenance subsector.

Repair and Maintenance

The Repair and Maintenance Sector encompasses businesses that provide repair and maintenance services for automotive, commercial machinery, electronic equipment, and household goods. Businesses within this sector continue to face competition from larger retail firms that offer the same services but are outside this category. For example, the Best Buy Geek Squad offers many of the same tech support and repair services that electronic businesses within this sector also provide. Walmart's automotive division provides many of the services offered by the automotive businesses classified in the Other Services Sector. The sector is expected to end 2015 with 24,400 total jobs, up 3.8% from the previous year. The improvement is from continual demand for repair and maintenance for cars purchased during the past few years.

Personal and Laundry Services

Industries in the Personal and Laundry Services Sector are vastly diverse. They include firms that provide services such as hair, nail, and skin care; death care (i.e., funeral homes and cemeteries); dry cleaning (including coin-operated); pet care (except veterinary); photofinishing; and parking lots. Industry growth in this sector is based on changes in population and income. The sector grew 3.7% in 2014 and is expected to continue to improve in 2015. The increase is from continual demand for personal services, such as pet amenities and salons. In addition, an aging population provides an expanding customer base for many of these services.

Religious, Grantmaking, Civic Professional and Similar Organizations

The Religious, Grantmaking, Civic Professional and Similar Organizations Sector is the largest industry in Other Services, employing more than 50% of the supersector's workforce. The sector includes organizations that provide religious and grantmaking services. In addition, social advocacy and political organizations are also categorized under this sector. As a result, employment in this sector increases in election years because political campaigns hire more workers. In 2014, the sector added 900 jobs, relatively flat from the previous year. It is expected to grow by 1% in 2015 mainly from jobs added for the midterm elections. The sector is expected to increase 1.6% in 2016. ✤

Contributor: Louis Pino, Colorado Legislative Council

OTHER SERVICES EMPLOYMENT, 2007–2016
(In Thousands)

Year	Repair and Maintenance Services	Personal and Laundry Services	Religious, Grantmaking, Civic, Professional, and Similar Organizations	Total
2007	22.7	23.0	47.3	92.9
2008	22.7	23.6	48.6	94.8
2009	21.5	22.6	49.6	93.7
2010	21.4	22.2	48.9	92.4
2011	21.6	22.6	49.4	93.7
2012	22.0	23.2	50.8	96.0
2013	22.5	24.1	51.1	97.7
2014	23.5	25.0	52.0	100.4
2015[a]	24.4	25.1	52.5	102.0
2016[b]	25.1	25.5	53.3	103.9

[a]Estimated. [b]Forecast.

Note: Due to rounding, the sum of the individual items may not equal the total.

Sources: Colorado Department of Labor and Employment, and Colorado Business Economic Outlook Committee.

Government

The Government Supersector includes federal, state, and local workers and is the second-largest provider of jobs in Colorado, representing roughly one in six jobs. Government activities include a variety of services ranging from space research and technology to public safety, program administration, and education.

In 2014, Government employment in Colorado increased 1.1%, to 408,000, representing 60% local government (including K–12 education), 27% state government (including higher education), and 13% federal government. Government employment is expected to increase 1.6%, to 414,700, in 2015, then rise 0.9%, to 418,200, in 2016.

Government employment is impacted by a variety of factors. The biggest impact on federal government employment has been the federal budget that has impacted the budgets of federal agencies, national laboratories, and the military. The federal budget is expected to continue to restrain federal government employment growth over the next couple of years. State government employment growth will be impacted by a tight state budget environment. Despite healthy revenue growth from sales and income taxes, the state faces a tight budget situation because of several constitutional and statutory requirements. The state is required to refund excess revenue to taxpayers, and caseload growth in existing programs limits the amount of money available for other government programs. Local government employment has largely recovered from the Great Recession and is expected to grow at about the same rate as the state population. Higher property values will relieve some of the pressure on school district budgets, allowing them to continue adding staff over the next couple years.

Federal Government

The U.S. Government Accountability Office's Federal Fiscal Outlook Report and the Congressional Budget Office's (CBO's) 2015 Long-Term Fiscal Outlook provide similar conclusions that there is a continued need to inform near-term budget decisions with the projections that the United States will face unsustainable federal debt levels by 2040. Under current law federal debt will reach 100% of GDP in 25 years and "would have significant negative consequences for the economy in the long-term and would impose significant constraints on future budget policy." As the CBO states, "the sooner significant deficit reduction was implemented, the smaller the government's accumulated debt would be; the smaller the policy changes would need to be to achieve the chosen goal; and the less uncertainty there would be about what policies might be adopted."

Over the next 25 years, spending is projected to grow by more than 50% as a share of GDP and revenue is projected to remain relatively flat. The two main drivers of this imbalance are the retirement of baby boomers who will increasingly live longer and will continue to rely on

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GOVERNMENT EMPLOYMENT IN COLORADO
2007–2016
(In Thousands)

Government Sector	2007	2008	2009	2010	2011	2012	2013	2014[a]	2015[b]	2016[c]
Federal	52.1	52.4	53.5	56.2	54.9	54.6	53.6	52.6	53.2	53.6
State	84.7	87.8	90.7	93.0	95.4	97.6	107.8	109.4	111.5	112.2
State General	31.3	32.4	32.6	32.7	33.2	34.0	42.7	43.2	43.5	43.8
State Education	53.4	55.4	58.1	60.3	62.2	63.6	65.1	66.2	68.0	68.4
Local	237.8	244.0	246.3	244.7	242.6	242.6	242.3	246.0	250.0	252.3
Local General	115.4	118.9	119.2	117.9	116.5	117.2	115.1	116.4	118.2	118.8
Local Education	122.4	125.1	127.1	126.8	126.1	125.4	127.2	129.6	131.8	133.5
Government	374.7	384.1	390.5	393.8	392.9	394.8	403.7	408.0	414.7	418.2

[a]Revised. [b]Estimated. [c]Forecast.

Note: Due to rounding, the sum of the individual components of government may not equal the total.

Government

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federal programs, such as Social Security, Medicare and Medicaid, and the increased costs of major health care programs that are forecast to increase from 4.8% of GDP now to 8.1% by 2040. During this period, the number of people age 65 and older is projected to increase from 46 million in 2014 to 82 million in 2040.

The required increase in revenues or reductions in spending needed to stabilize debt at current levels over the 75-year fiscal gap may require some combination of a 27% reduction in noninterest spending and a 37% increase in revenues. Therefore, delaying decisions will only raise the possibility of slower economic growth, underfunding critical public investment, reducing policymakers' flexibility in responding to national emergencies, more severe fiscal crises, and a reduction in average inflation-adjusted income per capita by as much as $6,000. By 2022, interest costs on the debt could surpass current federal spending on R&D infrastructure and education combined.

The federal government remains one of Colorado's largest employers. More than 52,000 civilian employees work at over 250 federal field offices and a diverse mix of Department of Defense (DOD) military installations that employ more than 74,000 active duty military personnel plus military contractors.

The 2011 Budget Control Act (BCA) and the subsequent Bipartisan Budget Act (BBA) of 2013 will continue to hold federal employment relatively flat in 2016, while reducing funding levels in Colorado for research institutions and laboratories and limiting many public service programs. As a result, federal employment is projected to remain relatively unchanged in Colorado with the possibility of a less than 1% increase in 2016. Nationwide federal employment should also remain relatively stable but generational workforce shifts may begin resulting in an increase in overall federal employment as higher-paid baby boomers retire and are replaced with lower-wage millennials. The beginning of this generational shift in the federal workforce will begin to test the ability of federal agencies to successfully implement succession policy plans that address this generational transition in order to attract and retain highly qualified federal workers in Colorado and around the nation as the baby boomer generation continues to move into retirement.

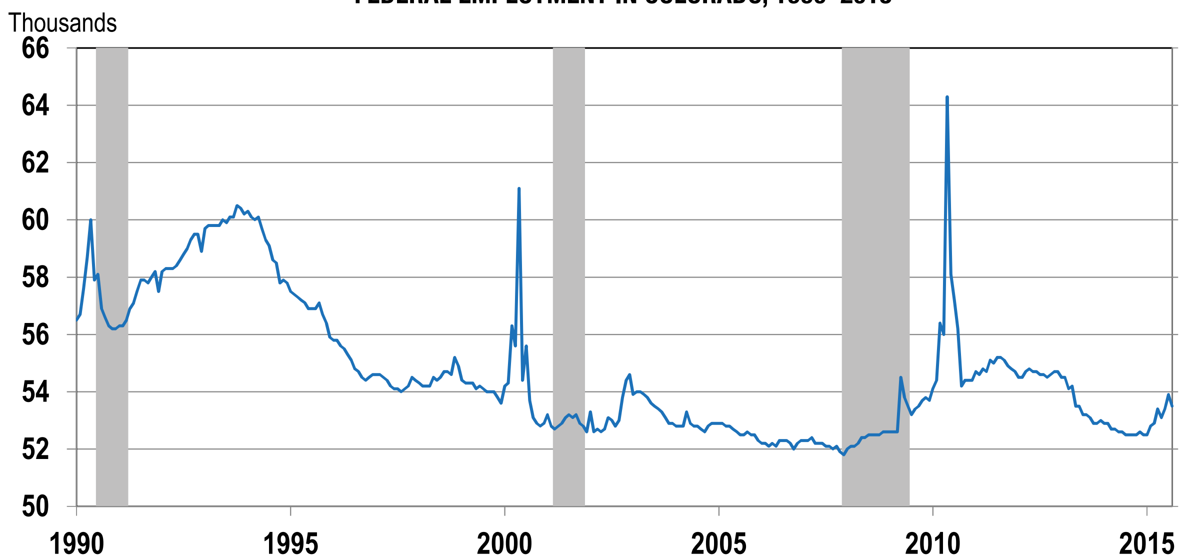
As of October 1, 2013, the 2011 BCA requires the federal government to reduce spending by $109.3 billion in FY 2014—half from defense programs and half from nondefense spending. In December 2013, the BBA of 2013 made additional changes to the mandated sequestration. It set new caps that keep defense and nondefense discretionary levels basically flat from FY 2014 through FY 2016. The act also extended the mandatory sequester for two years, through FY 2023. In 2016, the BCA caps for defense will rise from $521 billion to $523 billion, a continuation of the nominal freeze for the base budget. While unlikely, under BCA there is the possibility for sequester to be triggered.

Due to sequestration, the DOD—the largest federal agency in Colorado—is anticipating a 15% reduction in the military and civilian workforce over the next decade. Although it is trying to absorb the cuts through retirements and attrition, the DOD may have to resort to reductions in the workforce and buyouts.

Similar to the DOD, the U.S. Postal Service continues to face significant financial challenges, including shrinking revenues due to declining mail volume. The agency's financial difficulties are partially the product of reduced demand; it has experienced a nearly 22% drop in mail volume during the past decade. As a result, agencies are trimming their hours and reducing or eliminating some services.

Although not immune to sequestration, federally funded science and research centers located in the state continue

FEDERAL EMPLOYMENT IN COLORADO, 1990–2015



Source: Bureau of Labor Statistics, Current Employment Statistics. Data through September 2015. Shading represents recessions.

to generate significant employment and economic impacts. Colorado has 30 federal laboratories—one of the highest concentrations of federally funded science and research centers in the nation. These laboratories employ nearly 7,970 direct workers who earn a total of $787.2 million in wages and benefits and generate more than $2.3 billion annual economic impact to Colorado. The labs also contribute greatly to the state's high-tech industries, stimulating significant tech-transfer opportunities for higher education and area companies in critical areas such as renewable energy, space science, and natural resource management.

State Government

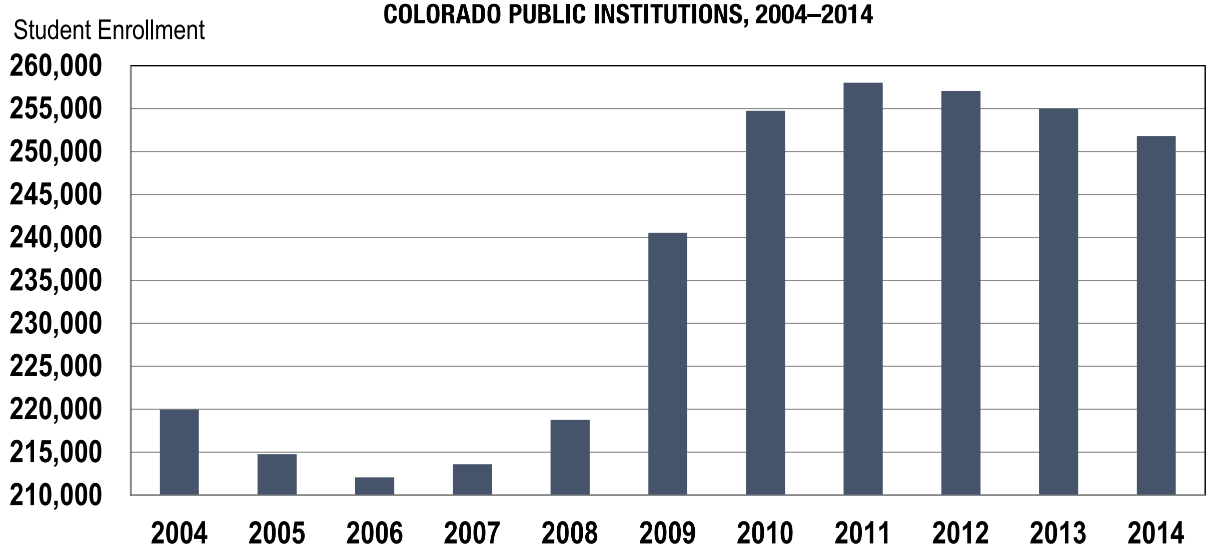
State government employment growth in Colorado has followed very stable trends over the past decade, slowing substantially only during the Great Recession as falling tax revenue sharply limited state resources. Although revenue growth following the recession has allowed state employment to steadily increase, constitutional spending restraint will put pressure on the state budget in the next few years. Dramatic growth in state government employment statistics in 2013 was largely the result of a change in the way that certain employees were classified and does not reflect actual state payroll growth.

State government employment for Colorado in 2013 grew substantially, though the large majority of this growth was the result of two large hospital employers moving to the University of Colorado hospital system. Formerly, one of the two was a private hospital system and the other was owned by a local government. The resulting reclassification of the employees at each system caused more than 8,000 employees to be counted under state government employment rather than under other industries as had been the case previously. In 2014, state government employment grew 1.1%.

Although growing state revenues have supported hiring growth since 2011, specific elements of Colorado law restrict the amount of revenue the state can retain and thus will limit the rate of state government hiring in coming years. A unique provision of the Colorado Constitution, referred to as the Taxpayer Bill of Rights (TABOR), specifies a limit on the amount of revenue that can be collected and retained by Colorado governments. The cap on revenue collections is allowed to grow each year by no more than the sum of the rates of Colorado's population growth and inflation. The state exceeded the cap on spending in FY 2014–15, meaning $145.0 million will be returned to taxpayers. In addition, a $200.0 million transfer is expected for transportation. This refund obligation and transportation spending will limit the budget flexibility of the general assembly and the amount of money available for other government services in upcoming budget years.

State government employment, excluding higher education, is expected to increase nearly 0.8%, with 43,500 jobs added in 2015. State government employment is anticipated to average 43,800 per month in 2016, a growth rate of 0.8%.

HIGHER EDUCATION ENROLLMENT LEVELS IN ALL COLORADO PUBLIC INSTITUTIONS, 2004–2014



Source: Colorado Department of Higher Education.

Higher Education

Employment in Colorado's higher education accounts for slightly more than 60% of total state government employment. These workers include both part-time and full-time faculty and nonfaculty staff. Employment in the state's higher education increased 1.7% in 2014, showing modest growth from the prior year. State higher education employment is anticipated to rise 2.7% in 2015 and 0.6% in 2016.

Higher education enrollment is countercyclical, meaning more students attend school when it is difficult for them to find jobs. During the recession, enrollment growth at public institutions of higher education reached 9.1% in the 2009–10 school year and higher education employment increased 4.9%. The growth rate for higher education enrollment has backed off those highs, and has decreased for the past three school years. Because of

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Government

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a healthy labor market, enrollment in higher education is expected to moderate over the next few years.

Colorado's higher education system includes 31 public institutions of higher education, 354 private occupational schools, and 103 degree-granting private colleges and religious training institution. The 51,323 degrees or certificates awarded by these institutions during the 2013–14 academic year represented a 2.6% increase over the prior year. Of the degrees earned, 47% were bachelor's, 19.3% were certificates, 16.2% were associate's, and 17.5% were graduate.

Local Government

General

Local governments generally derive their revenues from property taxes, sales and use taxes, fees, and intergovernmental sources. More than 3,000 local governments in Colorado provide a variety of services through counties, school districts, special districts, cities, and towns. Their powers and duties are defined by state law and range in authority from overseeing K–12 education, maintaining park programs, providing public safety, serving judicial functions, and regulating land use. State and federal governments transfer various revenues to local governments, such as state-collected highway revenues derived from gas tax and motor vehicle registration fees that are transferred to counties and municipalities. A state-run lottery returns net proceeds back to parks and recreation districts for open space and recreation improvements. The most significant state-funded program, the School Finance Act, annually appropriates state revenues to public school districts. The majority of revenue available to local governments is collected locally in Colorado through property and sales and use taxes. Although the availability of federal and state grant funding continues to decline, local governments in Colorado apply for grants if the program's purpose and conditions fit local government needs and priorities.

The most significant source of local revenue for cities and counties is sales and use taxes. Sales tax collections have rebounded since the recession, which has helped local governments improve their fiscal health. Despite growth in recent years, the sales tax base has been eroding because households spend a larger portion of their income on services and purchases from outside of Colorado. Sales taxes are generally not collected on catalog and Internet purchases, which reduce the revenue available to local governments.

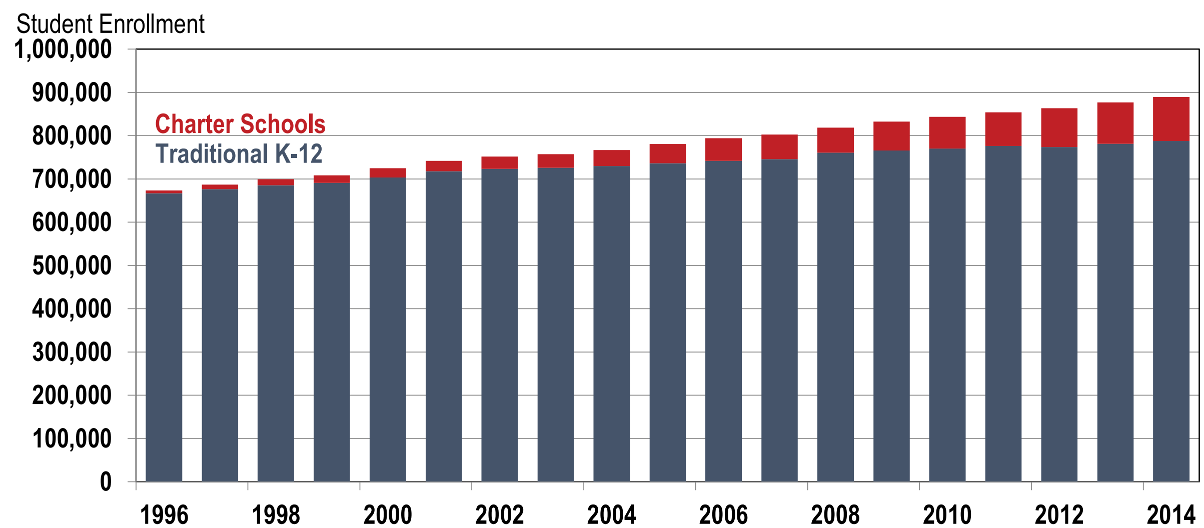
Property tax collections are a primary source of revenue for counties and many special districts in Colorado. Changes to the assessed valuation of property can increase or decrease the revenues raised from each jurisdiction's property taxes. Based on recent home price appreciation, statewide property tax revenue will increase over the next couple of years. However, the recovery in market values has varied significantly among taxing jurisdictions across the state. Appreciation in residential values in the Front Range and mountain regions in the state have seen double-digit growth while the western and southern regions of the state have not seen as much appreciation. In the northern part of the state appreciation in the value of residential property will buffer the declining value of oil and gas property.

Local government employment increased 1.5% between 2013 and 2014, which is the first time growth has been above 1% since the recession. In 2015, local government employment is expected to increase 1.6%, to 118,200, and grow 1.6% in 2016.

Education

More than half of local government employees in Colorado are teachers or staff in public K–12 education. Two factors that impact K–12 employment are the number of students and the amount of funding.

PUBLIC SCHOOL ENROLLMENT, 1996–2014



Source: Colorado Department of Education.

The number of K–12 students increased 1.4% between the 2013–14 and the 2014–15 school years, to 888,767 students. These students include attendance at both traditional K–12 and charter schools. Charter schools are semi-autonomous public schools operated by a group of parents, teachers, and/or community members that operate under a contract with the local school board. In the past 10 years, charter school enrollment has increased 161.5% while total public school enrollment has increased 16.4%.

Another factor in determining local government employment growth is the level of available funding. In Colorado, two large components of school funding are property taxes and the state general fund. While there are still areas of Colorado that have not recovered from the Great Recession, residential property values are above the peak values reached before the housing bubble. State general fund revenue is used to pay for the state portion of education funding, but other constitutional spending requirements are limiting the amount of state support for local schools.

The number of public and charter school students is expected to continue increasing, which means that demand will increase for school faculty and staff. An improving revenue outlook will allow school districts the finances to make those hires. As a result of these trends, local government education employment will grow 1.7% in 2015 and 1.3% in 2016.

In 2015, the Colorado State Supreme Court upheld the state's use of the negative factor in the school funding formula. Passed in 2000, Amendment 23 requires that base per pupil funding for education increase at the rate of inflation each year. The funding consists of two components, *base* and *factor*. Base funding is applied evenly to all pupils, while factor adjusts per pupil funding by variables such as district size and cost of living. Positive factors would increase per pupil funding; negative factors would decrease per pupil funding. During the recession, the general assembly introduced the negative factor as a way to balance the budget and meet the Amendment 23 growth requirement. The negative factor was challenged in court, and if it were overturned, the state would be required to spend more on K–12 education over current levels. The legislature passed the budget with a negative factor of $855.2 million in FY 2015–16.

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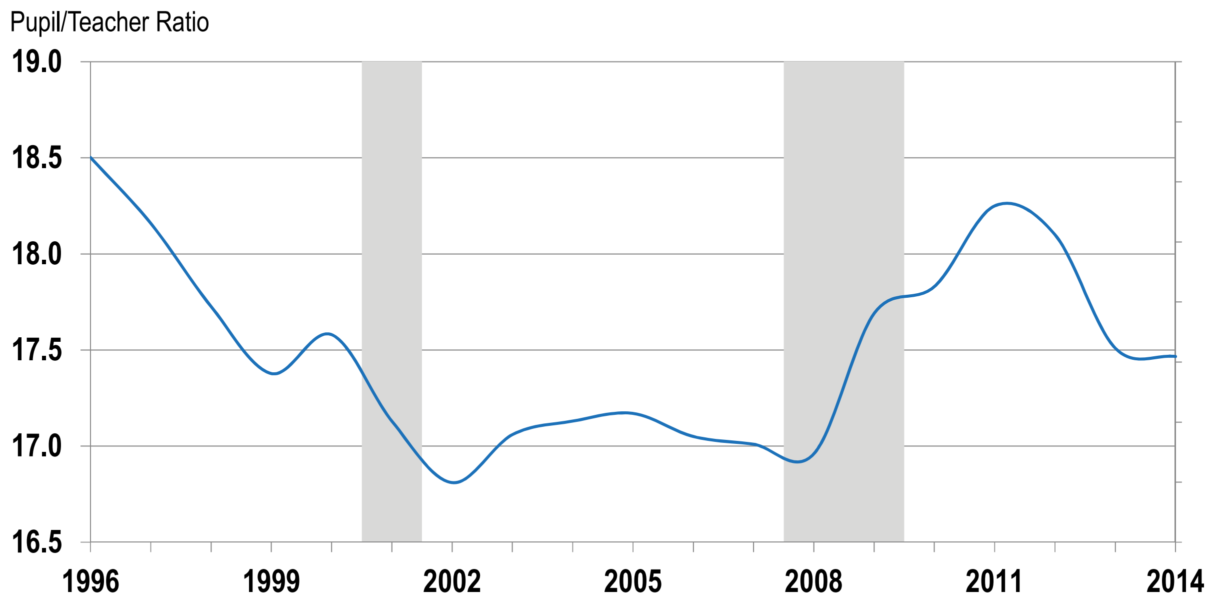
PUPIL/TEACHER FTE RATIO, 1996–2014



Source: Colorado Department of Education.

International Trade

Overview

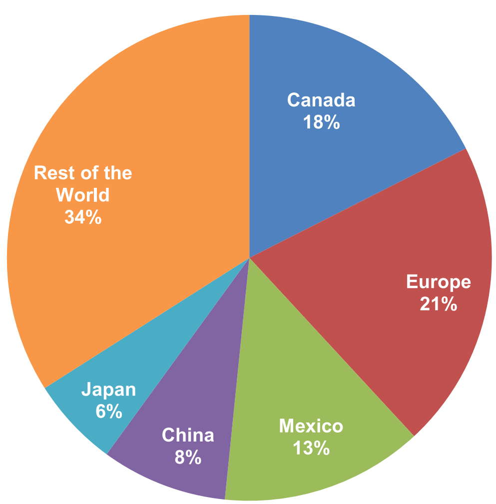
With the dollar hitting its highest mark in over a decade, 2015 will be the first time in five years that U.S. exports have decreased year-over-year. The year-to-date numbers show a decrease of 6% as of September, with most of that occurring in Q3. Hardest hit were large capital purchases, which saw a sharp drop due to the overall investment and production cycles. The data are tracked at the point of shipping, not at the time the order was placed. Many larger pieces of equipment have a production cycle of six to eight months, so the items shipping at the middle of the year were purchased in late 2014. This downward trend should continue and become even more pronounced as 2016 begins. Another industry that was hard hit was energy. Coal mines throughout the county have been forced to scale back or shutdown all together due to regulations that have closed coal-fired energy plants across the country. Increased regulation has also led to less competitive prices and lower inventory levels that have resulted in a decrease of nationwide exports by nearly 32%. As of late 2015, the only top 10 export products in the United States that are seeing increases are pharmaceuticals and aircrafts.

The strong dollar is not only an indication of how well the U.S. economy is doing, but also a reflection of the struggles experienced on a global scale. Sanctions between Russia and Europe have weakened many European countries, and this trend is expected to continue into 2016. The Asian markets, and in particular China, are growing at a slower rate than expected, and Canada is in the midst of a recession.

After decreasing in 2013, U.S. imports increased by 3% in 2014 and are expected to continue to rise in 2015 and into 2016. The strong dollar, coupled with low interest rates and companies that have a stock pile of cash, could lead to continued import growth and an increase in the trade deficit to record highs.

The cost of oil has driven down the import totals for fuels, but the difference has been offset in large part by increases in machinery, equipment, vehicles, optics, small electronics, and pharmaceuticals imports.

COLORADO EXPORT MARKETS SEPTEMBER 2015 YTD



Source: World Institute for Strategic Economic Research (WISERTrade).

TRADE WEIGHTED U.S. DOLLAR, 2000–15

Source: Board of Governors of the Federal Reserve System, Broad Dollar Index.

In general, the state of Colorado appears to be experiencing similar results to that of the rest of the country.

Export Performance

Year to-date in September, Colorado's exports are down 1.3%; this is after dropping in 2014 by 2.4%. However, when fuels are removed from the equation, the state is down in 2015 by 0.24% and in 2014 by only 0.84%. Looking at the numbers without fuels paints a clearer picture of the state of Colorado's exports.

Colorado's largest exports are optical components, industrial machinery, and electrical machinery. The state experienced a large spike in 2012 and 2013 in those categories—much higher than that of the rest of the country. In 2014, industrial exports fell by 18%, but they experienced a slight uptick in 2015. Optical also tailed off in 2014 by 11%. In 2015, the drop is far less pronounced, sitting around 5%. For optical, this is unusual as U.S. exports are only down 0.7% over that same period. This demonstrates a potential weakness in this sector that is critical to the state—it still ranks as Colorado's No. 1 export.

Pharmaceuticals and organic chemicals have recovered nicely, showing a 44% and 31% increase year-to-date over 2014. Organic chemicals exports were down in 2014, by 12%, after climbing 20% in 2013. The industry seems to be strengthening. Pharmaceuticals were down in 2013 by 30%, but recovered in 2014, by 15%.

Of particular note, as mines have shut down and resources have shifted, previously smaller categories are on the rise. Cement, finished leather goods, rubbers, and other chemicals have filled the void and have contributed nicely to the state's overall numbers. This diversification is a good sign for Colorado businesses, and should lead to sustainable growth and economic health for the state.

TOP 20 COLORADO EXPORTS
2012–2015 YTD
(In Millions of Dollars)

Description	2012	2013	2014	Sept 2015 YTD
Optic, Photo Etc, Medic Or Surgical Instrments Etc	$1,425	$1,490	$1,327	$961
Industrial Machinery, Including Computers	1,565	1,480	1,209	923
Electric Machinery Etc; Sound Equip; Tv Equip; Pts	1,141	1,126	1,140	870
Meat And Edible Meat Offal	887	914	1,012	648
Photographic Or Cinematographic Goods	281	310	326	240
Raw Hides And Skins (No Furskins) And Leather	208	247	278	172
Aircraft, Spacecraft, And Parts Thereof	179	291	247	148
Organic Chemicals	152	182	159	134
Plastics And Articles Thereof	174	171	193	132
Pharmaceutical Products	137	95	110	127
Vehicles, Except Railway Or Tramway, And Parts Etc	116	141	196	124
Aluminum And Articles Thereof	107	114	93	113
Articles Of Iron Or Steel	212	198	178	109
Ores, Slag And Ash	137	162	165	105
Miscellaneous Chemical Products	79	83	85	86
Beverages, Spirits And Vinegar	12	31	81	83
Art Of Stone, Plaster, Cement, Asbestos, Mica Etc.	61	68	80	77
Leather Art; Saddlery Etc; Handbags Etc; Gut Art	59	73	84	68
Furniture; Bedding Etc; Lamps Nesoi Etc; Prefab Bd	48	64	98	67
Dairy Prods; Birds Eggs; Honey; Ed Animal Pr Nesoi	59	83	82	60
Total Top 20 Commodities	7,039	7,325	7,143	5,245
All Others	1,132	1,221	1,194	852
Total All Commodities	$8,170	$8,546	$8,337	$6,097

Source: World Institute for Strategic Economic Research (WISERTrade).

Colorado Agricultural Exports

Food and agriculture exports have been a remarkable success story for Colorado this past decade, tripling in value over this time frame. Exports reached a record $2 billion in 2014. Colorado's top five export markets are Canada, Mexico, Japan, Korea, and China.

For 2015, exports are down approximately 10% across the agriculture sector, and this is attributed in the main to the strong value of the dollar and exchange rates. This is hurting Colorado's ability to compete globally. The standout that is bucking the trend is the beverage sector that continues to enjoy robust growth despite the rise in prices for U.S. product.

Looking ahead, the state's slowed exports situation should ease when the dollar eventually peaks and begins to drop off. In addition, if ratified, the Trans-Pacific Partnership (TTP) would provide a boost to agriculture exports. For example, beef, which is Colorado's largest export, would benefit as tariffs to Japan would be slashed.

Trade issues and barriers continue to hurt growth in the following areas:

continued on page 106

International Trade

continued from page 105

MAJOR DESTINATIONS FOR COLORADO EXPORTS OF MANUFACTURED GOODS, MINERALS, AND AGRICULTURAL PRODUCTS 2010–2014 (In Millions of Dollars)

Country	2010	2011	2012	2013	2014	Percentage of Total
Canada	$1,659.4	$1,540.6	$2,000.3	$2,062.9	$1,640.6	19.7%
Mexico	589.8	755.0	849.1	917.3	1,068.2	12.8
China	558.4	636.8	675.9	658.6	654.8	7.9
Japan	318.1	393.3	426.5	441.5	509.4	6.1
Netherlands	331.4	316.5	279.7	304.5	341.1	4.1
Malaysia	175.2	208.6	223.7	274.3	337.1	4.0
Korea, Republic Of	200.9	225.8	266.2	340.6	335.0	4.0
Hong Kong	139.2	174.3	233.0	250.6	258.8	3.1
Germany	320.7	315.0	281.8	240.0	253.6	3.0
Switzerland	185.7	241.5	245.4	329.0	234.4	2.8
United Kingdom	212.5	247.6	204.7	211.1	222.3	2.7
Belgium	140.6	131.4	136.9	171.1	207.8	2.5
Philippines	210.9	222.4	191.4	195.7	200.0	2.4
Taiwan	156.1	180.7	144.2	182.5	191.0	2.3
Brazil	123.8	105.7	172.2	185.1	167.4	2.0
Australia	160.5	179.3	171.6	181.2	167.4	2.0
France	121.0	142.0	155.5	150.8	145.8	1.7
United Arab Emirates	37.5	58.3	72.3	74.4	99.0	1.2
India	102.1	119.1	119.0	111.7	88.5	1.1
Singapore	100.5	104.9	91.9	88.1	83.9	1.0
Total Top 20 Countries	5,844.2	6,298.7	6,941.4	7,370.8	7,206.2	86.4
All Other Countries	882.3	1,039.5	1,228.7	1,174.8	1,131.1	13.6
Total All Countries	$6,726.5	$7,338.2	$8,170.1	$8,545.6	$8,337.3	100.0%

Source: World Institute for Strategic Economic Research (WISERTrade).

- **Produce:** Despite the ongoing litigation in Mexico courts to deny access for fresh potatoes to all of Mexico, Colorado growers and shippers now supply some 65% of U.S. fresh potatoes entering the 26 km free trade zone along the border. Colorado growers and shippers have significant upside if the legal disputes can be settled allowing for greater market access.
- **Beef:** Access to the China market for U.S. beef is still denied. The country of origin labeling (COOL) issue, if not resolved, could impact trade with Canada and Mexico.
- **Dairy:** Canada has quotas for dairy that are prohibitive. It also has quotas on poultry and eggs. Even if TPP is implemented, there is very little give from Canada in these commodities.

Import Performance

Colorado's imports increased 5% in 2014, which is higher than the rest of the country. This is due to increased capital investment by many companies that are purchasing larger pieces of equipment. Industrial and electrical machinery imports are up 26% on the year. Another large contributor is the meat industry. Meat imports have more than doubled in order to combat the shortages. Meat imports are 4.5% of the total increase of imports in 2014. This trend should continue into 2015 with the onset of disease in the region.

The state has also increased imports of burning fuels. After dropping by 14% in 2013, imports increased by 5% in 2014.

Other categories seeing large increases are rubber, aircraft, vehicles, leather goods, and plastics. It is curious that many of these categories also have the highest export increases. This demonstrates a healthy economy as companies are either importing product to offset the need for additional capacity for the domestic market, or they are importing raw materials that are then re-exported.

International Students in Colorado

Colorado saw the largest increase in years in the number of international students enrolling in the state's colleges and universities. In the 2014–15 academic year, institutions of higher education reported 10,800 international students, a 12.3% increase from the previous year according to the Institute of International Education's annual *Open Doors Report on International Educational Exchange.*

The growth in the number of students enrolling in Colorado institutions was greater than the national growth rate of 10%. The leading countries of origin for students coming to Colorado are China (29.5%), India (12.4%), Saudi Arabia (11.6%), Brazil (4%), and South Korea (3.2%). For the United States as a whole, the top countries of origin are China, India, South Korea, Saudi Arabia, and Canada.

International student expenditures in Colorado totaled an estimated $352 million for 2014–15 according to an economic impact analysis conducted annually by the organization NAFSA: Association of International Educators. This figure takes into account tuition, fees, and living expenses and subtracts U.S. support provided to students.

The largest number of international students was reported by the University of Colorado Boulder (with 2,614 students), Colorado State University, the University of Denver, the University of Colorado Denver, and the Colorado School of Mines. Many of Colorado's institutions of higher education and English language schools are working together under the state's StudyColorado initiative to market Colorado as a higher education destination. That effort, together with the institutions' individual recruiting efforts and an overall increase in student mobility, are expected to lead to continued increases in international students enrolling in higher education in Colorado.

The number of Colorado students studying abroad has similarly continued to climb, though at a slightly slower rate. More than 5,350 Colorado students studied outside the United States in 2013–14 (data for students studying abroad lag other data by a year). This number represents a 6% increase over the prior academic year. Colorado students who choose to study abroad cite preparation for the increasingly globalized economy as a key benefit.

Projections

The year 2016 will be an interesting one for not only Colorado but the nation. Exports should continue to drop, which will eventually lead to the decreased value of the dollar. Companies are currently investing in equipment and automation while the dollar is strong, so the United States should be well positioned to recapture lost exports when things normalize. The dollar is expected to remain strong heading into the Q2 2016, then weaken a bit at the beginning of Q3. Of concern will be the Asian markets, Russia, and continued depressed oil prices.

Some catalysts that may arise are the TTP (agreed to on October 5, 2015) and the Transatlantic Trade and Investment Partnership (TTIP), which may or may not be approved. Both of these agreements should benefit foreign companies and U.S. consumers as import/export numbers are more closely tied to the exchange rate than to a trade agreement. ✤

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INTERNATIONAL STUDENT ENROLLMENT AT SELECT COLORADO INSTITUTIONS

Institution	2010-11	2011-12	2012-13	2013-14	2014-15	Percentage Change
University of Colorado Boulder	1,553	1,681	1,910	2,163	2,614	20.9%
Colorado State University	1,216	1,352	1,598	1,793	2,148	19.8%
University of Denver	1,250	1,430	1,590	1,617	1,690	4.5%
University of Colorado Denver	940	1,116	1,348	1,457	1,463	0.4%
Colorado School of Mines	570	652	660	767	823	7.3%

Sources: Institute of International Education and Colorado School of Mines.

Summary

Job growth peaked in Colorado in 2014, with 78,900 additional jobs in the state, resulting in the best year of employment growth since 2000 in both absolute and percentage change (3.3%). Employment growth continued in 2015, albeit at a slightly slower pace—70,200 jobs, 2.8% growth. The forecast for 2016 includes 65,100 jobs, or 2.6% growth, as the state faces labor force and infrastructure constraints.

Beginning in 2012, Colorado has recorded employment growth not seen since the tech boom years leading up to the 2001 recession.

Continuing a long-term trend, Colorado will add more services jobs in 2015 and 2016 than goods-producing jobs. However, the pace of growth in goods-producing industries has collectively outpaced services post-recession, growing more than 22% from 2010 through 2015 compared to 13% for services.

The goods-producing sectors will increase their employment base in 2016.

Agriculture—Gross farm revenue will decrease faster than expenses in 2016, leaving farmers with the lowest net farm income since 1997 under the auspices of commodity price declines.

Construction—Household formation continues to exceed the growth in housing units in Colorado, adding fuel to the construction industry and to home prices. Coupled with growth in nonresidential and infrastructure construction, Colorado is poised to record the second-highest value of Construction on the books in nominal (not inflation-adjusted) terms, increasing 10% year-over-year. Industry employment is forecasted to increase 6.4% in 2016, leaving the industry 4.5% below peak levels recorded in 2007.

Manufacturing—Following a decade of decline, employment is expected to increase for the sixth-consecutive year in 2016, growing 1.6% compared to 2.7% growth in 2015. A decrease in exports is cited as a drag on industry growth. Most industry growth will come in durable goods.

Natural Resources and Mining—Colorado ranks seventh as an energy producer, with abundant oil, natural gas, and coal. Other resources, such as molybdenum, uranium, and aggregates, lead the state to have the fifth-highest number of industry workers nationally. Total value of production declined from record levels in 2014, mostly due to lower oil and natural gas prices. The industry should see a modest increase in value in 2016 on more stable pricing; however, employment will decrease 4.2%.

The outlook for services employment shows growth in nearly every sector in 2015.

Education and Health Services—Private education and health care services are expected to add 10,900 jobs in 2015, demonstrating resilience both during and after the recession. Most of the growth will be in health care, driven by population growth, accessibility, and demographic shift.

ESTIMATED NET JOBS CREATED IN NONAGRICULTURAL WAGE AND SALARY EMPLOYMENT SECTORS 2005–2016 (In Thousands)

Sector	2005-2015[a]	2014[a]	2015[b]	2016[c]
Natural Resources and Mining	13.9	3.3	-2.8	-1.3
Construction	-9.5	14.8	8.2	9.7
Manufacturing	-8.1	3.8	3.7	2.2
Total Goods Producing	*-3.7*	*21.9*	*9.1*	*10.6*
Trade, Transportation, and Utilities	31.0	11.6	12.2	10.8
Information	-6.8	0.1	0.2	0.3
Financial Activities	-1.2	2.3	4.0	2.6
Professional and Business Services	78.6	12.6	12.3	15.5
Education and Health Services	87.5	12.1	13.3	10.9
Leisure and Hospitality	53.9	11.3	10.7	9.0
Other Services	13.5	2.7	1.6	1.9
Government	52.1	4.3	6.7	3.5
Total Services Producing	*308.7*	*57.0*	*61.1*	*54.5*
Total Jobs Created[c]	305.0	78.9	70.2	65.1

[a]Revised. [b]Estimated. [c]Forecast.

Sources: Colorado Department of Labor and Employment and Colorado Business Economic Outlook Committees.

Professional and Business Services—This industry will record the most employment growth in 2016, increasing by 15,500 jobs, as an expanding economy lends demand for core industry services. The industry is building on gains in the Professional, Scientific, and Technical Services subsectors related to Colorado's high-tech industries and research institutions. The state records a 33% higher concentration of Professional, Scientific, and Technical Services Sector employment than the nation.

Trade, Transportation, and Utilities—TTU employment is anticipated to increase by 10,800 in 2016, with retail trade contributing more than half to industry growth on the basis of a stronger economy and healthier consumers. Retail sales are anticipated to rise 5.6% in 2015.

Leisure and Hospitality—Colorado's tourism industry will continue to grow in 2016, building on greater capacity in hotels and convention centers, and positive early signals for skier visits, gaming proceeds, and visits to Colorado public lands. This sector expects growth of 9,000 jobs in 2016.

Government—Government employment will increase modestly in 2016, growing 0.8%, with the greatest gains in local (K–12) education and the weakest growth in federal government employment. Local government finances show greater stability due to rising property values (property taxes) and increased consumption (sales and use taxes). State finances have also been increasing with population growth and economic expansion, but are dampened by TABOR revenue limits.

Financial Activities—The Financial Activities Sector will grow in 2016 on the foundation of an improving overall economy that supports more banking, insurance, and real estate employment. The industry is projected to add 2,600 jobs in 2016, mostly in banking.

Information—The industry turned the corner in 2014, with modest growth in telecom, broadcasting, and film that barely offset losses in the publishing sector. The industry will record modest gains in both 2015 and 2016. Industry GDP continues to climb on productivity gains.

The following observations summarize the thoughts of committee members for 2016:

National and International

- Weak commodity prices will have repercussions on agriculture and natural resources industries, but will continue to lend a boost to consumers.
- A partially slowing global economy poses risks to U.S. and Colorado exports in 2016.
- U.S. GDP growth will likely remain below 3% in 2016.
- The reversal of Fed policy will put slight upward pressure on interest rates.
- Inflation will continue in check for another year, and interest rates will remain at low levels, even with policy moves.

Colorado

- Employment growth will place Colorado in the top 10 states in 2016.
- Talent remains a long-term concern for economic vitality in Colorado.
- El Niño may cause volatility for agriculture production, as well as tourism.
- Home prices will continue to creep higher in Colorado as inventory is absorbed, making housing affordability a detriment to some communities in the state.
- In terms of population, Colorado is the fifth-fastest growing state in the nation in percentage terms. The state will continue to attract people from out of state, which will contribute to population growth of 1.7%.
- Colorado will sustain a 4% unemployment rate.

With Colorado's skilled workforce; high-tech, diversified economy; relatively low cost of doing business; global economic access; and exceptional quality of life, the state remains poised for long-term economic growth.

Around the Region

The western region of the United States is made up of Colorado and its neighboring states of Arizona, Kansas, Montana, Nebraska, New Mexico, Utah, and Wyoming. This section compares economic activity in 2015 in these states and their top metropolitan statistical areas (MSAs) as measured by total employment, employment growth, unemployment rate, average annual pay, and GDP.

Every state in the region, except New Mexico, has shown positive 10-year growth. In September 2015, Utah, Montana, Arizona, and Wyoming experienced the largest increases with year-over-year growth of 2.4%, 2.1%, 1.9%, and 1.4%, respectively. New Mexico (0.3%) and Colorado (0.0%) lagged behind the rest of the region while Nebraska (-1.1%) and Kansas (-1.4%) lost jobs. It should also be noted that employment in two of the eight regional states has not recovered to pre-crisis levels: Kansas and New Mexico. Regarding MSAs, Phoenix-Mesa-Glendale, Salt Lake City, and Kansas City led the region with year-over-year growth of 2.8%, 2.4%, and 1.4%, respectively, in September 2015. Albuquerque, Denver, and Cheyenne followed close behind, with growth of 0.8%, 0.5%, and 0.2%, respectively. Employment in both Lincoln and Wichita fell by 0.3%.

REGIONAL STATES								
September 2015 Total Employment (In Thousands)	297.6 Wyoming	502.8 Montana	861.0 New Mexico	978.4 Nebraska	1,414.9 Utah	1,416.9 Kansas	2,693.5 Colorado	2,947.4 Arizona
Employment CAGR September 2005–September 2015	-0.2% New Mexico	0.2% Kansas	0.4% Nebraska	0.6% Arizona	0.7% Montana	1.0% Colorado	1.1% Wyoming	1.4% Utah
Employment Percentage Change September 2014–September 2015	-1.4% Kansas	-1.1% Nebraska	0.0% Colorado	0.3% New Mexico	1.4% Wyoming	1.9% Arizona	2.1% Montana	2.4% Utah
September 2015 Unemployment Rate	2.9% Nebraska	3.6% Utah	4.0% Colorado	4.0% Wyoming	4.1% Montana	4.4% Kansas	6.3% Arizona	6.8% New Mexico
2014 Average Annual Pay	$38,878 Montana	$41,185 Nebraska	$41,925 New Mexico	$42,716 Kansas	$42,942 Utah	$46,492 Wyoming	$46,919 Arizona	$52,724 Colorado
2014 GDP (Millions of Current Dollars)	$44,190 Wyoming	$44,269 Montana	$92,959 New Mexico	$112,159 Nebraska	$141,410 Utah	$147,075 Kansas	$284,156 Arizona	$306,663 Colorado
Real GDP Percentage Change 2013–2014	0.7% Nebraska	1.0% New Mexico	1.4% Arizona	1.8% Montana	1.8% Kansas	3.1% Utah	4.7% Colorado	5.1% Wyoming

Sources: Bureau of Economic Analysis, Colorado Department of Labor and Employment, and Bureau of Labor Statistics (CES, QCEW, and LAUS data). *Not seasonally adjusted. Unless noted, all data is seasonally adjusted. Based on preliminary data.

Every state enjoyed positive GDP growth from 2013 to 2014. Wyoming led the region with 5.1% change in real GDP, and Colorado, Utah, Kansas, Montana, and Arizona followed with 4.7%, 3.1%, 1.8%, 1.8%, and 1.4%, respectively. New Mexico and Nebraska, each with less than 1.1%, lagged behind the rest of the region.

Denver led all MSAs in the region with a 5% increase in real GDP. Wichita, Cheyenne, and Salt Lake City all followed with a 2.2% increase. Kansas City recorded 2%, and Phoenix-Mesa-Glendale, 1.8%. While the lowest growth in the region was in Lincoln and Albuquerque, 0.8% and -0.1%, respectively.

In 2014, Colorado's $52,724 average annual earnings exceeded all states in the region, including Arizona, with $46,919. Boulder, Fort Collins-Loveland, and Denver maintained their top spots, with above-average annual pay levels exceeding $58,000. This far surpasses other MSAs in the region, which fall within the $38,000–$46,000 range. ✣

REGIONAL METROPOLITAN STATISTICAL AREAS (MSAs)								
September 2015 Total Employment (In Thousands)	**46.4** Cheyenne	**173.5** Lincoln	**292.4** Wichita	**388.2** Albuquerque	**600.8** Salt Lake City	**1,055.7** Kansas City	**1,449.4** Denver-Aurora-Broomfield	**2,049.5** Phoenix-Mesa-Glendale
Employment CAGR September 2005–September 2015	**0.0%** Wichita	**0.3%** Albuquerque	**0.9%** Phoenix-Mesa-Glendale	**0.9%** Lincoln	**1.0%** Kansas City	**1.4%** Salt Lake City	**1.4%** Denver-Aurora-Broomfield	**1.6%** Cheyenne
Employment Percentage Change September 2014–September 2013	**-0.3%** Wichita	**-0.3%** Lincoln	**0.2%** Cheyenne	**0.5%** Denver-Aurora-Broomfield	**0.8%** Albuquerque	**1.4%** Kansas City	**2.4%** Salt Lake City	**2.8%** Phoenix-Mesa-Glendale
September 2015 Unemployment Rate (Not Seasonally Adjusted)	**2.2%** Lincoln	**3.1%** Salt Lake City	**3.2%** Denver-Aurora-Broomfield	**3.3%** Cheyenne	**4.4%** Kansas City	**4.4%** Wichita	**5.5%** Phoenix-Mesa-Glendale	**6.4%** Albuquerque
2014 Average Annual Pay	**$40,476** Lincoln	**$42,903** Cheyenne	**$42,910** Albuquerque	**$43,706** Wichita	**$48,168** Salt Lake City	**$49,033** Kansas City	**$49,038** Phoenix-Mesa-Glendale	**$58,273** Denver-Aurora-Broomfield
2014 GDP (Millions of Current Dollars)	**$5,533** Cheyenne	**$17,626** Lincoln	**$30,267** Wichita	**$42,046** Albuquerque	**$75,672** Salt Lake City	**$121,638** Kansas City	**$187,111** Denver-Aurora-Broomfield	**$215,214** Phoenix-Mesa-Glendale
Real GDP Percentage Change 2013–2014	**-0.1%** Albuquerque	**0.8%** Lincoln	**1.8%** Phoenix-Mesa-Glendale	**2.0%** Kansas City	**2.2%** Salt Lake City	**2.2%** Cheyenne	**2.2%** Wichita	**5.0%** Denver-Aurora-Broomfield

Sources: Bureau of Economic Analysis, Colorado Department of Labor and Employment, and Bureau of Labor Statistics (CES, QCEW, and LAUS data). *Not seasonally adjusted. Unless noted, all data is seasonally adjusted. Based on preliminary data.

Around the State

COLORADO METROPOLITAN STATISTICAL AREAS (MSA)

September 2015 Total Employment (In Thousands)

68.5	69.8	146.1	172.3	174.6	301.6	1,449.4
Pueblo	Grand Junction	Greeley	Boulder	Fort Collins-Loveland	Colorado Springs	Denver-Aurora-Broomfield

Employment CAGR September 2005–September 2015

0.2%	0.5%	0.5%	0.6%	0.8%	1.4%	3.2%
Grand Junction	Colorado Springs	Pueblo	Boulder	Fort Collins-Loveland	Denver-Aurora-Broomfield	Greeley

Employment Percentage Change September 2014–September 2015

-0.6%	-0.5%	-0.4%	-0.3%	0.5%	0.7%	1.7%
Colorado Springs	Boulder	Grand Junction	Pueblo	Denver-Aurora-Broomfield	Fort Collins-Loveland	Greeley

September 2015 Unemployment Rate (Not Seasonally Adjusted)

2.6%	2.7%	3.2%	3.3%	4.0%	4.8%	5.1%
Boulder	Fort Collins-Loveland	Denver-Aurora-Lakewood	Greeley	Colorado Springs	Grand Junction	Pueblo

2014 Average Annual Pay

$38,901	$40,575	$45,257	$45,613	$45,651	$58,273	$59,858
Pueblo	Grand Junction	Colorado Springs	Greeley	Fort Collins-Loveland	Denver-Aurora-Lakewood	Boulder

2014 GDP (Millions of Current Dollars)

$4,785	$5,342	$10,165	$14,323	$22,354	$29,232	$187,111
Pueblo	Grand Junction	Greeley	Fort Collins-Loveland	Boulder	Colorado Springs	Denver-Aurora-Lakewood

Real GDP Percentage Change 2013–2014

1.2%	2.6%	3.1%	4.6%	5.0%	5.9%	9.9%
Grand Junction	Colorado Springs	Pueblo	Boulder	Denver-Aurora-Lakewood	Fort Collins-Loveland	Greeley

Sources: Bureau of Economic Analysis, Colorado Department of Labor and Employment, and Bureau of Labor Statistics (CES, QCEW, and LAUS data). *Not seasonally adjusted. Unless noted, all data is seasonally adjusted. Based on preliminary data.

Boulder County

Boulder County has a robust economy fueled by high concentrations of businesses and employees in a diverse mix of industries. A highly educated workforce, visionary entrepreneurs, a well-established manufacturing sector, a world-class research university, and several federal research labs are equally critical to Boulder County's economic vitality. The area has continued to outperform state and national economies in many areas, such as job growth, educational attainment, capital investment, and commercial real estate absorption, among others. Boulder County was severely impacted by the September 2013 floods, but the area has largely recovered. Local communities are investing in infrastructure, business resources, and cultural amenities to enhance their preparedness for future natural disasters.

Employment and Wages—Boulder County has experienced above-average employment growth and some of the lowest unemployment rates in Colorado over the past several years. Employment in Boulder County increased 1.4% between August 2014 and 2015, creating an additional 1,800 jobs compared to a 1.9% increase in Colorado during that period. In August 2015, the Boulder County unemployment rate was 3.2% compared to state unemployment of 4.2% and a national rate of 5.1% (not seasonally adjusted). The area's large concentration of jobs in sectors with higher-than-average wages contributes to above-average incomes for area residents. The median household income for Boulder County residents was $67,956 in 2013 compared to $58,433 for Colorado.

Real Estate—Commercial and industrial real estate absorption in Boulder County has produced low vacancy rates and accelerating demand for new construction. The office vacancy rate for the region showed a decrease over the past year to 4.7% in Q3 2015 from 6.9% the year prior according to data from Newmark Grubb Knight Frank Research. Similarly, the industrial/flex vacancy rate in the county fell to 8.2%, and the retail vacancy rate dropped to 4.3%.

Residential construction continues to be a strong component of Boulder County's economy, with residential sales and average home values steadily increasing in communities throughout the area. According to the Boulder Area Realtor Association, the number of single-family homes sold in Boulder County through August 2015 increased 6.2%, to just over 3,350 homes compared to the same period in 2014. The Federal Housing Finance Agency house price index for Boulder County increased 10.3% from midyear 2014 to 2015. During the same period, the house price index for Colorado increased 10.4%.

Financial Services and Venture Capital Investment—Boulder County represents a significant and growing share of the state's financial institution deposits and venture capital investment.

As of June 30, 2015, Boulder County had 31 FDIC-insured financial institutions with 110 offices and $8.5 billion in deposits, representing 7.3% of the state total—an increase in market share from 2014.

From midyear 2014 to midyear 2015, deposits in Boulder County institutions rose $825.2 million or 10.8% compared to an increase of 6.6% during the same period for deposits held in Colorado institutions. Deposit growth from 2014 to 2015 was higher than from midyear 2013 to 2014, when deposits in Boulder County institutions increased by $284.2 million, or 3.9%, and deposits in Colorado institutions increased 3.5%.

The high concentration of advanced technology and entrepreneurial activity in Boulder County continues to fuel continued venture capital investment in early-stage Boulder County companies. According to the PricewaterhouseCooper/Venture Economics/NVCA MoneyTree Report, $151 million in venture capital funding was received by Boulder County companies in the first three quarters of 2015, representing 29% of the state total.

Leading Industries—The Boulder County economy continues to benefit from high concentrations of companies and employment in key industry clusters, such as aerospace, biotechnology, cleantech, information technology, natural and organic products, outdoor recreation, and tourism. In addition to the presence of well-established Fortune 500 companies, many startup and early-stage companies in these industries are based in Boulder County.

Aerospace—Many aerospace companies, including Ball Aerospace, DigitalGlobe, Lockheed Martin, Northrop Grumman, and Sierra Nevada Space Corporation, do business in Boulder County. The University of Colorado Boulder, a member of the Universities Space Research Program, offers nationally recognized aerospace academic programs and receives major funding from NASA. Several federally funded labs in the area conduct research in space, including the Laboratory for Atmospheric and Space Physics (LASP), the National Oceanic and Atmospheric Administration (NOAA), and the University Corporation for Atmospheric Research (UCAR).

Biotechnology—Boulder County is a well-established location for companies in the pharmaceuticals and medical devices industries. Major employers include Array BioPharma, AstraZeneca, KBI BioPharma, Medtronic, Mountainside Medical, and GHX. The University of Colorado Boulder has a distinguished record in biotechnology research that has attracted major research funding and generated numerous startups. The university is home to the BioFrontiers Institute, a program headed by Nobel laureate Dr. Tom Cech, designed to facilitate interdisciplinary research and expand Colorado's leadership in biotechnology.

Cleantech—Renewable energy, energy efficiency, and energy research companies continue to diversify in Boulder County. The industry is well-supported by university programs, such as the University of Colorado Boulder's Renewable and Sustainable Energy Initiative (RASEI) and the National Renewable Energy Laboratory (NREL), the federally funded research lab in Golden. Boulder County businesses in the industry include Boulder Wind

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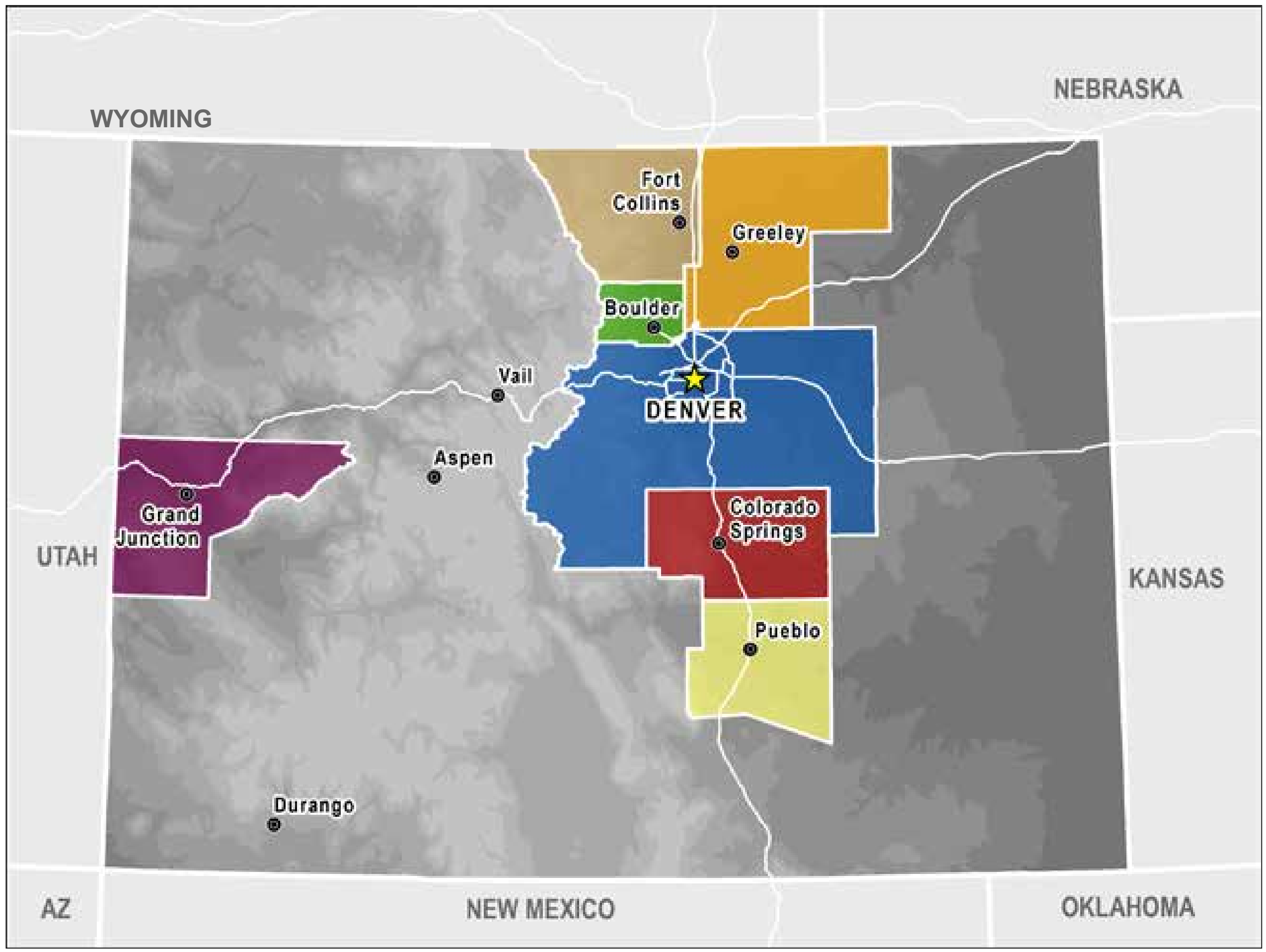

Around the State

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Power, GE Oil & Gas, juwi solar, juwi Wind, Sundrop Fuels, Populus, RGS Energy, and Siemens Energy.

Information Technology—Boulder County has a long history as a center of information technology, data storage, software development, and Internet services. Major employers include Epsilon, Google, HP, IBM, Intrado, Microsoft, Qualcomm, Rally Software, Seagate, Twitter, and Uber among hundreds of other established and early-stage companies. Boulder was ranked first in the nation for its concentration of high-tech startups by the Ewing Marion Kauffman Foundation. The area is home of the successful mentorship and seed-funding program TechStars and TinkerMill, the largest makerspace/hackerspace in Colorado.

Natural and Organic Products—Many leaders in the natural and organic products industry cluster got their start in Boulder, and the area remains an international hub of the industry. Area companies include Bhakti Chai, Boulder Brands, Celestial Seasonings, Chocolove, Fresca Foods, Haystack Mountain Goat Dairy, Justin's Nut Butter, Oskar Blues, and Rudi's Organic Bakery. Naturally Boulder, a Boulder-based industry association, supports these and hundreds of other natural products companies through networking, educational sessions for early-stage companies, and other programming.

Outdoor Products and Recreation—Widely recognized as a center for the outdoor recreation industry, Boulder is home to the Outdoor Industry Association and the International Mountain Bicycling Association. The Boulder County area has a high concentration of manufacturers, distributors, retailers, marketing and media companies, and medical and other service providers focused on the industry. Local companies include American Rec Products, Bergans USA, Brunton, Reeb Cycles, La Sportiva, Newton Running, Pearl Izumi, Salewa, Sea to Summit, and Spyder Active Sports, among many others.

Tourism—The Boulder County area is a popular destination that receives national media attention for its recreational and cultural amenities, and impressive array of shopping and dining choices. Boulder was recently recognized by *GQ* (Best College Town), NationalGeographic.com (one of America's Top Adventure Towns), *Bon Appetit* (America's Foodiest Town), *Outdoor* magazine (No. 1 Sports Town), Gallup-Healthways (Nation's Happiest and Healthiest City), and *Bicycling* magazine (one of the Best Bike Cities).

The business and economic outlook is very positive for Boulder County. The region's robust economy built on diverse high-tech and lifestyle industries, the University of Colorado Boulder flagship campus, a highly educated workforce, thriving entrepreneurial culture, and highly desirable quality of life inspires optimism heading into 2016.

Contributors: *Clif Harald, Boulder Economic Council*
Jessica Erickson, Longmont Area Economic Council
Corine Waldau, Boulder Economic Council

Kit Carson County

The economy in Kit Carson County continues to rely on adequate moisture for crops. Although farmers had above-average yields for their crops in 2015, the economy is not as strong as the previous year with the decline of commodity prices.

As in most rural areas in Eastern Colorado, agriculture continues to dominate the economy. However, Burlington is fortunate with its location on Interstate 70 as tourism plays an important part of the financial picture. The year 2015 has been excellent for tourism as the lodging tax is up for the third year in a row, by 2.7%. The Colorado Welcome Center in Burlington is the third-highest entry point into Colorado via vehicle.

As of October 2015, two hotels are under construction: one will have 57 rooms and the other 92 rooms. When they are completed, Burlington will have approximately 450 motel/hotel rooms, which is a large number for a community of approximately 4,200 people.

For the third consecutive year, dry land wheat that has been planted has more than enough moisture to establish a very strong winter wheat crop to be harvested next summer.

The financial condition of farmers remains strong, although somewhat weaker than a year ago. In 2010 and 2011, excellent yields were produced and commodity prices were exceptional. In 2012 and again in 2013, yields were far below average; however, the results in 2010 and 2011 enabled farmers to extend excellent working capital. In 2014 and 2015, yields were above average, although commodity prices were down dramatically.

Once again, farmers have seen increases in prices for supplies, including seed, fertilizer, and machinery. This has placed a burden on farm machinery dealers as their market has softened considerably because of lower commodity prices.

Cattle numbers have remained stable and in a recovery number for cow-calf operations. Prices are down to the numbers recorded in 2013. In 2014 and a portion of 2015, cattlemen saw prices spike. A downward spiral has taken place since that time. As an example, cattle prices on an animal weighing 1,000 pounds were $500 to $600 higher in 2014 than in the last several months of 2015.

As is always the case, agriculture continues to rely on adequate moisture and good commodity prices. Commodity prices were off dramatically in 2014, with corn down a minimum of 50% and wheat down approximately 20%. Prices in 2015 were off an additional 5 to 10%.

Farmland values are less than a year ago, though not by the larger percentage drops seen in Iowa and Illinois in 2015. Realtors have said land values in Kit Carson County may be down approximately 5%.

Burlington's economy has remained strong, and the population continues to record modest growth. The remainder of the county shows a decline in population.

In 2015, total average nonfarm employment in Kit Carson County was 3,035 according to the Quarterly Census of Employment and Wages, and the average weekly wage was $629. Based on the four quarters ending in Q1 2015, the annual average wage was $34,144 in Kit Carson County compared to $53,073 for the state of Colorado.

In addition to this nonfarm covered employment, farm and sole proprietor employment represents significant employment in the county, accounting for approximately 35% of total employment not in the nonfarm wage and salary tally. The Kit Carson County unemployment rate was 2.1% in September, much lower than the state or national average.

Major industry employment in Kit Carson County includes:

- Construction: 22 establishments, 134 employees
- Wholesale Trade: 27 establishments and 344 employees
- Education Services: 9 establishments and 344 employees
- Agriculture, Forestry, Fishing and Hunting: 31 establishments and 322 employees
- Accommodation and Food Services: 27 establishments and 301 employees
- Health Care and Social Assistance: 22 establishments and 277 employees
- Public Administration: 22 establishments and 283 employees
- Retail Trade: 35 establishments and 262 employees
- Manufacturing: 12 establishments and 134 employees
- Finance and Insurance: 24 establishments and 115 employees

Once again, real estate prices have continued to increase over the past year. Prices have remained good to excellent over the past 14 years.

Affordable housing is almost nonexistent. There continues to be a waiting list for rental housing, and rents are high. This makes for an excellent housing market; however, many simply cannot afford to purchase homes with the lower wage scale.

Total bank deposits are at another record level in Kit Carson County, hitting in excess of $307 million.

Contributor: *Rol Hudler, City of Burlington*

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La Plata County

The Office of Business and Economic Research (OBER) at the School of Business at Fort Lewis College measures and reports on economic activity in La Plata County. The county's economy is highly seasonal and is related to tourism's impact on the local economy and construction. Although significant winter tourism is associated with winter sports, most La Plata County tourism occurs during the summer. This summer concentration of tourism causes a third quarter seasonal upswing in economic indicators such as retail sales and employment each year.

The presence of Fort Lewis College, Walmart, Mercury Systems, Mercy Medical Center, and natural gas and oil extraction in La Plata County provides some stability to the local economy, particularly in labor markets, which experienced a large degree of volatility during the Great Recession. Given the county's reliance on construction during the 2000s, this is a welcome development.

The impact of the student population has diminished since 2002 when the student body Fort Lewis College peaked at 4,349 students. Fall 2014 enrollment was 3,775, down from 4,019 in 2013.

The Gold King Mine disaster on August 5, 2015, while undoubtedly having a pronounced impact on San Juan County (which is north of La Plata County), and downstream on the Navajo nation in northern New Mexico, will likely have little impact on the La Plata economy. It should be expected that this environmental disaster will lead to further scrutiny of the many closed mines in the region and their potential impact on regional economies and environment.

Over the past 10 years or so, there has been a push to attract new and dynamic private companies, "growth companies." While Mercury Payment Systems, which was purchased by Vantiv in 2014, is the largest and most widely known company in La Plata, other private firms have entered the local economy. These firms attract higher skilled jobs to the area and include Chinook Medical Systems, Durango Soda Co./Zuberfizz, and Zukes.

Employment and Unemployment—For the 12 months September 2014 to September 2015, the La Plata County seasonally adjusted unemployment rate continued to decline, falling roughly 0.5% percentage points from the same period the previous year, 3.4%. OBER estimates this to be roughly equal to the local natural rate of unemployment. The rate is currently below the statewide unemployment rate and the national average.

In July 2015, the La Plata County seasonally adjusted labor force was 29,854 or about 0.9% lower than the same period in 2014. From September 2009 until July 2012, La Plata County's labor force experienced negative growth; however, since then it has grown average of 0.5%, slowing in 2015.

Income—Per capita income in La Plata County has improved over the last few years, both absolutely and relative to Colorado per capita personal income. The moving average of personal per capita income in Q1 2015 was $44,393 in La Plata County, an increase of 4.9% from 2014, and remains the highest in the Region 9 counties. In Q1 2015, the seasonally adjusted weekly per capita income rose 4.8% over the same period in 2014. Through Q1 2015, total wage growth in La Plata has been slightly lower than the state average, 5.9% in La Plata compared to 6.4% in the state. The gap between county average annual income in 2014 income was 18%, a rise from 16% the previous year.

Since 2002 seasonally adjusted weekly income growth in La Plata has been positive about 87% of the time, with only seven quarters experiencing negative income growth over that period.

With respect to countywide private income shares, in 2014, services accounted for about 43% of total income in La Plata County. The largest industry share for private firms was in Transportation and Utilities, accounting for about 11% of total income, followed by Health and Education Services, with about 10.5%. Construction's share of income decreased in 2010, returned to 2009 levels the following year, and have increased since then. By the end of 2014 Construction's share was just over 9%. The income share of Natural Resources and Mining began falling in 2013 and the amount of natural gas extracted has been trending down. However, higher gas prices at the end of 2013 caused a spike in income for Q1 2014. Since then gas prices have returned to below their long-run average. With oil prices likely to be below $60 per barrel for the foreseeable future, natural gas prices are likely to remain low.

Federal, state, and local government income as share of total private and public county income has remained nearly constant, at 25%, over the past 10 years. Local government is expanding, accounting for 18%, with state and federal income shares contracting. They make up 2% and 4.6%, respectively.

Tourism—Though the economy is more diversified, tourism continues to play a large role in La Plata County. Retail and Accommodation and Food Services combined account for almost 17% of private income. Data through summer 2015 show that tourism was down in Q1 compared to 2014; however, from April to August tourism displayed continued growth over 2014. This may be due to a relatively dry winter in 2014, resulting in fewer skier visits to the region.

The two primary regional tourist attractions, Mesa Verde National Park and the Durango-to-Silverton Train, seem to have stabilized. The train in particular has seen continuous growth over the past two years while visits to Mesa Verde have been more inconsistent, which also explains the decline in tourism index in Q1 2015.

The average number of enplanements at the Durango-La Plata County Airport through August, 2015 fell by about 2% after expanding 0.2% in 2014. It should be noted that the number of airlines servicing La Plata County has been changing. Frontier stopped servicing Durango in April 2015. This has been partially offset by the arrival of American Eagle in 2011.

Real Estate and Banking—Like many Colorado resort communities, La Plata County's economy is closely tied to real estate. Using Q3 as representative of the overall housing market, the median inflation adjusted (2010Q1=100) home price in La Plata County as combined—which includes residences in the whole county—stabilized at about $324,000 in Q3 2015, about 11% higher than the same time in 2014 ($315,000). Indeed, the second and third quarters in 2015 were the first positive growth quarters for real estate in one-and-a-half years in La Plata County. Combined quarterly growth in the number of home sales over the previous year averaged more than 12% in 2015.

Commercial banking has also seen continued growth. Over the four-year period between 2009 and 2012, bank assets, defined as net loans and/or leases, experienced negative growth. However, since Q3 2014 they have been about 17% higher than the same period in 2009. While bank assets declined between 2009 and 2011, they have been steadily growing since then, averaging 4.7% over 2014 and 2015. Bank liabilities, or total deposits, experienced 3% negative growth over 2010 and 2011, as well. Since then, liabilities have increased an average of 7% over the last eight quarters.

Recent and Future Trends—The past couple of years have had seen relatively minor external shocks; however, the region received some national attention from the Gold King Mine spill, although most of the effects are outside of La Plata. Indeed, tourism returned to pre-recession levels in 2015, and post-spill tourism is higher compared to a year ago. Moreover, the diversification of the local economy is reducing the reliance of the economy on tourism. The labor market is continuing to experience positive trends, and OBER estimates the unemployment rate is not likely to fall by more than 0.2% – 0.5% in 2016.

Anecdotally, the spirits of most local business leaders are improving, and optimism is continuing to build on the positive environment of the past two years or so. Rising demand for Construction and Real Estate are, once again, providing a foundation for relatively solid growth.

Unlike 2014, lower oil and gas prices, and continued slack in resource markets compared to 2015, add some uncertainty to local county extraction taxes. Nonetheless, other flows of revenues should be quite strong.

Contributor: *Robert Sonora, Fort Lewis College*

Mesa County

Located on the Western Slope of the Colorado Rockies and bordering Utah, Mesa County is isolated from other population centers by mountain passes and open ranges. Most of the county's residents live in Grand Junction, which is 250 miles from both Denver and Salt Lake City and is the largest city between the two. Those who live in the county outside of Grand Junction are distributed among the small and rural towns of Fruita, Palisade, Gateway, Collbran, Mesa, Mack, and DeBeque.

Population, Employment, and Wages—Mesa County has experienced slow but steady population and employment growth and a decrease in unemployment over the past year.

Between 2010 and 2014, the county's population increased by 1.7%, totaling 149,082, compared to the state population increase of 6.1%. Year-to-year total nonfarm employment increased 0.5% between September 2014 and September 2015. The 4.8% unemployment rate (not seasonally adjusted) in Mesa County remained the same from September 2014 to September 2015. This is higher than Colorado's not seasonally adjusted unemployment rate of 3.3%, but the same as the nation's rate of 4.8%. The Mesa County Workforce Center recorded 1,369 new job orders in Q3 2015, an 8% decrease from Q3 2014.

As of September 2015, the Mesa County labor force totaled 73,345, a 0.5% decrease from September 2014 and a 10.5% decline from September 2009. The average annual wage in Mesa County was $40,831 in Q1 2015, which was a 2% increase from the same time in 2014.

Real Estate—A total of 2,716 transactions totaling $663 million were reported in Mesa County through the first eight months of 2015. Compared to the same period in 2014, transactions were up 12.7%, and the dollar volume was up 22.8%.

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Regional Hub—Mesa County continues to be a regional hub for health care, education, energy, and travel. The area is a regional medical and health center serving a population of approximately 500,000 in western Colorado and eastern Utah.

Health Care—The level of medical and health services in Mesa County is uncommon in the variety of services offered to a community of this size. St. Mary's Hospital is the largest hospital in the Grand Valley and the only Level II trauma center in western Colorado and eastern Utah. An AIRLIFE Emergency Medical/Critical Care Transport Service and a Level II neonatology center are also available. Mesa County serves as a commercial and medical center for citizens in this region and as a medical referral center for neighboring towns such as Moab in Utah and Montrose, Delta, Rifle, Eagle, Aspen, Glenwood Springs, Craig, Meeker, Rangely, Gunnison, Ouray, and Telluride in Colorado.

Education—Colorado Mesa University (CMU) ranks in the top 10 largest employers in the region, with 1,996 full- and part-time employees in 2014 and a total yearly net payroll of more than $25.1 million that is spent locally. Its expenditures for goods and services in the 14-county region totaled $33.6 million for FY 2013–14, while an additional $32.2 million was spent on construction and technology. CMU's estimated economic impact of $417.5 million in FY 2013–14 is a 189.5% increase over that in FY 2003–04. Furthermore, an estimated 2,794 regional jobs are due to CMU's spending.

Mesa County School District 51 currently employs more than 2,600 teachers, administrators, and support staff.

Retail—Retail sales in Mesa County increased slightly in 2015. The Mesa County sales and use tax revenues increased 5.4% from September 2014, with the county collecting $24.2 million compared to $22.9 million in 2014.

Airport—The Grand Junction Regional Airport (GJT) is classified by the Federal Aviation Administration as a Class I airport. GJT is the premiere facility serving western Colorado and eastern Utah. In addition to both private and public passengers, FedEx operates out of the facility. GJT reported 163,860 passenger enplanements as of September 2015, a 25.3% decrease compared to September 2014.

Leading Industries—Originally steeped in energy and agriculture, the Mesa County economy has diversified significantly in the last 25 years.

Medical and Health Care—Health Care and Social Assistance make up 15% of Mesa County's total employment. As of October 2015, Mesa County had 9,167 jobs in the Health Care and Social Assistance industry, which is a 2.5% gain from the same period the previous year. St. Mary's Hospital is currently completing its build-out of a new patient tower that will support 120 local construction jobs and open 92 net new positions. Services will include a bone marrow transplant program, an expansion to its rehab and surgical units, and a new rehabilitation unit, which will have an estimated economic impact of $40 million to the local economy. Community Hospital is completing a $50 million expansion that will extend services to include labor and delivery and a variety of out-patient surgeries. The Grand Junction VA Medical Center is another health care facility providing patient care to more than 37,000 veterans residing on the Western Slope.

Aviation and Aerospace—The aviation and aerospace industries employ more than 400 employees in Mesa County, and 411 people are currently employed in aviation and parts manufacturing, which is a 9.2% increase from 2014. Lewis Engineering, Twin Otter Airborne Research, Timberline Aviation, and West Star Aviation, Inc. are the leading employers in the aviation and aerospace industry.

Outdoor Products and Services—Businesses are attracted to Mesa County because of the natural environment for product testing and the wide array of outdoor recreation options that are attractive to the outdoor workforce. Businesses currently based in Mesa County include DT Swiss, Loki, Mountain Racing Products, Honey Skateboards, Powderhorn Mountain Resort, Leitner-Poma of America, Mountain Khakis, and Bonsai Design. The area is home to more than 12 bike shops, 5 ski shops, and 2 mountaineering/climbing shops.

Energy—The energy industry makes up 5.1% of Mesa County's total employment. Mesa County had an 8% increase in the total number of energy-related jobs from 2014 to 2015. However, the number of drilling permits issued year-to-date decreased from 74 in May 2014 to 1 permit in 2015. Permits are good for two years. Major employers include Halliburton, Certek Heating Solutions, TWI Oilfield Fabrication, Chevron, Encana, ExxonMobil, WPX Energy, and Xcel Energy.

IT and Professional Services—The Professional, Scientific and Technical Services industry makes up 3.5% of Mesa County's total employment and expects an increase of 10.9% in 2016. This industry includes employment in IT solutions, data storage, web design and marketing, and web-based services. Local companies include Networks Unlimited; ProStar Geocorp, Inc.; the Kaart Group; COBB & Associates; STARTEK; Cranium 360; Ryan Sawyer Marketing; EWS Group; and ProVelocity.

Agriculture—In 2014, the Agriculture Sector accounted for $32 million of GDP in the Grand Junction MSA according to data from the Bureau of Economic Analysis. Beef (cattle and calves) is the largest agricultural export for Mesa County. Livestock sales make up 52% of the market value of agricultural products sold in Mesa County.

Tourism—In 2014, Mesa County reported 1,000,000 visitors to local lodging properties, totaling $269 million in direct travel spending. Mesa County is home to Colorado National Monument, which attracts more than 400,000 visitors annually. Visitation in 2014 was up 1.8% from 2013, totaling 416,862; however, it was up 43% from the 2001 total. The Town of Palisade is a sought-after destination with its rich history of Palisade peaches. The town is also the home of Colorado Wine Country. Palisade boasts 17 wineries and 22 orchards, and hosts many festivals, including the Bluegrass and Roosts Festival, the Lavender Festival, the Palisade Peach Festival, and the Colorado Mountain Winefest.

Fruita, Grand Junction, and Palisade attract visitors from all over the world who come to ride world-class singletrack mountain bike trails. These trails have spawned the Grand Junction Off-Road, an endurance mountain bike event that has gained global attention, drawing racers from around the world. Other cycling races within Mesa County include the Maverick Classic, Icon LASIK Tour of the Moon, Tour of the Valley, Rumble at 18 Road, Palisade Brews and Cruise Festival, and the popular Fruita Fat Tire Festival.

Powderhorn Mountain Resort is located on the northern edge of the Grand Mesa with an average of over 250 inches of snow each season. An extensive downhill mountain bike trail system is currently being developed that will be served by a new high-speed quad chairlift that will be operational for the 2015–16 ski season. This downhill mountain bike trail system will be open during the summer of 2016, allowing Powderhorn Mountain Resort to operate year-round, generating new jobs and increasing adventure-seeking visitors.

Summary—The business and economic outlook is trending positive for Mesa County. Further diversification of business industries; new incentive programs, such as Jump Start Colorado that is designed for the rural regions of Colorado; and an ever-improving high quality of life will help to position Mesa County for growth in 2016.

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Northern Colorado

By most broad economic measures, Weld and Larimer counties have continued to grow quicker than most counties throughout Colorado and in some facets, even the country. According to *Area Development* magazine, both Greeley and Fort Collins attained national ranking in their annual 100 Leading Locations study, 4th and 20th, respectively. Determining factors for this ranking are represented by four key categories: prime work force, economic strength, year-over-year growth, and recession recovery attributes. These are all critical components that are assessed when business leaders are considering where to expand or locate. The region as a whole continues to outpace the majority of Colorado in job growth and low unemployment rates.

Although both county economies are doing well, the driving forces are quite different. According to the current employment statistics provided by the Colorado Department of Labor and Employment (CDLE), Weld County has added more than 12,800 nonfarm jobs over the last 24 months in September 2015 (not seasonally adjusted) and is ranked No. 1 in job growth on *Forbes*' Best Places for Business and Careers list.

Much of this is propelled by traditional strengths in food processing, and oil and gas; the supply-chain effects for these two industries is also prominent. Despite some slowdown, natural resource extraction operations continue to be strong in some parts of the county, thus providing growth for the construction and transportation industries. Agricultural producers continue to prosper, in part buoyed by higher commodity prices.

Larimer County has added nearly 8,700 nonfarm jobs over the past 24 months through September 2015, with much of the growth coming from service industries. Noteworthy expanding sectors that reflect the county's high-service orientation include Professional, Scientific

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and Technical Services; Health Care; and Education. Fort Collins ranks 10th in the country on *Forbes*' Best Places for Business and Careers 2015 list, citing a high educational attainment. The growing regional economy has also benefited from retail development; the recent renovation and redevelopment of several long-standing retail properties in Fort Collins have paved the way for additional amenities and increased the tax base.

Northern Colorado's housing market is also strong. Federal Housing Finance Agency (FHFA) data show single-family housing price indices in Weld and Larimer counties have increased 11.9% and 9.7%, respectively, in Q2 2015 compared to the year prior. Greeley ranked fourth in the nation for highest rate of house appreciation. Price appreciation has led to builders moving more dirt, with single-family building permits rising in both counties. The U.S. Census Bureau estimates 1,648 single family permits were issued in Weld County through September 2015, up nearly 148 from the previous year. Larimer County saw about 49 more single-family permits through the time period than 12 months earlier.

A tight housing market means rents are also increasing. Q3 2015 data from the Colorado Department of Local Affairs show the median rental rates for a two-bedroom, two-bath apartment is $1,144 in Greeley and $1,391 in Fort Collins-Loveland. The increase over the past years is 10.4% in Greeley and 10.5% in Fort Collins-Loveland. However, these numbers are not at all surprising considering Fort Collins boasts many livability accolades that attract people to move to the area.

The area is consistently ranked in top 100 best places to live polls. Fort Collins placed 13th out of 100 in a ranking of the best small to mid-size cities in the nation in 2016 according to Livability. The city also placed ninth in Livability's list of the top 10 healthiest cities in 2015. In 2014, Fort Collins-Loveland area residents ranked the highest in city satisfaction in a Gallup and Healthways survey.

The overall strong performance is especially remarkable as the region recovers from damage caused by the September 2013 floods. In 2013's regional outlook great concern was expressed about the potentially adverse impacts of substantial infrastructure damage. The Town of Estes Park and its tourism-based economy bore significant damage to most access roads in 2013.

Due to a very focused and intense recovery effort, most of the negative effects were short-lived. Year-to-date, the Community Development Block Grant Disaster Recovery Program has awarded over $4.3 million to 160 businesses and will continue its efforts into 2016.

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Pueblo County

Economic indicators for Pueblo County are showing impressive improvement in 2015. The countywide unemployment rate for September 2015 is 5.1%, down from 5.9% one year earlier. While this still represents a higher rate than other major Front Range cities, it is the lowest unemployment rate recorded since Q4 2007.

Government (18%), health services (17%), and retail (12%) continue to be the three-largest sources of jobs in the local economy. However, Pueblo has a heritage of manufacturing and metal fabrication, with those segments providing many of the primary jobs that support other employment in the community.

New and Existing Industry Clusters—Pueblo has seen significant success in attracting new, high-tech industries during 2015. Three sectors of the economy have been identified as promising "clusters" for economic growth, and progress has been made in each. The first sector is aerospace development and manufacturing. In July 2015, United Launch Alliance, a joint venture between Lockheed Martin Space Systems and Boeing Defense, Space & Security, announced Pueblo as the location for testing and manufacturing of propulsion systems for the next generation Vulcan rocket. Earlier in the year, Pueblo was chosen as the site of an $82 million expansion of United Technologies Aerospace System's carbon braking business. These products are used on a wide variety of commercial and military aircraft.

A second potential cluster is the emerging hemp industry. Hemp is a nonhallucinogenic strain of the cannabis family and has thousands of commercial applications for nutraceuticals, cosmetics, clothing, fiber, and medical products. In October 2015, CBD Bioscience announced it will locate North America's largest hemp oil extraction facility in Pueblo with production starting later in the year. The facility will employ at least 163 people within three years. The goal is for this project to serve as the catalyst for hemp industries since Pueblo has an advantageous climate for growing hemp, in addition to the qualified production workforce and facilities to process the crop into commercial products.

The third identified cluster is rail industries. Much of this is driven by three unique facilities in Pueblo County. Evraz Steel, the descendent of the historic CFI Company, is the largest producer of rail in North America. Also, the Transportation Test Center is acknowledged as one of the premier engineering, testing, and training facilities in the world. Finally, Rocla Concrete Ties established a large facility in Pueblo several years ago, providing pre-stressed concrete railroad ties throughout the nation. Other existing companies produce a diverse portfolio of rail components, accessories, and cars.

Energy and the HARP Project—In addition to these existing and developing clusters, other projects are underway. Renewable energy developer Community Energy has started installation of the largest solar panel facility east of the Rocky Mountains. The power from this facility, which is located next to the Comanche Generating Station, will go to Xcel Energy. The project will use 450,000 solar panels to generate enough power for 31,000 homes according to the developer. Pueblo is under consideration for other solar energy applications due to its favorable climate and abundant sunshine.

A driving force for much of the development in the downtown area is the expansion of the Historic Arkansas Riverwalk Project, also known as HARP. A loan from the city's economic development fund will jumpstart work on an ambitious complex that will include an expanded convention center with a multiuse arena for the Professional Bull Rider's University bull-riding school. Future phases will result in the expansion of the Riverwalk, an amateur athletics swimming complex, and potential indoor/outdoor water park. In addition to tourists and convention visitors, the HARP project is expected to attract professional offices to locate in the city center area.

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Southern Colorado

Employment—The unemployment rate in El Paso County stood at 4% on a nonseasonally adjusted basis at the end of September 2015. This compares to an unemployment rate of 5% in September 2014. Much of the improvement in the unemployment rate is from a reduction in the size of the labor force in the county rather than employment increases. The labor force declined from 307,860 to 302,558 from September 2014 to September 2015, a change of 5,302. Over the same period, employment decreased from 292,467 to 290,456 for a change of 2,011. The reasons for the shrinking labor force are not entirely known, although there is most likely some structural unemployment tied to the lack of relevant training for many middle- and high-skill positions. The Colorado Department of Labor and Employment (CDLE) often revises labor force and employment numbers, which can affect the current figures.

Specific Sectors and Employment**—**Fifteen of the 21 Quarterly Census of Employment and Wages (QCEW) industry sectors in El Paso County saw job gains in 2014. The most significant gains were in Health Care and Social Assistance, Construction, Retail Trade, Manufacturing, Accommodation and Food Service, Other Service, and Professional and Technical Services. Health Care and Social Assistance, combined with Construction, represented 50% of total job gains in the county. Job losses occurred in six sectors, with the most notable losses in Public Administration (or Government), Information, and Mining, which tend to be some of the higher-paying county jobs.

The Colorado Springs Regional Business Alliance targets a number of key industries as part of Operation 6035 conducted several years ago. The Southern Colorado Economic Forum tracks employment and wages in El Paso County in these targeted industries using QCEW data from the CDLE. Total employment in these clusters was estimated at 35,393 in 2014. The clusters include Aerospace, Defense and Homeland Security (5,755 employed), Software and Information (12,747 employed), Renewable Energy and Energy Efficiency (7,347 employed), Sports and Sports-Related Industries (7,155 employed), and Emerging Industries/Entrepreneurs (2,389 employed). The estimated number of employees in these clusters may be overstated due to the difficulty of tracking specific jobs within North American Industry Classification System (NAICS) codes. The same methods were used to collect 2013 data, and unfortunately, the estimated employment in these targeted clusters decreased 6.3% in 2014.

The health and wellness sector continues to develop in the region and presents many opportunities given the natural assets in the region. The Bureau of Labor Statistics projects health care jobs will be those with the highest demand over the next 20 years. The health care subsector has grown from 9.3% of total QCEW employment in 2001 to 14% of employment in 2014. Hospitals and physicians' offices are some of the larger employers in the sector. These subsectors have average wages that are much higher than the average wage in the county. Total health care wages paid in El Paso County in 2014 were more than $1.6 billion or 14.5% of total wages in El Paso County. This sector should continue to grow at a faster rate than general employment in the county.

QCEW average annual pay across all categories increased in El Paso County, from $44,512 in 2013 to $45,500 in 2014. This 2.2% wage increase is very close to the national average. However, the average wage in El Paso County remains low compared to Colorado as a whole and is 13.7% below the 2014 state average of $52,728.

Average wages increased in 13 sectors in the county. Average wage growth was strong in Management of Companies and Enterprises (up $12,636, to $109,928), Public Administration (up $3,224, to $65,624), Wholesale Trade (up $2,288, to $62,140), and Manufacturing (up $2,652, to $59,748). Average wages declined most significantly

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in Mining (down $13,104, to $72,332) and Agriculture, Forestry, Fishing and Hunting (down $728, to $22,776).

Per Capita Personal Income—Per capita personal income increased slightly in El Paso County, reflecting that individuals who live here did have some appreciation in their total net wealth. This includes not only net earnings, but also personal dividend and interest income, rental income, and transfer payments by government sources. Given the high proportion of retirees in the region, it stands to reason that some of the appreciation in per capita personal income is associated with working residents and with retirees. Per capita personal income increased 0.2%, to $41,128, in 2013 (most current data available) over the 2012 level of $41,061. The Southern Colorado Economic Forum forecasts per capita personal income in 2014 will be 2% higher than the previous year ($41,930). At the estimated 2014 level, per capita personal income in El Paso County would be 9.1% below the U.S. average and 14% below the Colorado average.

Residential Real Estate—The residential real estate market continues to improve, although there has been a small slowdown in single-family permit activity in 2015. From July 2014 through June 2015, a total of 2,634 single-family permits were issued in El Paso County. This is a decrease of 22 permits (0.8%) issued compared to permits issued from July 2013 through June 2014. The Southern Colorado Economic Forum expects approximately 2,600 permits to be issued in El Paso County in 2015. The multifamily market has also seen a slowdown. Through July 2015, permits for 21 projects and 424 units were pulled. Multifamily permits are expected to end 2015 with 494 units and a forecast for another 534 units in 2016. As of Q2 2015, average monthly rents for apartments were $899 per month in the Colorado Springs Metropolitan Statistical Area (MSA).

Home sales were strong in 2014. Buyers are taking advantage of historically low mortgage rates and attractive prices. The average sales price of a home is expected to increase to $272,000 in the Pikes Peak region in 2015, an 8.2% gain over 2014. The median price of a single-family home is anticipated to rise to $239,000 in 2015 compared to $220,850 in 2014. Sales are expected to reach 13,000 homes in 2015 and 15,000 homes in 2016.

The improving economy has helped reduce the rate of foreclosures. Foreclosures decreased 1.9% in 2014, to 1,825. This is the fifth-consecutive year foreclosures have declined in El Paso County. Through July 2015, foreclosures totaled 859 compared to 1,156 in July 2014. The forum projects a total of 1,430 foreclosures in 2015 and 1,300 foreclosures in 2016.

Commercial Real Estate—Turner Commercial Research reports mostly positive signals in the Colorado Springs commercial real estate market. The commercial office vacancy rate rose to 13.6% at the end of 2014 compared to 12.8% at the end of 2013. By June 2015, the vacancy rate edged down slightly, to 13.5%. At the same time, everything was positive when looking at rents as triple net lease rates increased from $10.12 per square foot at the end of 2013 to $10.42 per square foot at the end of 2014. The rate climbed to $10.60 per square foot in June 2015.

The industrial vacancy rate decreased to 8.8% at the end of 2014 from 9.2% at the end of 2013. As of June 2015, the vacancy rate was down to 8%. Average rents increased from $6.48 per square foot in 2013 to $6.65 per square foot by the end of 2014 according to Turner. This rate increased again, to $6.93 per square foot, as of June 2015.

Shopping center vacancy rates have decreased from 11.7% at the end of 2013 to 10.2% at the end of 2014. They stayed flat, at 10.2%, in June 2015. Average rents increased about $0.28 per square foot, from $12.80 at the end of 2013 to $13.08 at the end of 2014. They increased to $13.46 per square foot as of June 2015. Anchored shopping centers have average vacancy rates of 5.7%, a rate much lower than the nonanchored shopping centers' average rate of 17.4%.

Medical office vacancy rates have improved slightly, decreasing from 11.5% at the end of 2013 to 11.1% at the end of 2014. By June 2015, they were slightly higher, at 11.2%. Average rents also rose in this property type, going from $11.54 at the end of 2013 to $11.64 at the end of 2014. As of June 2015 they were $11.87.

Wholesale and Retail Trade—With the increase in GDP and employment levels, and the improvements in consumer confidence, it is not surprising there has been a rise in sales of building materials, nonstore retailers, food and beverages, motor vehicles and parts, clothing, accessories, health and personal care, hobby, books, and music. The only category that declined from 2013 to 2014 was electronic appliances, furniture, and home furnishings. Employment in the Retail Trade Sector increased by 862 jobs, up 2.9%. Average wages increased $468, to $27,976 (1.7%).

Wholesale sales in El Paso County show continued fluctuation. After increasing 12.6%, to $4 billion in 2012, they decreased 7.7%, to $3.7 billion in 2013, and then increased 7.8%, back up to $4.0 billion in 2014. Wholesale Trade employment in El Paso County increased by only 80 jobs, to 5,004, in 2014. Average wages for employees in Wholesale Trade, however, grew 3.8%, or $2,288, to $62,140 in 2014.

Sales and Use Tax—The City of Colorado Springs benefits from strong, growing taxable retail sales since more than 50% of the city's budget dollars come from these collections. City sales and use tax collections increased a healthy 7.2%, or $9.8 million, to $145.9 million, in 2014. Sales and use tax collections are expected to increase 5% in 2015 and another 2.5% the following year in nominal terms. However, adjusting sales taxes for both consumer price inflation and population increases, the real value of sales and use tax collections will increase by just 1.3% in 2015 and decrease by 1.7% in 2016.

Education—The higher educational attainment of a region's population is important because well-trained individuals are necessary for business growth, and therefore, overall economic growth. The American College Test (ACT) is used to help determine how well students will do in their first year of college. The overall unweighted average in El Paso County ACT scores for juniors in high school was 20.6 in 2014 while the Colorado average was 20.3 for all juniors. Colorado is one of 10 states that require all high school juniors to take the ACT. This brings down the average composite score so it is should not be compared to most other states or to the U.S. average of 21.0. El Paso County's high school graduation rate has stayed ahead of Colorado's rate for the last three years, although it decreased, to 77.8%, in 2014. In 2013, the age 25 and older population in the city of Colorado Springs had some college or an associate's degree (36.8%), which is higher than the state (31.1%) and the United States (29.2%). In addition, 37.1% of this population in Colorado Springs had attained a bachelor's degree or higher, which is comparable to the state (37.8%) and significantly higher than the nation (29.6%) according to U.S. Census Bureau data on educational attainment. Southern Colorado has an advantage in this relatively well-educated workforce that is ready to meet the forecasted need that by 2020, 74% of all jobs in the state will require some level of postsecondary education or training.

Where Is the Economy Heading?—The Colorado Springs MSA, which encompasses El Paso and Teller counties, is likely to continue its positive trajectory with respect to economic recovery and growth. Projections include a continued decrease in the unemployment rate, to 5.1% and 5% for 2015 and 2016, respectively, from 6% in 2014. With improvements in employment, what has long been an employer's market is now becoming more of an employee's market. This will push up average wages, which is desirable given the low civilian participation rate. More workers need to be lured back into the workforce in order to improve the civilian participation rate and increase productivity. Likewise, it is likely that gross metropolitan product will increase 2.4% in 2015 and 2.2% in 2016, which are both more favorable rates of growth than in 2014 (2.1%).

Consumer confidence is high and has returned to pre-recessionary levels. This is fueling economic activity as a whole, but especially the purchase of large ticket items, such as cars and homes. The housing industry has finally rebounded, and home sales should continue to be strong. New home construction, in particular, will likely be quite strong with double-digit increases for 2015 and into 2016. According to the National Association of Realtors, the Pikes Peak region saw increases in home prices of 10% in Q2 2015 year-over-year, which is higher than the U.S. average increase of 8.2%. The average home price in 2014 was $251,387 and for 2015 and 2016, the projected average prices are $272,000 and $291,000, respectively. Total home sales were 11,197 in 2014, and for 2015 and 2016, home sales in the Pikes Peak region are projected to be 13,000 and 15,000, respectively.

Last, the state projects large increases in population for El Paso County. The county is one of four projected to have a population increase of at least 300,000 by 2050. This has tremendous implications for businesses, individuals, families, and government. The relatively lower cost of living in the region, with a housing affordability index of 167, is likely one of the reasons for the projected population growth. By way of comparison, Denver's housing affordability index is 135 and Boulder's is 127. A higher index means homes are more affordable.

Overall, the Colorado Springs region is well positioned for growth, particularly if it can foster a stronger business climate. Similarly, the region will significantly benefit from instilling effective strategies for attracting or internally building a skilled workforce. ✣

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