Review of 2019 Colorado Benchmark Employment Data

In January, government leaders were faced with a choice to either let the Wuhan/Covid-19/Corona virus run its natural course or to take steps to save lives and leave the nation healthier. Either way, there would be a significant cost to society and the economy.

This short analysis reviews the benchmark revisions for 2019 Colorado employment data to provide a better understanding of where the economy was before this crisis. It can be used to help understand which sectors will be hit the hardest and which sectors are likely to lead the state out of the downturn.

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Colorado-based Business and Economic Research
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Relevant U.S. and Colorado Data

Economic Overview, U.S. and Colorado Unemployment Claims, the Equity Markets, Savings Rate, Crude Oil Prices, and Colorado Occupations

There is limited knowledge about the medical aspects of the virus. This has created uncertainty about how to establish policy to reduce the economic impact of the crisis on the economy.

U.S. Economic Overview
Projections

During the first week in March it seemed unlikely the crisis would cause a recession. As more information has been received, the projected length and medical severity of the situation has increased. At the moment, a recession is inevitable.

- Q1 – In early March, Q1 real GDP growth was projected to be positive. Within a week it was lowered to no growth. As businesses and schools began to close the projection for Q1 real GDP growth fell to -2.5% to -5.0%. The decrease is driven by lower consumption and business investment.

- Q2 – Currently the shutdown is expected to be 6 to 8 weeks in duration. If this is the case, companies will begin adding workers in the second half of April or early May. Q2 real GDP growth will be in the -2.5% to -5.0% range driven by lower consumption and business investment, but increased spending by the federal government.

- Q3 – From mid-May to mid-July the economy will begin to improve as more companies ramp up operations and add employees. Q3 Real GDP growth is expected to be in the range of -2.0% to 1.0%.

- Q4 - Real GDP growth will be in the range of 1.0% to 2.0% during Q4, although there are several projections suggesting much stronger growth because of pent up demand and the stimulus from the government.

- The number of people who have lost their jobs or had a reduction in hours during Q2 and Q3 will be unimaginably high. Because the economy has evolved from a goods producing economy to an economy based on service and financial activity, the pent-up demand will be less than previous years.

- Equity markets will return when companies and consumers become confident the medical problems associated with the virus have been resolved and their personal economy will again turn positive. Whereas the 2007 recession was self-inflicted and driven by greed, the current crisis was event driven and exacerbated by fear.

- There will be unexpected winners and losers as the economy improves.

- In theory, the fiscal and monetary stimulus efforts should reduce the challenges that consumers and businesses will face as they navigate through a recession that has an abrupt decline and a gradual return to normalcy.

Relevant Data Sets

Most data is produced with a minimum lag of a month. As a result, there is very little data that can be used to measure the impact of the pandemic and associated policy decisions. The following data sets provide limited but insightful information.

Unemployment Claims – The U.S. report showed a spike of 70,000 initial claims for March 14th. There was no change in the number of continuing claims for March 7th. Anecdotal evidence suggests there will be a significantly larger number of initial claims for the next reporting period. This illustrates that changes in the economy have been extremely abrupt.

S&P 500 Index – The equity markets have been driven down by fear – the fear of unknown about how the virus and related policy decisions will affect the economy. As questions are answered and the fear is mitigated, the market will bottom out.

Personal Savings Rate – The most recent personal savings rate was higher than during the months prior to the 2001 and 2007 recessions. Time will tell if this benefits consumers.
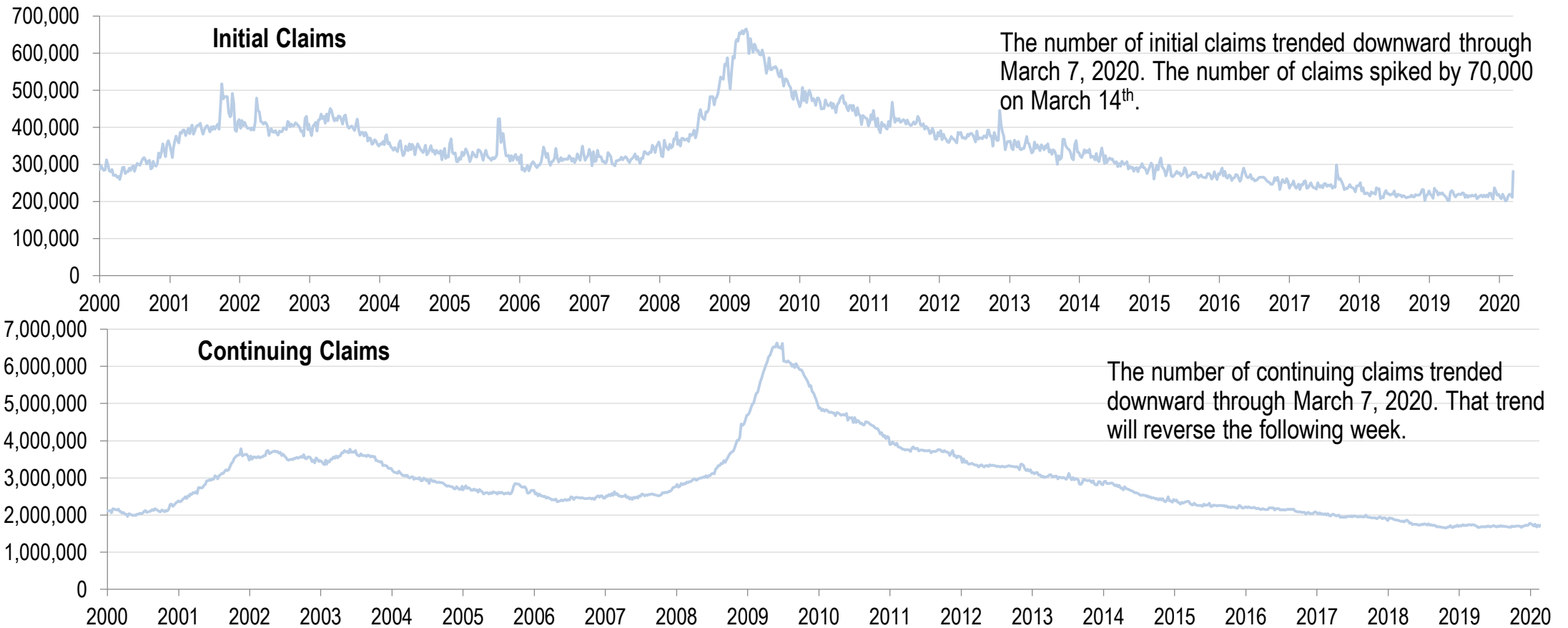
WTI Price of Oil – The Russia-Saudi "Oil War" has caused prices per barrel to plummet to about $20 per barrel. The combination of the decrease in prices and SB181 will negatively impact oil production and employment in Colorado.

Occupations – There are 22 broad categories of SOC codes. Fifteen of those categories have average annual wages below the average wages for all occupations. Many of the individuals who will be terminated or have their hours reduced, work in the 15 categories with below average wages.

Real GDP by Region – In the recovery from the Great Recession, the areas of greatest real GDP concentration have been Denver, Colorado Springs, and Northern Colorado. These areas have also shown the fastest rate of growth during this period. Look for these areas to lead growth during the recovery from the 2020 recession.
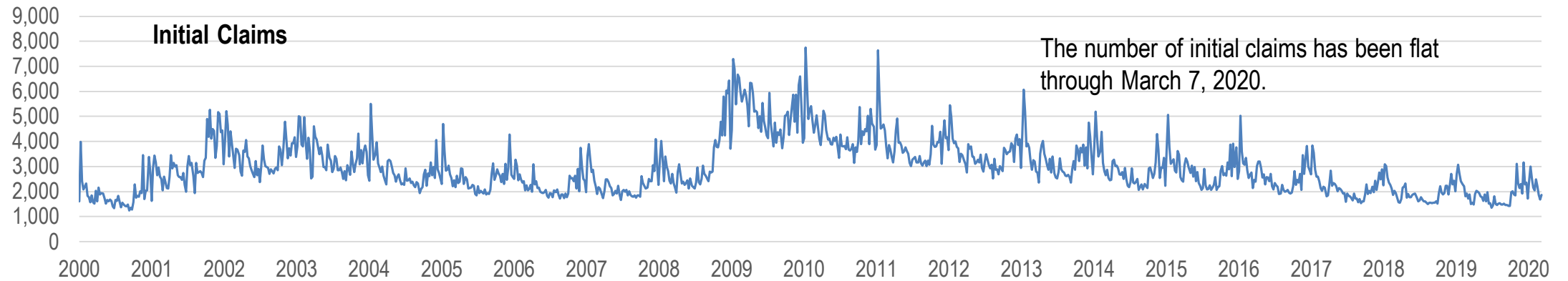
Initial and Continuing Unemployment Claims
United States

Initial Claims

The number of initial claims trended downward through March 7, 2020. The number of claims spiked by 70,000 on March 14th.

Continuing Claims

The number of continuing claims trended downward through March 7, 2020. That trend will reverse the following week.

Source: FRED, Department of Labor, SA, cber.co.

Initial and Continuing Unemployment Claims
Colorado

Initial Claims

The number of initial claims has been flat through March 7, 2020.

Continuing Claims

The number of continuing claims has trended downward through February 29, 2020.

Source: FRED, Department of Labor, NSA cber.co.

Standard and Poor's 500 Index

Standard and Poor's 500 Index

After reaching 3,373 on February 20th , the S&P 500 had slipped to 2,343 on March 20th.

The S&P 500 posted the following gains:
29.8% in 2019
-6.2% in 2018
19.4% in 2017
9.5% in 2016
-0.7 in 2015
11% in 2014
30% in 2013

Daily S&P 500

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

U.S. Personal Savings Rate
Percentage of Disposable Personal Income

Personal Savings Rate

The personal savings rate declined from a peak of 10.1% (red) in December 1992 to 2.2% (green) in July 2005. The rate trended upward and peaked at 11.0% (gold) in 2012. It dropped abruptly and was in the range of 5.8% to 7.9% between 2012 and 2018.

The reduction in the savings rate for this period was caused by increased consumption and/or investment in equities.

In 2018 and 2019, the rate was in the range of 7.7% to 8.8%. It was at 7.9% in January 2020.

Source: FRED, SA.

Crude Oil Prices
West Texas Intermediate

Crude Oil Prices: West Texas Intermediate, Cushing, Oklahoma

Dollars per Barrel

On the last trading day of 2019, the price for a barrel of oil was $60. In 2020, prices are projected to be slightly less than $60 per barrel. On March 20th, prices had fallen to $22.63.
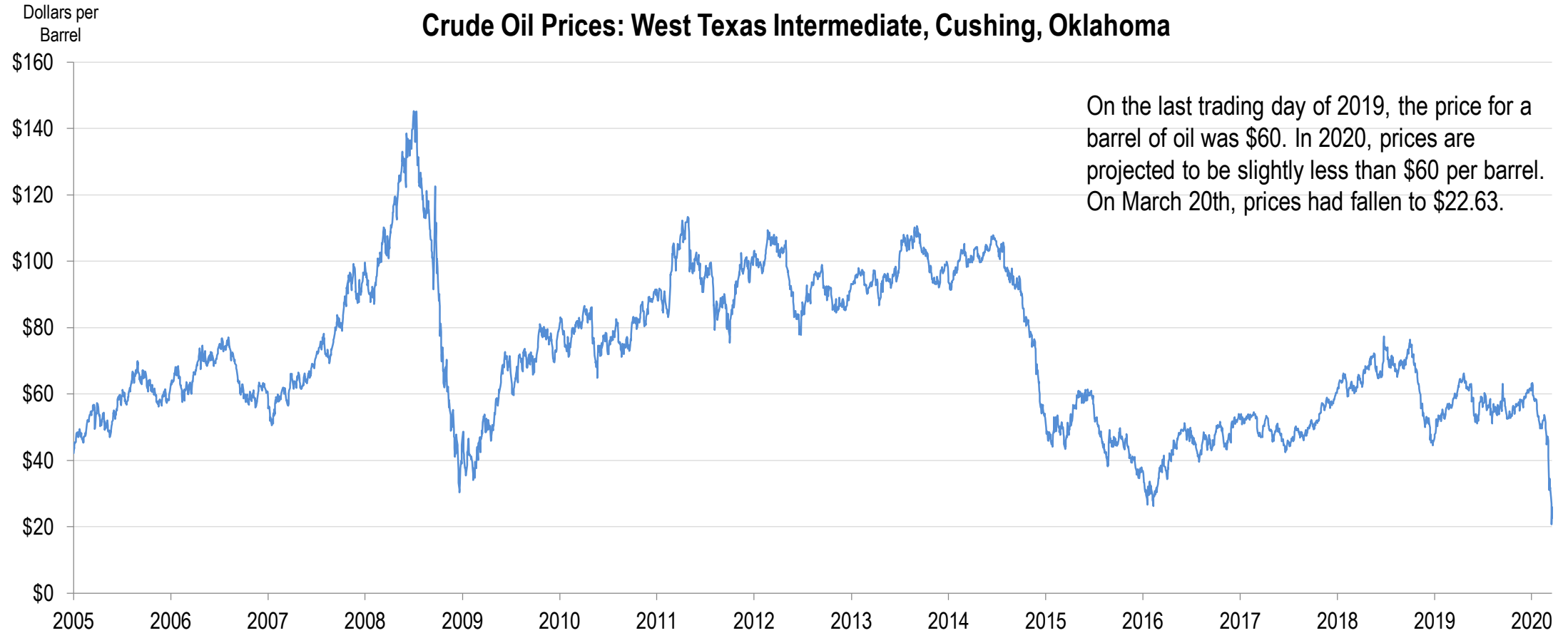
Source: FRED, EIA, cber.co.

Occupations by SOC
Colorado 2018

Occupations by SOC

SOC Code, Description, Mean Wages	Number of Employees
43 Office and Administrative Support $40,926	361,390
41 Sales and Related $47,853	291,900
35 Food Preparation $27,297	255,250
13 Business and Financial Operations $78,775	190,330
53 Transportation $42,305	150,880
29 Healthcare Practitioners $83,928	146,200
25 Education, Training, and Library $54,913	143,090
47 Construction and Extraction $49,985	140,690
15 Computer and Mathematical $96,884	116,930
11 Management $131,750	116,770
51 Production $40,988	102,540
49 Installation and Maintenance $51,483	101,450
39 Personal Care and Service $31,221	93,270
37 Maintenance $31,224	83,120
31 Healthcare Support $35,512	65,740
17 Architecture and Engineering $91,093	61,970
33 Protective Service $50,011	59,080
27 Arts, Entertainment, and Media $55,233	40,640
21 Community and Social Services $49,872	39,470
19 Life, Physical, and Social Science $76,168	30,330
23 Legal $113,442	22,540
45 Farming, Fishing, and Forestry $32,451	7,050

The mean wages for all occupations is $55,818 and the median is $42,308. There is a disparity between the two because mean wages for seven categories (yellow) distort the overall average. These seven categories employ only 26.1% of total workers and they receive 44.1% of total wages. The bottom line is that many of the jobs being added and lost in all industries are for occupations that pay lower than average wages. Total employment is 2,620,640.

Source: Bureau of Labor Statistics, cber.co.

Gross Domestic Product
Colorado MSAs and Nonmetro

CAGR Change in Current Dollar 2010 to 2018

MSA	CAGR 2010 vs. 2018
Greeley	7.8%
Fort Collins	4.9%
Denver	4.8%
Colorado Springs	3.9%
Boulder	3.7%
Grand Junction	2.9%
Nonmetro	1.8%
Pueblo	1.7%

The areas of fastest growth in GDP were Northern Colorado, Denver, and Colorado Springs. These same areas were 78% of the state's GDP.

2018 Colorado MSA GDP (millions)
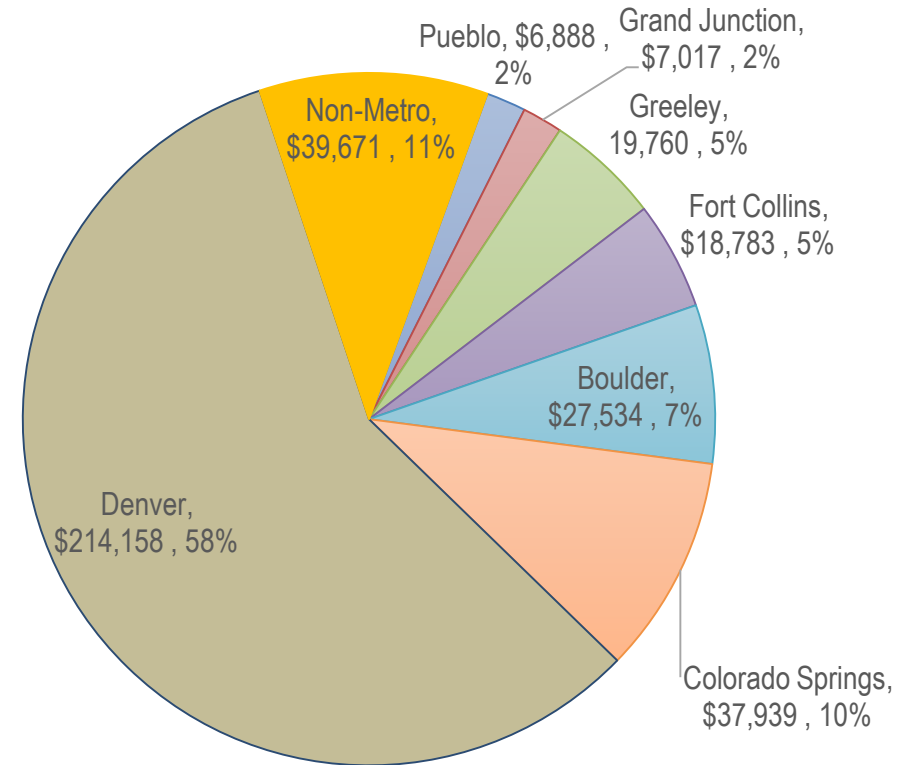
- Pueblo, $6,888 , 2%
- Grand Junction, $7,017 , 2%
- Greeley, 19,760 , 5%
- Fort Collins, $18,783 , 5%
- Boulder, $27,534 , 7%
- Non-Metro, $39,671 , 11%
- Denver, $214,158 , 58%
- Colorado Springs, $37,939 , 10%

Benchmark Wage and Salary Data for 2019

Strong Growth Category, Solid Growth Category, Volatile Category

The following analysis looks at sectors based on their classification as a strong growth, solid growth, or volatile category. The classification is based on a variety of factors measuring their performance over the past three quarters.

Employment By Growth Category

Employment Projections by Category

(000s)

	2011	2012	2013	2014	2015	2016	2017	2018	2019
Volatile	5.7	15.2	22.4	31.2	16.2	9.0	19.2	27.9	19.4
Solid Growth	9.9	14.1	25.1	23.2	27.3	24.9	16.8	16.9	9.9
Strong Growth	20.5	25.2	21.6	28.5	33.9	27.0	22.5	22.2	29.0

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

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

Volatile
Extractive Industries (NRM)
Construction
Manufacturing
Transportation and Warehousing
Utilities
Employment Services
Financial Activities
Information
Federal Government

Source: BLS, cber.co.
Colorado-based Business and Economic Research https:cber.co

Employment Projections

Colorado added 67,000 wage and salary workers in 2018 and 58,300 workers in 2019. The overall growth rate in 2019 was 2.1%.

About 35% of the employees are in the strong growth category (green).The strong growth category added about half of the total workers. It added jobs at a rate of 3.0%.

About 36% of the employees are in the solid growth (yellow) category. It added 17% of total jobs and increased at a rate of 1.0%.

About 29% of the employees are in the volatile category. It added 33% of total jobs and increased at a rate of 2.5%.

Change in Employment
Colorado Professional, Scientific, and Technical Services and Health Care

(000s)

Change in PST Employment (Strong Growth)

*Professional, Scientific, and Technical
2019 Employment: 235,300*

The PST sector led Colorado out of the Great Recession with jobs and wages. PST added 10,800 jobs in 2019, or 18.5% of total jobs added. Jobs will be added at a lower than normal rate in 2020.

(000s)

Change in Health Care Employment (Strong Growth)
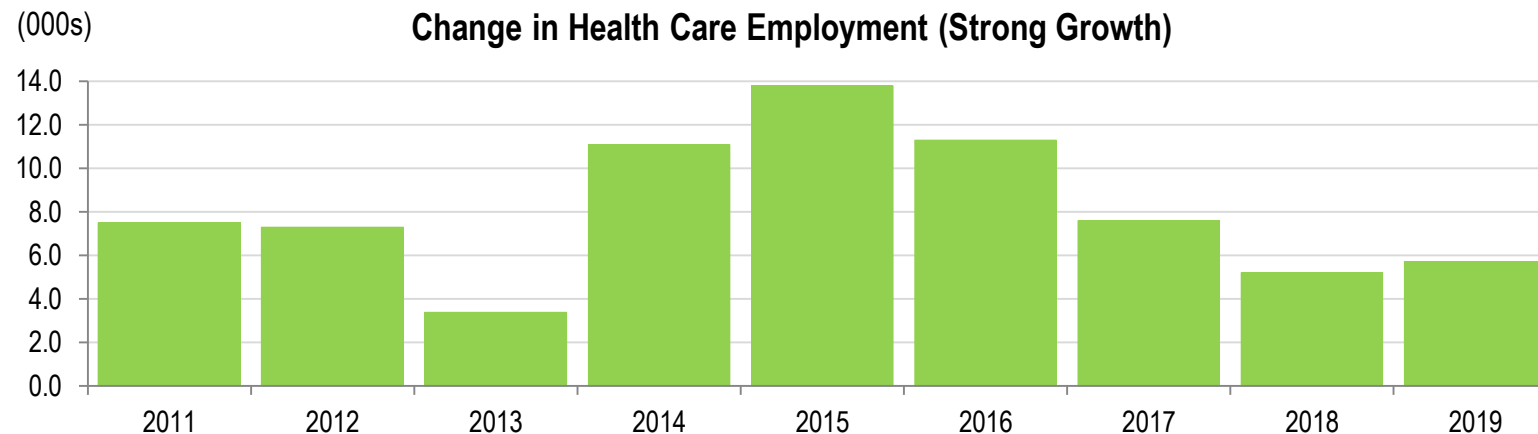
*Health Care
2019 Employment: 304,500*

The health care sector has been recession-proof. Jobs have been added in the sector every year since 1990. With the number of aging baby boomers and the virus pandemic crisis, there are no concerns about a health care bubble. Modest employment growth is expected for 2020.

Source: Bureau of Labor Statistics, cber.co.

Change in Employment
Colorado Arts, Entertainment, and Recreation and Other Services

Change in AER Employment (Strong Growth)

(000s)
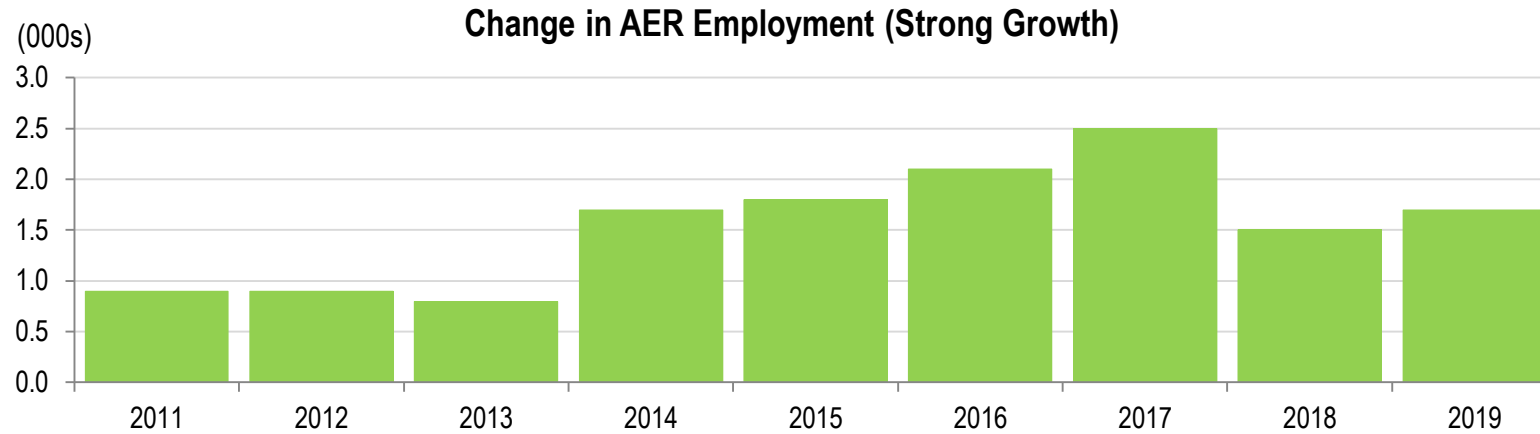
Arts, Entertainment, and Recreation
Employment: 58,600

The AER sector is part of the Leisure and Hospitality super sector. AER is small, but it has added jobs every year since 2009. The sector will experience job losses in 2020.

Change in Other Services Employment (Strong Growth)

(000s)
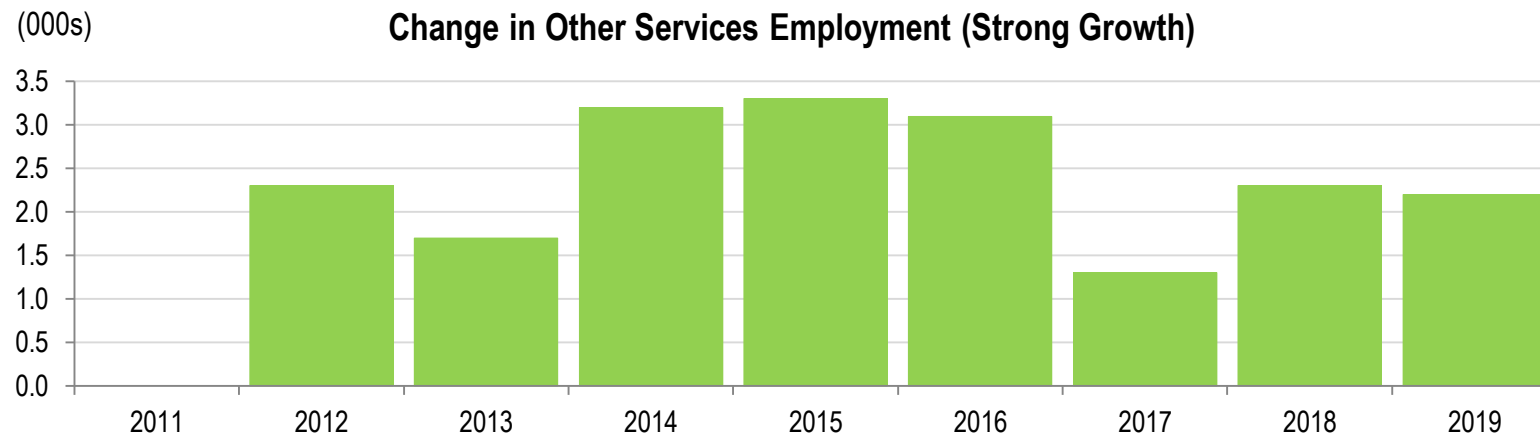
Other Services
Employment: 113,100

The other services sector provides a variety of services that may or may not be affected by fluctuation in the economy. The sector added jobs every year between 2012 and 2019. At best the sector will break even in 2020.

Source: Bureau of Labor Statistics, cber.co.

Change in Employment
Colorado Management of Companies and Enterprises and Administrative Services Less Employment Services

Change in MCE Employment (Strong Growth)

(000s)
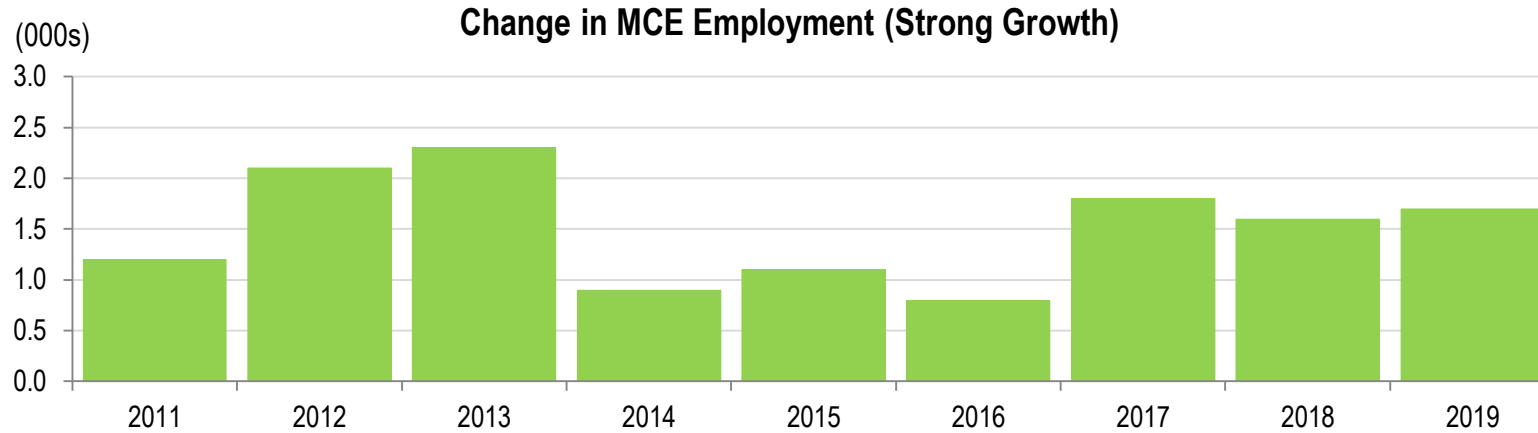
Management of Companies and Enterprises
2019 Employment: 42,500

The MCE sector has only shown job losses in two years since 1990 (1995 and 2009). The sector may add jobs in 2020 as a result of economic development efforts to attract companies from California.

Change in Administrative Services Except Employment Services (Strong Growth)

(000s)
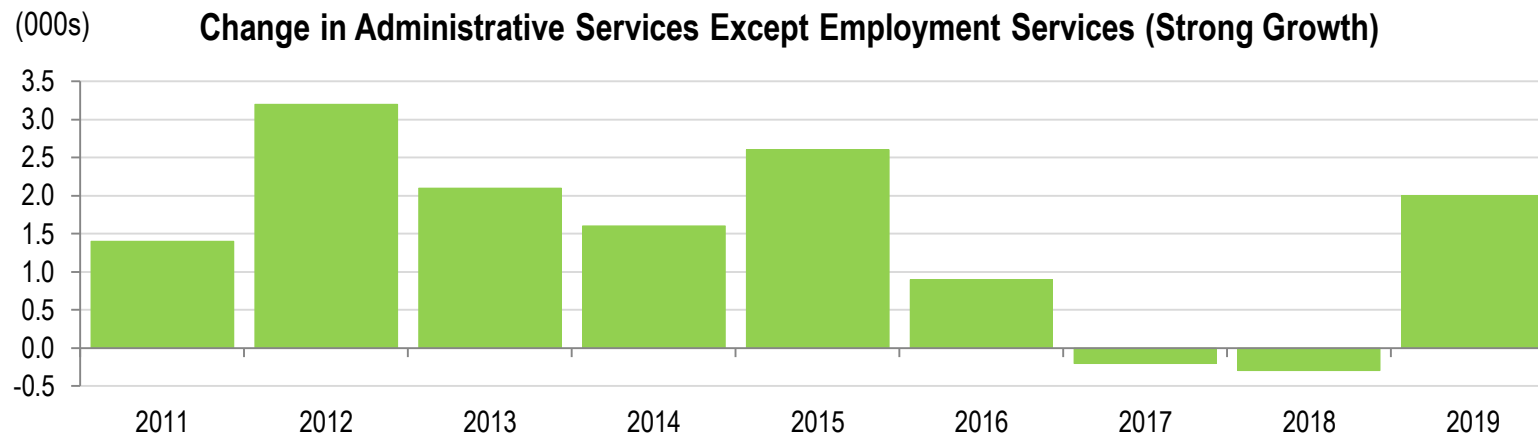
Administrative Services Except Employment Services
2019 Employment: 112,400

The administrative services (less employment services) sector added about 2,000 jobs in 2019. The sector will experience job losses in 2020.

Source: Bureau of Labor Statistics, cber.co.

Change in Employment
Colorado Professional, Scientific, and Technical Services and Health Care

Change in Private Education Services Employment (Strong Growth)

(000s)
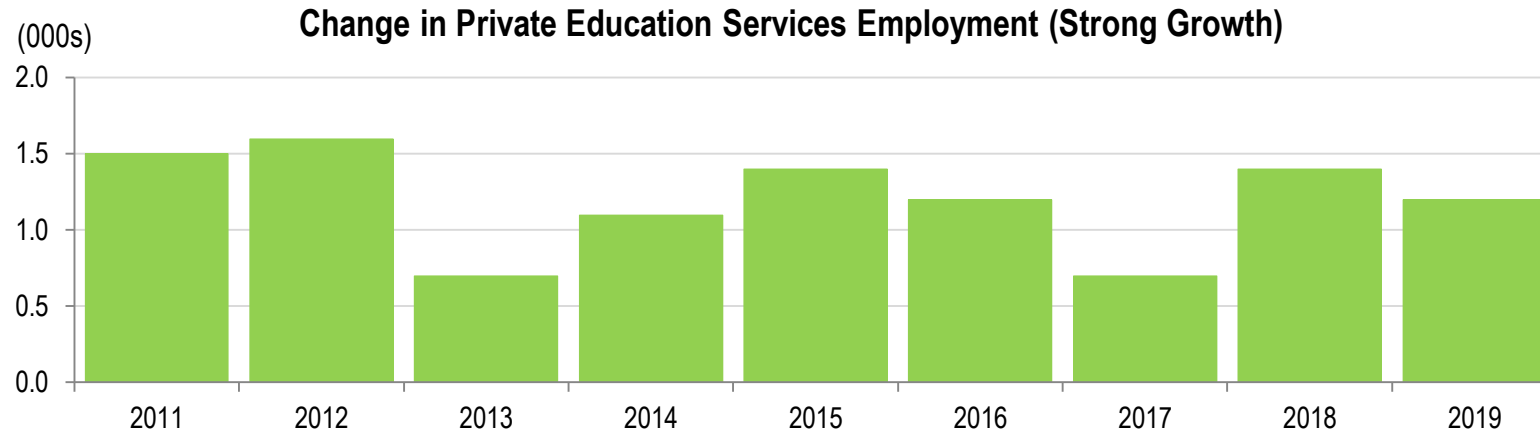
Education Services (Private)
2019 Employment: 43,100

The private education sector is small, but it has added workers as the state has increased its population. The sector has added jobs every year since 1990. Jobs may be added in 2020 to support workforce-related training.

Change in State Education Services Employment (Strong Growth)

(000s)
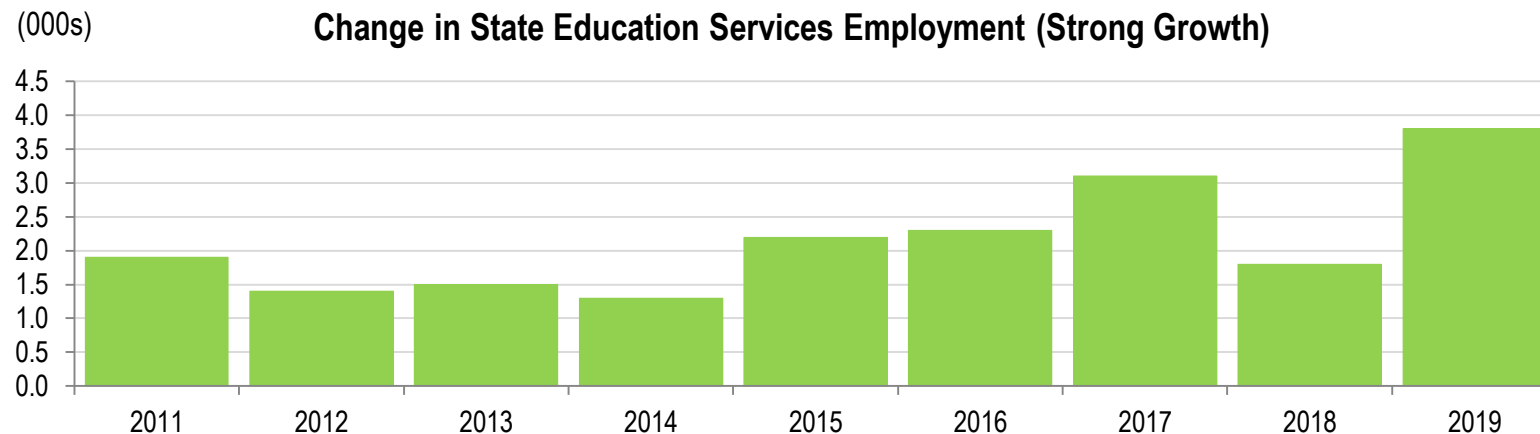
State Education Services (Higher Education)
2019 Employment: 79,600

Higher education has been a job creation machine since 1990. More recently universities have purchased hospitals which are included in their employment numbers. The sector will continue to add jobs in 2020.

Source: Bureau of Labor Statistics, cber.co.

Change in Employment
Colorado Retail and Accommodations and Food Services

Change in Retail Trade Employment (Solid Growth)

(000s)
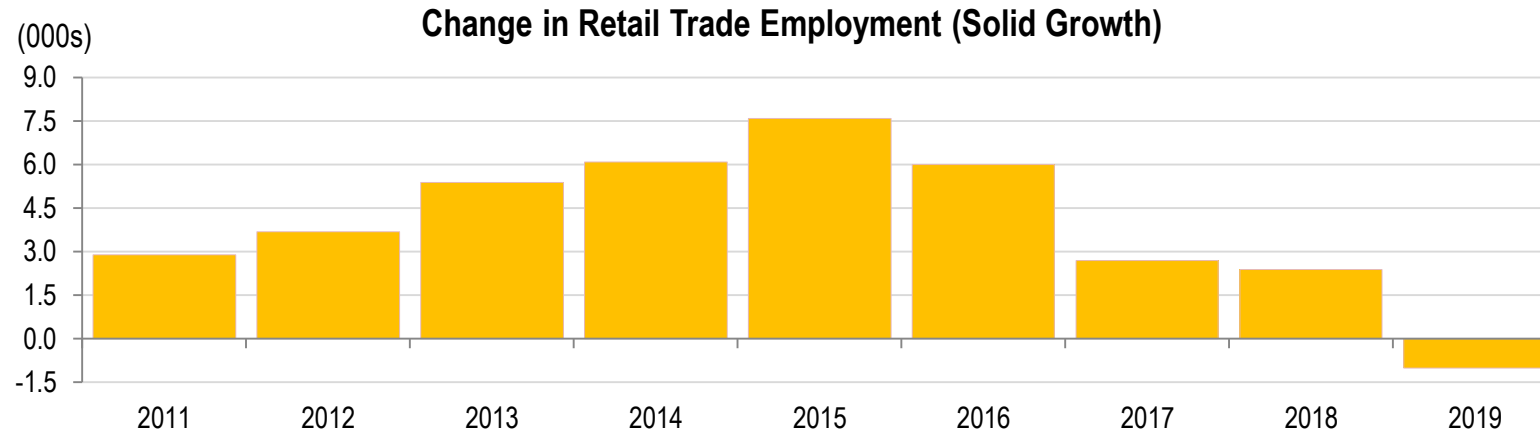
Retail
2019 Employment: 272,200

In 2006, Colorado had more than 19,100 retail establishments. That number declined as a result of the Great Recession and was slightly above 17,800 between 2016 and 2018. A slight decline from that level is expected in 2019. This is an indication Colorado may be overbuilt in retail establishments. Retail employment growth will deteriorate further in 2020.

Change in Accommodation and Food Services Employment (Solid Growth)

(000s)
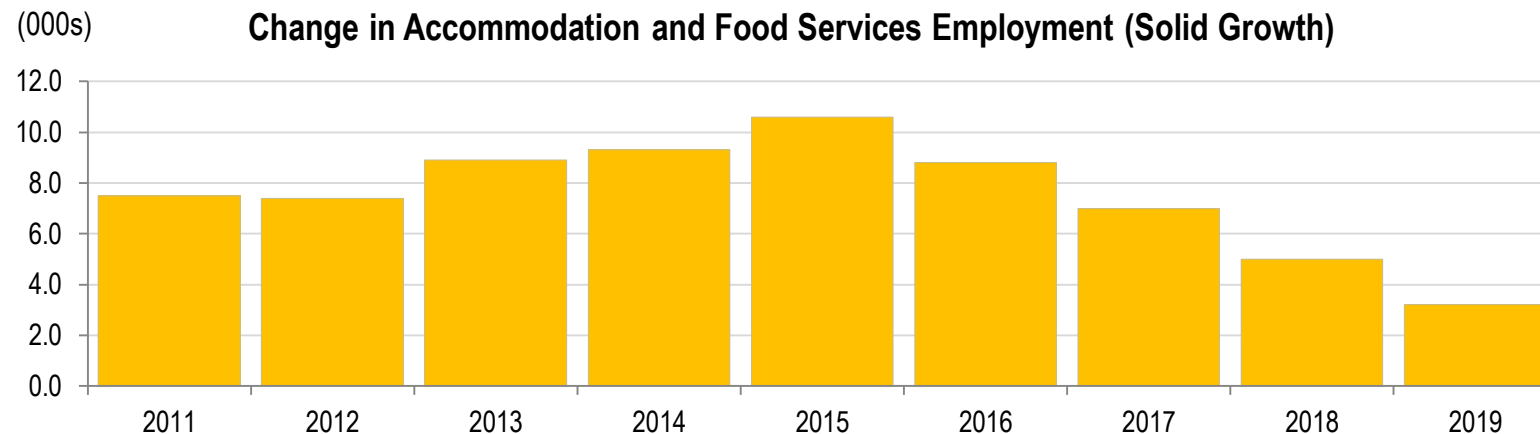
Accommodations and Food Services
2019 Employment: 286,000

Historically, the AFS sector has been a source of steady employment growth. In 2019, the number of AFS establishments dropped off significantly, suggesting the state may be saturated with some types of AFS establishments. The AFS sector will lose a significant number of jobs in 2020.

Source: Bureau of Labor Statistics, cber.co.

Change in Employment
Colorado Local and State Government (Excluding Education)

Change in Local Government Employment Excluding Education (Solid Growth)

(000s)
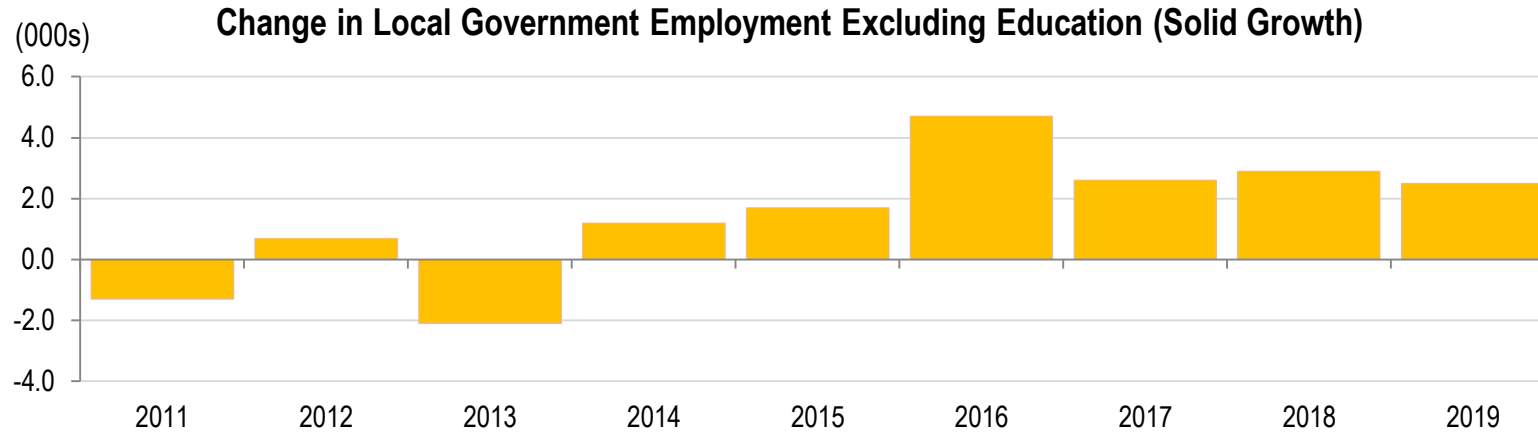
Local Government
2019 Employment: 130,800

The local government sector added jobs between 2014 and 2019. The peak in 2016 was a function of strong hiring by local governments as part of the recovery from the Great Recession. Despite the need for services, the sector will lose jobs in 2020.

Change in State Government Excluding Education (Solid Growth)
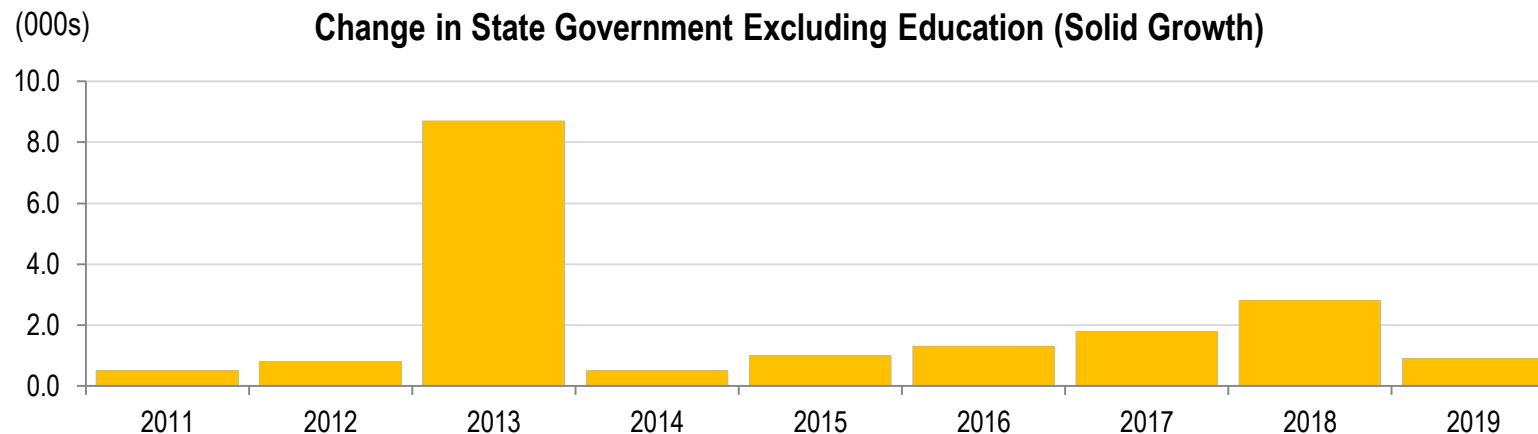
(000s)

State Government
2019 Employment: 51,000

State government employment has increased every year since 1990 with the exception of 2003 and 2004. It posted stronger than usual gains in the final years of the Hickenlooper administration. The sector is expected to add jobs in 2020, despite budget challenges. This may occur if stimulus related grants are provided by the federal government.

Source: Bureau of Labor Statistics, cber.co.

Change in Employment
Colorado Local Education and Wholesale Trade

Change in Local Education Employment (Solid Growth)

(000s)
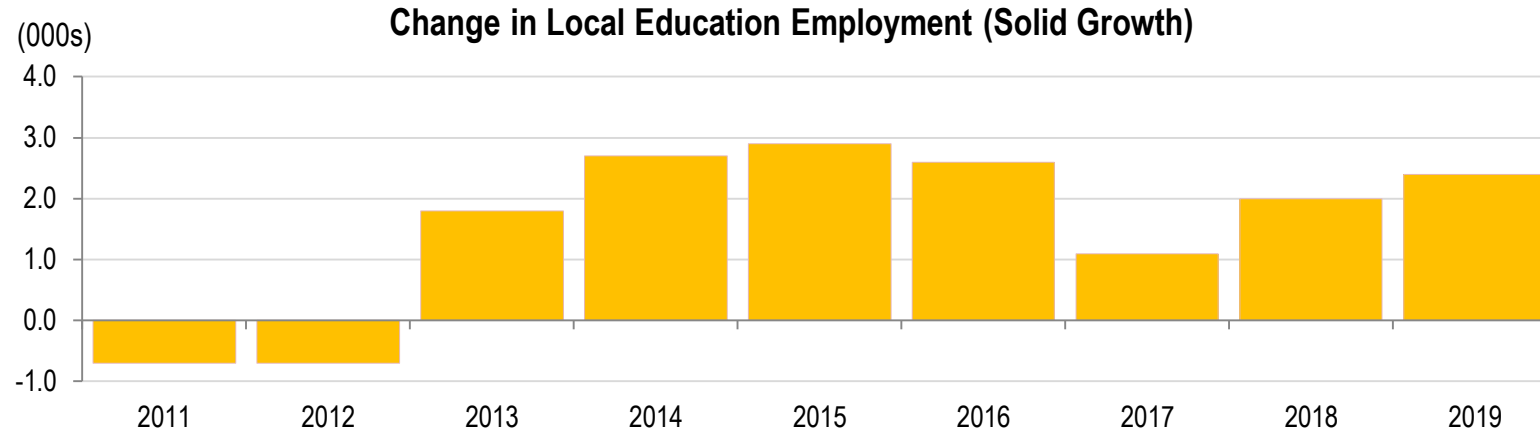
Local Education (K-12)
Employment 2019: 140,900

K-12 education has recorded job losses on only three occasions since 1990 - 2010 through 2012. Lower fertility rates are having an adverse affect on FTE student enrollment. At best, the number of new jobs will be flat in 2020.

Change in Wholesale Trade (Solid Growth)

(000s)
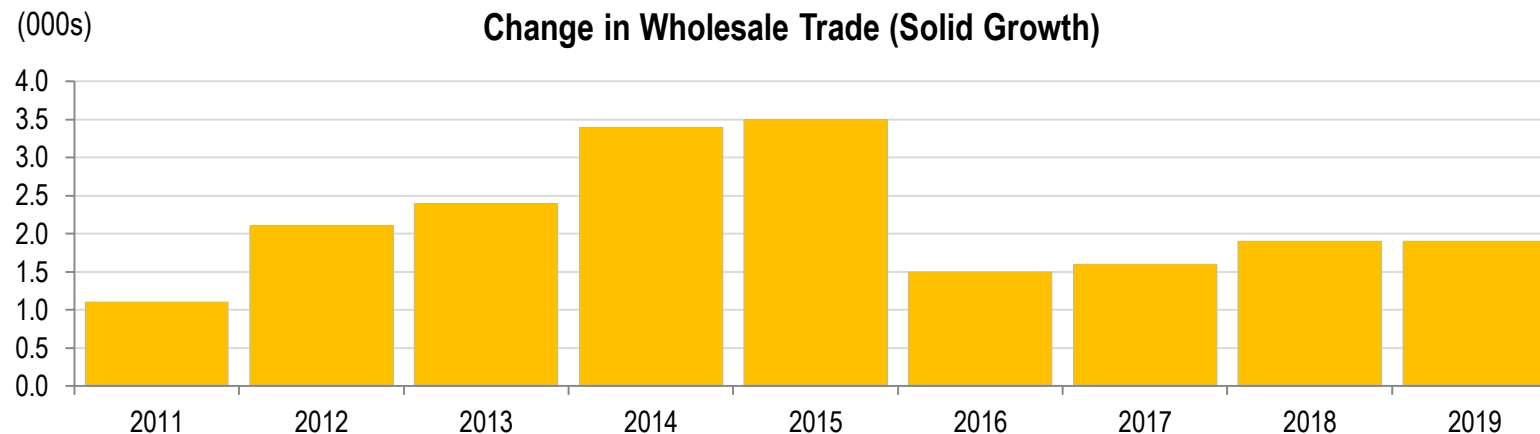
Wholesale Trade
Employment 2019: 110,100

Wholesale trade posted solid job gains during the recovery from the Great Recession. The sector recorded job losses in each of the last recessions. It is likely to see job losses in 2020.

Source: Bureau of Labor Statistics, cber.co.

Change in Employment
Colorado Extractive Industries (NRM) and Transportation and Warehousing

Change in Extractive Industries (NRM) Employment (Volatile)

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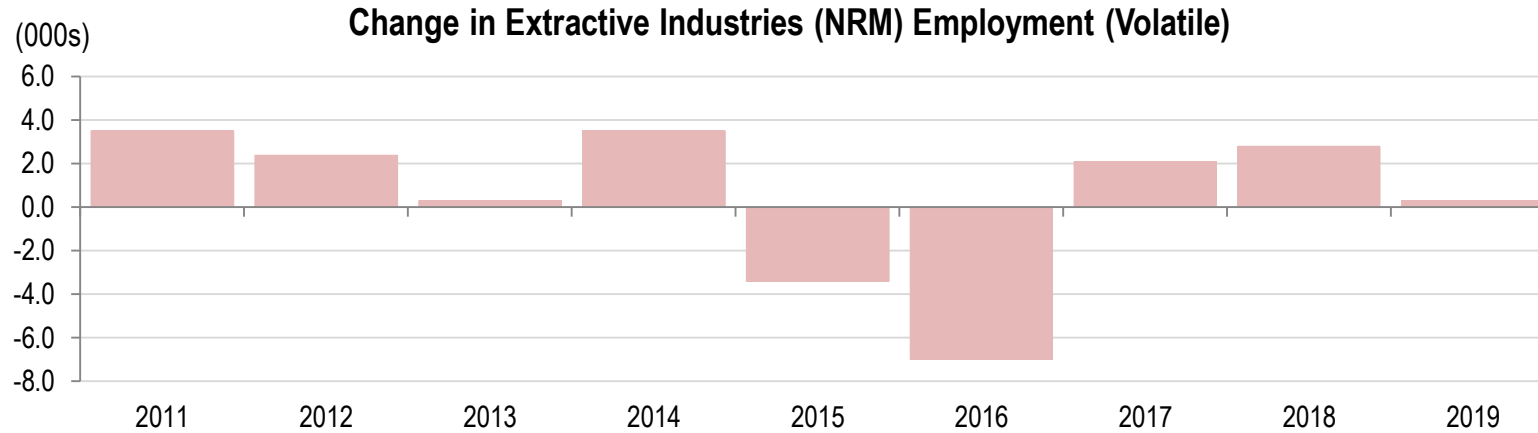
Natural Resources and Mining
2019 Employment: 28,900
The extractive industries are volatile because of wide swings in prices and demand. Volatility has been exacerbated by government policy and legislation intended to eliminate the drilling and production of fossil fuels in Colorado. In addition, the Russia – Saudi Arabia "Oil War" will negatively impact shale production in the U.S. The sector will experience significant job losses in 2020.

Change in Transportation and Warehousing Employment (Volatile)

(000s)
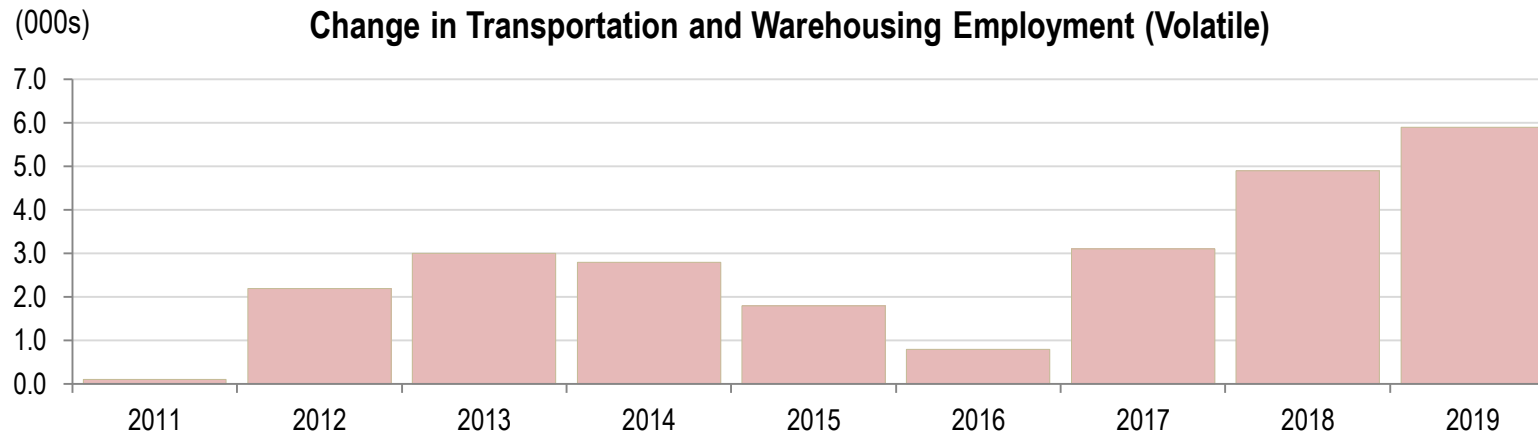
Transportation and Warehousing
2019 Employment: 86,900
Colorado has seen a strong increase in its warehousing operations in the past three years. In addition there has been growth in air courier, transportation support, and USPS employment. Changes in employment are more erratic for urban transit and trucking employment. In 2020 there will be growth in logistics and warehousing. There will be a likely decline in tourism-related transportation.

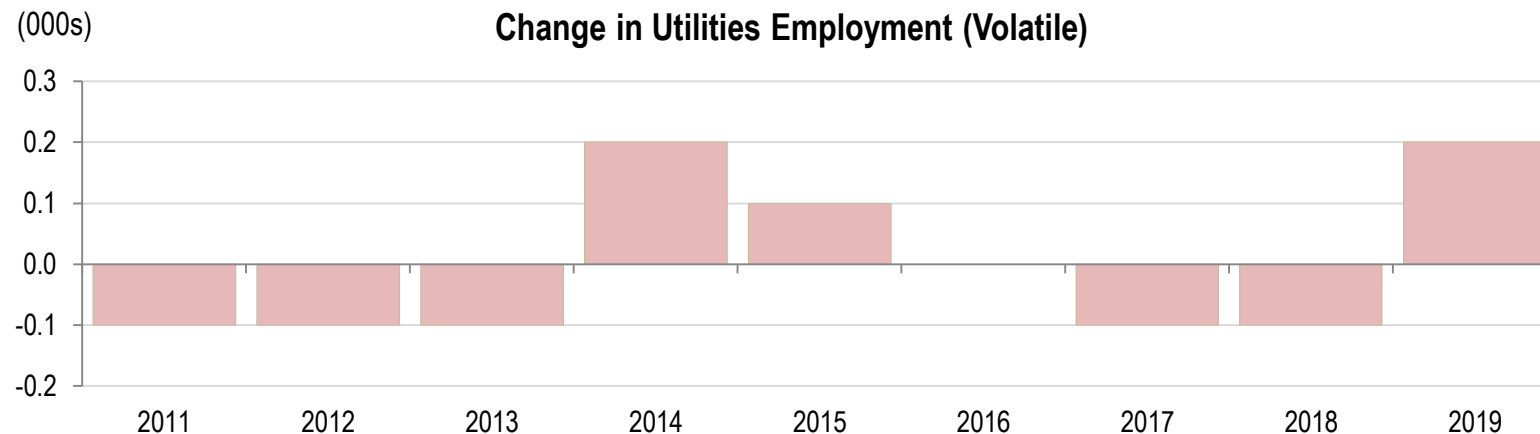**Source: Bureau of Labor Statistics, cber.co.**

Change in Employment
Colorado Federal Government and Utilities

Change in Federal Government Employment (Volatile)

(000s)

Change in Utilities Employment (Volatile)

(000s)

Source: Bureau of Labor Statistics, cber.co.
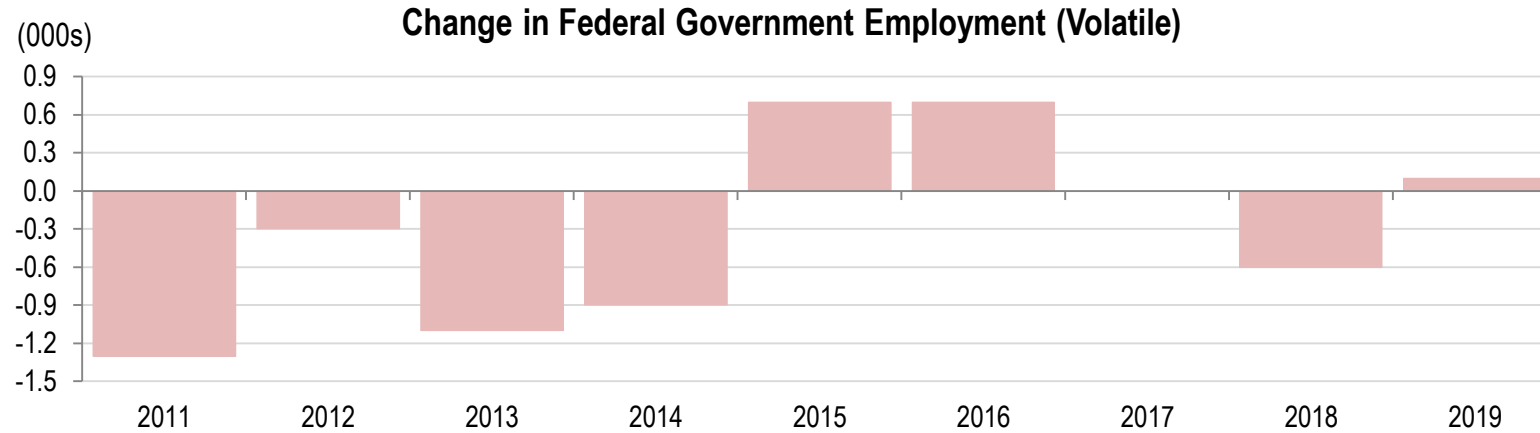
Federal Government
2019 Employment: 53,000

Historically, federal government employment has been erratic because of swings in funding. Approximately 2000 temporary workers will be hired in 2020 to assist with the U.S. Census.
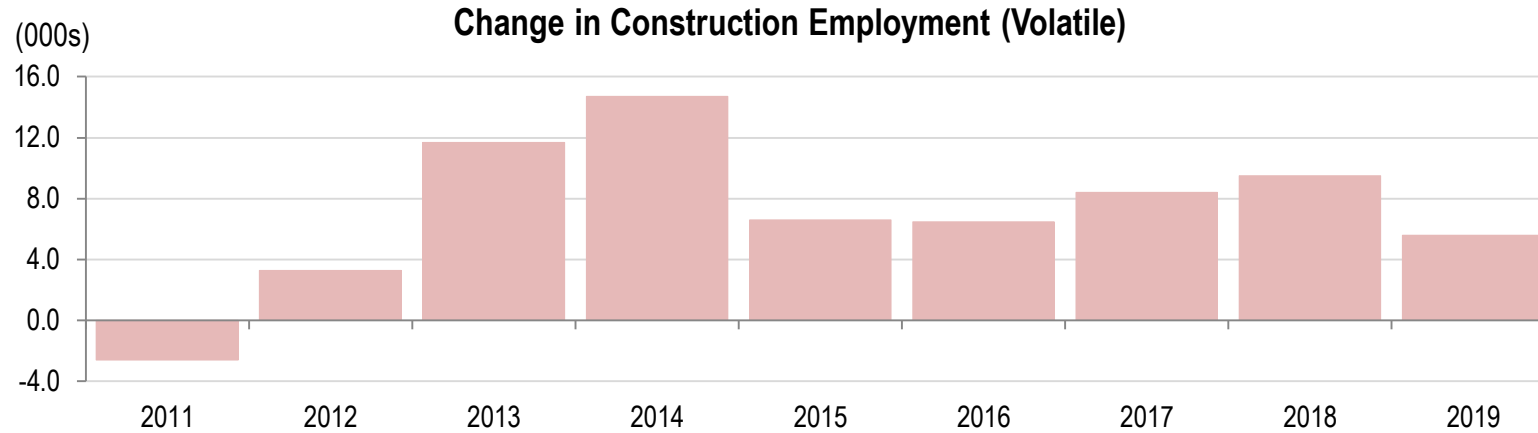
Utilities
2019 Employment: 8,200
Historically, the utilities sector has employed about 8,000 workers. Yearly changes are minimal. Employment in 2020 will be flat.

Change in Employment
Colorado Construction and Manufacturing

Change in Construction Employment (Volatile)

(000s)

Construction
2019 Employment: 178,800
The outlook for construction is positive; interest rates are low, the rate of appreciation has slowed, wages are increasing, there is solid demand, and millennials are entering the market. Despite the turbulent economy, the sector will see slight growth in 2020.

Change in Manufacturing Employment (Volatile)

(000s)
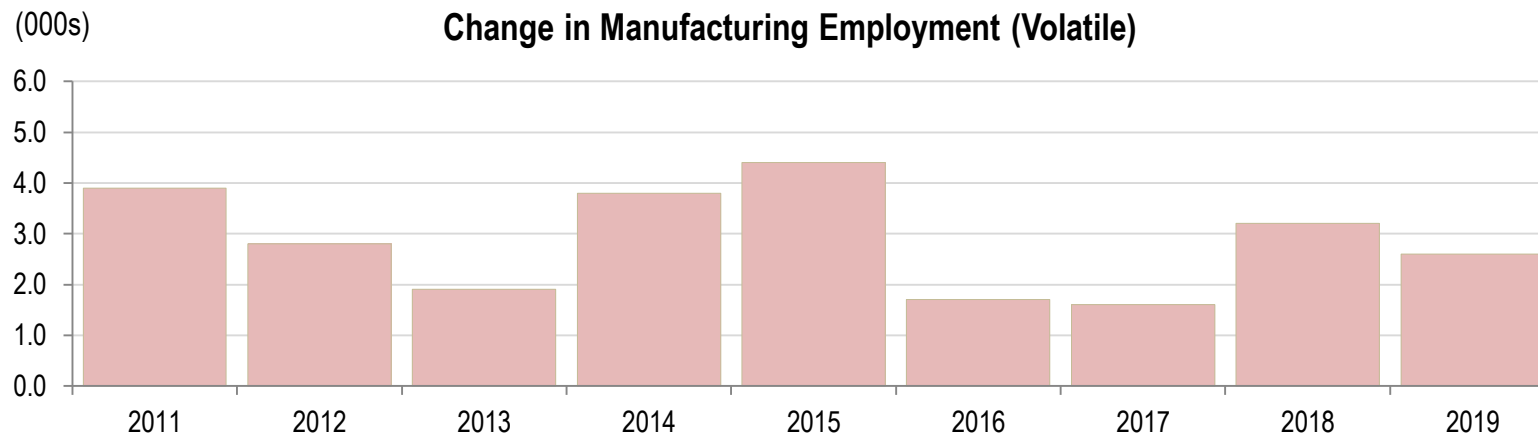
Manufacturing
2019 Employment: 150,100
U.S. manufacturing is in a slump. On the other hand, Colorado manufacturing posted gains between 2011 and 2019. Although Colorado has a low concentration, or location quotient, of manufacturers, it has been resilient because of the strengths in aerospace, renewable energy, and beverages. Losses will occur in 2020, in part because of declines in beverage manufacturing and companies that rely heavily on foreign supply chains.

Source: Bureau of Labor Statistics, cber.co.

Change in Employment
Colorado Information and Administrative Services Except Employment Services

Change in Information (Volatile)

(000s)

Change in Employment Services (Volatile)

(000s)

Source: Bureau of Labor Statistics, cber.co.
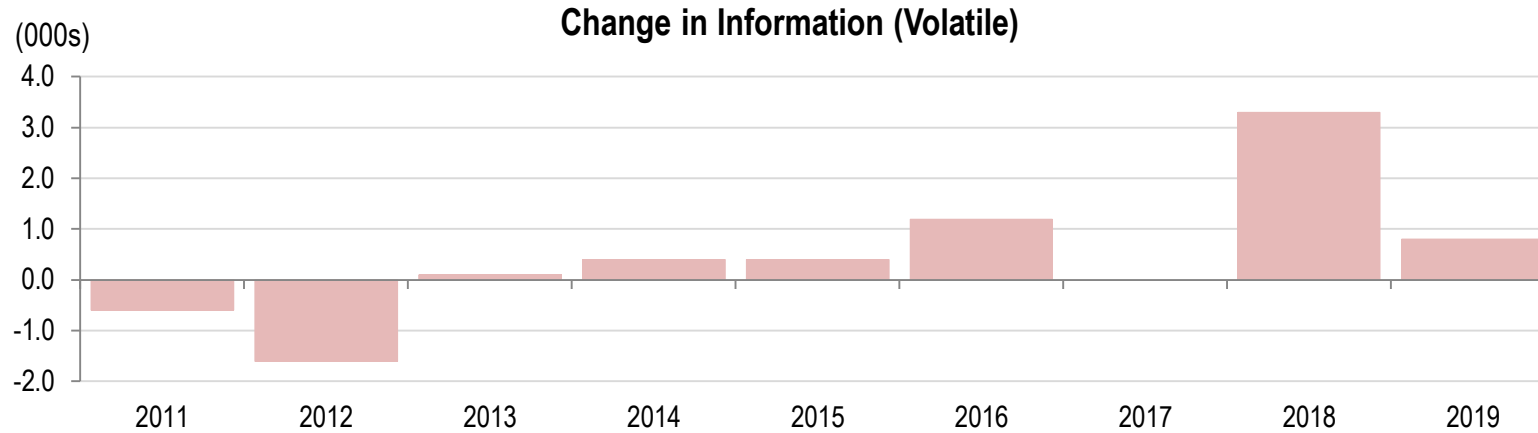
Information
2019 Employment: 76,000

The information sector peaked at 107,300 workers in 2001, but it declined precipitously over the next five years. Since then, annual employment has been between 69,000 and 77,000. Technology changes and industry consolidation have been the primary sources of volatility. At best, the sector employment will remain flat in 2020.
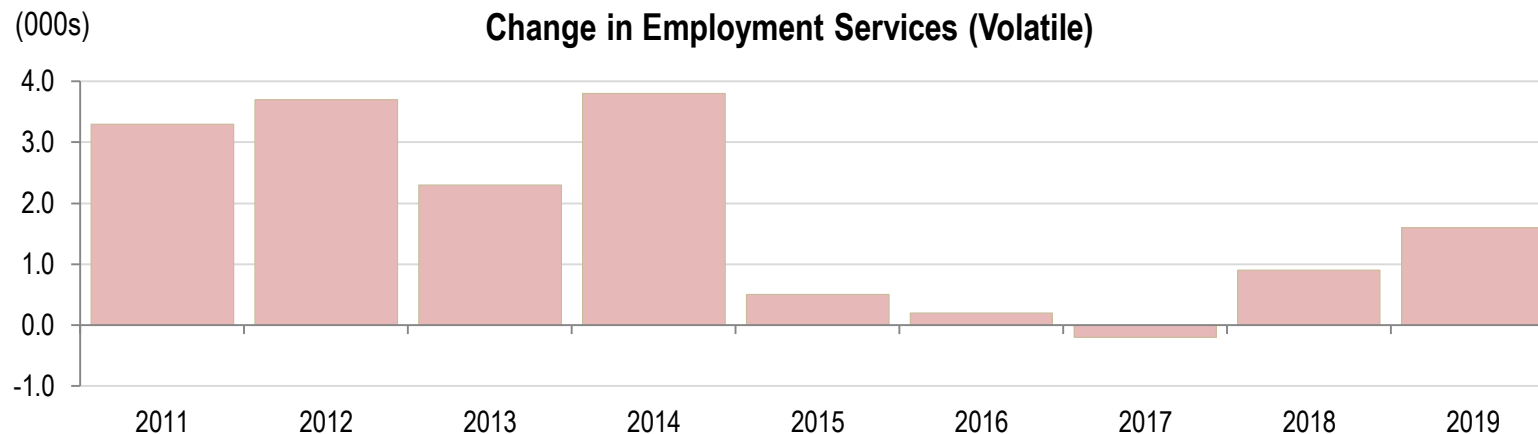
Employment Services
2019 Employment: 49,800

The number of jobs in the employment services sector increased in 2018 and 2019 as companies struggled to find workers. In 2020 there may be slight job gains for temporary workers as companies struggle to find the optimal number of workers.

Change in Employment
Colorado Financial Activities

Change in Financial Activities (Volatile)

(000s)
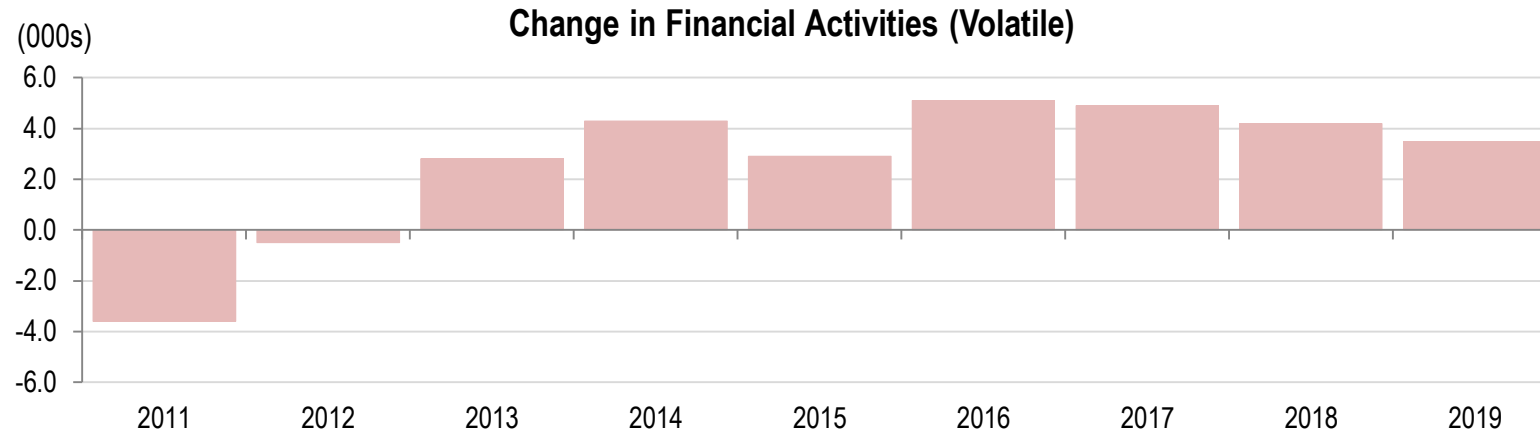
Financial Activities
2019 Employment: 173,900

The financial activities sector added jobs between 2013 and 2019. Low interest rates and limited construction will support slight job growth in 2020.

Source: Bureau of Labor Statistics, cber.co.

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Summary of Potential Job Growth in 2020

Strong Growth Category, Solid Growth Category, Volatile Category

In 2020, the Strong Growth category will add jobs. There will be significant losses in the Solid Growth category. The Volatile category will lose slightly more jobs than it adds. At this point it appears there may be as many as 400,000 jobs at risk and total job losses in 2020 will be greater than 35,000.

Potential for Job Growth in 2020
Strong Growth Category

Strong Growth Category	2019 Employment	% of Total Employment	2019 vs 2018 Change	2019 v 2018 % Change	Location Quotient	Comments
Professional, Scientific, and Technical Services	235,300	8.4%	10,800	4.8%	1.34	Colorado has a competitive advantage in PST. The sector supports the growth of energy and advanced technology. For that reason slight job growth is likely in 2020.
Management of Companies and Enterprises	42,500	1.5%	1,700	4.2%	0.95	Colorado does not have a competitive advantage in this sector. The sector may add jobs in 2020.
Administrative Services (Not Employment)	112,400	4.0%	2,000	1.8%	1.07	The sector requires growth in other businesses for it to flourish. Job losses in the sector are likely in 2020.
Private Education	43,100	1.5%	1,200	2.9%	0.62	The sector may be a resource for job training as workers re-enter the workforce. There will be slight growth in the sector in 2020.
Higher Education (Public)	79,600	2.9%	3,800	5.0%	1.74	Higher education gets funding from multiple sources, including medical operations. It will add a small number of jobs in 2020.
Health Care	304,500	10.9%	5,700	1.9%	0.81	Health care is essential to the well-being of our society, especially during a pandemic. The sector will add jobs in 2020.
Arts, Entertainment, and Recreation	58,600	2.1%	1,700	3.0%	1.30	AER job losses will occur because residents and visitors will not have discretionary income and a willingness to travel in 2020.
Other Services	113,100	4.1%	2,200	2.0%	1.04	Many services are essential, even during tough economic times. At best, there will be minimal growth in 2020.

Potential for Job Growth in 2020
Solid Growth Category

Solid Growth Category	2019 Employment	% of Total Employment	2019 vs 2018 Change	2019 v 2018 % Change	Location Quotient	Comments
Wholesale Trade	110,100	4.0%	1,900	1.8%	1.01	Growth in wholesale trade employment is contingent upon retail sales and business investment. In the near-term both areas are expected to show job losses. Expect WT job losses in 2020.
Retail Trade	272,200	9.8%	(1,000)	-0.4%	0.94	The retail sector is evolving and reliant upon shipments from China. The social distancing policy will drive more consumption online. In turn, this will reduce the tax base for state and local governments. Over time the number of retail establishments has declined. Expect significant decreases in retail employment as small retail establishments may be forced out of business.
State (Not Higher Education)	51,000	1.8%	900	1.8%	1.03	The state will be expected to provide more services and support for Coloradans. If it receives federal funding to provide these services expect employment to increase.
Local (Not K-12 Education)	130,800	4.7%	2,500	1.9%	1.08	Expect local government employment to decline because of a reduced revenue stream from sales taxes.
K-12 Education	140,900	5.1%	2,400	1.7%	0.95	K-12 education will have a budget shortfall because of the reduction in tax revenue collected by the state. Expect employment cuts, unless additional federal funding is provided.
Accommodations and Food Services	286,000	10.3%	3,200	1.1%	1.10	For a variety of reasons (lack of tourism, slim margins, steep competition) there will be significant decreases in AFS in 2020.

Potential for Job Growth in 2020
Volatile Category

Volatile Category	2019 Employment	% of Total Employment	2019 vs 2018 Change	2019 v 2018 % Change	Location Quotient	Comments
Extractive Industries (NRM)	28,900	1.0%	300	1.0%	2.13	Expect significant production and employment decreases as a result of the Russian-Saudi "Oil War", lower oil prices, and SB 19-181.
Construction	178,800	6.4%	5,600	3.2%	1.29	New home construction may continue at some level because of low interest rates. At worst, employment will remain flat.
Manufacturing	150,100	5.4%	2,600	1.8%	0.63	Brewing and tourism related manufacturing will lose jobs in 2020. Manufacturers with foreign supply chains may also face slowdowns. Small manufacturers will be vulnerable.
Transportation and Warehousing	86,900	3.1%	5,900	7.3%	0.84	In 2020 there will be an increase in warehousing and logistic companies. Tourism related transportation jobs will decline.
Utilities	8,200	0.3%	200	2.5%	0.81	There will be no significant change in utility employment in 2020.
Employment Services	49,800	1.8%	1,600	3.3%	0.74	Companies may increase the use of employment agencies during layoffs and the remainder of 2020.
Financial Activities	173,900	6.2%	2,300	1.3%	1.08	The financial activities sector will likely add jobs because people may refinance their homes or take out loans.
Information	76,000	2.7%	800	1.1%	1.44	The sector is extremely volatile. Expect slight losses in 2020.
Federal Government	53,000	1.9%	100	0.2%	1.01	The federal government will add significant temporary jobs to complete the 2020 Census.

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

Horvath was the principal investigator for a state and federally funded project to prepare a nanotechnology roadmap for Colorado. As well, he was a co-founder of the Colorado Photonics Industry Association, a trade group for Colorado's Photonics cluster. Horvath has been an active board member of the group since its inception.

Horvath has also served on the Board of Directors for the Economic Development Council of Colorado, Northwest Denver Business Partnership, Adams County Economic Development, and Broomfield Economic Development Corporation. Horvath has also been the lead for the photonics/electronics cluster in OEDIT's early stage and proof of concept grant program.