



COLORADO
Department of
Labor and Employment
Office of Labor Market Information

Colorado School Finance Project

Monthly Meeting

May 13, 2022

Education Sector Employment Trends in the U.S. and Colorado

Ryan Gedney
Principal Economist
Labor Market Information, CDLE

May 13, 2022

This presentation will be divided into four main sections:

- 1. General overview of Colorado's labor market since the start of the pandemic**
- 2. Employment trends for Colorado's elementary and secondary schools**
- 3. Metrics that measure labor tightness and potential hiring difficulties**
- 4. Other potential short and long-term staffing issues for the education sector**
 - Education employees shifting to other industries**
 - Retaining those with degrees in education**
 - Relatively older workforce**
 - Teacher pay**

What this presentation won't address:

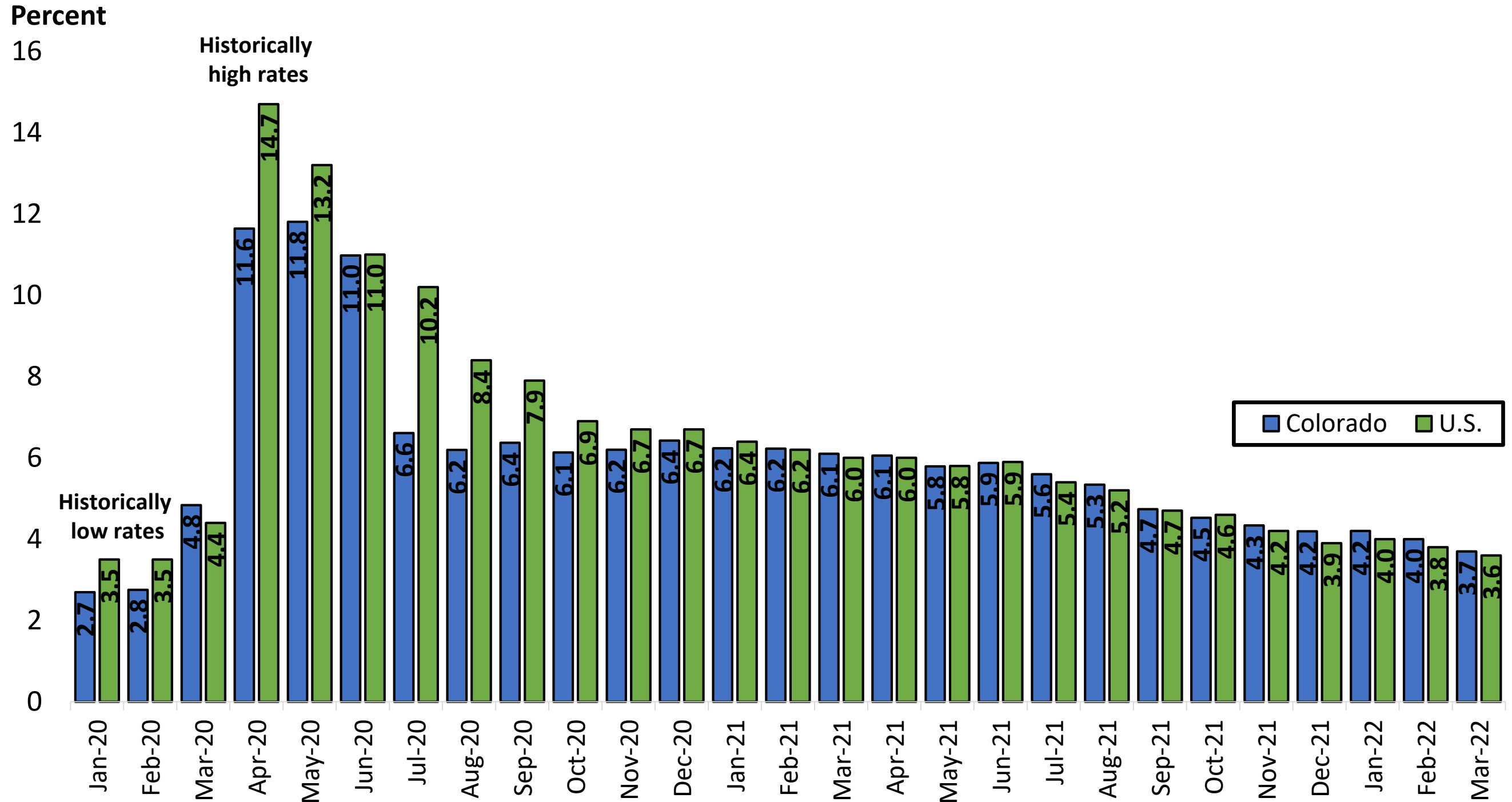
- **Real-time trends**
- **Granular data on labor supply and demand issues for the education sector**
- **Policy impacts**
- **Solutions**

Role of Labor Market Information office:

- Work contractually with U.S. Bureau of Labor Statistics to produce official BLS labor market estimates for Colorado and sub-state areas**
- These estimates are comparable to every geographic region across the U.S. and across time**
- We produce a lot of data, but some of the most popular are for: nonfarm payroll jobs; unemployment rate; occupational wages and employment; and industry wages and employment**

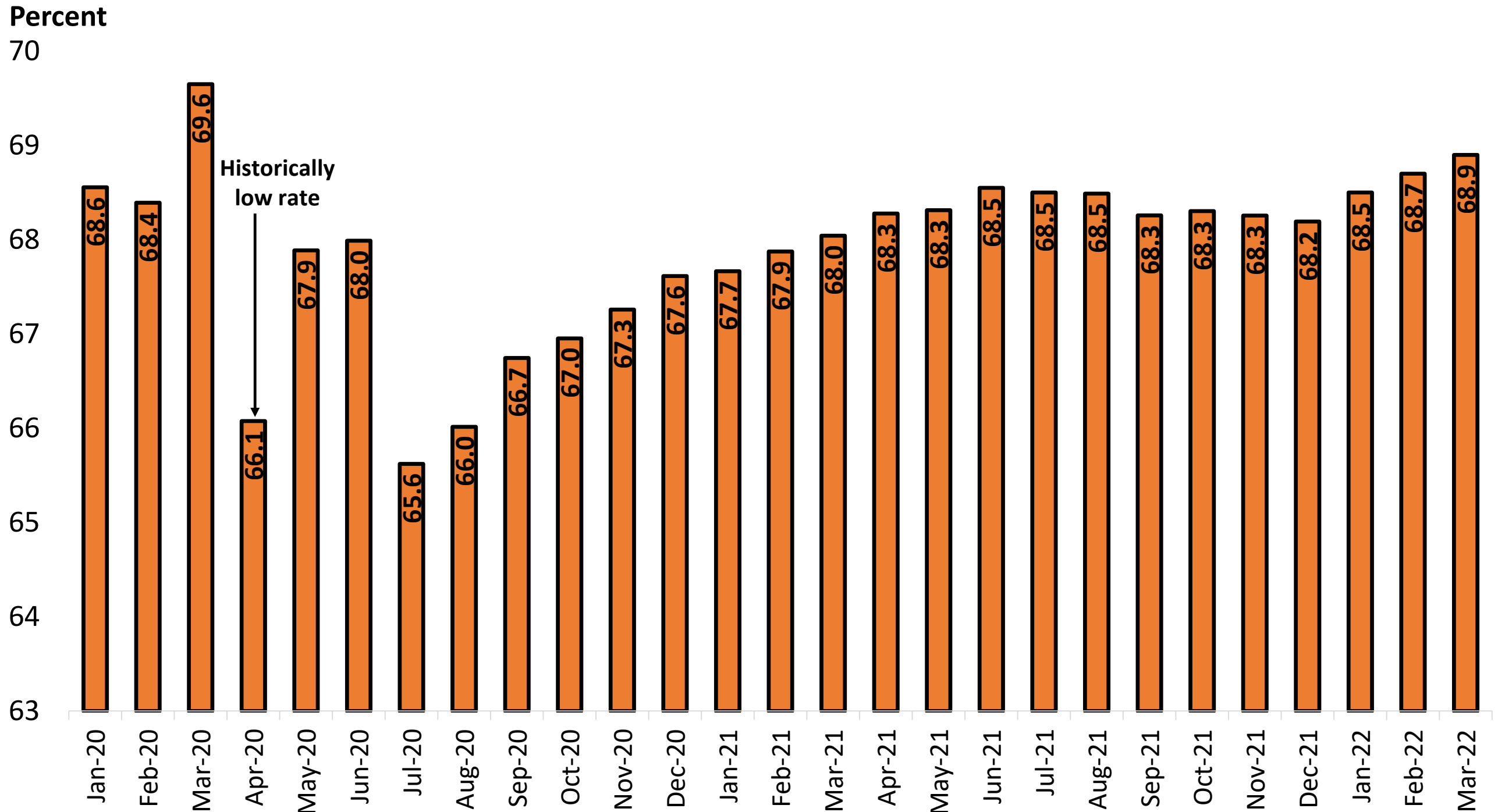
General Overview of Colorado's Labor Market Since the Start of the Pandemic

U.S. and Colorado Unemployment Rates Jumped From Historically Low to High Rates in 2020



Source: Bureau of Labor Statistics; CDLE/Office of Labor Market Information
Data seasonally adjusted

Colorado's Labor Force Participation Rate* Dropped to an All-Time Low Level in April 2020

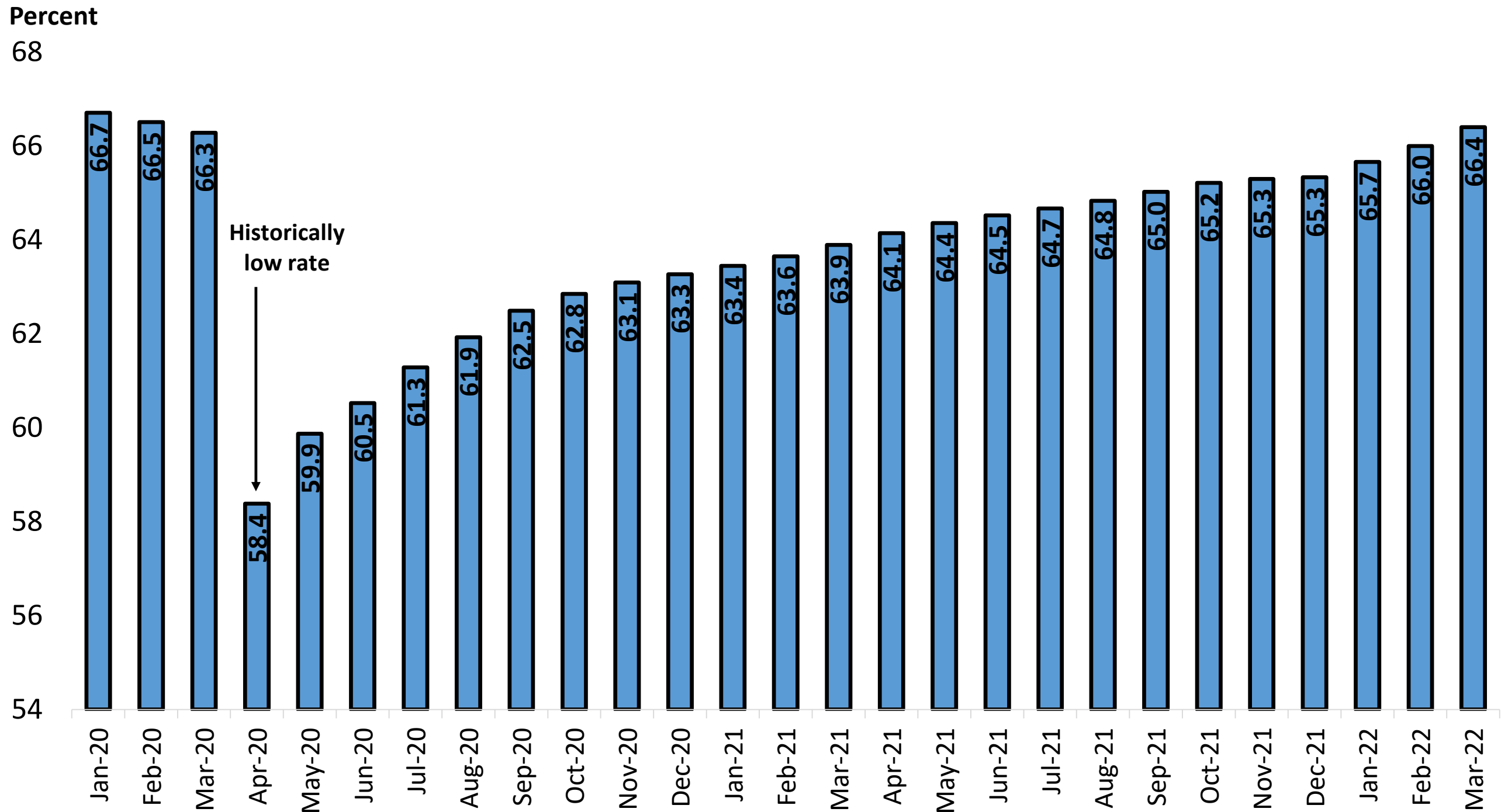


Source: Bureau of Labor Statistics; CDLE/Office of Labor Market Information

*Estimates share of Colorado's 16+ population that is participating in the labor force within a given month

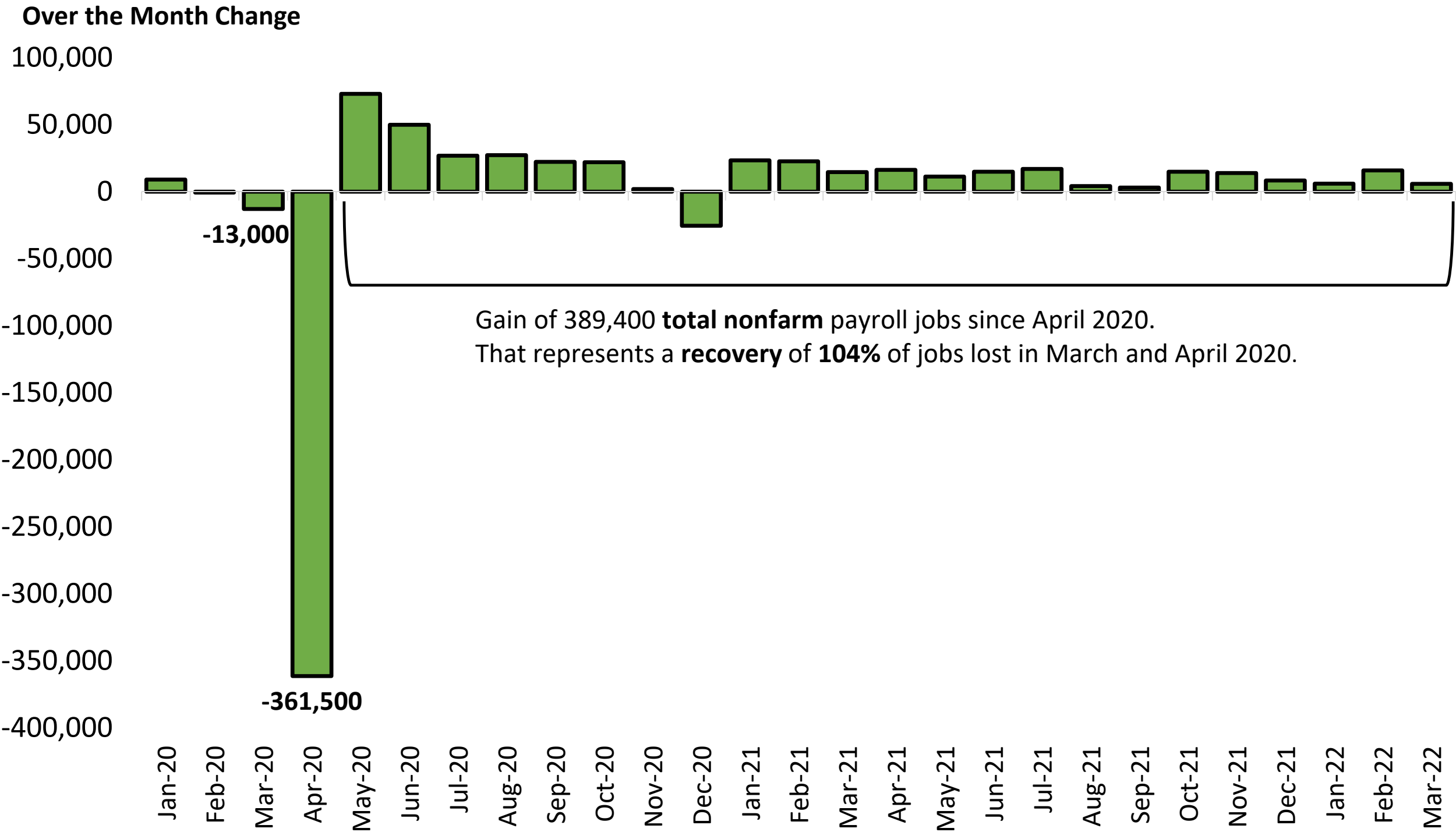
Data seasonally adjusted

The Share of Employed Coloradans* Also Dropped to an All-Time Low Rate in April 2020



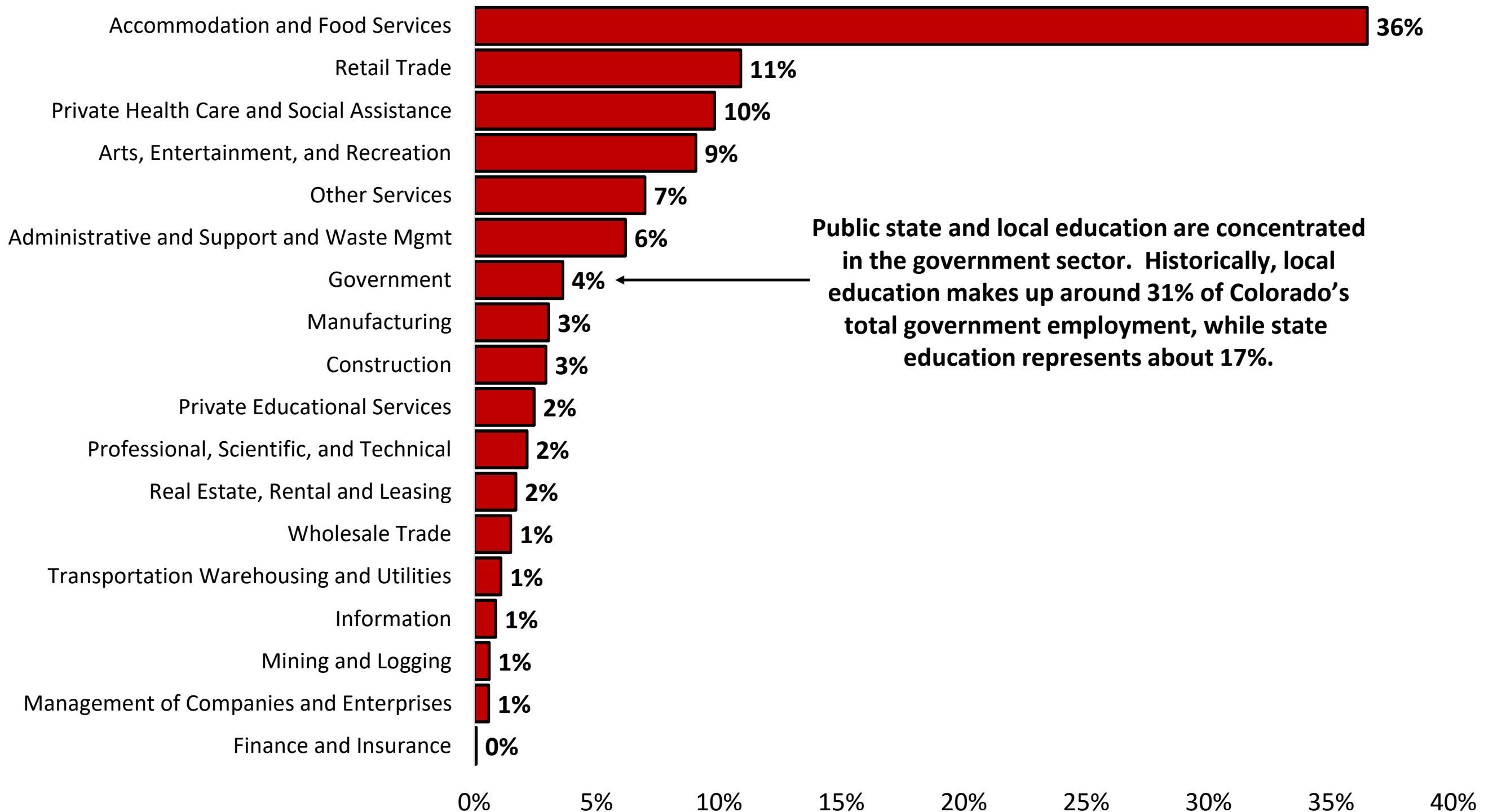
Source: Bureau of Labor Statistics; CDLE/Office of Labor Market Information
*Estimates share of Colorado's 16+ population that is employed in a given month
Data seasonally adjusted

Colorado Lost Nearly 375,000 Nonfarm Payroll Jobs in March and April 2020

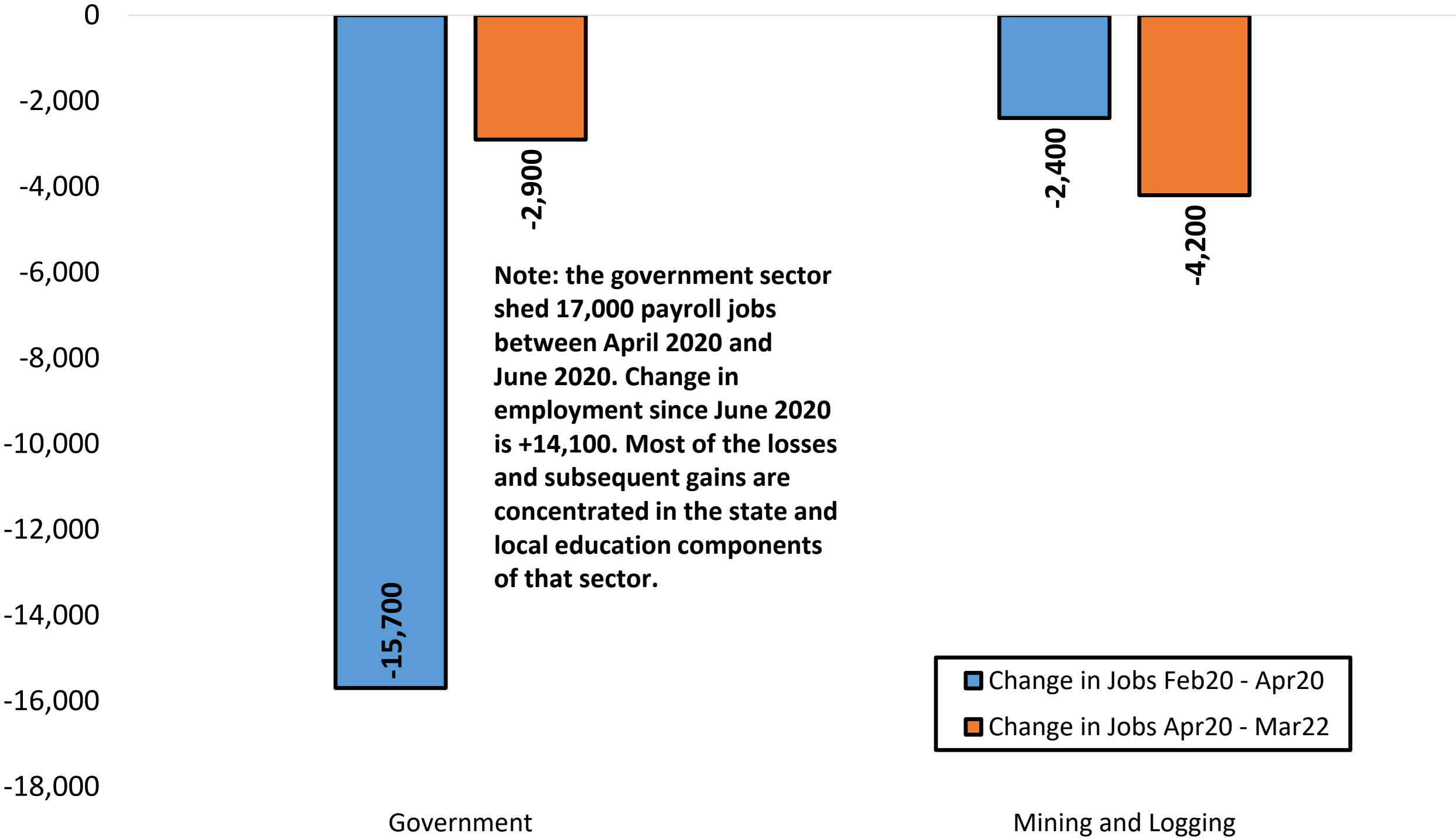


Source: Bureau of Labor Statistics; CDLE/Office of Labor Market Information
Data seasonally adjusted

Percent Contribution to Total Colorado Nonfarm Payroll Jobs Lost March-April 2020, by Industry



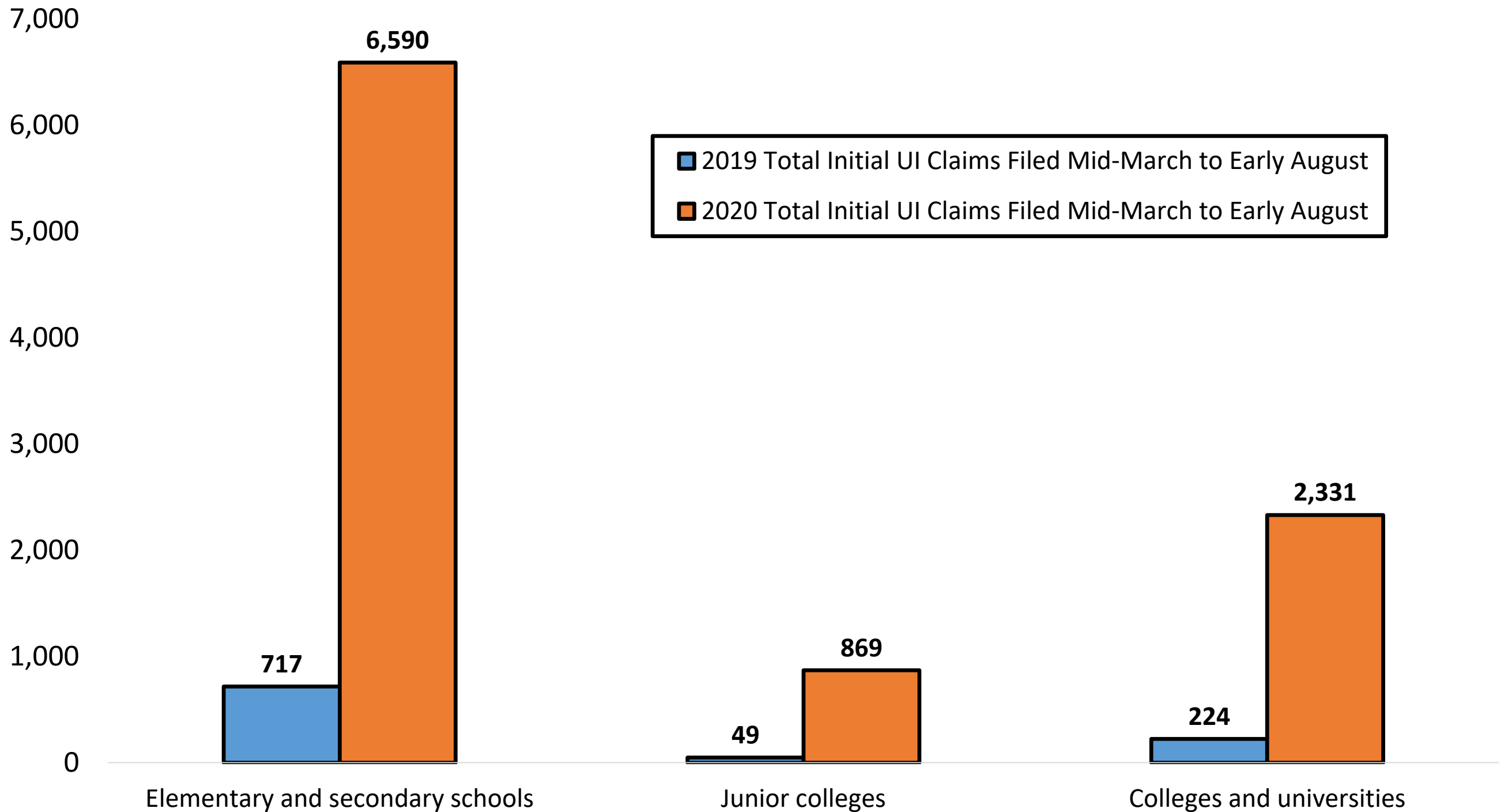
Colorado's Government Sector Continues to Lag in Job Recovery



Source: Bureau of Labor Statistics; CDLE/Office of Labor Market Information
Data seasonally adjusted

Employment Trends for Colorado's Education Sectors

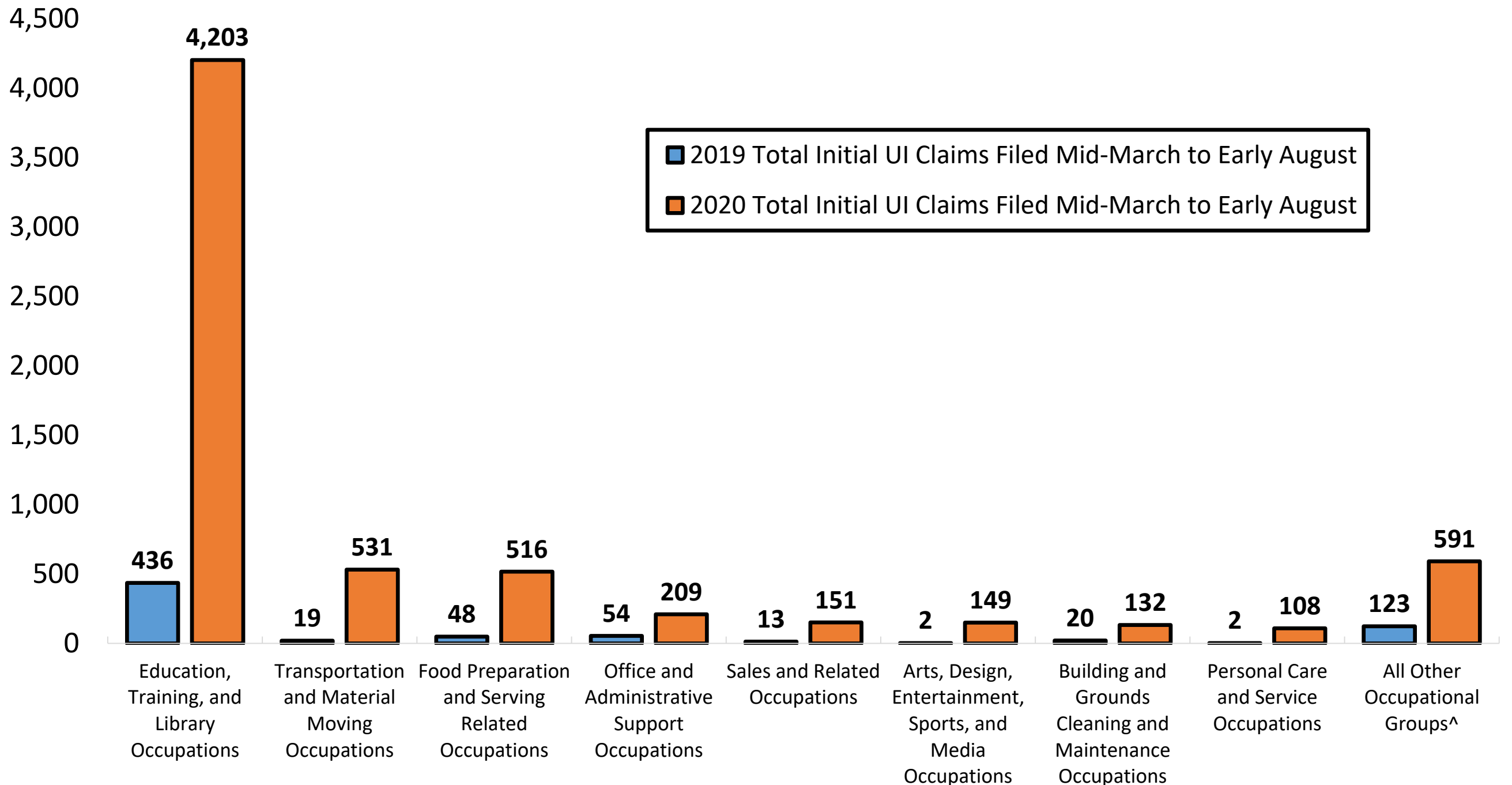
Unemployment Insurance Claims* Skyrocketed for Colorado's Education Industries in 2020



Source: CDLE/Office of Labor Market Information calculations, UI benefits data

*Initial claims are claims filed to establish or reestablish benefit eligibility; however, it does not guarantee payment

Elementary and Secondary UI Claims*, by Occupational Groups

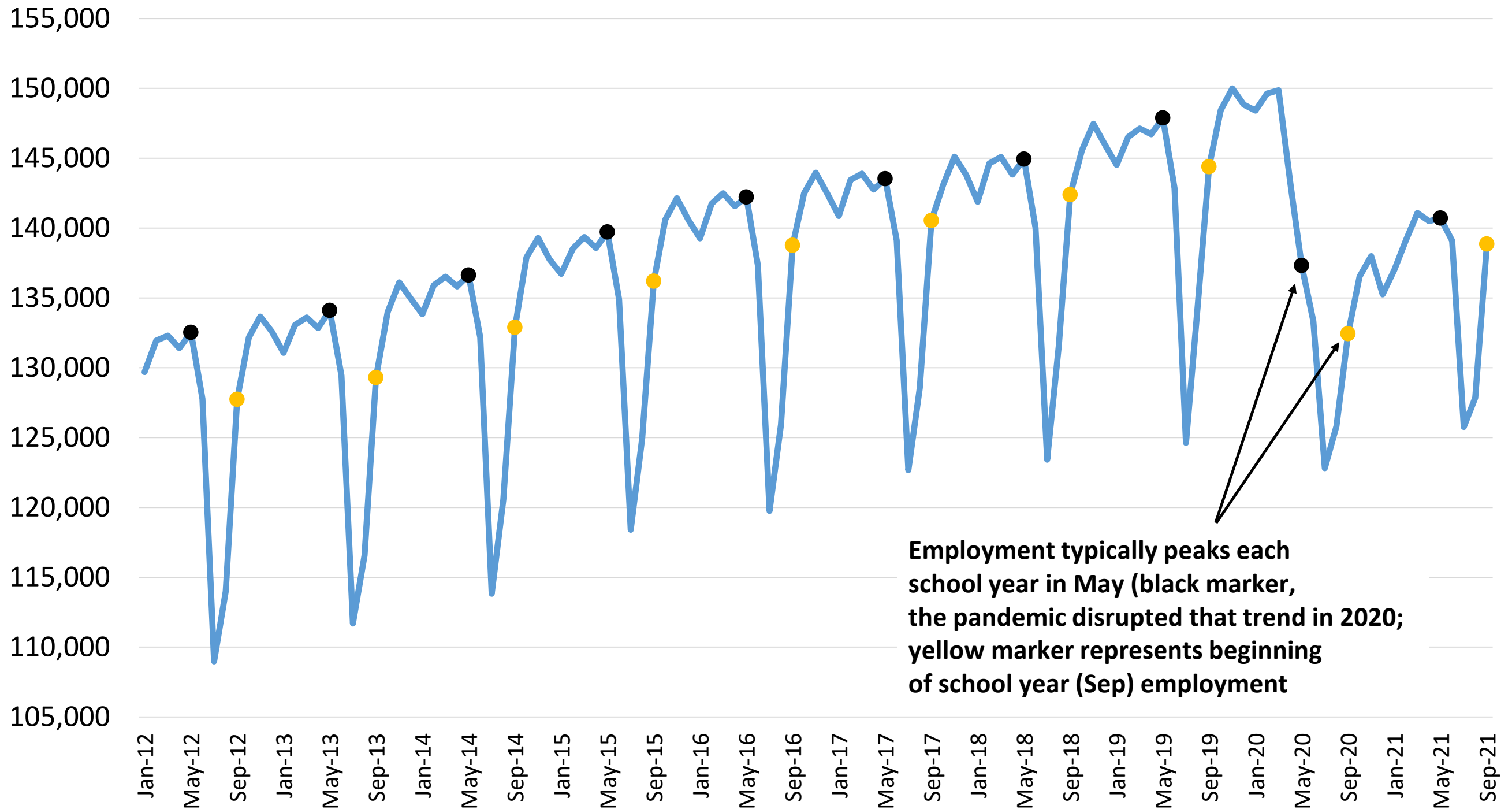


Source: CDLE/Office of Labor Market Information calculations, UI benefits data

*Initial claims are claims filed to establish or reestablish benefit eligibility; however, it does not guarantee payment

^All other occupational groups is the aggregate of occupational groups not broken out and represent about 14% of 2019 claims and 8% of 2020 claims

Employment for Colorado Elementary and Secondary Schools (January 2012 to September 2021)*



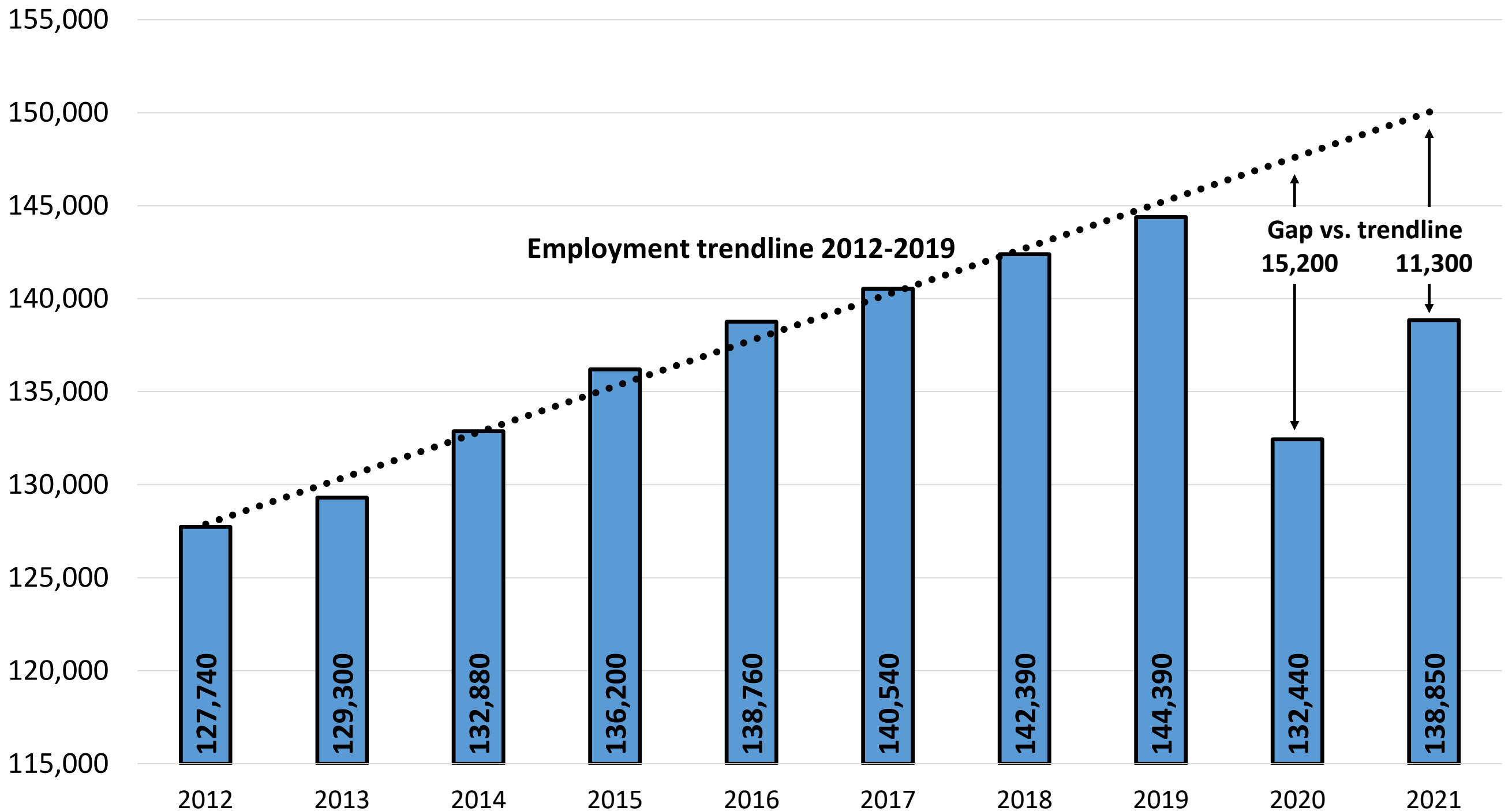
Employment typically peaks each school year in May (black marker, the pandemic disrupted that trend in 2020; yellow marker represents beginning of school year (Sep) employment)

Source: CDLE/Office of Labor Market Information, Quarterly Census of Employment and Wages program

*Employment for schools in local government and private sector (private share of total employment ranges between 3.5% and 4.7%)

Data is not seasonally adjusted

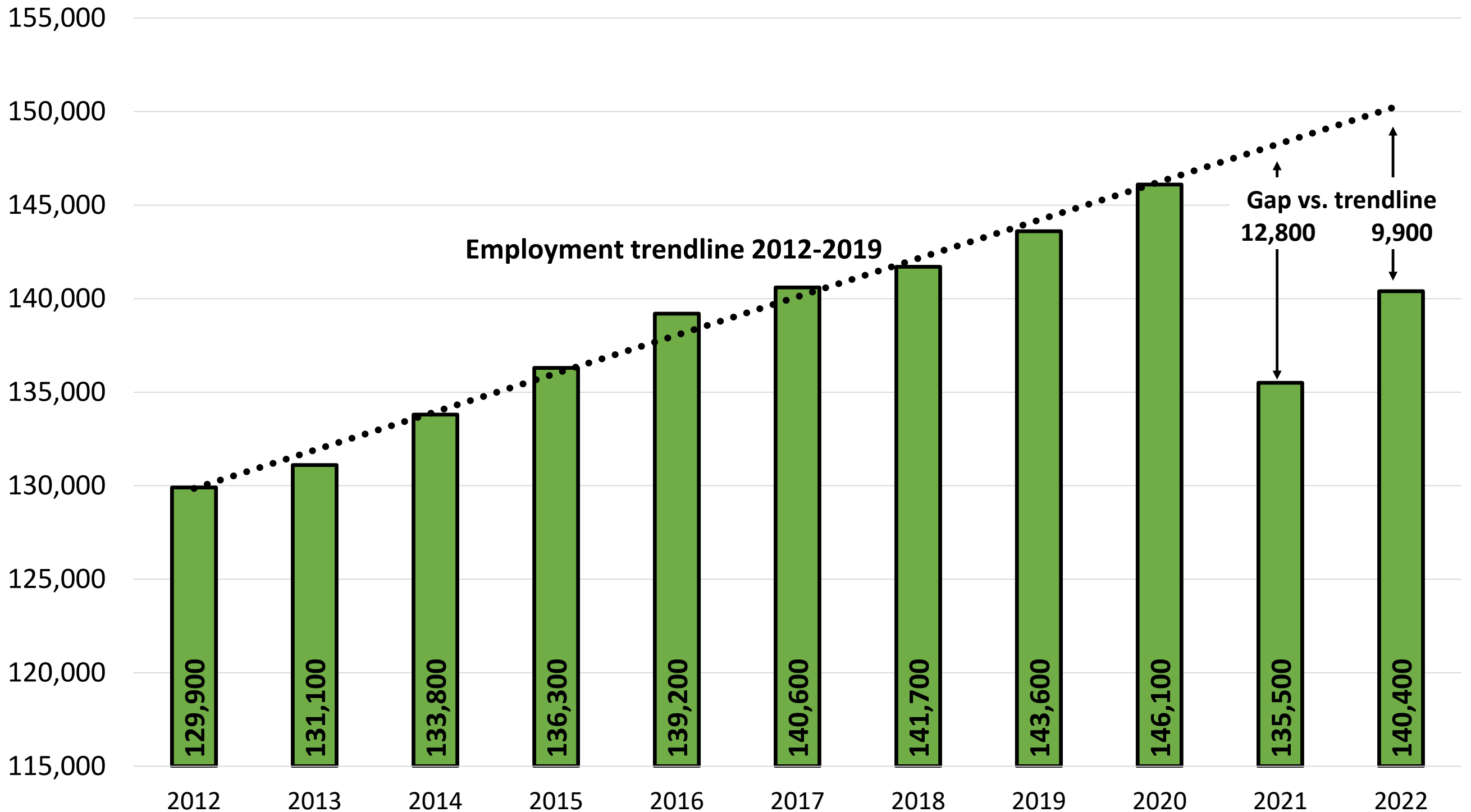
September Employment for Colorado Elementary and Secondary Schools*



Source: CDLE/Office of Labor Market Information, Quarterly Census of Employment and Wages program

*Employment for schools in local government and private sector (private share of total employment ranges between 3.5% and 4.7%)

March Employment for Colorado Local Government Education Sector



Employment Recovery for Select Industries in Colorado

Industry	February 2021 Employment as Ratio of February 2020	February 2022 Employment as Ratio of February 2020
Warehousing and Storage	131%	137%
Professional and Technical Services	102%	110%
Retail Trade	101%	104%
Construction	98%	103%
Private Education	93%	102%
All Industries	95%	101%
Restaurants and Other Eating Places	84%	101%
Social Assistance	96%	99%
Local Government Education	92%	95%
Arts, Entertainment, and Recreation	76%	91%
Accommodation	68%	89%
State Government Education	85%	88%
Mining and Logging	73%	72%

14 Largest Detailed Occupations[^] for Colorado Elementary and Secondary Schools in 2019

Occupation	2019 Employment	Share of Total
Elementary School Teachers**	25,560	17.1%
Teaching Assistants	17,710	11.9%
Secondary School Teachers*	17,500	11.7%
Middle School Teachers*	12,980	8.7%
Janitors and Cleaners	5,350	3.6%
Secretaries and Administrative Assistants	5,150	3.5%
Cooks, Institution and Cafeteria	5,130	3.4%
Education Administrators (K-12)	4,770	3.2%
Passenger Vehicle Drivers (i.e. Bus Drivers)	4,040	2.7%
Special Education Teachers (K-8)	3,770	2.5%
Childcare Workers	2,800	1.9%
Educational, Guidance, & Career Counselors	2,710	1.8%
Kindergarten Teachers**	2,440	1.6%
Special Education Teachers, Secondary	2,250	1.5%

Source: CDLE/Office of Labor Market Information, research estimates from the Occupational and Wage Employment Statistics program

[^]This group of occupations represents approximately 75% of total employment for the elementary and secondary school industry in Colorado

*Excludes special and career/technical education; **Excludes special education



...and Employment Estimates for Those Same Occupations in 2021, with Comparisons to 2019

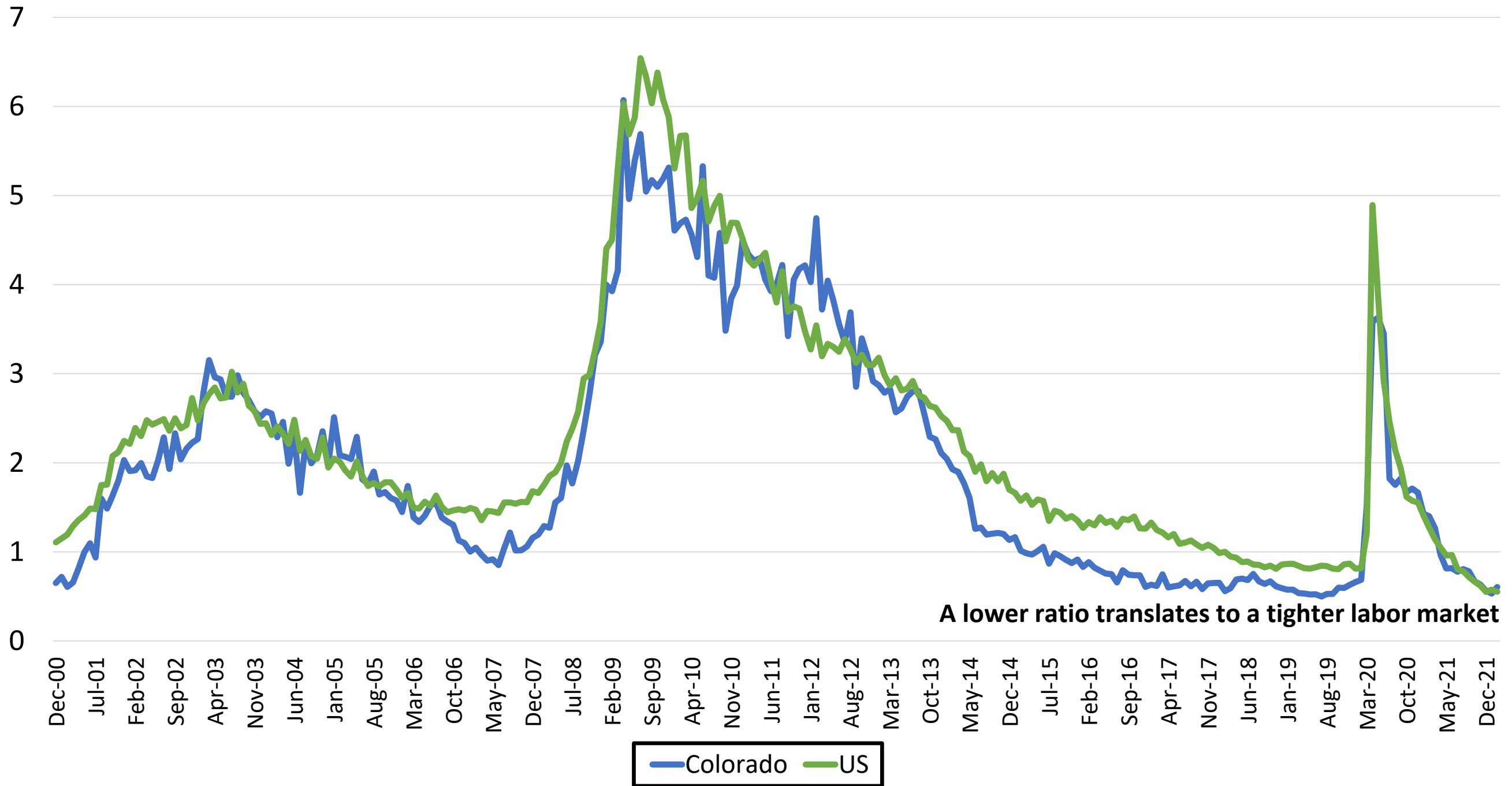
Occupation	2021 Employment	Change vs. 2019 [^]
Elementary School Teachers**	24,190	-1,370 (-5.4%)
Teaching Assistants	16,650	-1,060 (-6.0%)
Secondary School Teachers*	17,020	-480 (-2.7%)
Middle School Teachers*	12,590	-390 (-3.0%)
Janitors and Cleaners	5,120	-230 (-4.3%)
Secretaries and Administrative Assistants	4,790	-360 (-7.0%)
Cooks, Institution and Cafeteria	3,970	-1,160 (-22.6%)
Education Administrators (K-12)	4,570	-200 (-4.2%)
Passenger Vehicle Drivers (i.e. Bus Drivers)	3,630	-410 (-10.1%)
Special Education Teachers (K-8)	3,690	-80 (-2.1%)
Childcare Workers	2,380	-420 (-15.0%)
Educational, Guidance, & Career Counselors	3,080	+370 (+13.7%)
Kindergarten Teachers**	2,280	-160 (-6.6%)
Special Education Teachers, Secondary	1,910	-340 (-15.1%)

Source: CDLE/Office of Labor Market Information, research estimates from the Occupational and Wage Employment Statistics program

[^]This group of occupations represented approximately 85% of the decline in total employment for the elementary and secondary school industry in Colorado; bolded percentage indicates a worse decline than for the overall industry (-5.4%). *Excludes special and career/technical education; **Excludes special education

Metrics that Measure Labor Tightness and Potential Hiring Difficulties

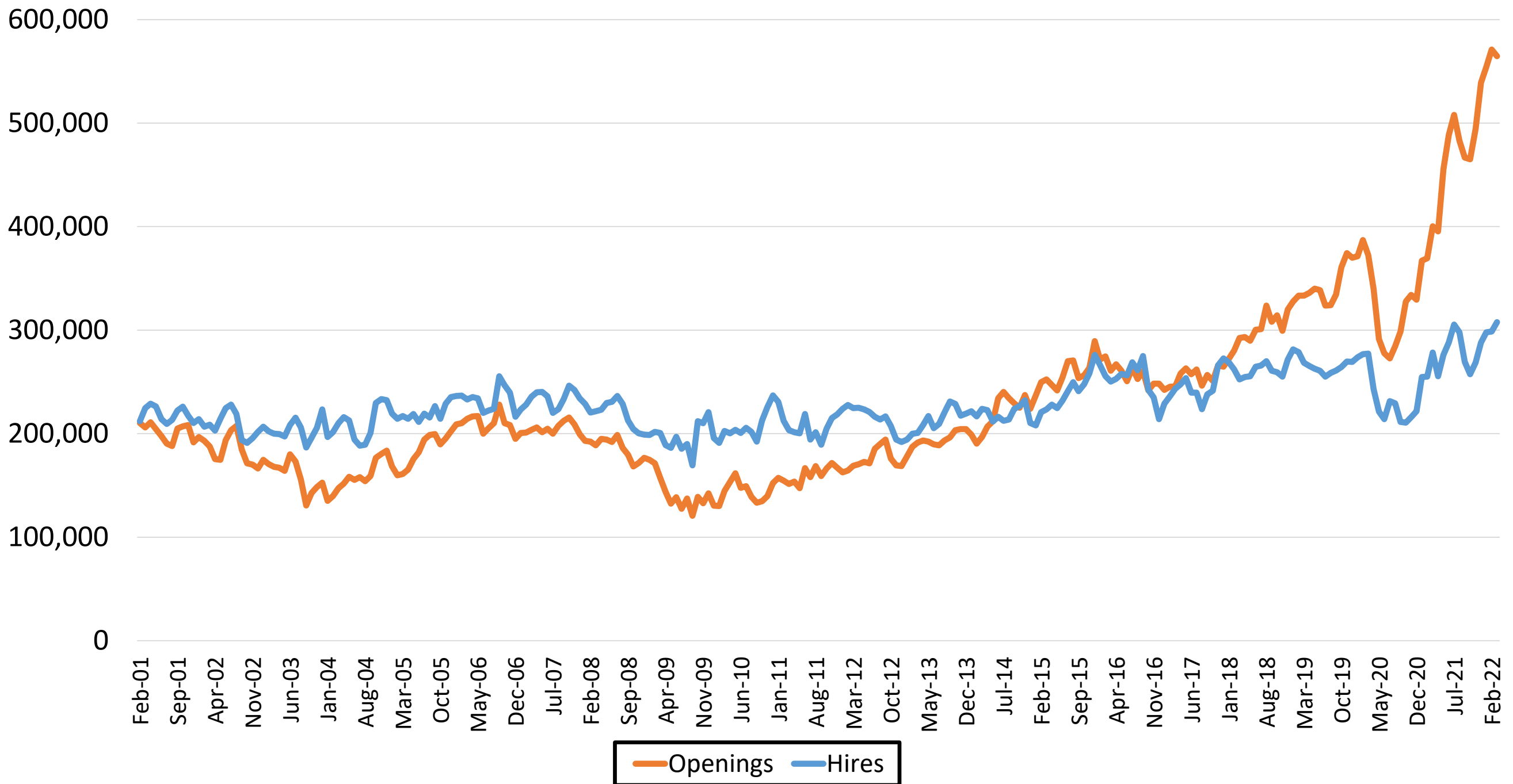
Estimated Number of Unemployed Persons Per Job Opening At Historically Low Levels



A lower ratio translates to a tighter labor market

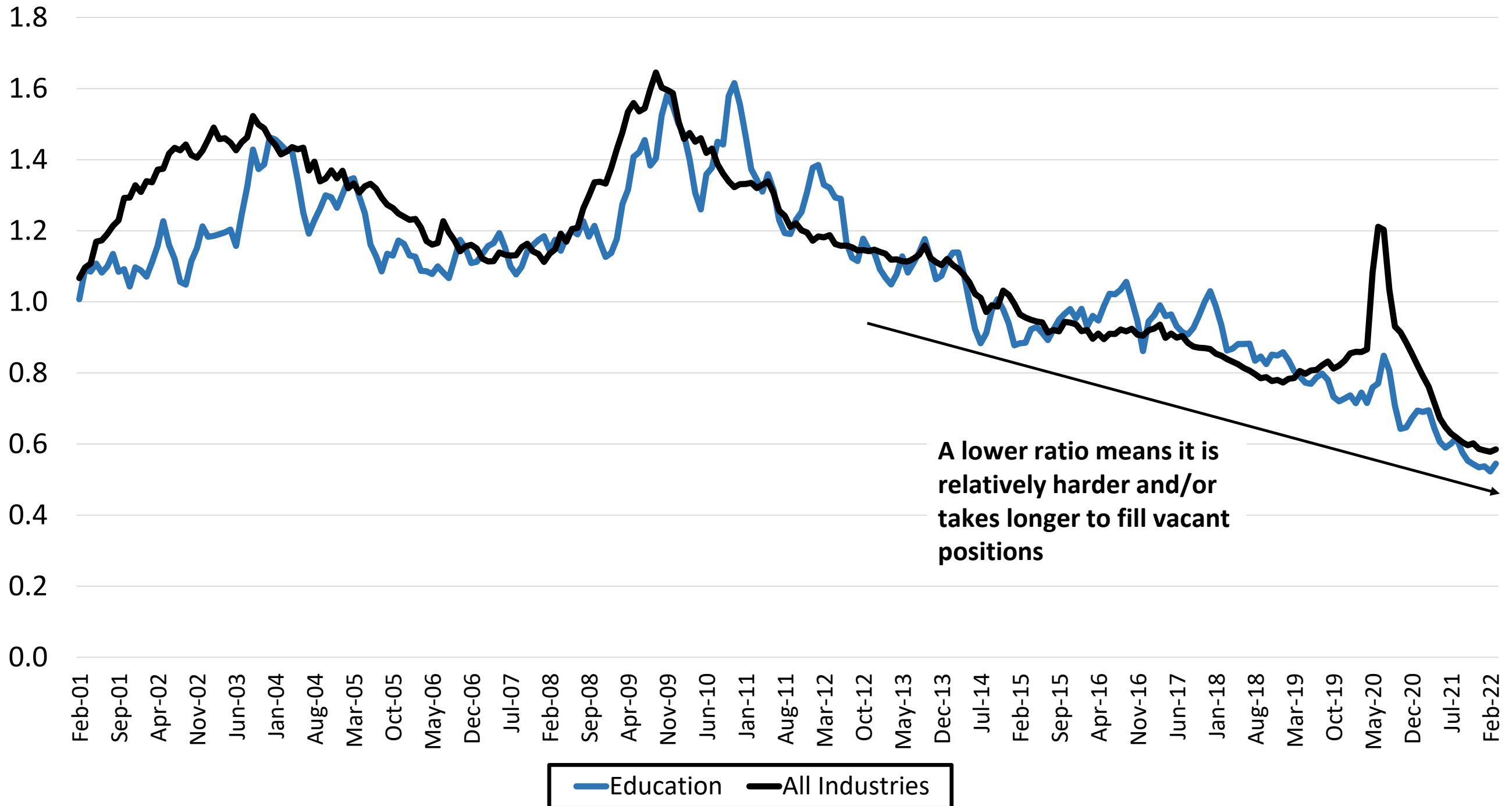
Source: Bureau of Labor Statistics, Job Openings and Labor Turnover Survey (JOLTS) and Local Area Unemployment Statistics (LAUS) programs (ratio is calculated by dividing the number of unemployed persons by the number of openings for each month, a ratio of 1 means the two indicators are equal)
Data seasonally adjusted

U.S. Education Industry Number of Openings and Hires* (Three-Month Moving Average)



Source: Bureau of Labor Statistics, Job Openings and Labor Turnover Survey (JOLTS) program (*Openings are all open positions that are not filled on the last business day of the month, while hires are defined as all additions to the payroll during the month)
 Data seasonally adjusted, includes private, state, and local education

U.S. Hires to Openings Ratio for Education and All Industries* (Three-Month Moving Average)

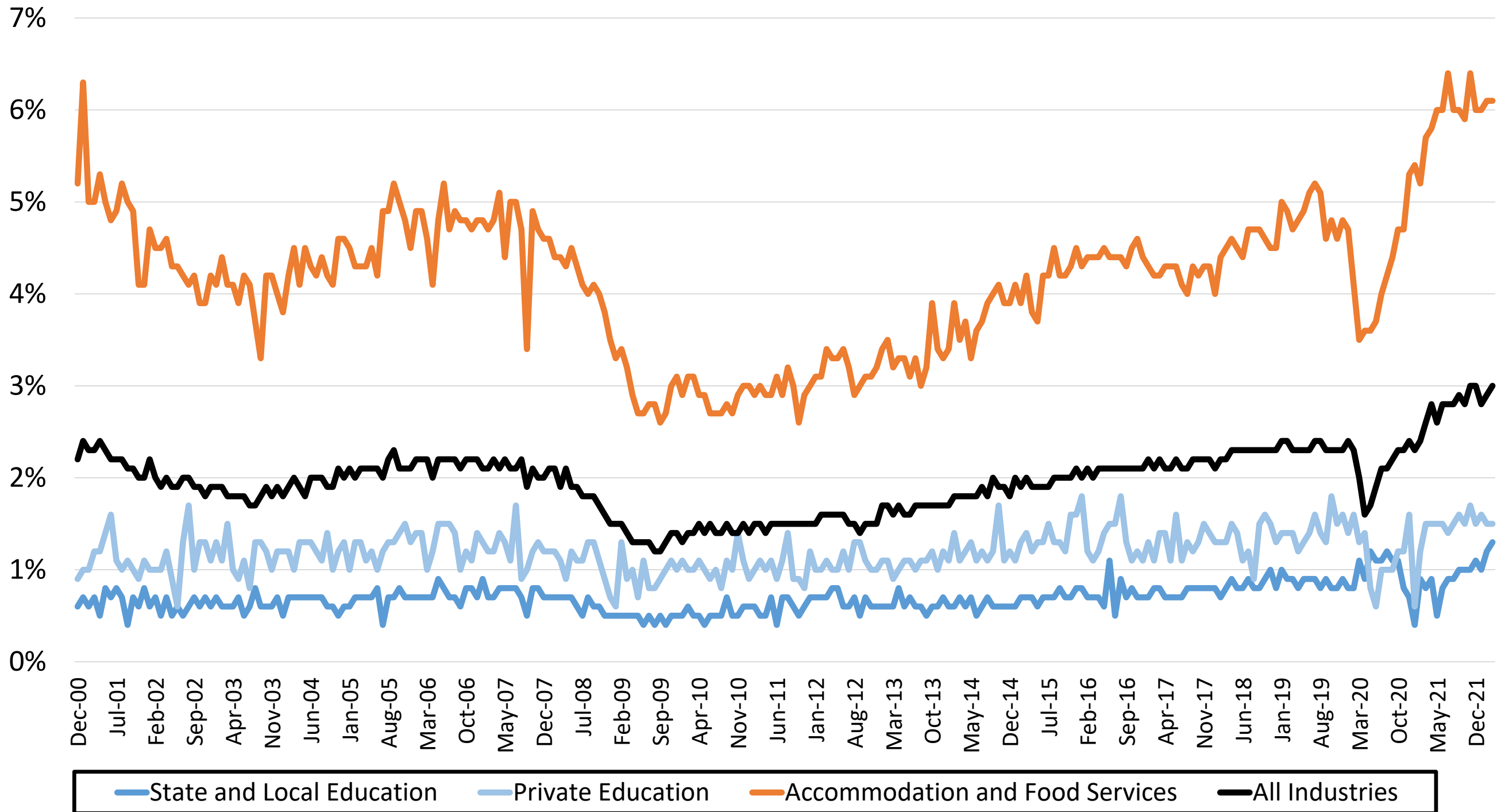


A lower ratio means it is relatively harder and/or takes longer to fill vacant positions

— Education — All Industries

Source: Bureau of Labor Statistics, Job Openings and Labor Turnover Survey (JOLTS) program (*Ratio is determined by hires divided by openings during same period)
 Data seasonally adjusted, includes private, state, and local education

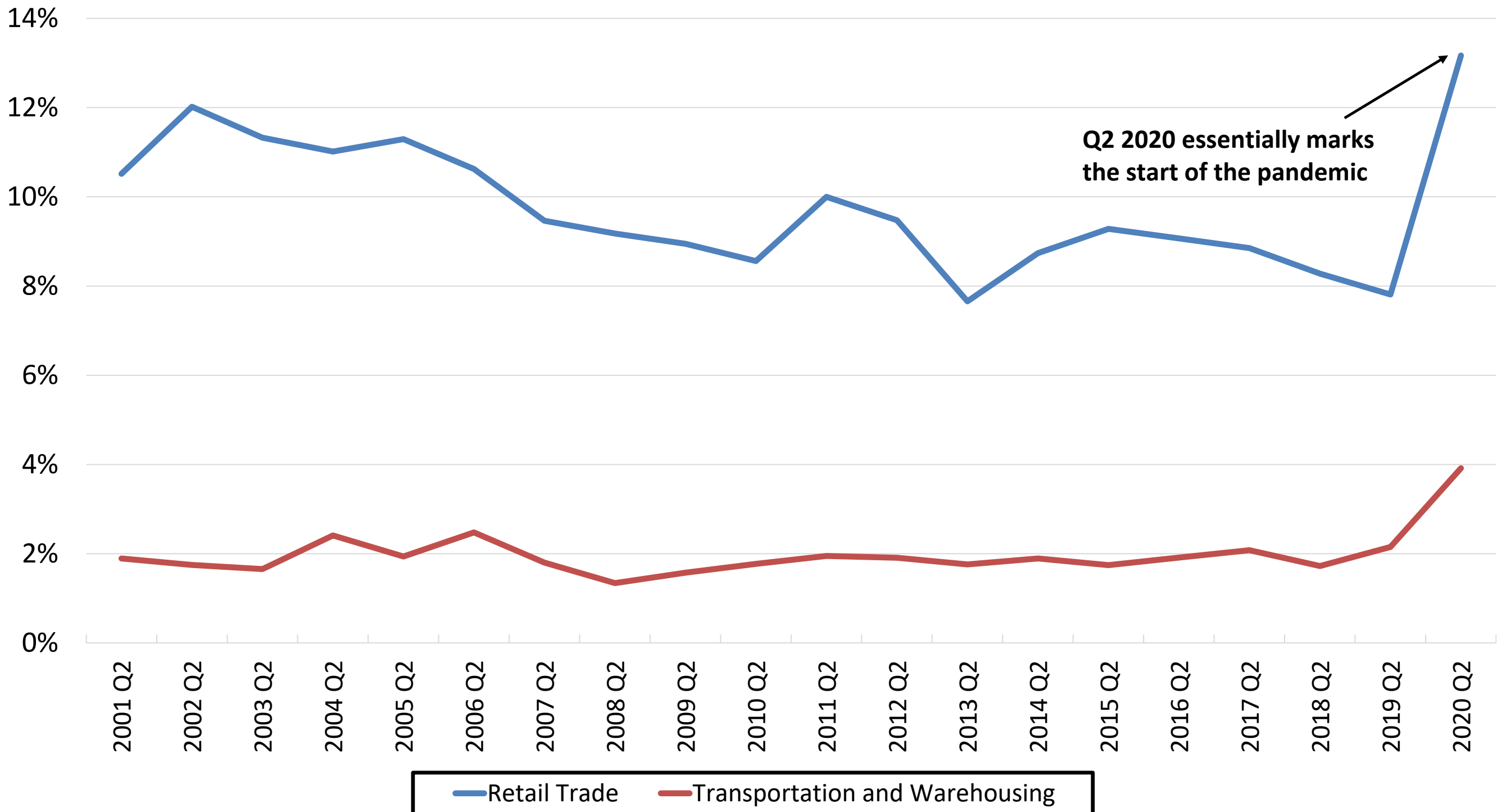
U.S. Quits Rates* by Select Industries



Source: Bureau of Labor Statistics, Job Openings and Labor Turnover Survey (JOLTS) program (*rates calculated as estimated quits a share of payroll employment within each respective industry)
 Data seasonally adjusted

**A Collection of Other Potential Short
and Long-Term Staffing and Retention
Issues for the Education Sector**

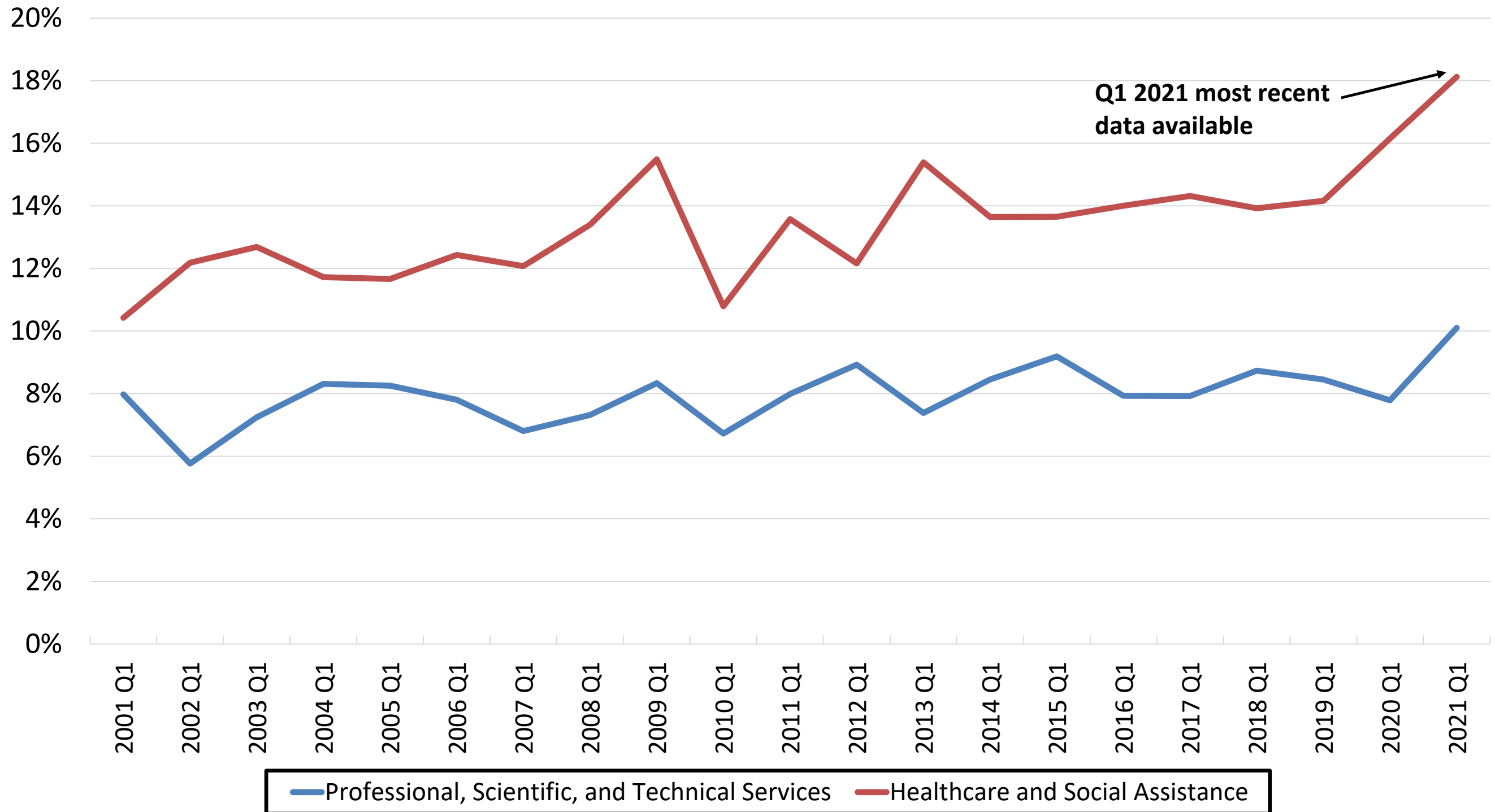
Share of Colorado Q2 Job Flows From Education Employer to Retail or Transportation/Warehousing



Source: U.S. Census Bureau, Longitudinal Employer-Household Dynamics program (Job-to-Job Flows for Coloradans employed within the education industry, switched employers during the quarter, and who experienced a relatively short, or no, nonemployment spells (i.e. rough proxy for continuous employment)).

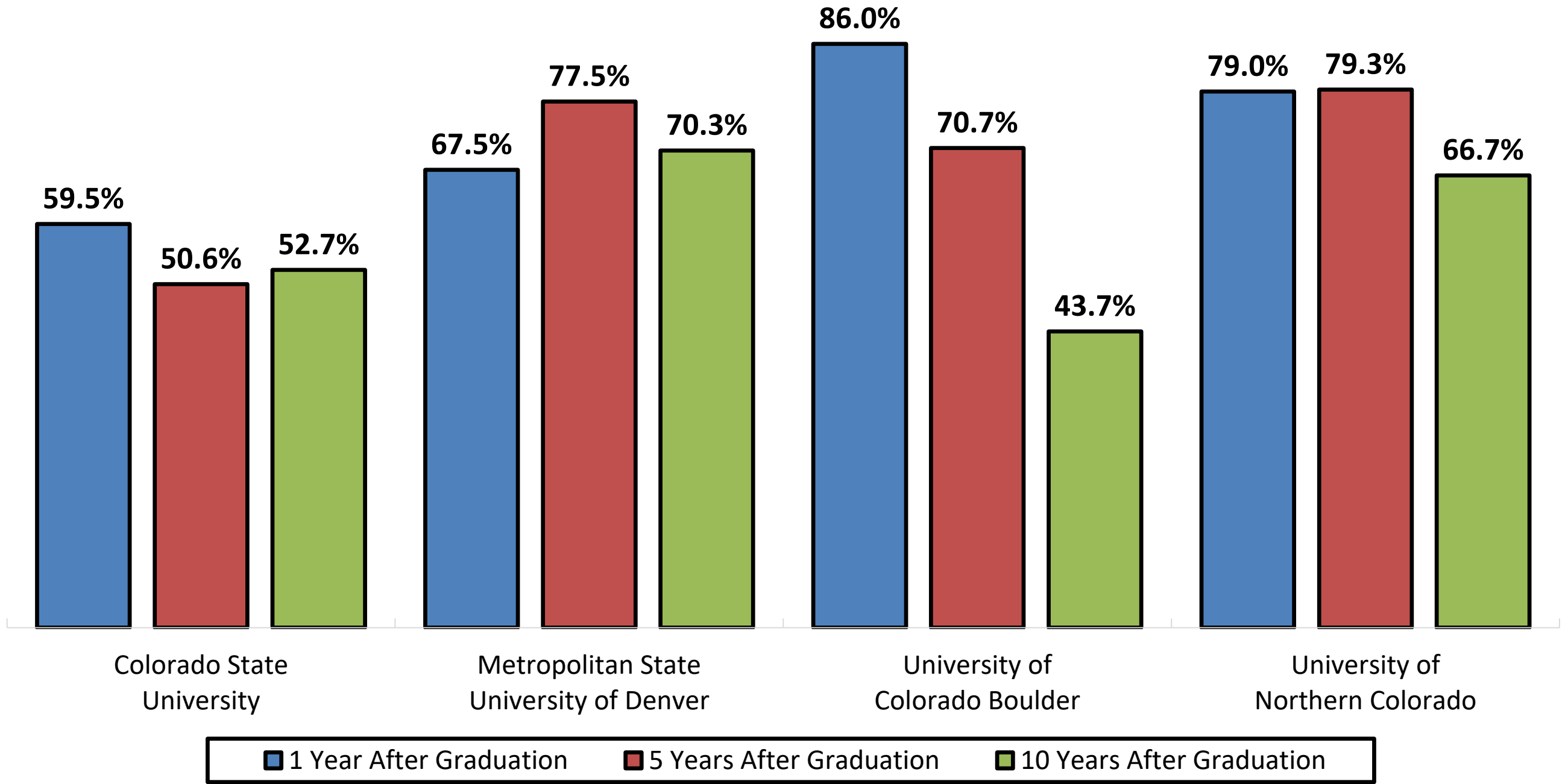


Share of Colorado Q1 Job Flows From Education Employer to Professional Services or Healthcare



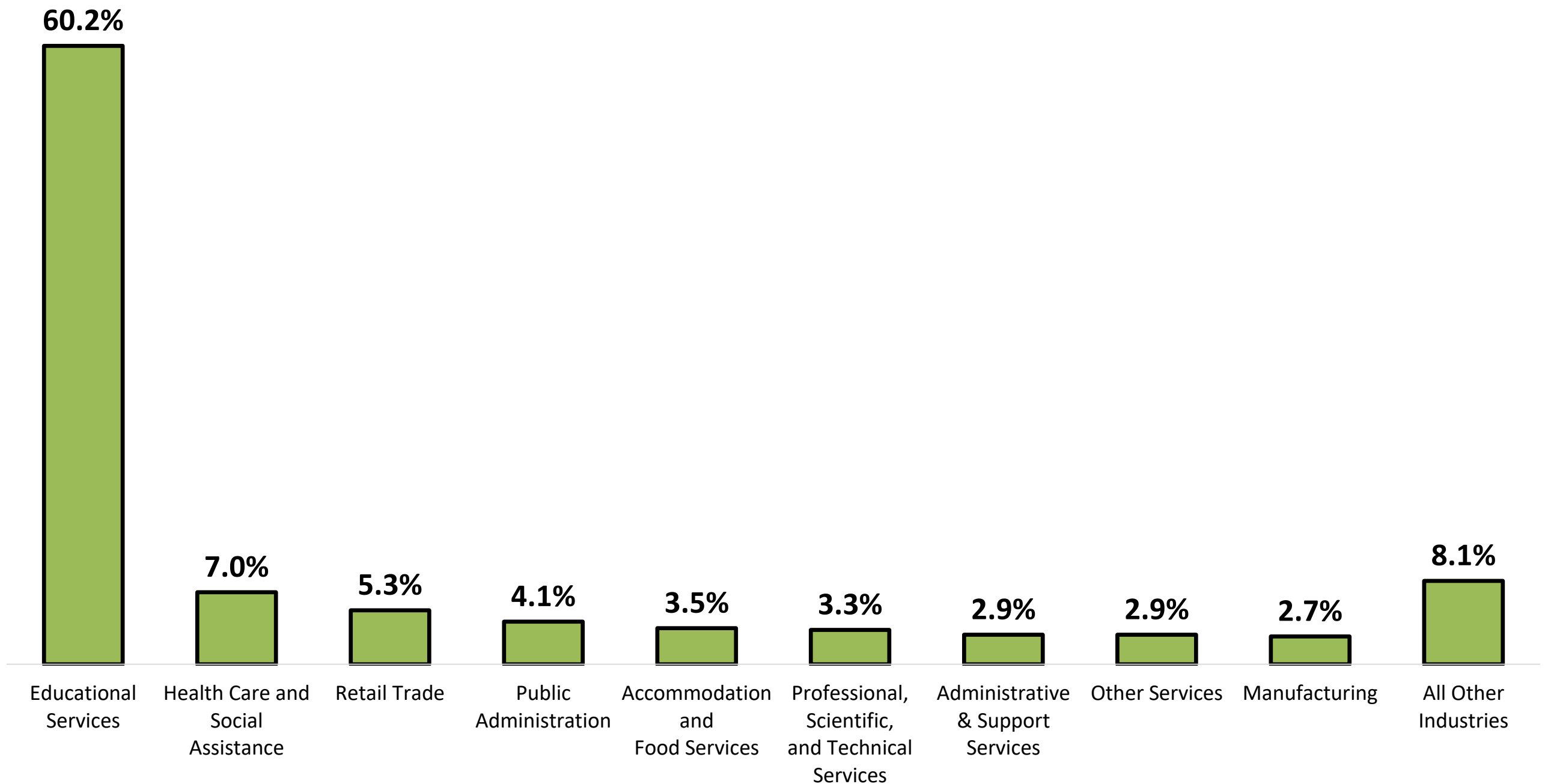
Source: U.S. Census Bureau, Longitudinal Employer-Household Dynamics program (Job-to-Job Flows for Coloradans employed within the education industry, switched employers during the quarter, and who experienced a relatively short, or no, nonemployment spells (i.e. rough proxy for continuous employment)).

Share of Graduates with Bachelor's in Education, Employed in Education Industry 1, 5, 10 Years Out



Source: U.S. Census Bureau, Longitudinal Employer-Household Dynamics program (Post-Secondary Employment Outcomes for all graduation cohorts – spanning 2001 to 2018 -- that received a bachelor's degree in education within these select Colorado universities)

Concentration of Industry Employment 10 Years After Graduation, for Groups in Prior Slide



Source: U.S. Census Bureau, Longitudinal Employer-Household Dynamics program (Post-Secondary Employment Outcomes for all graduation cohorts – spanning 2001 to 2018 -- that received a bachelor's degree in education within select Colorado universities)



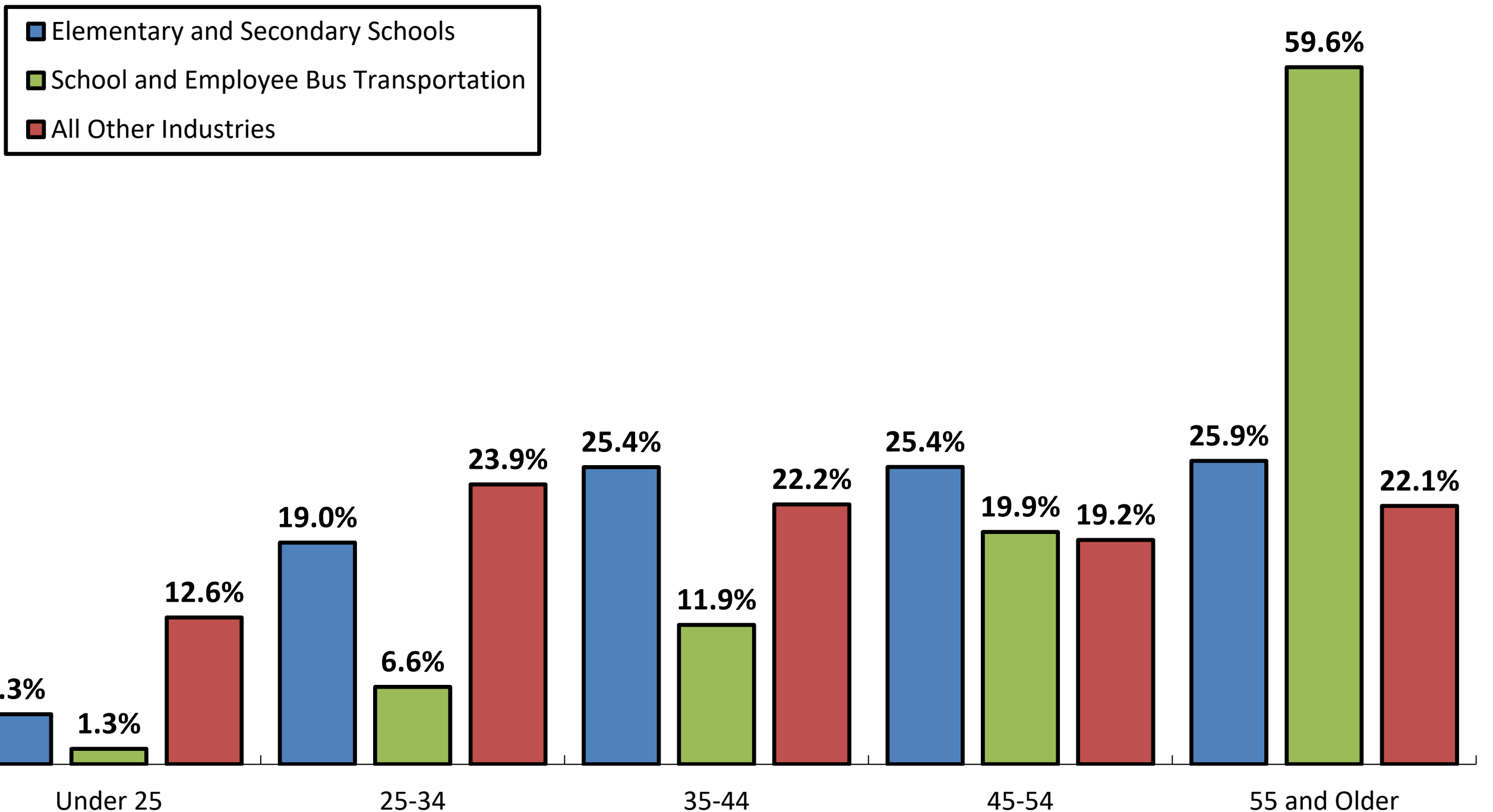
Ten Largest Colorado Industries* and Share of 2019 Employment 45 Years and Older

Industry	2019 Employment	Share of Employment 45 Years and Older
Restaurants and Other Eating Places	211,000	22.5%
Elementary and Secondary Schools	129,200	51.4%
Executive, Legislative, & Other General Gov.	82,800	50.1%
General Medical and Surgical Hospitals	81,800	42.6%
Computer Systems Design & Related Svcs.	64,600	42.8%
Employment Services	52,700	39.5%
Colleges, Universities, & Professional Schools	50,500	47.1%
Building Equipment Contractors	50,300	37.6%
Architectural, Engineering, & Related Svcs.	49,000	46.2%
Other Amusement & Recreation Industries	48,800	30.9%

Source: U.S. Census Bureau, Longitudinal Employer-Household Dynamics program

*Note: Industries displayed are at the 4-digit NAICS level

2019 Distribution of Colorado Industry Employment, by Age Groups





Comparing Salaries of K-12 Teachers to Other Jobs that Typically Require a Bachelor's for Entry[^]

Occupation	Colorado 2021 Median Wage
Software Developers	\$121,130
Civil Engineers	\$95,300
Chemists	\$91,250
Occupational Health & Safety Specialists	\$82,800
Registered Nurses	\$78,070
Public Relations Specialists	\$63,600
Training & Development Specialists	\$63,410
Interior Designers	\$62,070
Dietitians & Nutritionists	\$61,350
Secondary School Teachers*	\$60,670
Middle School Teachers*	\$60,600
Elementary School Teachers**	\$60,040
Child, Family, & School Social Workers	\$60,040
Kindergarten Teachers**	\$58,820

Source: CDLE/Office of Labor Market Information, Occupational and Wage Employment Statistics (OEWS) program
[^]Information on degree levels typically required for entry can be viewed here: <https://data.bls.gov/projections/occupationProj>
 *Excludes special and career/technical education; **Excludes special education

Technical Note on Annual Wage Information Produced by the OEWS Program

NOTE: For the majority of occupations in the OEWS Survey, both hourly and annual wage estimates are reported. These occupations typically work a standard work year. That is, a fulltime employee who is paid for 40 hours per week, and for 52 weeks per year. In brief, a standard mean hourly wage rate is calculated for these occupations by summing the weighted total (hourly) wages from each establishment and dividing that by the sum of the weighted employment for the occupation. An annual equivalent wage rate is obtained by multiplying this by 2,080.

There is a **small group of occupations, primarily in teaching** where the standard work-year assumption is not valid. For this group, we assume that the respondent has correctly reported annual wages for the occupation, using the annual interval endpoints supplied on the OEWS survey form. For this group, the annual wage is calculated directly from the reported data, using the annual interval endpoints. An hourly wage for these workers cannot be calculated because the number of hours worked is not known.

Contact Information

- **Email: ryan.gedney@state.co.us**
- **LMI Website: www.colmigateway.com**
 - ❖ **Link to sign up for email notifications when most recent LMI data is published is available on the LMI website homepage (service is free)**

**Ryan Gedney
Principal Economist
Labor Market Information, CDLE**