

**November 4, 2021**

# 2020-2030 Employment Projections

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# Industry Projections Methodology: Estimation Process

- The long-term projections process estimates employment ten years from the baseline period
  - Historic 2020 employment data are used as the base year of the forecast
  - Employment estimates for 2020 are the latest available annual data published by the BLS QCEW program
  - Projected data are modeled for forecast-year 2030
- Projected employment estimates are created using historical employment trends
- Estimates are refined through a review of current U.S. and Arizona economic trends

# Industry Projections Methodology: Estimation Process

- The principal data source is the Quarterly Census of Employment and Wages (QCEW) data
  - Near census of all employment subject to unemployment insurance tax law (92%-95% of total Arizona Employment)
- The QCEW industry classification structure differs slightly from the CES industry classification structure
  - Notably:
    - QCEW: State and local government education employment is categorized in the Educational Services sector
    - CES: State and local government education employment is categorized in the Government sector

# Industry Projections Methodology: Data Source

- Industry Projections Estimates **Include:**

- Nonfarm employment
- Self-employed workers
- Private household workers
- Railway workers
- Religious organization workers
- Farm workers

- Industry Projections Estimates **Exclude:**

- Unpaid family workers
- Active duty military service personnel

# Substate Regions

Projected employment was estimated for 20 substate regions including:

## All Fifteen Arizona Counties

## Three Multi-County Areas

- Northeast Arizona: Apache, Navajo, and Gila Counties
- Southeast Arizona: Greenlee, Graham, and Cochise Counties
- Mohave and La Paz Counties

## Two Sub-County Areas

- City of Phoenix and Balance of Maricopa County

# Industry Projections Methodology: Economic Assumptions

- No major economic or political disruptions will occur
- Government agencies will operate within their budgets
- Population distribution will not differ significantly
- The U.S. economic framework will not differ significantly from its current state
- Long-term employment patterns will continue in most industries

The projections methodology in its entirety can be found at  
[https://www.azcommerce.com/media/1545673/lt\\_proj\\_method.pdf](https://www.azcommerce.com/media/1545673/lt_proj_method.pdf)

# Additional Forecast Assumptions

- Arizona's population growth will continue to be one of the strongest in the nation.
- The demand for health care services will continue to increase as a large portion of the population reaches Medicare eligibility age.
- Nonstore retail and transportation and warehousing will drive employment growth within the retail trade sector.
- Impacts of COVID-19 on long-term job growth will be minimal, though not zero, and will be concentrated primarily in the leisure and hospitality industry.

# Arizona Projections Highlights

- Total Arizona employment is projected to grow by 721,689 jobs over the ten-year period, reaching 3,751,905 jobs in 2030.
- Total Arizona employment is projected to grow 2.2% annually (23.8% total growth) from 2020-2030.
- Arizona employment growth (2.2% annualized) is projected to outpace U.S. employment growth (0.7% annualized) over the ten-year period.
- Educational and Health Services is projected to add the largest number of jobs (23,906 jobs annually), primarily within Health Services.
- Educational and Health Services is also projected to record the largest percentage gain, growing 3.2% annually.



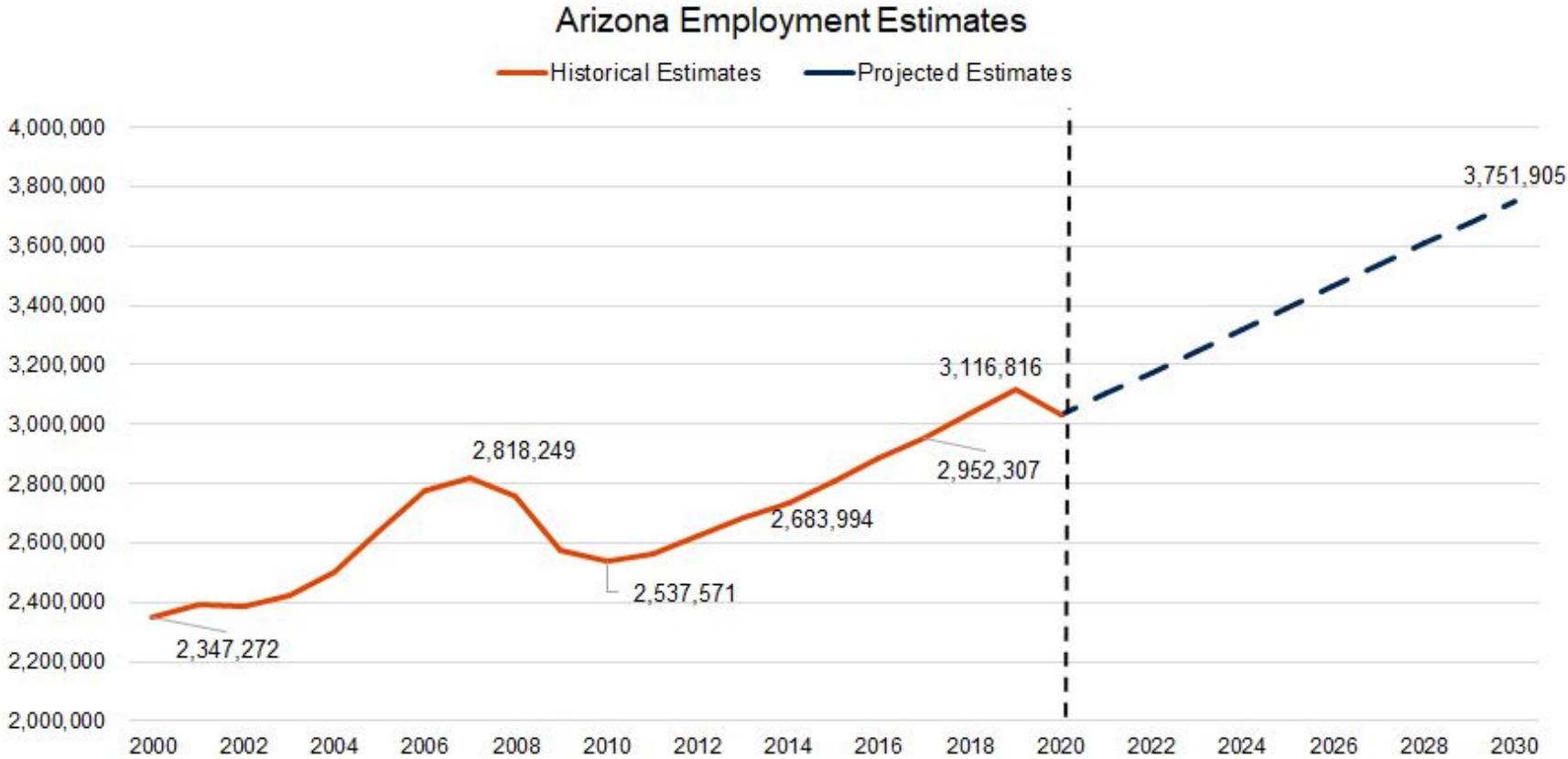
# Projected Employment Growth Comparison

Area	Employment Levels		Employment Change		
	2020	2030	Numeric Change	Percentage Change	Annualized % Change
Arizona	3,030,216	3,751,905	721,689	23.8%	2.2%
United States	153,533,800	165,413,700	11,879,900	7.7%	0.7%

*Source: Arizona Office of Economic Opportunity*

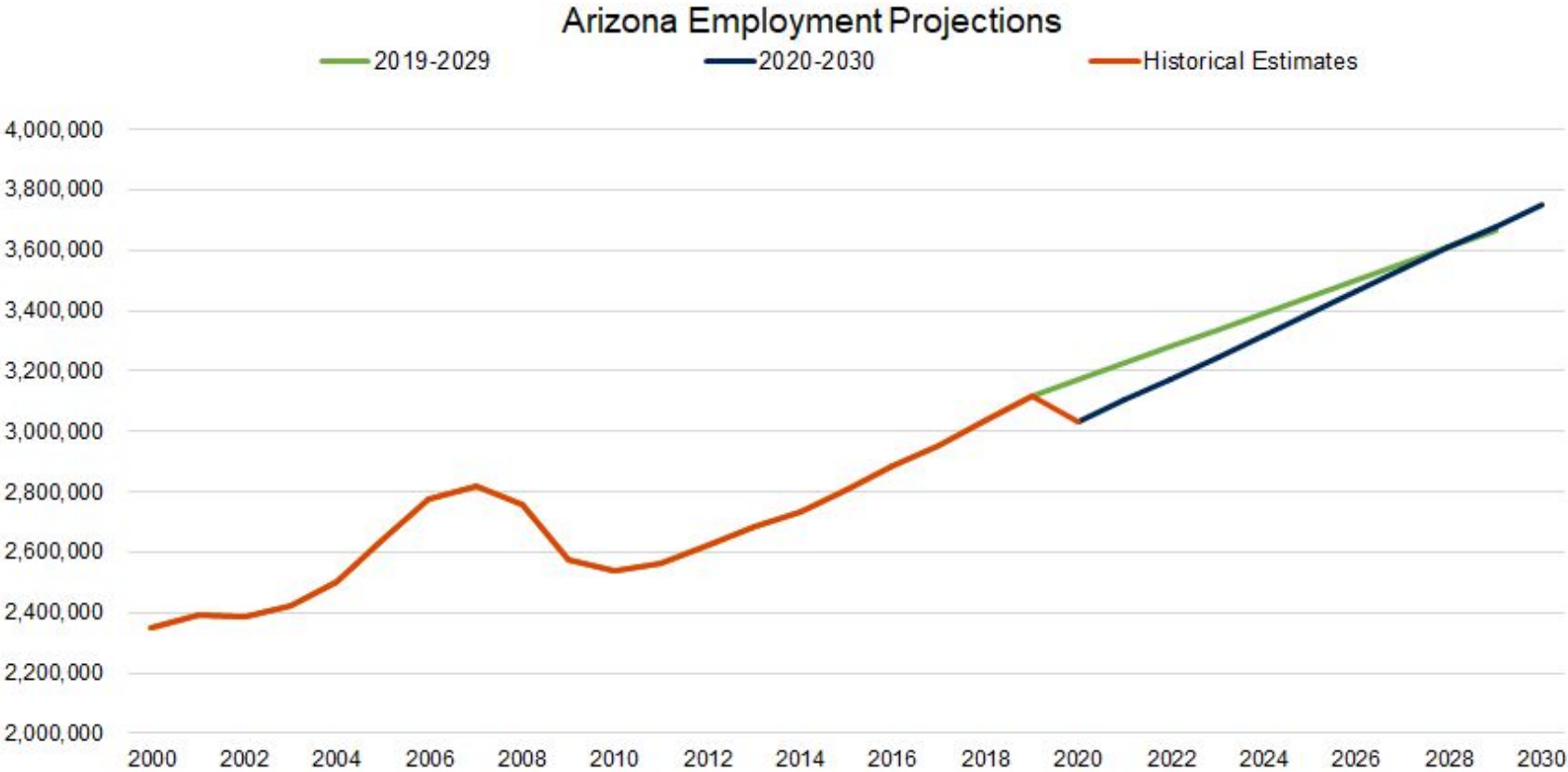
*Note: National 2020-2030 projections were released on September 8, 2021*

# Arizona Employment



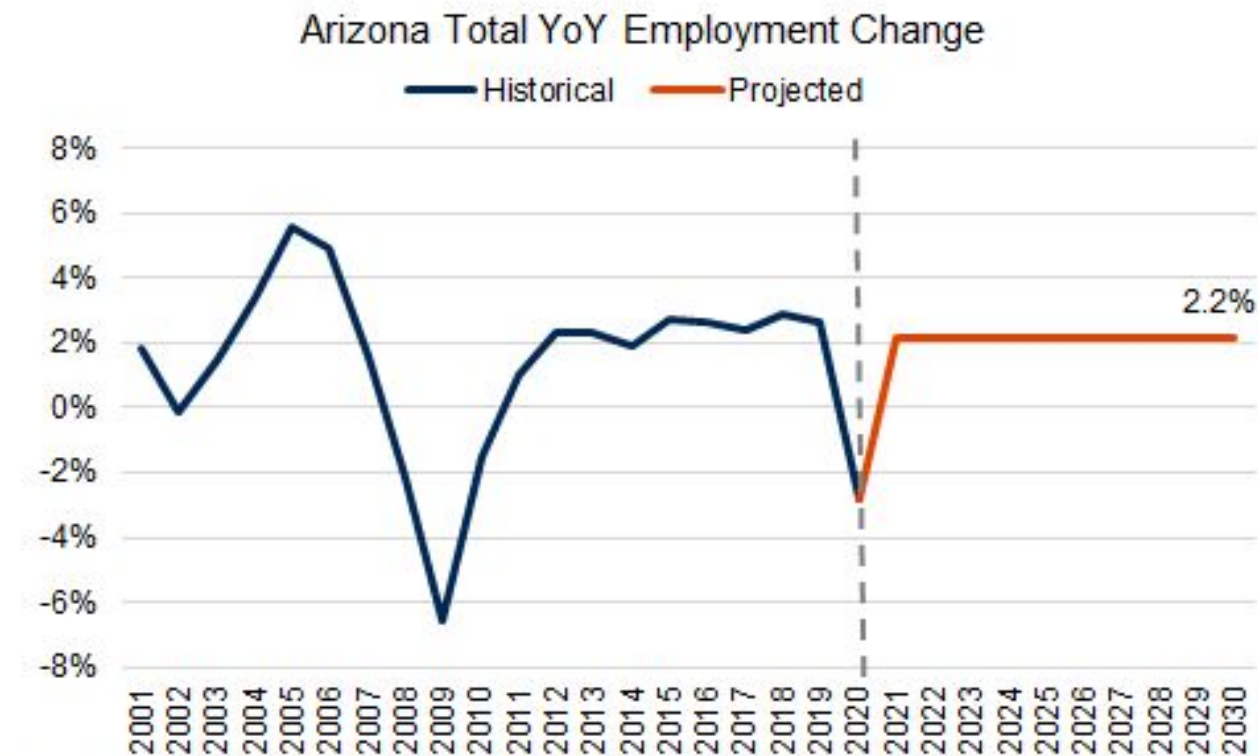
Source: Arizona Office of Economic Opportunity  
NOTE: 2021-2030 numbers reflect average ten-year projected growth

# OEO Employment Projections Comparison



Source: Arizona Office of Economic Opportunity  
NOTE: 2021-2030 numbers reflect average ten-year projected growth

# Arizona Total Employment

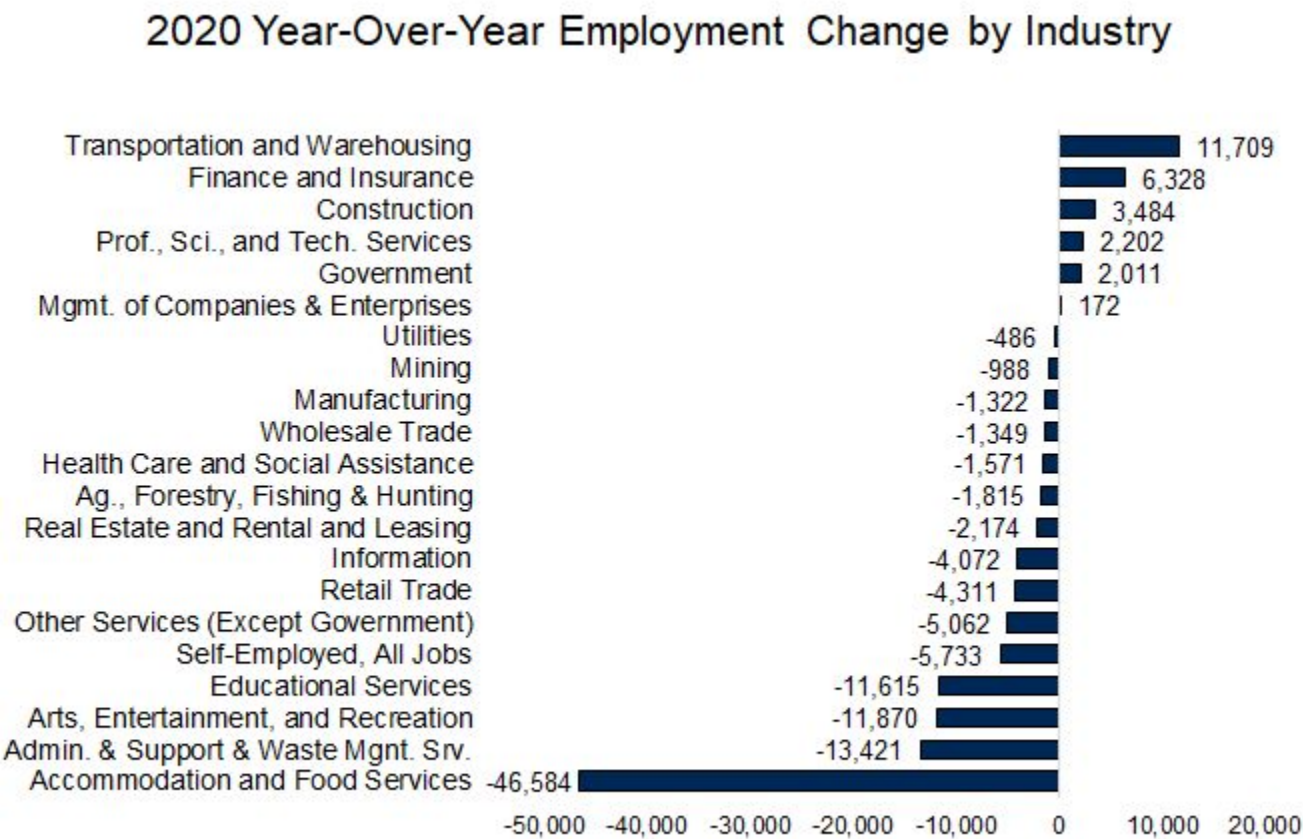


Source: Arizona Office of Economic Opportunity

Note: Annual growth may differ from year-to-year between 2020 to 2030, but is projected to average the growth noted in the chart.

Total employment is projected to grow 721,689 jobs or 2.2% annually from 2020-2030

# COVID-19 Pandemic Employment Recovery by Industry



Source: Arizona Office of Economic Opportunity Projections Employment Series

In 2020, total employment was down 86,500 jobs compared to 2019.

Employment losses within industries that have not yet fully recovered totaled 112,400

# Economic Trends

## Short-term

- As of September 2021:
  - Arizona nonfarm employment has recovered 94% of the jobs lost during the early months of the COVID-19 pandemic (March to April 2020).
  - The Arizona labor force has surpassed pre-pandemic levels by nearly 60,000 individuals.
  - The Arizona unemployment rate declined to 5.7%, its lowest level since the start of the COVID-19 pandemic.



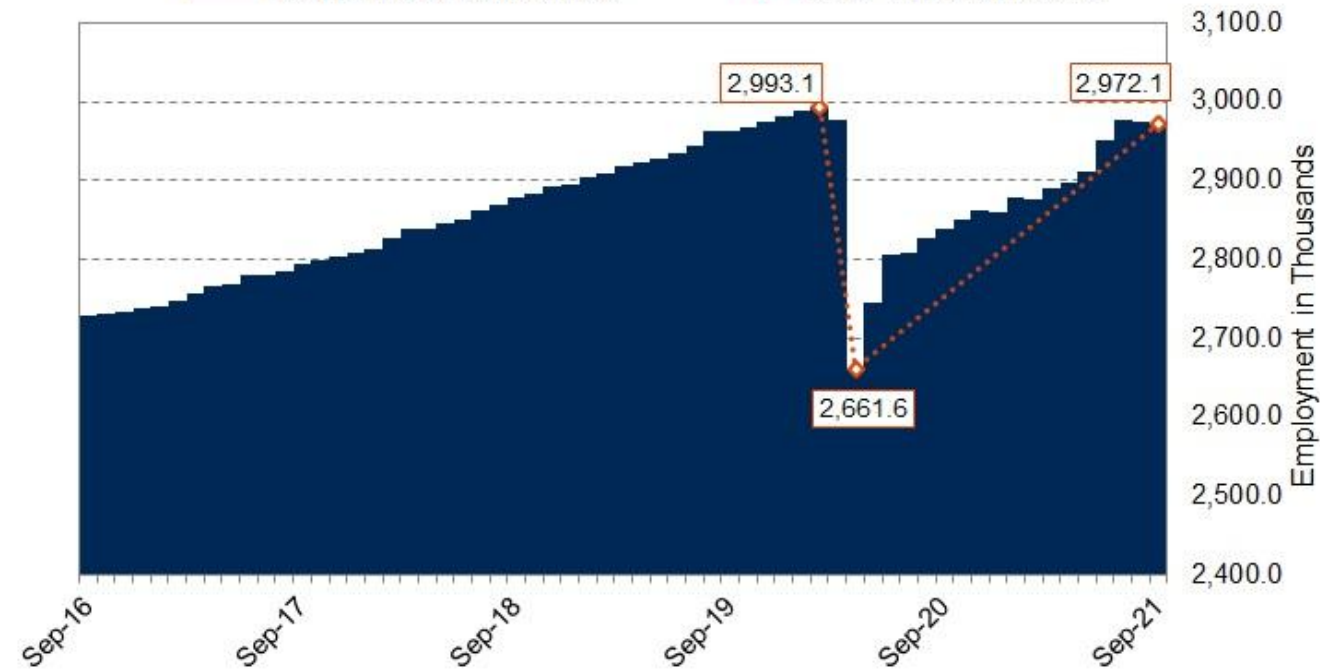
# Arizona Nonfarm Employment; Seasonally Adjusted

Arizona Total Nonfarm Employment

Seasonally Adjusted

■ Total Nonfarm Employment

---◇--- Peak, Trough, Present

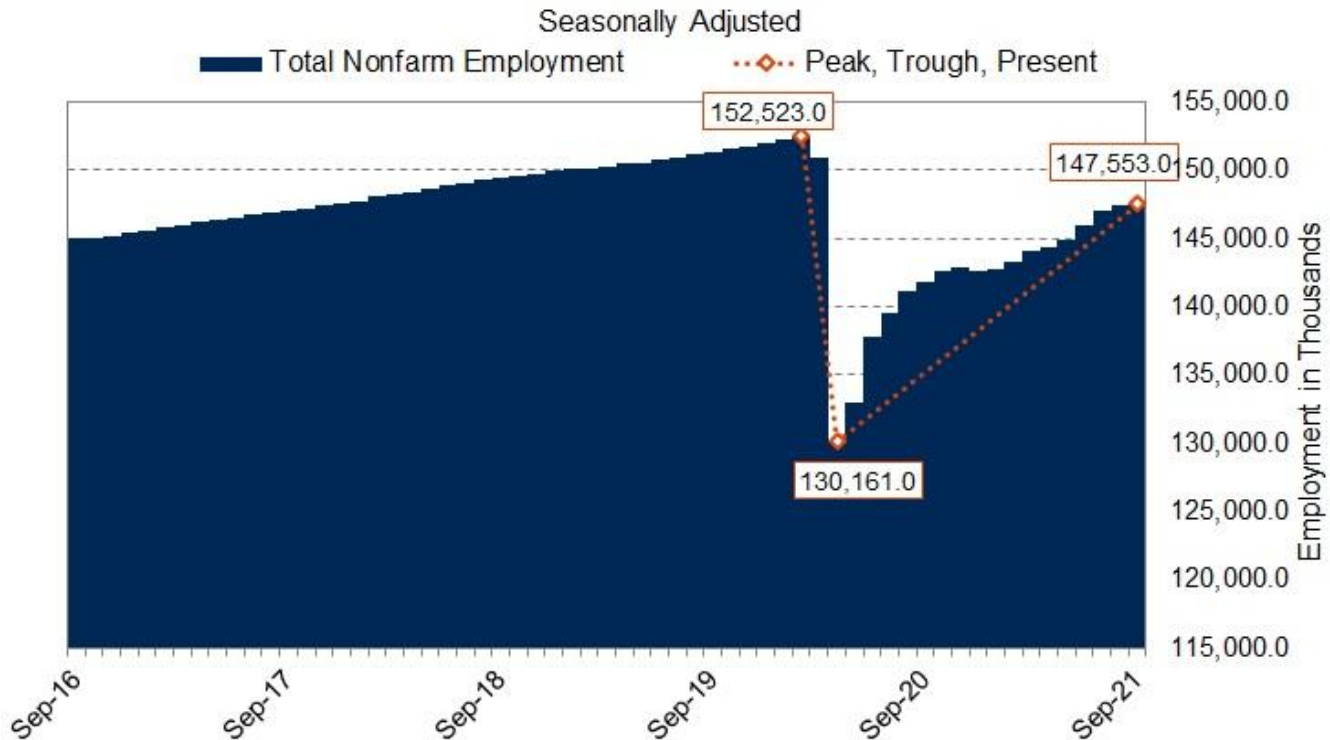


Source: Produced by the Arizona Office of Economic Opportunity in cooperation with the U.S. Dept. of Labor, BLS

- Employment declined by 11.1% or 331,500 jobs from February 2020 to April 2020.
- Since April 2020, 94% (310,500 jobs) of the Arizona Nonfarm pandemic job losses have been recovered

# U.S. Nonfarm Employment; Seasonally Adjusted

U.S. Total Nonfarm Employment

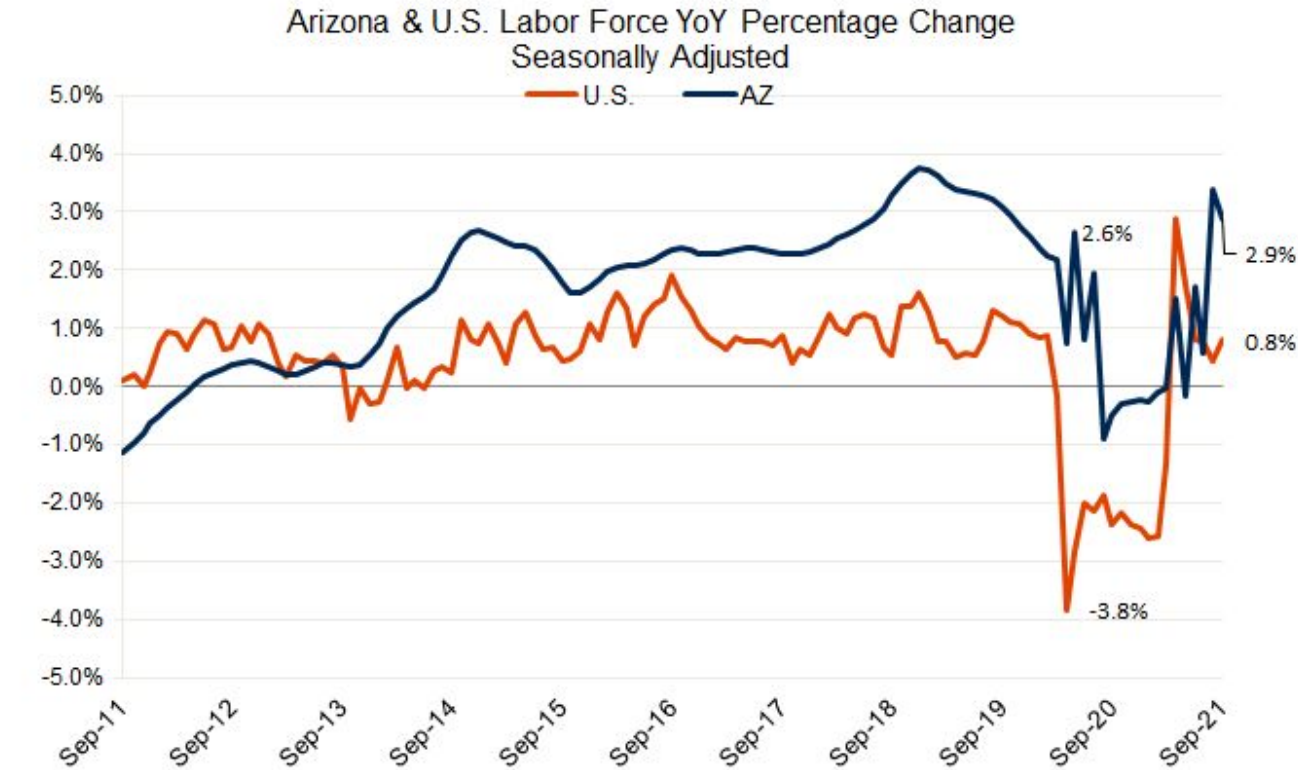


Source: Produced by the Arizona Office of Economic Opportunity in cooperation with the U.S. Dept. of Labor, BLS

- Employment declined by 14.7% or 22,362,000 jobs from February 2020 to April 2020.
- Since April 2020, 78% (17,392,000 jobs) of the U.S. Nonfarm pandemic job losses have been recovered



# Labor Force Change



Source: Produced by the Arizona Office of Economic Opportunity in cooperation with the U.S. Dept. of Labor, BLS

The Arizona labor force grew by more than 1 million people over the past two decades (Sept. '01 - Sept. '21)

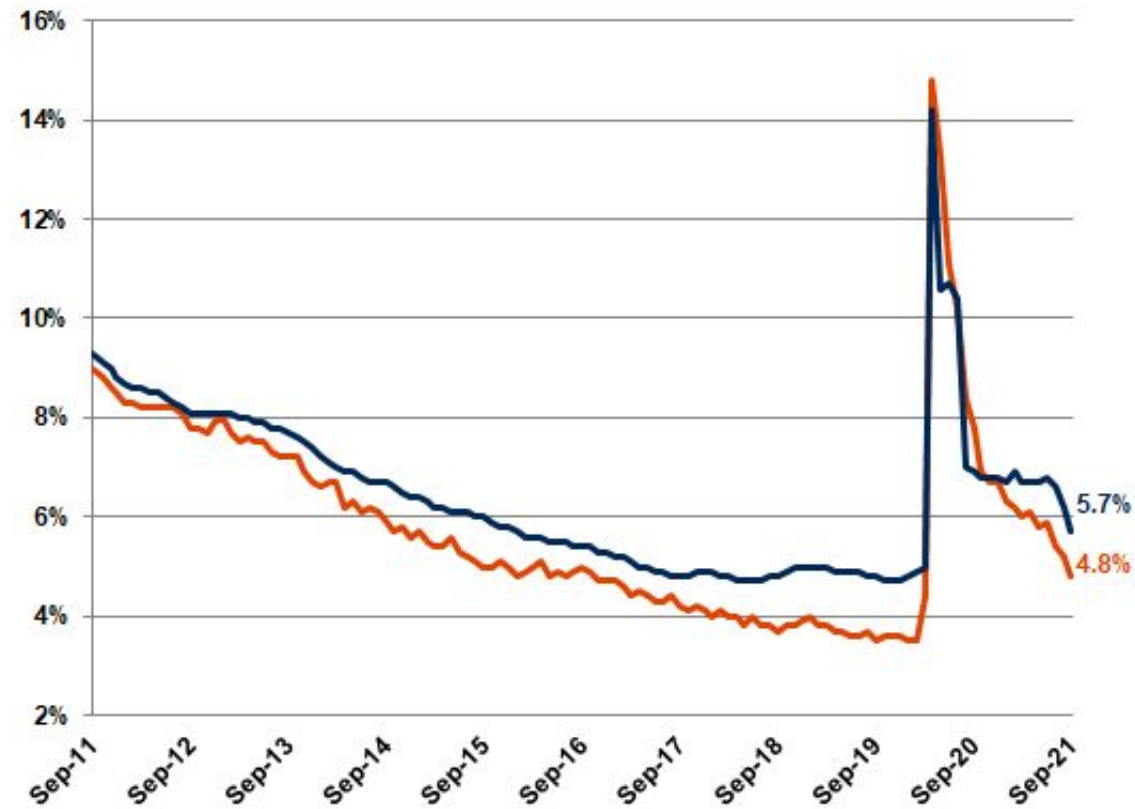
The Arizona labor force grew nearly three times faster than the U.S. labor force from Sept. '01 to Sept. '21

- Arizona labor force grew by 1.7% annually
- U.S. labor force grew by 0.6% annually

# Arizona & U.S. Unemployment Rate

Seasonally Adjusted

— U.S. — AZ



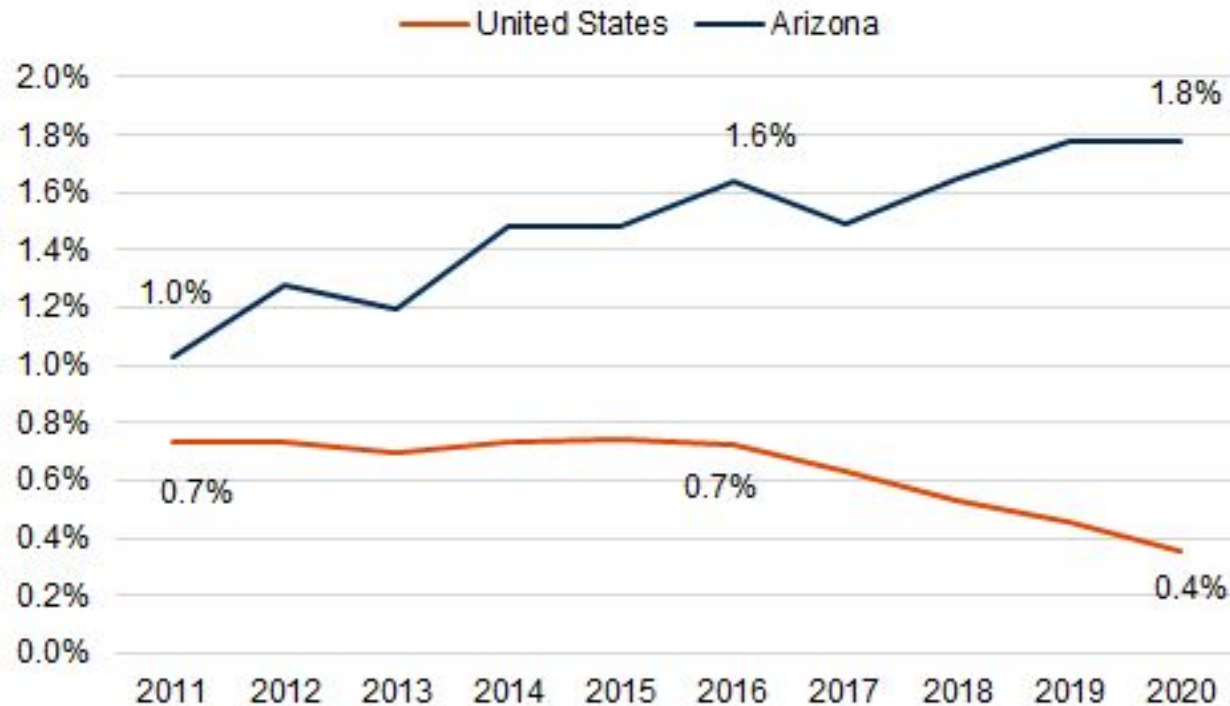
Period	Labor Force	Employment	Unemployment	Unemp. Rate
Sep-2021	3,644,010	3,434,885	209,125	5.7
OTM Change	6,331	22,367	-16,036	-0.5
OTY Change	102,041	135,558	-33,517	-1.2

# Economic Trends

## Long-term

- U.S. population continues to grow, but at a decelerating pace.
- Arizona population growth has been among the fastest in the nation.
- A significant portion of the U.S. population is nearing retirement age, which will likely increase the demand for health care services.
- The Arizona labor force has grown steadily over the past two decades.
- Demand for new housing has kept construction employment in high demand over the past decade.
- Consumers have increasingly shifted to online retail (e-commerce) over the past two decades.

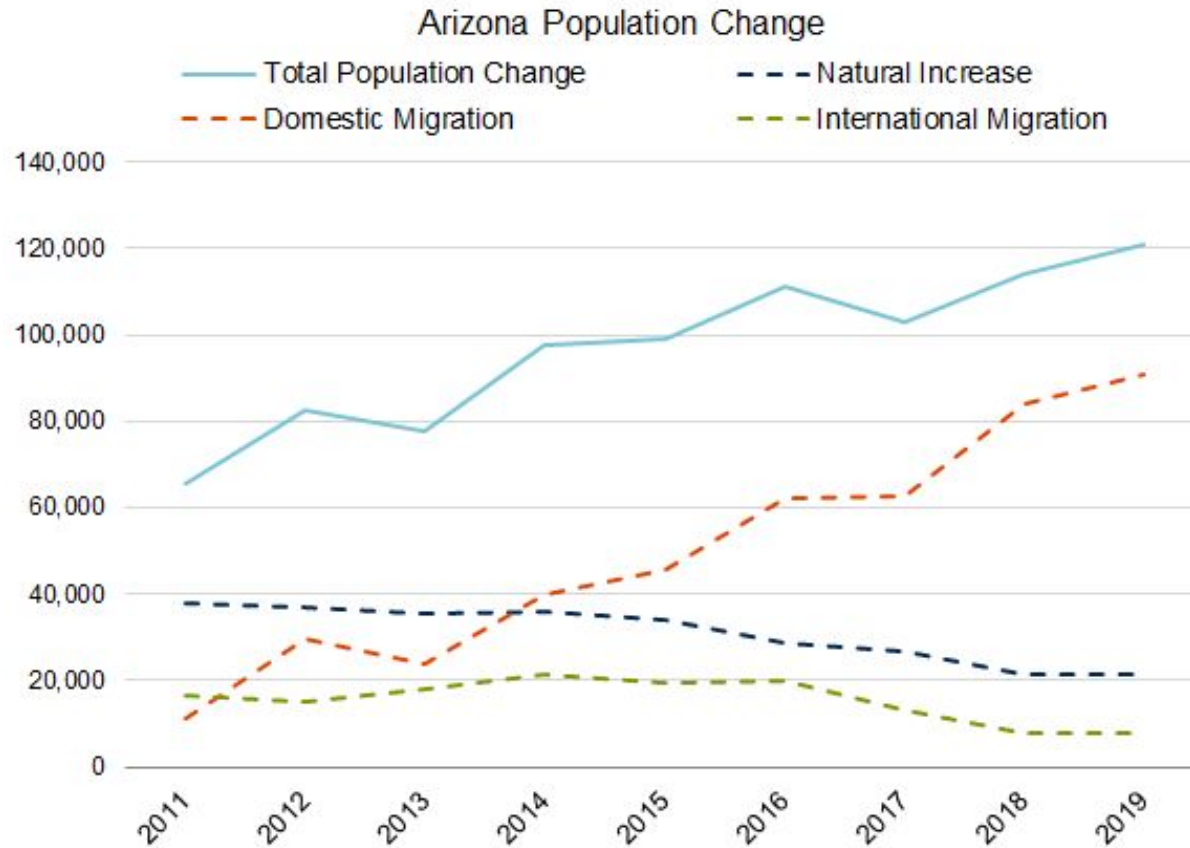
# Population Growth



Source: US Census Bureau Population and Housing Unit Estimates Program

- U.S. population continues to grow, but at a decelerating pace
- Arizona's 2020 population growth rate was four times larger than the U.S. population growth rate
- Arizona population growth ranked 2nd in the nation in 2020 and 3rd in 2019

# Arizona Annual Population Change

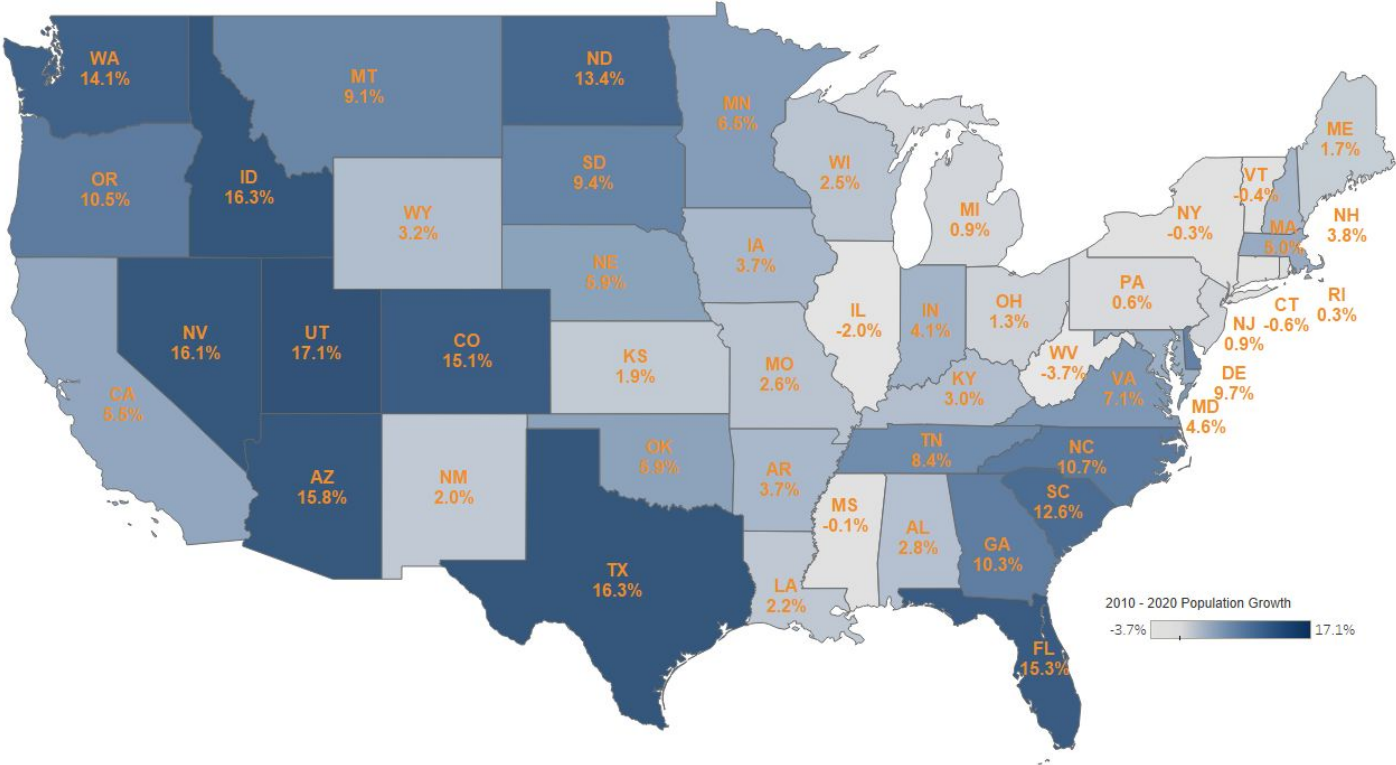


Source: US Census Bureau Population and Housing Unit Estimates Program

Arizona's strong population growth can be attributed to an increase in domestic migration into the state.

- In 2011, total migration accounted for 42% of total population growth.
- In 2019, total migration accounted for 82% of total population growth.
- Arizona migration growth ranked 3<sup>rd</sup> in the nation in 2019.

# 2010 to 2020 Population Change by U.S. State



Arizona's population growth from 2010-2020 ranked 5 in the nation.

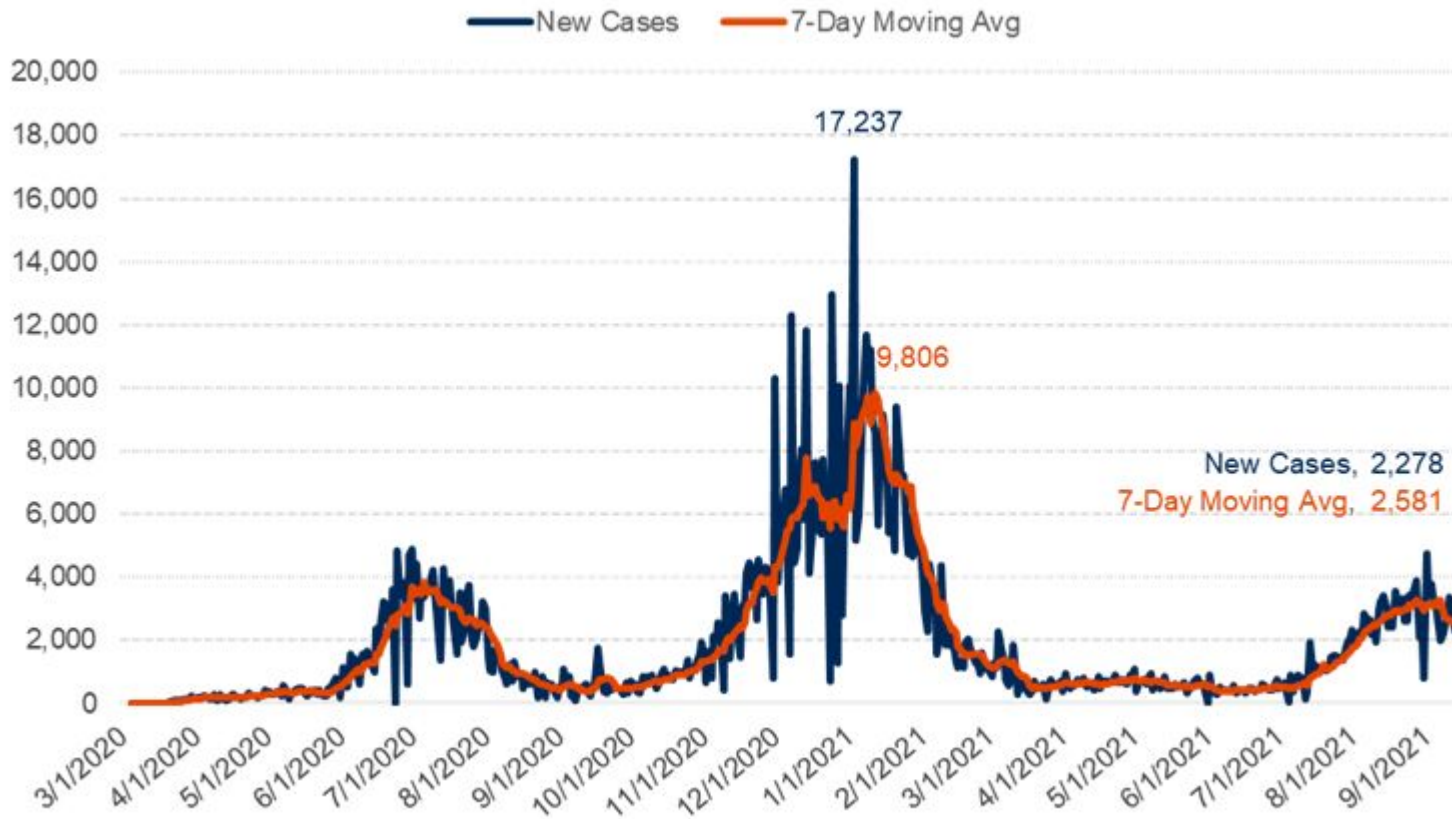
Source: US Census Bureau Population and Housing Unit Estimates Program

# Caveats and Considerations

- The Arizona economy has reported strong growth throughout 2021 as the impacts of the COVID-19 virus have been mitigated. However, employment growth may be adversely affected if new challenges arise because of the COVID-19 virus.
- The consumer price index (CPI) began to rise in 2021, mainly because of supply chain disruptions and pent-up consumer demand. If inflationary pressures are shown to be a long-term trend instead of a short-term trend, future employment growth could be affected.
- Arizona had one of the fastest growing populations in the nation over the past decade (2010-2020), which has helped increase economic growth and mitigated labor supply constraints for Arizona businesses. If population growth decreases, this could have adverse effects on economic growth and labor supply.



# Positive Covid-19 Cases in Arizona

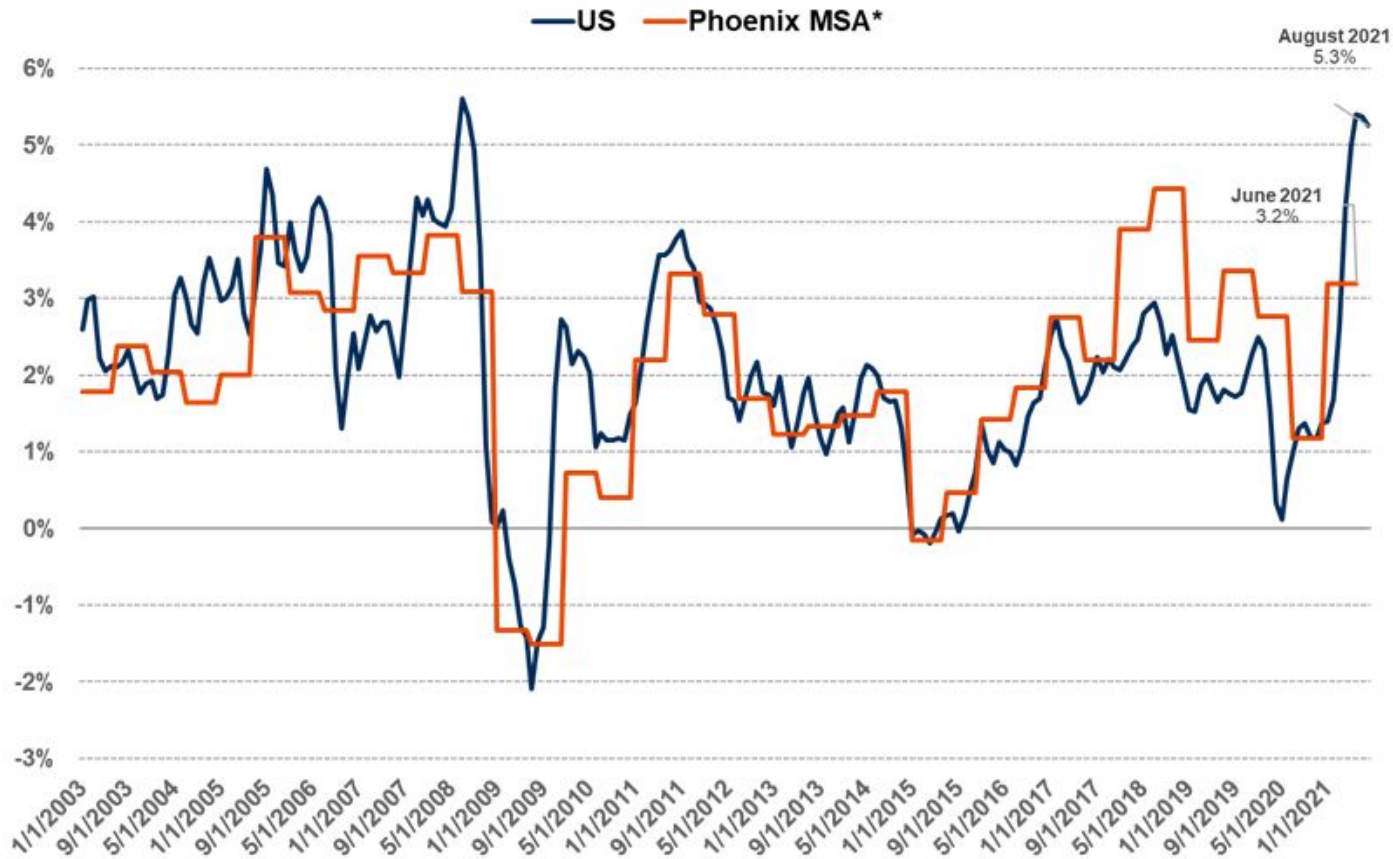


Source: Arizona Department of Health Services

- Positive COVID-19 cases rose through August 2021.



## Year-Over-Year CPI Percent Change

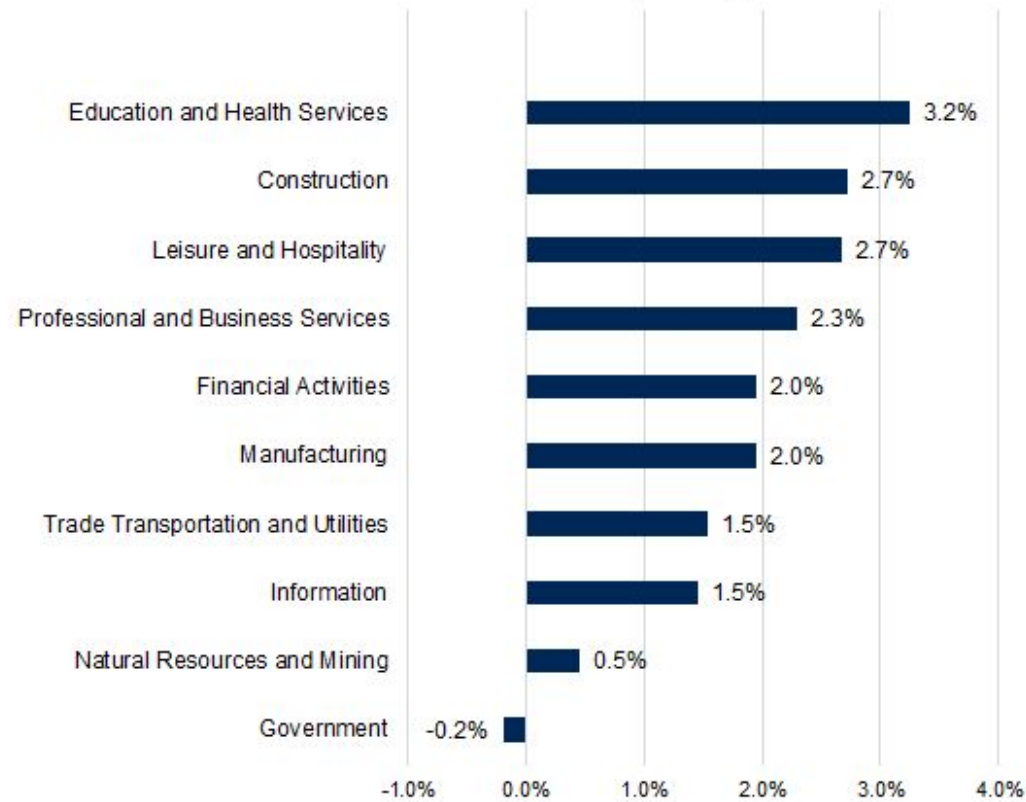


NOTE: Phoenix MSA CPI data are published as biannual averages while national data are monthly

- Year-over-year CPI growth declined from July 21 to August. 21, though it remains at ten-year highs.

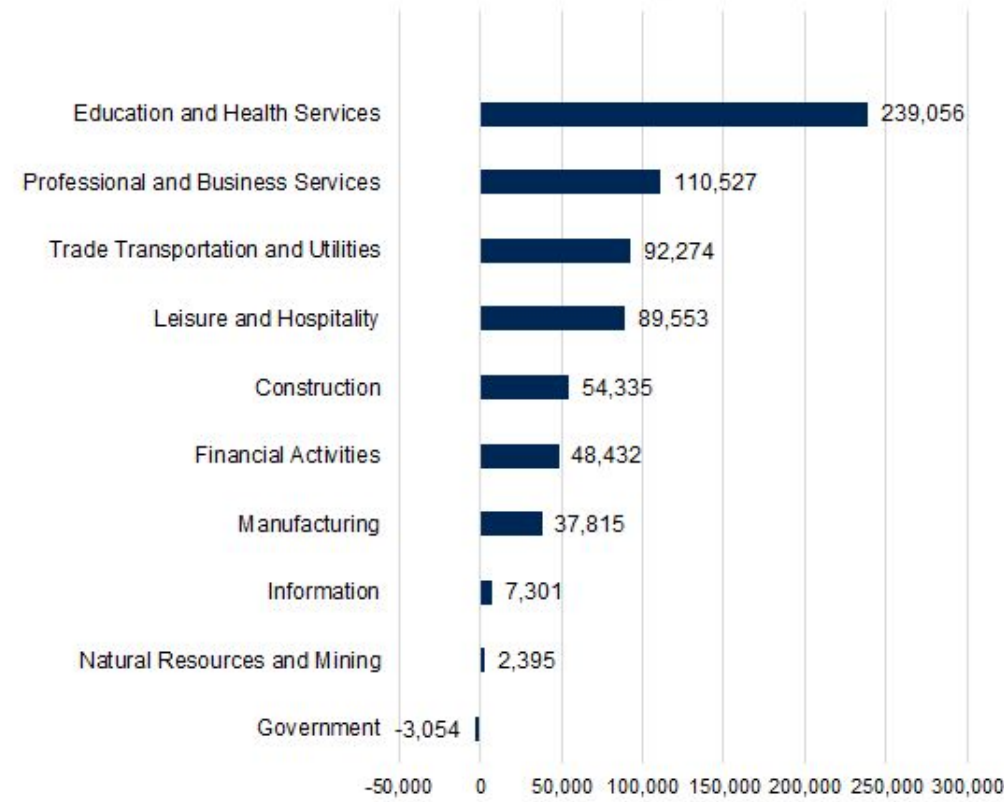
# Projected Industry Employment Change

Arizona Supersector Employment  
2020-2030 Annualized Percentage Change



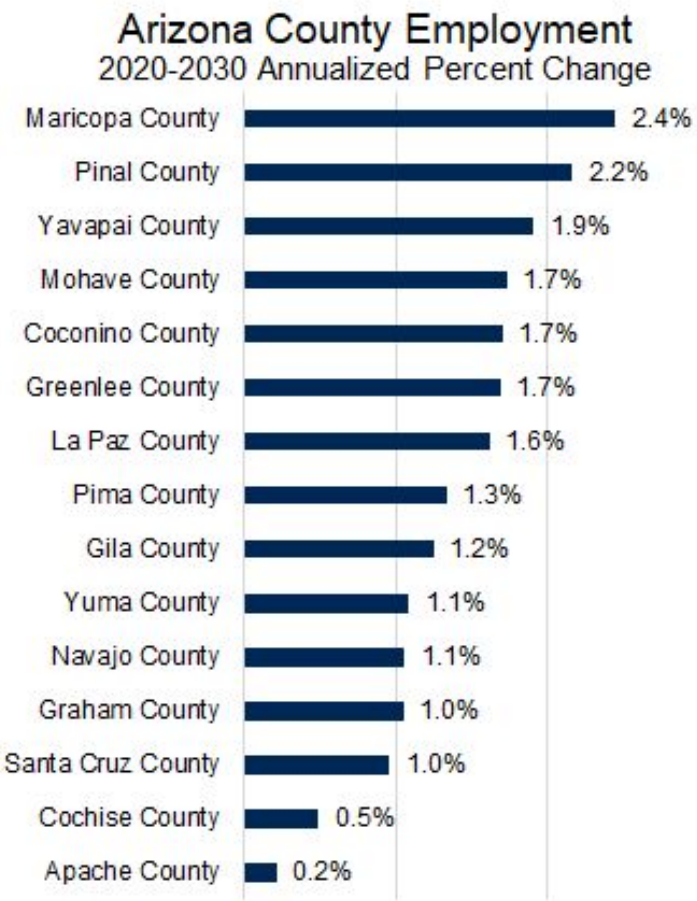
Source: Arizona Office of Economic Opportunity

Arizona Supersector Employment  
2020-2030 Total Numeric Change

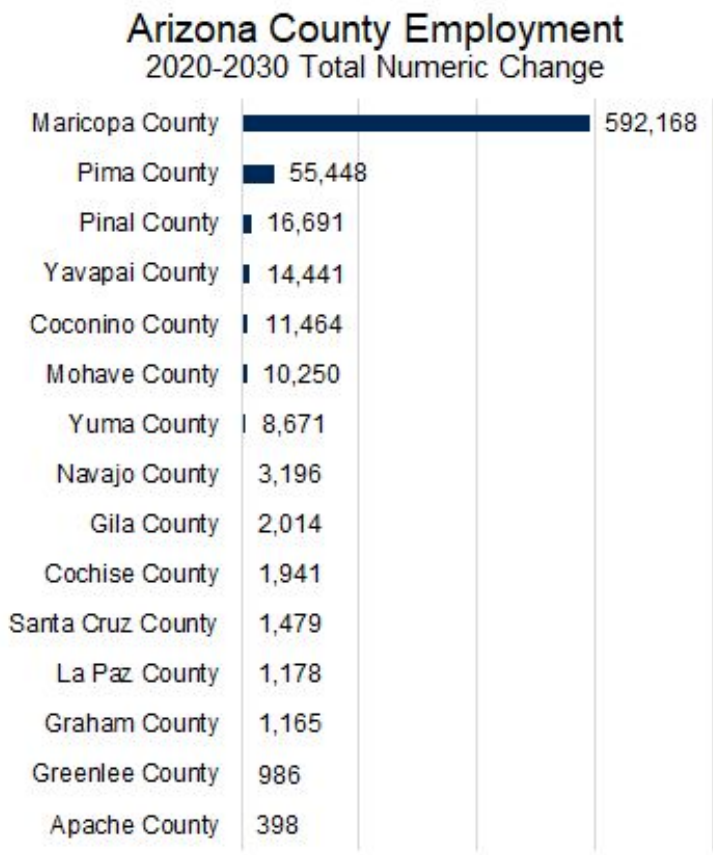


Source: Arizona Office of Economic Opportunity

# Projected Employment by Arizona County



Source: Arizona Office of Economic Opportunity

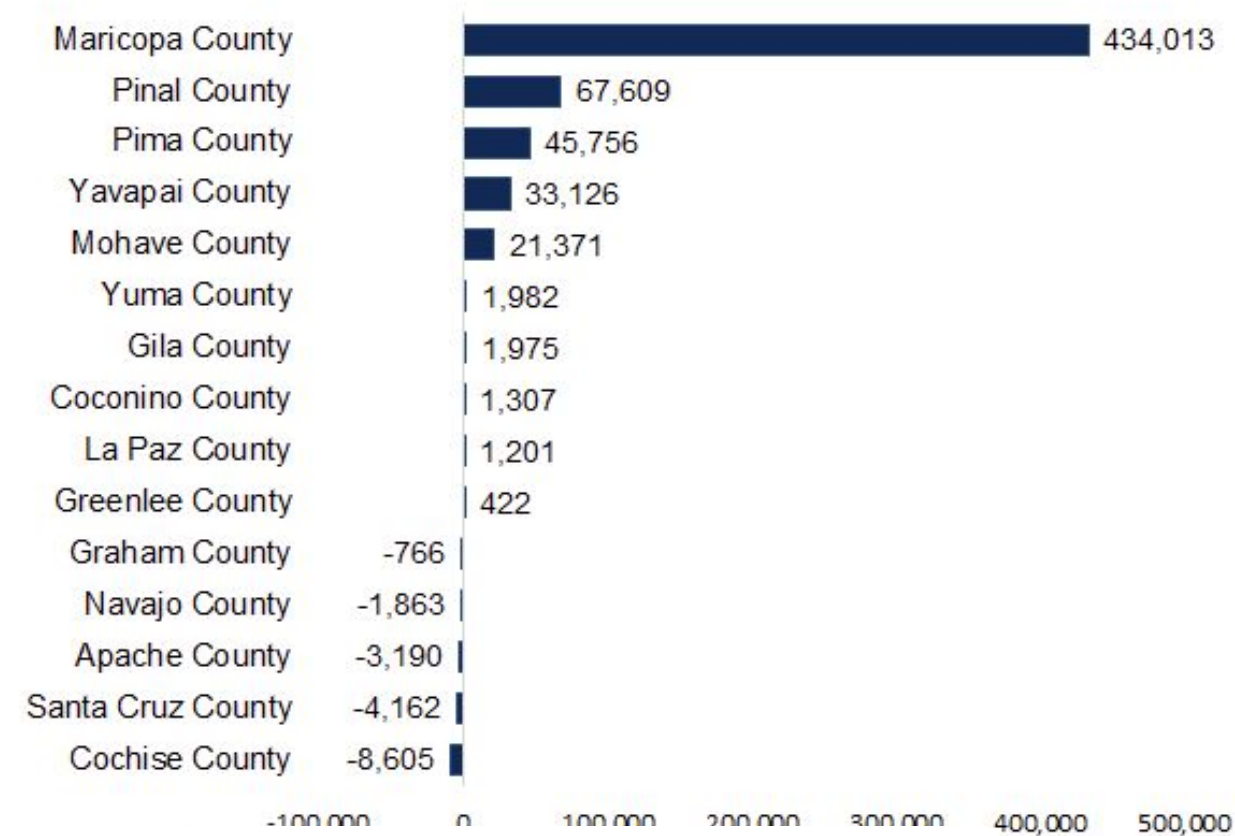


Source: Arizona Office of Economic Opportunity

- Maricopa County is projected to account for 82% of job gains in Arizona from 2020-2030

# Population Considerations

Net Migration Change by County 2010 to 2019



Source: US Census Bureau Geography Division

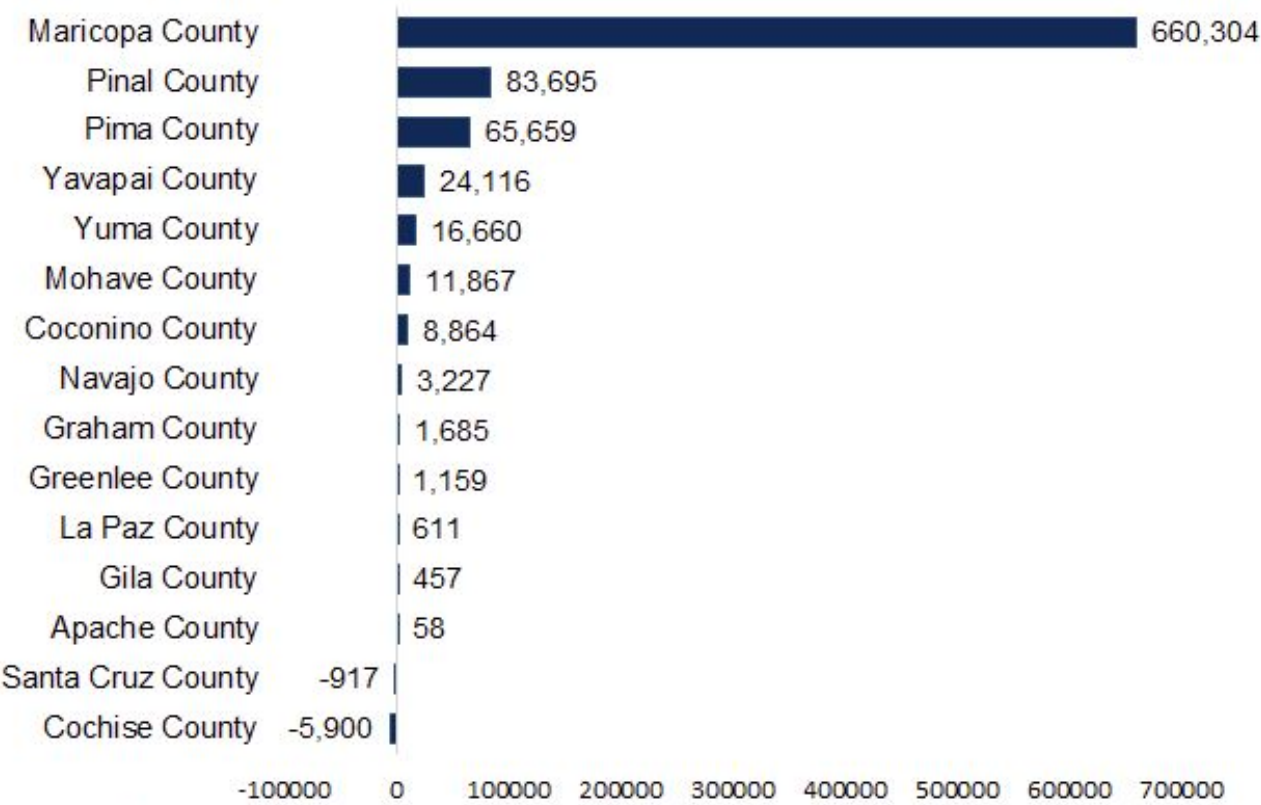
From 2010-2019, Arizona net migration increased by 590,000 people

- Maricopa County accounted for 74% (434,000 people) of the total net migration growth for the state.

Maricopa County population represented 61% of Arizona population from 2010-2019

# Population Considerations

Total Population Change by County 2010 to 2019



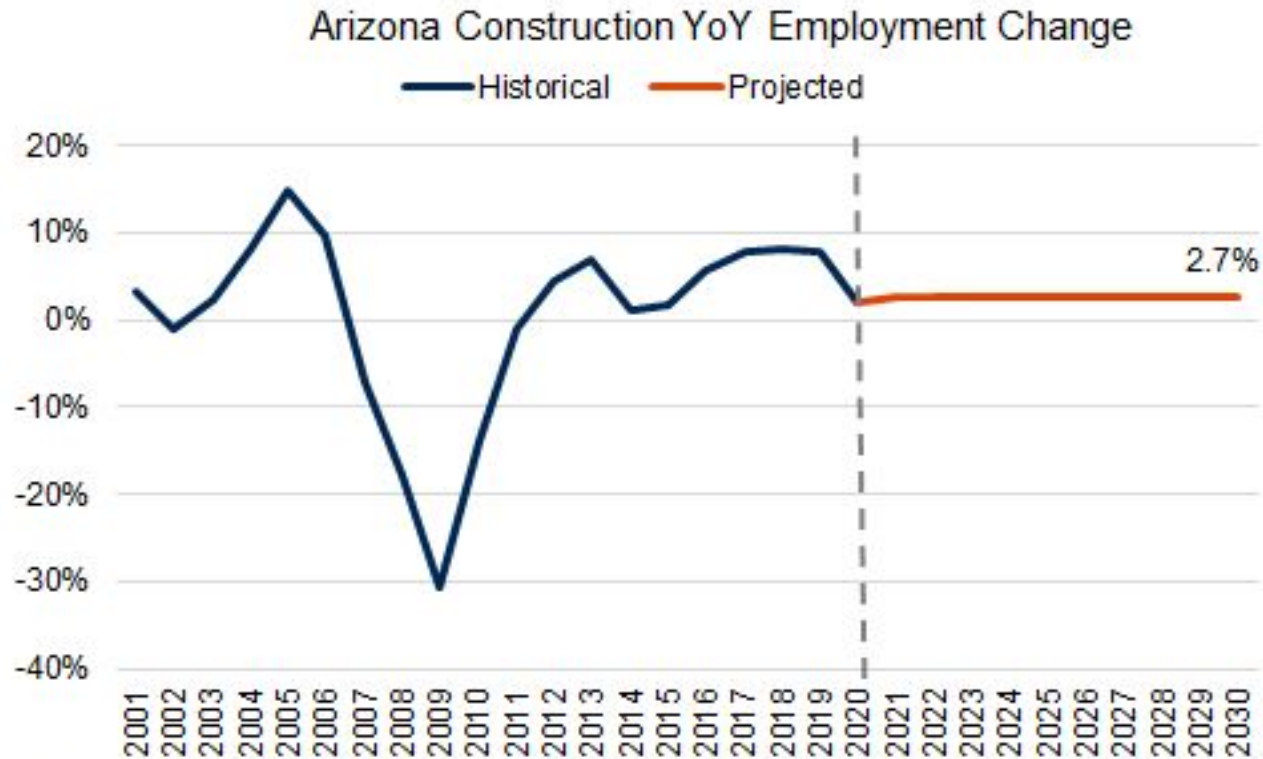
Source: US Census Bureau Geography Division

From 2010-2019, Arizona’s total population increased by 871,545 people

- Maricopa County accounted for 76% (660,000 people) of the total population change for the state.



# Industry Highlight: Construction



Source: Arizona Office of Economic Opportunity

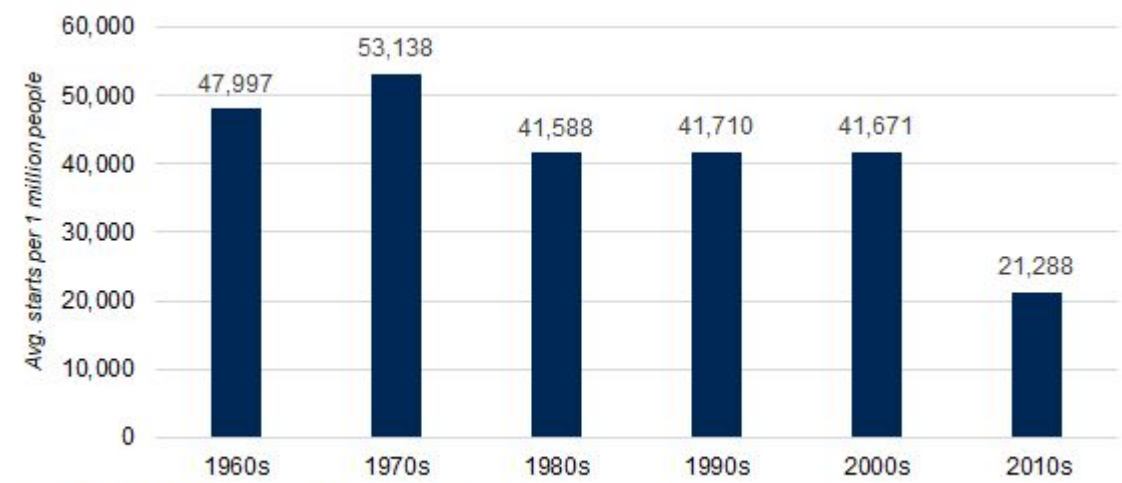
Note: Annual growth may differ from year-to-year between 2020 to 2030, but is projected to average the growth noted in the chart.

Construction employment growth is projected to continue through 2030

- Demand to purchase and rent residential housing is likely to continue
- Population growth is likely to continue, driving demand for residential construction

# U.S. Housing Construction

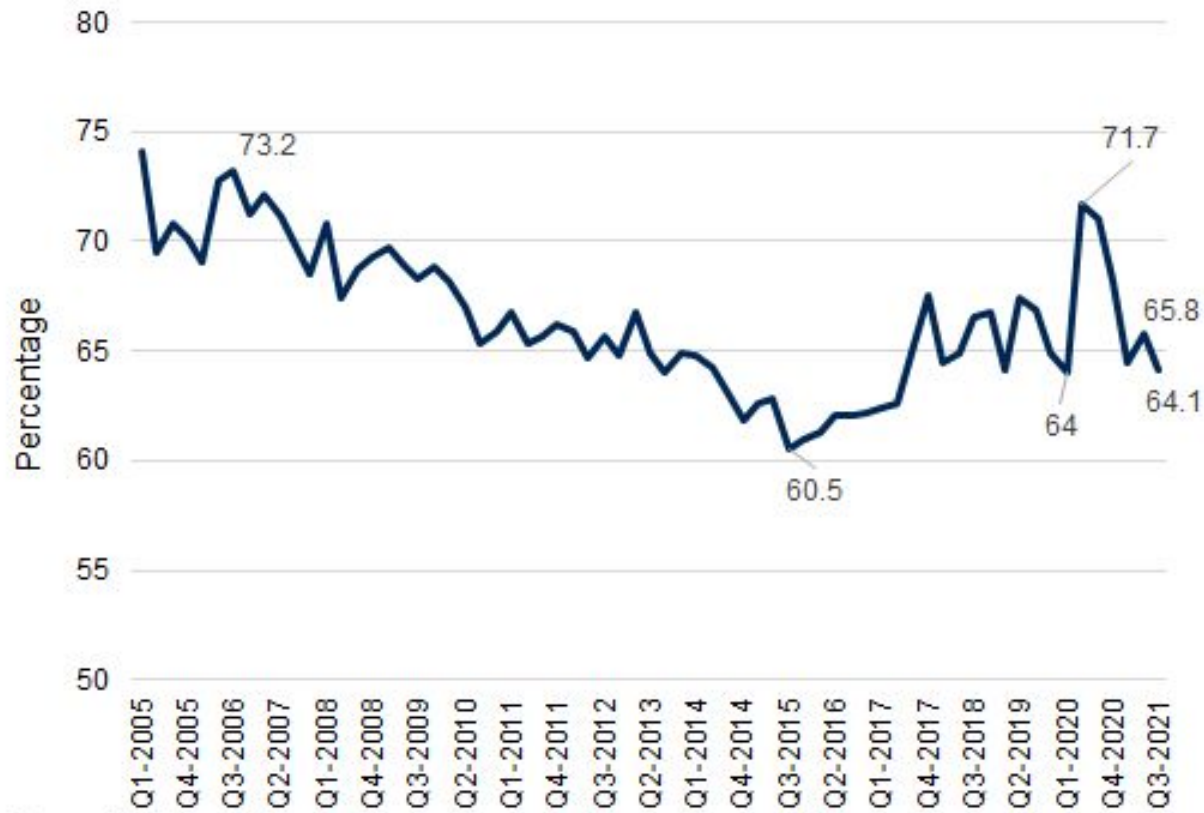
Population-Adjusted Single-Family Housing Starts



Source: National Association of Home Builders

There were about 20,000 fewer starts per million people in the 2010s than in the previous three decades.

# Arizona Homeownership Rate



Source: U.S. Census Bureau

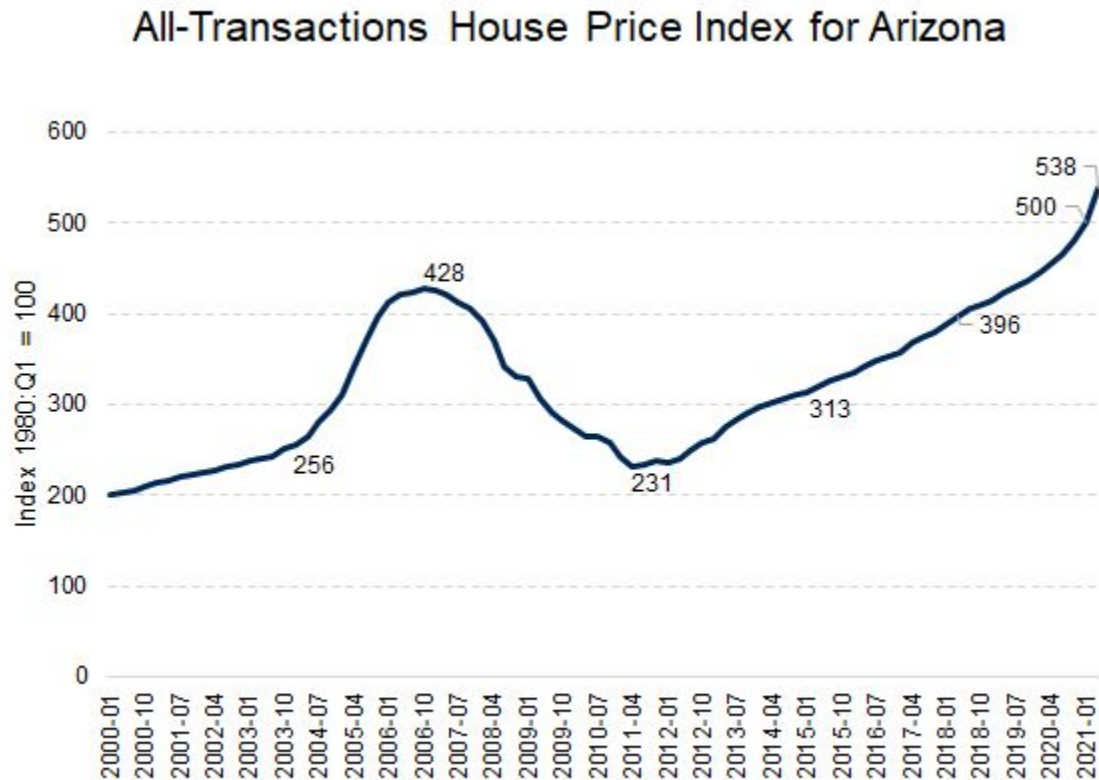
## Demand for residential housing continues

- Homeownership rates have continued to increase over the past five years
- Homeownership rates have decreased from 65.8% in Q2 2021 to 64.1% in Q3 2021

*Note: Data are Not Seasonally Adjusted*



# Arizona Home Price Trends

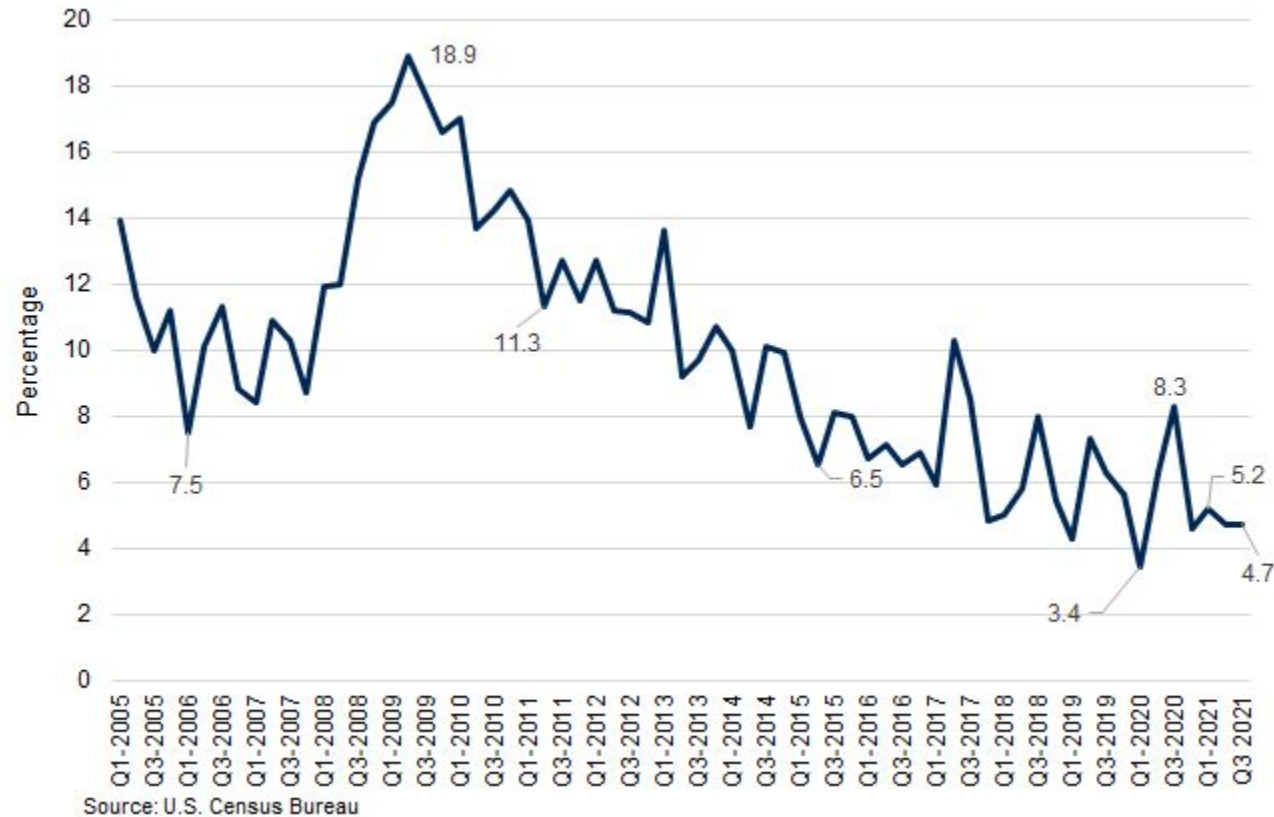


Source: US Federal Housing Finance Agency

Note: Data are Not Seasonally Adjusted

- Home prices increased by 18.7% YoY in Q2 2021
  - This was the largest YoY increase in 14 years (Q2 2006)
- Increases in home prices will likely incentivize new residential building construction

# Arizona Rental Vacancy Rate



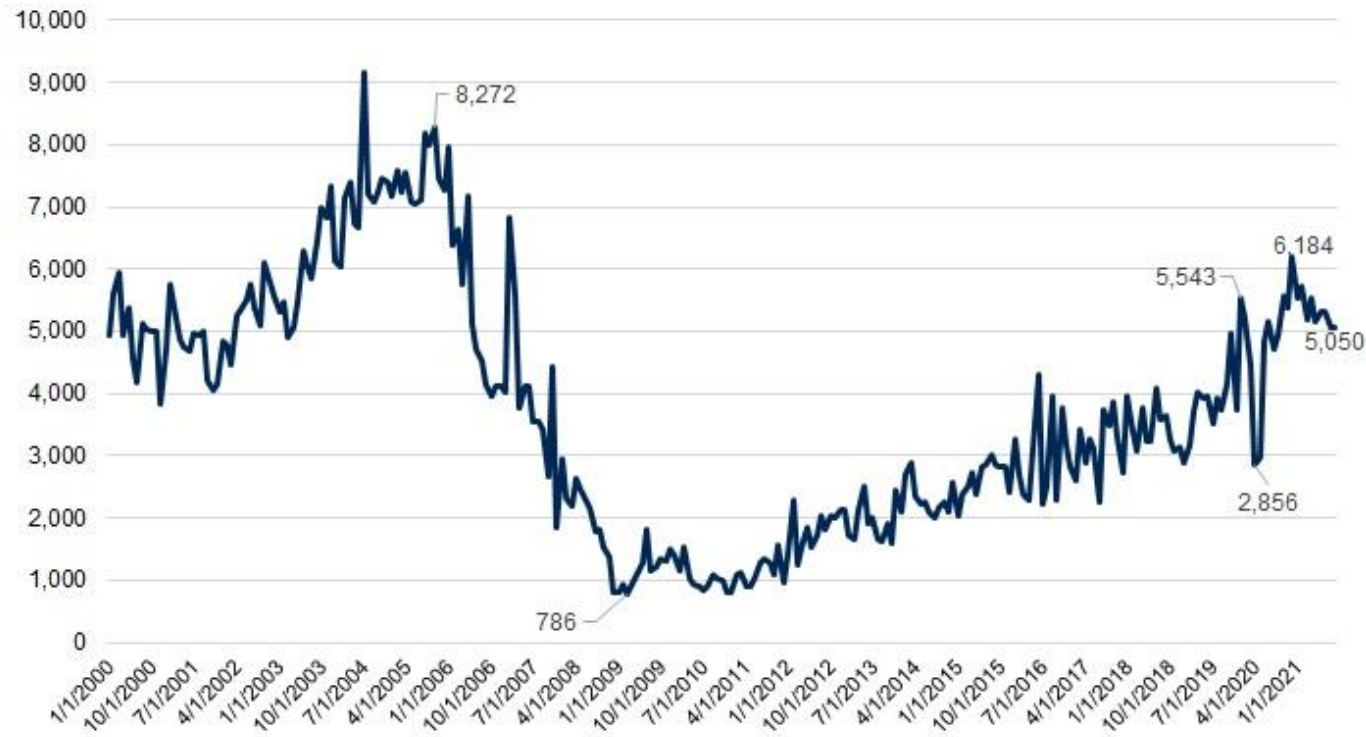
*Note: Data are Not Seasonally Adjusted*

Demand for rental housing continues to outpace supply

- The rental vacancy rate has continued to be near historic lows in Q3 2021

Construction employment is projected to increase as new residential housing is needed to meet demand

# Arizona New Private Housing Units Authorized by Building Permits



Source: U.S. Census Bureau

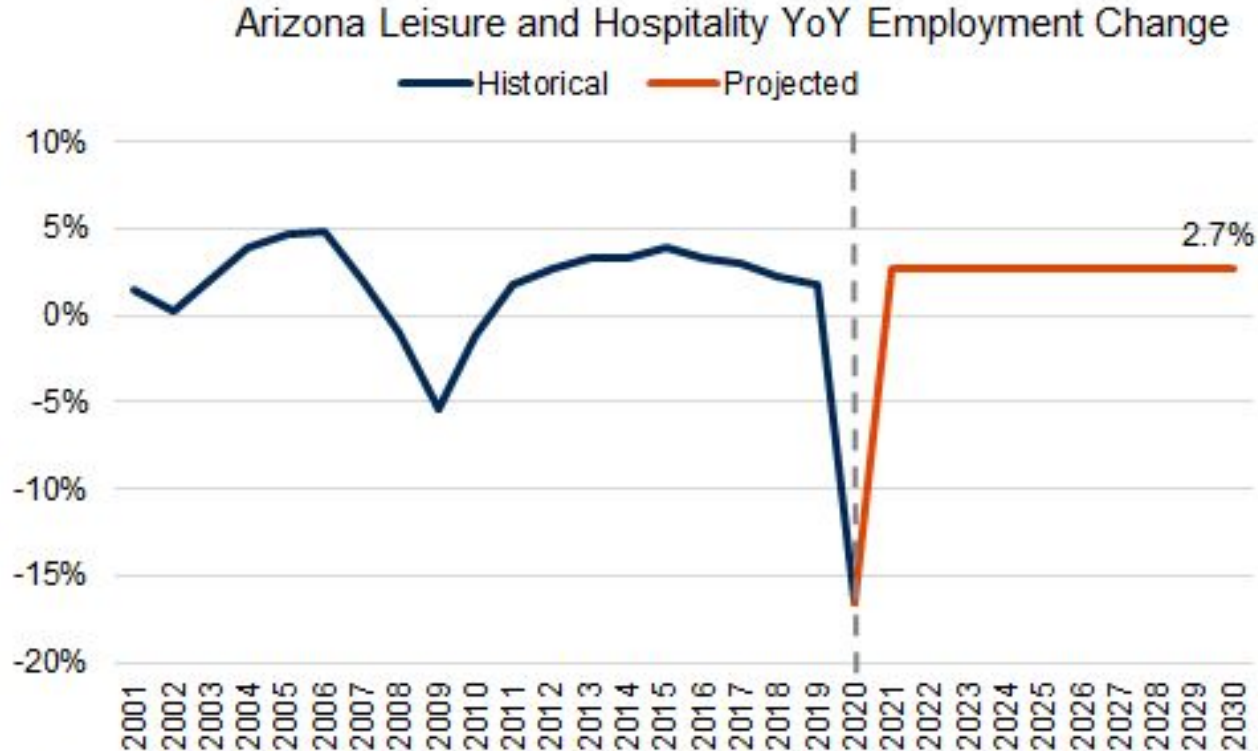
Note: Data are Seasonally Adjusted

Building permit authorizations steadily increased from 2010-2019

Because of the COVID-19 pandemic, building permit authorizations dramatically declined in April 2020.

- 5,050 building permits were authorized in September 2021, up 99 (2%) permit authorizations from September 2020.

# Industry Highlight: Leisure and Hospitality



Source: Arizona Office of Economic Opportunity

Note: Annual growth may differ from year-to-year between 2020 to 2030, but is projected to average the growth noted in the chart.

Leisure and Hospitality (L&H) is projected to gain jobs through 2030 at a quicker pace than it has in recent years as the industry recovers from the pandemic

Job gains are projected to be strongest in:

- Accommodation (3.7% annual growth)
- Performing Arts, Spectator Sports, and Related Industries (3.0% annual growth)
- Museums, Historical Sites, and Similar Institutions (2.9% annual growth)
- Food Service and Drinking Places (2.6% annual growth)

# Industry Highlight: Leisure and Hospitality

Arizona Leisure and Hospitality Employment



Source: Produced by the Arizona Office of Economic Opportunity in cooperation with the U.S. Dept. of Labor, BLS

- Employment declined by 43.3% or 146,600 jobs from February 2020 to April 2020.
- Since April 2020, 83% (121,300 jobs) of the Leisure and Hospitality pandemic job losses have been recovered

# Industry Highlight: Health Care and Social Assistance

Sector	Historic Change (2010-2020)		Projected Change (2020-2030)	
	Numeric Change	% Change (Annual)	Numeric Change	% Change (Annual)
Health Care and Social Assistance	102,756	2.9%	203,805	4.1%
Ambulatory Health Care Services	44,155	2.9%	89,944	4.2%
Hospitals	22,749	2.2%	47,523	3.5%
Nursing and Residential Care Facilities	22,749	2.8%	31,424	4.5%
Social Assistance	13,872	4.3%	34,914	4.5%

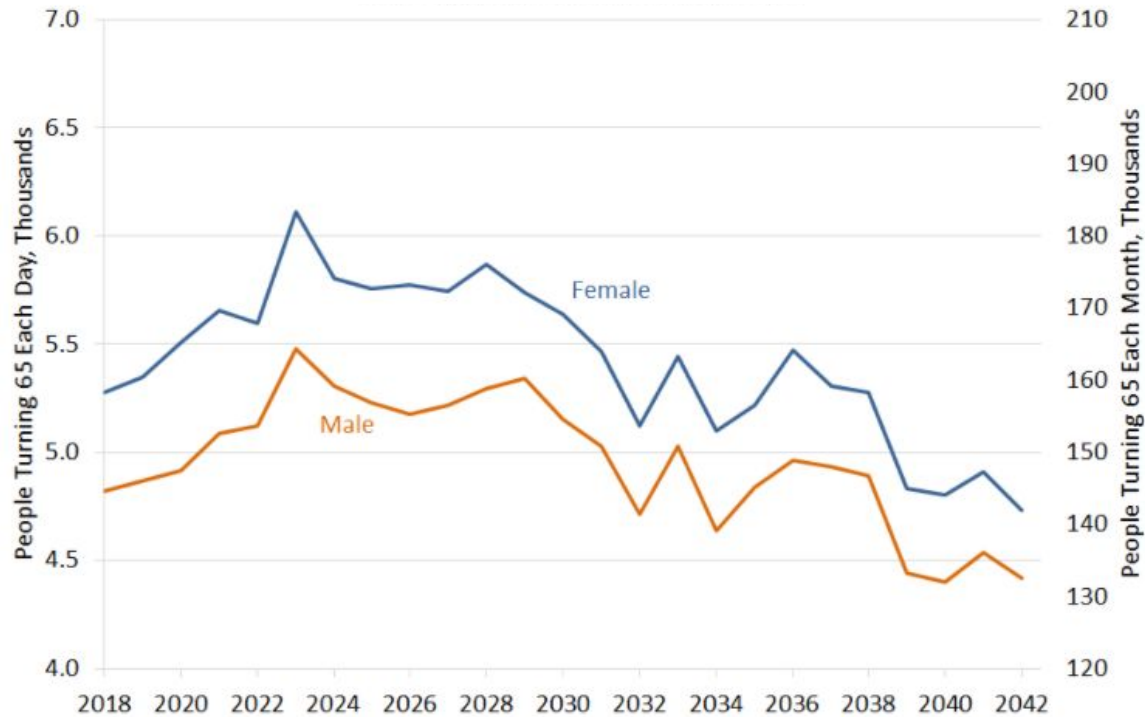
Source: Arizona Office of Economic Opportunity

Health Care employment is projected to increase by 4.1% annually from 2020-2030

- Projected growth is higher than the 2010-2020 growth rate of 2.9%
- Growth will be driven, in part, by increasing population growth and an aging population



# The Aging U.S. Population



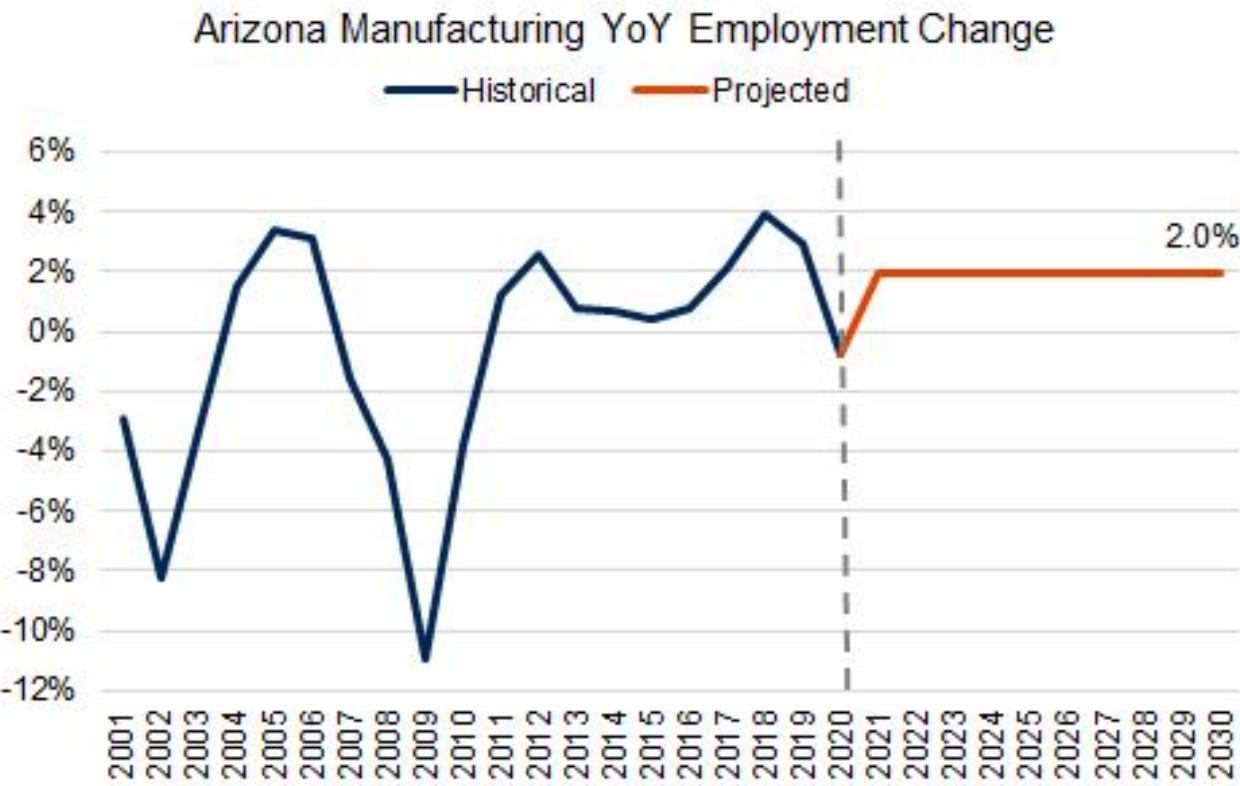
Source: Federal Reserve Bank of St. Louis

The number of people reaching retirement age is on the rise<sup>1</sup>

In 2023 alone, nearly 350,000 residents are expected to turn 65 each month.

Research has shown that nearly half of lifetime medical expenditures is incurred during the senior years (age 65+)<sup>2</sup>

# Industry Highlight: Manufacturing



Source: Arizona Office of Economic Opportunity

Note: Annual growth may differ from year-to-year between 2020 to 2030, but is projected to average the growth noted in the chart.

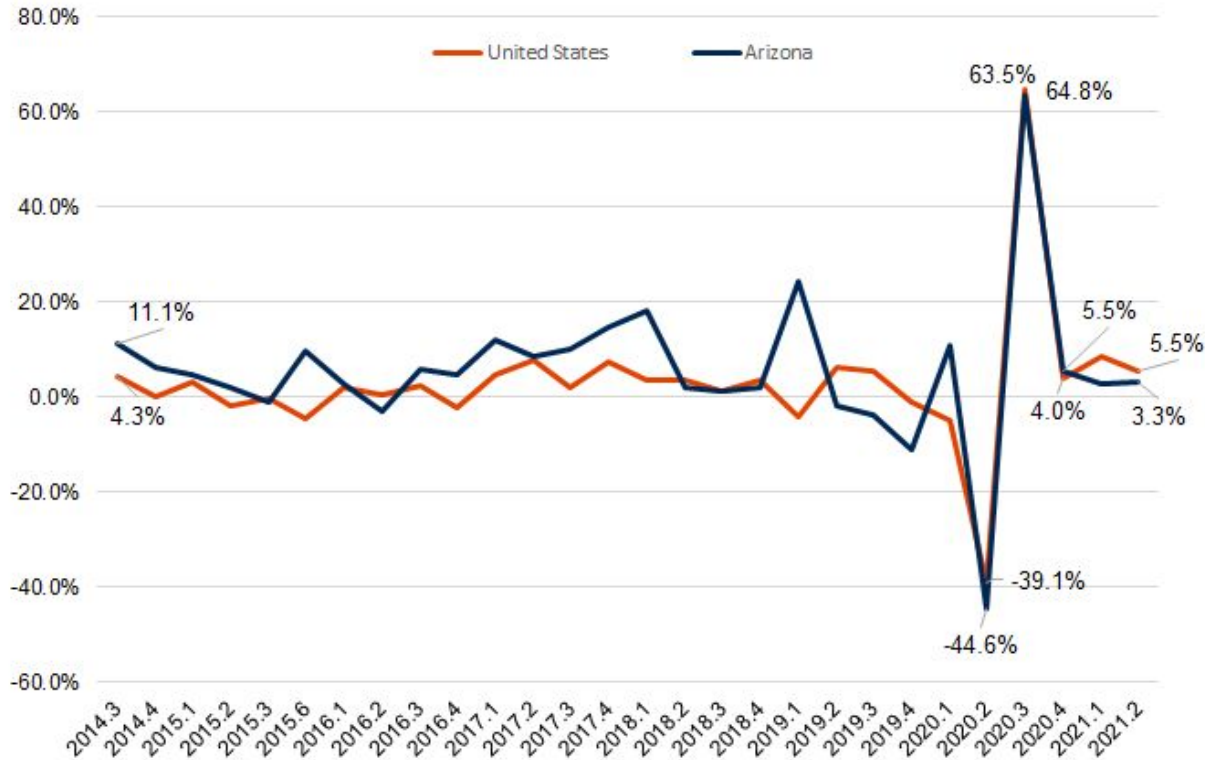
Manufacturing employment growth is projected to continue through 2030

- From 2014-2019, manufacturing gained 21,700 jobs, growing by 2.6% annually (Source: BLS CES)



# Real Manufacturing GDP

## Seasonally Adjusted Annual Rate



Source: U.S. Bureau of Economic Analysis

Mfg. GDP posted positive growth from Q3 2020 to Q2 in 2021

Mfg. job gains in 2020-2030 are projected to be strongest in:

- Chemical Manufacturing\* (4.4% annual growth)
- Miscellaneous Manufacturing\*\* (3.4% annual growth)
- Electrical Equipment, Appliance, and Component Manufacturing (3.4% annual growth)

\*Chemical Mfg. is comprised of Petrochemical; Industrial Gas; and Synthetic Dye Mfg., among others

\*\*Miscellaneous Mfg. is composed of Medical Equipment, Jewelry, Sporting Goods and Office Supplies Mfg., among others

# Industry Highlight: Transportation and Warehousing

Sector	Historic Change (2010-2020)		Projected Change (2020-2030)	
	Numeric Change	% Change (Annual)	Numeric Change	% Change (Annual)
Transportation and Warehousing	50,010	5.5%	51,150	3.6%
Couriers and Messengers	9,656	8.1%	9,638	4.4%
Scenic and Sightseeing Transportation	25	0.6%	319	5.4%
Support Activities for Transportation	4,456	3.6%	4,854	2.9%
Truck Transportation	6,390	3.2%	7,320	2.7%
Warehousing and Storage	29,019	15.4%	23,744	5.0%

Source: Arizona Office of Economic Opportunity

Job growth in Warehousing and Storage is projected to account for the majority of job gains in Transportation and Warehousing

- Warehousing and Storage employment more than doubled over the past five years (2015-2020) and quadrupled over the past ten years (2010-2020)
- The emergence of online retail has increased the demand for warehousing and storage jobs

# U.S. E-Commerce (Online Retail) Sales

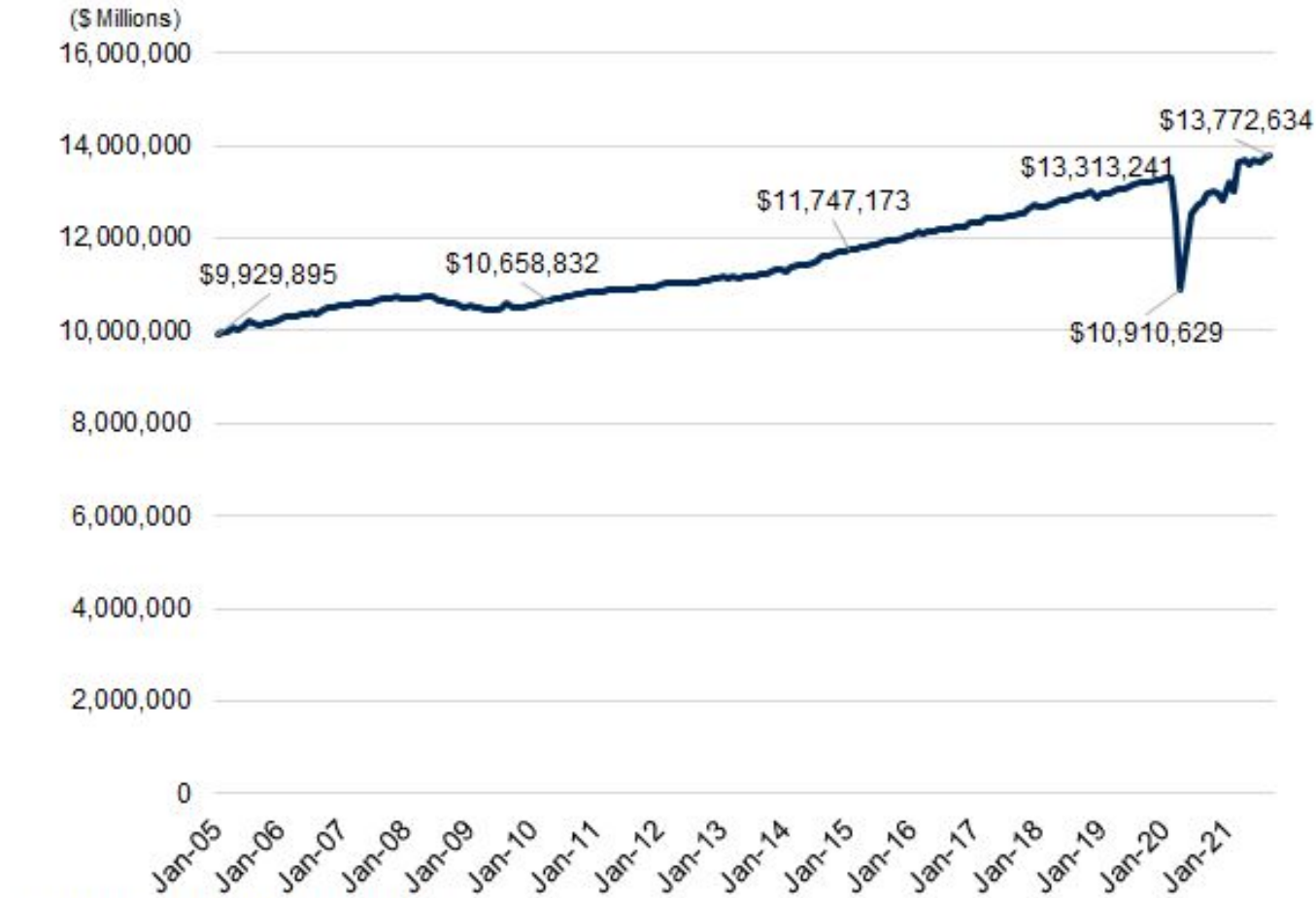


Over the past two decades, e-commerce has accounted for an increasing percent of total retail sales

- E-commerce sales as a percent of total retail sales increased to 13.3% in Q2 2021 from 11.4% in Q1 2020

*Note: Data are Not Seasonally Adjusted*

# U.S. Personal Consumption Expenditures (PCE)



Source: Bureau of Economic Analysis

U.S. PCE recovered quickly after declining sharply in the early months of the COVID-19 pandemic.

- In September 2021, PCE levels exceeded pre-pandemic levels by 3.5%.
- Over the year, U.S. PCE increased by 6.2%.

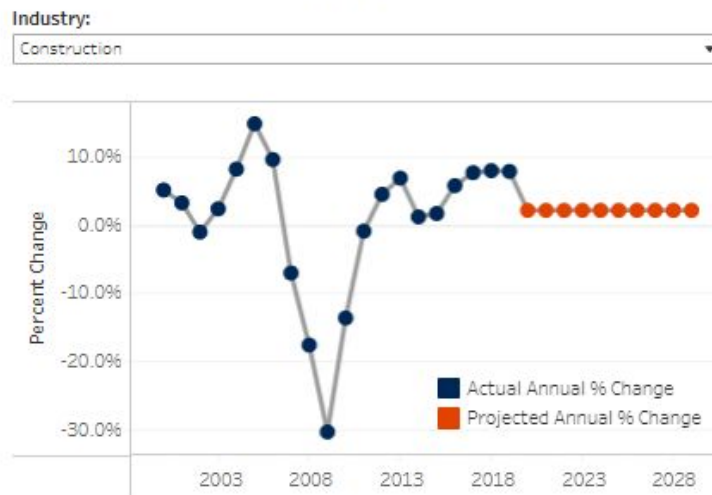
# Additional Resources:

Area:  Industry Level:  Projection Type: ☐ Short Term (2020 - 2022) ☒ Long Term (2019 - 2029)

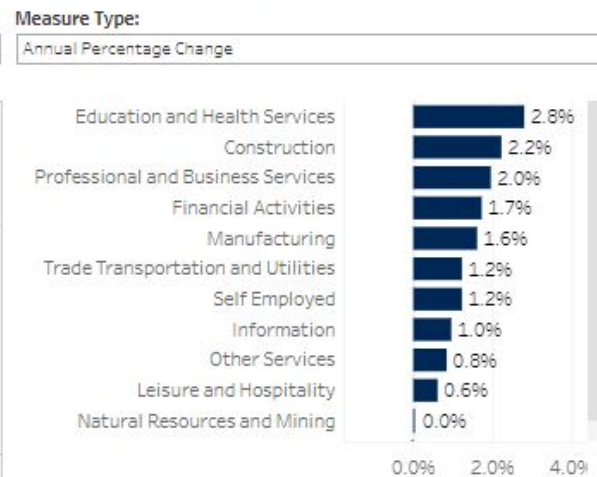
## Long Term (2019 - 2029) Arizona Industry Projections

Industry	Base Employment	Projected Employment	Total Employment Numeric Change	Total Employment Percentage Change	Annual Employment Numeric Change	Annual Employment Percentage Change
Construction	172,554	214,838	42,284	24.5%	4,228	2.2%
Education and Health Services	648,432	856,272	207,840	32.1%	20,784	2.8%
Financial Activities	222,616	264,489	41,873	18.8%	4,187	1.7%
Government	160,171	159,322	-849	-0.5%	-85	-0.1%
Information	51,008	56,109	5,101	10.0%	510	1.0%
Leisure and Hospitality	354,329	377,072	22,743	6.4%	2,274	0.6%
Manufacturing	178,642	209,971	31,329	17.5%	3,133	1.6%
Natural Resources and Mining	54,825	54,865	40	0.1%	4	0.0%

### Annual Employment % Change



### Employment Change Long Term (2019 - 2029)



- Interactive data tools are available on the OEO website at: <https://www.azcommerce.com/oelabor-market/employment-projections/>

# Report Summary

- Total employment is projected to continue gaining jobs, growing by 2.2% annually from 2020 – 2030.
- All private sector industries are projected to add jobs through 2030.
- All fifteen Arizona counties are projected to add jobs through 2030.
- Growth is projected to be led by Education and Health Services (3.2% annually), Construction (2.7% annually), and Leisure and Hospitality (2.7% annually).
- Health care jobs will continue to grow across the state as demand for health care services is anticipated to increase.



# Questions?

## Upcoming Release Schedule:

October 2021 Employment Report on November 18

## Contact

Website: [Laborstats.az.gov](https://laborstats.az.gov)

Email: [Laborinfo@oeo.az.gov](mailto:Laborinfo@oeo.az.gov)

Phone: 602-771-2222



# Works Cited

1. Vadenbroucke, Guillaume. (2020 January 13). *How many people will be retiring in the years to come?* Federal Reserve Bank of St. Louis. <https://www.stlouisfed.org/on-the-economy/2020/january/staff-pick-people-retiring-years-come>
2. Alemayehu, Berhanu, and Kenneth E Warner. "The lifetime distribution of health care costs." *Health services research* vol. 39,3 (2004): 627-42. doi:10.1111/j.1475-6773.2004.00248.x