

**December 1, 2022**

# 2021-2031 Employment Projections

Doug Walls, Labor Market Information Director



# Industry Projections Methodology: Estimation Process

- The long-term projections process estimates employment ten years from the baseline period
  - Historic 2021 employment data are used as the base year of the forecast
  - Employment estimates for 2021 are the latest available annual data published by the U.S. Bureau of Labor Statistics (BLS) Quarterly Census of Employment and Wages (QCEW) program
  - Projected data are modeled for forecast-year 2031
- 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 BLS 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 BLS Current Employment Statistics (CES) industry classification structure

- Notably:
  - QCEW: Federal, state and local government employment is categorized in the industry that best describes the business activity
    - Public K-12 teachers are categorized in the Ed. Services sector
  - CES: Federal, state and local government employment is categorized in the government industry sector, regardless of business activity
    - Public K-12 teachers are categorized in the Local Gov. Ed. 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 is expected to reach Medicare eligibility during the forecasted period
- Nonstore retail and transportation and warehousing will drive employment growth within the retail trade sector

# Arizona Projections Highlights

- Total Arizona employment is projected to grow by 541,770 jobs over the ten-year period, reaching 3,697,248 jobs in 2031
- Total Arizona employment is projected to grow 1.6% annually (17.2% total growth) from 2021-2031
- Arizona employment growth (1.6% annualized) is projected to outpace U.S. employment growth (0.5% annualized) over the projected ten-year period
- Educational and Health Services is projected to add the largest number of jobs (14,622 jobs annually), primarily within Health Services
- Educational and Health Services is also projected to record the largest percentage gain (2.1% annually)



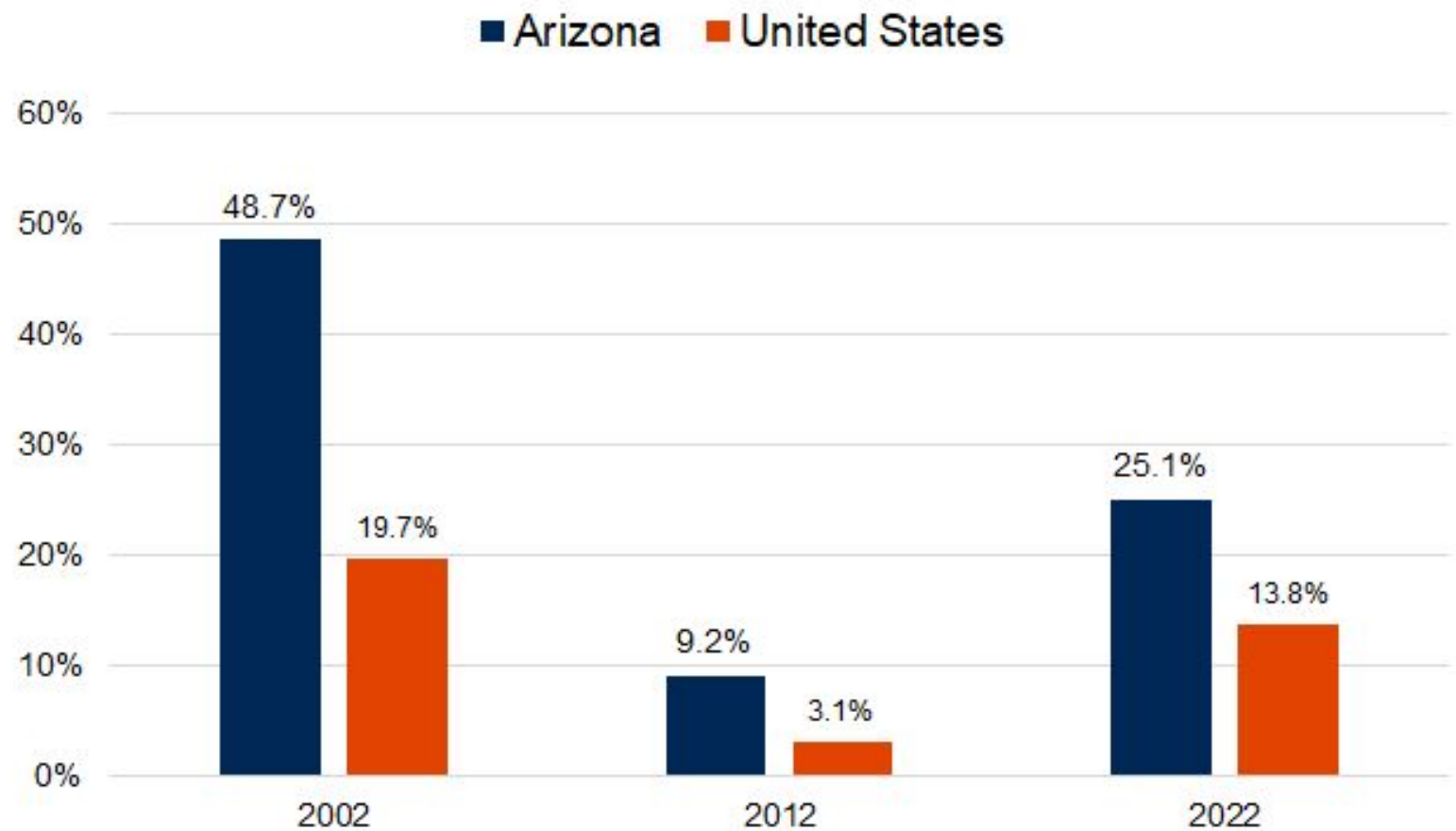
# Projected 10-Year Employment Growth Comparison

	Employment Levels		Employment Change		
Area	2021	2031	Numeric Change	Percentage Change	Annualized % Change
Arizona	3,155,478	3,697,248	541,770	17.2%	1.6%
United States	158,134,700	166,452,100	8,317,400	5.3%	0.5%

*Source: Arizona Office of Economic Opportunity*

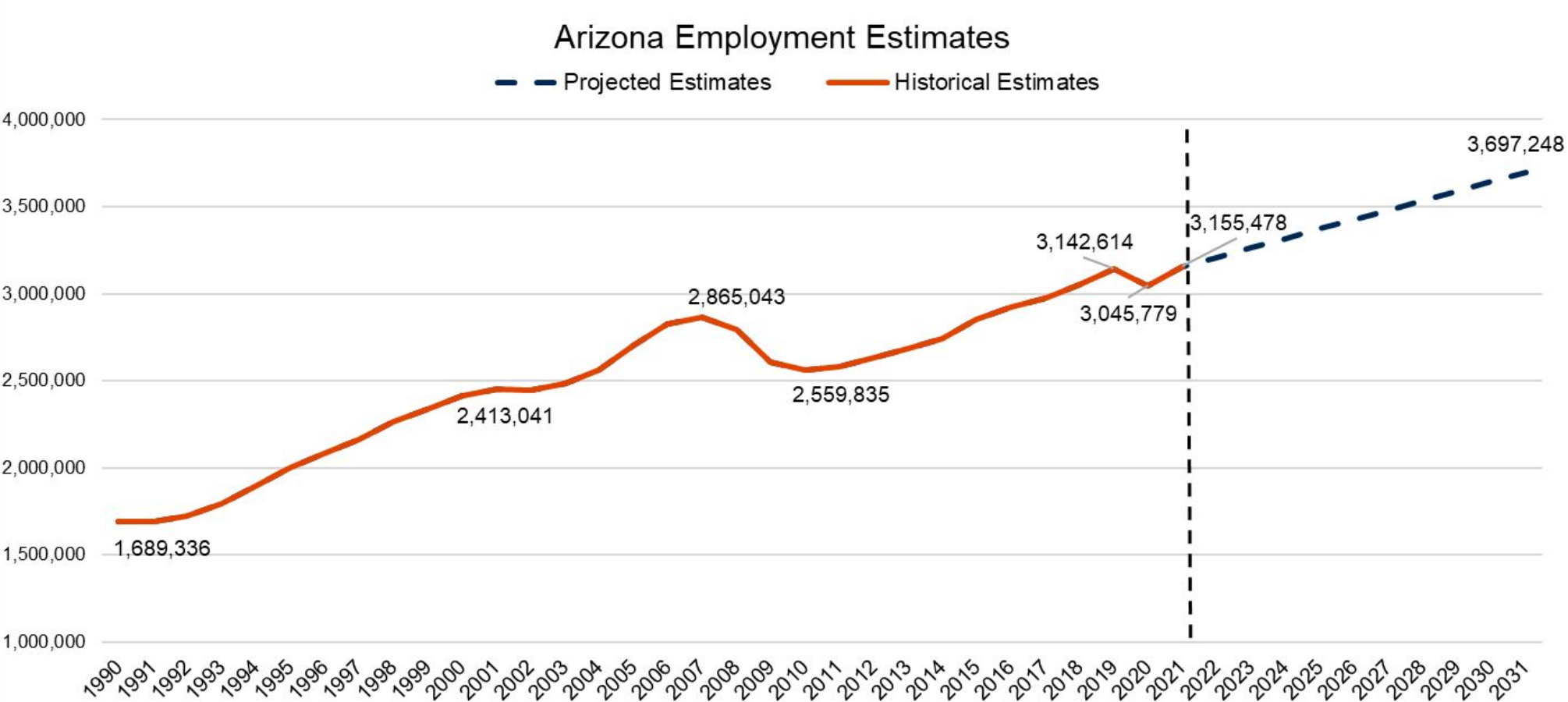
*Note: National 2021-2031 projections were released on September 8, 2022*

# 10-Year Nonfarm Employment Growth; Seasonally Adjusted



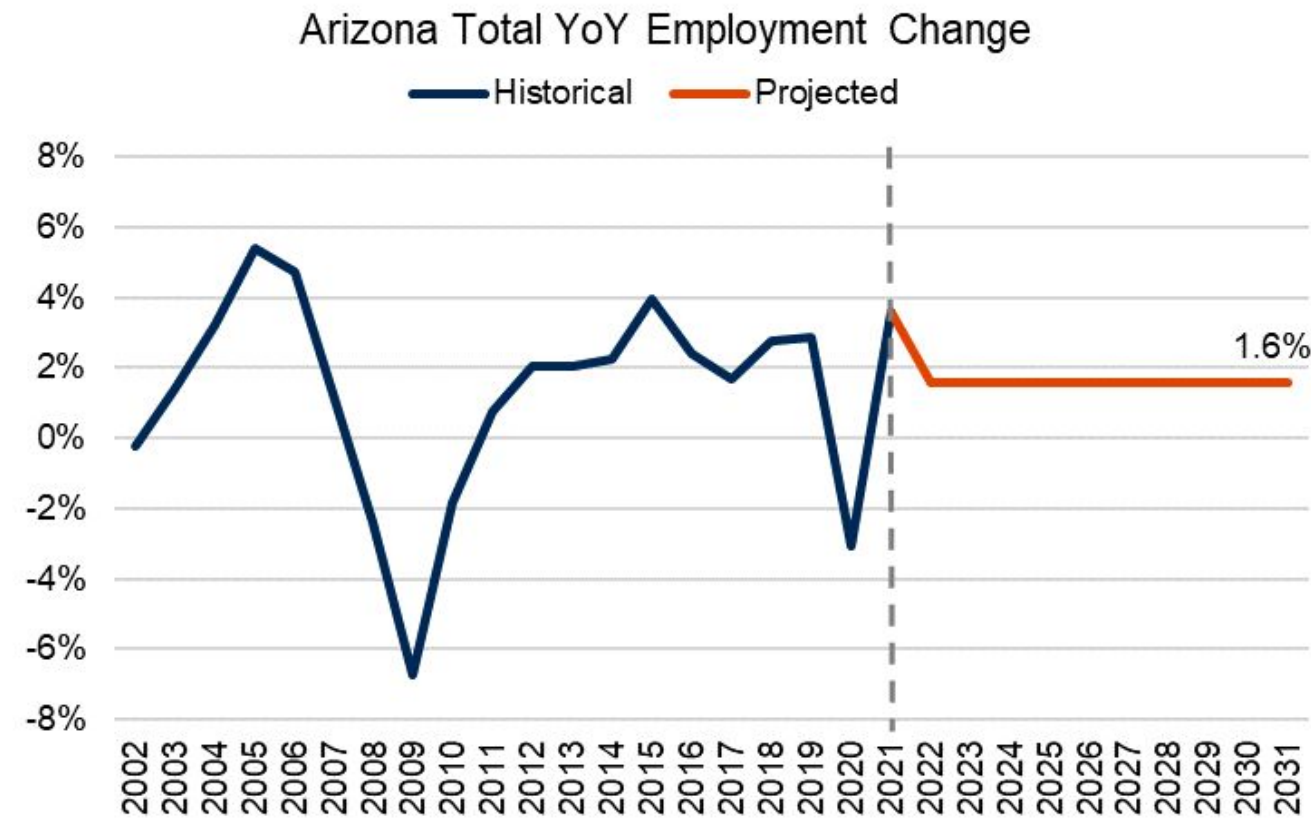
*\* October was used as the reference period for each year*  
*Source: U.S. Bureau of Labor Statistics CES Program*

# Arizona Employment



Source: Arizona Office of Economic Opportunity  
NOTE: 2021-2031 numbers reflect average ten-year projected growth. Only 2031 employment values were estimated for this release. Employment values from 2022-2030 are not official projected estimates and are included for continuity purposes only.

# Arizona Total Employment



Total employment is projected to grow 541,770 jobs or 1.6% annually from 2021-2031

Source: Arizona Office of Economic Opportunity  
Note: Annual growth may differ from year-to-year between 2021 to 2031, but is projected to average the growth noted in the chart.

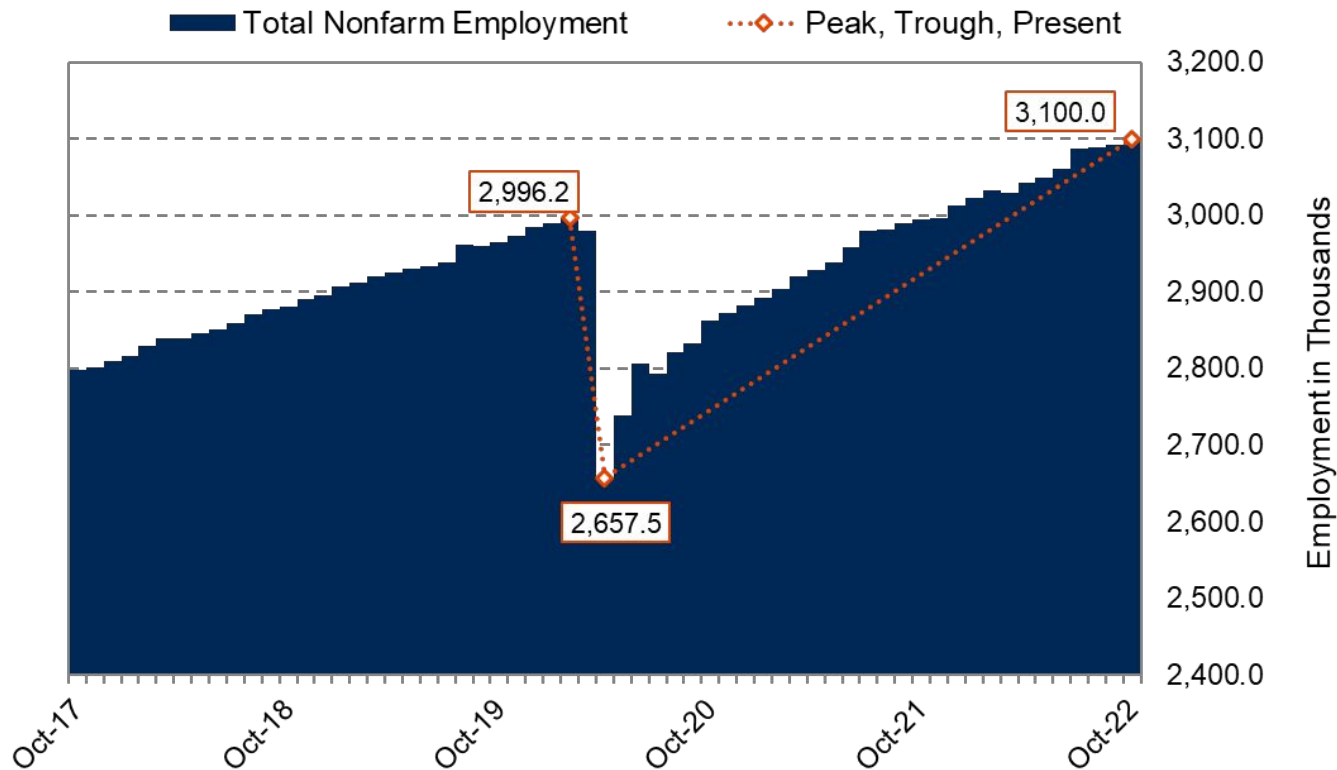
# Economic Trends

## Short-term

- Arizona nonfarm employment increased by 105,600 jobs or 3.5% year-over-year (YoY) in Oct. 2022
- The Arizona seasonally adjusted (SA) unemployment rate increased to 3.9% in Oct. 2022 from 3.7% in Sept. 2022, and 3.2% in May 2022
- The Phoenix metro Consumer Price Index (CPI) increased 12.1% YoY in Oct. 2022, largely because of increased energy, food and housing prices
- The Federal Open Market Committee (FOMC) increased the federal funds effective rate to 3.08% in Oct. 2022 from 0.08% in Mar. 2022 in response to rising consumer prices

# Arizona Nonfarm Employment; Seasonally Adjusted

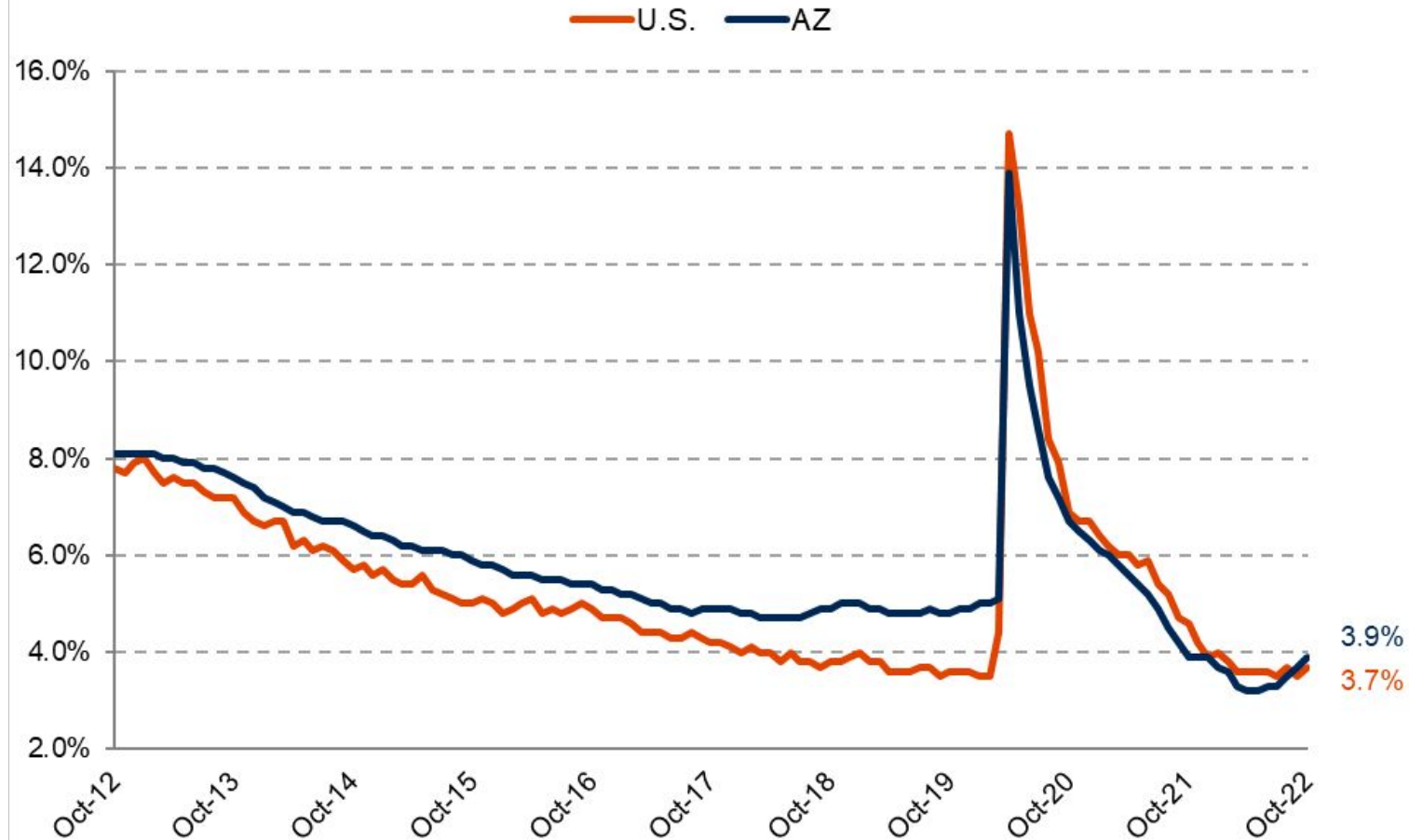
Arizona Total Nonfarm Employment  
Seasonally Adjusted



- Since April 2020, 131% (442,500 jobs) of the Arizona Nonfarm pandemic job losses have been recovered

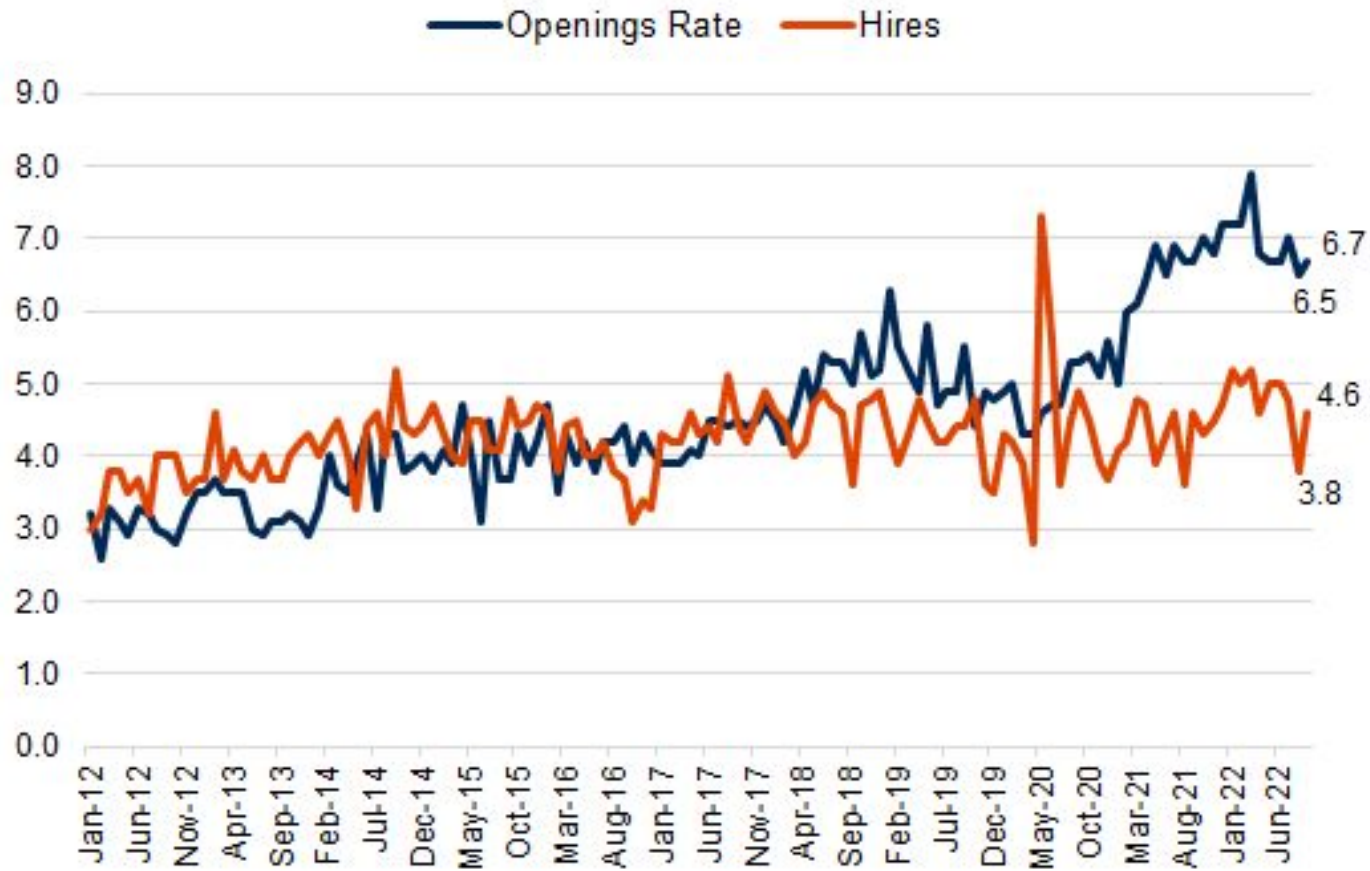
Source: Produced by the Arizona Office of Economic Opportunity in cooperation with the U.S. Dept. of Labor, BLS

## Arizona & U.S. Unemployment Rates Seasonally Adjusted





# Arizona Openings and Hires Rates

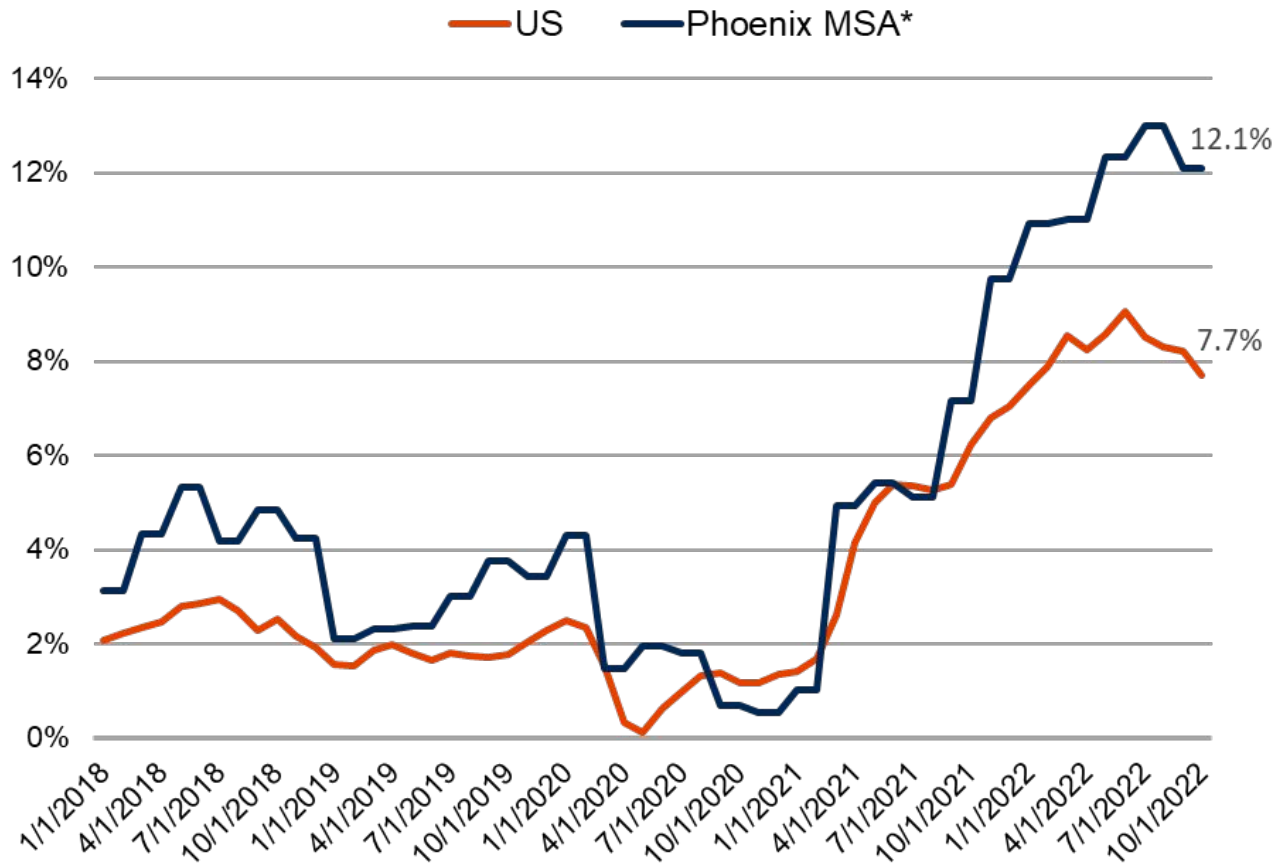


Source: U.S. Bureau of Labor Statistics

- The Arizona openings rate increased to 6.7% in Sept. 2022 from 6.5% in Aug. 2022
- The Arizona hires rate increased to 4.6% in Sept. 2022 from 3.8% in Aug. 2022



# Consumer Price Index Year-Over-Year % Change Not Seasonally-Adjusted



\*Phoenix MSA estimates are released every other month  
Source: US BLS CPI Program

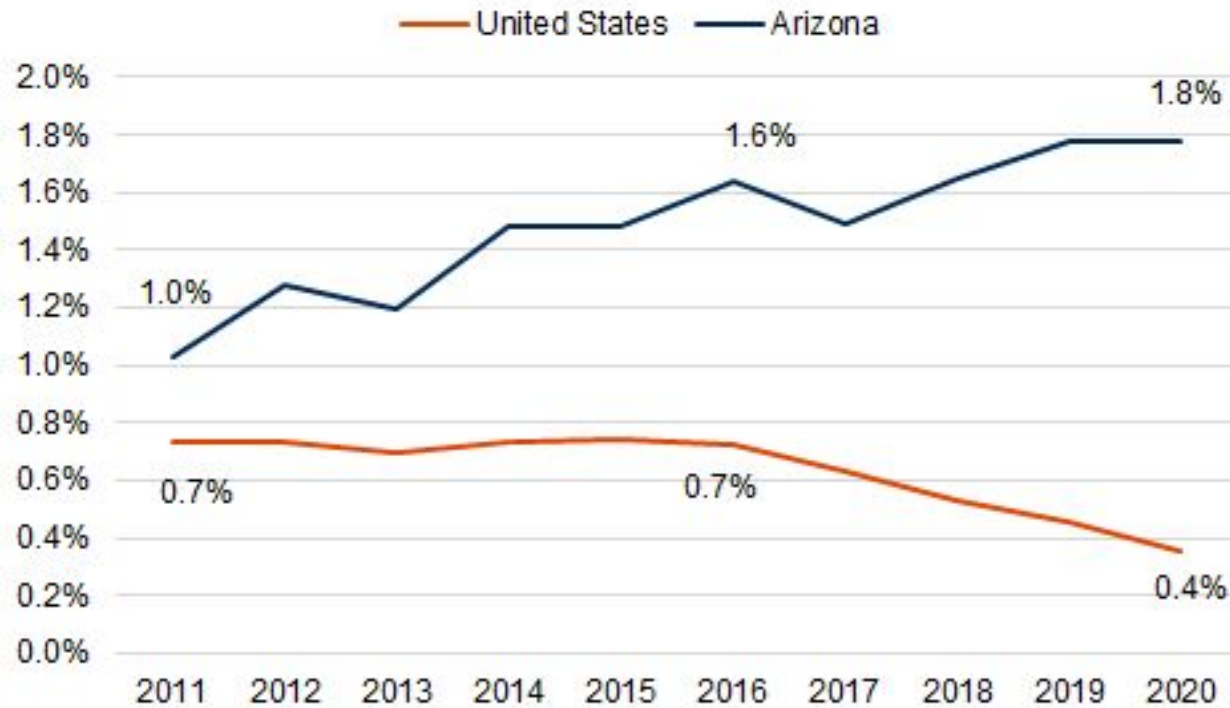
- US CPI increased 7.7% year-over-year (YoY) in October 2022
  - Energy prices rose 17.6% YoY
  - Food prices rose 10.9% YoY
  - Transportation prices rose 15.2% YoY
  - Housing prices rose 7.9% YoY
- Phoenix MSA CPI increased 12.1% YoY in October 2022
  - Energy prices rose 23.4% YoY
  - Food prices rose 12.6% YoY
  - Transportation prices rose 13.3% YoY
  - Housing prices rose 16.5% YoY

# 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
- Arizona's labor force growth has ranked in the top 10 among U.S. states over the past four decades (1982-2022)
- Arizona's employment growth has ranked in the top 10 among U.S. states over the past three decades (1992-2022)

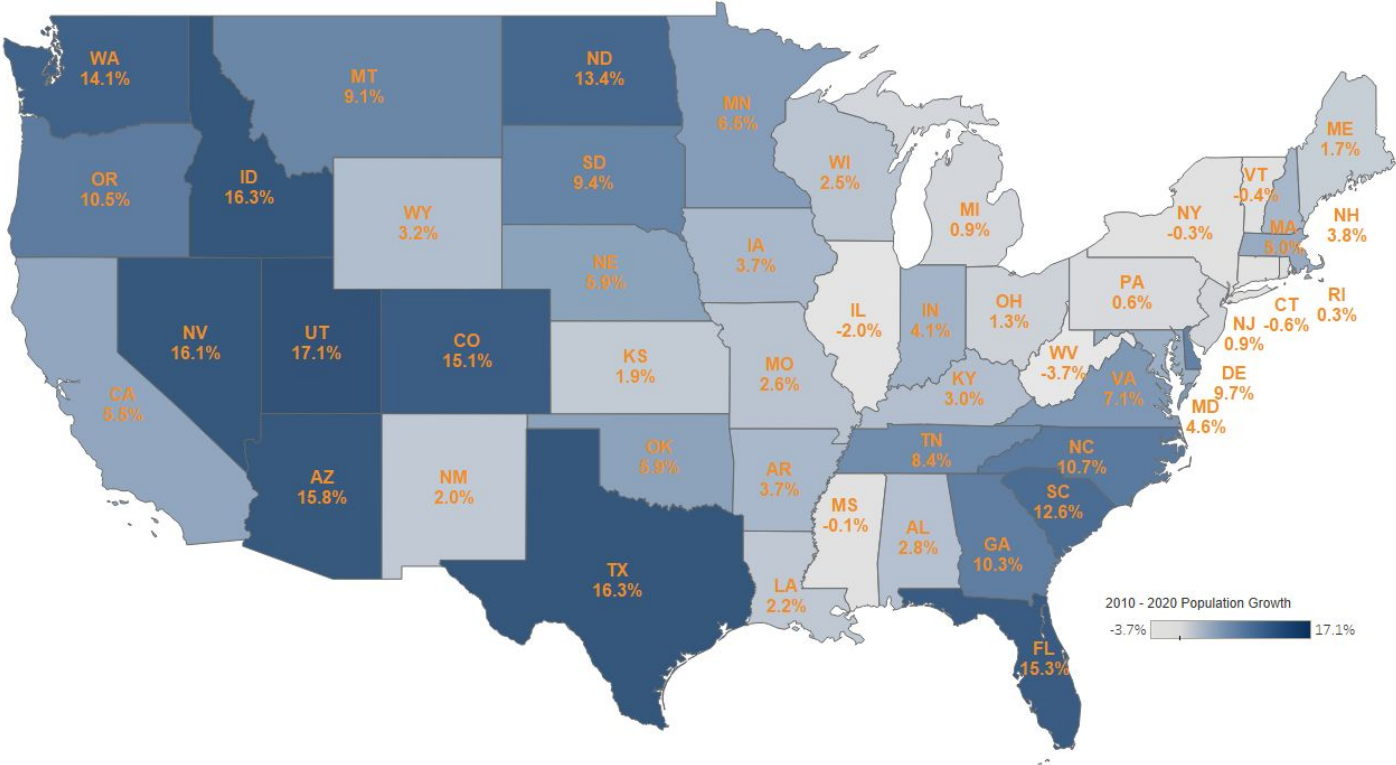
# Population Growth



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

# 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

## Arizona Labor Force Change\*

### Seasonally-Adjusted

	1982	1992	2002	2012	2022
Level <sup>1</sup>	1,365,000	1,888,000	2,702,000	3,060,000	3,617,000
Rank	29	23	21	19	15
10-Yr. Numeric Chg. <sup>1</sup>	**	523,000	814,000	359,000	557,000
Rank	**	9	5	7	4
10-Yr. Percent Chg.	**	38%	43%	13%	18%
Rank	**	3	2	6	3

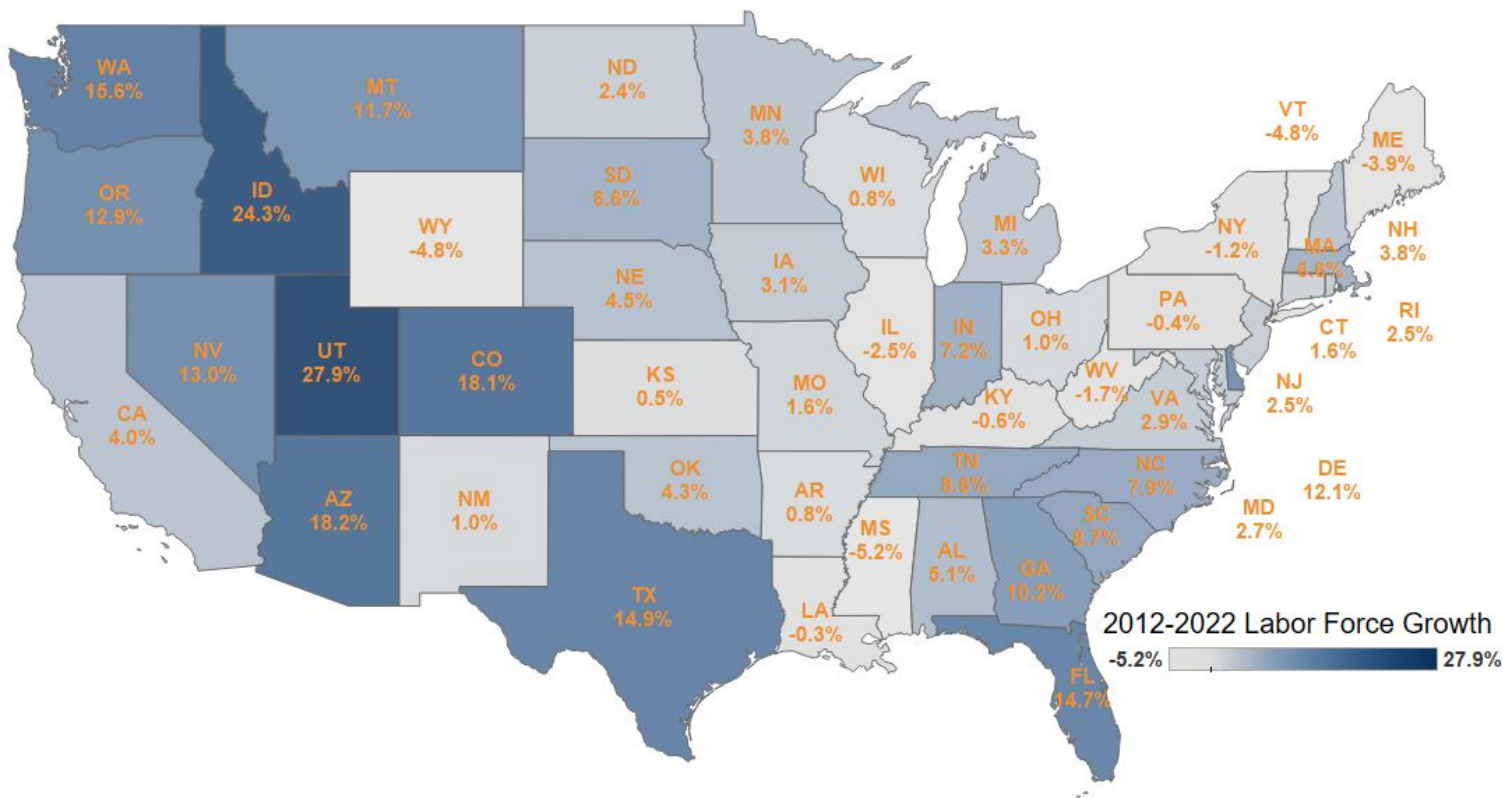
\* October was used as the reference period for each year

\*\* State data series available only through 1976

<sup>1</sup> Rounded to the nearest 1,000

- Arizona's labor force growth has been among the fastest in the nation, helping to improve it's national ranking from the 29th largest labor force in 1982 to the 15th largest in 2022
- The Arizona labor force grew by 557,000 people over the past ten years (2012 - 2022), ranking fourth among U.S. states
- From 2012 to 2022, Arizona's labor force growth rate ranked 3rd in the nation, an improvement from its 2002-2012 ranking of 6th

# 2012 to 2022 Labor Force Change by U.S. State



States in the Northwest, Southwest and South have benefited from migration out of the Northeast and Midwest over the past 10 years

Arizona's labor force growth from 2012-2022 ranked third in the nation

Source: U.S. Bureau of Labor Statistics



## Arizona Employment Change\*

*Seasonally-Adjusted*

	1992	2002	2012	2022
Level <sup>1</sup>	1,527,000	2,270,000	2,478,000	3,100,000
<i>Rank</i>	25	21	21	17
10-Yr. Numeric Chg. <sup>1</sup>	**	744,000	208,000	622,000
<i>Rank</i>	**	6	7	7
10-Yr. Percent Chg.	**	49%	9%	25%
<i>Rank</i>	**	2	9	5

\* October was used as the reference period for each year

\*\* State data series available through 1990

<sup>1</sup> Rounded to the nearest 1,000

- Arizona's employment growth has been among the fastest in the nation, helping to improve it's national ranking from the 25th largest employment base in 1992 to the 17th largest in 2022
- Arizona employment grew by 622,000 people over the past ten years (2012 - 2022), ranking seventh among U.S. states
- From 2012 to 2022, Arizona's employment growth ranked 5th in the nation, an improvement from its 2002-2012 ranking of 9th

# Projected Employment Highlights



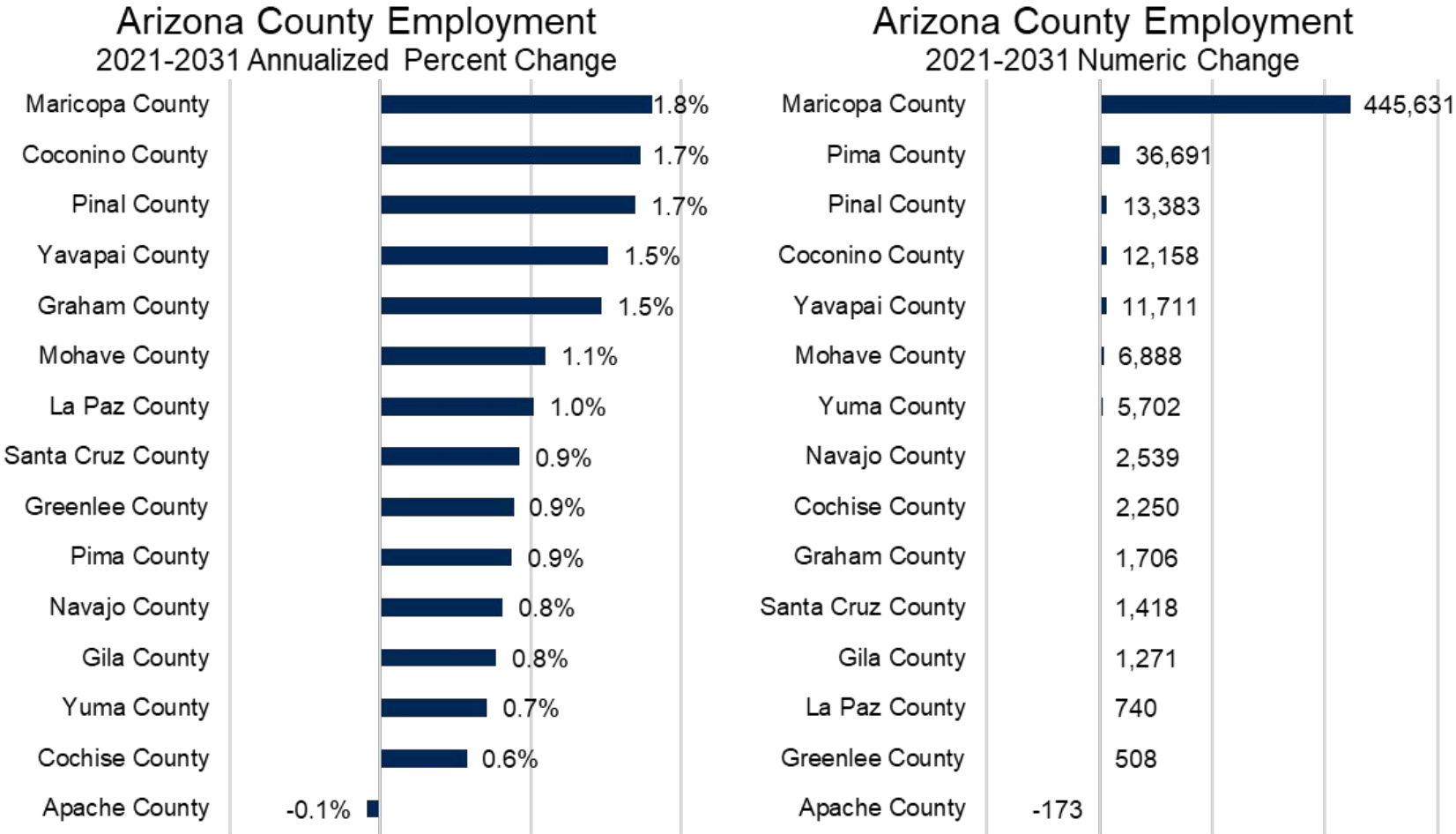
# Projected Industry Employment Change



Source: Arizona Office of Economic Opportunity



# Projected Employment by Arizona County



- Maricopa County is projected to account for 82% of job gains in Arizona from 2021-2031

Source: Arizona Office of Economic Opportunity

Source: Arizona Office of Economic Opportunity

## Area Highlight: Apache County

	2001	2011	2021	2031
Employment	20,508	20,636	18,539	18,366
10-Yr. Numeric Chg.	4,509	128	-2,097	-173
10-Yr. Percentage Chg.	28.2%	0.6%	-10.2%	-0.9%

*Source: Arizona Office of Economic Opportunity*

- Employment losses from 2011-2021 occurred primarily within Local Gov. (-965 jobs or -21.0%) and Education and Health Services (-414 jobs or -7.8%)
- Employment losses from 2021-2031 are projected to occur primarily within Local Gov. (-571 jobs or -15.7%) and Leisure and Hospitality (-63 jobs or -6.2%)

# Industry Highlight: Construction

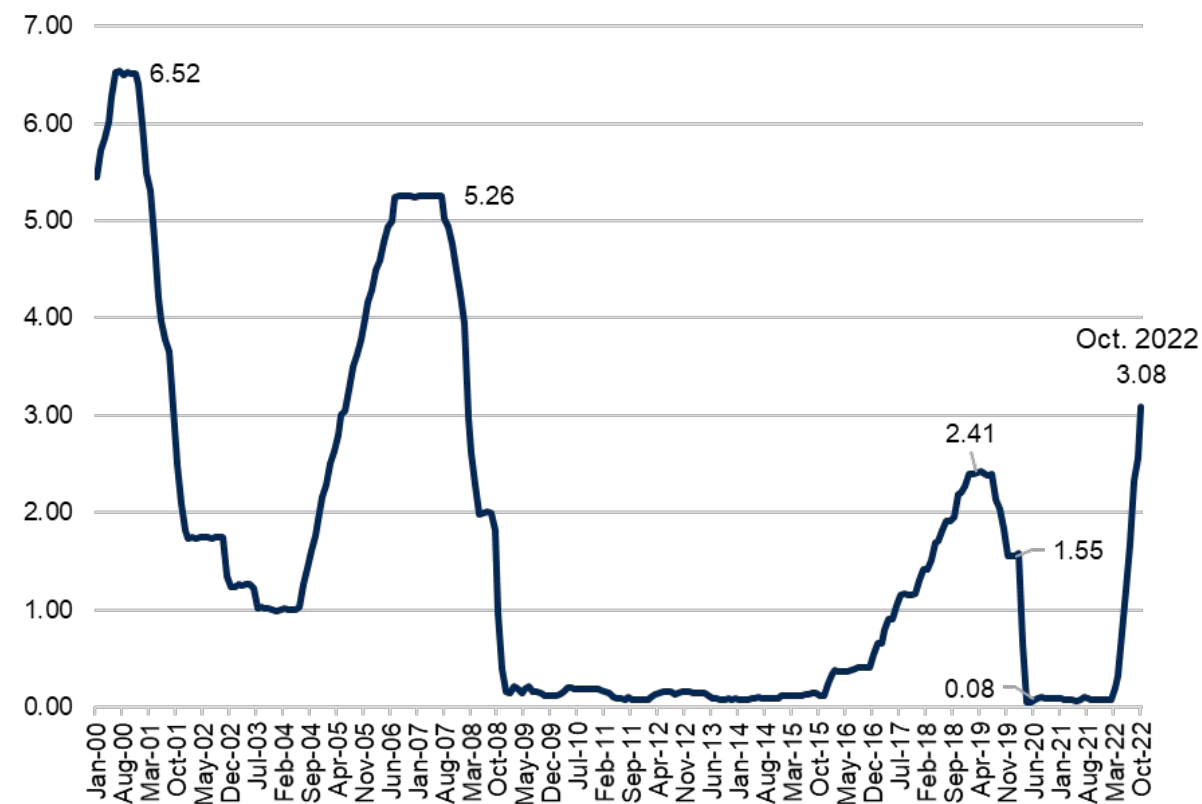
Sector	Historic Change (2011-2021)		Projected Change (2021-2031)	
	Numeric Change	% Change (Annual)	Numeric Change	% Change (Annual)
Construction	68,842	4.9%	36,942	1.9%
Construction of Buildings	16,103	5.8%	7,985	2.0%
Heavy and Civil Engineering Construction	4,375	2.2%	1,807	0.8%
Specialty Trade Contractors	48,364	5.2%	27,150	2.0%

Source: Arizona Office of Economic Opportunity

Construction employment growth is projected to continue through 2031

- Population growth is likely to drive long-term demand for residential construction
- Employment is projected to grow at a slower rate from 2021-2031 than it did from 2011-2021 (1.9% ann. growth vs. 4.9% ann. growth)
  - This is partially because growth from 2011-2021 was atypically high following the 2007 Great Recession
  - Construction employment grew at an annualized rate of 0.4% from 2002-2021

# Federal Funds Effective Rate



Source: Board of Governors of the Federal Reserve System

## Notable Change:

- The federal funds rate increased by 0.52 in October 2022 from September 2022
- The increase in the federal funds effective rate from Mar. 2022 to Oct. 2022 is the sharpest increase in the last four decades

# Arizona New Private Housing Units Authorized by Building Permits



Building permit authorizations fell sharply in April 2022 following a 15-year high recorded in March 2022

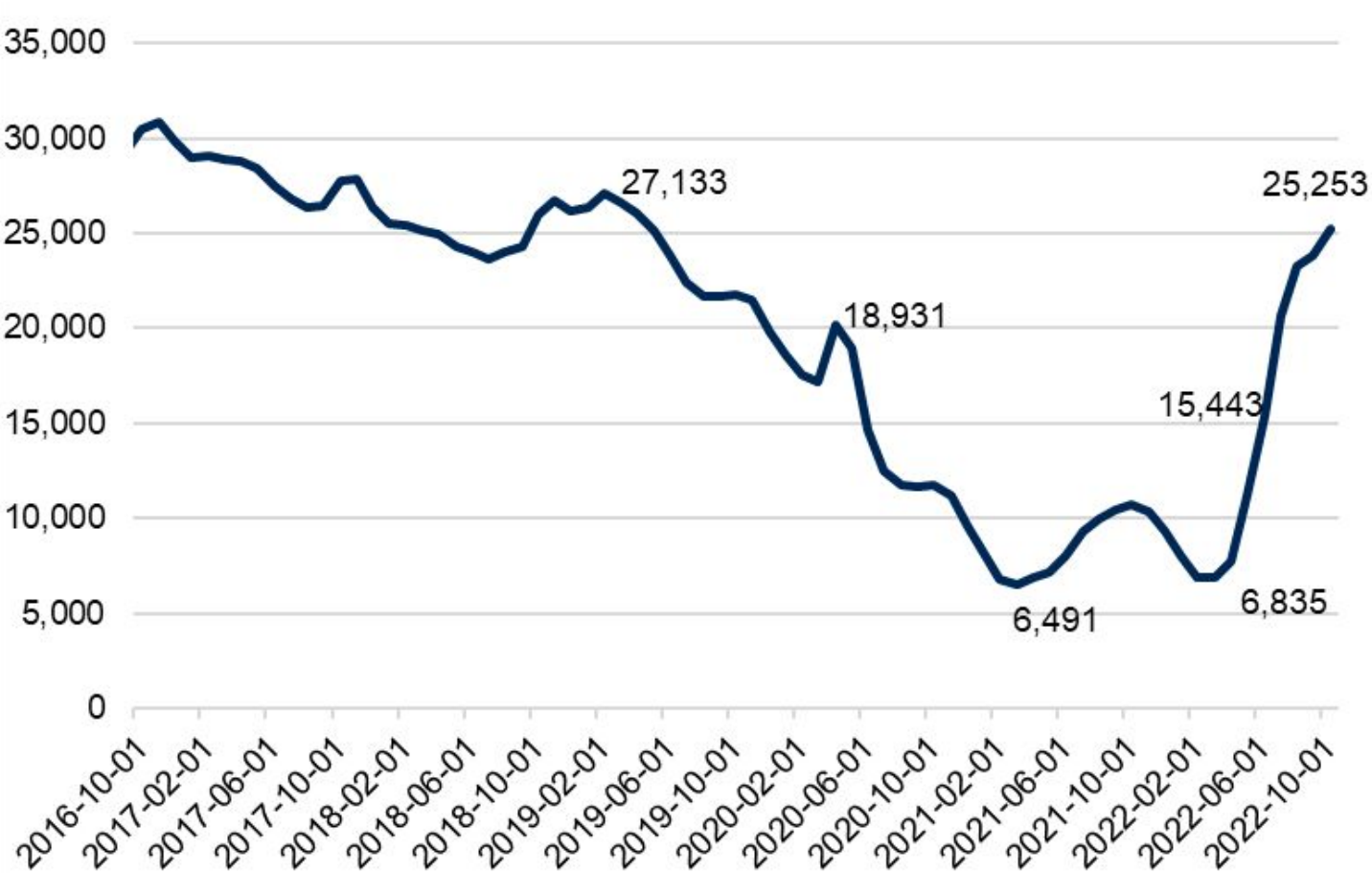
In October 2022, 4,254 building permits were authorized, the fewest number authorized since May 2020

Source: U.S. Census Bureau



# Housing Inventory: Active Listing Count in Arizona

Not Seasonally Adjusted



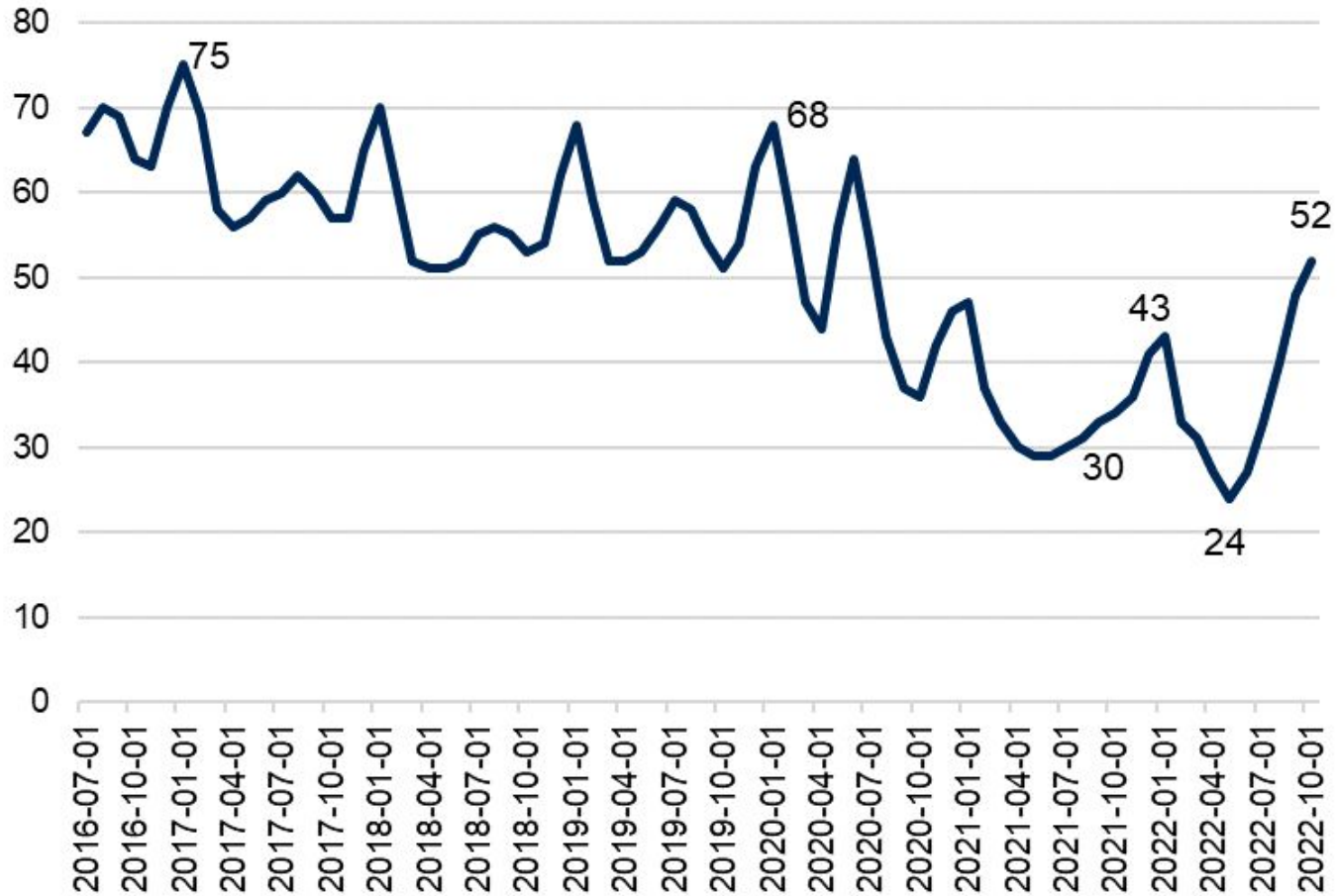
Source: Realtor.com

## Notable Changes:

- The count of active home listings increased by 1,462 (6.1%) in Oct. 2022 from Sept. 2022
- Active home listings are up 14,559 (136.1%) in Oct. 2022 from Oct. 2021

# Housing Inventory: Median Days on Market in Arizona

## Not Seasonally Adjusted



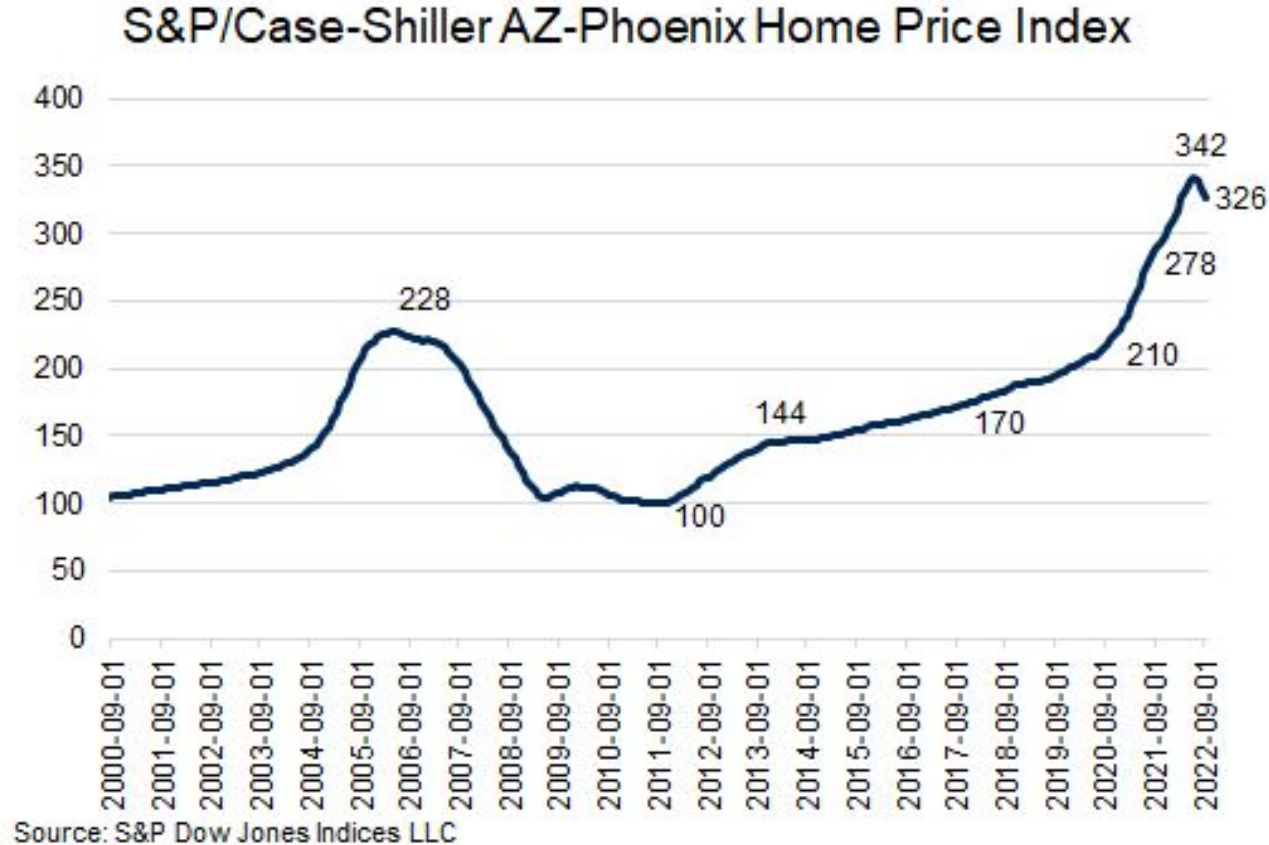
Source: Realtor.com

### Notable Changes:

- The median days property listings were active increased to 52 days in Oct. 2022 from 48 days in Sept. 2022
- Year-over-year, the median days property listings were active increased by 18 days or 53%
  - Up to 52 days in Oct. 2022 from 34 days in Oct. 2021

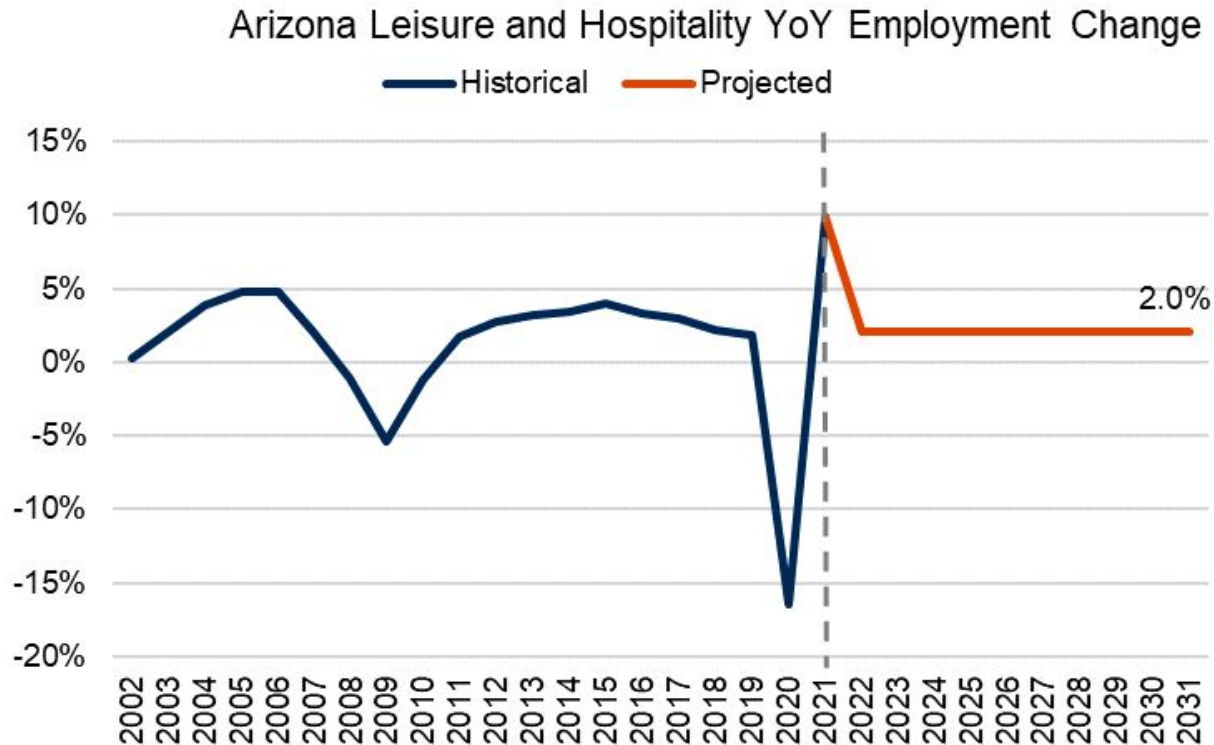


# Arizona Home Price Trends



- The home price index declined to 326 in Sept. 2022 from 333 in Aug. 2022 (-2.1%)
- The home price index grew by 12.6% in Sept. 2022 from Sept. 2021

# Industry Highlight: Leisure and Hospitality



Source: Arizona Office of Economic Opportunity

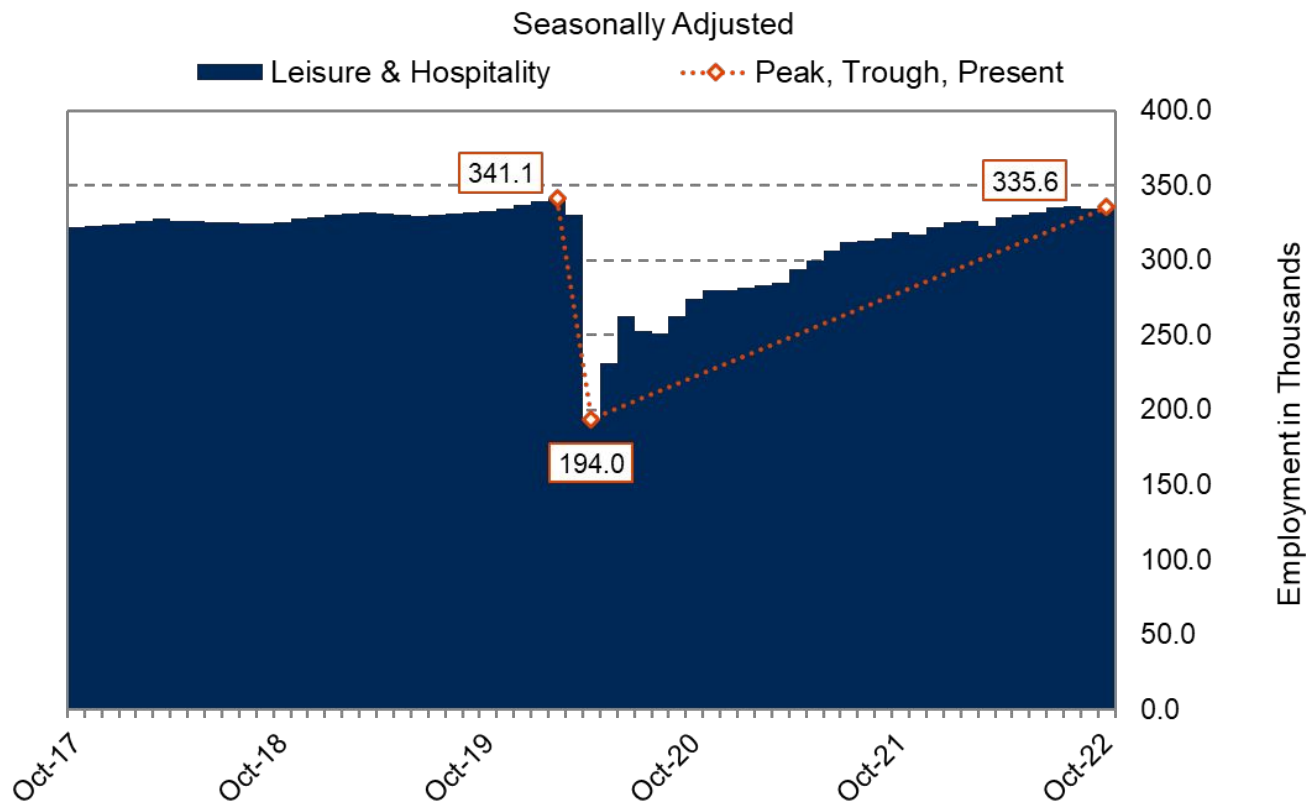
Note: Annual growth may differ from year-to-year between 2021 to 2031, but is projected to average the growth noted in the chart.

Job gains are projected to be strongest in:

- Performing Arts, Spectator Sports, and Related Industries (2.8% annual growth)
- Museums, Historical Sites, and Similar Institutions (2.1% annual growth)
- Food Service and Drinking Places (2.0% annual growth)
- Amusement, Gambling, and Recreation Industries (2.0% annual growth)

# Industry Highlight: Leisure and Hospitality

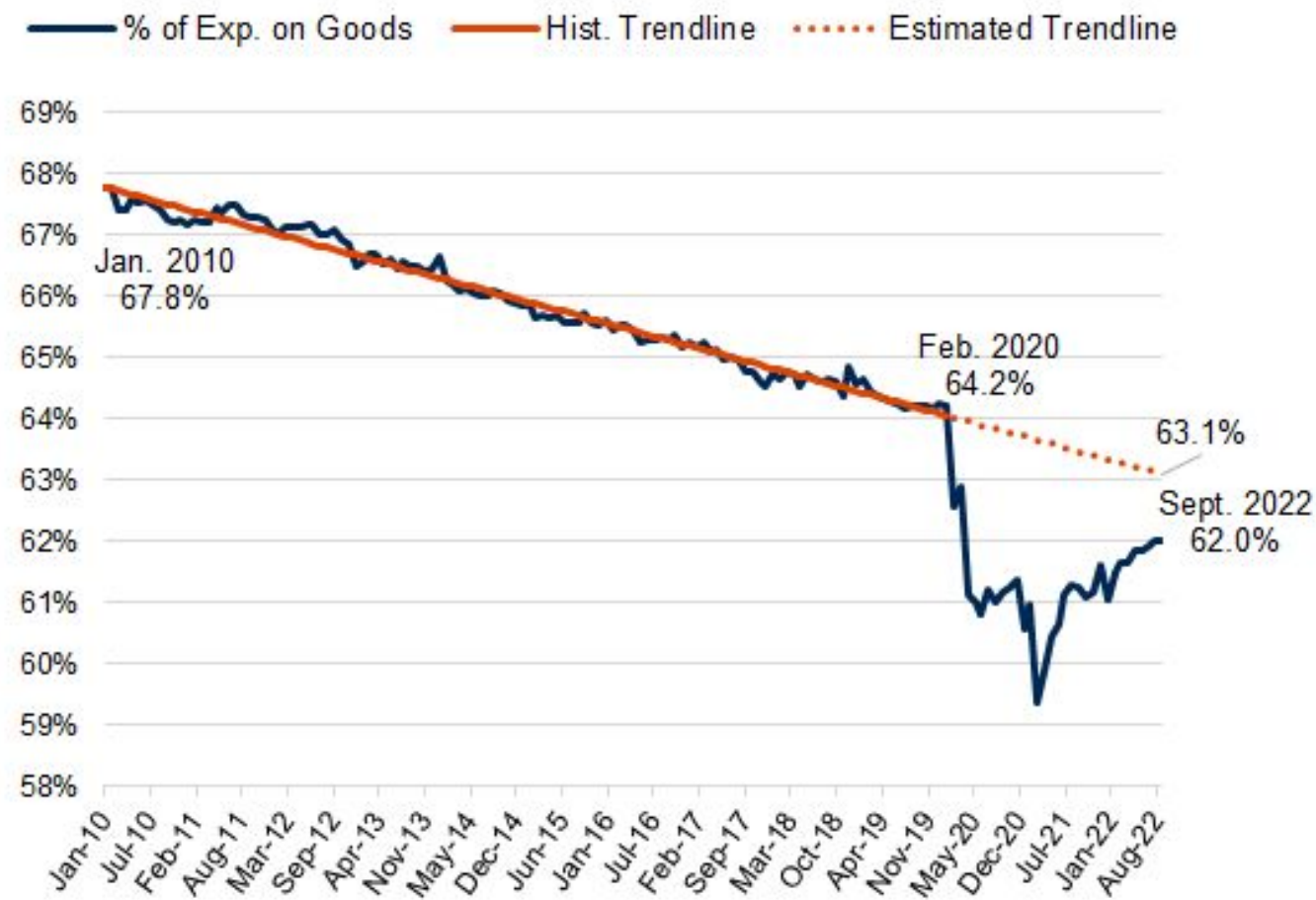
Arizona Leisure and Hospitality Employment



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

- Employment declined by 43.1% or 147,100 jobs from February 2020 to April 2020.
- Since April 2020, 96% (141,600 jobs) of the Leisure and Hospitality pandemic job losses have been recovered

# Percent of U.S. Personal Consumption Expenditures (PCE) on Services



Percent of U.S. PCE on services has been declining over the past ten years. The COVID-19 pandemic has accelerated its decline.

- In September 2022, PCE on services represent 62% of total PCE

Source: Bureau of Economic Analysis

# Industry Highlight: Health Care and Social Assistance

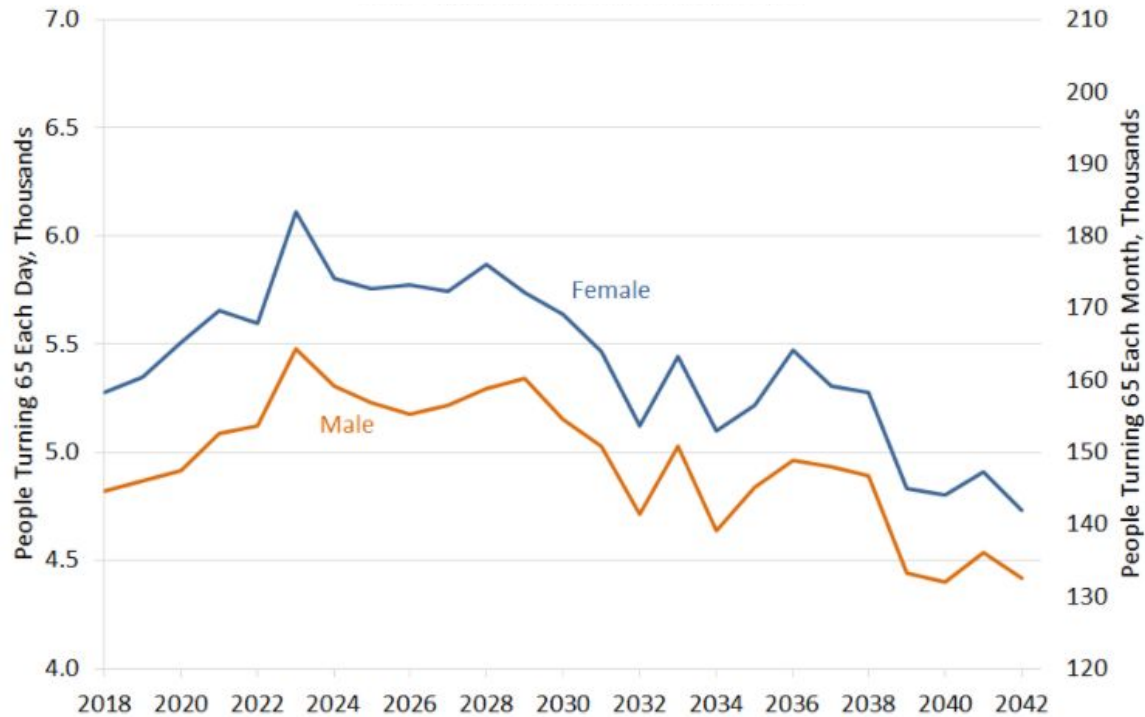
	Historic Change (2011-2021)		Projected Change (2021-2031)	
Sector	Numeric Change	% Change (Annual)	Numeric Change	% Change (Annual)
Health Care and Social Assistance	101,768	2.8%	132,815	2.8%
Ambulatory Health Care Services	49,260	3.1%	65,353	3.1%
Hospitals	19,666	1.9%	24,117	1.9%
Nursing and Residential Care Facilities	19,666	2.0%	22,066	3.5%
Social Assistance	9,857	4.3%	21,279	2.8%

Source: Arizona Office of Economic Opportunity

Health Care employment is projected to increase by 2.8% annually from 2021-2031

- Projected growth is equal to the 2011-2021 growth rate of 2.8%
- Growth will be driven, in part, by 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 2021 to 2031, but is projected to average the growth noted in the chart.

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

Manufacturing job growth is projected to continue through 2031, with the strongest growth projected in:

- Chemical Manufacturing\* (3.2% annual growth)
- Electrical Equipment, Appliance, and Component Manufacturing (3.2% annual growth)
- Food Manufacturing (3.2% annual growth)

# Industry Highlight: Transportation and Warehousing

Sector	Historic Change (2011-2021)		Projected Change (2021-2031)	
	Numeric Change	% Change (Annual)	Numeric Change	% Change (Annual)
Transportation and Warehousing	59,782	6.1%	44,075	2.9%
Couriers and Messengers	10,804	8.6%	9,258	4.0%
Scenic and Sightseeing Transportation	71	1.5%	327	5.0%
Support Activities for Transportation	4,757	3.7%	4,200	2.4%
Truck Transportation	6,873	3.3%	7,732	2.7%
Warehousing and Storage	37,791	16.2%	22,335	3.8%

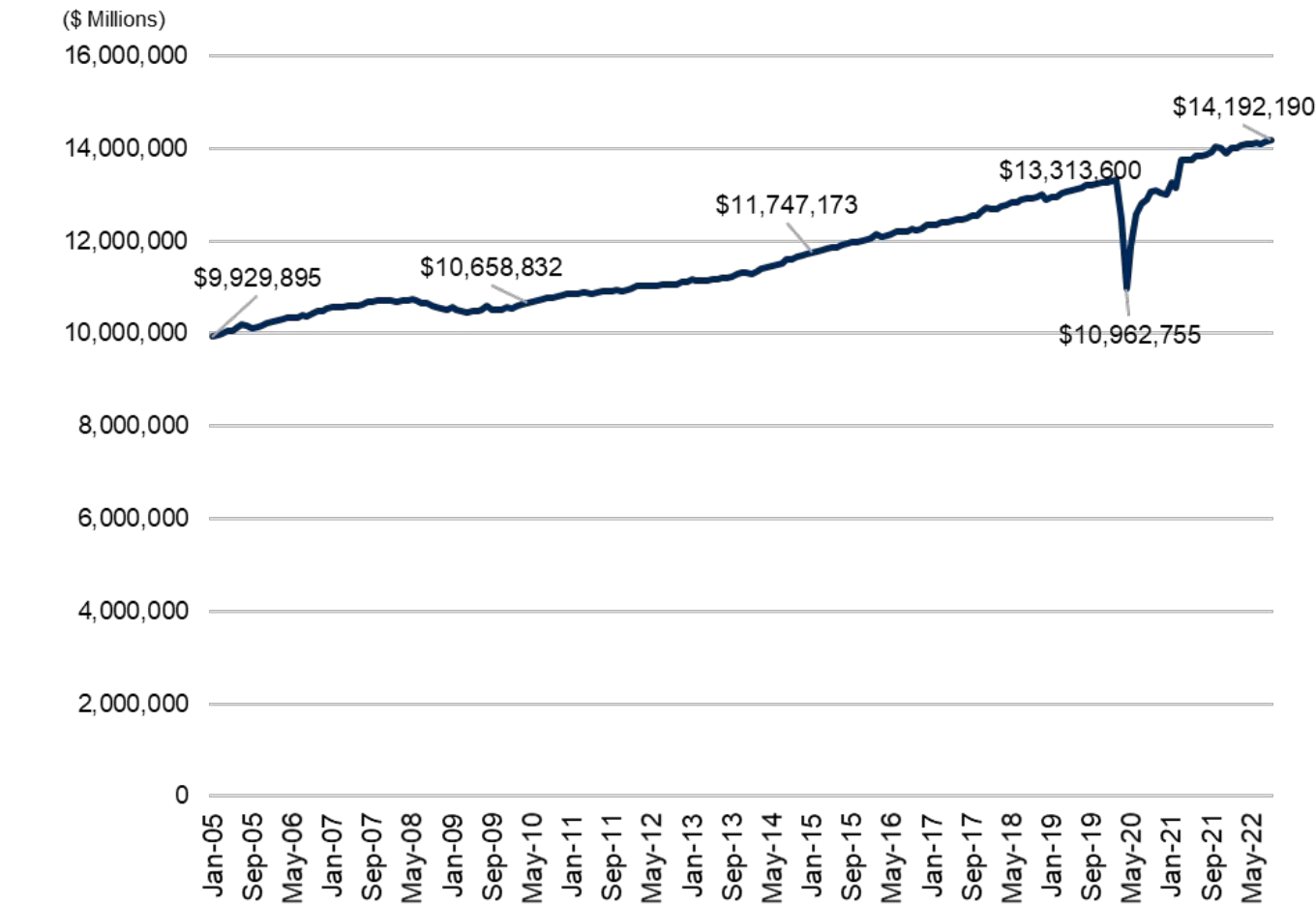
Source: Arizona Office of Economic Opportunity

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 (2016-2021) and quadrupled over the past ten years (2011-2021)
- The emergence of online retail has increased the demand for warehousing and storage jobs



# U.S. Real Personal Consumption Expenditures (PCE)

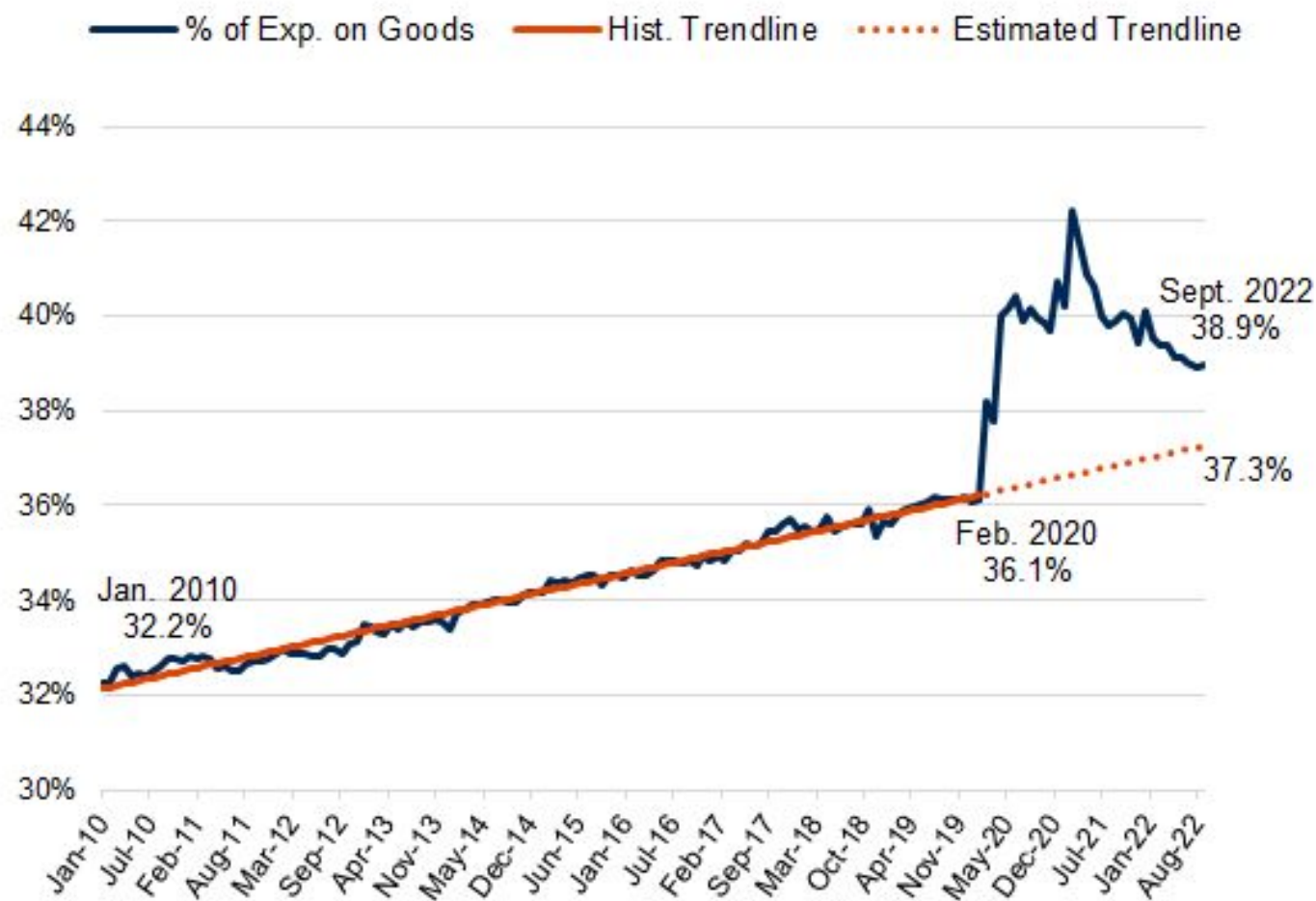


Source: Bureau of Economic Analysis

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

- In September 2022, PCE levels exceeded pre-pandemic levels by 6.6%
- Over the year, U.S. PCE increased by 1.9%

# Percent of U.S. Personal Consumption Expenditures (PCE) on Goods

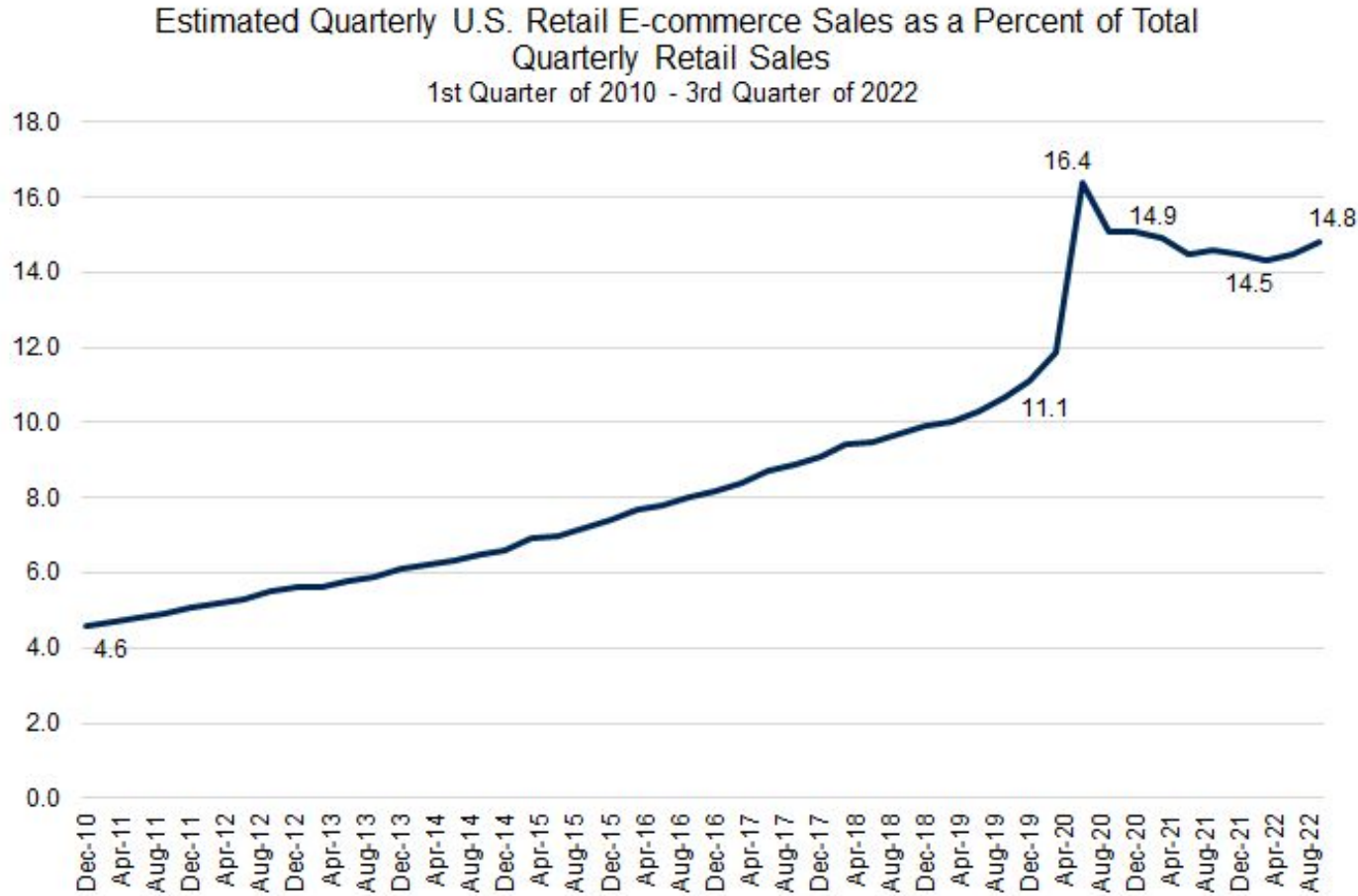


Source: Bureau of Economic Analysis

Percent of U.S. PCE on services has been increasing over the past ten years

- In September 2022, PCE on goods represent 37.3% of total PCE

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



Note: Data are Seasonally Adjusted  
Source: U.S. Census Bureau

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 14.8% in Q3 2022 from 14.5% in Q2 2022

# Additional Resources:

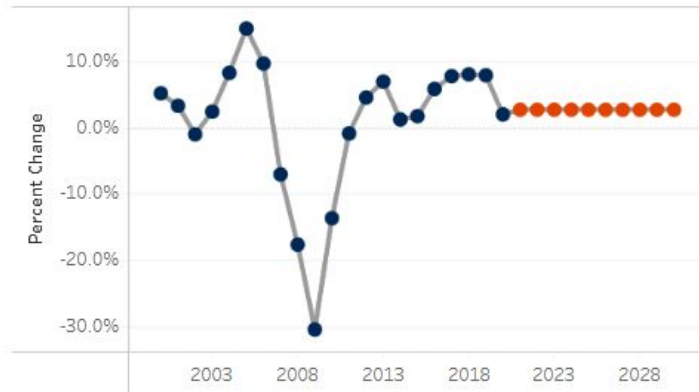
Area:  Industry Level:  Projection Type: ☐ Short Term (2021 - 2023) ☒ Long Term (2020 - 2030)

## Long Term (2020 - 2030) Arizona Industry Projections

Industry	Base Employment	Projected Employment	Total Employment Numeric Change	Total Employment Percentage Change	Annual Employment Numeric Change	Annual Employment Percentage Change
Information	46,936	54,237	7,301	15.6%	730	1.5%
Leisure and Hospitality	295,875	385,428	89,553	30.3%	8,955	2.7%
Manufacturing	177,320	215,135	37,815	21.3%	3,782	2.0%
Natural Resources and Mining	52,022	54,417	2,395	4.6%	240	0.5%
Other Services	94,465	106,993	12,528	13.3%	1,253	1.3%
Professional and Business Services	433,837	544,364	110,527	25.5%	11,053	2.3%
Self Employed	167,058	197,585	30,527	18.3%	3,053	1.7%
Trade Transportation and Utilities	562,467	654,741	92,274	16.4%	9,227	1.5%

## Annual Employment % Change

Industry:  ☒ Actual Annual % Change ☒ Projected Annual % Change



## Employment Change Long Term (2020 - 2030)

Measure Type:



[Click Here to Download Data Based on Filter Selections](#)

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

# Report Summary

- Total employment is projected to continue gaining jobs, growing by 1.6% annually from 2021 – 2031
- Nine out of ten private sector industries are projected to add jobs through 2031
- Fourteen out of fifteen Arizona counties are projected to add jobs through 2031
- Growth is projected to be led by Education and Health Services (2.1% annually), Leisure and Hospitality (2.0% annually), and Manufacturing (1.9% 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:

November 2022 Employment Report on December 15

## 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