

# **THE ARIZONA ECONOMY**

## **January 2017**

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# **ECONOMIC CONCEPTS**

# Economic Dichotomy

- **Base (traded-sector)** economic activities drive regional economies, but account for only about 30 percent of total employment.
  - Traded economic activities are those that sell their goods and services to customers outside the region.
    - Importing money into the region is necessary since leakages of money are inevitable – no region produces all of the goods and services desired by its residents.
  - Most traded activities can locate anywhere, since their customers are spread out across the country or the world.
    - Economic development focuses on attracting, growing, and retaining traded activities.

# Economic Dichotomy (cont'd)

- **Local (nontraded)** economic activities are location specific since they sell their goods and services to customers within the region.
  - Local activities do not display geographic concentrations across the country. Their presence is largely proportional to a region's size, as defined by purchasing power.
  - While an integral part of a regional economy, nontraded activities do not import money into the region. Their presence is due to the traded activities.
  - Traded activities drive the economy while nontraded activities respond to growth in the traded activities.

# **Economic Clusters**

- A cluster is a geographic concentration of related companies, organizations, and institutions in a particular field.
- Clusters arise because they raise a company's productivity, which is influenced by local assets and the presence of like firms, institutions, and infrastructure that surround it.

# **Economic Cyclicity**

- Arizona has one of the most cyclical economies in the nation.
- The state's fast growth and the large size of the construction and real estate sectors largely have caused the extreme cyclicity.
- Economic cycles have become longer since the 1950s due to the expanding length of expansions.

# Economic Indicators

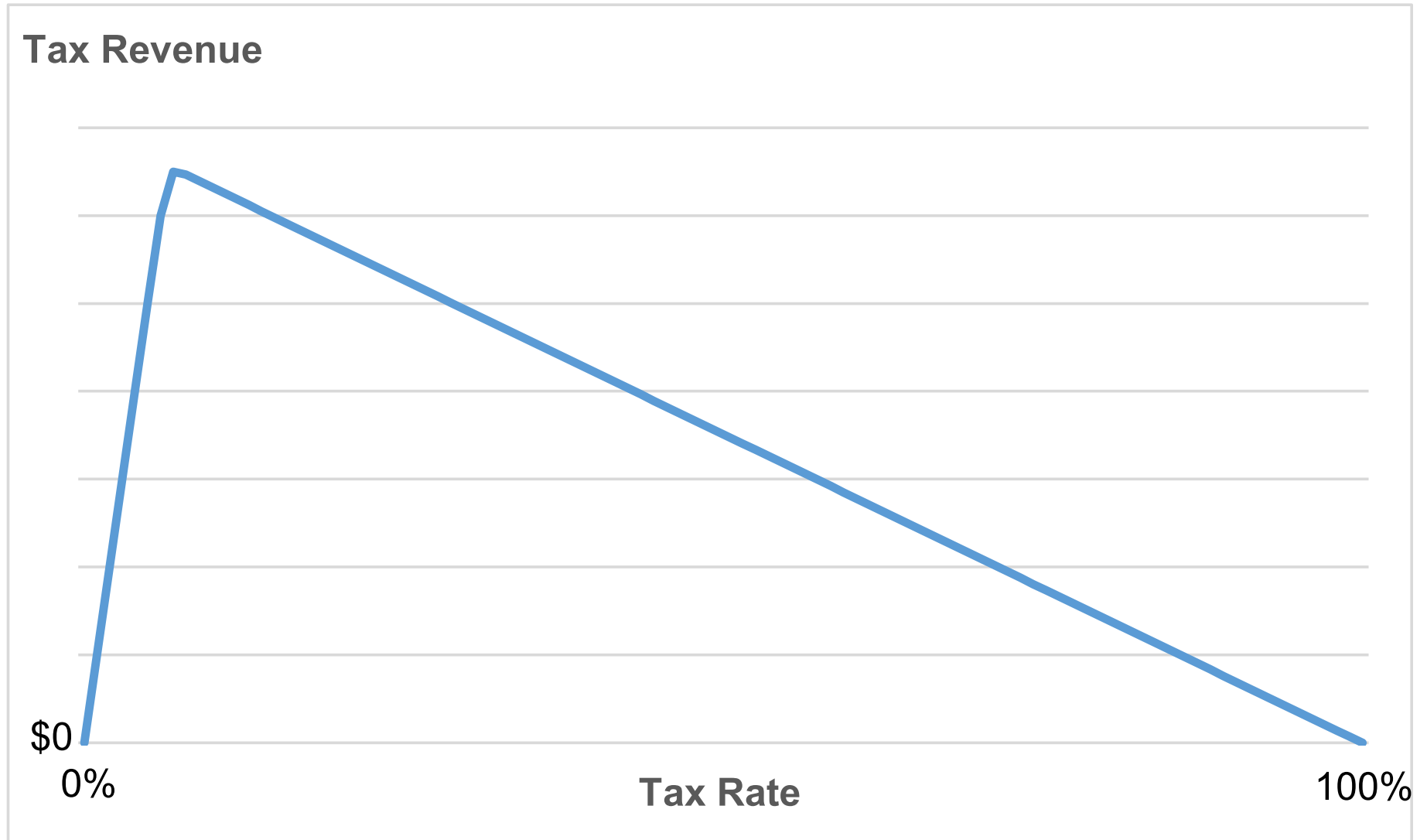
- Measures of economic performance can be grouped into three categories:
  - Productivity. True productivity measures are not available by state. Per worker measures, such as per worker gross domestic product, are proxies.
  - Prosperity. Among the measures of prosperity are per person measures, such as per capita personal income.
  - Aggregate growth. Measures such as employment and GDP receive the most attention.
- The goal of economic development is to enhance prosperity, which is dependent on productivity gains.

# Supply-Side Economics

- A single tax rate – the revenue-maximizing rate -
  - produces the greatest government revenue.
    - A lower rate results in less revenue.
    - A higher rate depresses economic activity, resulting in less revenue.
- When the tax rate is higher than the revenue-maximizing rate, a tax reduction stimulates economic growth and boosts government revenues.
- The relationship follows a curve – the “Laffer Curve” – but the exact shape of the curve, and the revenue-maximizing rate, is unknown.



# Illustrative Laffer Curve



# Limitations of Supply-Side Economics

- Only works when tax rate is higher than revenue-maximizing rate.
- Effect is stronger for business taxes than personal taxes.
- Since state and local government tax payments are small relative to federal taxes and to other business expenses, only a small supply-side effect accrues.
- A regional economy must be at less-than-full capacity for a tax cut to have a net positive effect on government finance.

# **EVOLUTION OF ARIZONA ECONOMY**

# Arizona's Early Economy

- At statehood, Arizona's economy was based on the 4 Cs: copper, cattle, cotton, and citrus. Thus, the economy was disproportionately driven by agriculture and mining.
- Somewhat later, climate (a fifth C) became important. Tourists were first drawn to the state in part due to its climate.

# Early Evolution

- As a share of the overall economy, mining began to decline during the 1930s. Agriculture began to decline during the 1950s.
- In addition to tourism, two activities became relatively more important to the Arizona economy:
  - The federal government presence expanded due to the depression and the second world war.
  - Manufacturing – particularly electronics and aerospace – began to expand during the 1950s.
- By the mid-1960s, the industrial mix in Arizona was about as similar to the nation as it is today.

# Recent Evolution

- Most of the changes in the composition of the Arizona economy since the 1960s mirror national changes.
- In particular, services have expanded while manufacturing has declined.
- In Arizona, high-tech manufacturing has declined by more than the national average.

# **CURRENT ECONOMIC BASE IN ARIZONA**

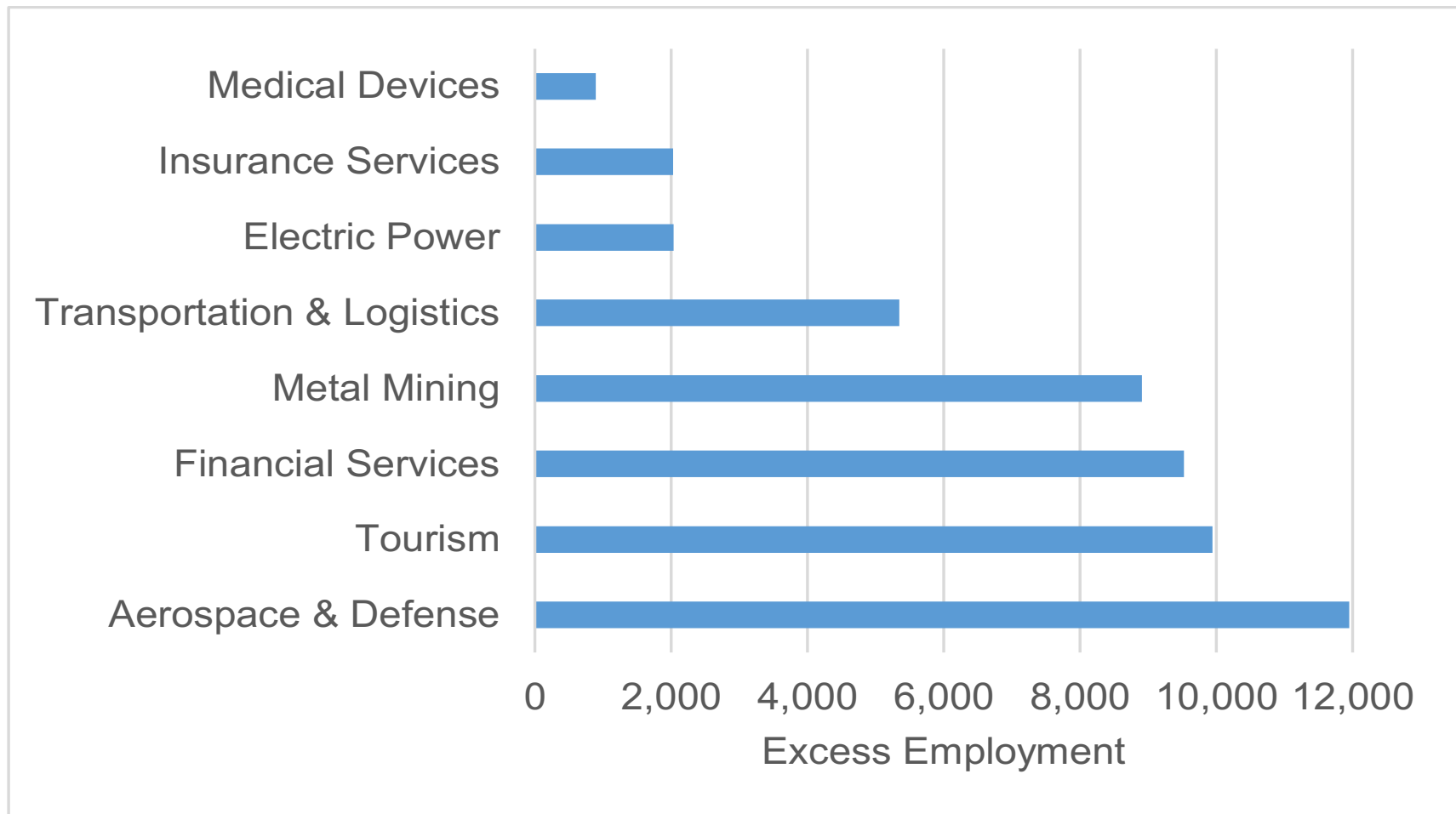
# **Current Economic Base in Arizona**

- Aerospace and defense is the most important traded cluster, followed by tourism, financial services, and metal mining.
- Traded clusters of lesser importance include transportation and logistics, electric power generation and transmission, insurance services, and medical devices.
- Over the last decade, financial services and insurance services have had the greatest gains.



# Traded Clusters With Excess Employment in Arizona

(Excess employment is a measure of the concentration of economic activity relative to the national average)



# **Economic Base Within Arizona**

- The economic base in Metro Phoenix is broad, with financial services and transportation and logistics the most important traded clusters. Other traded clusters include insurance services, aerospace and defense, tourism, and information technology.
- The economic base in Metro Tucson is more narrow, largely consisting of aerospace and defense and the federal government. Metal mining and tourism also contribute.

## **Economic Base Within Arizona (cont'd)**

- The economic drivers within Arizona's other 12 counties vary from place to place.
- The federal government is the leading economic activity in the aggregation of the 12 other counties. Mining, agriculture, and tourism are other mainstays.

# **ECONOMIC PERFORMANCE**

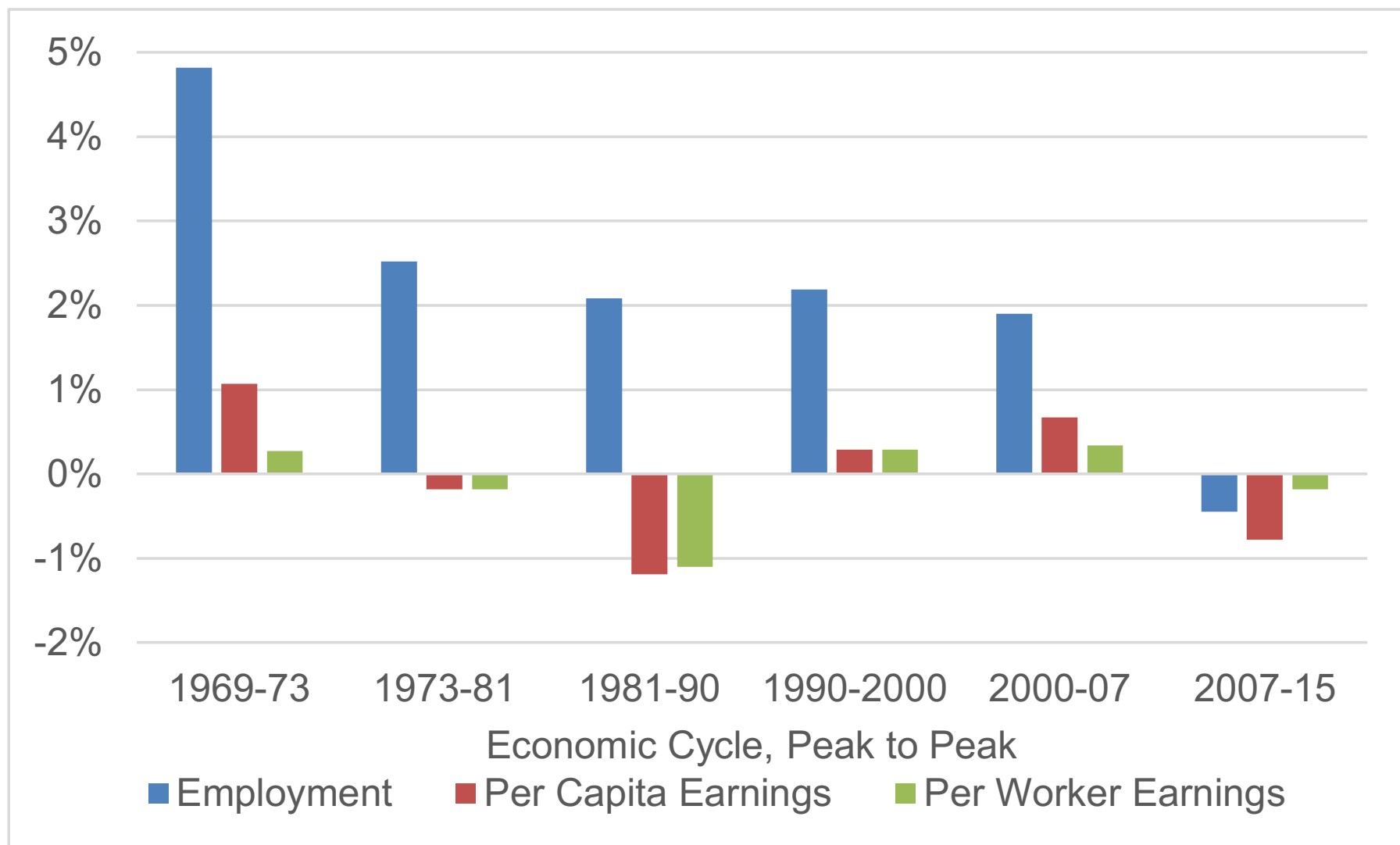
# **Arizona Economic Performance Over an Economic Cycle**

- On aggregate growth measures, Arizona's growth rate during economic expansions historically was far higher than the U.S. average, but during recessions, the growth rate was about the same as, or lower than, the U.S. average. For the entire economic cycle, the growth rate in Arizona was considerably above average.
- Per capita growth rates have tended to be slightly higher than average during expansions, but lower during recessions and somewhat lower over an entire cycle.
- Per worker growth rates do not follow a cyclical pattern; over an entire cycle, they have averaged somewhat less than the U.S. average.

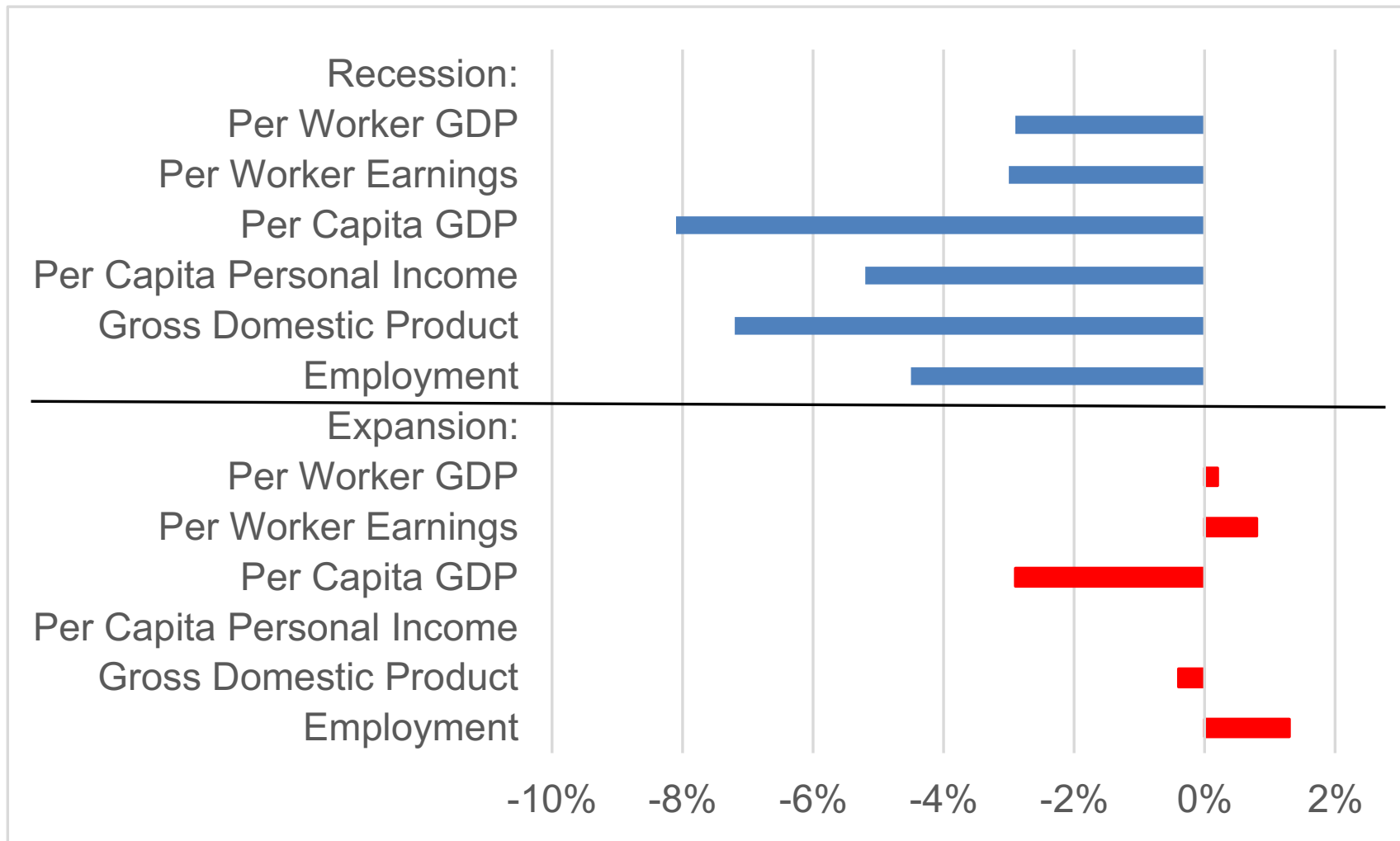
# Arizona's Recent Economic Performance

- Since the onset of the last recession in 2008, Arizona's aggregate economic growth relative to the nation has been far below the historical norm.
- Arizona was hard hit during the recession. Since then, aggregate growth rates have been about equal to the U.S. average, considerably below the historical norm.
- Gains in per capita and per worker measures during the current cycle are near the bottom of the historical range.

# Annual Average Real Percent Change, Arizona Difference From U.S. Average



# Percent Change, Arizona Less United States, Current Cycle





# Annual Growth Rates, Adjusted for Changes in the Cost of Living

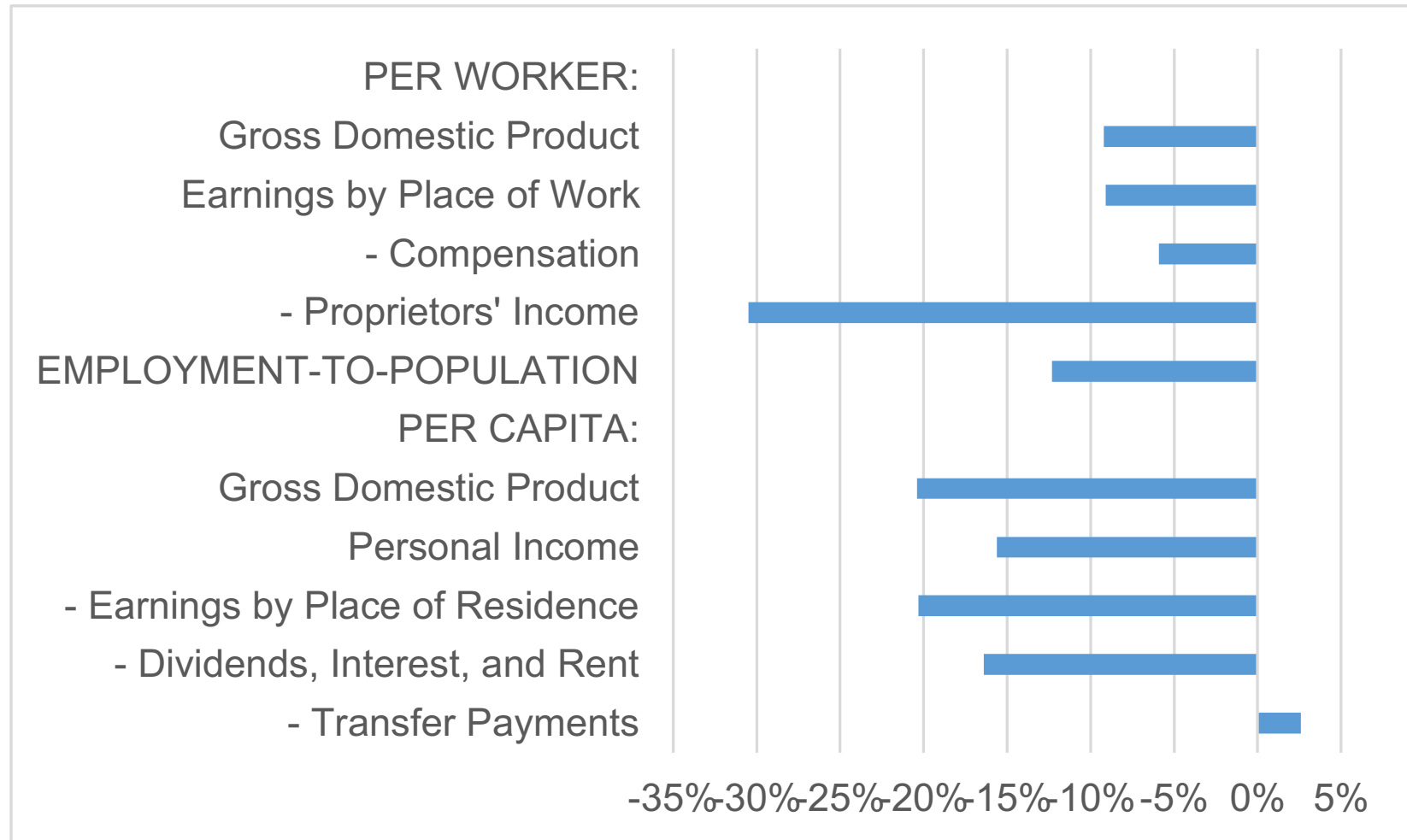
	Real Gross Domestic Product			Employment		
	Arizona	US	Difference	Arizona	US	Difference
2008	-2.9%	-0.5%	-2.4	-1.7%	-0.1%	-1.6
2009	-7.7	-2.7	-5.0	-5.0	-3.0	-2.0
2010	2.2	2.2	0.0	-1.7	-0.7	-1.0
2011	2.4	1.4	1.0	1.8	1.9	-0.1
2012	2.9	2.0	0.9	1.7	1.6	0.1
2013	0.6	1.3	-0.7	2.3	1.9	0.4
2014	2.0	2.2	-0.2	2.2	2.1	0.1
2015	0.9	2.4	-1.5	2.8	2.2	0.6
2016 (latest)				1.8	1.6	0.2

# **PRODUCTIVITY AND PROSPERITY**

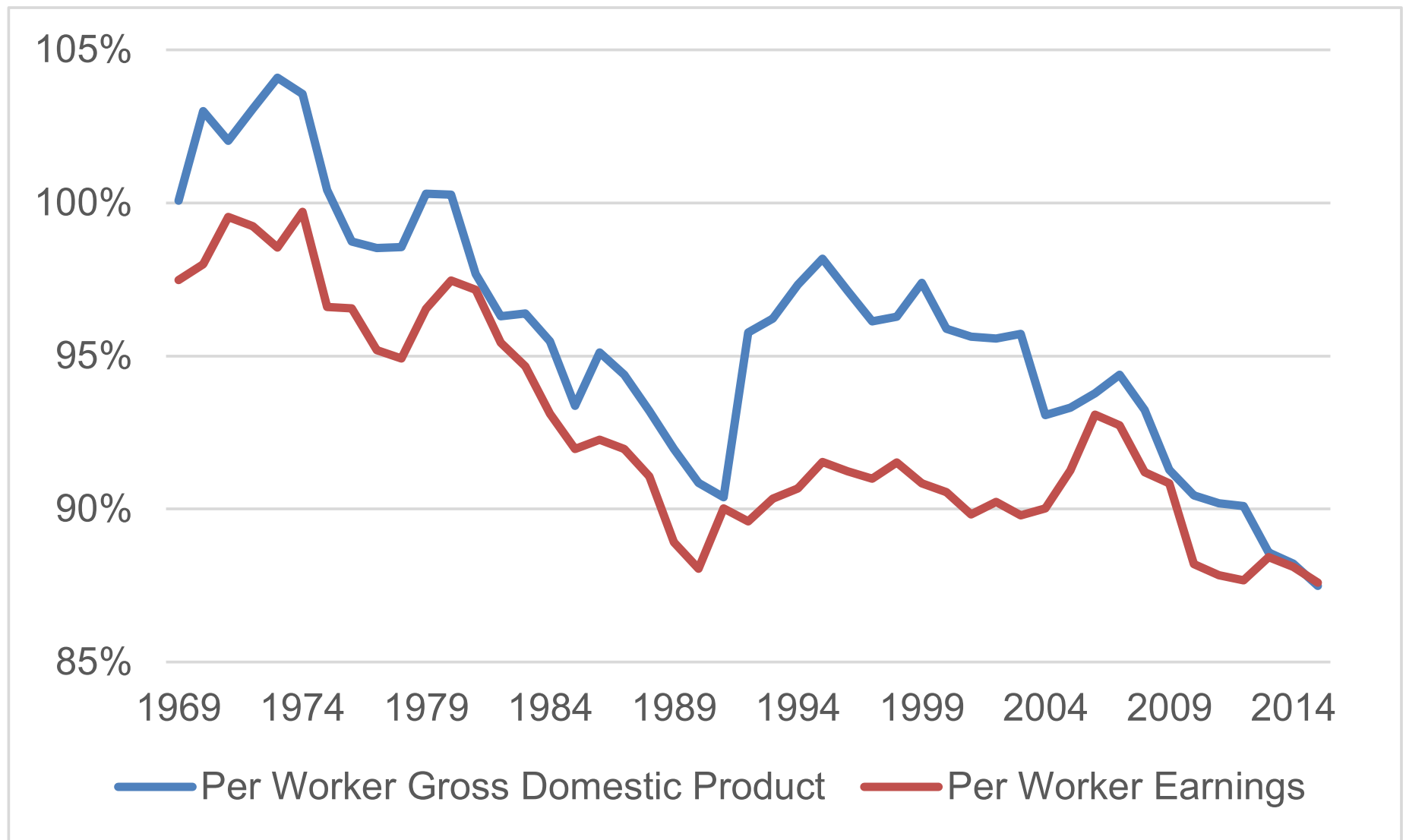
# **Arizona's Productivity and Prosperity After Adjusting for the Cost of Living**

- On per worker measures, Arizona is below the national average and has declined relative to the nation over the last four decades.
- Arizona is further below the national average on per person measures due to the state's low employment-to-population (E-P) ratio. Per person measures have declined substantially relative to the nation over the last four decades.
- While the state's age distribution contributes to the low E-P ratio, Arizona is below average even among those of prime working age.

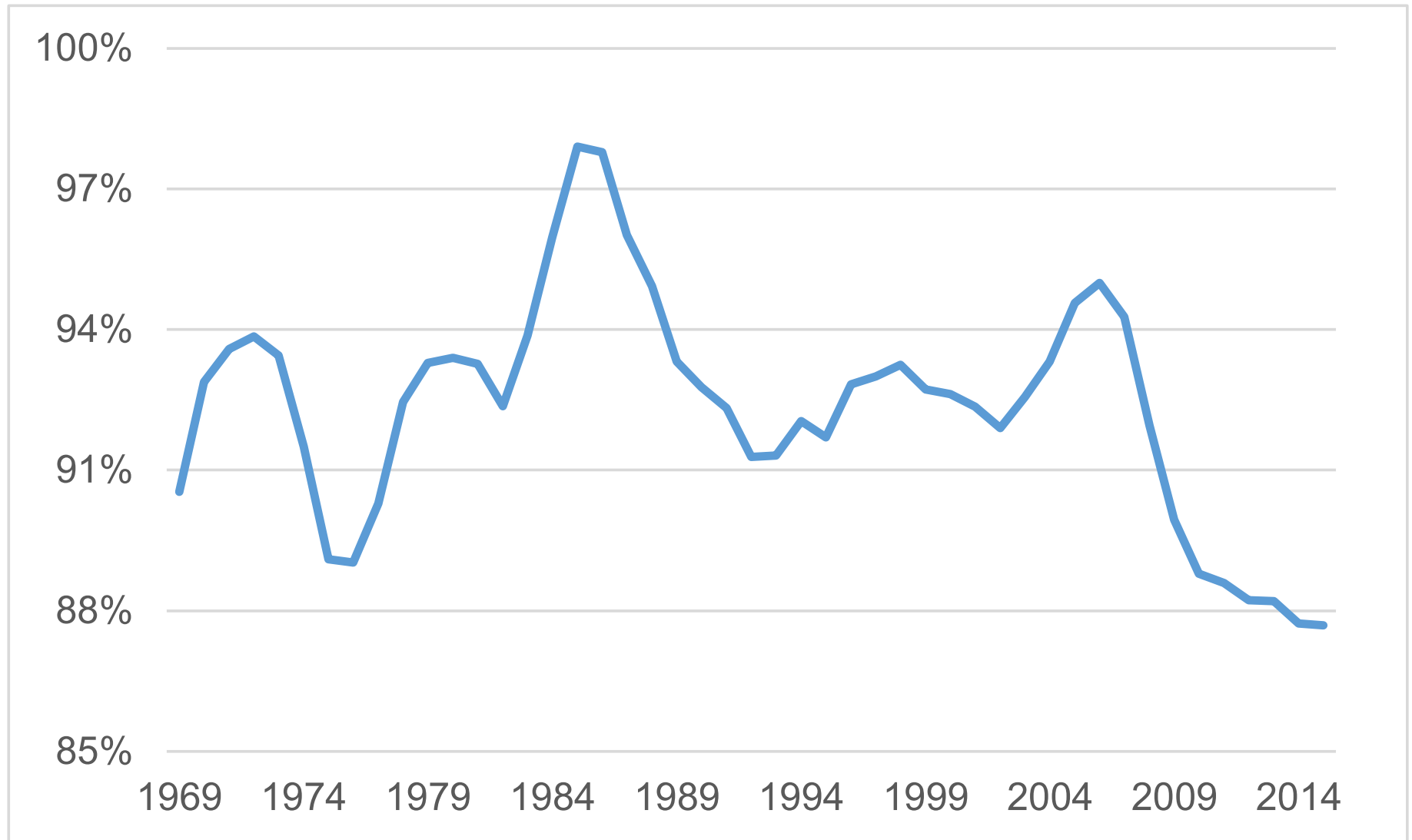
# Components of Productivity and Prosperity, Arizona Relative to the U.S. Average, 2015, Adjusted for Cost of Living



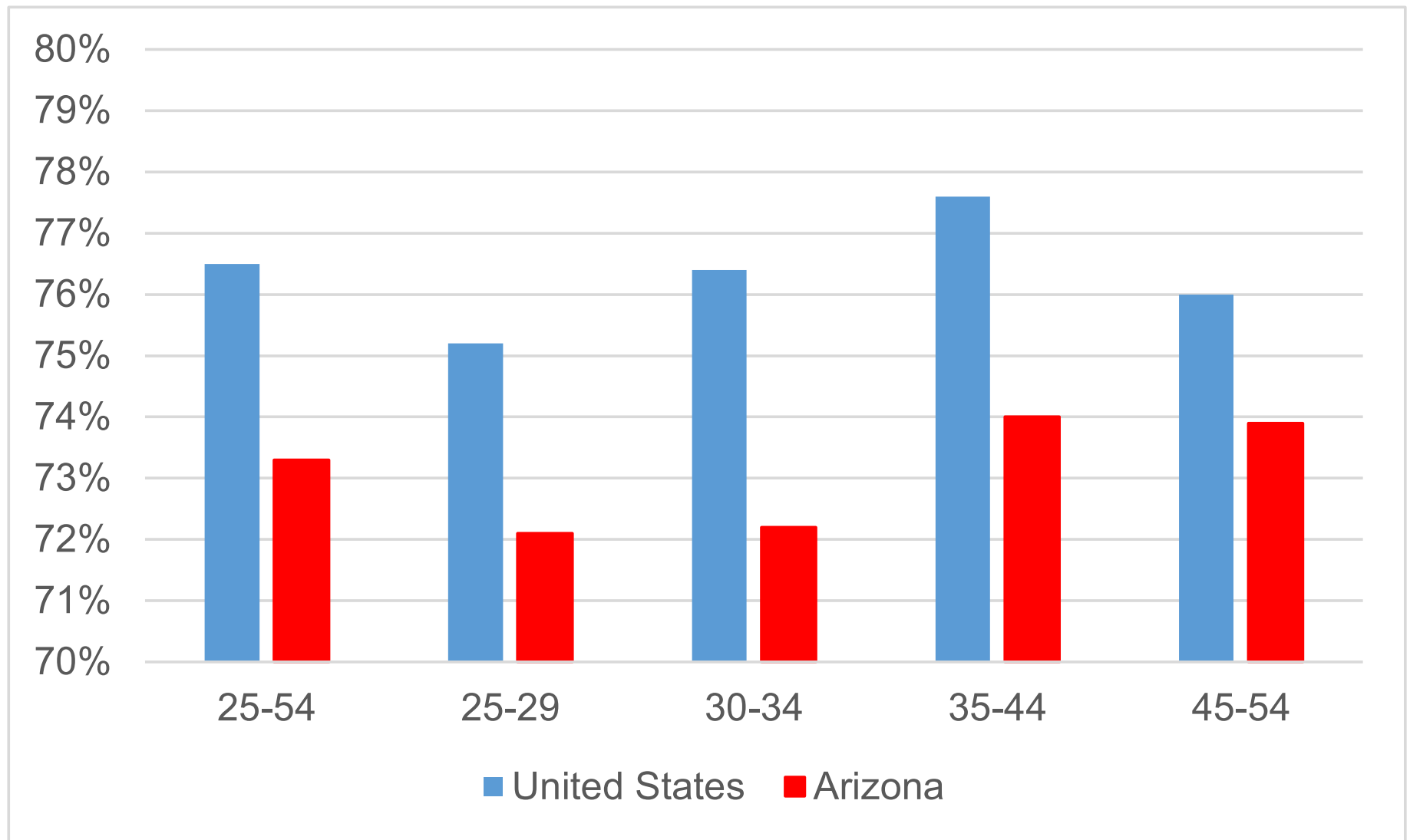
# Productivity Measures in Arizona as a Percentage of the National Average



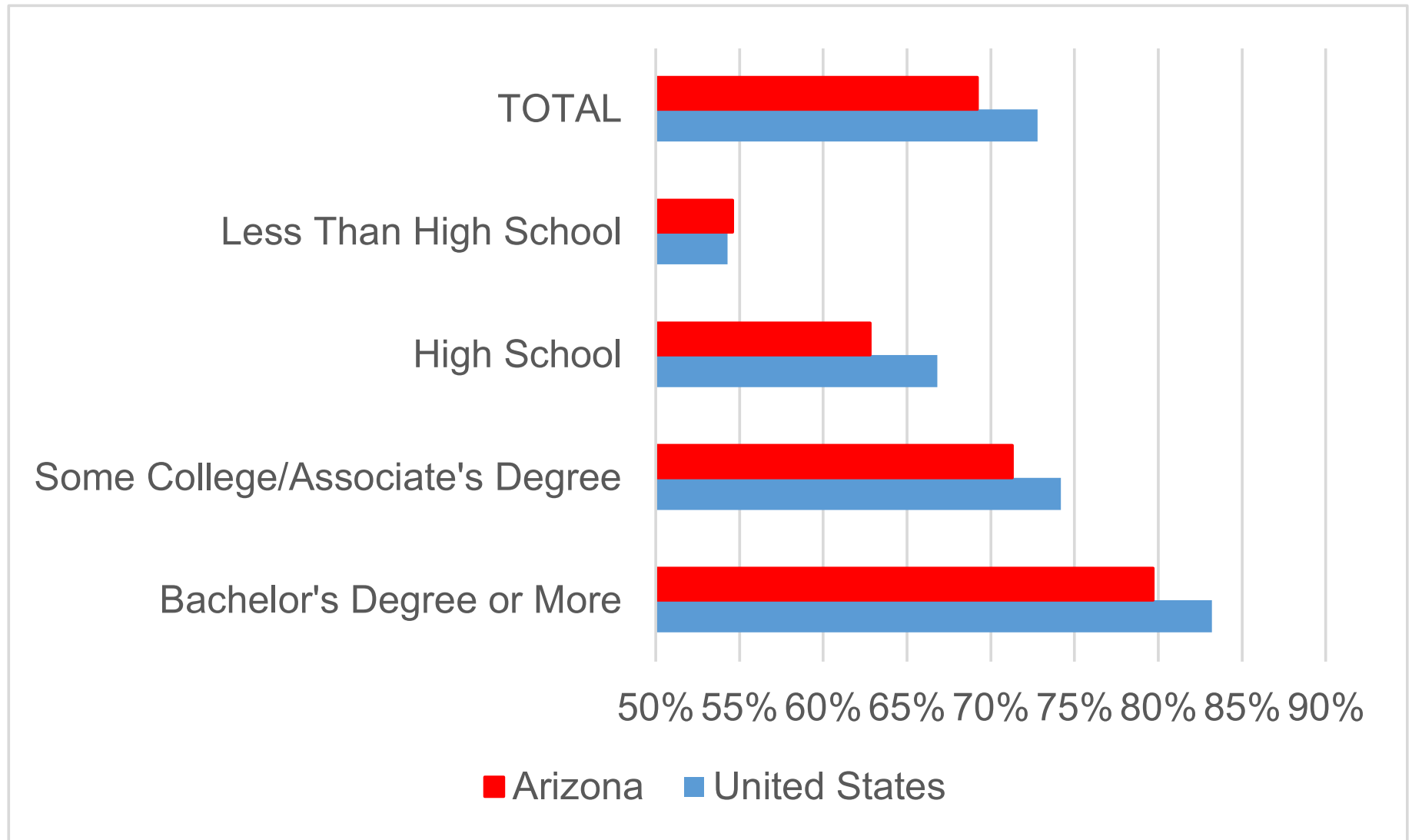
# Employment-to-Population Ratio in Arizona as a Percentage of the National Average



# Civilian Employment-to-Population Ratio, Age 25 to 54, 2015

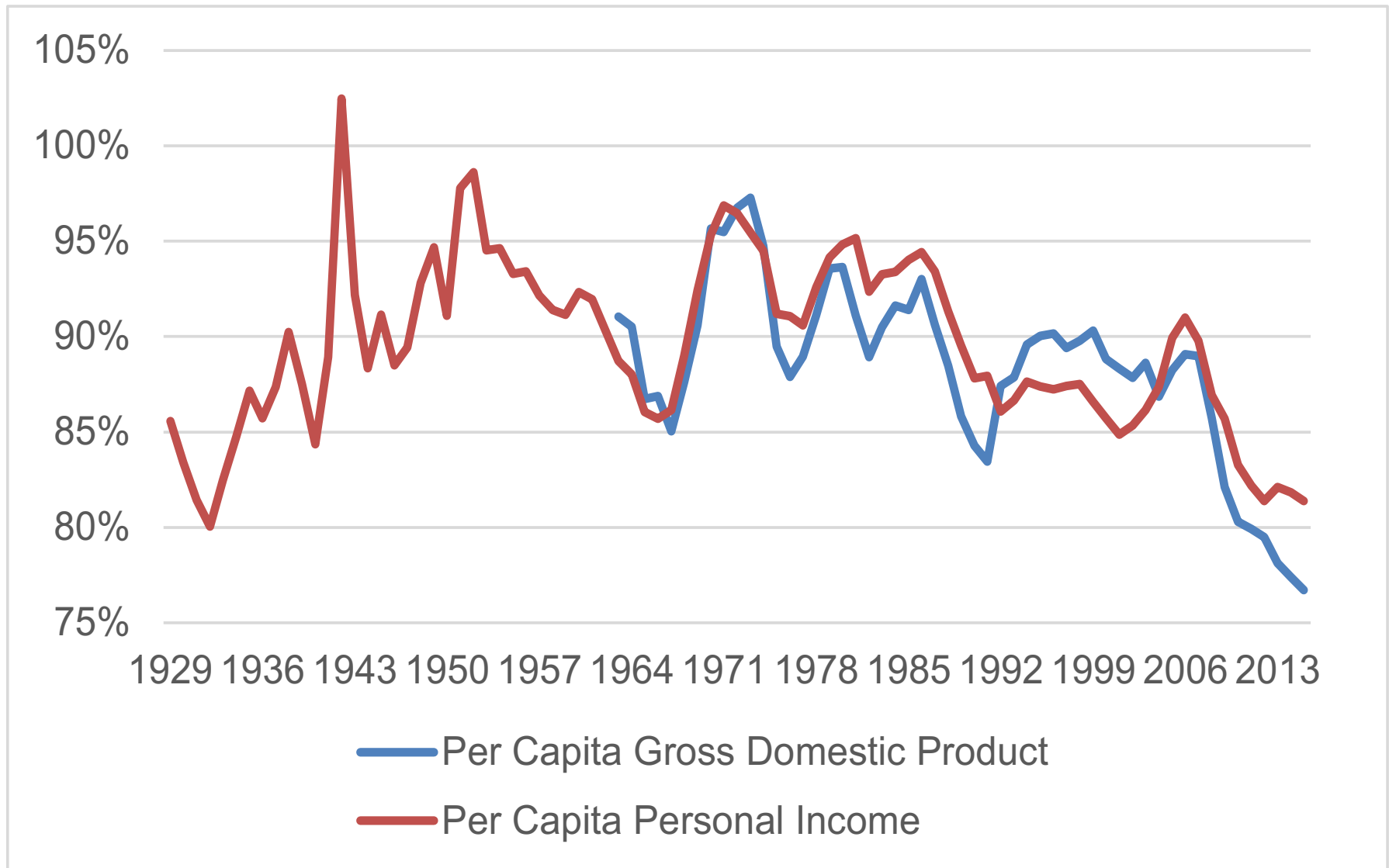


# Civilian Employment-to-Population Ratio by Educational Attainment, Age 25 to 64, 2015





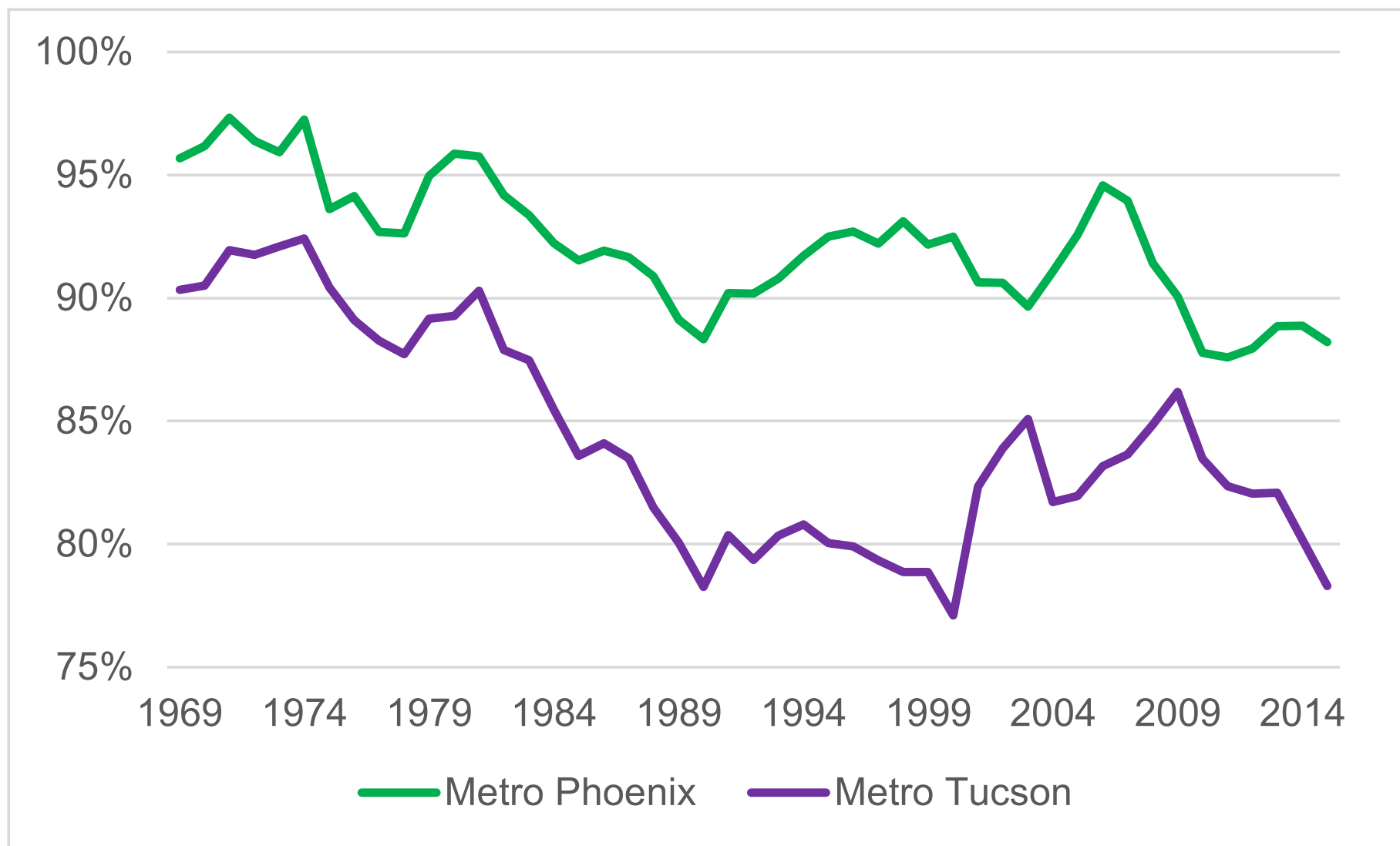
# Prosperity Measures in Arizona as a Percentage of the National Average



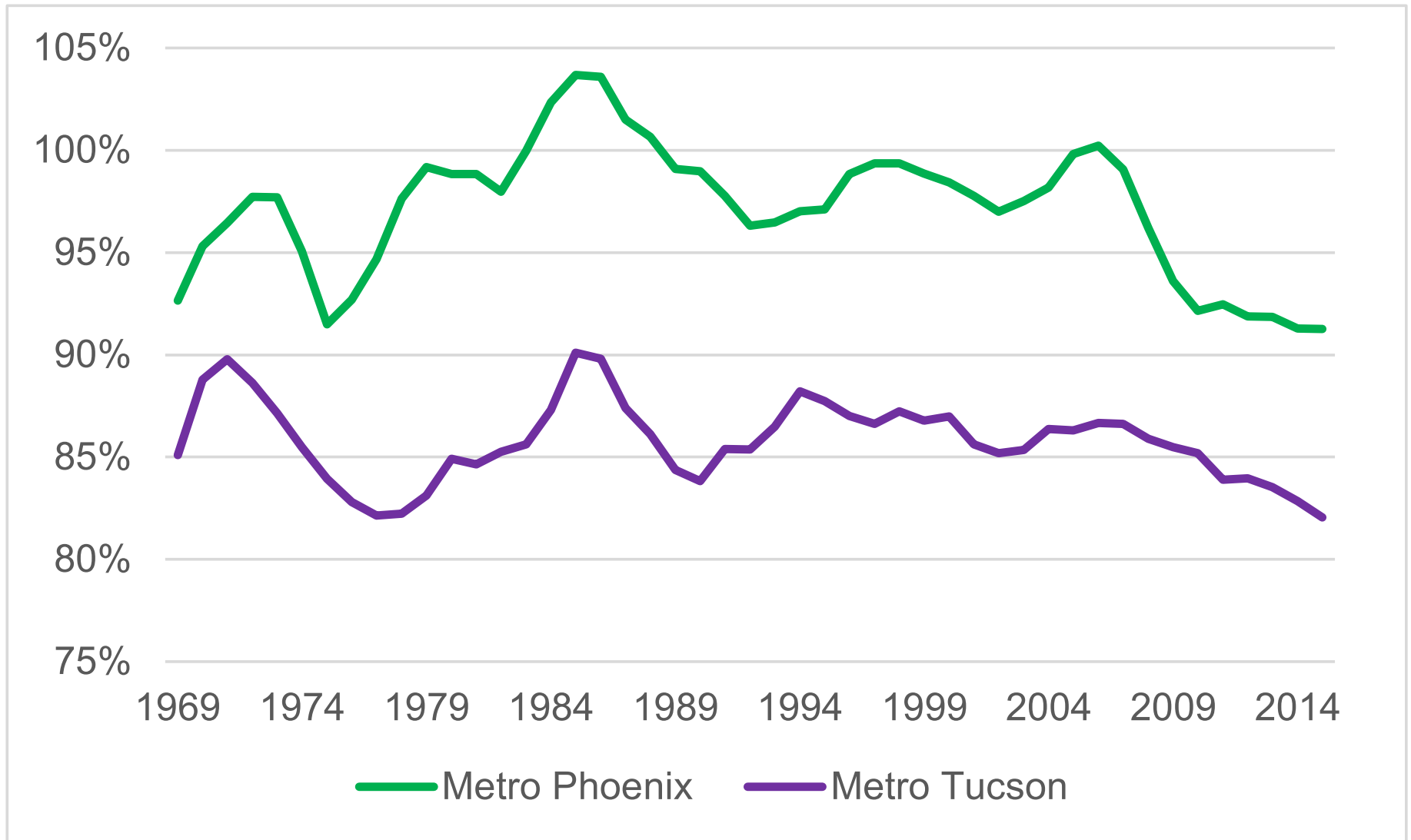
# **Productivity and Prosperity Within Arizona**

- Throughout the state, productivity, prosperity, and the E-P ratio are below average and have fallen over time relative to the nation.
- The Phoenix area compares most favorably, yet relative to the U.S. metro average in 2015 it was 8% below on per worker earnings, 9% below on the E-P ratio, and 14% below on per capita personal income – after adjusting for the lower cost of living in the Phoenix area.

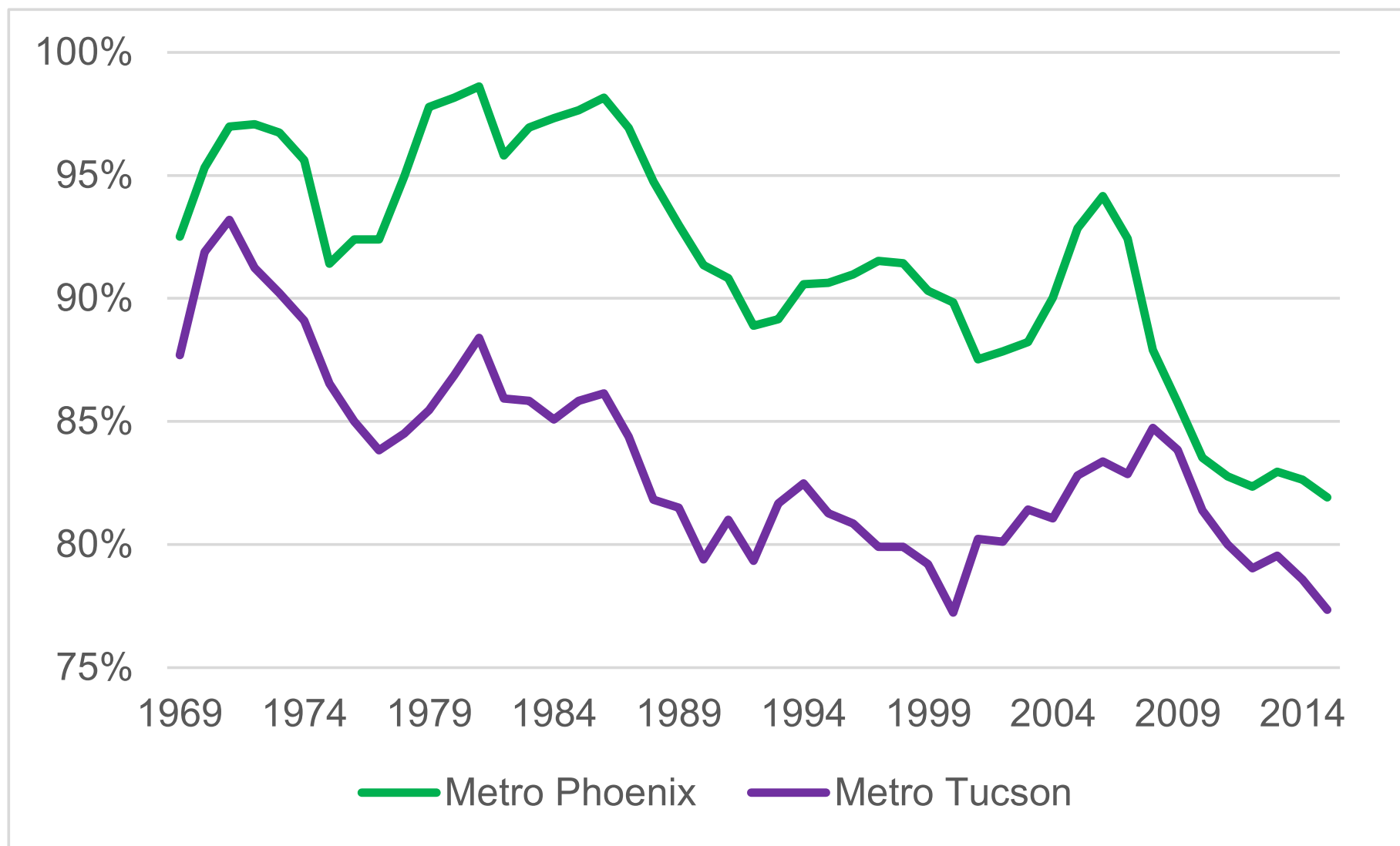
# Per Worker Earnings as a Percentage of the U.S. Metropolitan Average



# Employment-to-Population Ratio as a Percentage of the U.S. Metropolitan Average



# Per Capita Personal Income as a Percentage of the U.S. Metropolitan Average



# **COMPETITIVENESS AND ECONOMIC DEVELOPMENT**

# Economic Development

- Economic development focuses on base activities.
- Success is dependent on an area's business climate/competitiveness.
- The most important site selection factors are
  1. **Workforce quality and availability:** largely dependent on education – achievement and attainment – and workforce training.
  2. **Physical infrastructure** quality and availability: transportation, utilities, telecommunications, etc.
  3. Costs: particularly labor, but also taxes (evaluated in relation to the availability and quality of public services), real estate, and energy.

# Arizona's Business Climate

- Arizona generally compares favorably on cost measures.
- Arizona is in the middle of the states on the physical infrastructure.
- On workforce quality – the most important factor – Arizona compares unfavorably. Its evaluation on workforce quality has declined over time.
- Overall, Arizona ranks in the middle of the states on the most reliable studies of business climate: #27 according to the Beacon Hill Institute and #26 according to *Forbes*.



# Physical Infrastructure

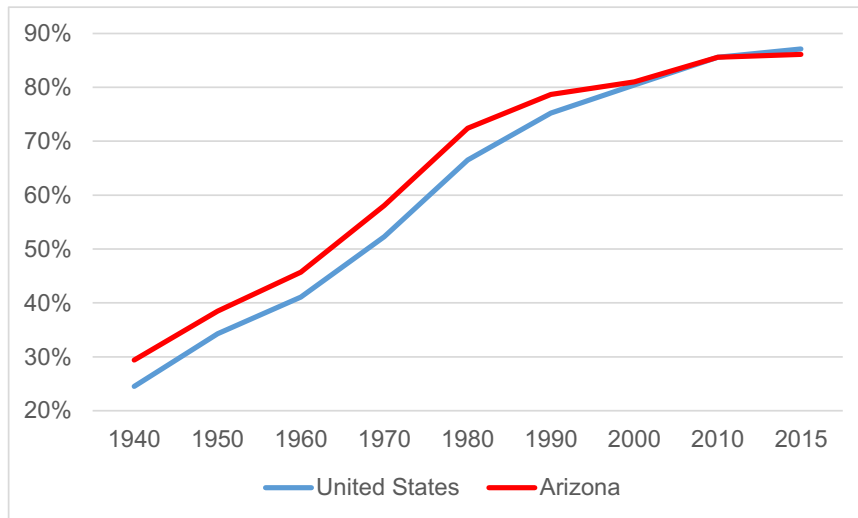
- The American Society of Civil Engineers evaluates the quality of the physical infrastructure by state in a number of categories.
- Overall, Arizona is rated as slightly above the median state.
- Arizona's scores are equal to or above the median state in each category except one: roads.

# Workforce Quality

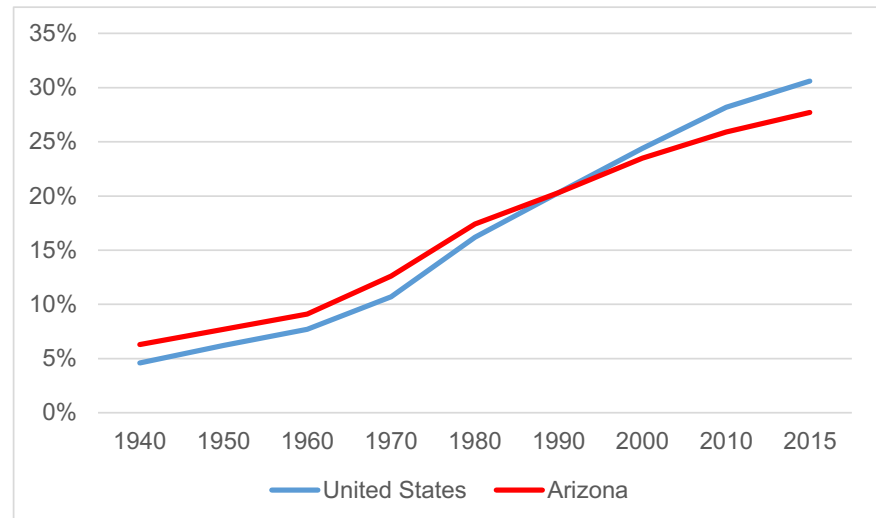
- Educational attainment is the best available indicator of workforce quality.
- Historically, the educational attainment of adults in Arizona was above the national average. In recent decades, it has fallen below average.
- The educational attainment of workers in Arizona is further below average.
- Student test scores provide insight into future workforce quality. Arizona's students score considerably below the U.S. average.

# Educational Attainment, Age 25 and Older

## High School Graduate or More



## Bachelor's Degree or More



# Educational Attainment of Workers, Ages 25 to 64, in 2015

