



# THE IMPORTANCE OF INVESTING IN ARIZONA

**October 2022**

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**P<sup>3</sup> | PRODUCTIVITY AND  
PROSPERITY PROJECT**

**ASU** W. P. CAREY  
SCHOOL of BUSINESS  
ARIZONA STATE UNIVERSITY

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**A Report from the Productivity and Prosperity Project (P3),  
Supported by the Office of the University Economist**

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## TABLE OF CONTENTS

|   |    |
|---|----|
| Summary   | 1  |
| Introduction  | 4  |
| Arizona's First Challenge: Low Productivity and Prosperity  | 6  |
| Arizona's Second Challenge: A Changing World  | 10 |
| Investment: A Means of Improving Productivity and Prosperity and Keeping Up With a Changing World | 12 |
| The Role of Government: Public Revenues and Expenditures  | 22 |

## LIST OF TABLES

|   |    |
|---|----|
| 1. Infrastructure Report Card   | 14 |
| 2. Measures of Elementary and Secondary Education, Arizona's Ranks, 2021                                      | 17 |
| 3. Individual Tax Payments in Phoenix Expressed as the Percent Difference From the Average of 51 Cities, 2020 | 33 |

## LIST OF CHARTS

|   |    |
|---|----|
| 1. Prosperity and Productivity, Arizona as a Percentage of the National Average   | 8  |
| 2. Measures of Productivity in Arizona as a Percentage of the National Average  | 9  |
| 3. Capital Outlays Per Capita, Arizona as a Percentage of the National Average  | 16 |
| 4. Educational Attainment, Age 25 or Older, Arizona as a Percentage of the National Average   | 19 |
| 5. Current Operations Expenditures Per Student for Elementary and Secondary Education, Arizona as a Percentage of the National Average                          | 20 |
| 6. Higher Education Revenue Per Full-Time-Equivalent Student, Arizona as a Percentage of the National Average   | 21 |
| 7. State and Local Government Own-Source Revenue Collections, Arizona as a Percentage of the National Average   | 23 |
| 8. State and Local Government Tax Collections, Arizona as a Percentage of the National Average  | 25 |
| 9. State and Local Government Expenditures, Arizona as a Percentage of the National Average   | 30 |
| 10. Ongoing Tax Revenues Per \$1,000 of Personal Income and Effect on Revenues of Tax Law Changes Since Fiscal Year 1993, Arizona State Government General Fund | 37 |
| 11. Ongoing Revenues and Expenditures Per \$1,000 of Personal Income, Arizona State Government General Fund   | 37 |

## SUMMARY

Arizona would benefit from changing course in its economic development efforts, from an emphasis on aggregate growth rates and tax reductions to a focus on investing in itself.

Since the late 1960s, when reductions in taxes began, Arizona has been one of the fastest-growing states in the nation, though the fast growth cannot be traced to the tax cuts. This rapid aggregate growth has been accompanied by declines relative to the nation and to comparison states in measures of productivity and prosperity. Improvements in productivity lead to gains in prosperity; the goal of economic development is to improve the economic well-being of residents.

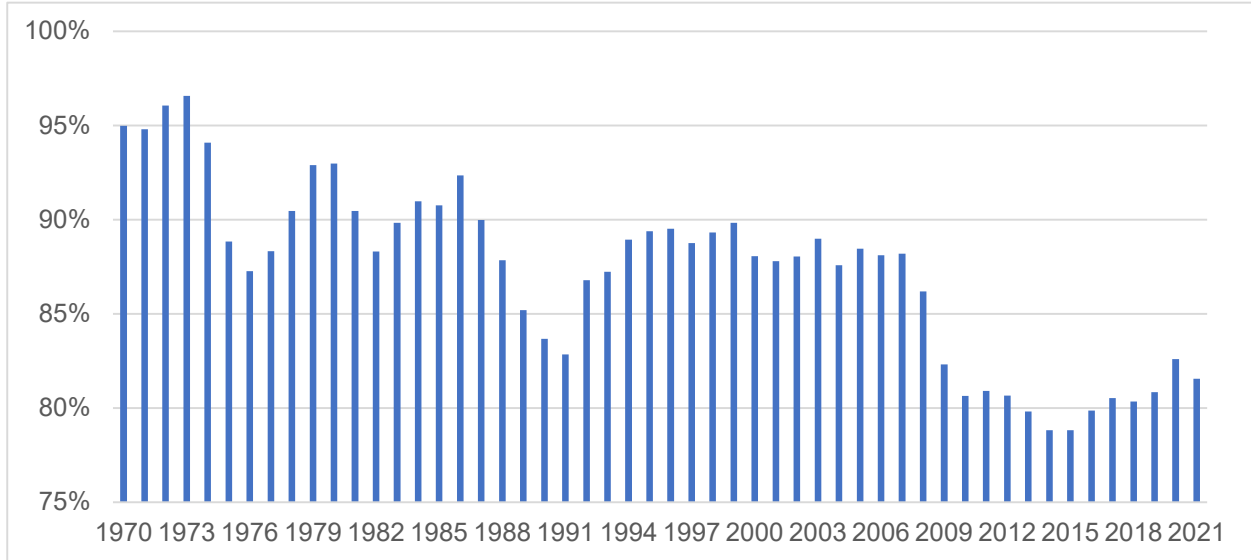
In the early 1970s, Arizona's prosperity, as measured by per capita gross domestic product, was within 5 percent of the U.S. average. Arizona ranked above the middle of all states and was fifth among a group of 15 comparison states. Arizona's position has deteriorated considerably, especially since the mid-2000s (see Chart S-1). In 2021, Arizona's prosperity was 17.8 percent below the national average, ranking 36th nationally and 11th among 15 comparison states.

Though the state has experienced some recent success in attracting semiconductor and electric vehicle manufacturing, this may not lead to improvements in productivity and prosperity. Similar success stories have occurred over the last 50 years, yet productivity and prosperity relative to the nation has declined. Such quality growth has been overwhelmed by the state's overall fast and mediocre growth.

Arizona is not positioned to make much improvement in its prosperity. Arizona's ratings in studies of the best states for business are mediocre. In particular, three surveys — of business consultants, site selectors, and corporate real estate executives — agree that the two most important business location factors that can be affected by local policy makers are skilled labor/education and physical infrastructure. Arizona does not compare favorably on these location factors. The educational achievement of the state's students is below average, as is the educational attainment of Arizona's adults. The state's physical infrastructure is rated as average in most categories and worse in the roads category, which is particularly important to economic development.

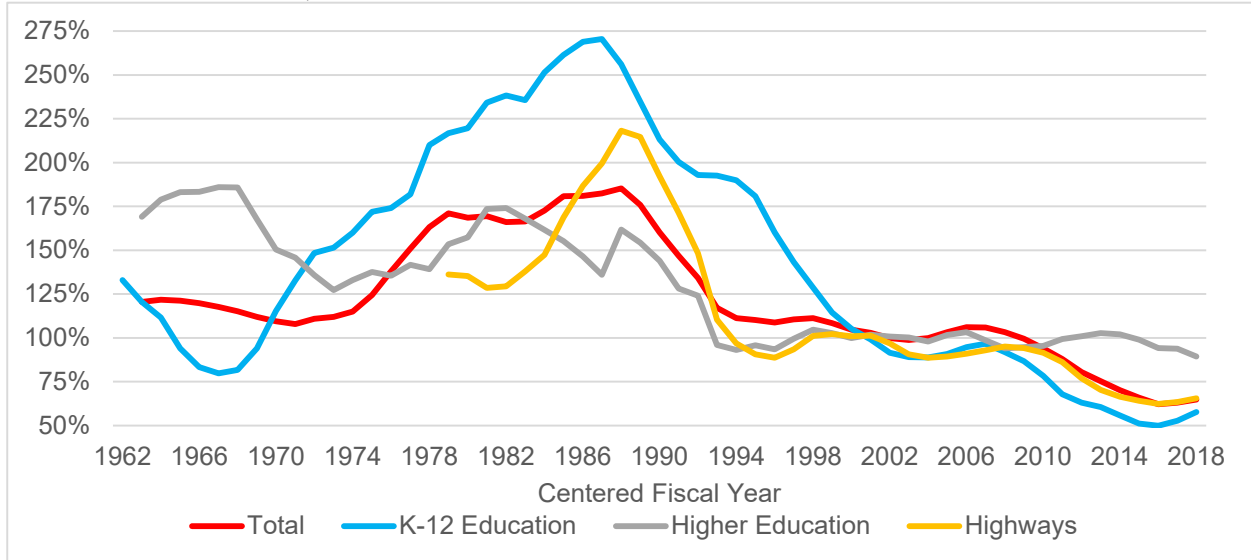
The public sector has a major role to play in supplying education to the state's residents and in providing some types of physical infrastructure, such as highways. Yet, public investments in physical infrastructure and in education have fallen substantially in Arizona relative to the nation, to considerably below the national average (see Charts S-2 and S-3). The reduction in expenditures has been a necessary outcome of the many tax cuts passed over the past 55 years, particularly during the last 30 years, that has greatly reduced the revenue available to fund public programs. In fiscal year 2020, Arizona state and local government revenue was \$17 billion less than what was needed to equal the national per capita average after adjusting for the cost of living. The loss of revenue has resulted in spending reductions relative to the nation for education and most other public programs. While the tax reductions have put Arizona's tax burden considerably below the national average for both businesses and individuals, the tax cuts have had no discernible positive impact on the state's economic performance.

**CHART S-1  
PROSPERITY AS MEASURED BY PER CAPITA GROSS DOMESTIC PRODUCT,  
ARIZONA AS A PERCENTAGE OF THE NATIONAL AVERAGE**



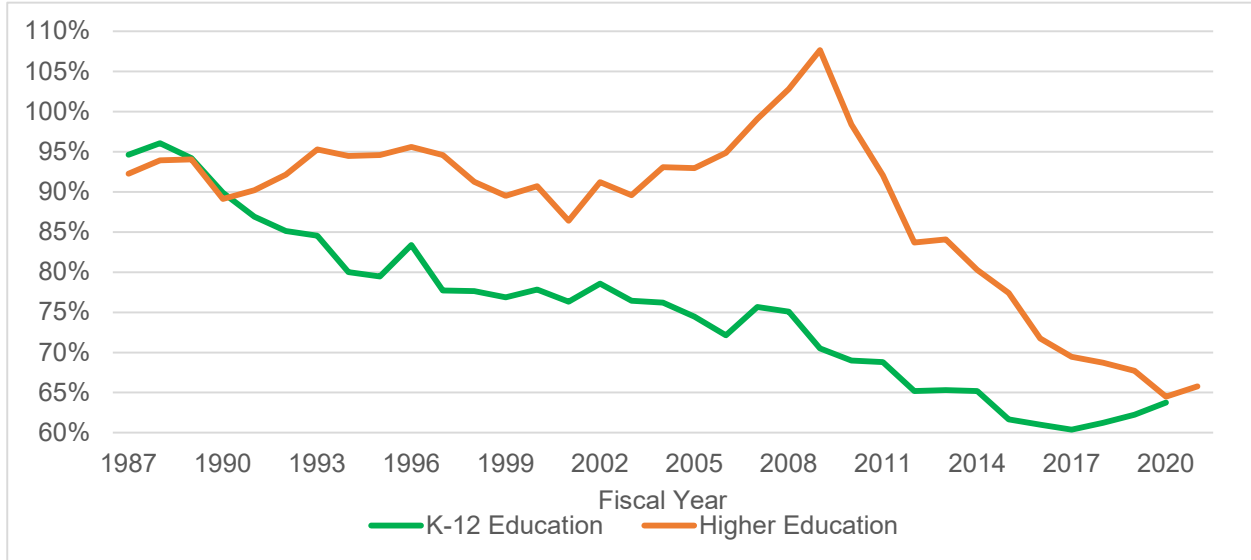
Source: Calculated from U.S. Department of Commerce, Bureau of Economic Analysis.

**CHART S-2  
CAPITAL OUTLAYS PER CAPITA EXPRESSED AS A CENTERED FIVE-YEAR  
MOVING AVERAGE, ARIZONA AS A PERCENTAGE OF THE NATIONAL AVERAGE**



Source: Calculated from U.S. Department of Commerce, Census Bureau, *Annual Survey of State and Local Government Finances* (capital outlays) and U.S. Department of Commerce, Bureau of Economic Analysis (population).

**CHART S-3  
FUNDING PER STUDENT FOR EDUCATION,  
ARIZONA AS A PERCENTAGE OF THE NATIONAL AVERAGE**



**Notes:**

Funding is defined as state and local government revenue.  
Higher education enrollment is measured on a full-time-equivalent basis.

Source: Calculated from U.S. Department of Commerce, Census Bureau, *Annual Survey of School System Finances*, and State Higher Education Executive Officers Association, *SHEF State Higher Education Finance, FY 2021*.

## INTRODUCTION

Many earlier reports produced by Arizona State University's Office of the University Economist are cited in this report. These and other reports are available from <https://economist.asu.edu/>.

Most of the analyses in this paper extend through calendar year 2021. However, the latest cost-of-living data are for 2020 and some of the public finance data extend only through fiscal year 2020 (through June 30, 2020).

When comparing regions on dollar measures, the figures should be adjusted for the cost of living when possible. However, consistent data on the cost of living extends only from 2008 through 2020.<sup>1</sup> Arizona's cost of living relative to the national average was above average from 2008 through 2010, by as much as 3.6 percent, but ranged from 0.7-to-2.4 percent below average from 2011 through 2020. Thus, the cost-of-living-adjustment does not have a substantial impact on the interpretation of economic indicators measured in dollars in Arizona relative to the nation. However, the cost of living adjustment has more impact when comparing Arizona to other states, some of which have a cost of living considerably higher or lower than the national average.

In this report, Arizona is compared to all states (including the District of Columbia) and to a subset of 15 states located in the West or along the South Atlantic coast. These comparison states, along with the 2020 cost of living as a percentage of the national average, follow:

- Arizona (AZ): 99.1
- California (CA): 110.4
- Colorado (CO): 102.9
- Florida (FL): 100.7
- Georgia (GA): 94.5
- Idaho (ID): 91.2
- Nevada (NV): 97.1
- New Mexico (NM): 91.6
- North Carolina (NC): 91.8
- Oregon (OR): 102.6
- South Carolina (SC): 91.6
- Texas (TX): 99.5
- Utah (UT): 95.3
- Virginia (VA): 99.3
- Washington (WA): 107.4

Due to the vast differences in population and economic size across states, dollar measures also need to be adjusted for size in order to compare states. Common adjustments include dividing the dollar measures by population, employment, or personal income.

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<sup>1</sup> The cost-of-living estimates, labeled as "regional price parities," are produced by the U.S. Department of Commerce, Bureau of Economic Analysis, <https://www.bea.gov/data/by-place-states-territories>. For a discussion of the cost of living, see the University Economist report *Measures of Prosperity and Productivity Adjusted for the Cost of Living*, August 2014, <https://ccpr.wpcarey.asu.edu/sites/default/files/prosperitycol8-14.pdf>.

Government revenues and expenditures are examples of the need to adjust for size. A case can be made to adjust revenue figures by population adjusted for the cost of living or by personal income (which inherently reflects the cost of living). Adjustment by the latter considers the ability of residents to pay taxes and fees. In a state such as Arizona where the average income is considerably lower than the national average, the choice between population and income to standardize data across states results in a substantial difference in the analysis of the revenue figures. For example, in fiscal year 2020, Arizona's per capita state and local government revenue excluding federal monies was 29.8 percent less than the national average and ranked 50th among the states. Adjusted by the cost of living, Arizona's per capita figure was 28.9 percent below average, the lowest in the nation. The shortfall was smaller at 19.0 percent when adjusted by personal income, though Arizona's rank was not much higher at 48th. The difference in the figures as adjusted by population and personal income in the magnitude of the deficit from the national average is due to Arizona's low per capita personal income, which was 13.4 percent below the U.S. average and ranked 41st in fiscal year 2020; adjusted for the cost of living, the per capita personal income deficit was 12.3 percent, with the state ranking 46th.

In contrast, the best adjustment for government expenditures is population adjusted for the cost of living. In order to provide public service of equal quality across the nation, adjusted expenditures per person need to be equal; the ability to pay is not relevant. When examining a spending category that serves a subset of the population — such as elementary and secondary education — the caseload (for example, the number of students for education expenditures) is a better adjustment than the total population.



## ARIZONA'S FIRST CHALLENGE: LOW PRODUCTIVITY AND PROSPERITY

Productivity is the efficiency of production of goods or services. According to Paul Krugman, “Productivity isn’t everything, but in the long run it is almost everything. A country’s ability to improve its standard of living over time depends almost entirely on its ability to raise its output per worker.”<sup>2</sup>

While productivity classically is defined as the rate of output per unit of input, this measure is not available for states. Per worker gross domestic product (GDP divided by the total number of workers) typically has been used as a proxy for productivity for subnational geographies; it is available annually back to 1969. GDP estimates for states are produced by the U.S. Department of Commerce, Bureau of Economic Analysis (BEA), <https://www.bea.gov/data/by-place-states-territories>. Alternative measures of productivity for states are produced by the U.S. Department of Labor, Bureau of Labor Statistics (BLS), <https://www.bls.gov/productivity/data.htm>, but these annual data extend back only to 2007. Value-added output per worker and per hour worked can be calculated from the BLS data.

These alternative measures of productivity are generally in agreement regarding productivity in Arizona relative to the national average and to other states. In 2021, Arizona’s figure was below the U.S. average by 10.7 percent on GDP per worker, 14.3 percent on value-added output per worker, and 15.0 percent on value-added output per hour worked. Arizona ranked 35th on each measure from the BLS and 29th on GDP per worker. In 2020, Arizona’s rank was worse after adjustment for the cost of living. Among the 15 comparison states, Arizona ranked 11th or 12th on each measure in 2020 after adjusting for the cost of living.

Prosperity is defined as a successful, flourishing, or thriving condition, especially in financial respects. It is most commonly measured by per capita GDP.<sup>3</sup> Real (inflation adjusted) per capita GDP is the standard measure for comparing growth rates across countries and within countries. As noted by Blakemore and Herrendorf, “It is important to distinguish overall growth that is fueled predominantly by the influx of people from growth on a per capita basis. The latter is more closely aligned with the trajectories of living standards and individual prosperity.”<sup>4</sup>

Thus, the goal of modern economic development is to raise productivity, which leads to improvements in prosperity. In the early 1990s, the Arizona Strategic Planning for Economic Development (ASPED) effort recommended that Arizonans shift their focus from aggregate economic measures to productivity and prosperity measures.

Per capita GDP in Arizona is further below the U.S. average than per worker GDP. In 2021, Arizona’s per capita GDP was 17.8 percent less than the national average, ranking 36th among the 50 states and the District of Columbia and 11th among the 15 comparison states. In 2020, its

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<sup>2</sup> Krugman, Paul. “Competitiveness: A Dangerous Obsession,” *Foreign Affairs*, Vol. 73, No. 2, March/April 1994, pp. 2844, <https://www.foreignaffairs.com/articles/1994-03-01/competitiveness-dangerous-obsession>, reproduced in Krugman, P. *Pop Internationalism*, 1996, pp. 324, MIT Press, Cambridge, MA.

<sup>3</sup> Other measures of prosperity exist, usually expressed on a per capita basis, such as per capita personal income. There is high correlation between the per capita measures.

<sup>4</sup> See page 1 of the University Economist report authored by Arthur Blakemore and Berthold Herrendorf: *Economic Growth: The Importance of Education and Technological Development*, January 2009, <https://ccpr.wpcarey.asu.edu/sites/default/files/techdevelop1-09.pdf>.

rank also was 36th, but dropped to 37th after adjustment for the cost of living; Arizona ranked 11th among the comparison states both before and after adjusting for living costs.

Arizona's performance on productivity and prosperity has fallen substantially over time relative to the national average. In the early 1970s, per worker GDP was somewhat above the U.S. average and per capita GDP was not much less than average, as seen in Chart 1. Each indicator as a percentage of the national average has trended down, with a decrease from the early 1970s peak to 2021 of 15 percentage points in both per capita GDP and per worker GDP, using data not adjusted for the cost of living.

In addition to the downward trend, per capita GDP in Arizona as a percentage of the U.S. average has been procyclical, rising during economic expansions and falling during recessions. The value plunged during the 2008-to-2010 recession. Even after nine years of economic expansion, its recovery was modest. The 2021 percentage of the U.S. average remained lower than in any year prior to 2010. Per worker GDP relative to the U.S. average has not been as cyclical as per capita GDP. Since 2010, the percentage of the national average has been below the previous low.

Chart 2 provides a closer look at three productivity measures. Arizona has compared more unfavorably relative to the national average since the 2008-to-2009 recession, with little improvement during the long 2010-to-2019 economic expansion.

Two University Economist reports examined in detail the causes of Arizona's low productivity and prosperity, using somewhat different approaches.<sup>5</sup> Each report identified multiple contributors to Arizona's substandard figures, but identified two as being of particular importance:

- A low workforce participation rate among those of prime working age. This in part is related to the low educational attainment of the state's residents.
- Low earnings per worker. Multiple factors contribute to the low earnings, including the prevalence in Arizona's economy of jobs that require less educational attainment and less work experience than the national norm.

Though workforce participation and average earnings are generally higher in Arizona's large metro areas than in the balance of the state, low workforce participation and low earnings are issues even in the state's large metro areas. The figures in Metro Phoenix and Metro Tucson are lower than the average of similarly sized metro areas across the nation.

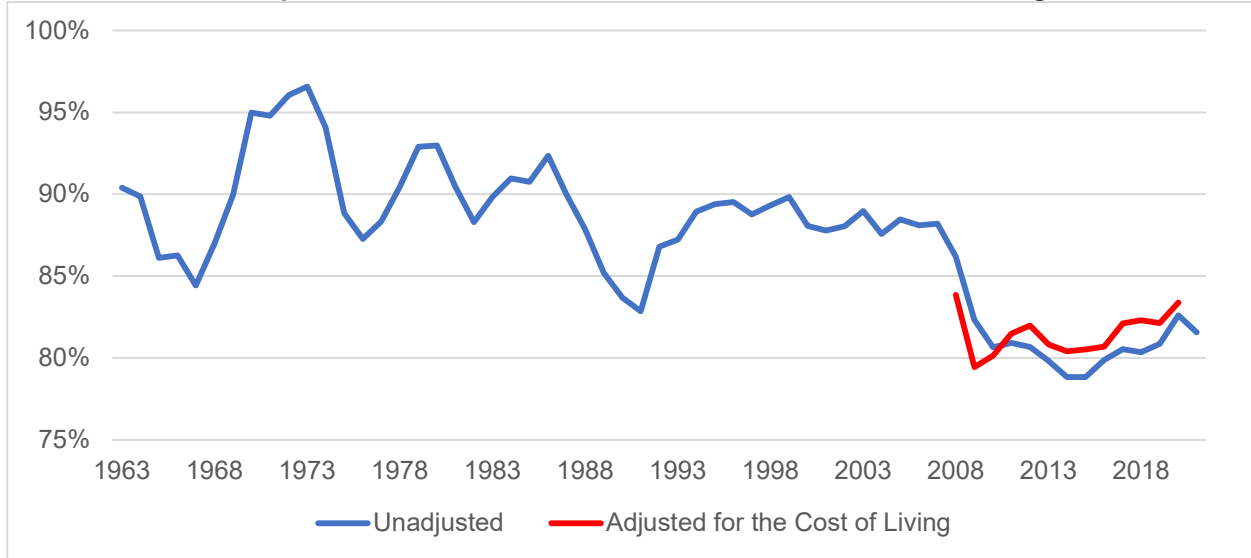
Each of the two earlier reports noted the importance of education and the physical infrastructure as means to improve the state's low productivity and prosperity. education and the physical infrastructure are addressed later in this report.

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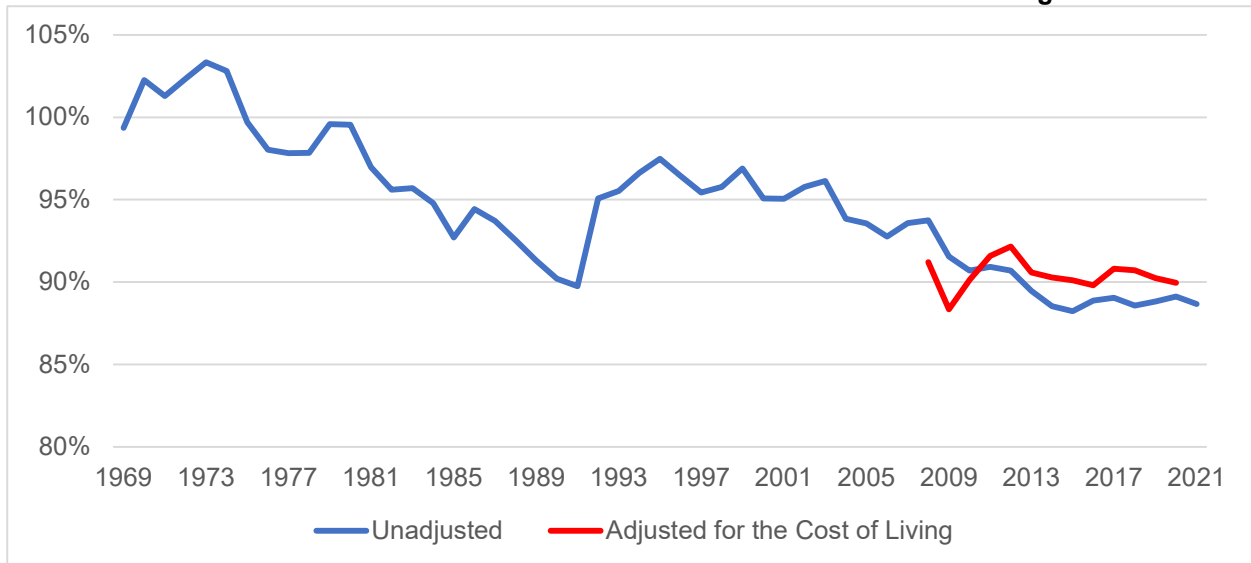
<sup>5</sup> See the University Economist reports *Causes of Arizona's Low Incomes*, September 2019, <https://ccpr.wpcarey.asu.edu/sites/default/files/income09-19.pdf>, and *The Magnitude and Causes of Arizona's Low Per capita Income*, February 2010, <https://ccpr.wpcarey.asu.edu/sites/default/files/income2-10.pdf>.

**CHART 1  
PROSPERITY AND PRODUCTIVITY, ARIZONA  
AS A PERCENTAGE OF THE NATIONAL AVERAGE**

**Per Capita Gross Domestic Product Relative to the National Average**



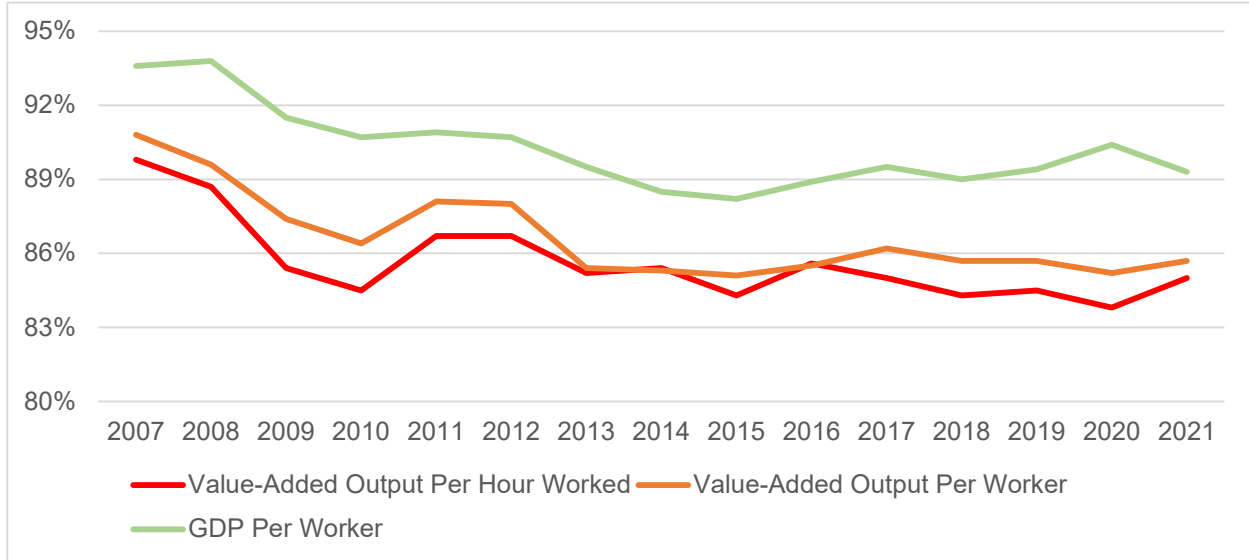
**Per Worker Gross Domestic Product Relative to the National Average**



Note: GDP estimates run through 2021, but regional price parity estimates are not yet available for 2021.

Source: Calculated from U.S. Department of Commerce, Bureau of Economic Analysis, <https://www.bea.gov/data/by-place-states-territories>.

**CHART 2  
MEASURES OF PRODUCTIVITY, ARIZONA  
AS A PERCENTAGE OF THE NATIONAL AVERAGE**



Source: Calculated from U.S. Department of Commerce, Bureau of Economic Analysis, <https://www.bea.gov/data/by-place-states-territories> and U.S. Department of Labor, Bureau of Labor Statistics, <https://www.bls.gov/productivity/data.htm>

## ARIZONA'S SECOND CHALLENGE: A CHANGING WORLD

For decades, Arizona has been a “people magnet,” attracting new domestic and foreign residents at rates well above the national average. This demographic dynamism attracted businesses looking to serve the strong population growth. Fueled by a pro-growth business and political climate, the overall economy grew robustly. Business and community leaders embraced and prospered from this growth and there seemed little need for establishing economic development strategies. Indeed, low taxes, limited regulations, and minimal government interference were embraced, with businesses that were looking for affordable labor and land arriving in large numbers. Arizona ranked high among the states on aggregate growth rates, such as employment. However, productivity and prosperity in Arizona eroded relative to the national average at the same time that aggregate growth rates were high.

More recently, it became apparent that Arizona needs to attract higher quality employers who could offer opportunities to first stop the erosion in productivity and prosperity relative to the national average and comparison states and then to raise standards of living in Arizona relative to other states. But with this desire/need to improve living standards comes the necessity to compete economically on a different level.

To attract businesses looking for productive workers, stable fiscal environments, and efficient transportation and energy systems, economic development strategies need to evolve. Richard Atkinson described a comparable challenge for nations.<sup>6</sup> He distinguishes “low-road” competition from “high-road.” Low-road competitors are in a “race to the bottom” over the lowest taxes. In contrast, competition on the high road is about trying to be the best at a wide range of attributes, including innovation, education, physical infrastructure, and quality-of-place measures such as health care. On the high road, productivity is raised across the economy due to knowledge spillovers from highly educated workers in cutting-edge industries. Residents prosper with higher standards of living.

In practice, effective economic development cannot embrace one of these strategies to the complete exclusion of the other, but the dichotomy offers lessons for Arizona. Since the mid-1960s and especially since the early 1990s, some policymakers in Arizona have seen low taxes as the primary economic development strategy and government spending as an impediment to maintaining low taxes. Going forward it is increasingly clear that government investment in people and programs is an integral part of the 21st-century economic development strategy. Productive businesses want to locate where they can maximize profits. While low state and local taxes are in themselves welcome, low taxes do not provide adequate revenue for the quality public services, such as education and highways, that productive businesses find essential. So a balance between tax rates and investments that deliver on these service demands is required.

It is conceivable that Arizona has already won the battle for businesses looking exclusively for low costs. But winning future battles will require that more emphasis is placed on investing in infrastructure and programs that will attract those businesses that will raise the standard of living across the state.

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<sup>6</sup> Robert D. Atkinson, “Deep Competitiveness,” *Issues in Science and Technology*, Winter 2007, <https://issues.org/atkinson-4/> or <https://itif.org/files/Deep-Competitiveness.pdf>.

The need for the state to change its economic development strategy is confirmed by its mediocre rankings in various ratings of the best states for business. In an earlier University Economist report, state rankings from two of these studies were found to be significantly correlated to prosperity:<sup>7</sup>

- Beacon Hill Institute, *State Competitiveness Report*, <https://beaconhill.org/economic-competitiveness/>. In the latest report, which utilized data from 2018, Arizona ranked 24th among the 50 states and 12th among the 15 comparison states. Arizona's overall rank has varied somewhat from year to year; over the nine years from 2010 through 2018, the median rank was 27th and the average rank was 28th.
- *Forbes* magazine, "Best States for Business," <https://www.forbes.com/best-states-for-business/list/>. In the latest report, published in December 2019, Arizona ranked 18th among the 50 states and 12th among the 15 comparison states.

A few other studies also evaluate a large number of factors important to businesses. In CNBC's report *America's Top States for Business*, <https://www.cnbc.com/2022/07/13/north-carolina-is-no-1-in-americas-top-states-for-business.html?&qsearchterm=top%20states%20for%20business> from July 2022, Arizona ranked 34th among the 50 states and 12th among the comparison states. For the second consecutive year, Arizona's rank was lower than its 10-year median and average of 24th. CNBC contends that today's businesses are looking for business climates that promote inclusion and livability, with investments in social infrastructure and health care. In 2022, CNBC ranked Arizona last among the states in its "life, health & inclusion" category. Arizona was evaluated more favorably by *Area Development* magazine, ranking 13th overall in its "America's Top States for Business 2022," <https://www.areadevelopment.com/Top-States-for-Doing-Business/q3-2022/top-states-for-doing-business-provide-an-environment-for-business-growth.shtml>.

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<sup>7</sup> See the University Economist report *Overview of Economic Competitiveness: Business and Individual Location Factors, With a Focus on Arizona*, November 2014, <https://ccpr.wpcarey.asu.edu/sites/default/files/competitiveness11-14.pdf>.

## **INVESTMENT: A MEANS OF IMPROVING PRODUCTIVITY AND PROSPERITY AND KEEPING UP WITH A CHANGING WORLD**

*Area Development* magazine, <https://www.areadevelopment.com/>, annually surveys two groups — corporate executives and consultants — on the importance of 28 business location factors. The corporate survey includes a disproportionate number of manufacturing firms; as a result, the corporate responses differ from those of the consultants. In particular, the executives rate cost factors to be more important than do the consultants, who work with companies from a broad range of industrial sectors.

In the latest survey, the consultants rated proximity to major markets as the most important factor, but of course this is not something under the control of local economic development experts or other policymakers. The second-most important factor was the availability of skilled labor; highway accessibility ranked third. The corporate leaders rated labor costs as the most important factor, followed by the availability of skilled labor, and energy availability and cost.

*Site Selection* magazine, <https://siteselection.com/>, also conducts an annual survey, of site selectors. The focus of the survey varies by year. In the January 2019 issue, the most important location criteria were identified as workforce skills and the transportation infrastructure. In another survey — of corporate real estate executives reported in the November 2021 issue — workforce skills was the top-rated factor. Workforce development was ranked third. The transportation infrastructure ranked second and the reliability and cost of utilities ranked fifth.

Thus, two business location factors are of prime importance to economic development in the 21st century:

- The quality and availability of the labor force. Educational attainment and achievement are key aspects of labor force quality. The level of human capital in an area, typically measured by the share of the population with a bachelor's degree, has been shown in numerous studies to be a significant predictor of subsequent population growth and gains in prosperity in a region.<sup>8</sup>
- The quality and availability of the physical infrastructure, particularly the transportation system and utilities (energy).

Arizona compares unfavorably on measures of the labor force and education. In the human resources component of the Beacon Hill study, Arizona ranked 36th. The rank on the education component of the CNBC study was 42nd. Among additional education measures discussed later in this section is an overall rank of 46th by the publication *EducationWeek*. Arizona's ratings on infrastructure generally are mediocre, but vary across the studies. The state ranked 27th in the Beacon Hill study. An additional evaluation is discussed in the next subsection.

### **Infrastructure**

In 2008, the L. William Seidman Research Institute undertook a major study of the infrastructure in Arizona. While more than a decade old, this work is still largely relevant given the limited action taken since then to improve the state's infrastructure. The initial report looked in detail at

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<sup>8</sup> See the University Economist report *Determinants of Growth and Prosperity in U.S. Metropolitan Areas*, February 2021, <https://ccpr.wpcarey.asu.edu/sites/default/files/determinantsmetrogrowth02-21.pdf>.

energy, telecommunications, transportation, and water and wastewater.<sup>9</sup> Subsequent work addressed education, health care, public safety, and other types of infrastructure.<sup>10</sup>

The conclusion of this work was that Arizona faces tremendous infrastructure needs:

- Arizona’s public-sector infrastructure — particularly the transportation system — has not kept pace with the state’s growth, resulting in a need to “catch up.”
- Arizona’s existing public-sector physical infrastructure — especially the water infrastructure — is aging, leading to an increasing need for renovation.
- Arizona continues to grow rapidly, creating a substantial demand from new residents and new businesses for public-sector and private-sector infrastructure.

The work also concluded that an unwillingness to invest in infrastructure and to confront the challenges posed by Arizona’s projected growth will lower the quality of life of Arizonans, negatively impact the state’s economy, limit the state’s opportunity to become one of the region’s leading economic centers, and eventually stifle growth itself.

A limited amount of the information included in the 2008 reports is updated below: the latest evaluation of Arizona’s infrastructure and a record of public investments in physical infrastructure through fiscal year 2020. While the public sector funds only a portion of the state’s infrastructure, it is the primary source of funding for education and surface transportation.

### **Evaluation of Arizona’s Infrastructure**

The American Society of Civil Engineers (ASCE) periodically grades the nation and individual states on the quality of the infrastructure.<sup>11</sup> Table 1 summarizes the latest results. Arizona’s overall grade is “C: mediocre: requires attention,” barely higher than the national grade. ASCE identifies a funding gap as Arizona’s biggest issue.

Of the comparison states, ASCE report cards are available for eight of the nine western states — California, Colorado, Idaho, Nevada, Oregon, Texas, Utah, and Washington — and for three of the five South Atlantic states: Florida, Georgia, and South Carolina. Arizona’s overall grade is in the middle of this group of 12 states, with little variation existing across the states.

Arizona’s lowest grade is in the “roads” category, one of the most important infrastructure categories for economic development. According to the ASCE:<sup>12</sup>

“Local, state, and federal funding cannot adequately keep up with the expansion, modernization, and preservation required for safe and well-maintained roadway

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<sup>9</sup> The initial report was produced for the Arizona Investment Council in May 2008: *Infrastructure Needs and Funding Alternatives for Arizona: 2008-2032*. The executive summary is available from <https://vdocuments.site/infrastructure-needs-and-funding-alternatives-for-azsmart-dev-infrastructure-needs.html>.

<sup>10</sup> See the University Economist report *Preparing for an Arizona of 10 Million People — Meeting the Infrastructure Challenges of Growth — Background Report*, October 2008, <https://ccpr.wpcarey.asu.edu/sites/default/files/infrastructurebackground10-08.pdf>.

<sup>11</sup> American Society of Civil Engineers, *2021 Report Card for America’s Infrastructure*, <https://infrastructurereportcard.org/> and *2020 Report Card for Arizona Infrastructure*, <https://infrastructurereportcard.org/state-item/arizona/>.

<sup>12</sup> American Society of Civil Engineers, *2020 Report Card for Arizona Infrastructure*, <https://infrastructurereportcard.org/state-item/arizona/>, page 56.



infrastructure. More money could be allocated to infrastructure by raising the gas tax and voting in favor of transportation initiatives. For Arizonans, the repair costs attributed to poorly maintained roads and bridges is reported to be more than three times what the cost of an increased gas tax would be.”

None of the other 11 Western and South Atlantic states have a lower grade in the roads category. Utah stands out with a grade of B+.

The ASCE recommends the following actions to raise the infrastructure grades in Arizona:<sup>13</sup>

- “Develop a comprehensive, statewide asset database and an examination rubric to establish infrastructure priorities and improve coordination of asset management across all levels of agencies.”
- “The current state gas tax does not keep pace with inflation and meet the needs of a growing population ... implement additional measures such as a vehicle miles traveled charge or user fee for electric cars.”
- “Develop outreach to highlight the current funding gap and the negative impacts experienced by Arizonans due to a lack of funding support.”
- “Incorporate sustainability principles to mitigate irreversible impacts to the quality of life for Arizonans and the natural environment.”

**TABLE 1  
INFRASTRUCTURE REPORT CARD**

|                | <b>Arizona</b> | <b>United States</b> |
|----------------|----------------|----------------------|
| Overall        | C              | C-                   |
| Aviation       | B              | D+                   |
| Bridges        | B+             | C                    |
| Dams           | C-             | D                    |
| Drinking Water | C-             | C-                   |
| Levees         | C-             | D                    |
| Rail           | C              | B                    |
| Roads          | D+             | D                    |
| Transit        | C              | D-                   |
| Wastewater     | C-             | D+                   |

Notes:

The ASCE defines the grades as follows:

A: Exceptional: Fit for the Future

B: Good: Adequate for Now

C: Mediocre: Requires Attention

D: Poor: At Risk

F: Failing/Critical: Unfit for Purpose

The national report includes additional categories of infrastructure that contribute to its overall grade.

Source: American Society of Civil Engineers, *2021 Report Card for America’s Infrastructure*, <https://infrastructurereportcard.org/> and *2020 Report Card for Arizona Infrastructure*, <https://infrastructurereportcard.org/state-item/arizona/>.

<sup>13</sup> American Society of Civil Engineers, *2020 Report Card for Arizona Infrastructure*, <https://infrastructurereportcard.org/state-item/arizona/>, page 10.

## **Public Infrastructure Investment in Arizona Relative to Other States**

Most investment in infrastructure is made in the form of capital outlays.<sup>14</sup> The Census Bureau produces annual data by state of revenues and expenditures of state and local governments that include capital outlays by category. The latest data are for fiscal year (FY) 2020. Capital outlays can vary substantially from year to year due to the project orientation of the work — for example, a highway-widening project may boost capital outlays substantially for a couple of years. Thus, it is preferable to view capital outlays as a time series or as the average of multiple years. This analysis examines capital outlays overall and in the three largest categories: highways, elementary and secondary (K-12) education, and higher education.

Infrastructure expenditures are partially related to population growth. A fast-growing state needs to build infrastructure for new residents in addition to maintaining the existing infrastructure. Thus, infrastructure expenditures per capita in Arizona through the early 1990s generally were above the national average, as seen in Chart 3. Historically, Arizona often was timely in its provision of infrastructure, such as the construction of Roosevelt Dam and the entire Salt River Project system.

Since the 1980s, per capita capital outlays in Arizona relative to the national average have declined. From the mid-1990s through FY 2009, per capita total capital outlays in Arizona were not much different from the U.S. average. From FY 2010 through FY 2020, Arizona's figure was below average, by more than 25 percent beginning in FY 2014. This lowering of per capita capital outlays in Arizona relative to the national average has occurred in each of the three major categories, with the per capita figure considerably less than the national average in recent years for highways and for K-12 education.

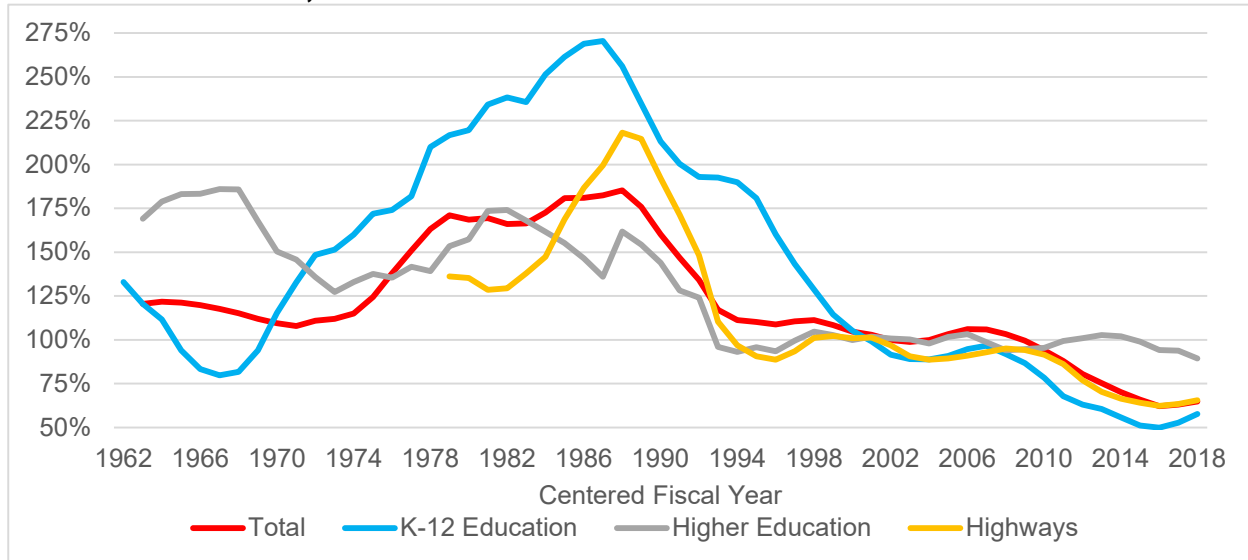
Slowing population growth in Arizona somewhat contributes to this relative decline in investment. Based on both the percent change and numeric change in population between the decennial censuses, Arizona's rank slipped between 2010 and 2020. However, Arizona remains one of the fastest-growing states, while its per capita spending on capital outlays has fallen far below the national average. Thus, the conclusion is that Arizona is no longer adequately investing in infrastructure. An example is the I-10 freeway south of Chandler, which remains at just two lanes in each direction despite heavy traffic that includes many large trucks.

Using the sum of cost-of-living-adjusted per capita capital outlays over the 11 years from FY 2010 through FY 2020, the total in Arizona was 27.7 percent less than the national per capita average, ranking 47th in the nation and last among the 15 comparison states. In the highway category, Arizona ranked 48th nationally and second lowest among the comparison states; the figure was 29.4 percent less than the U.S. average. Arizona ranked 44th nationally and 13th among the comparison states in the K-12 education category; the figure was 39.8 percent less than the U.S. average. In the higher education category, Arizona ranked 32nd nationally and 10th among the comparison states; the figure was 2.9 percent below average.

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<sup>14</sup> Capital outlays are direct expenditures for the construction of buildings and other improvements; for additions, replacements, and major alterations to fixed works and structures; and for the purchase of equipment, land, and existing structures.

**CHART 3**  
**CAPITAL OUTLAYS PER CAPITA EXPRESSED AS A CENTERED FIVE-YEAR MOVING AVERAGE, ARIZONA AS A PERCENTAGE OF THE NATIONAL AVERAGE**



Source: Calculated from U.S. Department of Commerce, Census Bureau, *Annual Survey of State and Local Government Finances*, <https://www.census.gov/programs-surveys/gov-finances.html> (capital outlays) and U.S. Department of Commerce, Bureau of Economic Analysis, <https://www.bea.gov/data/by-place-states-territories> (population).

### Education

The investment in education is of particular importance for a number of reasons. Among these are that:

- The Arizona Constitution provides more explicit instructions for the support of public education than any other governmental function. Article 11, Section 10 of the Arizona Constitution states that "... the legislature shall make such appropriations, to be met by taxation, as shall insure the proper maintenance of all state educational institutions, and shall make such special appropriations as shall provide for their development and improvement."<sup>15</sup>
- Educational attainment and achievement are of especial importance to economic development, productivity, and prosperity. Regions competitive in the 21st-century economy are comprised of competitive companies, which in turn consist of competitive individuals. The more highly skilled a worker, the higher is the worker's productivity. The educational attainment and skills of workers are more important than at any time in the past. Thus, a region's educational infrastructure and the educational achievement of its residents are key components of regional competitiveness. Higher education in particular provides benefits not only to those individuals obtaining this advanced

<sup>15</sup> For a discussion of this provision and how well it is being met, see the University Economist reports *Education Funding in Arizona: Constitutional Requirement and the Empirical Record*, January 2009, <https://ccpr.wpcarey.asu.edu/sites/default/files/edfunding1-09.pdf> and *Arizona Constitution: Specified Duties of State Government*, November 2010, <https://ccpr.wpcarey.asu.edu/sites/default/files/azconstitution11-10.pdf>.

education, but to society as a whole. A University Economist report estimated the economic benefit to the state from raising the educational attainment — specifically the share with at least a bachelor’s degree — of the workforce.<sup>16</sup>

**Evaluation of Arizona’s Education**

The publication *EducationWeek* produces an annual report that compares the states on various K-12 educational measures.<sup>17</sup> Arizona’s ranks among the states from the latest report in 2021 are displayed in Table 2.

According to *EducationWeek*, the “chance for success category” assesses “the role that education plays in promoting positive outcomes across an individual’s lifetime.” Arizona ranks quite low in this category and in each of its subcategories. Arizona also ranks near the bottom in the “school finance” category, including a second-lowest rank on spending. It is closer to the middle of the states on equity in the distribution of funding across school districts. The “K-12 achievement” category includes measures of student performance and high school graduation rates. Arizona compares favorably on the change in student achievement in recent years and in the equity subcategory, which looks at disparities between low-income students and others. Despite the high ranks in the “change” subcategory, Arizona still compared unfavorably in 2021 in the “status” subcategory.

**Educational Attainment.** Educational attainment is strongly correlated to productivity and prosperity. Educational attainment commonly is measured as the share with at least a high school diploma or equivalent and as the share with at least a bachelor’s degree. The American

**TABLE 2  
MEASURES OF ELEMENTARY AND SECONDARY EDUCATION,  
ARIZONA’S RANKS, 2021**

|                    | R51* | R15* |                  | R51* | R15* |
|--------------------|------|------|------------------|------|------|
| OVERALL            | 46   | 13   | School Finance   | 47   | 11   |
| Chance for Success | 43   | 13   | Spending         | 50   | 14   |
| Early Foundations  | 44   | 11   | Equity           | 27   | 11   |
| School Years       | 44   | 13   | K-12 Achievement | 22   | 10   |
| Adult Outcomes     | 39   | 11   | Status           | 40   | 13   |
|                    |      |      | Change           | 11   | 5    |
|                    |      |      | Equity           | 7    | 3    |

\* R51: rank among the 50 states and the District of Columbia; R15: rank among 15 comparison states. A rank of 1 is highest.

Source: *EducationWeek*, “Quality Counts: Grading the States,” <https://www.edweek.org/leadership/quality-counts-2021-grading-the-states>.

<sup>16</sup> See the University Economist report *The Economic Impact of Raising the Educational Attainment of Arizona’s Workforce: 2019 Update*, July 2019,

<https://gradstudents.wpcarey.asu.edu/sites/default/files/impactedattain07-19.pdf>.

<sup>17</sup> *EducationWeek*, “Quality Counts: Grading the States,” <https://www.edweek.org/leadership/quality-counts-2021-grading-the-states>. The latest report for 2021 was released in September 2021.

Community Survey (ACS)<sup>18</sup> provides data on educational attainment by age group and by state. The latest data are for 2021.

The variation across the states in 2021 was relatively narrow on the share with at least a high school diploma, with more than half of the states exceeding the national average. The U.S. average was 89.4 percent among those 25 or older, ranging from 87.4 percent among those 65 or older to 92.5 percent among those 25-to-34 years of age. In each of the three age groups in the 25-to-64 age bracket, Arizona's percentage was less than the U.S. average by 1.0-to-1.5 percentage points, ranking among the bottom 10 states.

The variation across the states in 2021 was greater on the share with at least a bachelor's degree, with less than half of the states exceeding the national average. Arizona did not rank quite as low on this measure, but the shortfall from the U.S. average was greater. Among those 25-to-34 years old, Arizona's share of 32.7 percent was less than the U.S. average of 39.1 percent, ranking 39th nationally and 12th among the 15 comparison states. Among those 35-to-44 years old, Arizona's share of 34.7 percent was below the national average of 39.7 percent, ranking 38th nationally and 12th among the comparison states. Arizona was not as far below the U.S. average in the 45-to-64 age group (31.2-versus-33.5 percent); the state ranked 30th nationally and 11th among the comparison states.

For those between the ages of 25 and 64, the ACS provides educational attainment by workforce status. In 2021, the overall percentage with at least a high school diploma was 88.7 percent in Arizona and 90.0 percent nationally, with Arizona ranking 43rd nationally and 12th among the comparison states. Arizona's shortfall from the nation and rank among the states did not vary much by labor force status.

In 2021, the overall percentage of those 25-to-64 years of age with at least a bachelor's degree was 32.5 percent in Arizona and 36.5 percent nationally, with Arizona ranking 37th nationally and 12th among the comparison states. Among those not in the labor force, Arizona's shortfall from the nation was smaller and its rank among the states was better.

Using the ACS data, the change in educational attainment can be consistently compared between 2010 and 2021. The change in Arizona versus the nation varies by age group. Among those 25-to-64 years of age, the increase in the share with at least a high school diploma was 2.6 percent in Arizona and 2.5 percent nationally. Arizona ranked 19th among all states but only ninth among the comparison states. The increase in the share with at least a bachelor's degree was 6.2 percent in Arizona and 6.7 percent nationally. Arizona ranked 25th among all states and eighth among the comparison states.

For a long-term comparison of educational attainment, data are available only for the 25-or-older population. From a practical perspective, this overstates Arizona's comparison to the U.S. average since the 65-or-older population in Arizona is better educated than their peers nationally, but have little participation in the workforce. As seen in Chart 4, Arizona has experienced a significant downtrend in educational attainment relative to the United States, particularly as measured by the share with at least a bachelor's degree.

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<sup>18</sup> U.S. Department of Commerce, Census Bureau, <https://www.census.gov/programs-surveys/acs/>.

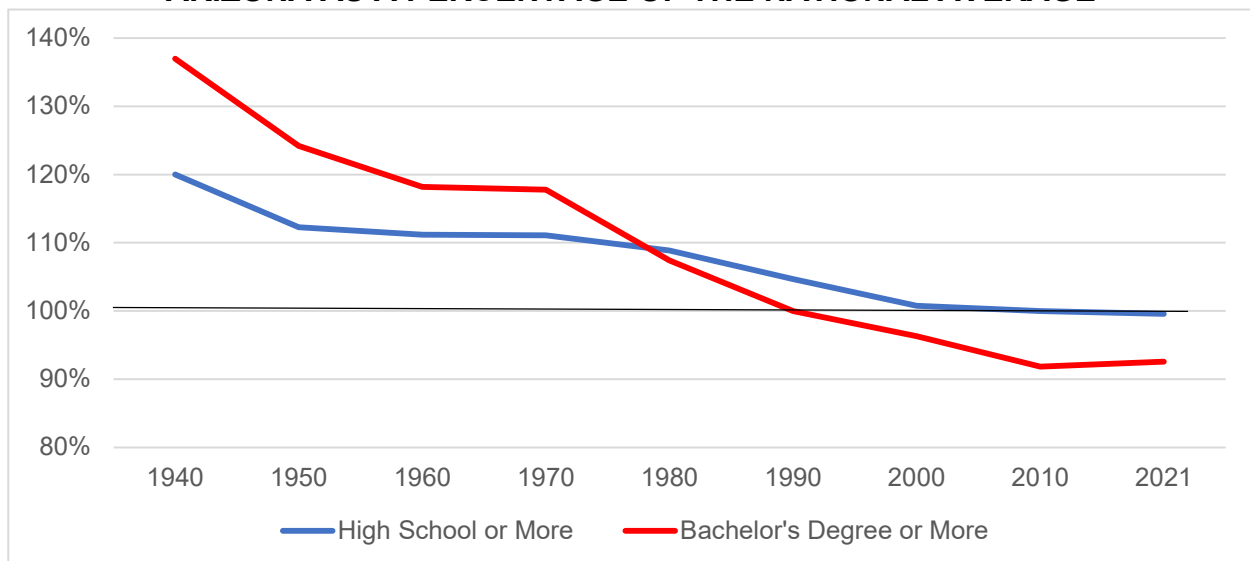
**Other Measures.** A number of other measures can be used to evaluate education by state, some of which are included in the broader indicators calculated by *EducationWeek*.<sup>19</sup> Education spending (investment) is discussed below.

**Investment in Education in Arizona Relative to Other States**

A number of University Economist reports have addressed the financing of public education in Arizona relative to the nation and other states.<sup>20</sup> Selected data are updated below.

**Elementary and Secondary Education.** The Census Bureau produces an annual report on K-12 education finance by state, examining revenues and expenditures by category; the latest data are for FY 2020. Expenditures are split into current operations, capital outlays, and “other” (which consists primarily of interest payments). Expenditures for current operations is the focus in this analysis. On a per student basis, Arizona’s spending has been below the U.S. average since the earliest data in FY 1978. However, as seen in Chart 5, spending relative to the nation dropped sharply in FYs 1990 and 1991 and has continued to decline since then. In FY 2020, Arizona’s per student expenditure figure adjusted for the cost of living was 34.7 percent below the U.S. average, ranking 49th nationally, higher than only Idaho and Utah.

**CHART 4  
EDUCATIONAL ATTAINMENT, AGE 25 OR OLDER,  
ARIZONA AS A PERCENTAGE OF THE NATIONAL AVERAGE**

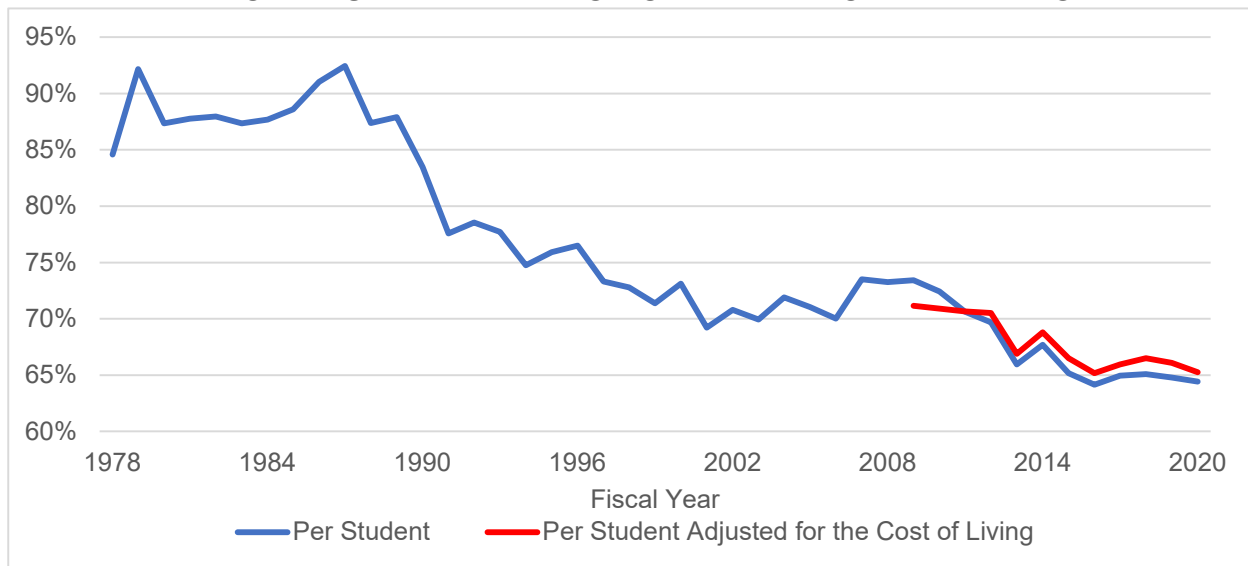


Source: Calculated from U.S. Department of Commerce, Census Bureau, 1940 through 2000 decennial census, <https://www.census.gov/data/tables/2000/dec/phc-t-41.html>, and 2010 and 2021 American Community Survey, <https://www.census.gov/programs-surveys/acs/data.html>.

<sup>19</sup> For other measures, see the University Economist report *An Examination of Public Education in Arizona Compared to the Nation*, October 2018, <https://ccpr.wpcarey.asu.edu/sites/default/files/publeduc10-18.pdf>.

<sup>20</sup> The most recent University Economist report is *The Financing of Public Education in Arizona: 2021 Update*, June 2021, <https://ccpr.wpcarey.asu.edu/sites/default/files/edfund06-21.pdf>.

**CHART 5  
CURRENT OPERATIONS EXPENDITURES PER STUDENT  
FOR ELEMENTARY AND SECONDARY EDUCATION,  
ARIZONA AS A PERCENTAGE OF THE NATIONAL AVERAGE**



Source: Calculated from U.S. Department of Commerce, Census Bureau, *Annual Survey of School System Finances*, <https://www.census.gov/programs-surveys/school-finances.html> (expenditures and enrollment) and U.S. Department of Commerce, Bureau of Economic Analysis, <https://www.bea.gov/data/by-place-states-territories> (cost of living).

In FY 2020, Arizona’s per pupil spending adjusted for the cost of living was considerably below average in each of the categories:

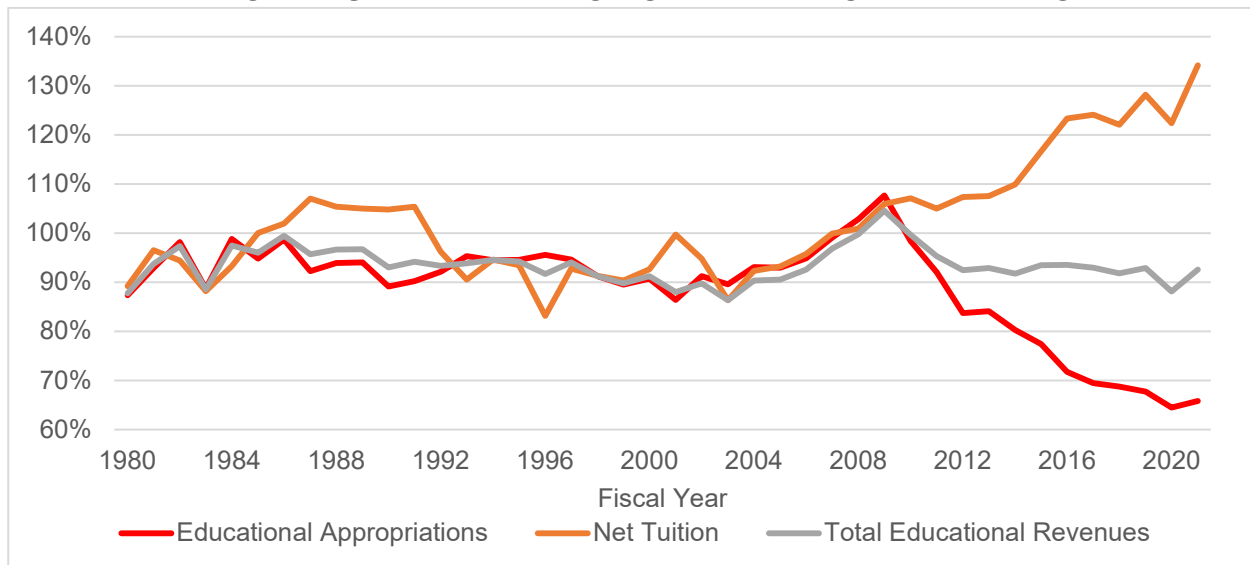
- Instruction: -41.6 percent, ranking last nationally.
- Total support services: -25.1 percent, ranking 47th nationally and 11th among the comparison states.
- Pupil support: -10.6 percent, ranking 28th and sixth.
- Instructional staff support: -26.4 percent, ranking 39th and 10th.
- General administration (school district): -41.0 percent, ranking 42nd and eighth.
- School administration: -44.0 percent, ranking last nationally.
- Plant operations and maintenance: -15.3 percent, ranking 41st and seventh.
- Pupil transportation: -28.6 percent, ranking 42nd and ninth.
- Other support services: -31.4 percent, ranking 37th and 11th.

Revenue for K-12 education from state and local government sources in Arizona in FY 2020 totaled \$8.87 billion. The per FTE student figure after adjustment for the cost of living was \$9,595 — 35.4 percent less than the national average of \$14,859 and lower than in every state. In order to reach a rank of 26th among the 50 states and District of Columbia in FY 2020, an additional \$4.45 billion in revenue would have been needed — an increase of 50 percent. To reach the national average per capita figure adjusted for the cost of living, the necessary increase in revenue would have been \$4.96 billion — an increase of 56 percent.

**Higher Education.** The State Higher Education Executive Officers Association annually produces a report on higher education revenue and full-time-equivalent (FTE) enrollment by state; data for community colleges and universities are combined. The revenue consists of educational appropriations from state and local governments and net tuition revenue. For Arizona, these two components of revenue, as well as total education revenue, per FTE student expressed as a percentage of the national average are presented in Chart 6. From FY 1980 (the earliest data) through FY 2006, higher education revenue per FTE student in Arizona generally was somewhat below average on each component. In FYs 2007 through 2009, both components increased relative to the national average. Since FY 2009, educational appropriations per FTE student have dropped sharply while the tuition component rose further.

The latest data are for FY 2021, but since cost-of-living data are not yet available for 2021, the following analysis is for FY 2020. Appropriations for higher education from state and local government sources in Arizona in FY 2020 totaled \$1.766 billion. The per FTE student figure after adjustment for the cost of living was \$5,679 — 34.7 percent less than the national average of \$8,694 and lower than in every state except Colorado, New Hampshire, and Vermont. In order to reach a rank of 26th among the 50 states and District of Columbia in FY 2020, an additional \$775 million in revenue would have needed — an increase of 44 percent. To reach the national average per FTE student figure adjusted for the cost of living, the increase in revenue would have needed to be \$965 million — an increase of 55 percent.

**CHART 6  
HIGHER EDUCATION REVENUE PER FULL-TIME-EQUIVALENT STUDENT,  
ARIZONA AS A PERCENTAGE OF THE NATIONAL AVERAGE**



Source: Calculated from State Higher Education Executive Officers Association, *SHEF State Higher Education Finance, FY 2021*, <https://shef.sheeo.org/report/>.



## **THE ROLE OF GOVERNMENT: PUBLIC REVENUES AND EXPENDITURES**

The Office of the University Economist has written numerous reports related to public finance; these are available from <https://economist.asu.edu/public-finance/>. Many reports have focused on public finance data but some have discussed conceptual topics and issues related to public finance. Several of these concepts are of key importance to understanding the fiscal situation in Arizona. These topics are briefly summarized in the next subsection.

### **Concepts**

Two reports produced for clients by the L. William Seidman Research Institute address many of the public finance concepts.<sup>21</sup> Additional reports addressing these issues are noted below.

#### **Interface Between the Economy and Public Finance**

Government cannot control economic growth, but it can influence the economy by creating an attractive environment for economic growth. While tax policy is one of the economic development factors, the uses of tax revenue and other revenue to create a quality infrastructure and a strong quality of life are keys to economic growth.

Government intervenes in the private-sector economy when a perfectly competitive private-sector market does not exist or when markets produce more (such as pollution) or less (for example, public safety) than is socially desirable. The private sector is not well suited to efficiently provide various public goods. The private sector cannot provide some types of physical infrastructure, such as roads. In some cases, it is impractical or inefficient for private-sector companies to compete to provide a public service.

#### **Supply Side and Laffer Curve**

The concepts of supply-side economics and the Laffer Curve are sound under certain conditions, but not under most conditions. The limitations are especially significant at a subnational level. Supply-side benefits from the numerous tax cuts passed in Arizona over the past 30 years have not been realized.<sup>22</sup> In part, this is due to the tax burden in Arizona 30 years ago not being higher than the U.S. average.

Arizona is not the only state not to experience a positive effect from tax reductions. According to Rickman and Wang, significant tax cuts in Kansas and Wisconsin “did not spur growth, and if anything harmed state economic performance.”<sup>23</sup>

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<sup>21</sup> *Riding the Fiscal Roller Coaster: Government Revenue in Arizona*, produced for the Arizona Town Hall in 2009, [https://aztownhall.org/Resources/Documents/95th\\_background\\_report.pdf](https://aztownhall.org/Resources/Documents/95th_background_report.pdf) and *Improving the Fiscal System of Arizona State Government*, produced for the Arizona School Boards Association in 2010, <https://ccpr.wpcarey.asu.edu/sites/default/files/asba.pdf>.

<sup>22</sup> For a detailed discussion of supply-side economics and the Laffer Curve, and the effect of tax cuts in Arizona, see the University Economist report *Tax Reductions in Arizona: Effects on Economic Growth and Government Revenue*, October 2016, <https://ccpr.wpcarey.asu.edu/sites/default/files/taxreductions10-16.pdf>, page 4.

<sup>23</sup> Dan S. Rickman and Hongbo Wang, “Two Tales of Two U.S. States: Regional Fiscal Austerity and Economic Performance,” *Regional Science and Urban Economics*, Volume 68, January 2018, pages 46-55, <https://www.sciencedirect.com/science/article/abs/pii/S0166046217300935/>.

## **Economic Impact of Taxes**

Changes in the levels of government revenues and expenditures have economic impacts, but the effects generally are quite small.<sup>24</sup> An increase in taxes has a small negative effect on the economy, but the positive effect from the spending increase enabled by the tax increase generally more than offsets the negative effect from the tax increase. Thus, a net positive economic effect accrues, unless the tax increase comes on top of a tax burden so high that a Laffer Curve effect is realized (a decrease in revenue). Similarly, while a tax cut may have a small positive effect, it is more than offset by the negative effect of the spending reduction that must inevitably follow.

## **Cyclicity of Public Revenues and Expenditures**

All governments experience cyclical imbalances between revenues and expenditures due to the cyclicity of revenue streams being greater than the cyclicity of economic growth, and because of the countercyclicity of some demands on the public sector. During economic expansions, the cyclical fiscal imbalance takes the form of a surplus. During economic recessions, the cyclical imbalance between revenues and expenditures takes the form of a deficit.

Government fiscal surpluses should always be considered to be temporary. Neither permanent spending increases nor permanent tax reductions should be implemented on the basis of a temporary surplus. Instead, cyclical surpluses should be saved (for example, in a budget stabilization fund) to be used to mitigate the inevitable cyclical deficits that will follow. Utilizing savings to offset a loss of revenue during a recession means that neither spending reductions nor tax increases — both of which have a short-term negative effect on the economy during a recession — are necessary during an economic downturn.

## **Fiscal System Guiding Principles**

The design of a fiscal system, particularly the revenue system, should be based on a number of generally agreed upon guiding principles.<sup>25</sup> An overall assessment of Arizona's state and local government fiscal system indicates that Arizona rates poorly on most of the guiding principles.

### **Fiscal Comparisons to Other States**

Fiscal comparisons of states need to be made after combining state government revenues and expenditures to those of local governments, since taxing authority and spending responsibilities between state and local governments vary by state.

## **Revenues**

Historically, state and local government own-source revenue<sup>26</sup> collections per capita and per \$1,000 of personal income in Arizona exceeded the national average, but this began to change in the mid-1960s, as seen in Chart 7. After holding near the national average from the late 1960s through the 1980s, revenues in Arizona relative to the nation have declined substantially. After

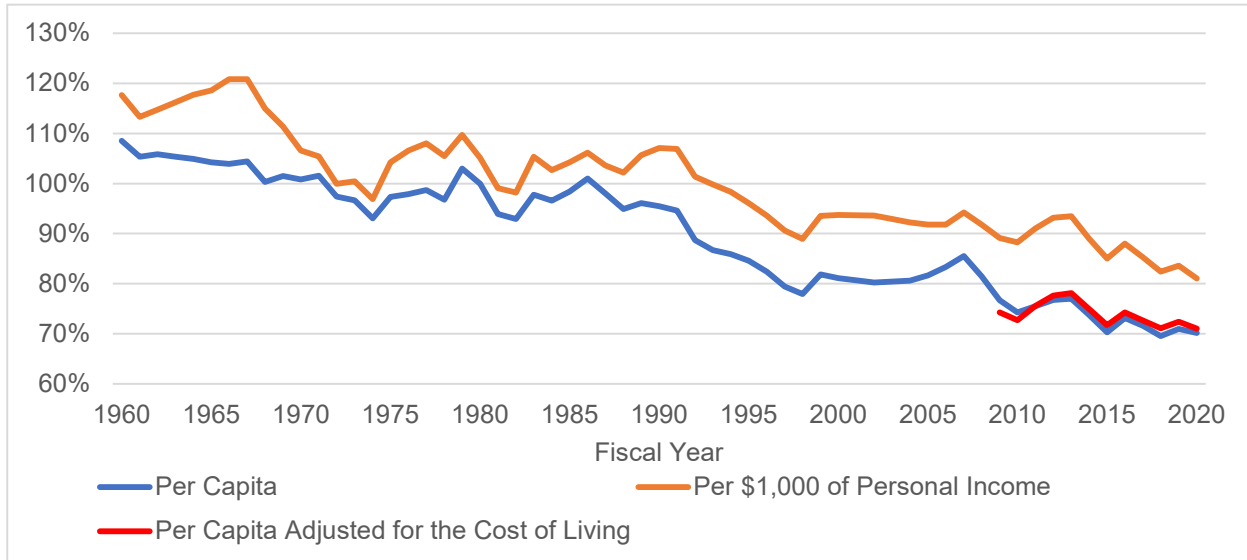
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<sup>24</sup> See the University Economist report *Options for Raising State Government Revenue in Arizona*, January 2018, <https://ccpr.wpcarey.asu.edu/sites/default/files/revoptions01-18.pdf>, page 62.

<sup>25</sup> For the most recent discussion of guiding principles, and an assessment of Arizona's fiscal system relative to these guiding principles, see the University Economist report *Options for Raising State Government Revenue in Arizona*, January 2018, <https://ccpr.wpcarey.asu.edu/sites/default/files/revoptions01-18.pdf>, page 52.

<sup>26</sup> Own-source revenue includes taxes and other types of revenue, such as user fees, employed by state and local governments, but excludes monies received from the federal government.

**CHART 7**  
**STATE AND LOCAL GOVERNMENT OWN-SOURCE REVENUE COLLECTIONS,**  
**ARIZONA AS A PERCENTAGE OF THE NATIONAL AVERAGE**



Source: Calculated from U.S. Department of Commerce, Census Bureau, *Annual Survey of State and Local Government Finances*, <https://www.census.gov/programs-surveys/gov-finances.html> (revenue) and U.S. Department of Commerce, Bureau of Economic Analysis, <https://www.bea.gov/data/by-place-states-territories> (personal income, population, and cost of living).

ranking in the teens during the early-to-mid-1960s, Arizona’s rank on per capita own-source revenue (excluding federal monies) fell to near the bottom of the states after FY 2008.

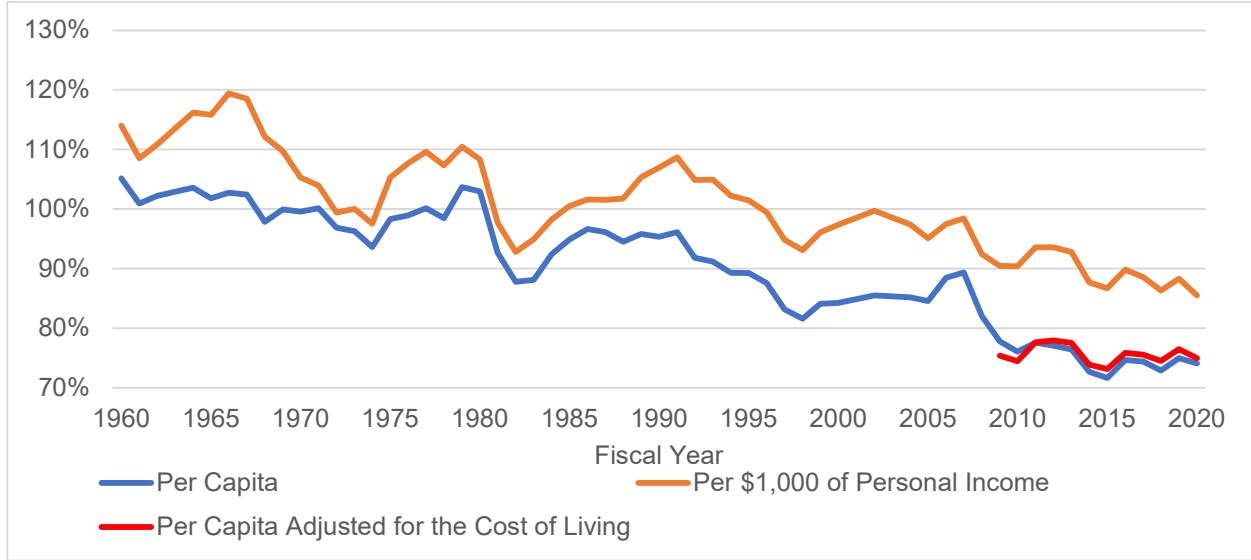
Revenue from state and local government sources in Arizona in FY 2020 totaled \$41.0 billion. The per capita figure after adjustment for the cost of living was \$5,828 — 28.9 percent less than the national average of \$8,200 and lower than in every state.

In order to reach a rank of 26th among the 50 states and District of Columbia in FY 2020 on the per capita own-source revenue adjusted for the cost of living, an additional \$15.1 billion in state and local government revenue would have needed to be raised in Arizona — an increase of 37 percent. To reach the national average per capita figure adjusted for the cost of living, the necessary increase in revenue would have been a bit more than \$17 billion — an increase of 41 percent.

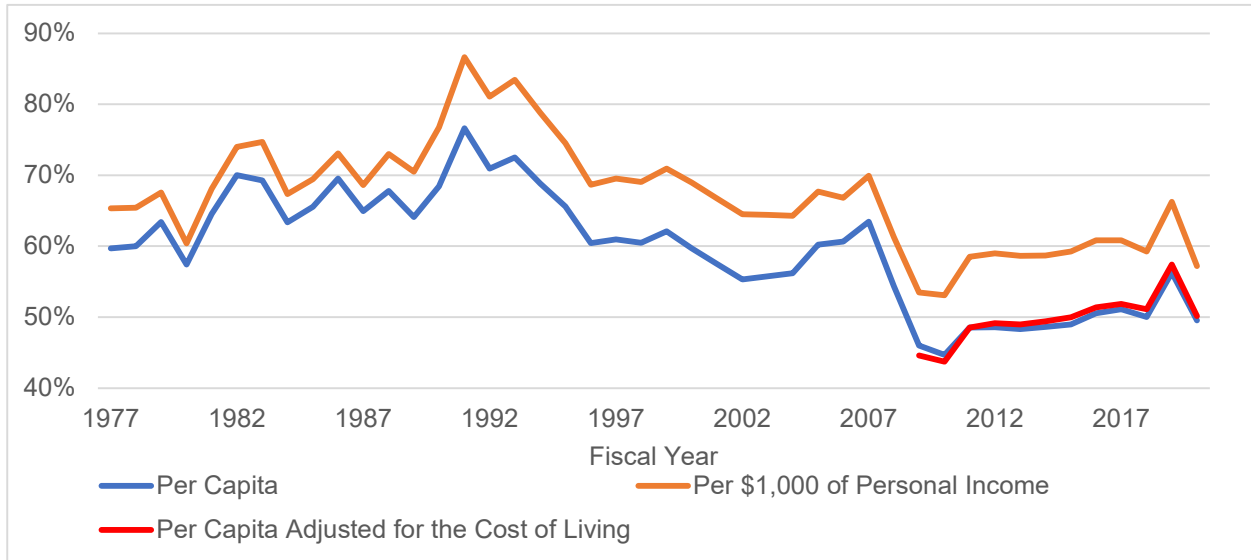
The comparison to the nation based on total taxes (see the first graph in Chart 8) is not substantially different from that of own-source revenue, though Arizona in FY 2020 did not rank quite as low and was not quite as far below average based on taxes. Tax revenue from state and local government sources in Arizona in FY 2020 totaled \$29.7 billion. The per capita tax figure after adjustment for the cost of living was \$4,220 — 25.0 percent less than the national average of \$5,626 and lower than in every state except Florida and Tennessee. The tax burden was higher in each of Arizona’s neighboring states — adjusted per capita tax revenue was above the U.S. average in California by 12.9 percent, and below average in Colorado (-1.3 percent), Nevada

**CHART 8  
STATE AND LOCAL GOVERNMENT TAX COLLECTIONS, ARIZONA  
AS A PERCENTAGE OF THE NATIONAL AVERAGE**

**TOTAL TAXES**



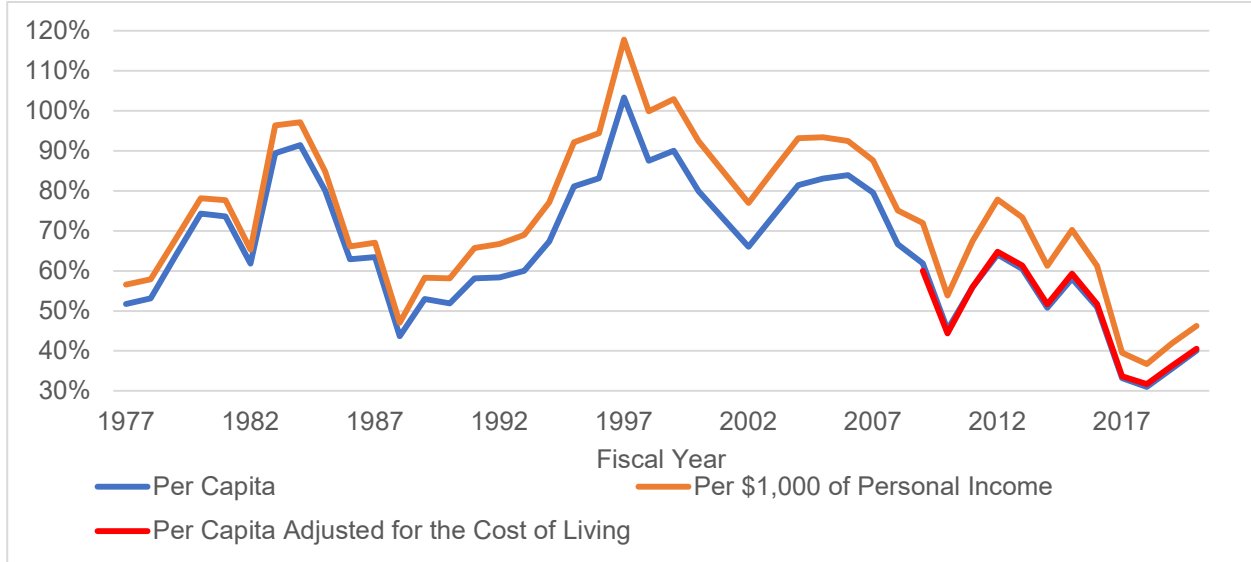
**INDIVIDUAL INCOME TAX**



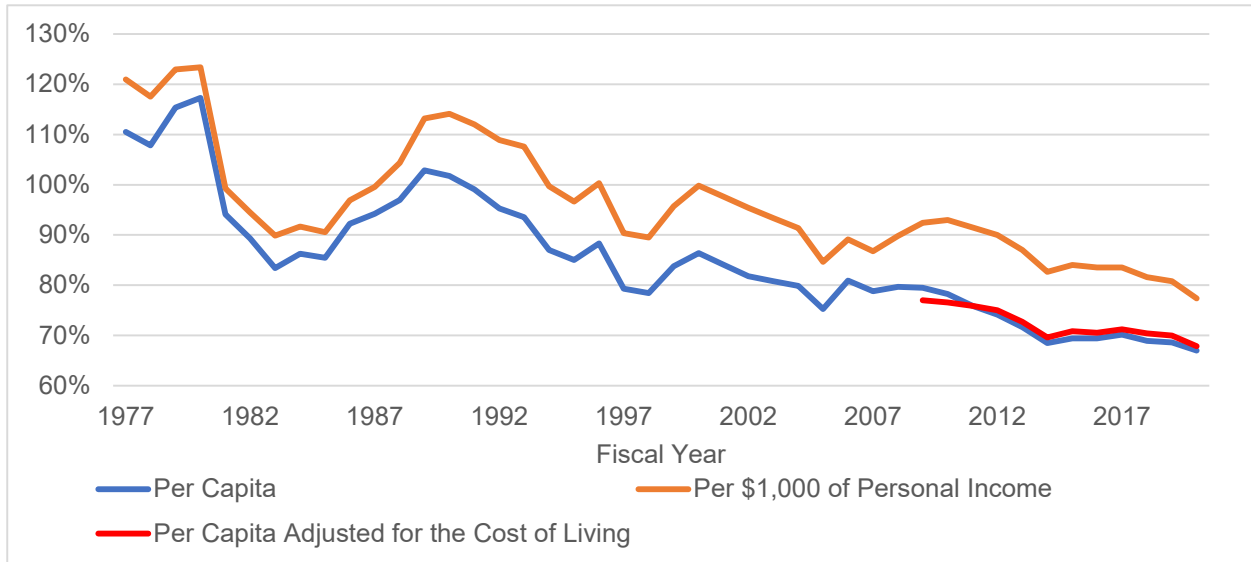
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**CHART 8 (continued)**  
**STATE AND LOCAL GOVERNMENT TAX COLLECTIONS, ARIZONA**  
**AS A PERCENTAGE OF THE NATIONAL AVERAGE**

**CORPORATE INCOME TAX**



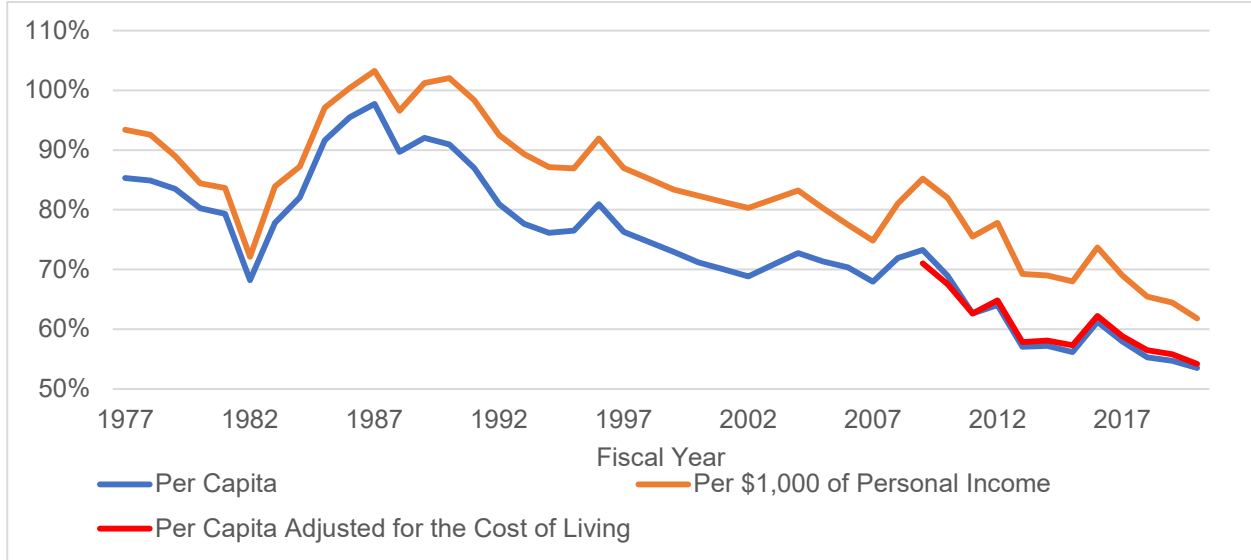
**PROPERTY TAX**



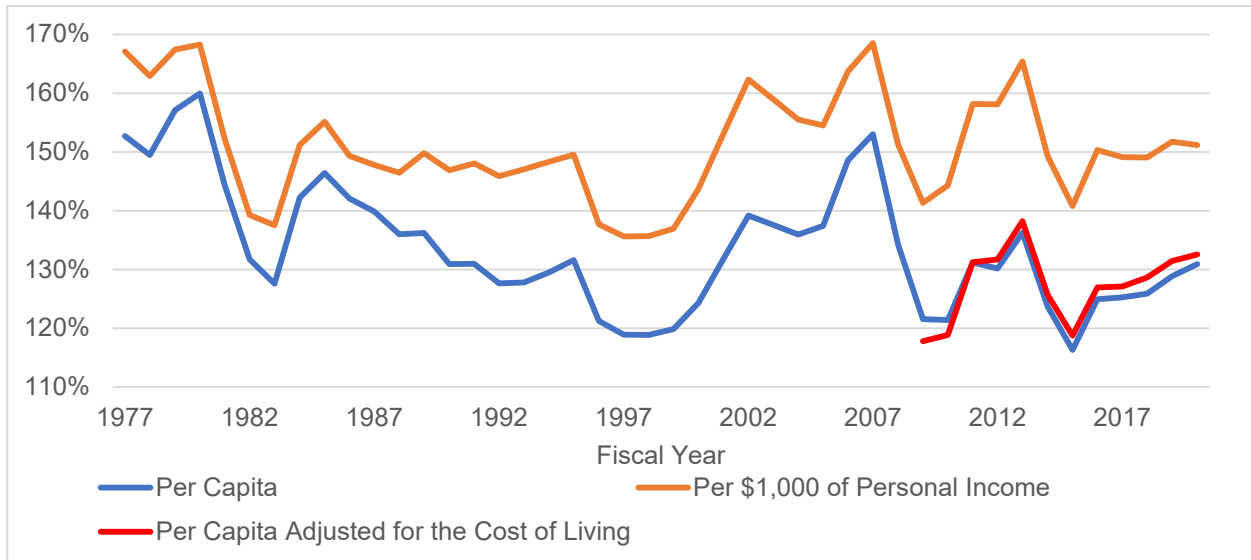
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**CHART 8 (continued)  
STATE AND LOCAL GOVERNMENT TAX COLLECTIONS, ARIZONA  
AS A PERCENTAGE OF THE NATIONAL AVERAGE**

**SELECTIVE SALES TAXES**



**GENERAL SALES TAX**



Source: Calculated from U.S. Department of Commerce, Census Bureau, *Annual Survey of State and Local Government Finances*, <https://www.census.gov/programs-surveys/gov-finances.html> (revenue) and U.S. Department of Commerce, Bureau of Economic Analysis, <https://www.bea.gov/data/by-place-states-territories> (personal income, population, and cost of living).

(-12.3 percent), New Mexico (-3.7 percent), and Utah (-17.0 percent). The tax burden in Texas (-14.6 percent) also was higher than in Arizona.

In order to reach a rank of 26th among the 50 states and District of Columbia in FY 2020 on per capita taxes adjusted for the cost of living, an additional \$15.1 billion in state and local government taxes would have needed to be raised in Arizona — an increase of 24 percent. However, to reach the national average per capita figure adjusted for the cost of living, the necessary increase in tax revenue would have been \$10.1 billion — an increase of 34 percent. As of FY 2020, state government general fund tax cuts (adjusted by personal income) since FY 1993 totaled \$5.7 billion, so these cuts did not account for all of Arizona's shortfall from the national norm. In FY 1993, Arizona's per capita state and local tax revenue already was 8.8 percent below the U.S. average.

Arizona is particularly far below the national average on income tax collections, both from individuals and from businesses. As seen in the second graph in Chart 8, Arizona's state and local government individual income tax collections were considerably below average from FY 1977 (the earliest data) through FY 2007. They fell even further below average after FY 2007. In FY 2020, the per capita figure was 49.8 percent below the national average after adjustment for the cost of living, ranking 40th. Other than the seven states that do not levy an individual income tax and two others in which the tax is severely limited, only New Mexico and North Dakota ranked below Arizona. Among the comparison states, Arizona's adjusted per capita collections ranked 10th.

The historical record of corporate income tax collections in Arizona relative to the national average is shown in the third graph in Chart 8. Except briefly in the late 1990s, Arizona's collections from state and local government corporate income taxes were below average. In FY 2020, the per capita figure was 59.4 percent below the national average after adjustment for the cost of living and ranked 42nd. Among the comparison states, Arizona ranked 10th.

From the late 1970s into the 1990s, state and local government property tax collections in Arizona ranged from above-to-below the national average (see the fourth graph in Chart 8). Since then, they have fallen increasingly far below average. In FY 2020, the per capita figure was 32.1 percent below the national average after adjustment for the cost of living, ranking 39th. Among the comparison states, Arizona's adjusted per capita property tax collections ranked 12th.

Selective sales taxes are imposed on sales of particular commodities or services. Selective sales taxes are commonly applied to motor fuels, alcoholic beverages, tobacco products, and public utilities. As seen in the fifth graph in Chart 8, state and local government collections from selective sales taxes generally have been lower in Arizona than the national average, but reached record low levels in FY 2020, with per capita collections adjusted for the cost of living the lowest in the nation at 45.8 percent less than the national average. Arizona was substantially lower than each of the comparison states.

In each of the Census Bureau's selective sales tax subcategories, Arizona was much below average in FY 2020 in state and local government per capita collections adjusted for living costs:

- Motor fuels: -21.5 percent, ranking 39th nationally and 12th among the 15 comparison states.
- Alcoholic beverages: -49.7 percent, ranking 36th and ninth.
- Tobacco: -22.9 percent, ranking 37th and eighth.
- Public utilities: -61.5 percent, ranking 39th and 11th.
- Other: -58.1 percent, ranking 48th and 14th.

The general sales tax is the exception to Arizona's low taxes. State and local government collections have been substantially above average, as seen in the last graph in Chart 8. In FY 2020, the per capita figure was 32.6 percent above the national average after adjustment for the cost of living, ranking 10th nationally and fourth among the comparison states.

According to the Institute on Taxation and Economic Policy (ITEP),<sup>27</sup> Arizona had the 11th-most-regressive state and local government tax system among the states in 2018. The most regressive states either (1) do not levy an individual income tax, which typically is the most progressive of the major taxes, or apply it as a flat tax or (2) rely heavily on regressive sales and excise taxes. Among the 15 comparison states, Arizona's tax system was the fifth-most regressive and the most regressive of the states that levy an individual income tax.

According to ITEP, while Arizona's state and local government tax burden in 2018 overall was well below the U.S. average, the tax burden was higher than average for the 40 percent of taxpayers with the lowest incomes. The tax burden in Arizona was furthest below average for the top 1 percent of taxpayers. Arizona's highly regressive overall tax structure is the result of two factors:

- The state relies heavily on the very regressive sales tax.
- Each of the major taxes — individual income tax, property tax, and sales and excises taxes — is more regressive or less progressive than the national average for that tax.

With Arizona switching to a flat individual income tax rate since the ITEP report was produced, Arizona's rank on regressivity will become worse. The top 20 percent of taxpayers are expected to receive 95 percent of the reduction in the individual income tax that will result from the conversion to the flat tax.

## **Expenditures**

Given the balanced budget requirements of state and local governments, the comparisons of Arizona's public expenditures to the national average and to other states cannot be much different from those of revenues. In Chart 9, the record of Arizona's per capita state and local government expenditures — which include monies originating from the federal government — relative to the national average are shown. After a period from the late 1960s through the early 1990s in which the figure was not much different from average, Arizona's per capita expenditures relative to the nation have fallen substantially. In FY 2020, the per capita figure was 21.2 percent below the national average after adjustment for the cost of living, the second

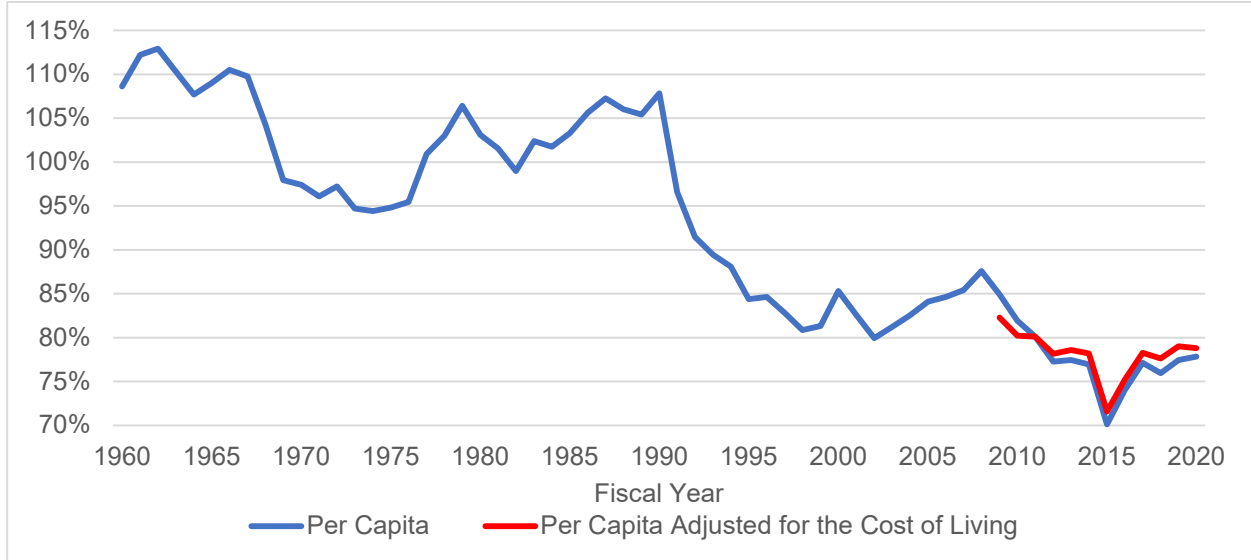
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<sup>27</sup> Institute on Taxation and Economic Policy, *Who Pays? A Distributional Analysis of the Tax Systems in All 50 States*, Sixth Edition, October 2018, <https://itep.org/whopays-map/>.

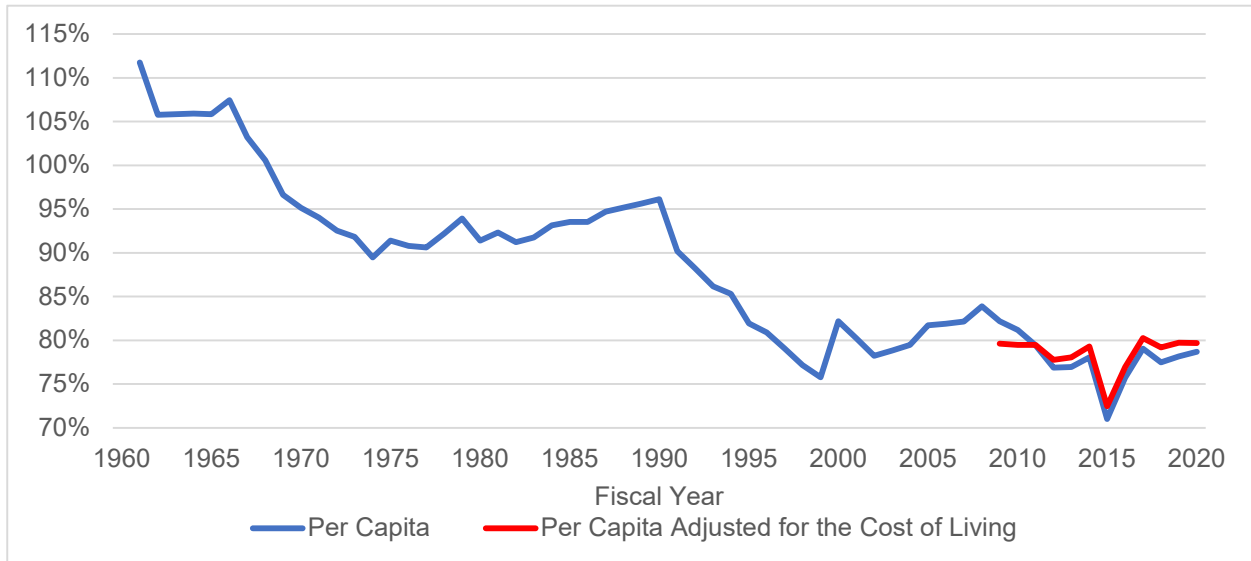


**CHART 9  
STATE AND LOCAL GOVERNMENT EXPENDITURES, ARIZONA  
AS A PERCENTAGE OF THE NATIONAL AVERAGE**

**TOTAL EXPENDITURES**



**NONCAPITAL EXPENDITURES**



Source: Calculated from U.S. Department of Commerce, Census Bureau, *Annual Survey of State and Local Government Finances*, <https://www.census.gov/programs-surveys/gov-finances.html> (expenditures) and U.S. Department of Commerce, Bureau of Economic Analysis, <https://www.bea.gov/data/by-place-states-territories> (population and cost of living).

lowest in the country. Looking only at noncapital expenditures, Arizona's adjusted per capita figure in FY 2020 was 20.3 percent less than the U.S. average, fourth lowest in the country.

### **Tax Burden**

Using the Census Bureau's data, it is possible to estimate the tax burden, either overall or by specific tax. However, in most categories, the figures are a combination of taxes paid by individuals and by businesses.

The Tax Foundation also produces a measure of tax burden that includes all state and local government taxes.<sup>28</sup> They express their measure as tax payments as a percentage of income. In 2022, the effective tax rate in Arizona reported by the Tax Foundation is 9.5 percent, less than the national average of 11.2 percent, ranking 36th among the 50 states and 11th among the 15 comparison states. The effective tax rate was higher in each of the neighboring states — 13.5 percent in California, 9.7 percent in Colorado, 9.6 percent in Nevada, 10.2 percent in New Mexico, and 12.1 percent in Utah. The rate was lower in Texas at 8.6 percent. According to this study, Arizona's tax burden has fallen over time relative to the national average; it was roughly equal to the average from the earliest data for 1977 through the early 1990s.

Specialized studies that allow a differentiation between individual and business taxpayers are discussed below.

**Business Taxes.** Ernst & Young produces an annual report on business tax burdens by state.<sup>29</sup> The latest report is for FY 2020. In order to compare states, tax payments are expressed per \$1 million of private-sector GDP. Tax payments are split into seven categories. Following are the results for Arizona in FY 2020 — the percentage difference from the national average, the rank among all states (and the District of Columbia), and the rank among the 15 comparison states:

- Total: -14.8 percent; 43rd; 12th.
- Property tax: -13.8 percent; 29th; eighth.
- Sales tax: 32.3 percent; 12th; fourth.
- Excise tax: -29.5 percent; 44th; 14th.
- Corporate income tax: -60.4 percent; 44th; 12th.
- Unemployment tax: -34.8 percent; 38th; 10th.
- Individual income tax on pass-through business income: -55.0 percent; 41st; 11th.
- Other taxes: -42.0 percent; 42nd; 12th.

Among the neighboring states, the business tax burden was higher than in Arizona except in Utah, which was 22.2 percent below the U.S. average. The difference from the U.S. average was -2.7 percent in California, 0.1 percent in Colorado, 13.0 percent in Nevada, and 79.2 percent in New Mexico. The business tax burden also was higher than in Arizona in Texas at 12.4 percent above the U.S. average.

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<sup>28</sup> Tax Foundation, *State and Local Tax Burdens, Calendar Year 2022*, <https://taxfoundation.org/tax-burden-by-state-2022/#time>.

<sup>29</sup> Ernst & Young LLP, *Total State and Local Business Taxes: State-by-State Estimates for FY20*, October 2021, [https://cost.org/globalassets/cost/state-tax-resources-pdf-pages/cost-studies-articles-reports/2108-3843085\\_50-state-tax-2021-final.pdf](https://cost.org/globalassets/cost/state-tax-resources-pdf-pages/cost-studies-articles-reports/2108-3843085_50-state-tax-2021-final.pdf).

The Lincoln Institute of Land Policy in conjunction with the Minnesota Center for Fiscal Excellence compares states on the property tax burden, including residential, commercial, industrial, and apartment buildings at differing assessment values.<sup>30</sup> Since tax rates, particularly for property taxes, vary within a state, figures are reported for cities. The Lincoln Institute study uses two samples: (1) 53 cities consisting of the largest city in each state, an additional city in Illinois and New York, and the District of Columbia; and (2) the 50 largest cities in the nation, which include Mesa, Phoenix, and Tucson.

In the first sample of 53 cities, commercial and industrial property taxes in Phoenix were higher than the average, except for low-value industrial properties. The differential from the average increased with rising value. In contrast, the apartment tax was below average. In the second sample of the 50 largest cities, of the three Arizona cities, nonresidential property taxes were consistently highest in Phoenix and lowest in Mesa. In each city, commercial and industrial taxes were higher relative to the 50-city average at higher valuations than lower valuations.

**Individual Taxes.** The Government of the District of Columbia annually produces a report on individual tax burdens; the latest report is for 2020.<sup>31</sup> The study compares the largest city in each state at each of five income levels for each of four categories of taxes.

As seen in Table 3, the tax burden, expressed as a percentage of income, was highest in Phoenix for those earning \$25,000. Relative to the ITEP study, the DC study shows a lower tax burden for low incomes and a higher tax burden for high incomes.

According to the DC study, the overall tax burden in Phoenix was above average at each income level except for \$150,000. At all incomes, the income tax burden was far below average but the sales tax burden was well above average and the property tax burden was considerably above average except for those earning \$25,000, who are assumed to be renters.

The Minnesota Center for Fiscal Excellence compares states on the individual income tax burden.<sup>32</sup> The latest report analyzes tax year 2018 data for the 41 states and the District of Columbia that impose an individual income tax. Taxes are estimated for 38 taxpayer profiles that are based on filing status (for example, single, no dependents, not claiming an age 65 or over exemption) and income. Based on the tax burden at each of four different high incomes relative to an income of \$20,000, Arizona had between the fourth- and sixth-most-regressive individual income tax in the nation.

Regardless of the tax filing status, Arizona's income tax burden was low compared to the average of the 42 states at middle and high incomes. Among those not claiming an age 65 or

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<sup>30</sup> Lincoln Institute of Land Policy, *50-State Property Tax Comparison Study for Taxes Paid in 2020*, June 2021, <https://www.lincolnst.edu/publications/other/50-state-property-tax-comparison-study-2020>.

<sup>31</sup> Government of the District of Columbia, *Tax Rates and Tax Burdens in the District of Columbia — A Nationwide Comparison 2020*, April 2022, <https://cfo.dc.gov/sites/default/files/dc/sites/ocfo/publication/attachments/2020%20Tax%20Rates%20and%20Tax%20Burdens%20Nationwide%20Comparison.pdf>.

<sup>32</sup> Minnesota Center for Fiscal Excellence, *Comparison of Individual Income Tax Burdens by State*, 2021 Edition, May 2021, <https://www.fiscalexcellence.org/our-studies/2021-income-tax-study.pdf>.

**TABLE 3  
INDIVIDUAL TAX PAYMENTS IN PHOENIX, 2020**

| Family Income | Tax Burden* | Percent Difference From Average of 51 Cities |          |       |        |       | Rank Among 51 Cities |          |       |      |       |
|---------------|-------------|--|----------|-------|--------|-------|----------------------|----------|-------|------|-------|
|               |             | Income                                       | Property | Sales | Auto   | Total | Income               | Property | Sales | Auto | Total |
| \$25,000      | 11.7%       | **.%   | 2.4%     | 20.4% | -12.4% | 6.9%  | 23                   | 22       | 17    | 28   | 25    |
| \$50,000      | 9.7         | -62.4  | 41.4     | 23.7  | 8.5    | 10.1  | 40                   | 8        | 14    | 20   | 19    |
| \$75,000      | 9.8         | -57.5  | 35.6     | 23.3  | 6.0    | 4.1   | 40                   | 10       | 13    | 20   | 22    |
| \$100,000     | 9.7         | -55.8  | 33.0     | 23.1  | 6.3    | 1.7   | 40                   | 11       | 14    | 19   | 23    |
| \$150,000     | 9.4         | -55.6  | 29.7     | 23.6  | 35.5   | -0.5  | 41                   | 11       | 13    | 14   | 26    |

\* Total taxes paid as a percentage of family income.

\*\* The 51-city average is negative.

Source: Calculated from Government of the District of Columbia, *Tax Rates and Tax Burdens in the District of Columbia — A Nationwide Comparison 2020*, April 2022,

[https://cfo.dc.gov/sites/default/files/dc/sites/ocfo/publication/attachments/2020%20Tax%20Rates%20and%20Tax%20Burdens\\_Nationwide%20Comparison.pdf](https://cfo.dc.gov/sites/default/files/dc/sites/ocfo/publication/attachments/2020%20Tax%20Rates%20and%20Tax%20Burdens_Nationwide%20Comparison.pdf).

over exemption, the tax burden typically was second or third lowest. In contrast, the tax burden at low incomes was closer to, or even higher than, the 42-state average.

The Minnesota study indicates that individual income taxes in Arizona at middle-to-high incomes were below average by approximately the following percentages:

- 30 percent for those claiming an age 65 or over exemption.
- 35 percent for those filing single and not claiming an age 65 or over exemption.
- 40 percent for those married filing jointly and not claiming an age 65 or over exemption.
- 45 percent for heads of households not claiming an age 65 or over exemption.

The per capita measure from the Census Bureau had a similar differential at 41 percent overall. In contrast, the individual income tax burden in Arizona was more than 50 percent below average according to the District of Columbia study.

The Lincoln Institute of Land Policy report on property taxes indicates that residential property taxes in Phoenix relative to the 53-city average was barely below average for the median-priced property, 7 percent below average for a property valued at \$150,000, and 10 percent below average for a property valued at \$300,000. The tax burden on the median-priced property was further below average when assessment limits are considered.<sup>33</sup> Compared to the average of the 50 largest cities, the tax burden in Phoenix was further below average: -24 percent for the median-priced property, -11 percent at a value of \$150,000, and -15 percent at a value of \$300,000. Residential property taxes in Tucson were lower than in Phoenix, and property taxes in Mesa were lower than those in Tucson.

**Tax Burden Summary.** The various tax burden studies agree that income taxes — both individual and business — are considerably lower in Arizona than the national average and that the general sales tax is high in Arizona. However, results are inconsistent for the property tax.

Based on the Census Bureau’s data, property taxes (residential and business combined) are considerably below the national average in Arizona both per capita and per \$1,000 of personal income. The Lincoln Institute study indicates that residential property taxes in Arizona are below average and the Ernst & Young study shows that business property taxes are below average. However, based on the District of Columbia study, residential property taxes in Phoenix are above average, by a substantial amount for those with incomes of \$50,000 or more. The Lincoln Institute study indicates that business property taxes are much above average except for properties of a low value.

### **Representative Revenues and Expenditures**

Another way of comparing states is through the “representative revenue system” and “representative expenditure system” approaches. The most recent example of these approaches is a 2016 study by the Urban Institute, which calculated revenue capacity and fiscal need by

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<sup>33</sup> In some states, including Arizona, limits are placed on the degree to which the assessed value (and therefore the tax levy) can rise as long as the owners reside in the home.

category for all states using FY 2012 data.<sup>34</sup> In the representative revenue system, “revenue capacity” (revenue-raising potential) is estimated by establishing a revenue base in each state and then applying a national average tax rate to that base. For example, the property tax base is the value of all property in a state. Measured on a per capita basis, revenue effort is calculated as actual revenue as a percentage of the revenue capacity.

In the representative expenditure system, “fiscal need” is estimated by applying a national average rate of per capita spending to the population of each state. The result is then adjusted for workload factors, demographic features, and differences by state in the costs of labor and other inputs. For example, for K-12 education, the workload is determined by the number of school-age children in a state and the percentage of children living in poverty. Measured on a per capita basis, spending effort is calculated as actual expenditures as a percentage of the fiscal need.

According to the Urban Institute’s study, the overall revenue capacity in Arizona in FY 2012 was only 82.4 percent of the national average, ranking 46th among the 51 “states.” The low capacity was due to a number of factors, but the low incomes present in the state were a primary cause. Actual per capita revenue collected was even lower at 75.9 percent of the national average, ranking 49th. Thus, the revenue effort was below average at 92.1 percent of the national average, ranking tied for 39th nationally. In other words, despite the low capacity, the state could have raised additional revenue without its revenue effort reaching the national average.

In contrast to the low overall revenue capacity estimated in the Urban Institute’s study, Arizona’s overall fiscal need in FY 2012 was 3.7 percent greater than the national average, 11th highest in the nation. This too was due to a number of factors, including the state’s high poverty rate that boosts demand for public services. Actual spending per capita in FY 2012 was only 76.3 percent of the national average — second lowest in the nation. Thus, the spending effort in Arizona also was far below average at 73.5 percent of the national average, with only one state having a lower figure.

### **Arizona State Government’s General Fund**

The Arizona Joint Legislative Budget Committee (JLBC, <https://www.azjlb.gov/>) is the primary source of fiscal data for Arizona’s state government. Historical, current, and projected revenue and expenditure data are available, with a particular emphasis on the state’s general fund. The state has many other funds, but the focus of each fund other than the general fund is narrow and the funding generally comes from one or a few dedicated sources.

In FY 2022, sales and use taxes accounted for 41.4 percent of general fund revenue in Arizona, an increase in share from 36.7 percent in FY 1971 (the earliest revenue data). The share contributed by the individual income tax increased from 20.9 percent to 43.2 percent. The share decreased from nearly every other source, with particularly large declines in the property tax and luxury taxes (alcoholic beverages and tobacco). Thus, the general fund’s tax base has become much narrower over time and much more subject to cyclicity.

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<sup>34</sup> Urban Institute, *Assessing Fiscal Capacities of States: A Representative Revenue System – Representative Expenditure System Approach, Fiscal Year 2012*, March 2016, <https://www.urban.org/research/publication/assessing-fiscal-capacities-states-representative-revenue-system-representative-expenditure-system-approach-fiscal-year-2012>.

The uses of the general fund's revenue also have changed. Between FY 1979 (the earliest expenditure data) and FY 2023 (using the appropriations figures), the combined share of the Department of Health Services and the Arizona Health Care Cost Containment System increased from 4.9-to-16.3 percent, and the share going to the Department of Corrections rose from 4.3-to-9.3 percent. The share going to K-12 education in FY 2023 (44.9 percent) is nearly the same as in FY 1979. For most other state agencies, the share fell. In particular, the share for higher education plunged from 22.8 percent to 7.8 percent.

This change in share represents only the relative size of the “pieces of the pie.” The size of the pie also has shrunk considerably. Since FY 1993, tax cuts have reduced revenue to the general fund. The effect in FY 2022 was \$3.3 billion in nominal terms. After considering inflation, population growth, and increases in prosperity, general fund revenue in FY 2022 was \$7.3 billion lower than if these changes to the tax code had not been made. Once the full impact of the transition to the flat income tax is in place in FY 2025, the nominal decrease in revenue will exceed \$4.5 billion; the adjusted impact will exceed \$9.6 billion, assuming no further tax reductions are passed. The JLBC projects tax revenue of \$15.95 billion in FY 2025, just 62 percent of the \$25.65 billion that would be collected if no tax law changes had occurred since FY 1993.

Chart 10 shows the impact of the tax changes since FY 1993 on total tax revenue, expressed relative to personal income (state government has an expenditure limit tied to personal income). Chart 11 compares revenues to expenditures over the entire time series, again expressed relative to personal income. Using the JLBC's projections of revenues, expenditures, and the effect of the tax changes made in 2021, revenues and expenditures relative to personal income will resume their decline following increases in FYs 2021 and 2022 that resulted from the federal infusion of monies to combat the effects of the pandemic. The gap between actual revenue and revenue that would have been realized if the tax code had remained unchanged after FY 1993 will expand substantially due to reductions in the tax rates for the individual income tax. These projections assume that no additional tax changes will be made in subsequent legislative sessions.

### **The Current Fiscal Situation in Arizona**

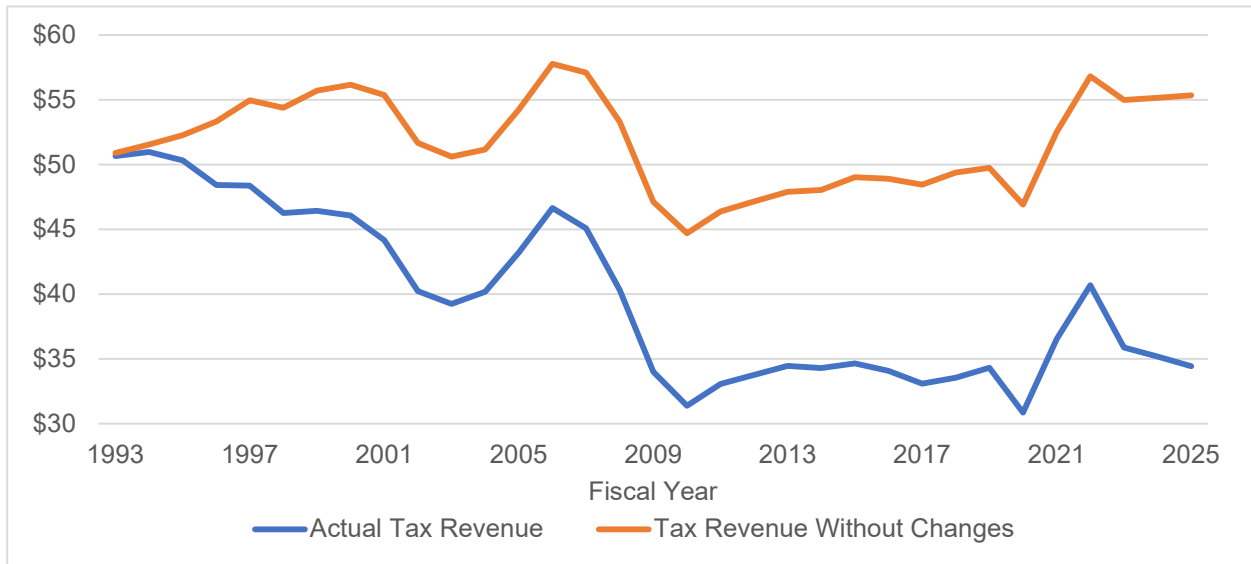
Arizona lawmakers in 2021 passed a significant reduction in the individual income tax.<sup>35</sup> According to the JLBC, the transition to a flat tax at a rate of 2.5 percent will reduce general fund revenue by more than \$2 billion by FY 2024. As in prior economic cycles, the reduction in revenue will result in serious fiscal challenges during the next economic downturn.

The general fund currently has a significant surplus, with balance of \$4.5 billion at the end of fiscal year 2022. This sizable balance largely results from the federal government injecting billions of dollars into the state in 2020 and 2021 in an effort to mitigate the adverse impact of pandemic-induced shutdowns. The federal infusion went to both individuals and governments, with the latter distributed on a per capita basis. However, Arizona's economy did not close down as sharply as in many states, increasing the benefit of the federal monies. After a decline in FY

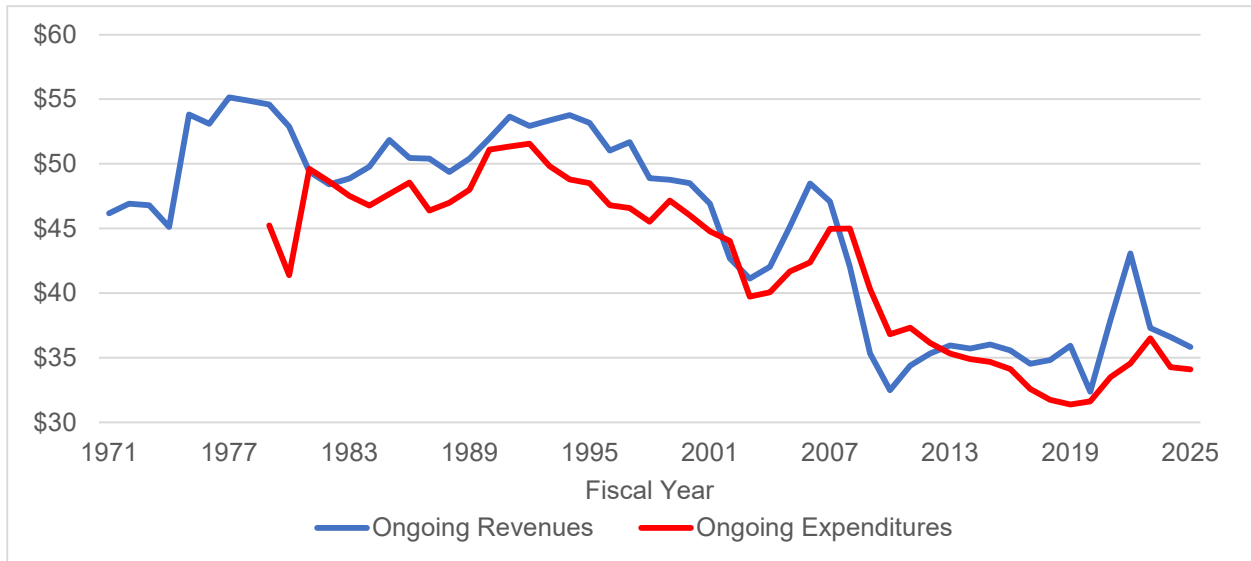
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<sup>35</sup> For a discussion of income taxes, see the University Economist report *Arizona's Income Taxes: A Comparison With Other States and a Policy Discussion of Potential Tax Reforms*, July 2016, <https://ccpr.wpcarey.asu.edu/sites/default/files/incometax07-16.pdf>.

**CHART 10**  
**ONGOING TAX REVENUES PER \$1,000 OF PERSONAL INCOME AND EFFECT ON**  
**REVENUES OF TAX LAW CHANGES SINCE FISCAL YEAR 1993,**  
**ARIZONA STATE GOVERNMENT GENERAL FUND**



**CHART 11**  
**ONGOING REVENUES AND EXPENDITURES PER \$1,000 OF PERSONAL INCOME,**  
**ARIZONA STATE GOVERNMENT GENERAL FUND**



Source (Charts 10 and 11): Calculated from Arizona Joint Legislative Budget Committee, <https://www.azjlb.com/> (actual and projected revenues, estimated effects of tax changes, and actual and projected expenditures); U.S. Department of Commerce, Bureau of Economic Analysis, <https://www.bea.gov/data/by-place-states-territories> (actual quarterly personal income); and S&P Global, IHS Markit, <https://ihsmarkit.com/index.html> (projected quarterly personal income).



2020, inflation-adjusted general fund revenue jumped 26 percent in FY 2021 and an additional 10 percent in FY 2022. The strong growth in part resulted from a large influx of capital gains income due to huge increases in equity prices from pandemic lows, coupled with significant gains from real estate. Unfortunately this windfall will not persist going forward.

Consumers reacted to the pandemic and the federal stimulus payments by shifting consumption away from services, which are not taxed in Arizona, to taxable retail goods. Sales tax collections surged as a result, with the real growth rate in general fund collections rising from 4 percent per year during fiscal years 2018 through 2020 to 13 percent in FY 2021 and 9 percent in FY 2022. The explosive demand coupled with supply constraints results in inflationary pressure, which only adds to the flow of tax collections.

In part due to capital gains, inflation-adjusted individual income tax collections soared 41 percent in FY 2021 following an 11 percent decline in FY 2020; collections rose an additional 9 percent in FY 2022. On an inflation-adjusted basis, corporate income tax collections increased 62 percent in FY 2021 and a further 29 percent in FY 2022, after a 2 percent decrease in FY 2020.

These strong revenue collections will not last; the general fund does not have a structural surplus. History suggests that consumers will soon revert to more normal consumption patterns. The housing boom has already slowed, the stock market has declined, and the Federal Reserve Board is aggressively raising interest rates to choke off inflation. According to the JLBC, the ending balance of the general fund will drop from \$4.5 billion in FY 2022 to \$200 million in FY 2025.

In addition to the general fund surplus, the Budget Stabilization Fund (BSF) had a balance of \$985 million at the end of FY 2022. With a committed transfer to the BSF of \$425 million in FY 2023, the balance is projected to rise to \$1.417 billion. Depending on the severity of the next economic recession, this may not be sufficient to cover the budget shortfalls that will occur.

Thus, despite the current appearance of being flush with cash, the general fund in reality does not have the resources to permanently increase its investment in education. Similarly, other state government funds do not have the resources to make substantive improvements in the state's physical infrastructure. For example, nearly all of the FY 2023 state highway fund's operating budget of \$226 million will be spent on routine maintenance.

# THE PRODUCTIVITY AND PROSPERITY PROJECT

The Productivity and Prosperity Project: An Analysis of Economic Competitiveness (P3) is an ongoing initiative begun in 2005, sponsored by Arizona State University President Michael M. Crow. P3 analyses incorporate literature reviews, existing empirical evidence, and economic and econometric analyses.

Enhancing productivity is the primary means of attaining economic prosperity. Productive individuals and businesses are the most competitive and prosperous. Competitive regions attract and retain these productive workers and businesses, resulting in strong economic growth and high standards of living. An overarching objective of P3's work is to examine competitiveness from the perspective of an individual, a business, a region, and a country.

## THE CENTER FOR COMPETITIVENESS AND PROSPERITY RESEARCH

The Center for Competitiveness and Prosperity Research is a research unit of the L. William Seidman Research Institute in the W. P. Carey School of Business, specializing in applied economic and demographic research with a geographic emphasis on Arizona and the metropolitan Phoenix area. The Center conducts research projects under sponsorship of private businesses, nonprofit organizations, government entities and other ASU units. In particular, the Center administers both the Productivity and Prosperity Project, and the Office of the University Economist.

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