

# THE FINANCING OF PUBLIC EDUCATION IN ARIZONA: UPDATE

**A Report from the Office of the University Economist**

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**Dennis Hoffman, Ph.D.**

Professor of Economics, University Economist,  
and Director, L. William Seidman Research Institute

**Tom Rex, M.B.A.**

Associate Director, Center for Competitiveness and Prosperity Research;  
and Manager of Research Initiatives, Office of the University Economist

Center for Competitiveness and Prosperity Research  
L. William Seidman Research Institute  
W. P. Carey School of Business  
Arizona State University  
Box 874011  
Tempe, Arizona 85287-4011

(480) 965-5362

FAX: (480) 965-5458

EMAIL: Tom.Rex@asu.edu

[wpcarey.asu.edu/research/competitiveness-prosperity-research](http://wpcarey.asu.edu/research/competitiveness-prosperity-research)  
[economist.asu.edu](http://economist.asu.edu)



## PREFACE

This paper updates portions of two Office of the University Economist papers published in 2016:

- “The Financing of Public Higher Education in Arizona,” October 2016, <https://wpcarey.asu.edu/sites/default/files/higheredfund10-16.pdf>.
- “The Financing of Public Elementary and Secondary Education in Arizona,” July 2016, <https://wpcarey.asu.edu/sites/default/files/k12edfund07-16.pdf>.

## TABLE OF CONTENTS

Summary	1
Higher Education	2
Elementary and Secondary Education	11

## LIST OF TABLES

1. Public Higher Education Revenue Per Full-Time-Equivalent Student, Arizona, Fiscal Year 2016	4
2. Public Elementary and Secondary Education Revenue Per Student, Arizona, Fiscal Year 2015	13
3. Public Elementary and Secondary Education Expenditures Per Student, Arizona, Fiscal Year 2015	19

## LIST OF CHARTS

1. Public Higher Education Revenue Per Full-Time-Equivalent Student Adjusted for the Cost of Living, Arizona Relative to the Nation, Fiscal Years 2008 Through 2016	6
2. Educational Appropriations as a Share of Total Educational Revenue, Public Higher Education in Arizona and the Nation, Fiscal Years 2000 Through 2016	9
3. Public Elementary and Secondary Education Revenue Per Student Adjusted for the Cost of Living, Arizona Relative to the Nation, Fiscal Years 2008 Through 2015	16
4. Public Elementary and Secondary Education Expenditures Per Student Adjusted for the Cost of Living, Arizona Relative to the Nation, Fiscal Years 2008 Through 2015	22
5. Public Elementary and Secondary Education Current Operations Expenditures Per Student Adjusted for the Cost of Living, Arizona Relative to the Nation, Fiscal Years 2008 Through 2015	25
6. Public Elementary and Secondary Education Expenditures for Support Services Per Student Adjusted for the Cost of Living, Arizona Relative to the Nation, Fiscal Years 2008 Through 2015	27

## SUMMARY

State and local government educational appropriations for public *higher education* — the combination of universities and community colleges — per full-time-equivalent student were 25 percent less in Arizona than the national average in fiscal year 2016 after adjusting for geographic variations in the cost of living. Arizona ranked 43rd among the 49 states with available data.

Historically, public support for higher education in Arizona was much stronger. Higher education in Arizona has experienced a large drop in per student funding relative to the nation since fiscal year 2008, when the state was marginally higher than the national average. In fiscal year 2016 alone, a year of moderate economic growth, Arizona state and local government funding for higher education per full-time-equivalent student fell 8 percent after adjusting for inflation and the change in the geographic cost of living. Arizona declined from 16 percent below the national average in fiscal year 2015 to 25 percent below average in fiscal year 2016.

In contrast, tuition for higher education has increased substantially in Arizona. Net tuition — tuition and fees paid by students, minus financial aid from state and institutional sources and student waivers and discounts — per full-time-equivalent student was less than the national average in fiscal years 2000 through 2007. In fiscal year 2016, net tuition in Arizona was 31 percent above the national average after adjusting for the cost of living.

The share of total educational revenue coming from educational appropriations of state and local governments historically was greater in Arizona than the national average. Since fiscal year 2008, the reduction in share has been considerably greater in Arizona, with the share dropping to 40.1 percent in fiscal year 2016 — 13.1 percentage points lower than the national share.

Relative to higher education, per student state and local government funding for public *elementary and secondary education* in Arizona has been further below the national average, but has not decreased as much in recent years. In fiscal year 2015 (the latest data), state and local government revenue per student for public-sector elementary and secondary education in Arizona was 36 percent below the national average after adjusting for the cost of living. Only two states — Idaho and Utah — raised less revenue per student.

Historically, public support for elementary and secondary education in Arizona was much stronger. Funding per student was above the national average through the first several decades of statehood. It began to decline relative to the national average in the late 1960s.

Relative to the national per student average, the shortfall in state and local government revenue for K-12 education was substantial in Arizona in fiscal year 2015. To have matched the national per student average, spending would have needed to have been \$4.5 billion higher. Considering the cost of living, the shortfall still exceeded \$4 billion.

In comparison, Prop 123 that was passed by Arizona voters in May 2016 added about \$300 million to K-12 revenue in the first year. Had revenue in FY 2015 been \$300 million higher, Arizona's per student state and local government K-12 revenue after adjustment for the cost of living still would have ranked 49th and would have been 33 percent below the national average.

## HIGHER EDUCATION

The State Higher Education Executive Officers Association (SHEEO) produces an annual report on “State Higher Education Finance” (<http://sheeo.org/projects/shef-%E2%80%94state-higher-education-finance>). The time series runs from fiscal year (FY) 2000 through FY 2016. By state, finance and enrollment data from all public universities and public community colleges are combined. Figures are not available separately for community colleges and universities. The latest dataset released by SHEEO does not include Illinois. Data for the District of Columbia are not available for the entire time period and have been excluded for this analysis. Thus, the national data are for the sum of the 49 available states. In this paper, Arizona is compared to the nation and to a group of 10 western states: Arizona, California, Colorado, Idaho, Nevada, New Mexico, Oregon, Texas, Utah, and Washington.

The SHEEO report focuses on the sources of funding for higher education; it does not provide information on how those funds are used. SHEEO does not include revenue from all sources. Five categories of revenue are examined in this paper:

- State Support for Public Higher Education: State government appropriations (plus American Recovery and Reinvestment Act monies in FYs 2009 and 2010).
- Local Support for Public Higher Education: Local government funding; in Arizona, only community colleges receive local funding.
- Educational Appropriations for Public Higher Education: The sum of state support and local support, minus appropriations for special purposes, research, and medical programs.
- Net Tuition for Public Higher Education: Tuition and fees paid by students, minus financial aid from state and institutional sources, student waivers and discounts, and medical student tuition and fees.
- Total Educational Revenue for Public Higher Education: The sum of the educational appropriations category and the net tuition category, minus tuition revenue used for capital outlays or debt service.

### Standardization of Data

In order to compare states, the data must be standardized to account for differences in size. For education finance, the adjustment for size and changes in size over time is accomplished by reporting the data on a per student basis. SHEEO reports a measure of full-time-equivalent (FTE) enrollment by state that does not include medical students.

In addition to the adjustment for size, dollar figures generally should be adjusted for cost-of-living differences between states. The regional price parity (RPP) estimates produced by the U.S. Department of Commerce, Bureau of Economic Analysis (BEA) — which are expressed as ratios to the national average — are used to measure the cost of living.<sup>1</sup> The regional price parity estimates are available only for calendar years 2008 through 2015. For this paper, fiscal-year RPPs were calculated as the average of two calendar years. Since the RPPs are not yet available for 2016, the FY 2016 SHEEO revenue data are adjusted by the calendar year 2015 RPPs. Similarly, FY 2008 revenue data are adjusted by calendar year 2008 RPPs.

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<sup>1</sup> The RPPs are available from <http://www.bea.gov/regional/index.htm>. Data for calendar year 2015 were released in June 2017.

Analyses over time of dollar measures must account for inflation as well as changes in the relative cost of living and changes in size. Inflation is measured by the gross domestic product implicit price deflator produced by the BEA.<sup>2</sup>

An additional adjustment is sometimes made to public finance data to reflect the “ability to pay.” Typically, personal income is used to make this adjustment; in the case of education data that are expressed per student, the finance data can be adjusted by per capita personal income.<sup>3</sup> This additional adjustment makes a big difference for Arizona since its per capita personal income is so far below the national average. In FY 2016 without adjusting for the cost of living, Arizona’s per capita personal income was 18.9 percent below the national average and ranked 43rd among the 50 states and the District of Columbia. Considering the cost of living, Arizona was not quite as far below the nation at 15.7 percent, but its rank was lower at 49th (higher than only Mississippi and New Mexico).

The adjustment for the ability to pay has a lesser impact on the analysis of the change over time. Still, Arizona’s per capita personal income dropped from 13.8 percent below average in FY 2000 on an unadjusted basis and from 12.1 percent below average in FY 2008 on an adjusted basis.

### **Revenue in Fiscal Year 2016**

Public support for higher education is measured by educational appropriations for public universities and community colleges by state and local governments, less funding targeted for special purposes, research, and medical programs. In Arizona in FY 2016, this amounted to \$1.43 billion. The amount per full-time-equivalent student was \$5,308 after adjustment for the cost of living. This figure was 25.4 percent less than the national average and ranked 43rd among the 49 states and ninth among the 10 western states. The states providing less support were Colorado, New Hampshire, Pennsylvania, Vermont, Virginia, and West Virginia.

Since the relative responsibility for financing public higher education varies by state between state government and local governments, comparisons across states of state support need to be made cautiously, as do comparisons of local support. Local governments provided funding for higher education in only 29 states in FY 2016.

State government appropriations for public higher education — without subtracting monies intended for special purposes, research, and medical programs — totaled \$800 million in Arizona in FY 2016. Expenditures per FTE student were \$2,978 after adjusting for the cost of living — 59 percent less than the national average and the lowest among the states. In contrast, local support adjusted for the cost of living was the highest in the country in Arizona at \$3,089 per FTE student, which was 3.74 times higher than the national average. Local support in Arizona, which is limited to community colleges, totaled \$830 million in FY 2016 (without subtracting monies intended for special purposes, research, and medical programs).

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<sup>2</sup> See Table 1.1.9 at <http://www.bea.gov/iTable/iTable.cfm?ReqID=9&step=1#reqid=9&step=1&isuri=1>.

<sup>3</sup> Quarterly estimates of per capita personal income were used in this analysis to calculate fiscal year averages. Gross product sometimes is used instead of personal income in the ability-to-pay analysis. The BEA produces estimates of both indicators, available from <http://www.bea.gov/regional/index.htm>.

Student tuition and fees is another significant source of higher education revenue. In Arizona in FY 2016, net tuition — tuition and fees paid by students, minus financial aid from state and institutional sources, student waivers and discounts, and medical student tuition and fees — provided \$2.23 billion. This amount was 56 percent higher than the funding from educational appropriations. Per FTE student adjusted for the cost of living, net tuition in Arizona amounted to \$8,285, which was 31 percent higher than the national average and ranked 19th nationally and third in the West (the figure was higher in Colorado and Oregon, though by only a slight amount in Oregon).

Total educational revenue for higher education is the sum of (1) state and local government educational appropriations (total appropriations less those for special purposes, research, and medical programs), and (2) net tuition less any tuition used for capital outlays or debt service. Total educational revenue in Arizona in FY 2016 was \$3.55 billion. Per FTE student adjusted for the cost of living, the figure was \$13,229 — 1.1 percent less than the national average. Arizona ranked 34th nationally and fourth among the western states. The data for FY 2016 are summarized in Table 1 for each of the categories of higher education revenue.

**TABLE 1  
PUBLIC HIGHER EDUCATION REVENUE PER FULL-TIME-EQUIVALENT  
STUDENT, ARIZONA, FISCAL YEAR 2016**

	Dollars	Percentage of Nation <sup>^</sup>	Rank: Nation <sup>^</sup>	Rank: West <sup>^^</sup>
State Government Support	\$2,865	39.6%	49	10
Adjusted by Cost of Living	2,978	41.2	49	10
Adjusted by Per Capita Personal Income*	75	50.8	48	10
Local Government Support	2,972	359.8	1	1
Adjusted by Cost of Living	3,089	374.0	1	1
Adjusted by Per Capita Personal Income*	78	461.0	1	1
State and Local Government Support**	5,106	71.8	42	9
Adjusted by Cost of Living	5,308	74.6	43	9
Adjusted by Per Capita Personal Income*	134	92.0	33	8
Net Tuition	7,971	126.1	17	3
Adjusted by Cost of Living	8,285	131.1	19	3
Adjusted by Per Capita Personal Income*	209	161.6	10	1
Total Educational Revenue***	12,727	95.1	30	4
Adjusted by Cost of Living	13,229	98.9	34	4
Adjusted by Per Capita Personal Income	334	121.9	17	2

\* Also adjusted by cost of living.

\*\* Less appropriations for special purposes, research, and medical programs.

\*\*\* State and local government support plus net tuition, less tuition revenue used for capital outlays or debt service.

<sup>^</sup> The nation consists of 49 states (Illinois is not included). A rank of 1 represents the highest revenue.

<sup>^^</sup> The West includes 10 western states: Arizona, California, Colorado, Idaho, Nevada, New Mexico, Oregon, Texas, Utah, and Washington. A rank of 1 represents the highest revenue.

Sources: State Higher Education Executive Officers Association, <http://sheeo.org/projects/shef-%E2%80%94state-higher-education-finance> (revenue and enrollment), and U.S. Department of Commerce, Bureau of Economic Analysis, <http://www.bea.gov/regional/index.htm> (regional price parity and per capita personal income).

In fiscal year 2016, educational appropriations by state and local governments accounted for 53.2 percent of total educational revenue nationally. The share contributed by state and local funding was considerably lower in Arizona at 40.1 percent. Arizona's share ranked 38th nationally and ninth of 10 western states (only Colorado was lower).

### **Change in Revenue Over Time**

For this analysis of trends, data not adjusted for the cost of living are used for the time period from FY 2000 through FY 2016. In addition, this period is split into two. Data not adjusted for the cost of living are examined for FYs 2000 through 2008, and adjusted data are used for FYs 2008 through 2016. Each year is expressed in inflation-adjusted FY 2016 dollars.

Educational appropriations by state and local governments for higher education per FTE student, adjusted for inflation but not for living costs, peaked in Arizona in FY 2008. Arizona's figure ranged from 2-to-9 percent less than the national average through FY 2006 but exceeded the national average in FYs 2008 through 2010, peaking at 6 percent above average in FY 2009. The state's rank improved from the mid-20s to 17th in FY 2009.

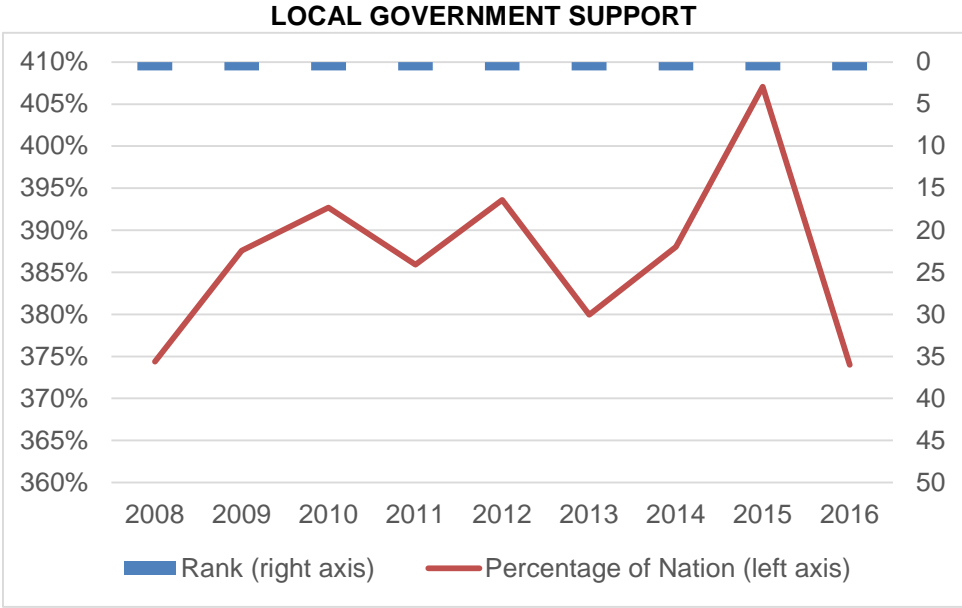
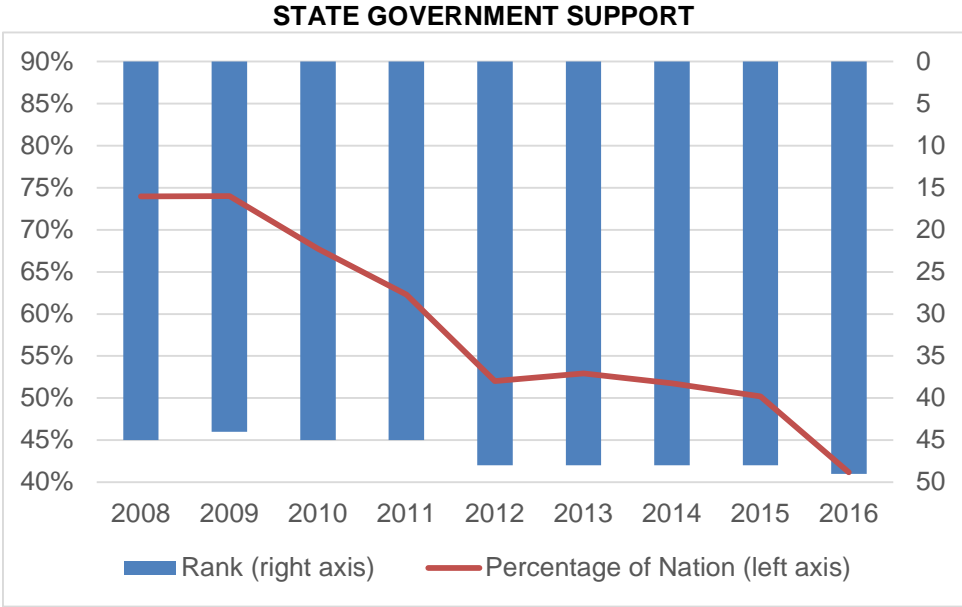
After adjusting for inflation and the cost of living, state and local government funding per FTE student was \$8,347 in FY 2008. The amount dropped for four consecutive years, then increased slightly for three straight years. In FY 2016, a year of moderate economic growth, the amount fell 8 percent to only \$5,308 — 36 percent lower than the figure in FY 2008. Arizona's figure tumbled from slightly above the national average to 25.4 percent below average in FY 2016. The state's rank lowered from 20th to 43rd. The real per FTE student revenue figures adjusted for the cost of living are shown in Chart 1 as a rank and as a percentage of the national average for FYs 2008 through 2016.

The trend in state funding was considerably different from that of local funding. State support per FTE student in real terms fell considerably in Arizona between FYs 2000 and 2004, but rose over the next four years to a figure within 3 percent of the FY 2000 figure. This down-and-up pattern reflects economic conditions and revenue flows to state government. The shortfall from the national average did not change much over this time period, dipping from 26-to-31 percent below average, then recovering to 26 percent below average. The rank improved slightly from 46th in the early 2000s to 42nd in FY 2008.

State appropriations for higher education dropped considerably after FY 2008. Real per FTE student state support adjusted for the cost of living contracted 53 percent in Arizona between FYs 2008 and 2016. The decrease in FY 2016 alone was 15 percent; this decline occurred years after the end of the recession. Arizona's figure fell from 26 percent below average in FY 2008 to 59 percent below average in FY 2016; the rank slipped from 45th to 49th (last).

In contrast to the fluctuations and small net reduction in state support between FYs 2000 and 2008 in Arizona, local support for higher education (community colleges only) per FTE student increased an inflation-adjusted 45 percent. The proportion of the U.S. average rose from 2.9 to 3.8 times higher.

**CHART 1  
PUBLIC HIGHER EDUCATION REVENUE PER FULL-TIME-EQUIVALENT STUDENT  
ADJUSTED FOR THE COST OF LIVING, ARIZONA RELATIVE TO THE NATION,  
FISCAL YEARS 2008 THROUGH 2016**

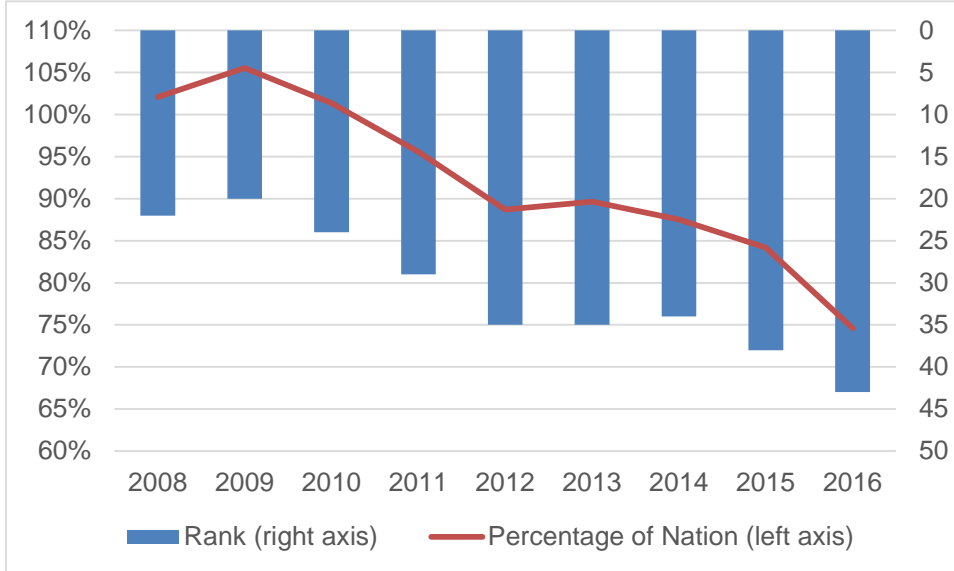


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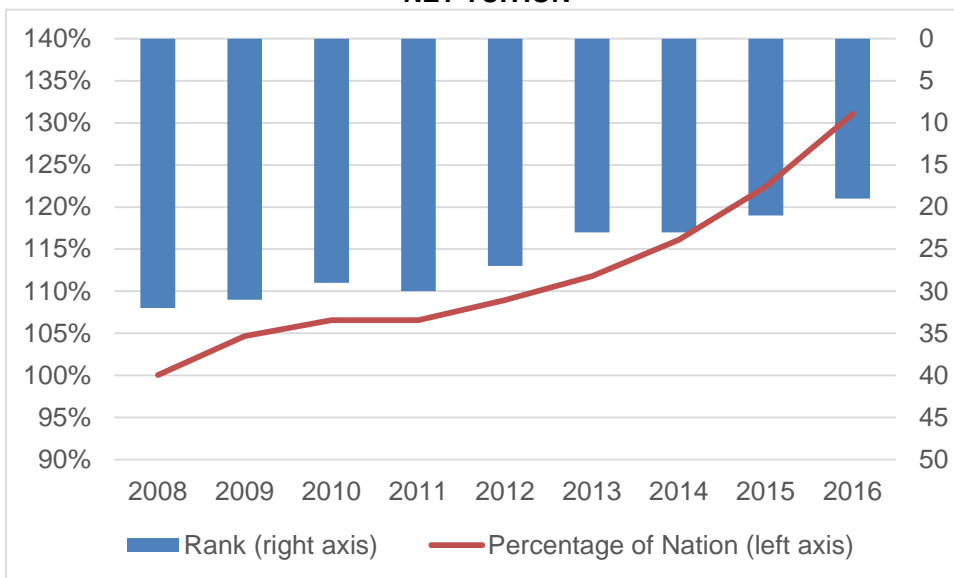


**CHART 1 (continued)**  
**PUBLIC HIGHER EDUCATION REVENUE PER FULL-TIME-EQUIVALENT STUDENT**  
**ADJUSTED FOR THE COST OF LIVING, ARIZONA RELATIVE TO THE NATION**

**STATE AND LOCAL GOVERNMENT SUPPORT,  
 LESS APPROPRIATIONS FOR SPECIAL PURPOSES, RESEARCH, AND MEDICAL**

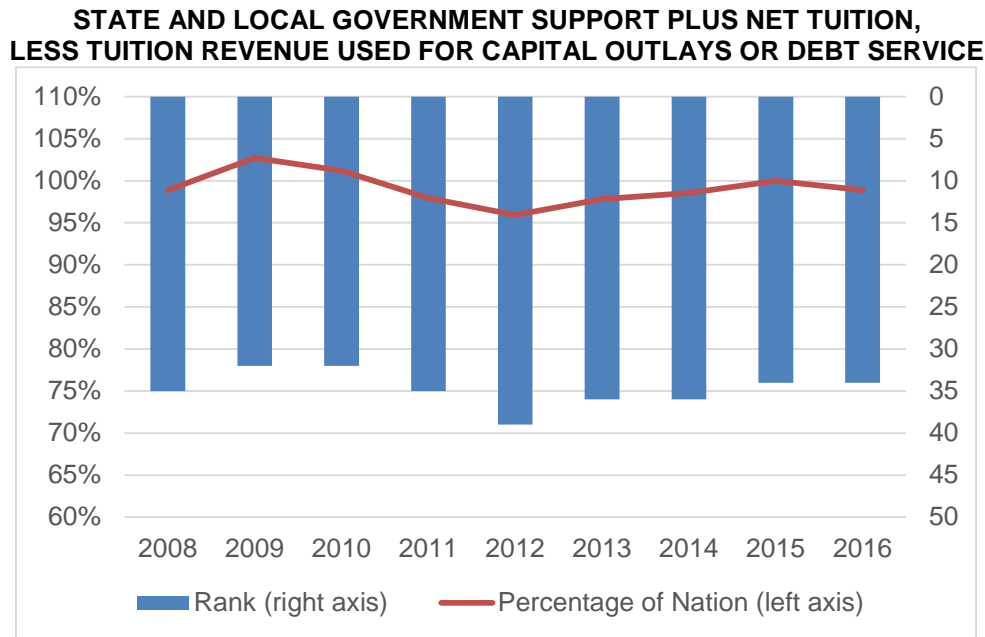


**NET TUITION**



(continued)

**CHART 1 (continued)**  
**PUBLIC HIGHER EDUCATION REVENUE PER FULL-TIME-EQUIVALENT STUDENT**  
**ADJUSTED FOR THE COST OF LIVING, ARIZONA RELATIVE TO THE NATION**



Notes: The rank is among 49 states (excluding Illinois); a rank of 1 represents the highest revenue. Public community colleges and public universities are combined.

Sources: State Higher Education Executive Officers Association, <http://sheeo.org/projects/shef-%E2%80%94state-higher-education-finance> (revenue and enrollment), and U.S. Department of Commerce, Bureau of Economic Analysis, <http://www.bea.gov/regional/index.htm> (regional price parity).

Similarly, in contrast to the 53 percent drop in state support per FTE student between FYs 2008 and 2016, local support slipped only 1 percent, adjusted for inflation and the cost of living. The figure in FY 2016 was 2 percent lower than in the prior year. The proportion of the U.S. average was the same for local support in FY 2016 as in FY 2008.

Between fiscal years 2000 and 2008 in Arizona, the increase in real net tuition per FTE student was 42 percent, compared to an 8 percent increase in real educational appropriations per FTE student. However, relative to the national average, the net tuition figure did not climb significantly, rising from 6 percent below average to 1 percent above average. The rank advanced from 34th to 29th.

The contrast between educational appropriations and net tuition was much greater in Arizona between FYs 2008 and 2016. Adjusting for inflation and the cost of living, state and local government funding per FTE student dropped 36 percent while net tuition per FTE student jumped 81 percent, including a 10 percent rise in FY 2016. The net tuition figure climbed from similar to the U.S. average in FY 2008 to 31 percent higher in FY 2016 and the rank rose from 32nd to 19th.

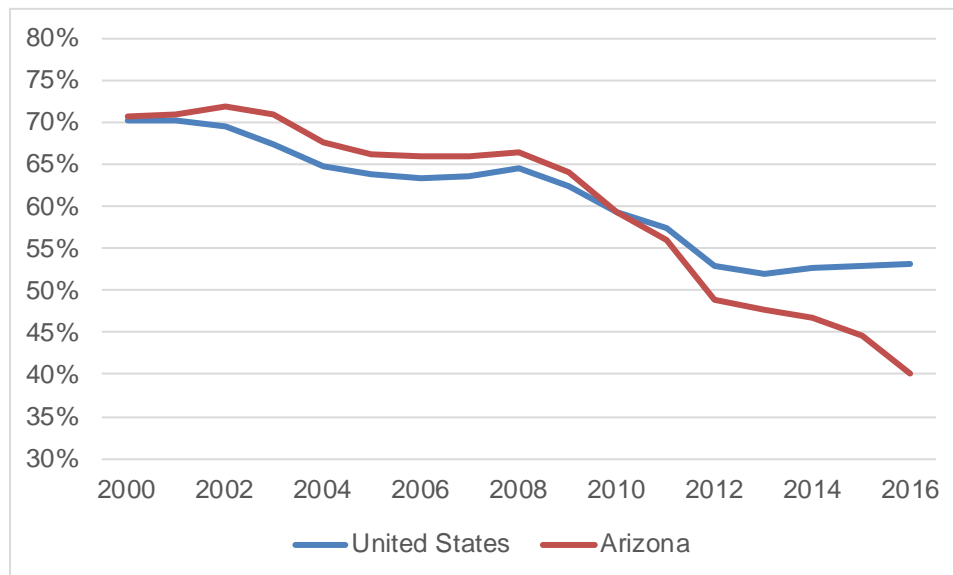
Total educational revenue for higher education on an inflation-adjusted per FTE student basis increased 15 percent in Arizona between FYs 2000 and 2008. The figure improved from 6 percent below the national average to nearly average. The rank advanced from 31st to 27th.

The net effect of the decline in appropriations and the increase in net tuition between FYs 2008 and 2016 was a gain of 5 percent in real per FTE student total educational revenue after adjusting for the cost of living. The figure edged up 2 percent in FY 2016. The FY 2016 figure was similar to the FY 2008 figure relative to the U.S. average (1 percent below) and to the rank (34th).

The share of total educational revenue coming from educational appropriations made by state and local governments has declined over time nationally. In FYs 2000 and 2001, the share contributed by state and local funding was 70.3 percent. Other than small upticks in FYs 2007 and 2008, the share decreased through FY 2013, dropping to 52.0 percent. Since then, the share has increased a little, reaching 53.2 percent in FY 2016.

In Arizona, the share of total educational revenue coming from educational appropriations from state and local governments was greater than the national average through FY 2010, with the largest differential occurring in FY 2003. The share was highest in Arizona in FY 2002 at 71.9 percent. Since FY 2008, the decline in share has been considerably greater in Arizona than the nation, with the share falling to 40.1 percent in FY 2016 — 13.1 percentage points lower than the national share. While the share nationally rose 1.2 percentage points between FYs 2013 and 2016, the share in Arizona dropped 7.5 points. Arizona ranked as high as 14th in FYs 2002 and

**CHART 2**  
**EDUCATIONAL APPROPRIATIONS AS A SHARE OF TOTAL EDUCATIONAL REVENUE, PUBLIC HIGHER EDUCATION IN ARIZONA AND THE NATION, FISCAL YEARS 2000 THROUGH 2016**



Source: State Higher Education Executive Officers Association, <http://sheeo.org/projects/shef-%E2%80%94state-higher-education-finance>.

2003, but ranked 38th in FY 2016. Arizona was below the middle of the western states throughout the time series, but the rank lowered to ninth in FY 2016.

Thus, students are being asked to pay an increasing share of the cost of higher education, particularly in Arizona and especially relative to other western states. The difference in the share in FY 2016 was marked between Arizona and some of the western states. In California, state and local government funding accounted for 79 percent of total educational revenue; in Idaho, Nevada and New Mexico, the share was between 60 and 70 percent.

## ELEMENTARY AND SECONDARY EDUCATION

The U.S. Census Bureau produces its “Public Education Finances” report annually. Revenues and expenditures by state are reported for public-sector elementary and secondary (K-12) education. Private schools, including charter schools operated by nongovernmental organizations, are not included in the report. Data for fiscal year FY 1992 through FY 2015 are available online at <http://www.census.gov/govs/school/>.

The Census Bureau reports revenue and expenditure data for a number of categories:

- Total Revenue: Total from the federal, state, and local governments.
  - Revenue From the Federal Government. Includes direct federal aid and federal funds distributed through the state government. Direct federal aid are project grants for programs such as Head Start and magnet schools. Federal funds distributed through the state are formula grants for programs such as special education and child nutrition.
  - Revenue From State Government. In Arizona in FY 2015, more than 97 percent was from general formula assistance. The remainder included revenue for special programs, such as vocational education.
  - Revenue From Local Governments. In Arizona in FY 2015, nearly 80 percent was from the property tax. The remainder came from charges, such as for school lunches, and miscellaneous other sources.
- Total Expenditures: Includes current operations, capital outlays, and other spending.
  - Expenditures for Current Operations. Includes salaries, employee benefits, purchased professional and technical services, purchased property and other services, and supplies. Current operations are divided into instruction, support services, and noninstructional functions.
    - Expenditures for Instruction. Current operations spending for salaries, employee benefits, supplies, materials, and contractual services related to instruction.
    - Expenditures for Support Services. Current operations spending for salaries, employee benefits, supplies, materials, and contractual services related to support services.
      - Expenditures for Pupil Support Services. Current operations spending for attendance record-keeping, social work, student accounting, counseling, student appraisal, record maintenance, and placement services. This category also includes medical, dental, nursing, psychological, and speech services.
      - Expenditures for Instructional Staff Support Services. Current operations spending for supervision of instruction service improvements, curriculum development, instructional staff training, and media, library, audiovisual, television, and computer-assisted instruction.
      - Expenditures for General Administration. Current operations spending for board of education and executive administration (office of the superintendent).
      - Expenditures for School Administration. Current operations spending for the office of principal services.
      - Expenditures for Plant Operations and Maintenance. Current operations spending for building services (heating, electricity, air conditioning, property insurance), care and upkeep of grounds and equipment, nonstudent transportation vehicle operation and maintenance, and security services.

- Expenditures for Pupil Transportation. Current operations spending for the transportation of public school students including vehicle operation, monitoring riders, and vehicle servicing and maintenance.
- Expenditures for Other Support Services. Current operations spending for business support services and central support services. Included are payments for fiscal services, purchasing, warehousing, supply distribution, printing, duplicating services, planning, research, development, evaluation services, information services, and data processing.
- Expenditures for Other Current Operations. Current spending for other than elementary-secondary education instruction and support services activities. Included in this category are food services, enterprise operations, community services, and adult education expenditures.
- Capital Outlays. Includes construction of buildings, roads, and other improvements; purchases of equipment, land, and existing structures; and payments on capital leases. Includes amounts for additions, replacements, and major alterations to fixed works and structures.
- Other Expenditures. Expenditures for other than current operations and capital outlays, primarily consisting of interest payments on debt.

Like the higher education data, the elementary and secondary education finance data must be standardized. The Census Bureau reports a measure of enrollment that is consistent with its categorization of revenues and expenditures.

As with higher education finance, the adjustment for the ability to pay makes a big difference for Arizona. In FY 2015 without adjusting for the cost of living, Arizona's per capita personal income was 18.4 percent below the national average and ranked 42nd among the 50 states and the District of Columbia. Considering the cost of living, Arizona was not quite as far below the nation at 15.2 percent, but its rank was lower at 47th. Arizona's per capita personal income dropped from 13.2 percent below average in FY 1992 on an unadjusted basis and from 12.1 percent below average in FY 2008 on an adjusted basis.

### **Revenue in Fiscal Year 2015**

Total revenue for public-sector elementary and secondary education in Arizona in fiscal year 2015 totaled \$8.16 billion. This amounted to \$8,634 per student, an amount 34.8 percent below the national average. Only two states — Idaho and Utah — raised less revenue per student for K-12 education. After adjusting for living costs, Arizona still ranked 49th at 32.2 percent below the national average. Even after considering the ability to pay — using cost-of-living-adjusted per student revenue per \$1,000 of per capita personal income — K-12 revenue in Arizona was considerably below average, ranking 44th nationally and sixth among the 10 western states at 17.0 percent below the U.S. average. The data for FY 2015 are summarized in Table 2 for each of the major categories of elementary and secondary education revenue.

Arizona received \$1.09 billion from the federal government in FY 2015 for K-12 education, accounting for 13.4 percent of total revenue. Per student after adjustment for the cost of living, Arizona ranked 21st among the states, and third among the western states, at 9.5 percent above the national average. Arizona was slightly above the national average on formula grants distributed through state government, and was among the top 10 states on direct federal aid

**TABLE 2  
PUBLIC ELEMENTARY AND SECONDARY EDUCATION REVENUE  
PER STUDENT, ARIZONA, FISCAL YEAR 2015**

	Dollars	Percentage of Nation <sup>^</sup>	Rank: Nation <sup>^</sup>	Rank: West <sup>^^</sup>
Total Revenue	\$8,634	65.2%	49	8
Adjusted by Cost of Living	8,975	67.8	49	8
Adjusted by Per Capita Personal Income*	232	83.0	44	6
Revenue from the Federal Government	1,158	105.3	20	4
Adjusted by Cost of Living	1,203	109.5	21	3
Adjusted by Per Capita Personal Income*	31	134.2	13	2
Revenue From State & Local Governments	7,477	61.5	50	9
Adjusted by Cost of Living	7,772	64.0	49	8
Adjusted by Per Capita Personal Income*	201	78.4	45	6
Revenue From State Governments	3,420	54.8	49	10
Adjusted by Cost of Living	3,555	57.0	50	10
Adjusted by Per Capita Personal Income*	92	69.8	48	10
Revenue From Local Governments	4,056	68.6	34	5
Adjusted by Cost of Living	4,217	71.4	34	4
Adjusted by Per Capita Personal Income	109	87.4	31	4

\* Also adjusted by cost of living.

<sup>^</sup> The nation consists of the 50 states and the District of Columbia. A rank of 1 represents the highest revenue.

<sup>^^</sup> The West includes 10 western states: Arizona, California, Colorado, Idaho, Nevada, New Mexico, Oregon, Texas, Utah, and Washington. A rank of 1 represents the highest revenue.

Sources: U.S. Department of Commerce, Census Bureau, <https://www.census.gov/programs-surveys/school-finances.html> (revenue and enrollment), and U.S. Department of Commerce, Bureau of Economic Analysis, <http://www.bea.gov/regional/index.htm> (regional price parity and per capita personal income).

(project grants). In particular, federal impact aid revenue was well above the norm. Such monies are used for construction and operations in areas affected by federal activities.

Revenue from state and local governments for K-12 education totaled \$7.07 billion in FY 2015 in Arizona, accounting for 86.6 percent of total revenue. Per student after adjustment for the cost of living, Arizona ranked 49th among the states, with only Idaho and Utah providing less funding, at 36.0 percent below the national figure. Elementary and secondary education funding from state and local governments compared more unfavorably relative to the nation in FY 2015 than did higher education, which was 16 percent below average and ranked 38th. However, higher education experienced a large decrease in FY 2016.

Per student adjusted for per capita personal income and the cost of living, state and local government funding for elementary and secondary education was 21.6 percent below the national figure in Arizona in FY 2015. Considering the ability to pay did not have much effect on Arizona's ranks, with the state ranking 45th nationally and sixth among the western states.

Relative to the national per student average, the shortfall in state and local government revenue for K-12 education was substantial in Arizona in FY 2015. To have matched the national per

student average, spending would have needed to have been \$4.5 billion higher. Considering the cost of living, the shortfall still exceeded \$4 billion. Considering the ability to pay and the cost of living, the shortfall was \$2 billion.

In comparison, Prop 123 that was passed by Arizona voters in May 2016 added about \$300 million to K-12 revenue in the first year. Had revenue in FY 2015 been \$300 million higher, Arizona's per student state and local government K-12 revenue after adjustment for the cost of living still would have ranked 49th and would have been 33 percent below the national average.

Since by design some states rely more heavily on state government to fund K-12 education while other states depend more on local government funding, caution is recommended in comparing Arizona to other states on measures of either state government or local government revenues. State government revenue for K-12 education in Arizona was \$3.23 billion in FY 2015 — 39.6 percent of total funding. Local governments provided \$3.83 billion, 47 percent of the total.

Per student adjusted for living costs, funding from the state government ranked last in Arizona in FY 2015 at 43.0 percent below average. The Census Bureau divides state revenue into seven categories, but nearly 98 percent of the revenue in Arizona came from general formula assistance, compared to 69 percent nationally. Funding from general formula assistance was 20 percent below average in Arizona on a per student basis after adjusting for living costs, ranking 39th. Arizona was last on other types of state revenue at 96 percent below the national average.

Funding from local governments also was considerably below average in FY 2015 in Arizona. Per student adjusted for living costs, the figure was 28.6 percent below average; Arizona ranked 34th nationally and fourth among the western states. The property tax was the largest of eight categories of local government revenue, accounting for 80 percent of the local funding in Arizona and 65 percent nationally. In Arizona, property tax collections per student adjusted for living costs were 13 percent below average in FY 2015, but ranked 24th. Other local funding per student adjusted for living costs was 58 percent below average in Arizona and ranked 38th.

### **Change in Revenue Over Time**

Even in FY 1992, per pupil total K-12 revenue (not adjusted for living costs) was below average in Arizona, ranking 35th at 12.3 percent below average. By FY 2015, the figure was 34.8 percent below average; the rank had fallen to 49th. Declines in K-12 revenue in Arizona relative to the national average occurred over time from each level of government. The reductions in federal funding lasted through FY 2011 with a partial recovery since then. The decreases in state government funding largely have occurred since FY 2008. The changes in rank and in the differential from the national average between FY 1992 and FY 2015 by source of funding follow:

- Federal government: seventh to 20th; +26 percent to +5 percent.
- State government: 39th to 49th; -22 percent to -45 percent.
- Local government: 27th to 34th; -8 to -31 percent.
- State and local government: 35th to 50th; -15 percent to -38 percent.

State government revenue per elementary and secondary student, adjusted for inflation and the cost of living, tumbled 29 percent in Arizona between FYs 2008 and 2015. The state's figure



shrunk from 23 percent below the national average to 43 percent below average and the state's rank slid from 43rd to 50th. The decline was not as large as for higher education, which experienced a drop of 45 percent per FTE student, with a decrease in the percentage of the national average of 24 percentage points.

Local government revenue per elementary and secondary student, adjusted for inflation and the cost of living, rose less than 1 percent in Arizona between FYs 2008 and 2015. The state's figure held nearly steady at about 28.5 percent below the national average and the state's rank also hardly changed. The slight increase in local government K-12 funding was consistent with local funding of higher education.

Combined state and local government revenue per elementary and secondary student, adjusted for inflation and the cost of living, decreased 15 percent in Arizona between FYs 2008 and 2015. The state's figure dropped from 25 percent below the national average to 36 percent below average and the state's rank dipped from 47th to 49th. The decline was not as large as for higher education, which experienced a fall of 31 percent per FTE student, with an 18 percentage-point decrease relative to the national average.

An increase in federal K-12 funding barely began to offset the reduction in state and local government funding. Federal government revenue per elementary and secondary student, adjusted for inflation and the cost of living, rose 8.5 percent in Arizona between FYs 2008 and 2015. The state's figure climbed from 2.4-to-9.5 percent above the national average and the state's rank also improved, from 25th to 21st.

Total revenue per elementary and secondary student, adjusted for inflation and the cost of living, fell 13 percent in Arizona between FYs 2008 and 2015. The state's figure dropped from 23 percent below the national average to 32 percent lower. Arizona's rank slid from 48th to 49th. In Chart 3, the state's rank and percentage of the national average based on the per student measure adjusted for the cost of living is graphed for FYs 2008 through 2015 for each of the major categories of elementary and secondary education revenue.

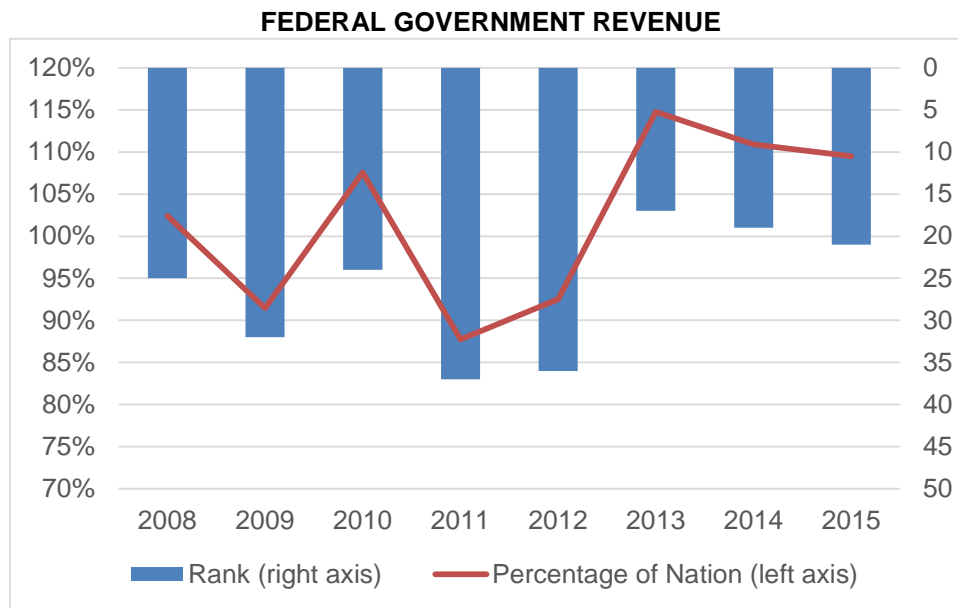
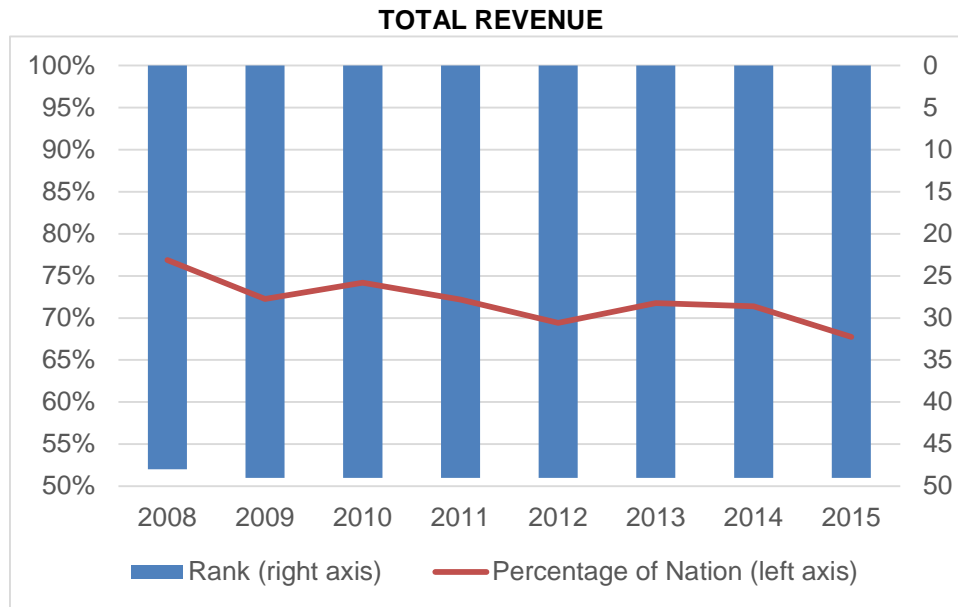
### **Expenditures in Fiscal Year 2015**

According to the Census Bureau, total expenditures for K-12 education were greater than total revenues in FY 2015 in some states but lower in others. Nationally, expenditures were 0.5 percent lower than revenues; in Arizona, the differential was 3.3 percent (revenues of \$8.16 billion and expenditures of \$7.89 billion).

Total per student spending was \$8,345 in Arizona in FY 2015, an amount 36.7 percent less than the national average; only Idaho and Utah spent less. The adjustment for the cost of living had no effect on Arizona's ranks; adjusted expenditures were 34.2 percent below average.

While the ability-to-pay adjustment is a conceptually reasonable alternative in analyzing revenue data, it is not appropriate to use for expenditure data since it does not consider need. Moreover, since state and local governments are prohibited from running a deficit, controlling revenue to the ability to pay generally results in spending less than the need in states with a limited ability to pay.

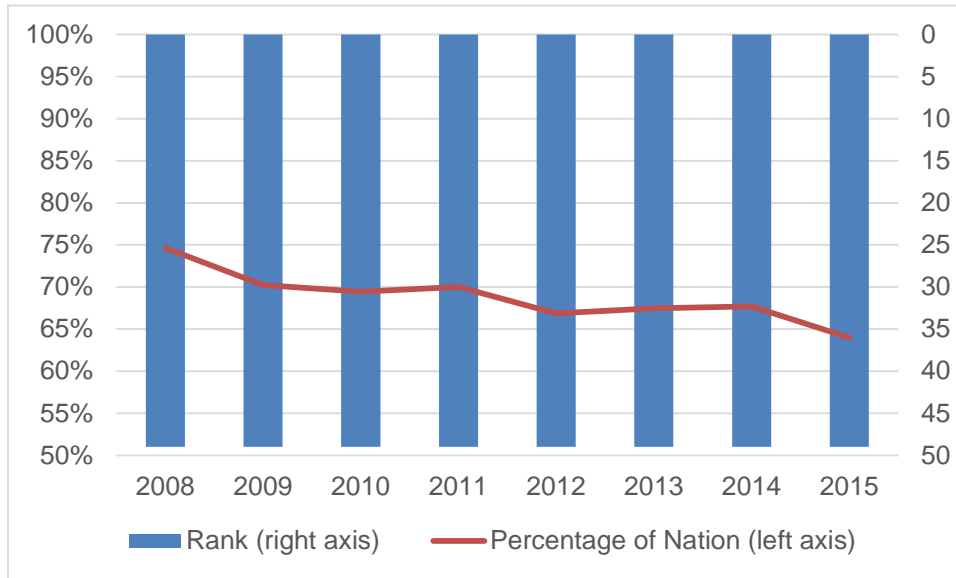
**CHART 3  
PUBLIC ELEMENTARY AND SECONDARY EDUCATION REVENUE PER STUDENT  
ADJUSTED FOR THE COST OF LIVING, ARIZONA RELATIVE TO THE NATION,  
FISCAL YEARS 2008 THROUGH 2015**



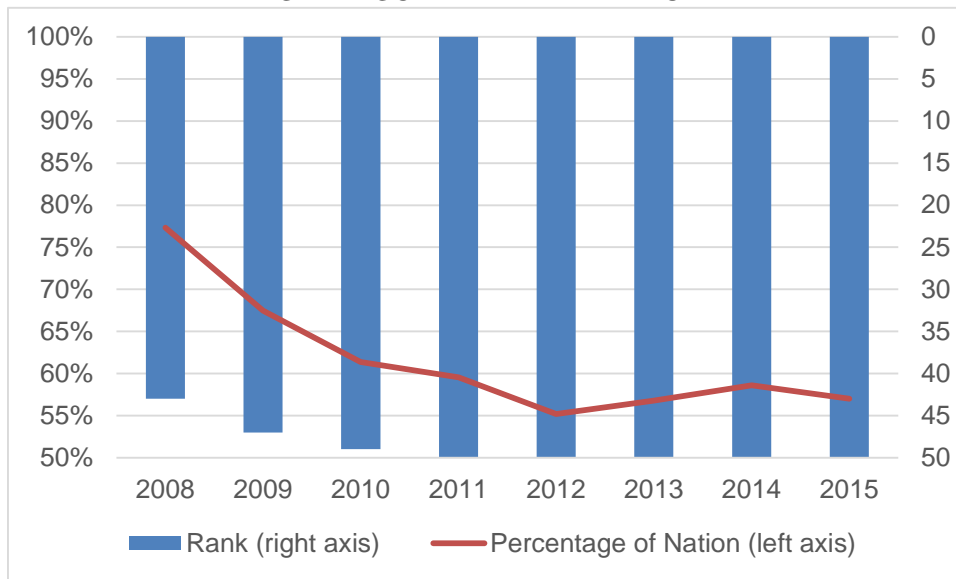
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**CHART 3 (continued)**  
**PUBLIC ELEMENTARY AND SECONDARY EDUCATION REVENUE PER STUDENT**  
**ADJUSTED FOR THE COST OF LIVING, ARIZONA RELATIVE TO THE NATION,**  
**FISCAL YEARS 2008 THROUGH 2015**

**STATE AND LOCAL GOVERNMENT REVENUE**

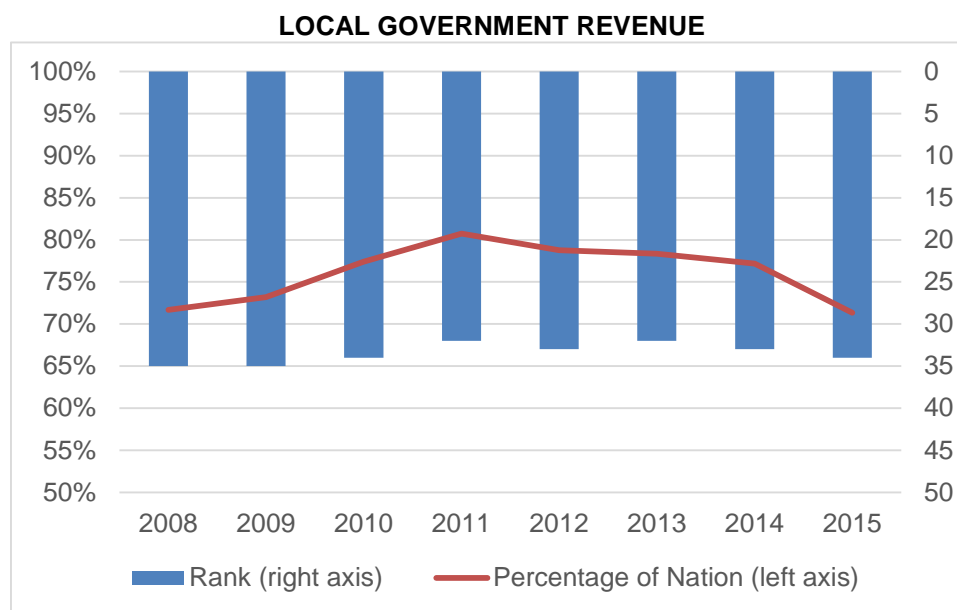


**STATE GOVERNMENT REVENUE**



(continued)

**CHART 3 (continued)**  
**PUBLIC ELEMENTARY AND SECONDARY EDUCATION REVENUE PER STUDENT**  
**ADJUSTED FOR THE COST OF LIVING, ARIZONA RELATIVE TO THE NATION,**  
**FISCAL YEARS 2008 THROUGH 2015**



Sources: U.S. Department of Commerce, Census Bureau, <https://www.census.gov/programs-surveys/school-finances.html> (revenue and enrollment), and U.S. Department of Commerce, Bureau of Economic Analysis, <http://www.bea.gov/regional/index.htm> (regional price parity).

For example, a recent study estimated needs by spending category by state, using the concept of representative expenditures. Considering such factors as the child poverty rate, the per capita — not per student — expenditure need for K-12 education in Arizona in FY 2012 was estimated to be 11 percent higher than the national average, fifth highest among the states. Actual per capita spending was 33 percent below average, second lowest.<sup>4</sup>

The Census Bureau divides expenditures for K-12 education into three broad categories:

- Current operations is by far the largest category. It includes payments for purchased supplies and services and the payment of salaries to employees.
- Capital outlays include construction of buildings; purchases of equipment, land, and existing structures; and additions, replacements, and major alterations to existing structures.
- Other expenditures largely consist of interest payments on debt.

The data for FY 2015 are summarized in Table 3 for the larger categories of elementary and secondary education expenditures.

<sup>4</sup> Urban Institute, March 2016, “Assessing Fiscal Capacities of States: A Representative Revenue System-Representative Expenditure System Approach, Fiscal Year 2012,” <http://www.urban.org/research/publication/assessing-fiscal-capacities-states-representative-revenue-system-representative-expenditure-system-approach-fiscal-year-2012>. Research has found that the cost of educating a child living in poverty is considerably higher than the cost for other children.

**TABLE 3  
PUBLIC ELEMENTARY AND SECONDARY EDUCATION EXPENDITURES  
PER STUDENT, ARIZONA, FISCAL YEAR 2015**

	Dollars	Percentage of Nation <sup>^</sup>	Rank: Nation <sup>^</sup>	Rank: West <sup>^^</sup>
Total Expenditures	\$8,345	63.3%	49	8
Adjusted by Cost of Living	8,675	65.8	49	8
Current Operations	7,625	65.2	49	8
Adjusted by Cost of Living	7,926	67.7	49	8
Instruction	4,070	57.4	51	10
Adjusted by Cost of Living	4,231	59.6	51	10
Total Support Services	3,048	76.1	44	7
Adjusted by Cost of Living	3,168	79.1	46	7
Pupil Support Services	593	91.0	26	4
Adjusted by Cost of Living	616	94.6	25	4
Instructional Staff Support Services	409	75.7	39	7
Adjusted by Cost of Living	425	78.7	40	6
General Administration	106	48.7	45	8
Adjusted by Cost of Living	110	50.7	45	8
School Administration	355	56.7	51	10
Adjusted by Cost of Living	369	58.9	51	10
Plant Operations and Maintenance	907	85.4	36	4
Adjusted by Cost of Living	943	88.7	37	2
Pupil Transportation	362	72.6	42	5
Adjusted by Cost of Living	376	75.5	42	5
Other Support Services	317	76.9	29	7
Adjusted by Cost of Living	329	79.9	28	6
Other Current Operations	507	84.8	40	4
Adjusted by Cost of Living	527	88.1	38	3
Capital Outlays	527	49.0	46	8
Adjusted by Cost of Living	547	50.9	46	8
Other Expenditures	194	47.8	39	9
Adjusted by Cost of Living	201	49.7	38	9

<sup>^</sup> The nation consists of the 50 states and the District of Columbia. A rank of 1 represents the highest revenue.

<sup>^^</sup> The West includes 10 western states: Arizona, California, Colorado, Idaho, Nevada, New Mexico, Oregon, Texas, Utah, and Washington. A rank of 1 represents the highest revenue.

Sources: U.S. Department of Commerce, Census Bureau, <https://www.census.gov/programs-surveys/school-finances.html> (expenditures and enrollment), and U.S. Department of Commerce, Bureau of Economic Analysis, <http://www.bea.gov/regional/index.htm> (regional price parity).

Current operations spending typically is the focus of comparisons over time and across states of education spending rather than total expenditures. The amount of capital outlays is in part determined by the growth rate in the number of students. The construction of a new school to accommodate growth does not benefit existing students. Similarly, interest payments do not directly benefit students.

Current operations spending of \$7.21 billion accounted for 91 percent of total K-12 education expenditures in Arizona in FY 2015. After adjusting for living costs, \$7,926 per student was

expended on current operations, 32.3 percent less than the U.S. average. Only Idaho and Utah spent less.

Current operations are divided into three categories by the Census Bureau: instruction, support services, and other expenses. Spending on instruction totaled \$3.85 billion in Arizona in FY 2015. Per pupil instructional spending was \$4,231 after adjusting for living costs, 40.4 percent below average and the lowest in the country. Nearly \$2.9 billion was spent on support services. This amounted to \$3,168 per student after adjusting for living costs, 20.9 percent less than the U.S. average. Arizona ranked 46th nationally and seventh in the West. Other current operations expenses (such as food services and adult education) totaled \$479 million, or \$527 per student after adjusting for living costs — 11.9 percent below average, ranking 38th nationally and third in the West.

The support services category is in turn divided into seven subcategories. The largest of these is plant operations and maintenance, which includes such functions as the heating/cooling of school buildings. Expenditures in FY 2015 totaled \$857 million in Arizona. After adjusting for living costs, this amounted to \$943 per student, 11.3 percent below the national average and 37th in the country (though second in the West).

Expenditures for pupil support — such as counseling, medical services, and student record keeping — totaled \$560 million in Arizona in FY 2015. The per student figure of \$616 after adjustment for the cost of living was 5.4 percent less than the national average, ranking 25th nationally and fourth among the western states. Instructional staff support spending — for items such as training, curriculum development, and alternative types of instruction — totaled \$386 million. The adjusted per student figure of \$425 was 21.3 percent below average and ranked 40th nationally and sixth in the West.

There are two categories of administration. Expenditures for school administration were \$335 million in Arizona in FY 2015, while spending for general administration (such as at the school district level) was \$100 million. Arizona's administrative costs per student after adjusting for the cost of living were \$369 for school administration and \$110 for general administration. Each figure was very low compared to other states. The school administration subcategory was 41.1 percent below average, the lowest in the country. In the general administration category, Arizona ranked 45th nationally and eighth in the West at 49.3 percent below average.

Pupil transportation expenses in Arizona in FY 2015 were \$342 million. Adjusted for the cost of living, this amounted to \$376 per pupil: 24.5 percent below the national average, ranked 42nd nationally and fifth in the West. In the other support services subcategory, spending totaled \$299 million, or \$329 per student adjusted for the cost of living: 20.1 percent below average, ranking 28th nationally and sixth among the western states.

Though per pupil spending in Arizona in FY 2015 was considerably less than the national norm for support services and for current operations other than instruction and support services, these categories still made up a disproportionate share of all current operations expenditures. Spending in the instruction category accounted for 53.4 percent of total current operations spending in Arizona in FY 2015, the lowest share in the nation. One possible explanation for the low

instructional share is that fixed costs for other types of current operations become a disproportionate issue when overall funding is so far below average. Such fixed costs are more of a limit in some of the support services than in instruction. For example, if pupil transportation is provided, buses must be maintained and fueled, drivers must be hired, and a bus cannot transport more students than it was designed for. Thus, substantial reductions in overall funding may of necessity disproportionately reduce expenditures in the instructional category.

Capital outlays in Arizona in FY 2015 for K-12 education totaled \$498 million, 6.3 percent of total expenditures. Per student adjusted for living costs, capital outlays amounted to \$547 — 49.1 percent less than the national average, ranking 46th nationally and eighth among the western states.

Other educational expenditures — largely interest payments — totaled \$183 million in Arizona in FY 2015, 2.3 percent of all expenditures. This amounted to \$201 per student after adjusting for living costs — 50.3 percent less than the national average, ranking 38th nationally and ninth among the western states.

### **Change in Expenditures Over Time**

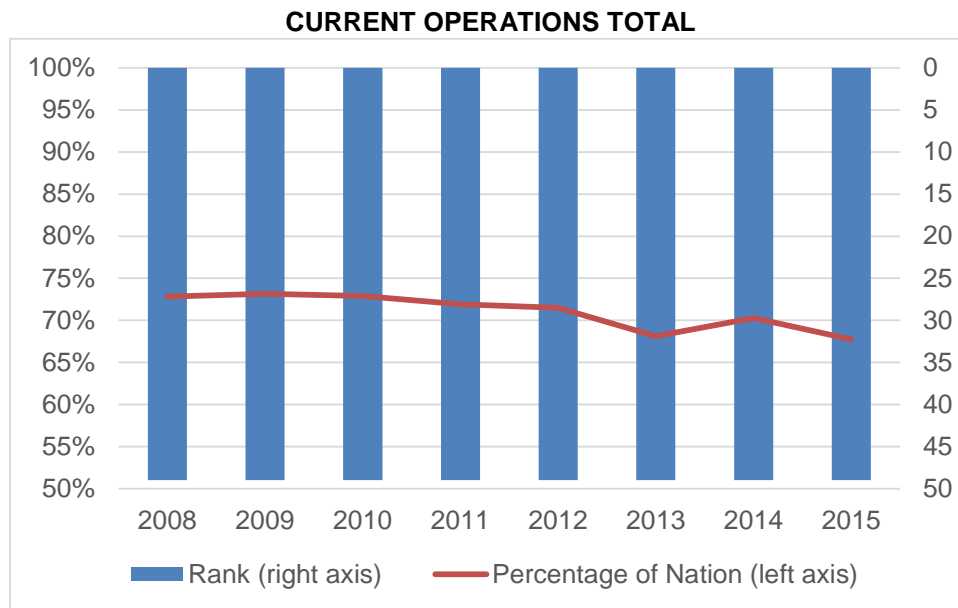
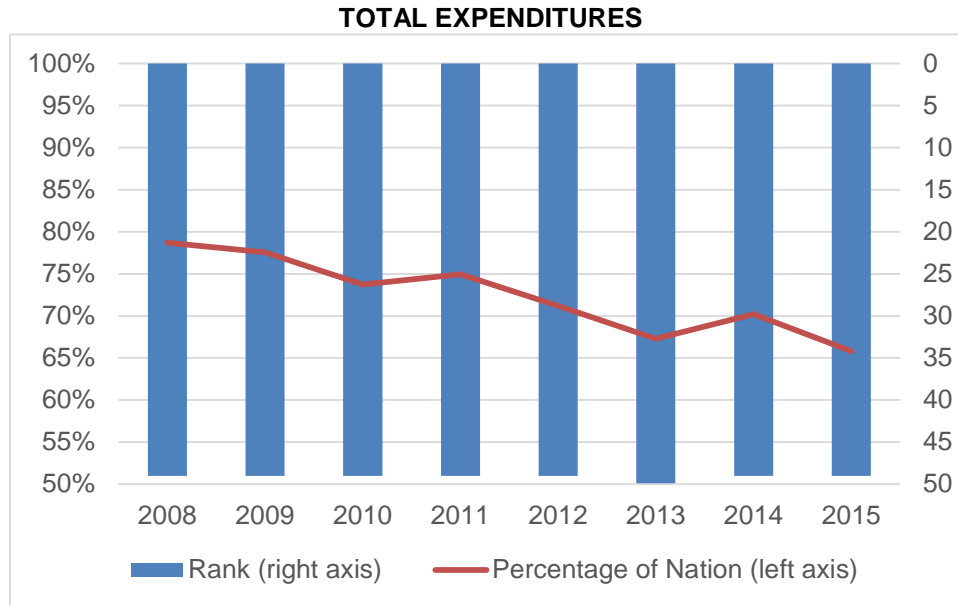
The examination of the change in expenditures over time uses data not adjusted for the cost of living for the long time period of FYs 1992 through 2015. Data for FYs 2008 through 2015 also are adjusted for the cost of living.

Total per student expenditures not adjusted for the cost of living for K-12 education fell substantially in Arizona relative to the national average between FYs 1992 and 2015. In FY 1992, the figure was 9 percent below average and ranked 33rd. In FY 2015, the figure was 37 percent below average and ranked 49th. Substantial declines occurred both prior to and since FY 2008. Between FYs 2008 and 2015, after adjusting for the cost of living, Arizona decreased from 21 percent below average to 34 percent below average.

The reduction in Arizona's per student spending relative to the nation between FYs 1992 and 2015 was much greater for capital outlays and other expenditures than for current operations. Historically, capital outlays in Arizona were substantially above the national average, due in large part to the state's rapid population growth requiring the construction of new schools. In FY 1992, capital outlays per student ranked third at 89 percent above the national average. By FY 2015, the figure had fallen to 51 percent below the national average, ranked 46th. The large decrease occurred both before and after FY 2008. A similarly large decline occurred in the other expenditure category, which largely consists of interest payments tied to construction projects.

The contraction in current operations spending was not as great, but Arizona already was considerably below average in FY 1992: 21.5 percent below average, ranked 42nd. In FY 2015, the state ranked 49th at 35 percent below average. The slide occurred primarily during the 1990s and again after FY 2009. Adjusted for the cost of living, the state went from 27 percent below average in FY 2008 to 32 percent below average in FY 2015. Arizona's rank among the states and its percentage difference from the national average based on cost-of-living-adjusted data are shown in Chart 4 for the major categories of K-12 expenditures for the FY 2008-through-2015 period.

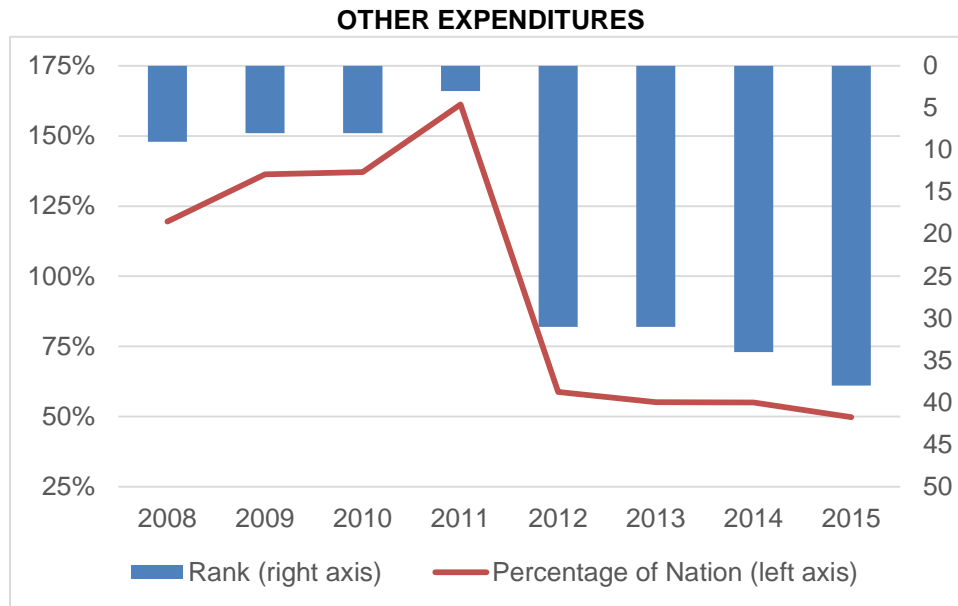
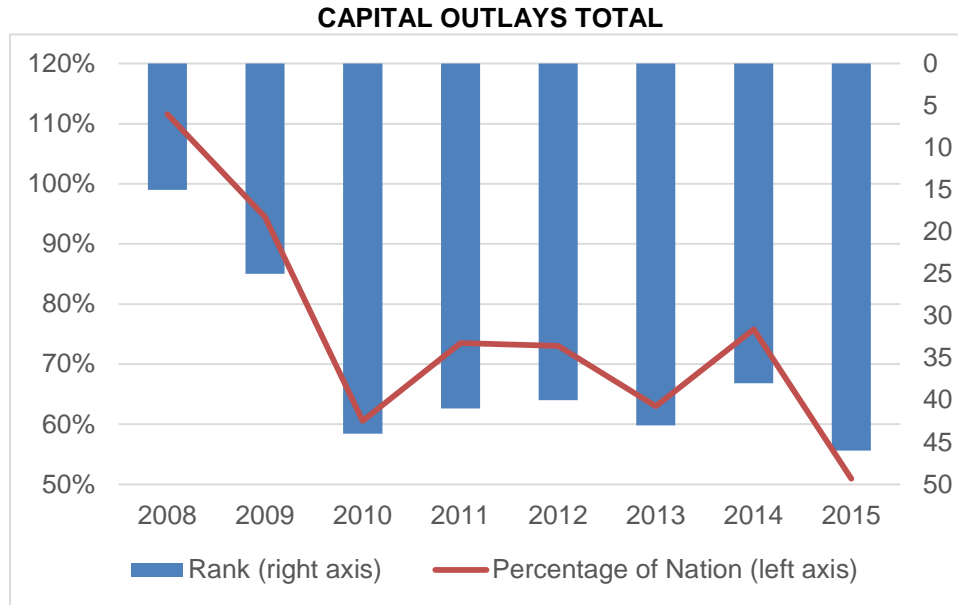
**CHART 4  
PUBLIC ELEMENTARY AND SECONDARY EDUCATION EXPENDITURES  
PER STUDENT ADJUSTED FOR THE COST OF LIVING, ARIZONA RELATIVE TO  
THE NATION, FISCAL YEARS 2008 THROUGH 2015**



(continued)



**CHART 4 (continued)**  
**PUBLIC ELEMENTARY AND SECONDARY EDUCATION EXPENDITURES**  
**PER STUDENT ADJUSTED FOR THE COST OF LIVING, ARIZONA RELATIVE TO**  
**THE NATION, FISCAL YEARS 2008 THROUGH 2015**



Sources: U.S. Department of Commerce, Census Bureau, <https://www.census.gov/programs-surveys/school-finances.html> (expenditures and enrollment), and U.S. Department of Commerce, Bureau of Economic Analysis, <http://www.bea.gov/regional/index.htm> (regional price parity).

The decline relative to the national average in noncapital expenditures per student that has occurred since the early 1990s is a continuation of a downtrend that began in the late 1960s. Per pupil K-12 noncapital expenditures had been at least 10 percent higher than the national average in Arizona in nearly every year from 1930 through 1967.<sup>5</sup>

In Chart 5, the same information as in Chart 4 is presented for the three major categories of current operations spending. Relative decreases occurred between FYs 1992 and 2015 in the current operations categories of instruction and support services.

Per student, instructional expenditures dropped from 24 percent less than the national average and a rank of 44th in FY 1992 to 43 percent below average and a rank of 51st in FY 2015. Much of this reduction occurred prior to FY 2008. Adjusted for living costs, per student instructional expenditures declined from 32 percent below average and a rank of 50th in FY 2008 to 40 percent below average and a rank of 51st in FY 2015.

Expenditures per student for support services lowered from 17 percent below the U.S. average in FY 1992 to 24 percent below average in FY 2015, with the rank falling from 34th to 44th. Little change relative to the nation occurred between FY 2008 and FY 2015.

In the other current operations category, per student spending in Arizona as a percentage of the national average is erratic from year to year. The state's deficit to the national average has on average narrowed over time.

Arizona's ranks and percentages of the national average in the seven subcategories of support services are displayed in Chart 6. Spending in several of these categories relative to the national average have gone up and down over time, making the determination of the trend more difficult.

However, the trend is obvious in the two subcategories of administrative costs. Per student spending on general administration in Arizona fell from 20 percent above average and a rank of 15th in FY 1992 to 51 percent below average and a rank of 45th in FY 2015. Most of the decline occurred prior to FY 2008. In the school administration subcategory, Arizona was 20 percent below average with a rank of 39th in FY 1992. In FY 2015, per student spending was the lowest in the nation at 43 percent below the national average. Decreases have occurred since FY 2008.

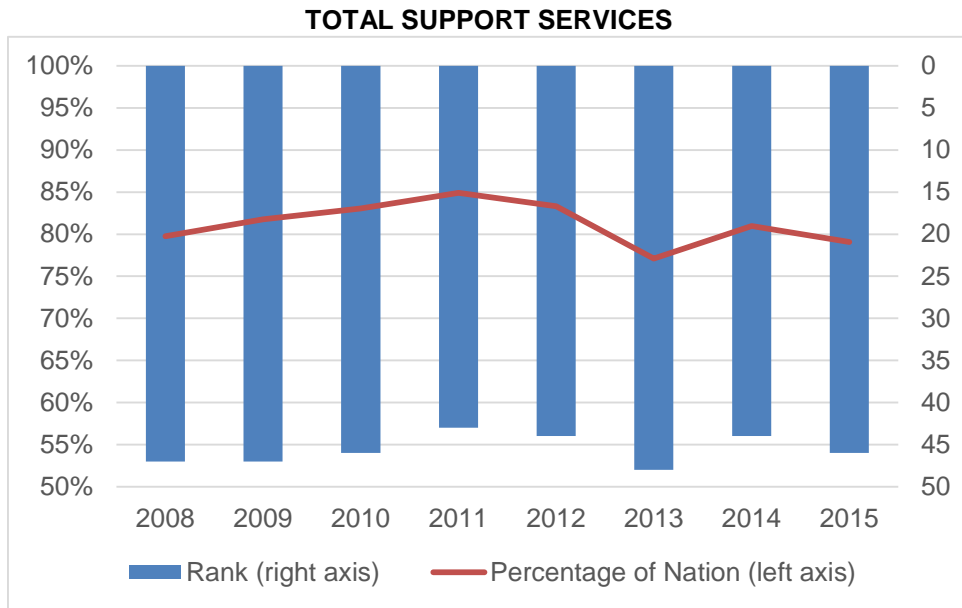
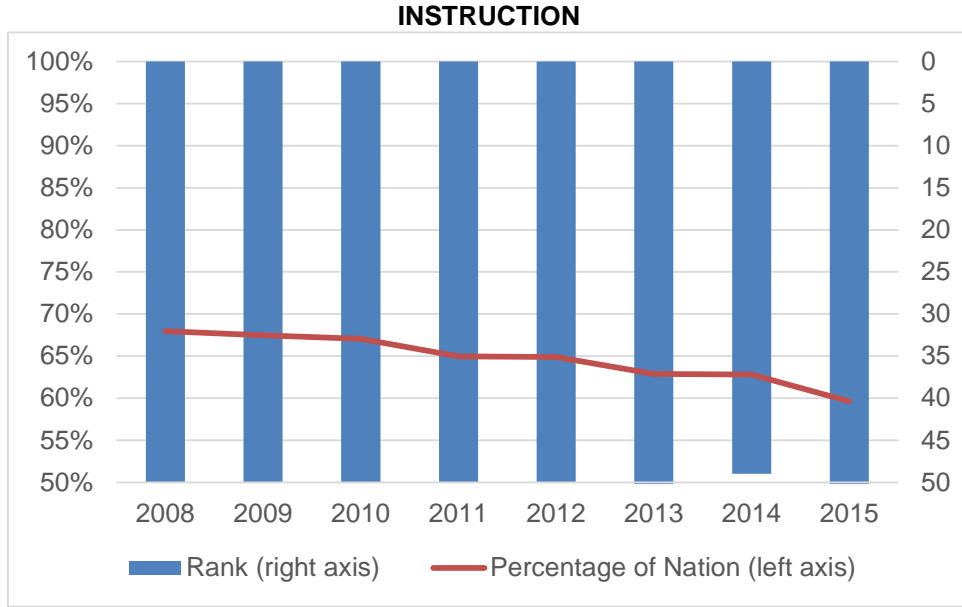
Lesser reductions occurred in the plant operations and maintenance and miscellaneous support services subcategories. Decreases in per pupil spending relative to the U.S. average occurred both before and after FY 2008.

In the other support services subcategories, the per student spending deficit from the national average was not as large in FY 2015 as in FY 1992. However, a slight dip on a cost-of-living-adjusted basis occurred between FYs 2008 and 2015 in the pupil transportation and pupil support subcategories.

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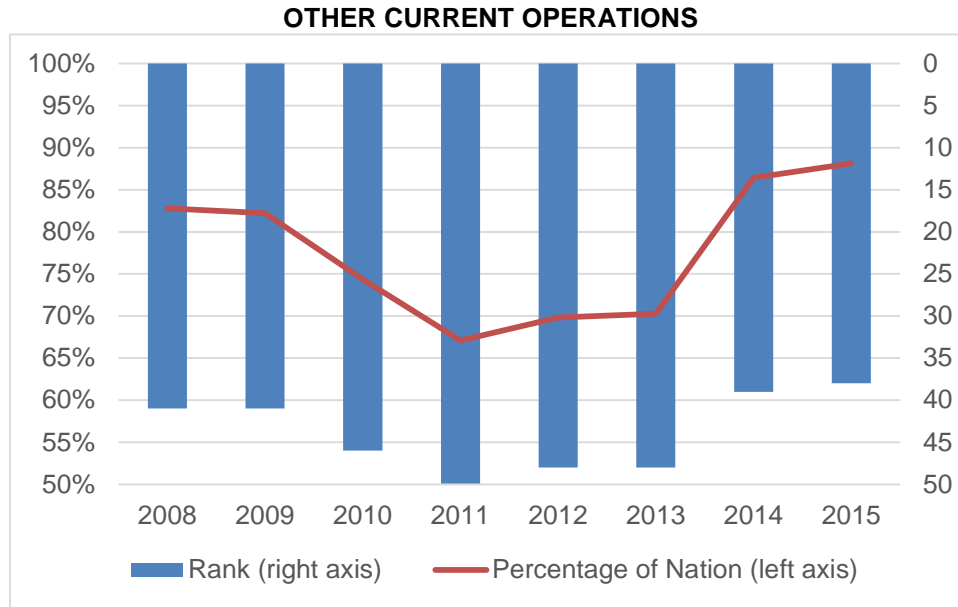
<sup>5</sup> See page 35 of the Office of the University Economist report "Arizona Constitution: Specified Duties of State Government," November 2010, available from <https://economist.asu.edu/public-finance>.

**CHART 5  
PUBLIC ELEMENTARY AND SECONDARY EDUCATION CURRENT OPERATIONS  
EXPENDITURES PER STUDENT ADJUSTED FOR THE COST OF LIVING,  
ARIZONA RELATIVE TO THE NATION, FISCAL YEARS 2008 THROUGH 2015**



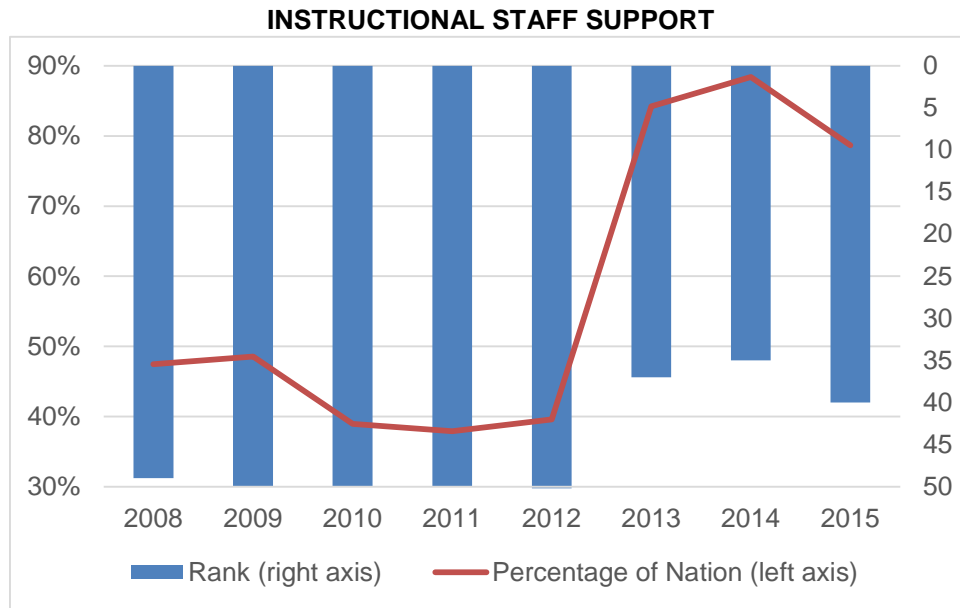
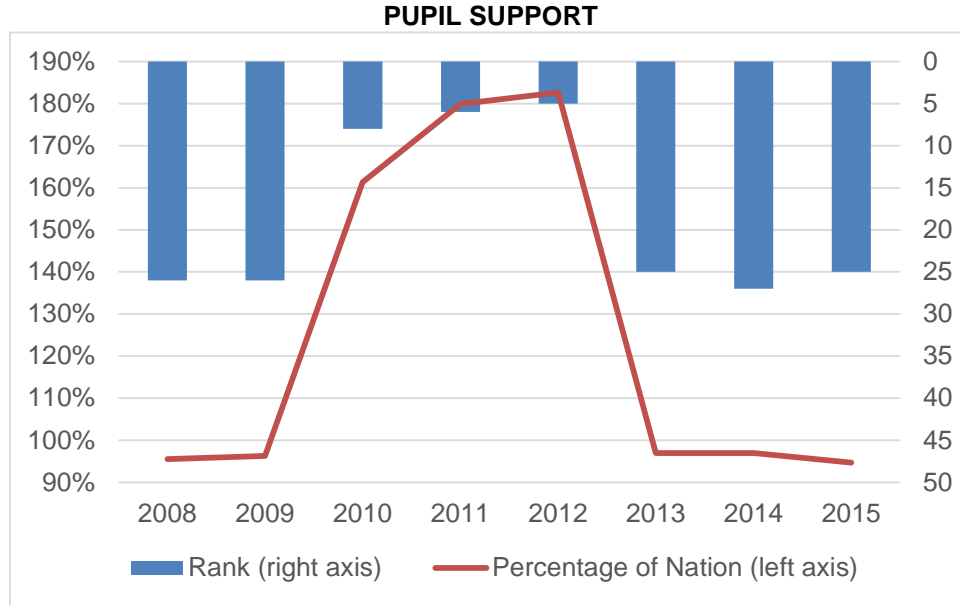
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**CHART 5 (continued)**  
**PUBLIC ELEMENTARY AND SECONDARY EDUCATION CURRENT OPERATIONS**  
**EXPENDITURES PER STUDENT ADJUSTED FOR THE COST OF LIVING,**  
**ARIZONA RELATIVE TO THE NATION, FISCAL YEARS 2008 THROUGH 2015**



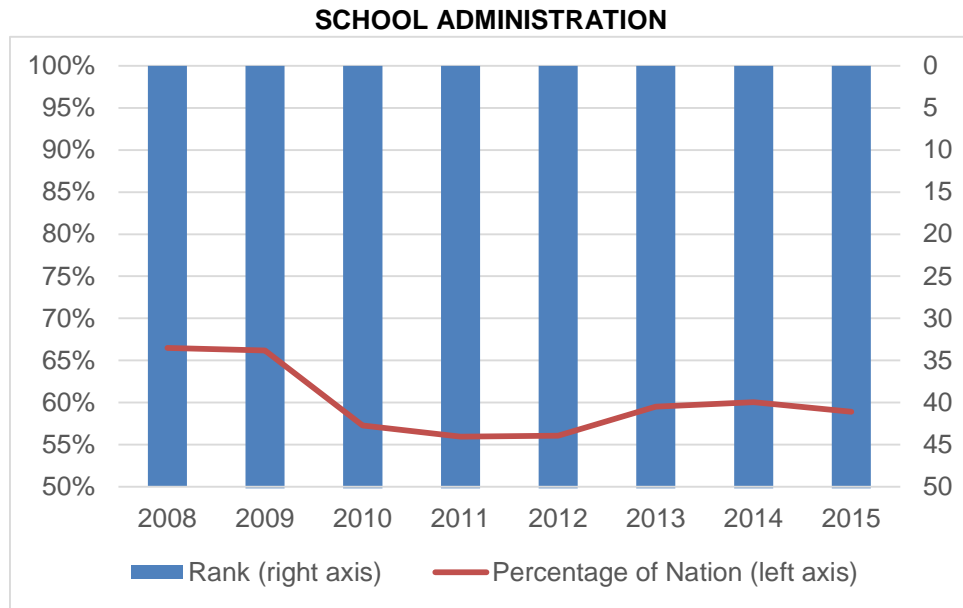
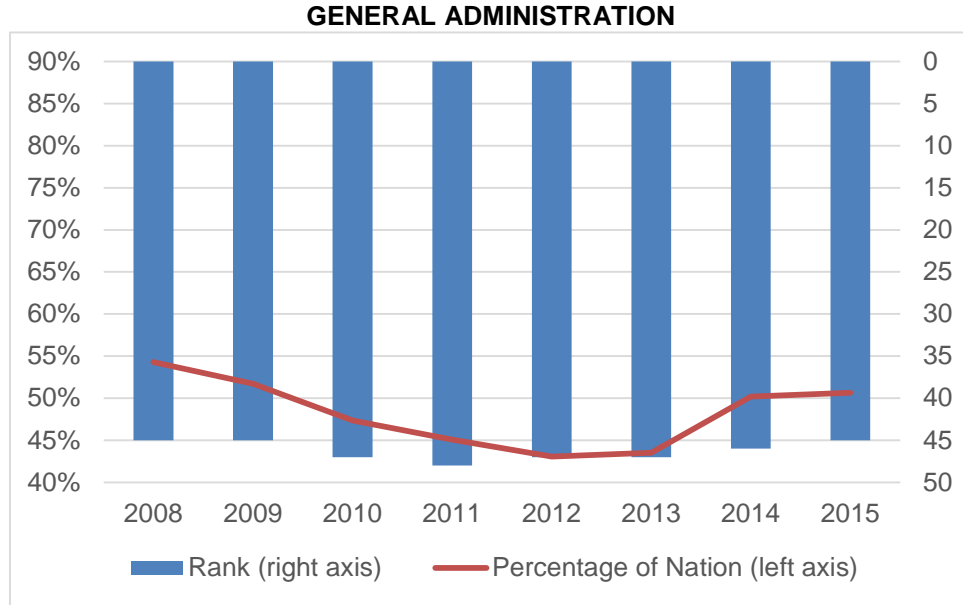
Sources: U.S. Department of Commerce, Census Bureau, <https://www.census.gov/programs-surveys/school-finances.html> (expenditures and enrollment), and U.S. Department of Commerce, Bureau of Economic Analysis, <http://www.bea.gov/regional/index.htm> (regional price parity).

**CHART 6  
PUBLIC ELEMENTARY AND SECONDARY EDUCATION EXPENDITURES FOR  
SUPPORT SERVICES PER STUDENT ADJUSTED FOR THE COST OF LIVING,  
ARIZONA RELATIVE TO THE NATION, FISCAL YEARS 2008 THROUGH 2015**



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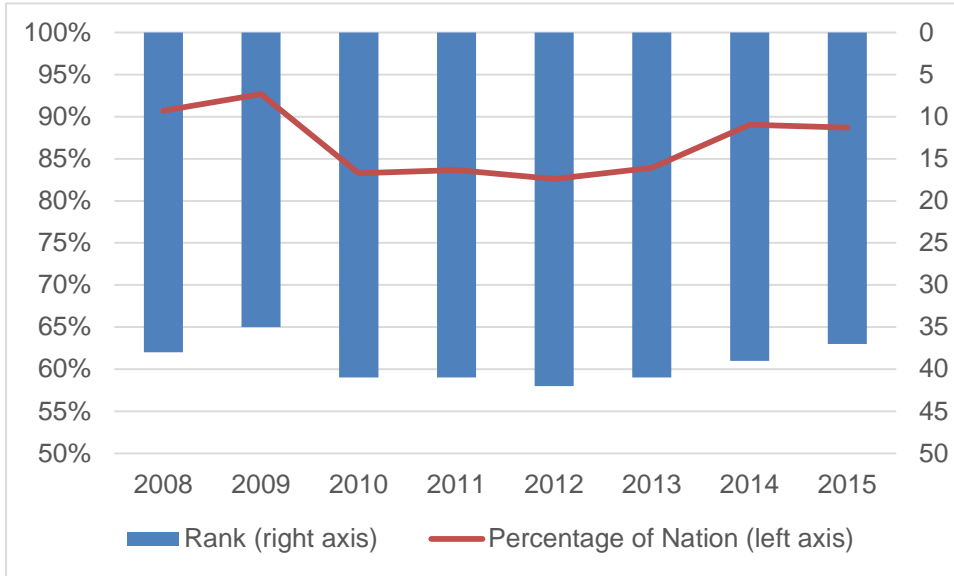
**CHART 6 (continued)**  
**PUBLIC ELEMENTARY AND SECONDARY EDUCATION EXPENDITURES FOR SUPPORT SERVICES PER STUDENT ADJUSTED FOR THE COST OF LIVING, ARIZONA RELATIVE TO THE NATION, FISCAL YEARS 2008 THROUGH 2015**



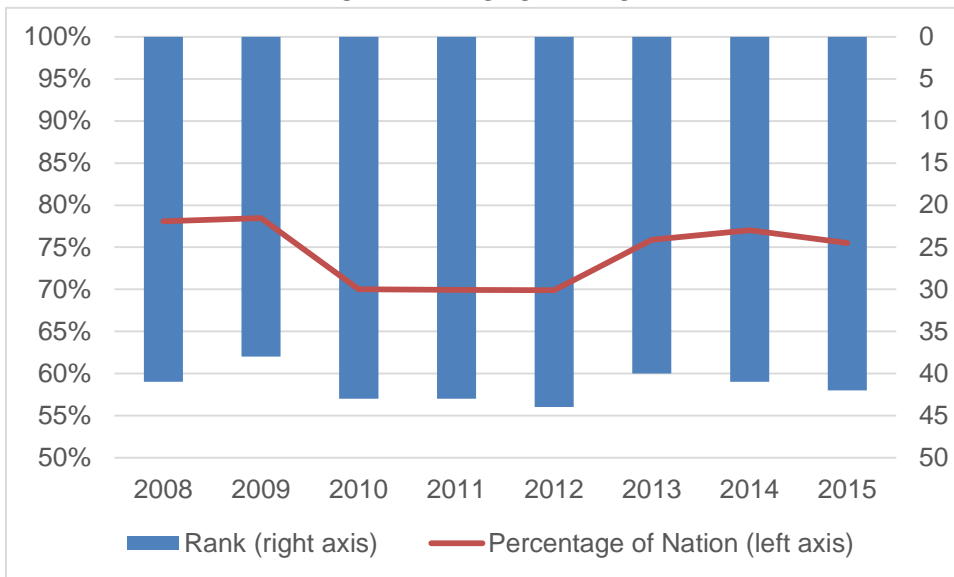
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**CHART 6 (continued)**  
**PUBLIC ELEMENTARY AND SECONDARY EDUCATION EXPENDITURES FOR**  
**SUPPORT SERVICES PER STUDENT ADJUSTED FOR THE COST OF LIVING,**  
**ARIZONA RELATIVE TO THE NATION, FISCAL YEARS 2008 THROUGH 2015**

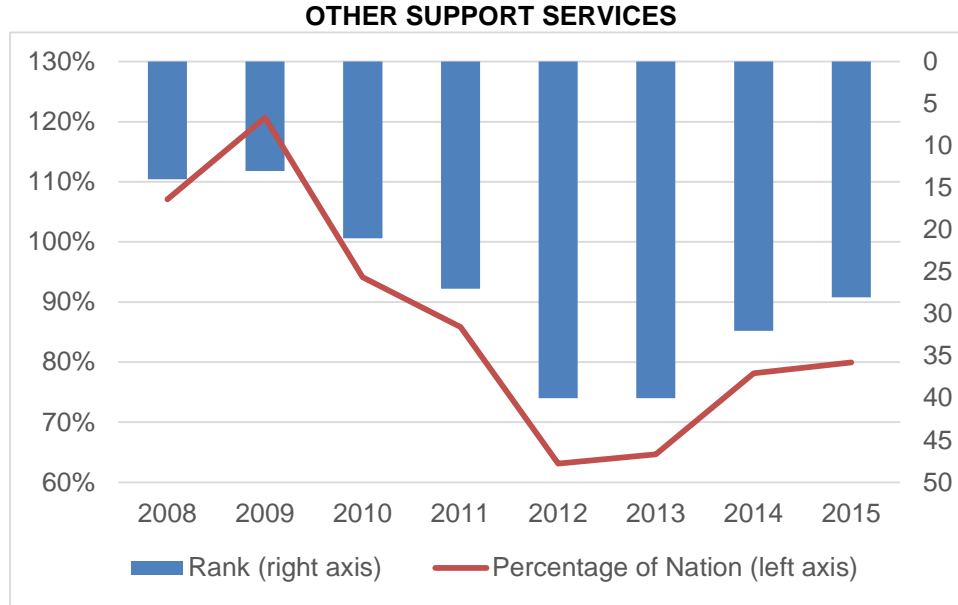
**PLANT OPERATIONS AND MAINTENANCE**



**PUPIL TRANSPORTATION**



**CHART 6 (continued)**  
**PUBLIC ELEMENTARY AND SECONDARY EDUCATION EXPENDITURES FOR**  
**SUPPORT SERVICES PER STUDENT ADJUSTED FOR THE COST OF LIVING,**  
**ARIZONA RELATIVE TO THE NATION, FISCAL YEARS 2008 THROUGH 2015**



Sources: U.S. Department of Commerce, Census Bureau, <https://www.census.gov/programs-surveys/school-finances.html> (expenditures and enrollment), and U.S. Department of Commerce, Bureau of Economic Analysis, <http://www.bea.gov/regional/index.htm> (regional price parity).