

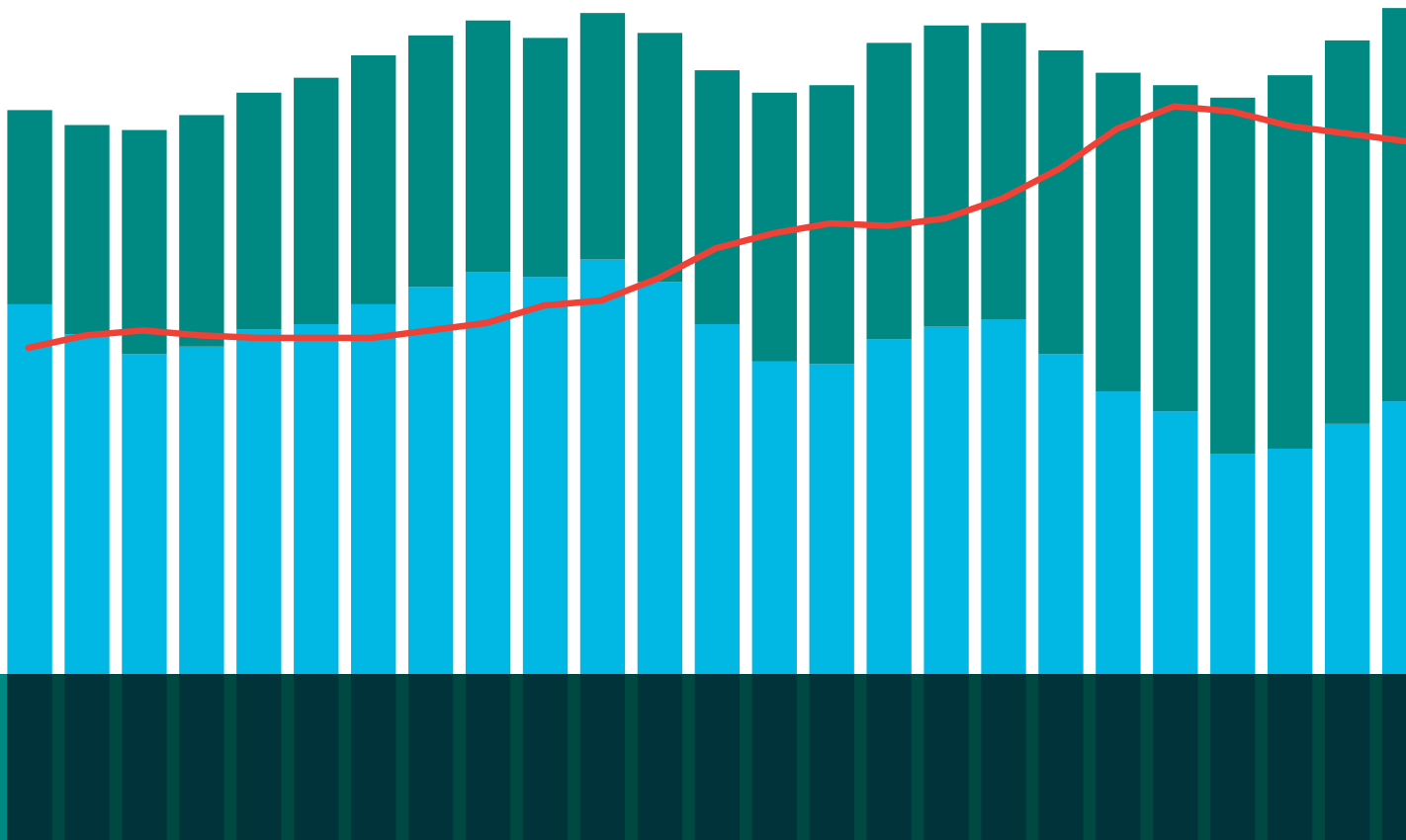


# SHEEO

STATE HIGHER EDUCATION EXECUTIVE OFFICERS ASSOCIATION

## SHEF: FY 2016

*STATE HIGHER EDUCATION FINANCE*



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The State Higher Education Executive Officers is the national association of the chief executives of statewide governing, policy, and coordinating boards of postsecondary education. Founded in 1954, SHEEO serves its members as an advocate for state policy leadership, as a liaison between states and the federal government, as a vehicle for learning from and collaborating with peers, as a manager of multistate teams to initiate new programs, and as a source of information and analysis on educational and public policy issues. SHEEO seeks to advance public policies and educational practices to achieve more widespread access to and completion of higher education, more discoveries through research, and more applications of knowledge that improve the quality of human lives and enhance the public good.

An electronic version of this report, State Higher Education Finance (SHEF) FY 2016, and numerous supplementary tables containing extensive state-level data are available at [www.sheeo.org](http://www.sheeo.org). These may be freely used with appropriate attribution and citation. In addition, core data and derived variables used in the SHEF study for fiscal years 1993 through 2016 are available on the SHEEO website and also through the National Center for Higher Education Management Systems (NCHEMS) sponsored Information Center for State Higher Education Policymaking and Analysis website at [www.higheredinfo.org](http://www.higheredinfo.org).

## ACKNOWLEDGEMENTS

We are pleased to present the fourteenth annual SHEEO State Higher Education Finance Survey (SHEF) study of state support for higher education. For the third consecutive year, we continue to make improvements to the look, feel, and presentation of the SHEF report and through additional features on the SHEF webpage ([www.sheeo.org/shef](http://www.sheeo.org/shef)). We hope these changes provide additional utility as SHEF becomes a resource used year round by staff at our member agencies, policymakers, researchers, and the media who report on higher education issues. Of course, SHEF's underlying data provide the real strength of this project and no changes were made to the data or its basic presentation in the report. SHEEO developed the SHEF study building directly on a 25-year effort by Kent Halstead, an analyst and scholar of state policy for higher education, and the SHEF dataset now extends from 1980 to 2016.

SHEEO is deeply indebted to the staff of state higher education agencies who annually provide the state-level data essential for the preparation of this report. Without their diligence and commitment, this project would not be possible. We also acknowledge and greatly appreciate the input and suggestions from many state higher education finance officers (SHEFOs); Dr. James Palmer at Illinois State University, who heads up the Grapevine survey; and the broader higher education community who utilize SHEF.

Last year, Sophia Laderman joined SHEEO as a data analyst and was a large contributor to the 2015 SHEF report. This year, Sophia Laderman continued to manage the data collection and was the primary author of the report. Andrew Carlson, a principal policy analyst, continued to support the project with his valuable guidance and insight throughout the process.

We are very appreciative and acknowledge the dedication and professionalism of Gloria Auer, who provided editorial support during the writing of this report, and Andy Sherman, with Can of Creative ([www.canofcreative.com](http://www.canofcreative.com)), who provided the graphics and design for the FY 2016 SHEF report. Finally, we are extremely grateful to Bart Lantz and Jiah Kim for developing the data collection website we launched this year.

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*President*

State Higher Education Executive Officers

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## EXECUTIVE SUMMARY

The State Higher Education Finance (SHEF) report is produced annually by the State Higher Education Executive Officers Association (SHEEO) to broaden understanding of the context and consequences of multiple public policy decisions in each state.

Although the cost of college has been rising for students and families, so has the potential economic benefit of earning a postsecondary credential or degree. Greater attention to both the costs and benefits of higher education influences the environment in which political leaders, policymakers, and educators make decisions.

No single report can provide definitive answers to the broad and fundamental questions of state higher education policy, but the SHEF report brings important context and trend analysis to help inform policy decisions. SHEF provides the earliest possible review of state and local support, tuition revenue, and enrollment trends for the most recently completed fiscal year.<sup>1</sup> The report includes:

- An explanation of the measures and methods used in this report;
- A description of the revenue sources and uses for higher education;
- An analysis of national trends in enrollment and revenue;
- Comparisons of the SHEF measures across states and over time;
- Indicators of state wealth, tax effort, and relative allocations for higher education; and
- A series of short callouts and case studies that add important context and understanding to the data presented in the report.

For the first time in the SHEF report, a state is excluded in its entirety. The figures presented here do not include Illinois, which has one of the country's largest student enrollments (and therefore a great potential to influence the national numbers). Illinois' data for 2016 were affected by the lack of an adopted state budget and data reporting errors, and are currently being revised for inclusion in next years' report.

State and local government support for public higher education in FY 2016 increased from \$85 billion in 2015 to more than \$88 billion in 2016, with just under \$70 billion going to support general education and operations and nearly \$10 billion being directed to student financial aid. Another \$10 billion supported medical education, hospitals, agricultural programs, and research.

Overall support increased by 3.2 percent per full-time equivalent (FTE) student enrollment in inflation adjusted terms. Fifteen states witnessed reductions in support, compared with nine in 2015 and twelve in 2014, signaling the shifting budgets of states faced with tax shortfalls

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1. **NOTE:** Generally, years referenced in the body of this publication refer to state fiscal years (FY), which commonly start July 1 and run through June 30 of the following calendar year. For example, FY 2016 includes July 2015 through June 2016. All enrollments are full-time equivalent for an academic year (including summer term). National averages are calculated using the sum of all of the states. For example, the national average per FTE expenditure is calculated as the total of all states' expenditures divided by the total of all states' FTEs.

(especially in resource dependent states) and growing state costs for health care and pensions. Average appropriation support per student for 2016 stood at \$7,116. By contrast, the pre-recession level (FY 2008) was \$8,372 per student (in 2016 dollars). FY 2016 support per student remains lower in 44 states than it was in 2008.

In 2016, sixteen states provided support at levels higher than the national average and 33 provided less than average support (excluding Illinois). This reflects that the nation's three largest states (California, Texas, and New York) all provided somewhat higher than average appropriation support, thus raising the per student average.

Tuition revenue rose by an average of 1.8 percent per student in inflation adjusted terms. This is the slowest year-over-year increase since 2009. This net increase in tuition was smaller than the year-over-year increase in educational appropriations, which led to a slight decrease in the student share of higher education revenues. In 2016, the student share comprised 47.3 percent of the revenue needed to support education, down from 47.6 percent the prior year.

Total revenue per student, from both appropriations and tuition, increased 2.6 percent from \$13,041 to \$13,377. Total revenue per student now stands about 2.8 percent higher than it did in FY 2008, although this masks large differences among states and institutions.

Student enrollment declined in 2016, with slight growth at 4-year institutions and a continued noticeable reduction in community college enrollment. Degrees awarded in 2015 per FTE student climbed to the highest level since SHEF has tracked this measure: 27.5 degrees awarded per 100 FTE students, showing the effects of the focus that institutions and states now are placing on degree completion. In 2005, institutions awarded 21.4 degrees per 100 FTE students.



# MEASURES, METHODS, AND ANALYTICAL TOOLS

## PRIMARY SHEF MEASURES

To assemble the annual SHEF report, SHEEO collects data on all state and local revenues used to support higher education, including revenues from taxes, lottery receipts, royalty revenue, and state-funded endowments. It also identifies the major purposes for which these public revenues are provided, including general institutional operating expenses, student financial assistance, and support for centrally-funded research, medical education, and extension programs.

1. **State and Local Support** consists of state tax appropriations and local tax support plus additional nontax funds (e.g., lottery revenue) that support or benefit higher education, and funds appropriated to other state entities for specific higher education expenditures or benefits (e.g., employee fringe benefits disbursed by the state treasurer). State and local support for 2009-2012 also includes federal American Reinvestment and Recovery Act (ARRA) revenue provided to stabilize these sources of revenue for higher education.
2. **Educational Appropriations** are that part of state and local support available for public higher education operating expenses. They are defined to exclude spending for research, agriculture-related programs, and medical education, as well as support for independent institutions or students attending them. Since funding for medical education and other major non-instructional purposes varies substantially across states, excluding these funding components helps to improve the comparability of state-level data on a per student basis.
3. **Net Tuition Revenue** is the gross amount of tuition and fees, less state and institutional financial aid, tuition waivers or discounts, and medical student tuition and fees. This is a measure of the resources available from tuition and fees to support instruction and related operations at public higher education institutions and includes revenue from in-state and out-of-state students as well as undergraduates and graduate students. Net tuition revenue generally reflects the share of instructional support received from students and their families, although it is not the same as and does not take into account many factors that need to be considered in analyzing the “net price” students pay for higher education.<sup>2</sup>

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2. SHEF's net tuition revenue statistic is not a measure of “net price,” but a measure of the revenue that institutions receive from tuition. It is a straightforward measure of the proportion of public institution instructional costs borne by students and families. SHEF does not deduct federal grant assistance (primarily from Pell Grants) from gross tuition revenue, since these are non-state funds that substitute, at least in part, for costs borne by students. Measures of net price for the student need to include non-tuition costs and all forms of aid.

4. **Total Educational Revenue** is the sum of educational appropriations and net tuition revenue excluding any tuition revenue used for capital and debt service. It measures the amount of revenue available to public institutions to support instruction (excluding medical students). Very few public institutions have significant non-restricted revenue from gifts and endowments to support instruction. In some states, a portion of the net tuition revenue is used to fund capital debt service and similar non-operational activities. These sums are excluded from the total educational revenue.
5. **Full-Time Equivalent Enrollment (FTE)** is a measure of enrollment equal to one student enrolled full time for one academic year, calculated from the aggregate number of enrolled credit hours (including summer session). SHEF excludes most non-credit or non-degree program enrollments; medical school enrollments also are excluded for the reasons mentioned above. The use of FTE enrollment reduces multiple types of enrollment to a single measure in order to compare changes in total enrollment across states and sectors, and to provide a straightforward method for analyzing revenue on a per student basis.

## ADJUSTMENTS FOR COMPARABILITY

SHEF's analytic methods are designed to make basic data about higher education finance as comparable as possible across states and over time. Toward that end, financial indicators are provided on a per student basis (using FTE enrollment as the denominator), and the State Higher Education Finance (SHEF) report uses three adjustments to the "raw data" provided by states.

1. **Cost of Living Index (COLI)**—a new adjustment to account for cost of living differences among the states;
2. **Enrollment Mix Index (EMI)**—to adjust for differences in the mix of enrollment and costs among types of institutions with different costs across the states (e.g., graduate education versus undergraduate education); and
3. **Higher Education Cost Adjustment (HECA)**—to adjust for inflation over time.

Technical Papers A and B on the SHEF website ([www.sheeo.org/shef\\_data\\_collection\\_process](http://www.sheeo.org/shef_data_collection_process)) describe these adjustments in more detail. *In 2016, the Cost of Living Index (COLI) replaced the former Cost of Living Adjustment (COLA). See Technical paper B for more information on this change.*

## DATA USES AND CAUTIONS

The SHEF report seeks to provide—to the extent possible—comparable data and reliable methods for examining many of the most fundamental financial issues facing higher education, particularly at the state level. However, using financial data can be complicated and even deceptive. Readers should be cognizant of limitations inherent in the data and methods.

1. **Comparing institutions and states is a difficult task.** Data providers often adjust their state data from prior years as more accurate information becomes available. States vary in climate, energy costs, housing costs, population densities, growth rates, areas of poverty, resource bases, and the mix of

industries and enterprises driving their local economies. Some have a relatively homogeneous, well-educated population, while others have large numbers of traditionally underserved populations. Additionally, the extent and rate at which these factors are changing varies across states.

2. **State higher education systems also differ.** Some have many small institutions, others fewer but larger institutions. Some have many independent institutions; others rely almost entirely on public institutions, with varying combinations of research universities, community colleges, and 4-year universities. Across states, tuition rates vary, as do the amounts and types of financial aid, which in turn affect enrollment patterns. Some states have many institutions that offer high-cost programs, while others focus funding on research or emphasize undergraduate education.
3. In addition to these differences, **technical factors can distort interstate comparisons.** For example, states differ in how they finance employee retirement. Some pay all retirement costs to employee accounts when the benefits are earned, while others defer part of the costs until the benefits are paid. Some pay benefit costs through a state agency, while others pay from institutional budgets. Many studies of state finance try to account for such factors, but no study, including this one, can assure flawless comparisons.

While making finance data cleaner, consistent, and more comparable, SHEF's analytic methods also add complexity. All comparisons can claim only to be "valid, more or less," and SHEF is no exception. Analysts with knowledge of particular states probably know of other factors that should be taken into account or that could mislead comparative analysis. SHEEO welcomes all efforts to improve the quality of its data and analytical tools. We urge readers and users to help us improve both methods and understanding. To that end, we are advised by a team of experts from states and policy organizations and welcome others to assist us. In the summer of 2015, SHEEO formed a SHEF advisory committee of experts from multiple areas of higher education finance.

Many educators and policymakers (and segments of the public) may look to interstate financial analysis to determine "appropriate" or "sufficient" funding for higher education, but sufficiency is meaningful only in the context of a particular state's objectives and circumstances. State leaders, educators, and others must work together to set goals and develop strategies to achieve those goals, and then determine the amount and allocation of funds required for success.

## SOURCES AND USES OF REVENUE

Support for higher education represents the third largest major budget area of state spending from state and local tax sources. According to the National Association of State Budget Officers (NASBO), 9.7 percent of state funds are allocated to higher education.<sup>3</sup> It is generally understood that state funding for higher education acts as the “balance wheel” during economic downturns with funding reductions typically greater than reductions in other budget areas. In part, this is because higher education funding reductions can be offset (in whole or in part) with money from tuition increases.

This section provides data and analysis of the sources of state and local government support for higher education, focusing on the most recent five-year trend (2011-2016) during which most states largely recovered from the Great Recession. This section also provides an overview of the major uses of that support, including state support for:

1. General operations support at public institutions of higher education;
2. Research, agricultural extension, and medical education;
3. Student financial aid;
4. Funding for independent, private, nonprofit institutions of higher education; and
5. Non-credit and continuing education.

***These funding amounts are not adjusted for inflation or for enrollment. Later sections of the report will show the impact of these two factors on state and local funding for higher education.***

Table 1 below presents state and local support in current unadjusted dollars for fiscal years 2011 through 2016. It shows the lingering impacts of the Great Recession and evidence of continued recovery of state and local funding sources provided to higher education. State funding grew 4 percent, from \$76.8 billion in 2015 to \$80 billion in 2016.

Sources for the \$88.8 billion in state and local government support for higher education in 2016 included the following:

1. State tax appropriations remained far and away the largest source of funds, totaling \$75.9 billion (85.5 percent of all support).
2. Local tax appropriations in 30 states accounted for 9.9 percent of total state and local support after a 5 percent increase from \$8.3 to \$8.8 billion in the last year.
3. Nontax appropriations, mostly from state lotteries, continued to grow and exceeded \$3.2 billion (3.6 percent) in 2016.
4. State-funded endowment earnings accounted for another 0.7 percent.
5. Non-appropriated support, often from oil and mineral extraction fees or royalties, accounted for 0.1 percent of the total funding provided by state and local governments.

3. Sigriz, B. (2016). *State Expenditure Report: Examining Fiscal 2014-2016 State Spending*. Washington, DC: NASBO.

Major uses of the \$88.8 billion in state and local government funding for higher education in 2016 included the following:

1. \$69.1 billion (77.9 percent) for general operating expenses of public institutions of higher education.
2. \$10.1 billion (11.3 percent, and a 3 percent increase from last year) went to special purpose appropriations for research, agricultural extension programs, and medical education.
3. \$9.1 billion was allocated to state-funded student financial aid programs. The bulk of this aid goes to students attending public institutions within a state. In fact, state funding for financial aid programs at public institutions increased 3 percent in 2016 to \$6.9 billion and now represents 7.8 percent of the total funding provided by state and local government sources. At the pre-recession high point of 2008, states allocated \$4.7 billion to financial aid at public institutions.
4. Fourteen states provided funding for operations at independent institutions and this amount totaled \$195 million in 2016, a 7 percent drop from 2015.
5. \$238 million (0.3 percent) was spent on non-credit and continuing education programs in the states. Funding for these programs dropped 3 percent from 2015 to 2016.

**TABLE 1**
**STATE AND LOCAL SUPPORT: DISTRIBUTION OF SOURCES AND USES, U.S., FY 2011-2016  
(CURRENT DOLLARS, IN MILLIONS)**

SOURCE	2011	2012	2013	2014	2015	2016	2016 % DISTRIBUTION
<b>STATE SUPPORT</b>							
ARRA FUNDS	\$2,840	\$117	\$0	\$0	\$0	\$0	-
TAX APPROPRIATIONS	\$68,919	\$64,559	\$65,069	\$69,219	\$73,021	\$75,976	85.5%
ALL NONTAX SUPPORT	\$2,989	\$2,954	\$2,928	\$3,027	\$3,153	\$3,225	3.6%
NON-APPROPRIATED SUPPORT	\$79	\$89	\$82	\$88	\$93	\$99	0.1%
STATE FUNDED ENDOWMENT EARNINGS	\$387	\$471	\$498	\$530	\$483	\$582	0.7%
OTHER <sup>1</sup>	\$539	\$257	\$266	\$312	\$201	\$171	0.2%
FUNDS NOT AVAILABLE FOR USE <sup>2</sup>	\$833	\$107	\$72	\$81	\$71	\$53	0.1%
<b>STATE SUPPORT TOTAL</b>	<b>\$74,919</b>	<b>\$68,340</b>	<b>\$68,771</b>	<b>\$73,095</b>	<b>\$76,880</b>	<b>\$80,000</b>	<b>90.2%</b>
<b>LOCAL TAX APPROPRIATIONS</b>	<b>\$7,990</b>	<b>\$7,903</b>	<b>\$8,373</b>	<b>\$8,547</b>	<b>\$8,257</b>	<b>\$8,836</b>	<b>9.9%</b>
<b>TOTAL</b>	<b>\$82,909</b>	<b>\$76,243</b>	<b>\$77,144</b>	<b>\$81,642</b>	<b>\$85,138</b>	<b>\$88,836</b>	<b>100.1%</b>
<b>USES</b>							
GENERAL PUBLIC OPERATIONS	\$64,368	\$58,169	\$58,687	\$62,858	\$65,974	\$69,176	77.9%
RESEARCH - AGRICULTURE - MEDICAL (RAM)	\$9,641	\$9,321	\$9,519	\$9,823	\$9,767	\$10,066	11.3%
PUBLIC STUDENT AID <sup>3</sup>	\$6,260	\$6,153	\$6,379	\$6,375	\$6,760	\$6,941	7.8%
INDEPENDENT STUDENT AID <sup>4</sup>	\$2,153	\$2,137	\$2,095	\$2,119	\$2,149	\$2,189	2.5%
OUT-OF-STATE STUDENT AID	\$36	\$35	\$35	\$34	\$34	\$31	0.0%
INDEPENDENT INSTITUTIONS	\$181	\$180	\$176	\$188	\$208	\$195	0.2%
NON-CREDIT AND CONTINUING EDUCATION	\$271	\$247	\$253	\$245	\$245	\$238	0.3%
<b>TOTAL</b>	<b>\$82,909</b>	<b>\$76,243</b>	<b>\$77,144</b>	<b>\$81,642</b>	<b>\$85,138</b>	<b>\$88,836</b>	<b>100.0%</b>

Excludes Illinois. Percentages may not equal 100 due to rounding.

- NOTES:**
1. "Other" includes multi-year appropriations from previous years and funds not classified in one of the other source categories.
  2. "Funds Not Available for Use" includes appropriations that were returned to the state, and portions of multi-year appropriations to be spread over other years.
  3. "Public Student Aid" is state appropriated student financial aid for public institution tuition and fees. Includes aid appropriated outside the recognized state student aid program(s). Some respondents could not separate tuition aid from aid for living expenses.
  4. "Independent Student Aid" is state appropriated student financial aid for students attending independent institutions in the state.

**SOURCE:** State Higher Education Executive Officers

## CASE STUDY: SOURCES AND USES

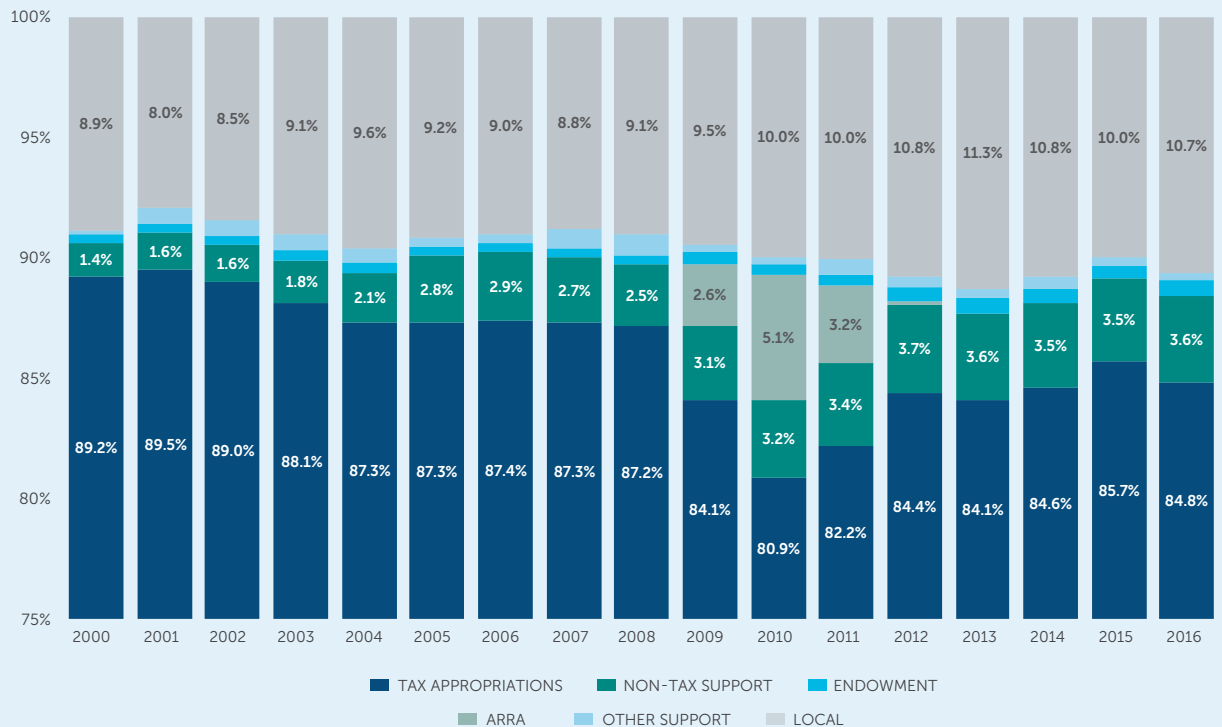
*This case study further explores the sources and uses of public funding in higher education. Figures 1 and 2 provide a historical look at the distribution of funds displayed in Table 1, while Figure 3 specifically explores the state-by-state changes in local funding since the pre-recession high point in 2008.*

*Tax appropriations, by far, made up the majority of sources of public funding for higher education (total funds excluding federal funds and tuition). During the Great Recession, tax appropriations dropped considerably, and nontax support grew from 2.5 percent of all funding in 2008 to 3.7 percent in 2012. Nontax support has remained between 3.5 and 3.6 percent of all funding sources since 2012 (Figure 1). The nontax data should be interpreted with caution because they have not been heavily analyzed in the past. In the coming years, SHEEO will review nontax support in all states and determine whether additional funds should be included.*

*Federal American Recovery and Reinvestment Act (ARRA) funds protected the states during the worst years of the Great Recession, and as those funds were used up, local funding took on a larger part of total funding. Local funding as a percent of all funding sources increased from 9.1 percent in 2008 to a high of 11.3 percent in 2013, and at \$9.7 billion, was 10.7 percent of public funding sources in 2016 (Figure 1).*

*[Figure 1 on following page...]*

**CASE STUDY FIGURE 1**  
**DISTRIBUTION AND PERCENT OF STATE AND LOCAL FUNDING SOURCES,**  
**U.S., FY 2000-2016**



**NOTE:** "Other support" includes non-appropriated support, multi-year appropriations from previous years, and funds not classified in one of the other source categories.

**SOURCE:** State Higher Education Executive Officers Association

Figure 2 shows how the sources of funding are distributed for higher education. General public operations are educational appropriations without public state financial aid, which is instead included in Student Aid in Figure 2. General operations comprised the majority of funding uses from 2000 to 2016, but has shrunk in comparison to other uses, from a high of 80.2 percent in 2001 to a low of 76.1 in 2013. Funding for general operations remains near the 2013 low, at 77.2 percent in 2016.

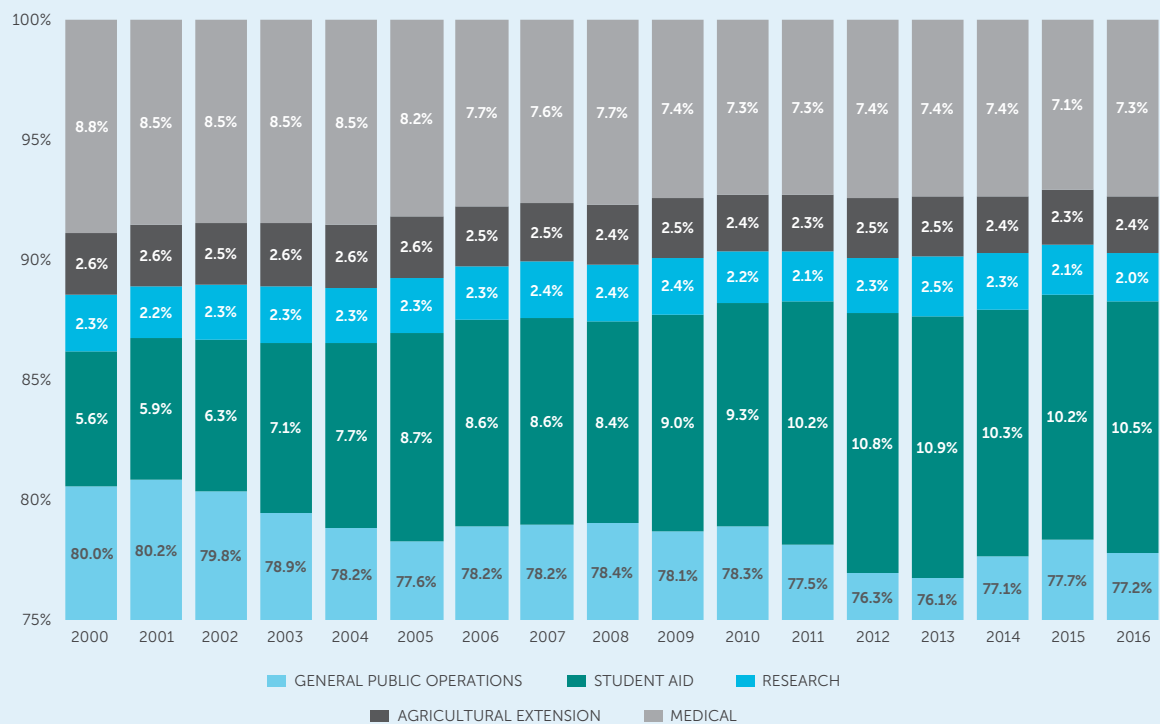
While general public operations has decreased in the distribution of uses of funding, student aid has steadily increased from 5.6 percent in 2000 to a high during the Great Recession of 10.9 percent in 2013 (student aid has since dropped slightly, to 10.5 percent). Funding used for agricultural extension programs has remained relatively constant in comparison to other funding sources, ranging from 2.3 to 2.6 percent.



Funding for research has fluctuated between less than half a percent since 2000. Toward the end of the Great Recession, research funding increased to a high of 2.5 percent, and has since decreased to 2 percent, the lowest since 2000. Although research funding has not changed considerably in the last 26 years, there may be significant changes in coming years due to changing public priorities.

Medical programs have seen a slow and steady decrease in their relative funding, compared to other uses of public funds for higher education. In 2000, medical programs received 8.8 percent of all funds. By the pre-recession high point of 2008, they comprised 7.7 percent. In 2015, medical programs reached their lowest percent of all funds (7.1 percent), and have now risen slightly to 7.3 percent (which is still below pre-recession levels).

**CASE STUDY FIGURE 2**  
**DISTRIBUTION AND PERCENT OF USES OF FUNDING, U.S., FY 2000-2016**

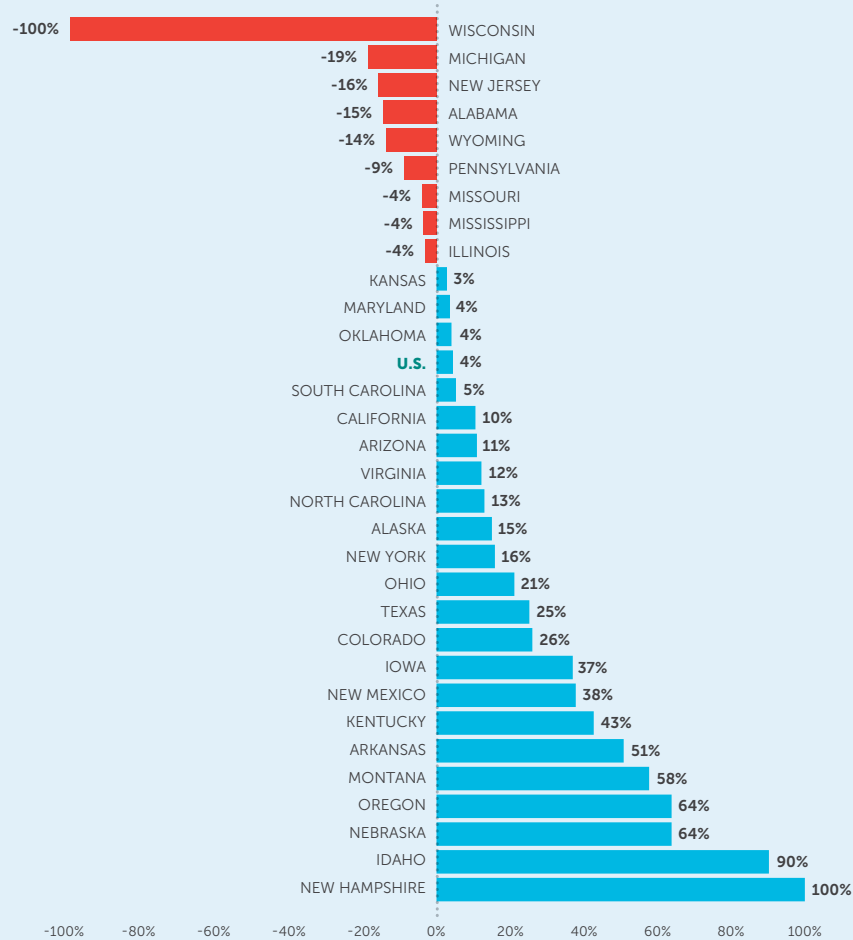


- NOTES:**
1. Totals do not equal 100 because funds for operating expenses at independent institutions and non-credit programs, which represent less than one percent of all uses, are included in the distribution calculation but are not shown.
  2. "Student aid" is state appropriated student financial aid for public and private institution tuition and fees. Includes aid appropriated outside the recognized state student aid program(s) and aid to students attending out-of-state institutions. Some respondents could not separate tuition aid from aid for living expenses.
  3. "Medical" includes funds appropriated for medical schools and hospitals.

**SOURCE:** State Higher Education Executive Officers Association

Local funding varies from state to state (Figure 3). From the pre-recession high point in 2008 to the most current financial data in 2016, 22 states have increased local funding, ranging from a 3 percent increase in Kansas to a 90 percent hike in Idaho. One state, New Hampshire, had no local funding from 2008 to 2015 and reported \$157,625 in local funding for 2016. Eight states reported losses in local funding, from 4 percent in Illinois to 19 percent in Michigan. Wisconsin lost local funding two years ago—but this has since been offset by an increase in state funding (see note below). The remaining 18 states did not report local funding in either year.

**CASE STUDY FIGURE 3**  
**CHANGE IN LOCAL TAX SUPPORT, FY 2008-2016, BY STATE**



- NOTES:**
1. Excludes states that did not have local tax support in fiscal 2008 or 2016.
  2. Constant 2016 dollars adjusted by SHEEO Higher Education Cost Adjustment (HECA).
  3. In 2015, the Wisconsin Technical College System lost \$66 million in local funds. This reduction was fully offset by an increase in state tax support.

**SOURCE:** State Higher Education Executive Officers Association

For additional information about the sources and uses of funding from 2000-2016, visit our online interactive dataset (<http://tabsoft.co/1MGDacv>), which includes state-by-state versions of the first two figures in this case study.

## NATIONAL TRENDS IN ENROLLMENT AND REVENUE

This section highlights national trends in higher education enrollment and the relationship between these trends and available revenues (and other components of financing). These “national” trends are actually composites of 50 unique and varied state trends, which are shown in the following section, **Interstate Comparisons—Making Sense of Many Variables**. For example, “national educational appropriations per FTE” is the sum of all educational appropriations divided by the sum of all net FTE across the 50 states. It is not the average of each of the 50 states’ individual per-FTE calculations. Please refer to the **Methods, Measures, and Analytical Tools** section for more information on the metrics presented here and the adjustment factors utilized.

*Table 2* presents a 25-year look at the SHEF Higher Education Finance Indicators and shows the impact of inflation and enrollment over time on higher education support for **public institutions**. It is a starting point for understanding the national story of public higher education funding from state and local sources, tuition revenue from students and families, and enrollment over time. The years 1991, 2006, 2011, 2015, and 2016 are shown, allowing for 25-year, 10-year, 5-year, and 1-year comparisons. The first section of the table shows unadjusted current dollars. Section two shows the impact of inflation by presenting the data in constant 2016 terms, while the third section presents the impact of both inflation and enrollment growth over time on these measures.

**TABLE 2**  
**IMPACT OF INFLATION AND ENROLLMENT ON HIGHER EDUCATION FINANCE,**  
**U.S., FY 1991-2016**

	1991	2006	2011	2015	2016	1 YEAR CHANGE	5 YEAR CHANGE	10 YEAR CHANGE	25 YEAR CHANGE
<b>CURRENT UNADJUSTED DOLLARS (MILLIONS)</b>									
ARRA FUNDS	-	-	\$2,840	-	-	N/A	N/A	N/A	N/A
STATE	\$37,455	\$64,758	\$69,439	\$74,243	\$77,347	4%	11%	19%	107%
LOCAL	\$2,720	\$6,258	\$7,990	\$8,257	\$8,836	7%	11%	41%	225%
[A] STATE AND LOCAL SUPPORT FOR PUBLIC HIGHER EDUCATION	\$40,176	\$71,016	\$80,269	\$82,501	\$86,183	4%	7%	21%	115%
[B] RESEARCH - AGRICULTURE - MEDICAL (RAM)	\$6,726	\$9,122	\$9,641	\$9,767	\$10,066	3%	4%	10%	50%
[C] EDUCATIONAL APPROPRIATIONS [A-B]	\$33,450	\$61,894	\$70,628	\$72,734	\$76,117	5%	8%	23%	128%
[D] NET TUITION	\$12,026	\$36,091	\$52,816	\$65,481	\$67,619	3%	28%	87%	462%
[E] TUITION AND FEES USED FOR DEBT SERVICE <sup>1</sup>	-	\$337	\$499	\$638	\$633	-1%	27%	88%	N/A
<b>TOTAL EDUCATIONAL REVENUE [C+D-E]</b>	<b>\$45,476</b>	<b>\$97,648</b>	<b>\$122,945</b>	<b>\$137,577</b>	<b>\$143,104</b>	<b>4%</b>	<b>16%</b>	<b>47%</b>	<b>215%</b>
<b>CONSTANT ADJUSTED DOLLARS (MILLIONS)</b>									
ARRA FUNDS	-	-	\$3,110	-	-	N/A	N/A	N/A	N/A
STATE	\$73,019	\$79,606	\$76,043	\$75,589	\$77,347	2%	2%	-3%	6%
LOCAL	\$5,303	\$7,693	\$8,750	\$8,407	\$8,836	5%	1%	15%	67%
[A] STATE AND LOCAL SUPPORT FOR PUBLIC HIGHER EDUCATION	\$78,322	\$87,299	\$87,902	\$83,996	\$86,183	3%	-2%	-1%	10%
[B] RESEARCH - AGRICULTURE - MEDICAL (RAM)	\$13,112	\$11,214	\$10,557	\$9,944	\$10,066	1%	-5%	-10%	-23%
[C] EDUCATIONAL APPROPRIATIONS [A-B]	\$65,211	\$76,085	\$77,345	\$74,052	\$76,117	3%	-2%	0%	17%
[D] NET TUITION	\$23,445	\$44,366	\$57,839	\$66,668	\$67,619	1%	17%	52%	188%
[E] TUITION AND FEES USED FOR DEBT SERVICE <sup>1</sup>	-	\$414	\$547	\$650	\$633	-3%	16%	53%	N/A
<b>TOTAL EDUCATIONAL REVENUE [C+D-E]</b>	<b>\$88,656</b>	<b>\$120,036</b>	<b>\$134,637</b>	<b>\$140,070</b>	<b>\$143,104</b>	<b>2%</b>	<b>6%</b>	<b>19%</b>	<b>61%</b>
<b>CONSTANT ADJUSTED DOLLARS (PER-FTE)</b>									
FULL-TIME EQUIVALENT ENROLLMENT (FTE) <sup>2</sup>	7,568,198	9,458,237	11,228,720	10,740,596	10,697,348	0%	-5%	13%	41%
EDUCATIONAL APPROPRIATIONS PER FTE	\$8,616	\$8,044	\$6,888	\$6,895	\$7,116	3%	3%	-12%	-17%
NET TUITION PER FTE	\$3,098	\$4,691	\$5,151	\$6,207	\$6,321	2%	23%	35%	104%
<b>TOTAL EDUCATIONAL REVENUE PER FTE</b>	<b>\$11,714</b>	<b>\$12,691</b>	<b>\$11,990</b>	<b>\$13,041</b>	<b>\$13,377</b>	<b>3%</b>	<b>12%</b>	<b>5%</b>	<b>14%</b>

Excludes Illinois

**NOTES:** 1. Tuition and fees used for debt service were not reported in 1991.  
2. FTE enrollment excludes medical school enrollments.

**SOURCE:** State Higher Education Executive Officers

Over the last 25 years, total state and local support for public higher education grew 115 percent in unadjusted terms from \$40.1 billion in 1991 to \$86.1 billion in 2016. After adjusting for inflation, state and local funding in 1991 was \$78 billion, meaning that in constant dollars, funding increased 10 percent in the last 25 years. However, funding has dropped 2 percent in the past five years.

General operations at public institutions of higher education are funded from state and local support and tuition revenue. The SHEF report tracks net tuition revenue over time and shows that overall net tuition revenue has grown 188 percent in constant dollars since 1990. This growth is due in large part to an enrollment increase from 7.6 million to 10.7 million student FTE between 1991 and 2016. Put simply, there are significantly more students paying tuition charges. Tuition revenue has also increased due to rising tuition rates and changes in enrollment mix (e.g., more non-resident students or more graduate students paying higher rates).

The third section of *Table 2* summarizes the impacts of both inflation and enrollment on higher education funding. Since 1991, student FTE enrollment has increased 41 percent, while educational appropriations per FTE have declined 17 percent, meaning **state and local funding has not kept up with inflation or enrollment growth over time**. Net tuition revenue per FTE has increased 104 percent since 1991 in constant dollars. Taken together, the sum of educational appropriations and net tuition revenue per FTE has increased 14 percent. In other words, **net tuition revenue has more than made up for the declines in state and local funding** per student over the most recent 25-year period. However, as discussed in the 2015 SHEF report, the amount of total expenditures may have also changed<sup>4</sup>, and this pattern is not reflected in many of the states.

*Figures 4* and *5* further explore the relationship between net tuition per FTE and educational appropriations per FTE. The historical data in *Figure 4* (the Wave Chart) demonstrate the relationships between higher education enrollment and revenue over time, especially the impact of the economic cycle on these measures over the last 25 years. *Figure 5* (the Tuition Trend Line Chart) tracks the share of total educational revenues from net tuition revenue over time. *Figures 4* and *5* also illustrate the longer-term trends.

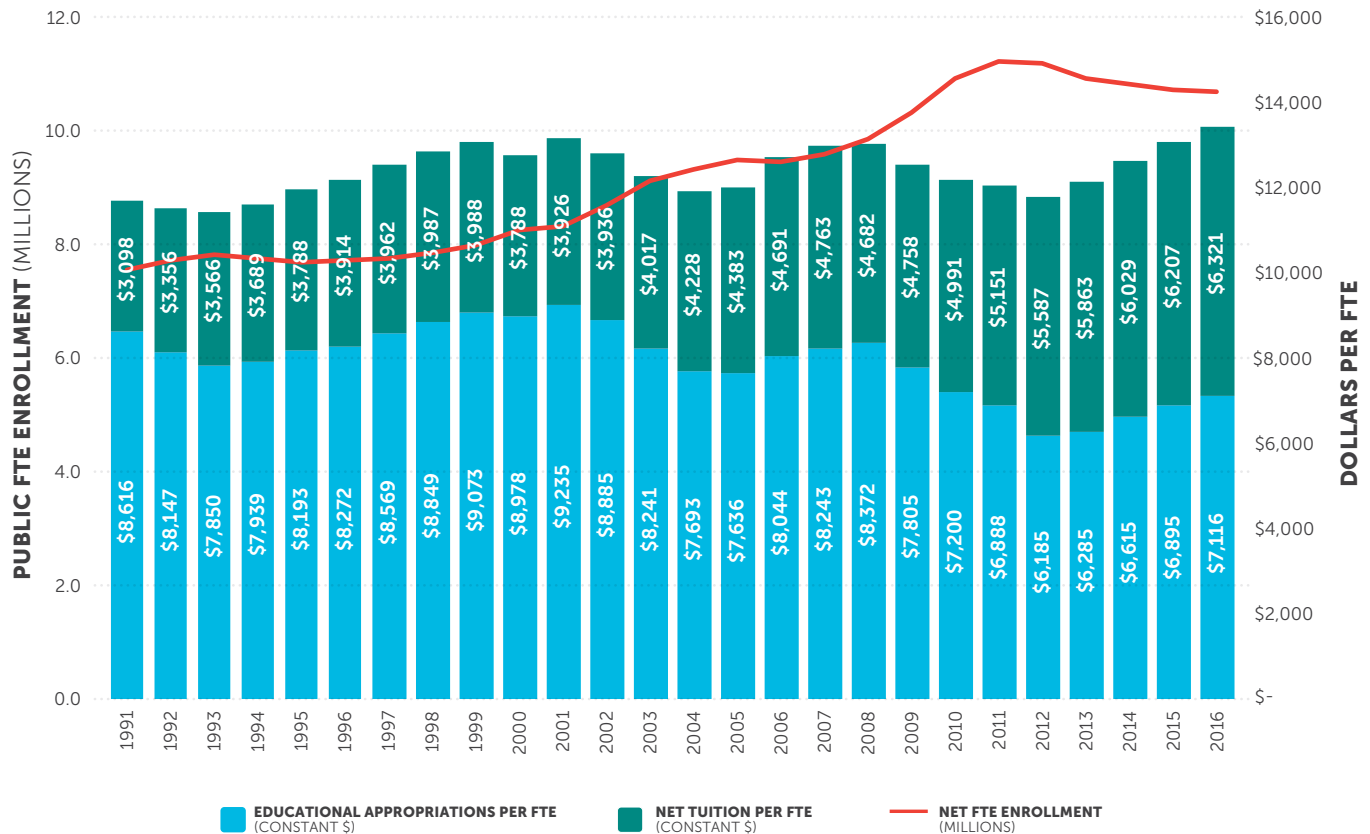
The *Figure 4* Wave Chart provides a 25-year look at each of the four SHEF metrics and *Figure 5* provides additional information on net tuition revenue, specifically, the growing reliance on this revenue source:

1. Full-time equivalent enrollment (FTE)—the red trend line in the Wave Chart
2. Educational appropriations per FTE—the blue bars in the Wave Chart
3. Net tuition revenue per FTE—the green bars in the Wave Chart and the trend line in *Figure 5*
4. Total educational revenue per FTE—the total shown by the blue and green bars in the Wave Chart each year

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4. See Case Study—Kentucky on page 36 of the FY 2015 SHEF report for more information.

**FIGURE 4**  
**PUBLIC FTE ENROLLMENT AND EDUCATIONAL APPROPRIATIONS PER FTE,**  
**U.S., FY 1991-2016**



Excludes Illinois

- NOTES:** 1. Net tuition revenue used for capital debt service included in the above figures.  
 2. Constant 2016 dollars adjusted by SHEEO Higher Education Cost Adjustment (HECA).

**SOURCE:** State Higher Education Executive Officers

## 1. FULL-TIME EQUIVALENT ENROLLMENT (FTE)

The rate of enrollment growth normally varies from year to year and state to state in response to the economy and job market as well as underlying demographic factors. During the Great Recession, enrollment growth was more pronounced than during prior downturns. Budget conditions in 2012 and 2013, however, may also have had adverse effects on higher education enrollments. Budget-driven enrollment caps, rapid increases in tuition and fees, and the beginnings of economic recovery may have driven the drop in enrollments in 2012 and 2013. The FTE enrollment reductions seen recently at 2-year institutions may be due, at least in part, to the recovering economy.

- Nationally, the explosive enrollment growth during the Great Recession continues to level off as economic recovery continues. After year-over-year increases of 4.7 percent, 6 percent, and 2.6 percent in 2009, 2010, and 2011, respectively, FTE enrollment has now declined slightly in each of the last five years.

- Due to these declines, 2016 enrollment of 10,697,348 FTE is 0.4 percent lower than 2015 enrollment and 4.7 percent lower than 2011 enrollment, but is 8.5 percent above the pre-recession high point in 2008.
- Enrollment is up 13.1 percent over the last 10 years and 41.3 percent over the last 25 years.
- In most states, the recent decline in FTE enrollment is concentrated in community colleges (see *Figure 8*), the sector in which enrollment grew most rapidly during the recession. Nationally, the 2-year sector has seen a 15.3 percent decline since 2011, while the 4-year sector has seen a 5 percent increase in FTE enrollment.

## 2. EDUCATIONAL APPROPRIATIONS

In constant dollars per student, educational appropriations remain below historic levels. Funding is 15 percent lower than in 2008 and 17 percent lower than in 1991. The substantial shift of responsibility for financing public higher education toward net tuition revenue (from around 25 percent to nearly 50 percent) since 1990 is a significant change for American higher education.

- Constant dollar educational appropriations per FTE (the blue bars in *Figure 4*) reached a high of \$9,235 in 2001.
- Following four years of declines (2002, 2003, 2004, and 2005), per student educational appropriations increased in 2006 and 2007, reaching a pre-recession high point of \$8,327 in 2008.
- During the Great Recession, educational appropriations dropped 17 percent over four straight years, reaching a low of \$6,185 in 2012. This was due largely to accelerating enrollment growth and the failure of state and local funding to increase proportionally.
- Reversing the annual decline that began in 2009, 2013 educational appropriations per FTE rose to \$6,285, a constant dollar increase of \$100 (1.6 percent) over 2012, indicating the beginnings of economic recovery. However, this increase in per FTE appropriations was caused by a decline in enrollment after the recession.
- As *Figure 1* shows, educational appropriations continued to grow to \$6,615 in 2014, \$6,895 in 2015, and \$7,116 in 2016. Nationwide, state and local support per student remain well below the levels that prevailed prior to the recession.

### 3. NET TUITION REVENUE

Net tuition revenue per student tends to increase most rapidly during periods of economic recession, shifting more of the cost of higher education to students and families (see *Figure 5*). When the economy stabilizes, the student share does not decline significantly. Instead, during periods of recovery a new level is established. Because of this trend, it is likely that student share will pass 50 percent during the next economic downturn.

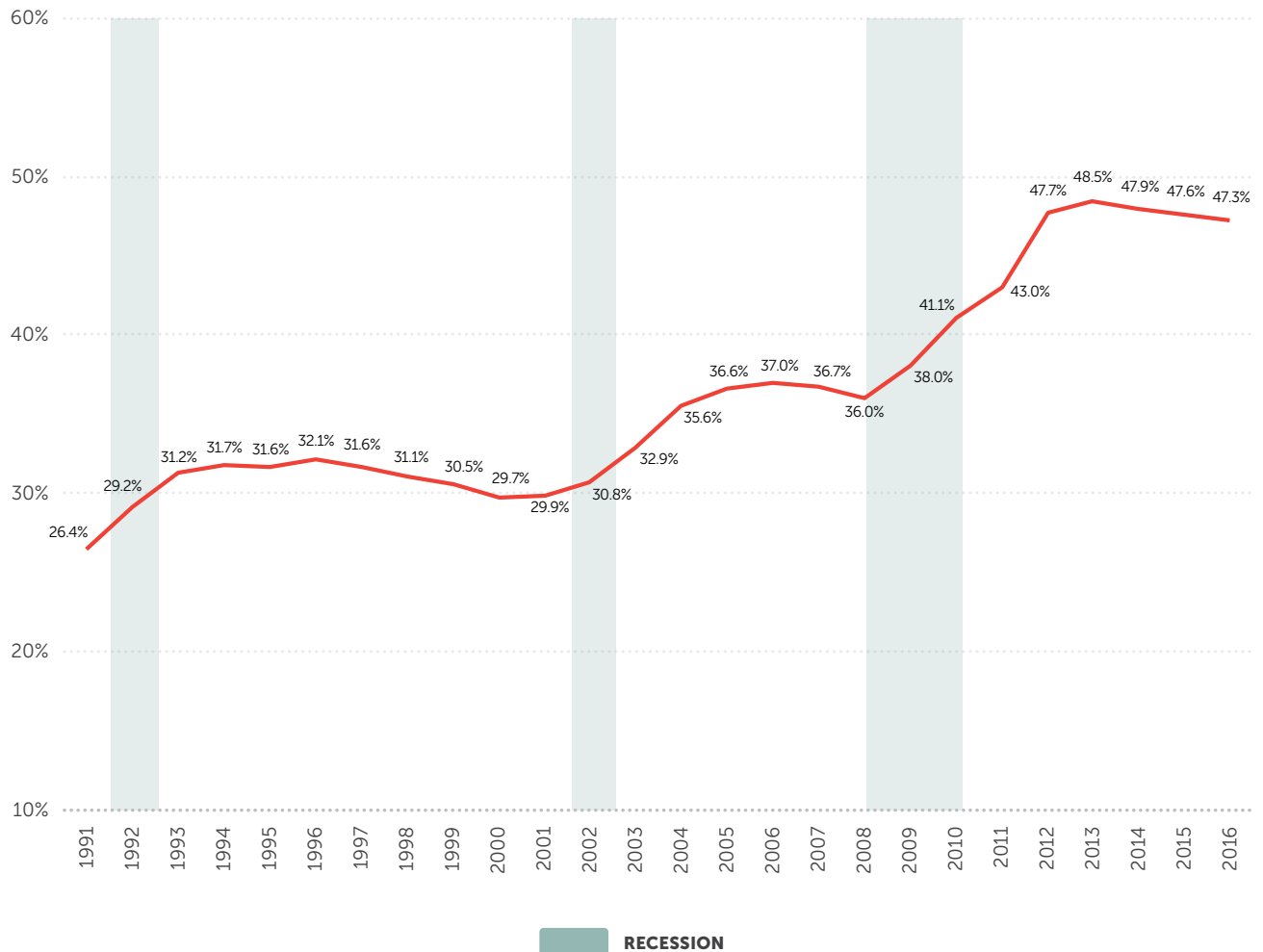
- *Figure 4* shows that in 1991, net tuition per FTE (in constant 2016 dollars) was \$3,098, and has since grown 104 percent.
- On a per-student basis, net tuition revenue increased 1.8 percent from \$6,207 in 2015 to \$6,321 in 2016. Since the pre-recession high point in 2008, net tuition revenue per student (in constant 2016 dollars) has increased 35 percent.

#### STUDENT SHARE

- *Figure 5* shows that net tuition as a share of total educational revenue (the student share) grew rapidly during the Great Recession, increasing from 36 percent in 2008 to 48.5 percent in 2013. Since that high point, the share from net tuition declined slightly over the past three years, returning to 47.3 percent in 2016.
- In half of all states, tuition comprises more than 50 percent of total educational revenue.



**FIGURE 5**  
**NET TUITION AS A PERCENT OF PUBLIC HIGHER EDUCATION TOTAL**  
**EDUCATIONAL REVENUE, U.S., FY 1991-2016**



Excludes Illinois

**NOTE:** Net tuition revenue used for capital debt service is included in net tuition revenue, but excluded from total educational revenue in calculating the above figures.

**SOURCE:** State Higher Education Executive Officers

#### 4. TOTAL EDUCATIONAL REVENUE

The total resources available on a per-student basis have historically changed during economic uncertainty. After dropping significantly during the Great Recession, total educational revenue has largely recovered thanks to increases in net tuition revenue and some recovery of educational appropriations. **Nationally, increases in net tuition revenue have more than offset reductions in state and local funding per student.** However, there is wide variance across the country and reductions have not been offset in all states.

- Continuing the regular growth seen over the past four years, total educational revenue per student (the sum of educational appropriations and net tuition revenue) has increased 2.6 percent since 2015 (\$13,041 to \$13,377).

- As shown in *Figure 4*, total educational revenue reached previous highs in 2015. This is due to increases in net tuition revenue and the partial restoration of educational appropriations over the last four years. The share of this total from net tuition revenue is 47.3 percent. During the previous high, in 2001, this share was 29.9 percent.

## CERTIFICATE AND DEGREE COMPLETION

Many states have adopted completion and attainment goals that are often tied to statewide strategic plans. These goals build upon the efforts of foundations and elected officials to improve educational attainment.<sup>5</sup> Using data from the Integrated Postsecondary Education Data System (IPEDS) for 2005-2015 (the most recent years available) for certificate and degree completion<sup>6</sup> at public institutions and SHEF FTE enrollment data, it is possible to compare and track progress toward these attainment goals. *Figure 6* shows the 10-year trend in certificate and degree completion (stacked bars) and SHEF FTE enrollment (trend line) from 2005-2015. *Figure 7* provides certificate and degrees per 100 SHEF FTE over the same time period, a standard way to normalize the data.

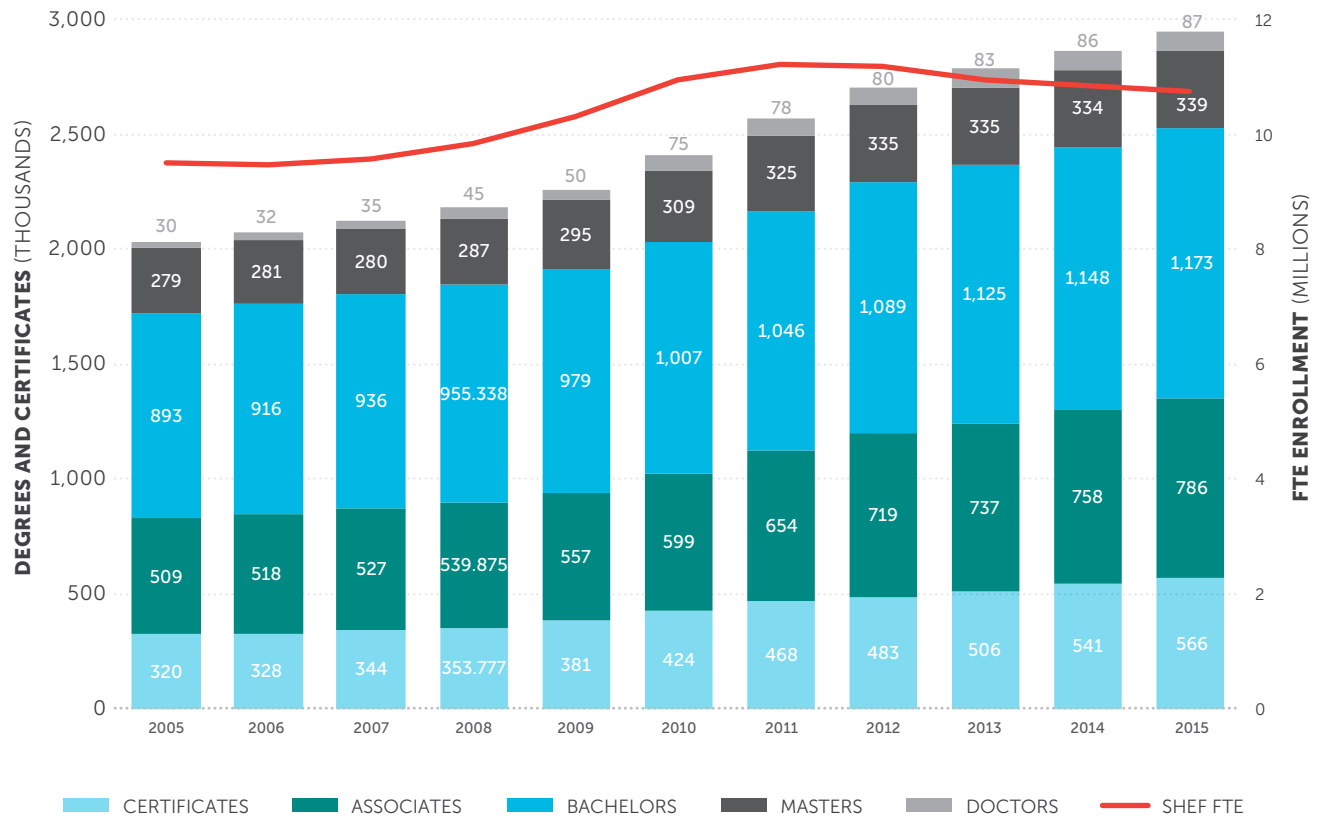
- Between 2014 and 2015, completions increased: 4.6 percent for certificates, 3.8 percent for associates, 2.2 percent for bachelor's, 1.4 percent for master's, and 1.6 percent for doctor's. At the same time, SHEF FTE decreased almost 1 percent.
- Over 10 years, from 2005-2015, SHEF FTE enrollment grew 12.9 percent to 10,740,596 and certificate and degree production grew 45 percent to 2,951,238.
- SHEF FTE peaked in 2011 and had fallen 4.3 percent by 2015. However, during this same time frame, certificate and degree completions grew 14.7 percent, indicating a correlation between enrollment growth during the recession and greater degree production in following years.
- Certificate, associates, and doctoral completions saw the largest increases from 2005 to 2015 (76.6, 54.5, and 31.3 percent, respectively). Bachelor's and master's degrees saw smaller increases; 28.4 and 21.2 percent, in this same time frame. However, bachelor's degrees remain the most common degree, accounting for a 10-year average of 41.5 percent of all completions and reaching a high of 1,173,104 in 2015.
- Completions per FTE grew 28.6 percent from 2005 to 2015.
- Greater focus on student success at the state and institution levels may be correlated with the increased rate of completions per FTE. However, because reductions in FTE include all students, these reductions may not be represented in completion data for several years.

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5. [www.whitehouse.gov/issues/education/higher-education](http://www.whitehouse.gov/issues/education/higher-education)

6. SHEEO's calculations come from the Completions Survey of the Integrated Postsecondary Data Systems (IPEDS). Includes certificates greater than 1 year and less than 4 years, and all degrees awarded at public institutions.

**FIGURE 6**  
**TOTAL DEGREE AND CERTIFICATE COMPLETIONS BY LEVEL AND SHEF FTE, 2005-2015**

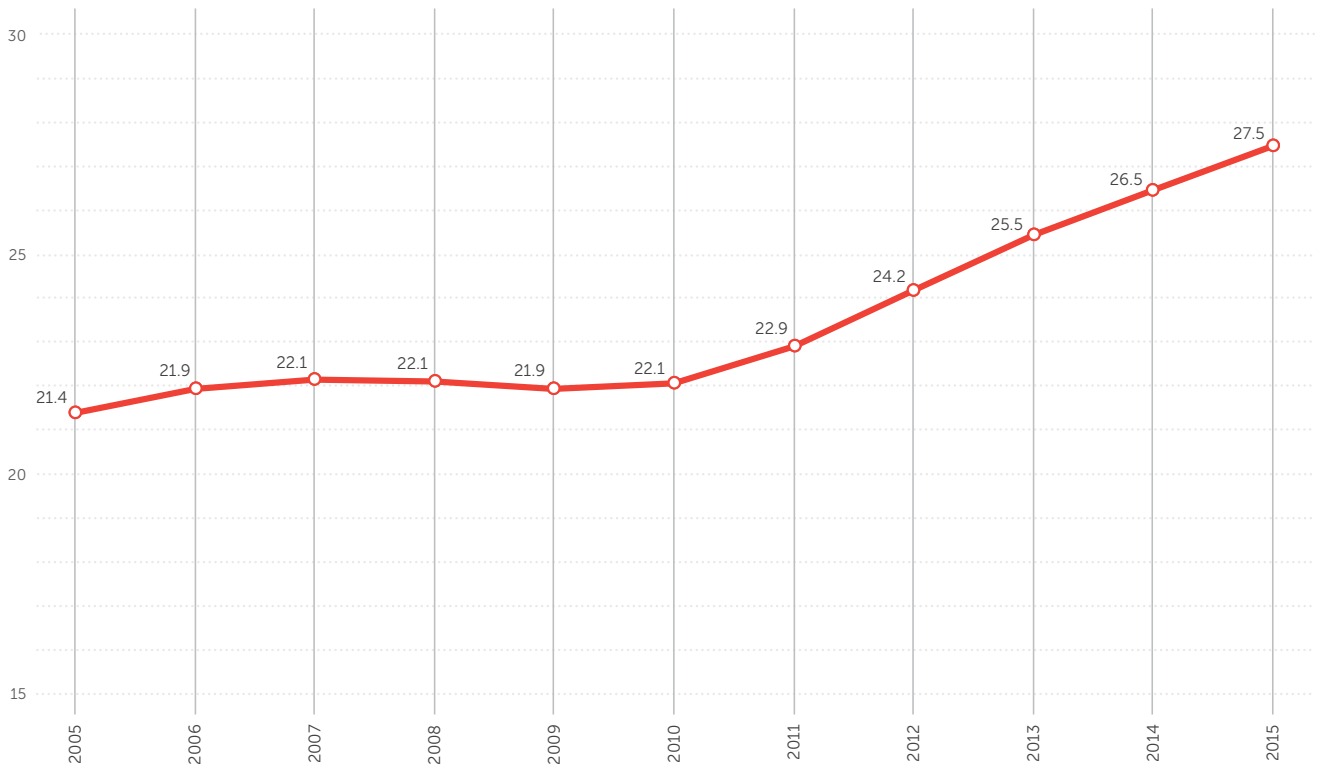


Excludes Illinois

**NOTE:** "Certificates" includes certificates of more than one and less than four years.

**SOURCES:** Integrated Postsecondary Education Data System (IPEDS) and State Higher Education Executive Officers

**FIGURE 7**  
**DEGREE AND CERTIFICATE COMPLETIONS PER 100 SHEF FTE, 2005-2015**



Excludes Illinois

**NOTE:** "Certificates" includes certificates of more than one and less than four years.

**SOURCES:** Integrated Postsecondary Education Data System (IPEDS) and State Higher Education Executive Officers

## CASE STUDY: SECTOR LEVEL BREAKDOWN

For the past several years, SHEEO has worked to collect three SHEF metrics broken down by Carnegie institution sector (2-year and 4-year). For the first time, we are publishing the sector breakdown of Full-Time Equivalent Enrollment (FTE), Net Tuition Revenue, and State Support data from 2009-2016. FTE and Net Tuition are a direct breakdown of the information provided in Table 3 and Table 5, but due to a difference in data collection, State Support differs from Educational Appropriations in that it does not include local funding and does include:

- State funding for students in non-credit continuing or adult education courses and non-credit extension courses;
- Sums appropriated to independent institutions for capital outlay or operating expenses;
- Allocation of appropriations for financial aid grants to students attending in-state independent institutions or students attending out-of-state institutions; and
- Research, Agricultural, and Medical Appropriations (RAM).

Local support was added to State Support in the wave chart in Figure 9 because local support primarily benefits 2-year institutions. However, Local Support is shown separately from State Support because it is not always strictly used for 2-year institutions. For example, one 4-year institution in Arkansas receives \$5.9 million in local county sales tax revenue. Similarly, Educational Appropriations does not include research, agricultural, and medical appropriations (RAM), but these funds are still included in the State Support metric. To remedy this, Figure 10 shows State Support to 4-year institutions without RAM and lists RAM funds separately.

It is important to note that this data is only available back to 2009 when the Great Recession had already begun to impact the states. In the future, SHEEO hopes to improve this data collection to the pre-recession high point of 2008 and provide a full breakdown of SHEF metrics by sector. As in the figures throughout the report, Washington, D.C., and Puerto Rico are excluded from the aggregate figures shown. A state-level breakdown of the data presented in this case study, including D.C. and Puerto Rico, is available using our online interactive data tool (<http://tabsoft.co/1MGDacv>).

**The data in this case study are available for just 43 states, and for twelve of these states, a small portion of sector data was uncategorizable and not included in the following figures. This section was added to the SHEF report to begin a conversation about improving these data so that in the future, they are available and accurate for all 50 states.**

### FULL-TIME EQUIVALENT (FTE) ENROLLMENT

Figure 8 shows the difference in FTE student enrollment between 2- and 4-year institutions for the past eight years. FTE enrollment differs from headcount enrollment, with the difference being most pronounced at 2-year institutions that enroll more part-time students (see page 10 for a more detailed definition of FTE enrollment). During the recession, FTE increased at both 2- and 4-year institutions, but this effect was much more pronounced at 2-year institutions, which saw a 12 percent increase in FTE from FY 2009 to FY 2011 compared to 5 percent at 4-year institutions. Since 2011, 2-year institutions have seen a 15 percent drop in FTE, while 4-year institutions have continued to increase an additional 5 percent from 2011 to 2016. Please note that data regarding sector enrollment was not available for seven states, whose total enrollment of 1,166,000 FTE students comprised more than 10.5 percent of the national total in 2016. Consequently, caution must be used in evaluating these data in comparison with other nationwide data contained in this 2016 SHEF report. (The seven states are Hawaii, Illinois, Kansas, Minnesota, New Jersey, Oklahoma, and Vermont.)

**CASE STUDY FIGURE 8**  
**FULL-TIME EQUIVALENT (FTE) ENROLLMENT AT 2- AND 4-YEAR INSTITUTIONS, U.S., 2009-2016**



- NOTES:**
1. Full-time equivalent enrollment equates student credit hours to full-time, academic year students, but excludes medical students.
  2. Excludes Hawaii, Illinois, Kansas, Minnesota, Oklahoma, New Jersey, and Vermont due to unavailable data in one or more sectors.

**SOURCE:** State Higher Education Executive Officers Association

## WAVE CHARTS BY SECTOR

The wave charts in Figures 9 and 10 provide an eight-year look at each of the metrics that can be broken down by institutional sector. These charts show:

- Full-time equivalent enrollment (FTE)—the red trend line
- State support per FTE—the bright blue bars
- Net tuition revenue per FTE—the green bars
- Total educational revenue per FTE—the total shown by the sum of the bars

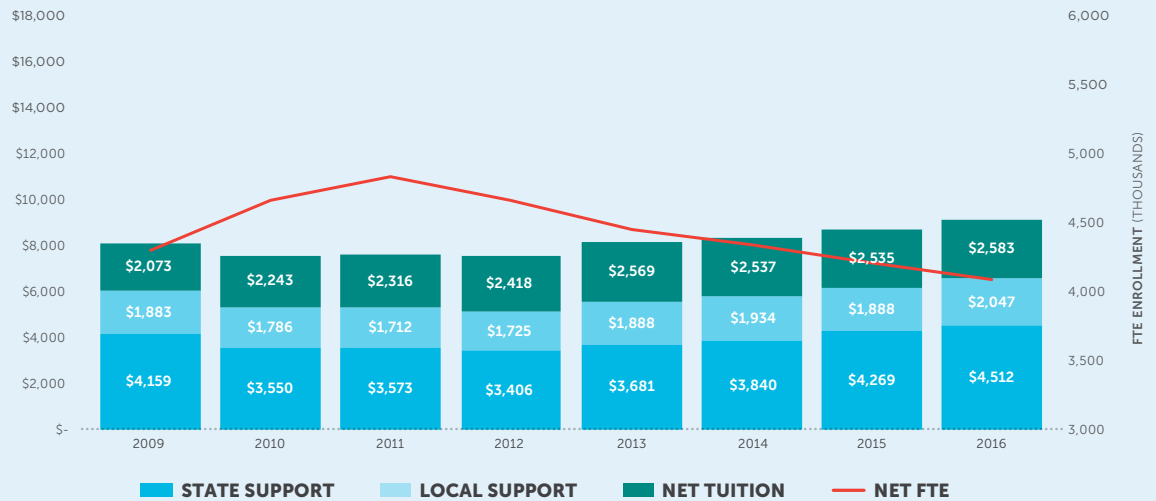
Additional variables are included in the wave charts to provide a closer approximation to the SHEF educational appropriations used throughout the report. The light blue bars show local appropriations per FTE in Figure 9 and special purpose appropriations for research, agricultural extension programs, and medical education in Figure 10. See page 33 for an explanation of why these data are included in the wave charts.

State support per FTE decreased during the Great Recession, but has mostly recovered since. From 2009 to 2016, 2-year institutions saw an 8 percent increase in state support per FTE, while 4-year institutions saw a 2 percent decrease in state support (not including RAM) per FTE.

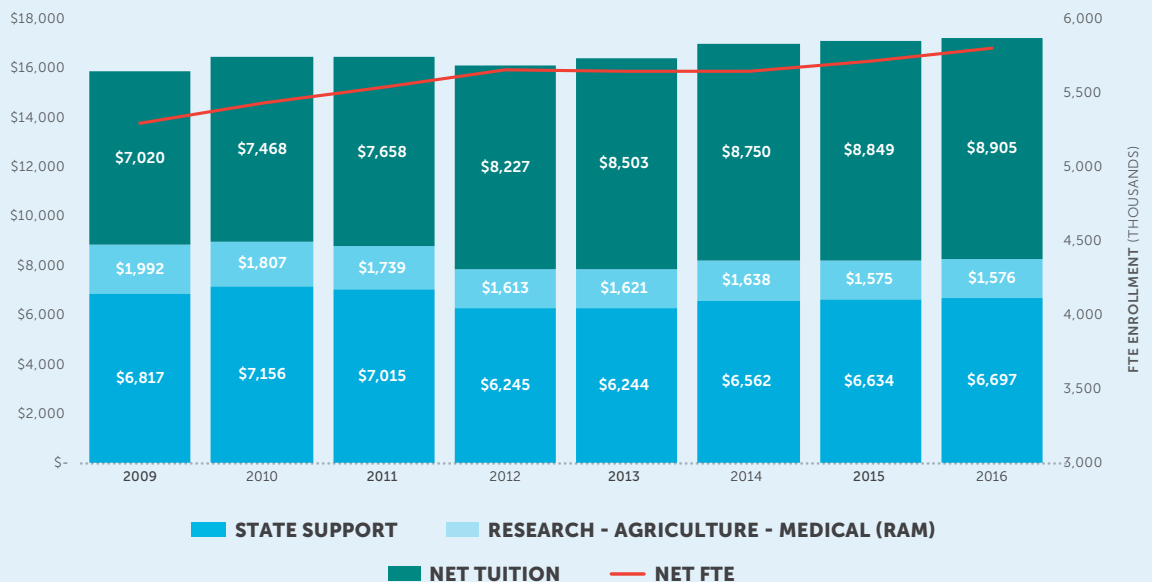
However, 2-year institutions experienced more volatility in state support from 2009 to 2016. During the recession, state support per FTE at 2-year institutions decreased 18 percent from 2009 to 2012, and subsequently increased 32 percent from 2012 to 2016. At 4-year institutions, state support per FTE decreased 8 percent and then increased 7 percent. **It is important to note that although state support at 2-year institutions is higher now than in 2009, there was likely a decrease between 2008 and 2009 due to the beginning of the Great Recession that is not reflected in the available data. Across both sectors, educational appropriations per student declined 5.3 percent in adjusted terms from 2008 to 2009.**

Net tuition per FTE increased steadily at both 2- and 4-year institutions (25 percent and 27 percent, respectively), but in 2016, 4-year institutions received more than three times the tuition that 2-year institutions received, on a per student basis. Part of this is due to lower nominal tuition rates at 2-year institutions and part is due to non-resident tuition at 4-year institutions and higher charges for graduate education.

**CASE STUDY FIGURE 9**  
**STATE SUPPORT AND NET TUITION PER FTE AT 2-YEAR INSTITUTIONS,**  
**U.S., 2009-2016**



**CASE STUDY FIGURE 10**  
**STATE SUPPORT AND NET TUITION PER FTE AT 4-YEAR INSTITUTIONS,**  
**U.S., 2009-2016**



**CASE STUDY FIGURES 9 AND 10 NOTES:**

1. Excludes Hawaii, Illinois, Kansas, Minnesota, New Jersey, Oklahoma, and Vermont due to one or more years of unavailable data.
2. Constant 2016 dollars adjusted by SHEEO Higher Education Cost Adjustment (HECA).
3. Institution Sector (2-Year/4-Year) is determined by Carnegie classification.
4. State Support is the sum of tax appropriations, nontax support, non-appropriated support, and interest or earnings from state-funded endowments.
5. Net tuition revenue used for capital debt service is included in the above figures.

**SOURCE:** State Higher Education Executive Officers Association



The Figure 5 wave chart on page 25 shows a decrease in total educational revenue (educational appropriations per FTE plus net tuition revenue per FTE) during the Great Recession. The data in this case study exclude some states and include a less precise metric than educational appropriations, and they tell a different story. The total revenue available to 2-year institutions (net tuition plus state and local support) decreased 7 percent during the Great Recession from 2009 to 2012, but increased 13 percent overall from 2009 to 2016. Four-year institutions saw a 2 percent increase of total revenue available (net tuition plus state and RAM support) during the recession, and a 9 percent increase overall. **Care should be taken in assessing these figures because data from several states were not available.**

### ABOUT THE SECTOR SPLIT DATA

States were able to report data that cannot be categorized as 2-year or 4-year for all three metrics (FTE, Net Tuition, and State Support). In general, states were able to categorize most of their FTE and Net Tuition revenue. However, a few states were unable to disaggregate all their data in ways that permit allocation to the categories in this report. The differences were relatively minor in most states. In FY 2016, four states reported uncategorizable FTE: .01 percent in California, 0.8 percent in Louisiana, 6.3 percent in Tennessee, and 5.5 percent in Utah. Eight states reported uncategorizable Net Tuition in FY 2016: 1.6 percent in Alaska, 0.7 percent in California, 1 percent in Connecticut, 2.5 percent in Louisiana, 0.9 percent in Maryland, 1.6 percent in Nevada, .03 percent in Tennessee, and 1.8 percent in Utah.

Similarly, a number of states were unable to provide a complete sector breakdown of State Support. In 2016, 13 states reported that 15 percent or more of their state support was uncategorizable. These states were included in the analysis because the percent of uncategorizable State Support was consistent over time and because when surveyed, the states were able to account for these funds. Most State Support that could not be split by sector consisted of funding for student financial aid and/or support for central offices, commissions, or boards. States also reported that they marked funds uncategorizable if they were appropriated to technical colleges offering less-than-2-year degrees or to institutions that did not offer undergraduate degrees. In future years, SHEEO will revise the sector breakdown definitions to account for these issues.

This case study marks the beginning of a foray into state financial data by sector. These data will improve and become more complete over time. It is our hope that in the next few years, most of the SHEF data will be available by institutional sector.

## INTERSTATE COMPARISONS— MAKING SENSE OF MANY VARIABLES

National averages and trends often mask substantial variations and important differences across the 50 states. This section examines these interstate differences more closely. First, it explains in greater detail the adjustments SHEF makes to state-level data. Next, it illustrates differences and trends across each of the SHEF metrics of higher education financing; for example, rates of enrollment growth or the varying proportions of public versus tuition financing. For the first time, the District of Columbia and Puerto Rico are included in the state tables (last year, they were introduced in a separate case study). The District of Columbia and Puerto Rico are still excluded from the U.S. totals and averages.

### SHEF ADJUSTMENTS TO FACILITATE INTERSTATE COMPARISONS

Many factors affect the decisions and relative positions of states in their funding of higher education. Although no comparative analysis can take all of these into account, SHEF makes two adjustments to reflect the most basic differences—differences in the cost of living across states and in the public postsecondary enrollment mix among different types of institutions.<sup>7</sup> These adjustments tend to draw states toward the national average; for example, states with a high cost of living also often tend to support higher education at above average levels, in which cases, the SHEF adjustment for living costs reduces the extent of their above average higher education revenues per student. The size and direction of these adjustments vary across states.

#### In brief:

- In states where the cost of living exceeds the national average, dollars per FTE are adjusted downward (e.g., Massachusetts). In states where the cost of living is below the national average, dollars per FTE are adjusted upward (e.g., Arkansas).
- If the proportion of enrollment in higher-cost institutions (e.g., research institutions) exceeds the national average, the dollars per FTE are adjusted downward. In states with a relatively inexpensive enrollment mix (e.g., more enrollment in community colleges), the dollars per FTE are adjusted upward.<sup>8</sup>
- Dollars per FTE are adjusted upward most significantly in states with an inexpensive enrollment mix and low cost of living (e.g., Wyoming). The reverse is true for states that possess both a more expensive enrollment mix and a higher cost of living (e.g., Colorado). In some states, the two factors cancel out each other (e.g., Washington).

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7. For more information on these adjustments, including the new Cost of Living Index (COLI), see Technical Paper B on our website ([http://www.sheeo.org/SHEF\\_Data\\_Collection\\_Process](http://www.sheeo.org/SHEF_Data_Collection_Process)).

8. SHEEO's Enrollment Mix Index adjusts state metrics based on the distribution of enrollment across institution type in a state. The adjustment does not account for distribution of students across educational level or the discipline mix offered across a state's institutions.

## COMPARING STATES ACROSS SINGLE DIMENSIONS OR VARIABLES

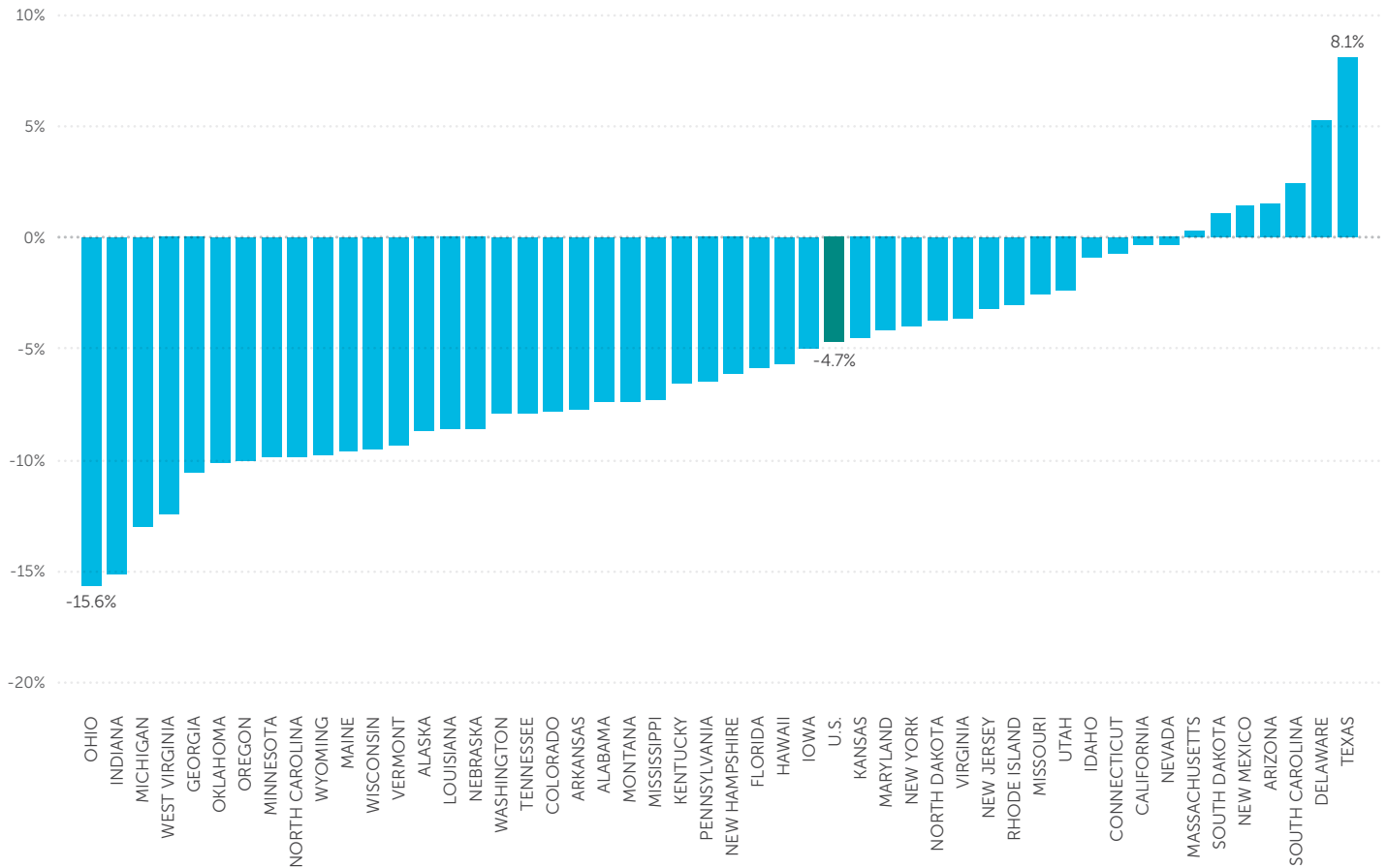
This section illustrates the variability across states and over time with respect to higher education enrollment growth, total state and local appropriations, the proportion of tuition-derived revenue, and total revenue available for public educational programs. The states are shown relative to one another to provide context for the national picture shown earlier in the report. These data are presented for the last five years and since the pre-recession high funding level of 2008.

*Figure 11* (and the accompanying data in *Table 3*) shows changes in full-time equivalent enrollment (FTE) in public higher education by state for the five years between 2011 and 2016, and since the Great Recession (2008).

- Enrollment continues to decline and, nationally, enrollment is down 0.4 percent since 2015 and 4.7 percent since 2011.
- Forty-two states have seen enrollment declines since 2011, ranging from 0.3 percent in Nevada to 15.6 percent in Ohio (*Figure 12*).
- Seven states show enrollment increases since 2011. These increases range from 0.3 percent in Massachusetts to 8.1 percent in Texas.
- Since the Great Recession, enrollment growth is up 8.5 percent nationally, with 44 states higher than they were in 2008.
- The District of Columbia and Puerto Rico both saw increases in the past year, 8.5 percent (from 3,723 to 4,041) in the District of Columbia, and 4.5 percent (from 55,005 to 57,469) in Puerto Rico. There were also increases from 2011 to 2016, of 10.4 percent in the District of Columbia and 9.9 percent in Puerto Rico. We were unable to obtain pre-recession data for the 2016 report.

The impact of the Great Recession can be seen in these patterns. In most states, FTE enrollment has gone down in the past five years yet remains higher than pre-recession enrollment levels. As noted earlier, enrollment declines have been concentrated at 2-year institutions with 4-year institutions showing slow but steady enrollment growth over the past five years.

**FIGURE 11**  
**PUBLIC HIGHER EDUCATION FULL-TIME EQUIVALENT (FTE) ENROLLMENT:**  
**PERCENT CHANGE, FY 2011-2016**



Excludes Illinois

**NOTE:** Full-time equivalent enrollment equates student credit hours to full-time, academic year students, but excludes medical students.

**SOURCE:** State Higher Education Executive Officers

**TABLE 3**  
**PUBLIC HIGHER EDUCATION FULL-TIME EQUIVALENT (FTE) ENROLLMENT**

	FY 2008 (PRE- RECESSION)	FY 2011	FY 2015	FY 2016	1 YEAR % CHANGE	5 YEAR % CHANGE	% CHANCE SINCE RECESSION
ALABAMA	187,086	212,758	193,411	197,031	1.9%	-7.4%	5.3%
ALASKA	18,703	21,070	19,904	19,229	-3.4%	-8.7%	2.8%
ARIZONA	233,255	275,071	274,454	279,239	1.7%	1.5%	19.7%
ARKANSAS	107,428	124,085	116,948	114,507	-2.1%	-7.7%	6.6%
CALIFORNIA	1,507,467	1,586,699	1,560,548	1,581,797	1.4%	-0.3%	4.9%
COLORADO	164,638	195,621	181,867	180,264	-0.9%	-7.9%	9.5%
CONNECTICUT	77,088	86,281	87,403	85,705	-1.9%	-0.7%	11.2%
DELAWARE	31,619	34,648	36,742	36,472	-0.7%	5.3%	15.3%
FLORIDA	540,823	636,320	601,292	599,211	-0.3%	-5.8%	10.8%
GEORGIA	310,759	385,615	344,325	344,768	0.1%	-10.6%	10.9%
HAWAII	35,469	40,743	39,444	38,414	-2.6%	-5.7%	8.3%
IDAHO	43,968	53,201	54,102	52,744	-2.5%	-0.9%	20.0%
ILLINOIS							
INDIANA	222,837	263,326	229,534	223,490	-2.6%	-15.1%	0.3%
IOWA	115,011	132,744	124,883	126,165	1.0%	-5.0%	9.7%
KANSAS	127,117	141,789	137,036	135,366	-1.2%	-4.5%	6.5%
KENTUCKY	142,382	159,806	152,317	149,314	-2.0%	-6.6%	4.9%
LOUISIANA	165,781	183,633	165,329	167,896	1.6%	-8.6%	1.3%
MAINE	35,533	38,284	35,608	34,602	-2.8%	-9.6%	-2.6%
MARYLAND	207,255	238,742	233,182	228,867	-1.9%	-4.1%	10.4%
MASSACHUSETTS	148,288	168,671	170,703	169,189	-0.9%	0.3%	14.1%
MICHIGAN	395,019	435,592	390,174	379,172	-2.8%	-13.0%	-4.0%
MINNESOTA	196,014	214,342	198,328	193,197	-2.6%	-9.9%	-1.4%
MISSISSIPPI	118,871	138,859	129,481	128,728	-0.6%	-7.3%	8.3%
MISSOURI	164,160	197,890	186,936	192,781	3.1%	-2.6%	17.4%
MONTANA	35,556	40,961	38,732	37,954	-2.0%	-7.3%	6.7%
NEBRASKA	75,451	84,384	79,182	77,153	-2.6%	-8.6%	2.3%
NEVADA	63,324	69,169	66,924	68,959	3.0%	-0.3%	8.9%
NEW HAMPSHIRE	32,982	39,036	38,398	36,640	-4.6%	-6.1%	11.1%
NEW JERSEY	238,040	277,147	270,053	268,296	-0.7%	-3.2%	12.7%
NEW MEXICO	85,203	92,078	96,110	93,379	-2.8%	1.4%	9.6%
NEW YORK	526,538	578,830	566,235	555,643	-1.9%	-4.0%	5.5%
NORTH CAROLINA	357,601	425,779	391,990	383,873	-2.1%	-9.8%	7.3%
NORTH DAKOTA	34,955	37,915	36,801	36,512	-0.8%	-3.7%	4.5%
OHIO	375,932	460,747	393,845	388,777	-1.3%	-15.6%	3.4%
OKLAHOMA	131,191	150,171	136,311	134,960	-1.0%	-10.1%	2.9%
OREGON	129,626	168,374	155,505	151,544	-2.5%	-10.0%	16.9%
PENNSYLVANIA	343,043	374,997	355,062	350,598	-1.3%	-6.5%	2.2%
RHODE ISLAND	30,120	31,724	31,547	30,757	-2.5%	-3.0%	2.1%
SOUTH CAROLINA	150,333	174,030	176,789	178,209	0.8%	2.4%	18.5%
SOUTH DAKOTA	29,595	33,313	33,938	33,675	-0.8%	1.1%	13.8%
TENNESSEE	173,706	201,378	185,316	185,543	0.1%	-7.9%	6.8%
TEXAS	804,918	943,694	1,010,334	1,020,366	1.0%	8.1%	26.8%
UTAH	103,320	125,073	120,352	122,066	1.4%	-2.4%	18.1%
VERMONT	19,797	22,548	20,639	20,447	-0.9%	-9.3%	3.3%
VIRGINIA	281,940	321,965	314,066	310,368	-1.2%	-3.6%	10.1%
WASHINGTON	221,264	261,485	242,221	240,788	-0.6%	-7.9%	8.8%
WEST VIRGINIA	73,525	81,116	72,765	71,026	-2.4%	-12.4%	-3.4%
WISCONSIN	219,006	240,625	219,490	217,856	-0.7%	-9.5%	-0.5%
WYOMING	23,054	26,392	24,041	23,812	-1.0%	-9.8%	3.3%
<b>U.S.</b>	<b>9,856,591</b>	<b>11,228,720</b>	<b>10,740,596</b>	<b>10,697,348</b>	<b>-0.4%</b>	<b>-4.7%</b>	<b>8.5%</b>
DISTRICT OF COLUMBIA	N/A	3,659	3,723	4,041	8.5%	10.4%	N/A
PUERTO RICO	N/A	52,295	55,005	57,469	4.5%	9.9%	N/A

Excludes Illinois

- NOTES:**
1. Full-time equivalent enrollment equates student credit hours to full-time, academic year students, but excludes medical students.
  2. The U.S. calculation does not include the District of Columbia or Puerto Rico.

**SOURCE:** State Higher Education Executive Officers

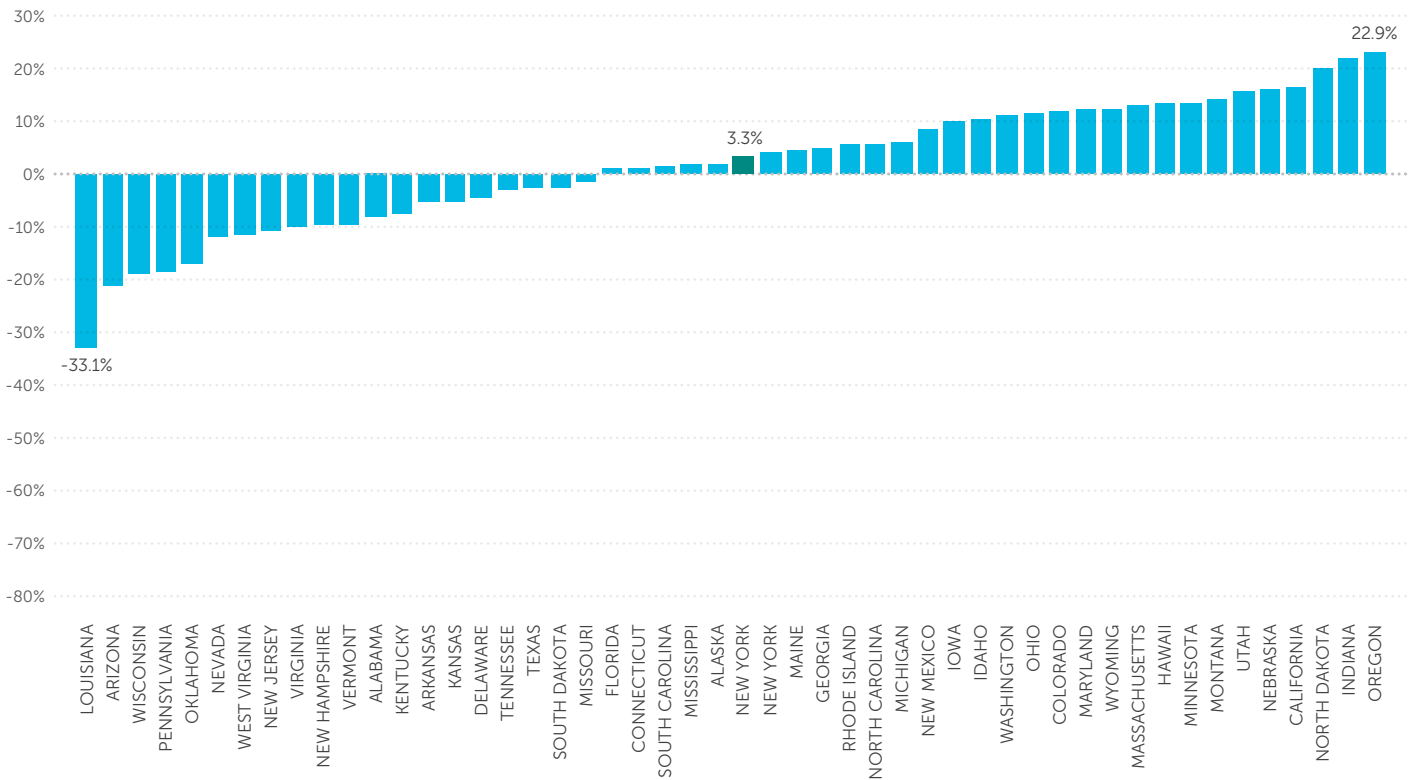
Figure 12 (and the accompanying data in Table 4) shows the percent change by state in higher educational appropriations per public FTE student in the past five years.

Federal funds available through the American Recovery and Reinvestment Act (ARRA) were used to help fill shortfalls in state support for general operating expenses at public colleges and universities in 2009, 2010, and 2011, and are included in the state educational appropriations data. These funds were spent by 2012 and have not been used since that time.

The national average per-FTE funding for 2016 increased 3.2 percent in constant dollars over 2015 from \$6,895 to \$7,116 (see Table 4). This is the fourth consecutive year of per student funding growth. Across the most recent five-year period, educational appropriations grew 3.3 percent from 2011 to 2016. Educational appropriations remain 15 percent lower than they were in 2008 (the most recent high point for funding prior to the Great Recession).

- Of the 33 states that increased constant dollar per student educational appropriations in the last year, five saw increases of 10 percent or more. These states were topped by Oregon (nearly 15 percent) and included Washington, Wyoming, Connecticut, and Colorado. At least one of these states, Wyoming, faced budget reductions in FY 2017.
- Fifteen states saw decreases in constant dollar per student educational appropriations from 2015 to 2016. Oklahoma had the largest decrease at 12.6 percent. Were Illinois included in the data, it would likely show the largest decrease due to the lack of an adopted budget in 2016.
- Over the past five years, the majority of states have seen increases in constant dollar per student educational appropriations. Of the 29 states with an increase from 2011 to 2016, Oregon had the largest increase at 23 percent, followed closely by Indiana at 22 percent and North Dakota at 20 percent. Seventeen states saw increases greater than 10 percent in the last five years (Figure 12).
- The states with the largest five-year decreases are Louisiana at 33 percent, Arizona at 21 percent, Wisconsin and Pennsylvania at 19 percent, and Oklahoma at 17 percent.
- Five states have seen an increase in educational appropriations since the pre-recession high point in 2008. Indiana, Montana, and Nebraska saw 2 percent increases, while Wyoming had a 15 percent increase and appropriations in North Dakota were increased by 29 percent. **More than half of states have seen at least an 18 percent reduction in per student educational appropriations from 2008 to 2016.**
- The District of Columbia had a 42 percent reduction in constant dollar per student educational appropriations from 2015 to 2016, and a 25.9 percent reduction from 2011 to 2016. Puerto Rico saw similar, but less dramatic, decreases. Puerto Rico faced a 17.6 percent decrease in appropriations from 2015 to 2016, and a 30.4 percent decrease in the past five years.

**FIGURE 12**  
**PUBLIC HIGHER EDUCATION EDUCATIONAL APPROPRIATIONS PER FTE: PERCENT CHANGE, FY 2011-2016**



Excludes Illinois

- NOTES:**
1. Dollars adjusted by 2016 HECA, Cost of Living Index, and Enrollment Index.
  2. Educational appropriations measures state and local support available for public higher education operating expenses and excludes appropriations for independent institutions, financial aid for students attending independent institutions, and research.

**SOURCE:** State Higher Education Executive Officers

**TABLE 4**
**EDUCATIONAL APPROPRIATIONS PER FTE (CONSTANT ADJUSTED 2016 DOLLARS)**

	FY 2008 (PRE-RECESSION)	FY 2011	FY 2015	FY 2016	INDEX TO U.S. AVERAGE	1 YEAR % CHANGE	5 YEAR % CHANGE	% CHANGE SINCE RECESSION
ALABAMA	\$8,927	\$5,984	\$5,593	\$5,483	0.79	-2.0%	-8.4%	-38.6%
ALASKA	\$12,179	\$11,878	\$12,903	\$12,096	1.74	-6.3%	1.8%	-0.7%
ARIZONA	\$7,557	\$5,684	\$4,909	\$4,489	0.65	-8.6%	-21.0%	-40.6%
ARKANSAS	\$7,747	\$7,530	\$7,219	\$7,138	1.03	-1.1%	-5.2%	-7.9%
CALIFORNIA	\$7,162	\$6,129	\$6,752	\$7,122	1.02	5.5%	16.2%	-0.6%
COLORADO	\$4,112	\$3,368	\$3,440	\$3,769	0.54	9.5%	11.9%	-8.3%
CONNECTICUT	\$8,948	\$7,915	\$7,275	\$8,000	1.15	10.0%	1.1%	-10.6%
DELAWARE	\$6,273	\$4,734	\$4,487	\$4,525	0.65	0.9%	-4.4%	-27.9%
FLORIDA	\$7,645	\$5,643	\$5,558	\$5,693	0.82	2.4%	0.9%	-25.5%
GEORGIA	\$8,945	\$6,974	\$7,102	\$7,319	1.05	3.1%	4.9%	-18.2%
HAWAII	\$9,015	\$6,954	\$7,418	\$7,873	1.13	6.1%	13.2%	-12.7%
IDAHO	\$10,702	\$7,351	\$7,773	\$8,124	1.17	4.5%	10.5%	-24.1%
ILLINOIS								
INDIANA	\$6,059	\$5,061	\$5,729	\$6,159	0.89	7.5%	21.7%	1.6%
IOWA	\$6,853	\$4,987	\$5,645	\$5,491	0.79	-2.7%	10.1%	-19.9%
KANSAS	\$7,127	\$5,988	\$5,918	\$5,679	0.82	-4.0%	-5.2%	-20.3%
KENTUCKY	\$8,913	\$7,330	\$6,771	\$6,775	0.97	0.1%	-7.6%	-24.0%
LOUISIANA	\$8,733	\$7,389	\$5,128	\$4,945	0.71	-3.6%	-33.1%	-43.4%
MAINE	\$6,643	\$5,986	\$5,936	\$6,244	0.90	5.2%	4.3%	-6.0%
MARYLAND	\$7,351	\$6,232	\$6,662	\$6,981	1.00	4.8%	12.0%	-5.0%
MASSACHUSETTS	\$7,475	\$5,614	\$6,262	\$6,334	0.91	1.1%	12.8%	-15.3%
MICHIGAN	\$6,592	\$5,292	\$5,437	\$5,595	0.81	2.9%	5.7%	-15.1%
MINNESOTA	\$7,256	\$5,530	\$5,766	\$6,267	0.90	8.7%	13.3%	-13.6%
MISSISSIPPI	\$8,463	\$6,763	\$6,815	\$6,878	0.99	0.9%	1.7%	-18.7%
MISSOURI	\$7,699	\$6,093	\$6,265	\$6,010	0.86	-4.1%	-1.4%	-21.9%
MONTANA	\$4,811	\$4,309	\$4,882	\$4,912	0.71	0.6%	14.0%	2.1%
NEBRASKA	\$8,556	\$7,572	\$8,289	\$8,769	1.26	5.8%	15.8%	2.5%
NEVADA	\$9,593	\$7,419	\$6,284	\$6,528	0.94	3.9%	-12.0%	-31.9%
NEW HAMPSHIRE	\$3,321	\$2,761	\$2,417	\$2,489	0.36	3.0%	-9.8%	-25.1%
NEW JERSEY	\$7,506	\$6,396	\$5,576	\$5,709	0.82	2.4%	-10.7%	-23.9%
NEW MEXICO	\$9,920	\$7,664	\$8,157	\$8,321	1.20	2.0%	8.6%	-16.1%
NEW YORK	\$7,115	\$6,835	\$6,896	\$7,106	1.02	3.0%	4.0%	-0.1%
NORTH CAROLINA	\$10,396	\$8,279	\$8,317	\$8,750	1.26	5.2%	5.7%	-15.8%
NORTH DAKOTA	\$5,574	\$5,995	\$7,529	\$7,189	1.03	-4.5%	19.9%	29.0%
OHIO	\$5,903	\$4,822	\$5,124	\$5,365	0.77	4.7%	11.3%	-9.1%
OKLAHOMA	\$8,490	\$7,413	\$7,032	\$6,148	0.88	-12.6%	-17.1%	-27.6%
OREGON	\$5,449	\$4,059	\$4,352	\$4,987	0.72	14.6%	22.9%	-8.5%
PENNSYLVANIA	\$5,673	\$4,399	\$3,619	\$3,576	0.51	-1.2%	-18.7%	-37.0%
RHODE ISLAND	\$5,696	\$4,437	\$4,375	\$4,681	0.67	7.0%	5.5%	-17.8%
SOUTH CAROLINA	\$7,153	\$4,765	\$4,664	\$4,836	0.70	3.7%	1.5%	-32.4%
SOUTH DAKOTA	\$6,104	\$5,158	\$5,094	\$5,030	0.72	-1.3%	-2.5%	-17.6%
TENNESSEE	\$8,829	\$7,225	\$6,836	\$7,001	1.01	2.4%	-3.1%	-20.7%
TEXAS	\$8,446	\$7,364	\$6,737	\$7,159	1.03	6.3%	-2.8%	-15.2%
UTAH	\$7,483	\$5,324	\$6,064	\$6,147	0.88	1.4%	15.4%	-17.9%
VERMONT	\$2,918	\$2,625	\$2,414	\$2,369	0.34	-1.9%	-9.7%	-18.8%
VIRGINIA	\$5,957	\$5,092	\$4,454	\$4,574	0.66	2.7%	-10.2%	-23.2%
WASHINGTON	\$7,193	\$5,375	\$5,342	\$5,973	0.86	11.8%	11.1%	-17.0%
WEST VIRGINIA	\$6,849	\$5,406	\$5,066	\$4,780	0.69	-5.6%	-11.6%	-30.2%
WISCONSIN	\$7,297	\$6,821	\$6,101	\$5,537	0.80	-9.2%	-18.8%	-24.1%
WYOMING	\$15,299	\$15,682	\$15,825	\$17,620	2.53	11.3%	12.4%	15.2%
<b>U.S.</b>	<b>\$8,372</b>	<b>\$6,888</b>	<b>\$6,895</b>	<b>\$7,116</b>	<b>1.00</b>	<b>3.2%</b>	<b>3.3%</b>	<b>-15.0%</b>
DISTRICT OF COLUMBIA	N/A	\$6,248	\$7,992	\$4,632	0.67	-42.0%	-25.9%	N/A
PUERTO RICO	N/A	\$18,520	\$15,631	\$12,887	1.85	-17.6%	-30.4%	N/A

Excludes Illinois

- NOTES:**
1. Educational appropriations are a measure of state and local support available for public higher education operating expenses including ARRA funds, and exclude appropriations for independent institutions, financial aid for students attending independent institutions, research, hospitals, and medical education.
  2. The U.S. calculation does not include the District of Columbia or Puerto Rico.
  3. Adjustment factors to arrive at constant dollar figures include Cost of Living Index (COLI), Enrollment Mix Index (EMI), and Higher Education Cost Adjustment (HECA). The Cost of Living Index (COLI) is not a measure of inflation over time.

**SOURCE:** State Higher Education Executive Officers



## STATE FUNDING VOLATILITY THROUGH THE ECONOMIC CYCLE

Year to year stability in funding varies across the states. Many states saw large cuts during the Great Recession, but only some of them bounced back. States with a large drop and rebound, or boomerang states, are defined as those that had a 20 percent or larger cut in educational appropriations per FTE between the pre-recession high point in 2008 and the low point in 2012, coupled with a 20 percent or larger increase in educational appropriations between the 2012 low point and FY 2016.

There were ten boomerang states: California, Colorado, Idaho, Michigan, Minnesota, New Hampshire, Ohio, Oregon, Utah, and Washington. The average cut between 2008 and 2012 was 34 percent, from \$7,172 to \$4,743 and the average increase from 2012 to 2016 was 32 percent, from \$4,743 to \$6,185. None of these states has surpassed its pre-recession high points, although California is close.

New Hampshire, a tuition dependent state, saw the largest swing with a 52 percent cut and a 58 percent increase. Michigan was the most moderate of these states with a 30 percent cut and a 21 percent increase. On average, the boomerang states saw a 14 percent decrease in funding across the entire period from 2008 to 2016.

No states were volatile enough to fit the definition of a boomerang state during either of the previous two recessions.

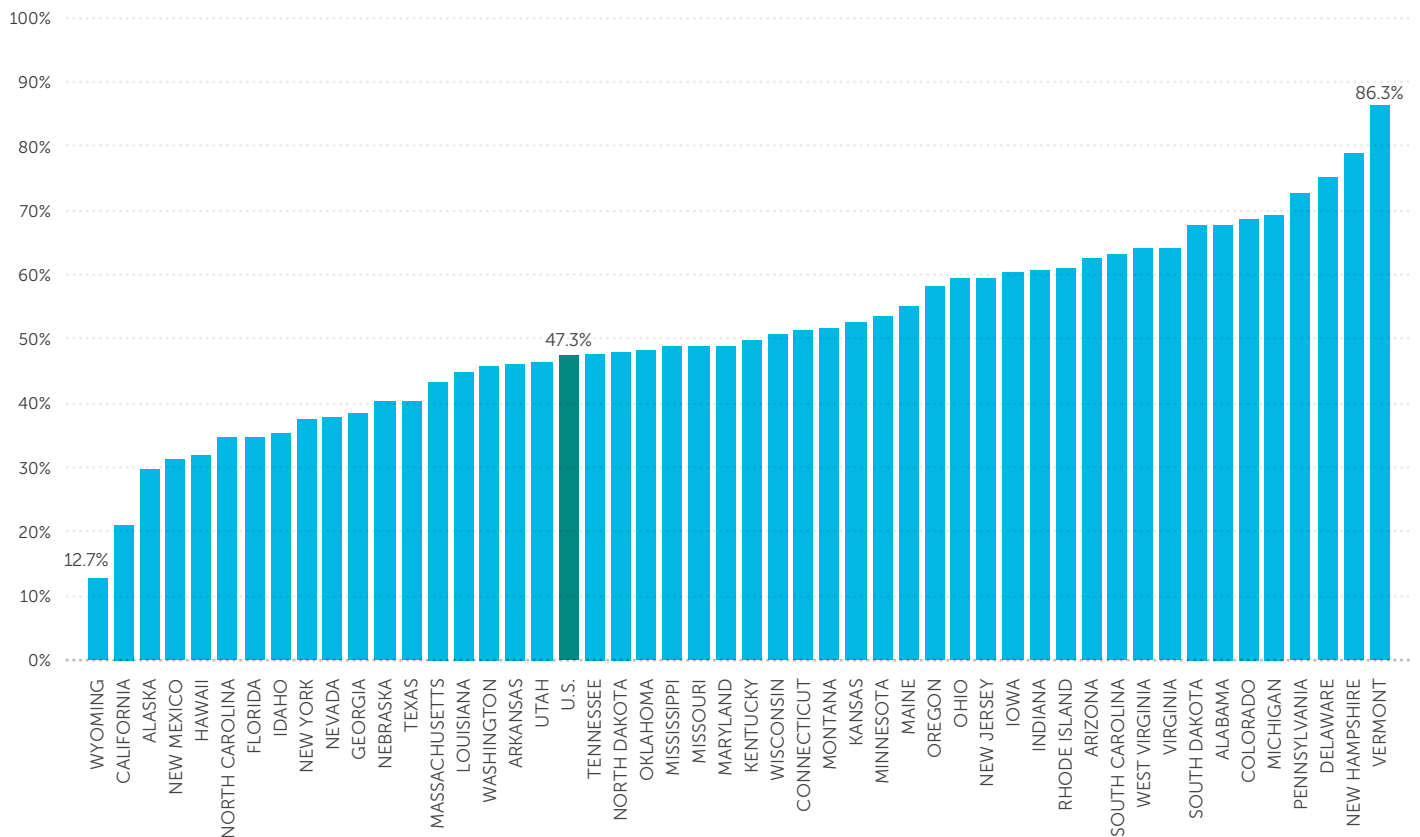
*Figure 13* shows net tuition revenue as a percentage of total educational revenue for public higher education by state for 2016. The accompanying *Table 5* shows the dollar values of net tuition per FTE by state.

- Of the 35 states with increased constant dollar per student net tuition revenue from 2015 to 2016, the largest year-over-year increases occurred in three states; New Mexico had a 10 percent increase, Virginia had a 10.5 percent increase, and Connecticut had an 11.9 percent increase.
- Eleven states saw a decrease in constant dollar net tuition revenue per student; the largest decrease was 10.7 percent in Louisiana. These decreases should not be construed as being driven by changes in tuition rates. SHEF tuition data include a mix of resident and non-resident tuition for undergraduates and graduates. Changes in enrollment mix (i.e., more students at institutions with lower tuition and fees or fewer out-of-state and international students paying a higher tuition rate) significantly impact changes in overall tuition revenue.
- Since the recession, 48 states have increased constant dollar per student net tuition revenue (Wyoming had a 4.5 percent reduction and Massachusetts had a 4.2 percent reduction). Net tuition revenue has increased by more than 50 percent in eight states, and has increased over 100 percent in Georgia (105.2 percent) and New Mexico (240.4 percent).
- States vary widely in the percentage of educational revenue supported by net tuition, from a low of 12.7 percent in Wyoming to a high of 86.3 percent in Vermont. Over time, state positions in *Figure 13* are relatively consistent.

While most states have seen increases in the share of total revenue from tuition over time, they have not changed positions relative to one another.

- Thirty-one states are above the national average of 47.8 percent in the proportion of educational revenue from tuition sources and 25 states are above 50 percent.
- The District of Columbia and Puerto Rico have seen unusual decreases in net tuition in the past year; there was a 2.2 percent reduction in the District of Columbia and a 27 percent reduction in Puerto Rico. Net tuition revenue makes up 54 percent of total educational revenue in the District of Columbia, and only 5 percent in Puerto Rico (this is lower than any state). From 2011 to 2016, the District of Columbia saw a 5.9 percent decrease, while Puerto Rico saw a 57.7 percent decrease.

**FIGURE 13**  
**NET TUITION AS A PERCENT OF TOTAL EDUCATIONAL REVENUE, FY 2016**



Excludes Illinois

- NOTES:**
1. Dollars adjusted by 2016 HECA, Cost of Living Adjustment, and Enrollment Index.
  2. Net tuition revenue is calculated by taking the gross amount of tuition and fees, less state and institutional financial aid, tuition waivers or discounts, and medical student tuition and fees. Net tuition revenue used for capital debt service is included in the net tuition revenue figures above.

**SOURCE:** State Higher Education Executive Officers

**TABLE 5**
**PUBLIC HIGHER EDUCATION NET TUITION REVENUE PER FTE  
(CONSTANT ADJUSTED 2016 DOLLARS)**

	FY 2008 (PRE-RECESSION)	FY 2011	FY 2015	FY 2016	INDEX TO U.S. AVERAGE	1 YEAR % CHANGE	5 YEAR % CHANGE	% CHANGE SINCE RECESSION
ALABAMA	\$6,074	\$8,062	\$10,537	\$9,962	1.58	-5.5%	23.6%	64.0%
ALASKA	\$4,113	\$4,373	\$4,737	\$5,066	0.80	6.9%	15.8%	23.2%
ARIZONA	\$4,142	\$4,740	\$6,425	\$7,006	1.11	9.1%	47.8%	69.1%
ARKANSAS	\$3,965	\$3,781	\$5,074	\$5,469	0.87	7.8%	44.6%	37.9%
CALIFORNIA	\$1,152	\$1,232	\$1,939	\$1,898	0.30	-2.1%	54.0%	64.7%
COLORADO	\$5,448	\$6,566	\$7,880	\$8,293	1.32	5.2%	26.3%	52.2%
CONNECTICUT	\$5,815	\$5,152	\$7,497	\$8,388	1.33	11.9%	62.8%	44.3%
DELAWARE	\$9,607	\$11,138	\$12,854	\$13,151	2.09	2.3%	18.1%	36.9%
FLORIDA	\$2,199	\$2,689	\$3,087	\$3,032	0.48	-1.8%	12.8%	37.9%
GEORGIA	\$2,222	\$2,373	\$4,400	\$4,560	0.72	3.6%	92.2%	105.2%
HAWAII	\$2,504	\$3,194	\$3,639	\$3,687	0.58	1.3%	15.4%	47.2%
IDAHO	\$2,575	\$3,352	\$4,711	\$4,435	0.70	-5.9%	32.3%	72.3%
ILLINOIS								
INDIANA	\$6,502	\$6,996	\$9,042	\$9,267	1.47	2.5%	32.5%	42.5%
IOWA	\$6,389	\$7,219	\$8,355	\$8,301	1.32	-0.7%	15.0%	29.9%
KANSAS	\$5,036	\$5,334	\$6,260	\$6,332	1.00	1.1%	18.7%	25.7%
KENTUCKY	\$5,198	\$5,665	\$6,598	\$6,699	1.06	1.5%	18.3%	28.9%
LOUISIANA	\$2,793	\$2,712	\$4,499	\$4,019	0.64	-10.7%	48.2%	43.9%
MAINE	\$6,618	\$7,542	\$7,914	\$7,650	1.21	-3.3%	1.4%	15.6%
MARYLAND	\$5,995	\$6,365	\$6,502	\$6,682	1.06	2.8%	5.0%	11.5%
MASSACHUSETTS	\$5,048	\$5,265	\$4,680	\$4,835	0.77	3.3%	-8.2%	-4.2%
MICHIGAN	\$8,767	\$9,859	\$12,194	\$12,698	2.01	4.1%	28.8%	44.8%
MINNESOTA	\$5,658	\$7,627	\$7,837	\$7,208	1.14	-8.0%	-5.5%	27.4%
MISSISSIPPI	\$4,934	\$5,266	\$6,310	\$6,540	1.04	3.6%	24.2%	32.6%
MISSOURI	\$5,297	\$5,252	\$6,078	\$5,746	0.91	-5.5%	9.4%	8.5%
MONTANA	\$4,729	\$4,786	\$5,149	\$5,218	0.83	1.3%	9.0%	10.3%
NEBRASKA	\$4,208	\$4,844	\$5,520	\$5,871	0.93	6.4%	21.2%	39.5%
NEVADA	\$2,793	\$3,258	\$3,903	\$3,956	0.63	1.4%	21.4%	41.7%
NEW HAMPSHIRE	\$7,956	\$8,136	\$9,126	\$9,242	1.47	1.3%	13.6%	16.2%
NEW JERSEY	\$6,342	\$7,009	\$8,393	\$8,392	1.33	0.0%	19.7%	32.3%
NEW MEXICO	\$1,114	\$2,159	\$3,445	\$3,791	0.60	10.0%	75.6%	240.4%
NEW YORK	\$3,053	\$3,292	\$3,952	\$4,228	0.67	7.0%	28.5%	38.5%
NORTH CAROLINA	\$3,116	\$2,969	\$4,285	\$4,602	0.73	7.4%	55.0%	47.7%
NORTH DAKOTA	\$5,942	\$5,895	\$6,483	\$6,624	1.05	2.2%	12.4%	11.5%
OHIO	\$6,844	\$6,412	\$7,816	\$7,815	1.24	0.0%	21.9%	14.2%
OKLAHOMA	\$3,911	\$4,081	\$5,520	\$5,731	0.91	3.8%	40.4%	46.6%
OREGON	\$4,822	\$5,270	\$6,993	\$6,947	1.10	-0.7%	31.8%	44.1%
PENNSYLVANIA	\$7,543	\$8,758	\$9,281	\$9,528	1.51	2.7%	8.8%	26.3%
RHODE ISLAND	\$6,022	\$6,879	\$7,143	\$7,308	1.16	2.3%	6.2%	21.4%
SOUTH CAROLINA	\$6,154	\$6,962	\$7,168	\$7,241	1.15	1.0%	4.0%	17.7%
SOUTH DAKOTA	\$5,807	\$7,095	\$8,343	\$8,515	1.35	2.1%	20.0%	46.6%
TENNESSEE	\$4,278	\$4,615	\$6,159	\$6,201	0.98	0.7%	34.4%	44.9%
TEXAS	\$4,385	\$4,427	\$4,643	\$4,824	0.77	3.9%	9.0%	10.0%
UTAH	\$3,766	\$4,320	\$5,022	\$5,344	0.85	6.4%	23.7%	41.9%
VERMONT	\$11,269	\$11,046	\$12,352	\$12,783	2.03	3.5%	15.7%	13.4%
VIRGINIA	\$5,411	\$6,266	\$7,268	\$8,029	1.27	10.5%	28.1%	48.4%
WASHINGTON	\$3,065	\$3,666	\$5,101	\$5,016	0.80	-1.7%	36.8%	63.6%
WEST VIRGINIA	\$5,111	\$5,570	\$6,814	\$7,159	1.14	5.1%	28.5%	40.1%
WISCONSIN	\$4,311	\$4,611	\$5,592	\$5,683	0.90	1.6%	23.3%	31.8%
WYOMING	\$2,684	\$2,037	\$2,775	\$2,563	0.41	-7.6%	25.8%	-4.5%
<b>U.S.</b>	<b>\$4,682</b>	<b>\$5,151</b>	<b>\$6,207</b>	<b>\$6,321</b>	<b>1.00</b>	<b>1.8%</b>	<b>22.7%</b>	<b>35.0%</b>
DISTRICT OF COLUMBIA	N/A	\$5,768	\$5,554	\$5,429	0.86	-2.2%	-5.9%	N/A
PUERTO RICO	N/A	\$1,538	\$891	\$651	0.10	-27.0%	-57.7%	N/A

Excludes Illinois

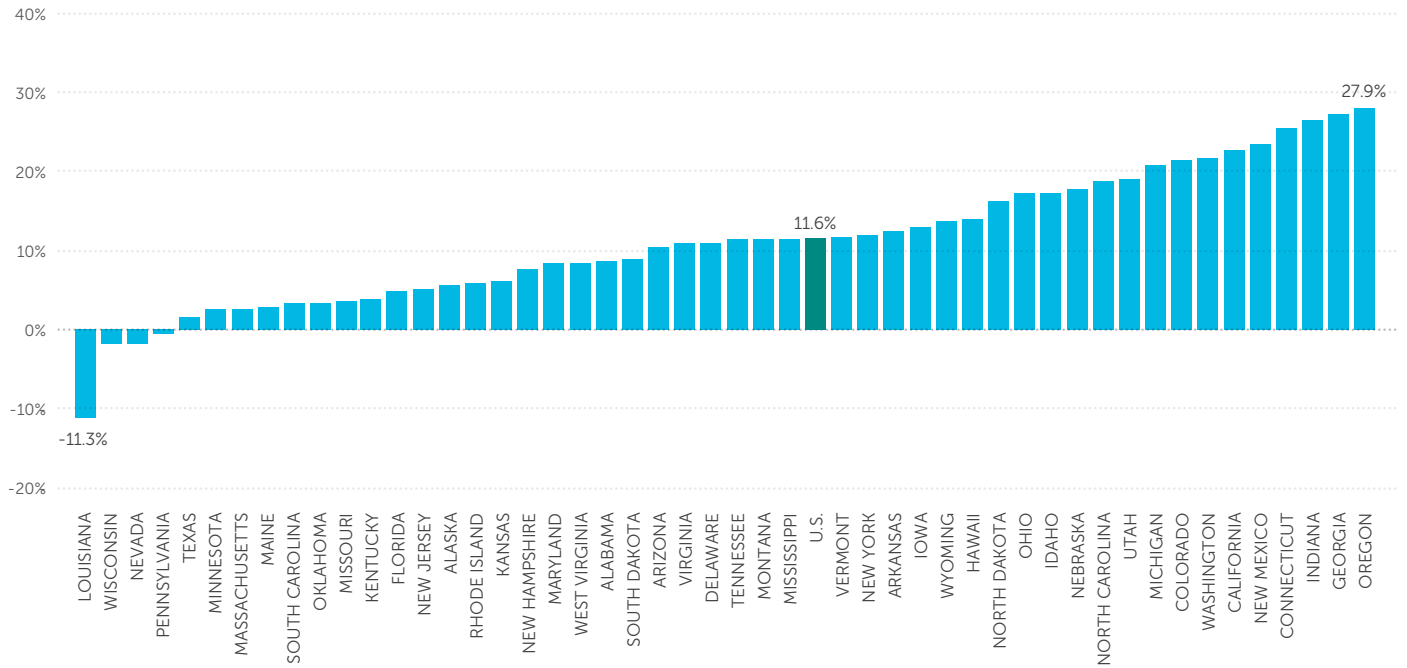
- NOTES:**
1. Net tuition revenue is calculated by taking the gross amount of tuition and fees, less state and institutional financial aid, tuition waivers or discounts, and medical student tuition and fees. Net tuition revenue used for capital debt service is included in the net tuition revenue figures above.
  2. The U.S. calculation does not include the District of Columbia or Puerto Rico.
  3. Adjustment factors to arrive at constant dollar figures include Cost of Living Index (COLI), Enrollment Mix Index (EMI), and Higher Education Cost Adjustment (HECA). The Cost of Living Index (COLI) is not a measure of inflation over time.

**SOURCE:** State Higher Education Executive Officers

Figure 14 (and the accompanying data in Table 6) shows the percentage change by state in total educational revenue per FTE in public higher education for the last five years. Total revenue per FTE in 2016 increased 2.6 percent from 2015 to reach \$13,377 in 2016, and increased 11.6 percent in total from 2010 (see Table 6).

- Thirty-eight states increased total educational revenue per student between 2015 and 2016, ranging from 0.03 percent in South Dakota to 10.9 percent in Connecticut. Ten states saw a decrease in the last year, the largest of which was Louisiana with a 6.9 percent drop.
- Four states are below 2011 total educational revenue per student levels, led by Louisiana with 11.3 percent lower educational revenue than in 2011. Nine states saw increases larger than 20 percent. From smallest percentage increase to largest, those states are Michigan, Colorado, Washington, California, New Mexico, Connecticut, Indiana, Georgia, and Oregon.
- Nationally, total educational revenue per FTE is up slightly, by 2.8 percent, since 2008 (the start of the Great Recession). This means that nationwide, tuition revenue growth has offset state funding reductions made during the Great Recession.
- However, 16 states are still below their pre-recession levels. Louisiana, Nevada, Florida, Massachusetts, and South Carolina are still at least 10 percent below their pre-recession total educational revenue.
- Following trends in educational appropriations and net tuition revenue, total educational revenue has decreased 25.7 percent in the District of Columbia and 20.5 percent in Puerto Rico in the last year alone. Since 2011, there has been a 16.3 percent decrease in the District of Columbia and a 34.5 percent decrease in Puerto Rico. The District of Columbia is particularly prone to large percentage changes due to its low FTE enrollment.

**FIGURE 14**  
**TOTAL EDUCATIONAL REVENUE PER FTE: PERCENT CHANGE, FY 2011-2016**



Excludes Illinois

- NOTES:**
1. Dollars adjusted by 2016 HECA, Cost of Living Adjustment, and Enrollment Index.
  2. Total Educational Revenue is the sum of educational appropriations and net tuition, excluding net tuition revenue used for capital debt service.

**SOURCE:** State Higher Education Executive Officers

**TABLE 6**
**TOTAL EDUCATIONAL REVENUE PER FTE (CONSTANT ADJUSTED 2016 DOLLARS)**

	FY 2008 (PRE- RECESSION)	FY 2011	FY 2015	FY 2016	INDEX TO U.S. AVERAGE	1 YEAR % CHANGE	5 YEAR % CHANGE	% CHANGE SINCE RECESSION
ALABAMA	\$14,509	\$13,508	\$15,382	\$14,688	1.11	-4.5%	8.7%	1.2%
ALASKA	\$16,292	\$16,251	\$17,640	\$17,162	1.30	-2.7%	5.6%	5.3%
ARIZONA	\$11,378	\$10,140	\$11,026	\$11,187	0.85	1.5%	10.3%	-1.7%
ARKANSAS	\$11,093	\$10,557	\$11,324	\$11,870	0.90	4.8%	12.4%	7.0%
CALIFORNIA	\$8,314	\$7,361	\$8,690	\$9,019	0.68	3.8%	22.5%	8.5%
COLORADO	\$9,560	\$9,935	\$11,321	\$12,062	0.91	6.5%	21.4%	26.2%
CONNECTICUT	\$14,762	\$13,067	\$14,773	\$16,388	1.24	10.9%	25.4%	11.0%
DELAWARE	\$15,835	\$15,792	\$17,309	\$17,523	1.33	1.2%	11.0%	10.7%
FLORIDA	\$9,844	\$8,332	\$8,645	\$8,725	0.66	0.9%	4.7%	-11.4%
GEORGIA	\$11,147	\$9,331	\$11,494	\$11,872	0.90	3.3%	27.2%	6.5%
HAWAII	\$11,519	\$10,149	\$11,057	\$11,560	0.88	4.5%	13.9%	0.4%
IDAHO	\$13,277	\$10,703	\$12,485	\$12,559	0.95	0.6%	17.3%	-5.4%
ILLINOIS								
INDIANA	\$12,530	\$12,057	\$14,601	\$15,261	1.16	4.5%	26.6%	21.8%
IOWA	\$13,242	\$12,206	\$14,000	\$13,792	1.05	-1.5%	13.0%	4.2%
KANSAS	\$12,163	\$11,321	\$12,178	\$12,011	0.91	-1.4%	6.1%	-1.2%
KENTUCKY	\$14,111	\$12,995	\$13,369	\$13,474	1.02	0.8%	3.7%	-4.5%
LOUISIANA	\$11,525	\$10,101	\$9,627	\$8,964	0.68	-6.9%	-11.3%	-22.2%
MAINE	\$13,261	\$13,528	\$13,850	\$13,894	1.05	0.3%	2.7%	4.8%
MARYLAND	\$13,346	\$12,597	\$13,164	\$13,663	1.04	3.8%	8.5%	2.4%
MASSACHUSETTS	\$12,523	\$10,878	\$10,942	\$11,169	0.85	2.1%	2.7%	-10.8%
MICHIGAN	\$15,359	\$15,151	\$17,631	\$18,293	1.39	3.8%	20.7%	19.1%
MINNESOTA	\$12,915	\$13,157	\$13,603	\$13,474	1.02	-0.9%	2.4%	4.3%
MISSISSIPPI	\$13,397	\$12,029	\$13,125	\$13,418	1.02	2.2%	11.6%	0.2%
MISSOURI	\$12,996	\$11,345	\$12,343	\$11,756	0.89	-4.8%	3.6%	-9.5%
MONTANA	\$9,540	\$9,095	\$10,031	\$10,131	0.77	1.0%	11.4%	6.2%
NEBRASKA	\$12,764	\$12,416	\$13,809	\$14,641	1.11	6.0%	17.9%	14.7%
NEVADA	\$12,385	\$10,677	\$10,187	\$10,484	0.80	2.9%	-1.8%	-15.3%
NEW HAMPSHIRE	\$11,277	\$10,897	\$11,543	\$11,731	0.89	1.6%	7.7%	4.0%
NEW JERSEY	\$13,848	\$13,405	\$13,969	\$14,101	1.07	0.9%	5.2%	1.8%
NEW MEXICO	\$11,034	\$9,824	\$11,602	\$12,112	0.92	4.4%	23.3%	9.8%
NEW YORK	\$10,168	\$10,127	\$10,848	\$11,334	0.86	4.5%	11.9%	11.5%
NORTH CAROLINA	\$13,512	\$11,248	\$12,602	\$13,352	1.01	6.0%	18.7%	-1.2%
NORTH DAKOTA	\$11,516	\$11,890	\$14,012	\$13,813	1.05	-1.4%	16.2%	19.9%
OHIO	\$12,747	\$11,233	\$12,940	\$13,180	1.00	1.9%	17.3%	3.4%
OKLAHOMA	\$12,401	\$11,494	\$12,552	\$11,879	0.90	-5.4%	3.4%	-4.2%
OREGON	\$10,271	\$9,329	\$11,346	\$11,934	0.91	5.2%	27.9%	16.2%
PENNSYLVANIA	\$13,216	\$13,157	\$12,899	\$13,104	0.99	1.6%	-0.4%	-0.8%
RHODE ISLAND	\$11,718	\$11,315	\$11,518	\$11,989	0.91	4.1%	6.0%	2.3%
SOUTH CAROLINA	\$12,787	\$11,132	\$11,251	\$11,494	0.87	2.2%	3.3%	-10.1%
SOUTH DAKOTA	\$11,358	\$11,558	\$12,580	\$12,583	0.95	0.0%	8.9%	10.8%
TENNESSEE	\$12,957	\$11,691	\$12,817	\$13,019	0.99	1.6%	11.4%	0.5%
TEXAS	\$12,828	\$11,791	\$11,380	\$11,984	0.91	5.3%	1.6%	-6.6%
UTAH	\$11,248	\$9,645	\$11,085	\$11,491	0.87	3.7%	19.1%	2.2%
VERMONT	\$13,902	\$13,255	\$14,359	\$14,806	1.12	3.1%	11.7%	6.5%
VIRGINIA	\$11,354	\$11,294	\$11,650	\$12,530	0.95	7.6%	10.9%	10.4%
WASHINGTON	\$10,258	\$9,041	\$10,443	\$10,989	0.83	5.2%	21.5%	7.1%
WEST VIRGINIA	\$11,241	\$10,306	\$11,115	\$11,181	0.85	0.6%	8.5%	-0.5%
WISCONSIN	\$11,608	\$11,432	\$11,693	\$11,219	0.85	-4.0%	-1.9%	-3.3%
WYOMING	\$17,983	\$17,720	\$18,564	\$20,148	1.53	8.5%	13.7%	12.0%
<b>U.S.</b>	<b>\$13,009</b>	<b>\$11,990</b>	<b>\$13,041</b>	<b>\$13,377</b>	<b>1.00</b>	<b>2.6%</b>	<b>11.6%</b>	<b>2.8%</b>
DISTRICT OF COLUMBIA	N/A	\$12,016	\$13,546	\$10,061	0.76	-25.7%	-16.3%	N/A
PUERTO RICO	N/A	\$20,058	\$16,522	\$13,134	1.00	-20.5%	-34.5%	N/A

Excludes Illinois

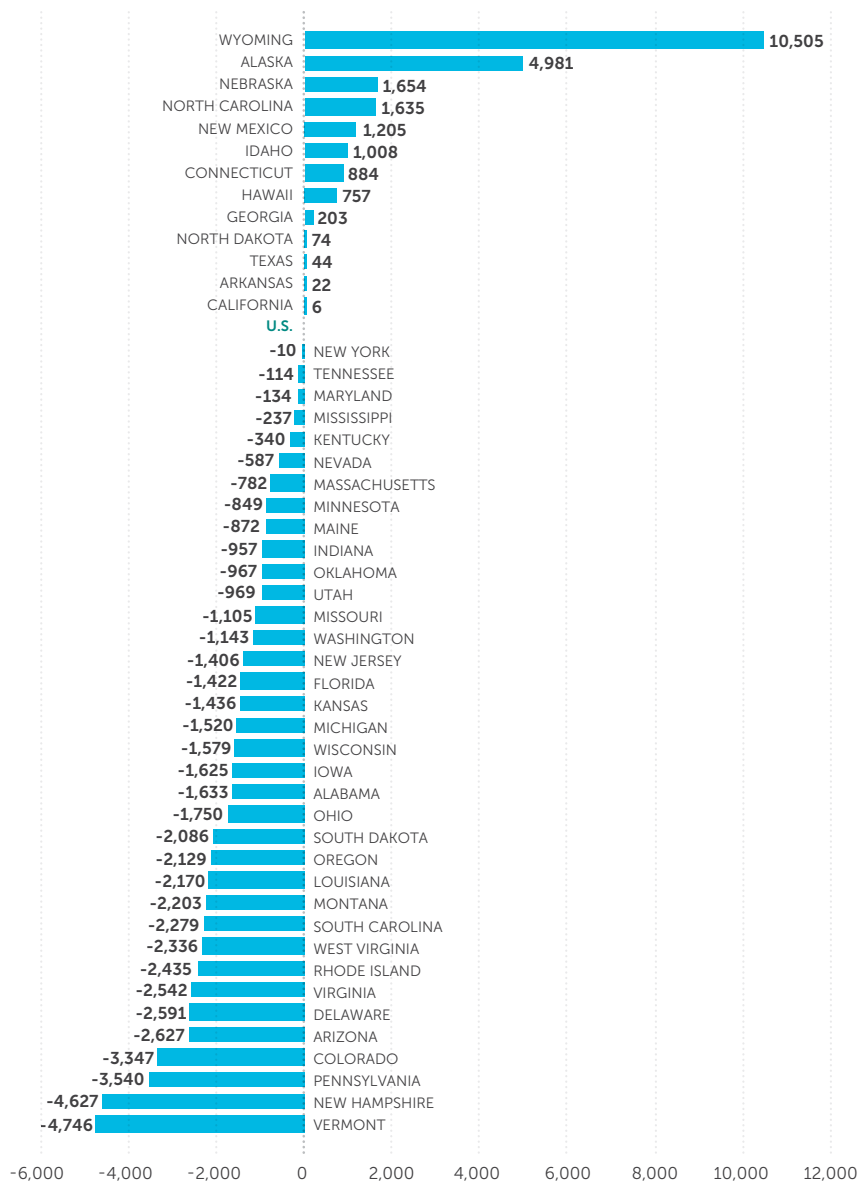
- NOTES:**
1. Total educational revenue is the sum of educational appropriations and net tuition excluding net tuition revenue used for capital debt service.
  2. The U.S. calculation does not include the District of Columbia or Puerto Rico.
  3. Adjustment factors to arrive at constant dollar figures include Cost of Living Index (COLI), Enrollment Mix Index (EMI), and Higher Education Cost Adjustment (HECA). The Cost of Living Index (COLI) is not a measure of inflation over time.

**SOURCE:** State Higher Education Executive Officers

Figures 15 and 16 compare states to the national average on 2016 educational appropriations per FTE and total educational revenue per FTE, respectively. In 19 states, educational appropriations per FTE are within \$1,000 of the U.S. average and a majority of states are within \$2,000. In total educational revenue per FTE, 15 states are within \$1,000 of the U.S. average, and 33 are within \$2,000. Comparing states across both charts, traditionally high-tuition states like New Hampshire and Vermont are well below the national average for educational appropriations (Figure 15) but are just below and far above average, respectively, on total revenue (Figure 16).

FIGURE 15

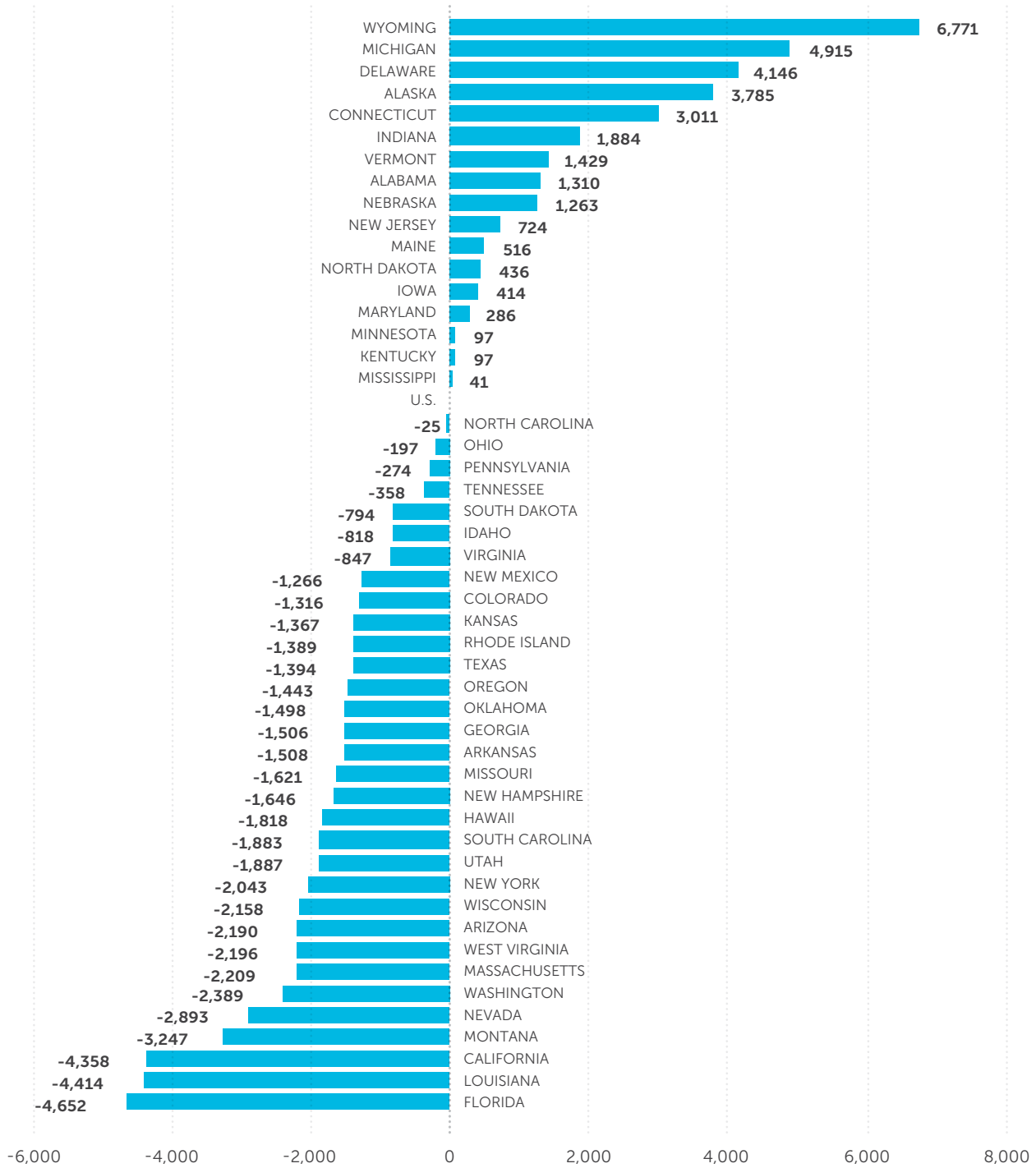
**EDUCATIONAL APPROPRIATIONS PER FTE (ADJUSTED) – DIFFERENCE FROM U.S. AVERAGE, FY 2016**



Excludes Illinois

- NOTES:**
1. Dollars adjusted by 2016 HECA, Cost of Living Index, and Enrollment Index.
  2. Educational appropriations measures state and local support available for public higher education operating expenses and excludes appropriations for independent institutions, financial aid for students attending independent institutions, and research.

**SOURCE:** State Higher Education Executive Officers

**FIGURE 16**
**TOTAL EDUCATIONAL REVENUE PER FTE (ADJUSTED) – DIFFERENCE FROM U.S. AVERAGE, FY 2016**


Excludes Illinois

- NOTES:**
1. Dollars adjusted by 2016 HECA, Cost of Living Adjustment, and Enrollment Index.
  2. Total Educational Revenue is the sum of educational appropriations and net tuition, excluding net tuition revenue used for capital debt service.

**SOURCE:** State Higher Education Executive Officers



## STATE WEALTH, TAXES, AND ALLOCATIONS FOR HIGHER EDUCATION

Within each state, policies and decisions about the financing of higher education are made in the context of prevailing economic conditions, tax structures, and competing budgetary priorities. Within this context, state policymakers face challenging questions, including:

- What revenue is needed to support important public services?
- What level of taxation will generate that revenue without impairing economic productivity or individual opportunities?
- What combination of public services, spending, and tax policy is most likely to enhance economic growth, future assets, and the quality of life?
- What should the spending priorities be for different public services and investments?

Opinions vary widely about a host of issues concerning taxes, public services, and public investments. Differences of opinion and ideology combine with conditions in the economy and demography to affect state taxing and spending decisions. As these conditions change, policymakers reevaluate taxation and spending policies. That reevaluation may be less likely to lead to changes in those states where tax or spending policies are dictated or influenced by provisions of the state constitution rather than by state statute.

No single standard exists to evaluate public policy decisions with respect to funding for higher education. Relevant, comparative information about states can, however, help inform higher education financing decisions. This section explores several types of comparative data and indicators, including population, relative state and personal wealth, tax capacity and effort, and comparative allocations to higher education.<sup>9</sup> **The data presented here are in nominal terms and are not adjusted for inflation. In all cases, the most recent available data are presented. In some cases (such as tax revenue), this means a two-year lag from 2016.** The effects of the stopgap budget in Illinois are not reflected in these data. As shown in *Table 7*, based on a combination of federal government data sources:

- Aggregate state wealth (total taxable resources) per capita increased 50.8 percent from \$44,493 in 2004 to \$67,105 in 2014. The effects of the 2008 recession are evident in the total taxable resource decreases in 2009 and 2010. Between 2011 and 2014, total taxable resources increased 27 percent, suggesting a strong rebound from the recession.
- Actual state and local tax revenues per capita increased 34.8 percent from \$3,435 in 2004 to \$4,630 in 2014, which is 6.3 percent higher than the pre-recession high of \$4,355.
- As a result of total taxable resources and revenues increasing at different rates, the national aggregate effective state and local tax rate reached a 10-year low of 6.9 percent.

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9. Part of this section draws on previous work by Kent Halstead to assemble data and develop indicators for higher education support per capita and relative to wealth (personal income), state tax capacity, and tax effort.

The national aggregate data also show that the proportion of available state and local revenue allocated to higher education has dropped to 5.7 percent, a slight increase from 5.5 percent in 2013, but otherwise the lowest since the SHEF dataset began in 1990. These data show that despite an economic recovery from the recession, budget challenges remain, and funding levels for higher education continue to lag—perhaps due to changes in tax policy or to structural deficits in states.

**TABLE 7**  
**STATE WEALTH, TAX REVENUE, EFFECTIVE TAX RATES, AND HIGHER EDUCATION ALLOCATION; U.S., 2004-2014 (CURRENT UNADJUSTED DOLLARS)**

FY	WEALTH, REVENUE, AND TAX RATES			ALLOCATION TO HIGHER EDUCATION		
	ACTUAL TAX REVENUES (ATR) PER CAPITA	TOTAL TAXABLE RESOURCES (TTR) PER CAPITA	EFFECTIVE TAX RATE (ATR/TTR)	STATE & LOCAL TAX REVENUES PLUS LOTTERY PROFITS (THOUSANDS)	STATE & LOCAL HIGHER EDUCATION SUPPORT (THOUSANDS)	(PERCENT)
2004	\$3,435	\$44,493	7.7%	\$974,251,249	\$65,714,176	6.7%
2005	\$3,692	\$47,633	7.8%	\$1,058,602,982	\$68,636,375	6.5%
2006	\$3,991	\$50,784	7.9%	\$1,154,839,563	\$73,629,479	6.4%
2007	\$4,243	\$53,465	7.9%	\$1,239,750,569	\$79,071,773	6.4%
2008	\$4,355	\$52,923	8.2%	\$1,284,218,648	\$85,025,325	6.6%
2009	\$4,123	\$49,885	8.3%	\$1,226,361,066	\$84,021,527	6.9%
2010	\$4,093	\$50,805	8.1%	\$1,228,071,315	\$82,846,833	6.7%
2011	\$4,272	\$52,842	8.1%	\$1,291,155,191	\$82,908,695	6.4%
2012	\$4,380	\$58,017	7.5%	\$1,334,380,843	\$76,242,806	5.7%
2013	\$4,561	\$65,008	7.0%	\$1,398,772,384	\$77,143,885	5.5%
2014	\$4,630	\$67,105	6.9%	\$1,432,678,566	\$81,642,026	5.7%
<b>10 YEAR CHANGE</b>	<b>34.8%</b>	<b>50.8%</b>	<b>-10.6%</b>	<b>47.1%</b>	<b>24.2%</b>	<b>-15.5%</b>

Excludes Illinois

**NOTE:** Higher education support is state and local tax and nontax support for general operating expenses of public and independent higher education, including special purpose appropriations for research-agricultural-medical.

**SOURCES:** State Higher Education Executive Officers

Actual tax revenues are state and local tax revenue per capita from U.S. Census Bureau 2014 Annual Surveys of State and Local Government Finances.

State and local tax revenues data is from U.S. Census Bureau; lottery profits data is from North American Association of State and Provincial Lotteries.

Total taxable resources per capita is from U.S. Treasury Department ([www.treas.gov/offices/economic-policy/resources/estimates.html](http://www.treas.gov/offices/economic-policy/resources/estimates.html)).

In *Table 8*, the state tax revenue per capita, total taxable resources per capita, and effective tax rates are indexed to the national average in order to indicate the variability across states relative to the national average. Taxable resources per capita vary by a factor of 2.04, from a low of \$45,061 in Mississippi to a high of \$92,337 in Connecticut. The U.S. average is \$67,105. Effective tax rates vary similarly, from a low of 5.5 percent in three states (Delaware, Georgia, and Virginia) to a high of 10.9 percent in North Dakota, while the U.S. average is 6.9 percent.

**TABLE 8**
**TAX REVENUES, TAXABLE RESOURCES, AND EFFECTIVE TAX RATES BY STATE, FY 2014**

STATE	ACTUAL TAX REVENUES (ATR) PER CAPITA		TOTAL TAXABLE RESOURCES (TTR) PER CAPITA		EFFECTIVE TAX RATE (ATR/TTR)	
	DOLLARS	INDEX	DOLLARS	INDEX	TAX RATE	INDEX
ALABAMA	\$3,000	0.65	\$50,379	0.75	6.0%	0.86
ALASKA	\$7,558	1.63	\$84,210	1.25	9.0%	1.30
ARIZONA	\$3,344	0.72	\$46,752	0.70	7.2%	1.04
ARKANSAS	\$3,756	0.81	\$50,575	0.75	7.4%	1.08
CALIFORNIA	\$5,447	1.18	\$71,575	1.07	7.6%	1.10
COLORADO	\$4,365	0.94	\$73,865	1.10	5.9%	0.86
CONNECTICUT	\$7,245	1.56	\$92,337	1.38	7.8%	1.14
DELAWARE	\$4,408	0.95	\$79,564	1.19	5.5%	0.80
FLORIDA	\$3,324	0.72	\$55,590	0.83	6.0%	0.87
GEORGIA	\$3,377	0.73	\$61,061	0.91	5.5%	0.80
HAWAII	\$5,708	1.23	\$56,472	0.84	10.1%	1.46
IDAHO	\$3,236	0.70	\$47,530	0.71	6.8%	0.99
ILLINOIS						
INDIANA	\$3,748	0.81	\$61,533	0.92	6.1%	0.88
IOWA	\$4,427	0.96	\$65,952	0.98	6.7%	0.97
KANSAS	\$4,375	0.95	\$62,711	0.93	7.0%	1.01
KENTUCKY	\$3,607	0.78	\$52,660	0.78	6.8%	0.99
LOUISIANA	\$3,888	0.84	\$63,919	0.95	6.1%	0.88
MAINE	\$4,808	1.04	\$51,198	0.76	9.4%	1.36
MARYLAND	\$5,600	1.21	\$80,503	1.20	7.0%	1.01
MASSACHUSETTS	\$6,022	1.30	\$90,483	1.35	6.7%	0.96
MICHIGAN	\$3,777	0.82	\$57,686	0.86	6.5%	0.95
MINNESOTA	\$5,640	1.22	\$75,284	1.12	7.5%	1.09
MISSISSIPPI	\$3,501	0.76	\$45,061	0.67	7.8%	1.13
MISSOURI	\$3,473	0.75	\$60,118	0.90	5.8%	0.84
MONTANA	\$3,839	0.83	\$51,143	0.76	7.5%	1.09
NEBRASKA	\$4,882	1.05	\$69,871	1.04	7.0%	1.01
NEVADA	\$3,874	0.84	\$54,386	0.81	7.1%	1.03
NEW HAMPSHIRE	\$4,331	0.94	\$71,875	1.07	6.0%	0.87
NEW JERSEY	\$6,448	1.39	\$85,831	1.28	7.5%	1.09
NEW MEXICO	\$3,967	0.86	\$51,773	0.77	7.7%	1.11
NEW YORK	\$8,411	1.82	\$90,484	1.35	9.3%	1.35
NORTH CAROLINA	\$3,621	0.78	\$57,599	0.86	6.3%	0.91
NORTH DAKOTA	\$9,753	2.11	\$89,450	1.33	10.9%	1.58
OHIO	\$4,208	0.91	\$62,964	0.94	6.7%	0.97
OKLAHOMA	\$3,567	0.77	\$59,460	0.89	6.0%	0.87
OREGON	\$4,101	0.89	\$61,706	0.92	6.6%	0.96
PENNSYLVANIA	\$4,709	1.02	\$67,096	1.00	7.0%	1.02
RHODE ISLAND	\$5,169	1.12	\$69,154	1.03	7.5%	1.08
SOUTH CAROLINA	\$3,218	0.70	\$49,320	0.73	6.5%	0.95
SOUTH DAKOTA	\$3,684	0.80	\$64,866	0.97	5.7%	0.82
TENNESSEE	\$3,091	0.67	\$55,528	0.83	5.6%	0.81
TEXAS	\$4,048	0.87	\$70,961	1.06	5.7%	0.83
UTAH	\$3,505	0.76	\$55,978	0.83	6.3%	0.91
VERMONT	\$5,543	1.20	\$58,855	0.88	9.4%	1.37
VIRGINIA	\$4,205	0.91	\$76,273	1.14	5.5%	0.80
WASHINGTON	\$4,558	0.98	\$71,504	1.07	6.4%	0.92
WEST VIRGINIA	\$3,953	0.85	\$50,554	0.75	7.8%	1.13
WISCONSIN	\$4,585	0.99	\$64,038	0.95	7.2%	1.04
WYOMING	\$5,945	1.28	\$83,005	1.24	7.2%	1.04
<b>U.S.</b>	<b>\$4,630</b>	<b>1.00</b>	<b>\$67,105</b>	<b>1.00</b>	<b>6.9%</b>	<b>1.00</b>

Excludes Illinois

**NOTE:** Actual tax revenues are state and local tax revenue per capita.

**SOURCES:** State Higher Education Executive Officers

Actual tax revenues are from the U.S. Census Bureau, 2014 Annual Surveys of State and Local Government Finances.

 Total taxable resources per capita is from U.S. Treasury Department  
 ([www.treas.gov/offices/economic-policy/resources/estimates.html](http://www.treas.gov/offices/economic-policy/resources/estimates.html)).

Based on federal data sources, *Table 9* and *Figures 17* and *18* show two measures of state support for higher education (per capita and per \$1,000 in personal income) for 2015, by state. Per capita support for higher education averages \$285 nationally and ranges from \$93 in New Hampshire to \$705 in Wyoming. When measured relative to personal income, support for higher education per \$1,000 of personal income varies from \$1.66 in New Hampshire to \$13.21 in New Mexico. Nationally, state and local support for higher education per \$1,000 of personal income was \$6.20 in 2015.

These comparative statistics reflect interstate differences in wealth, population characteristics and density, postsecondary enrollment rates, the relative size of the public and independent higher education sectors, student mobility, and numerous other factors. Poorer states may lag the national average in per capita support, but exceed the national average in support per \$1,000 of personal income. Similarly, sparsely populated states sometimes exceed the national average in both per capita support and per \$1,000 of personal income.

*Table 9* and *Figure 19* also provide an analysis of state support as a percentage of state budgets in 2013. While such statistics show relative investments in higher education, they do not necessarily indicate the relative “priority” or valuation of higher education by each state. They do reflect the different paths states have taken in financing a set of public purposes as they assess need, urgency, legal requirements, and financing options. As previously discussed, tuition revenue frequently (but not universally) has increased when state and local sources of support have not kept pace with enrollment growth and inflation. The data in *Table 7*, indicating a decrease in the effective state tax rate combined with the pressures created by growing higher education enrollment, increasing demands for elementary and secondary funding, rising Medicaid costs, and other factors, help explain the stress on state budgets and policymakers. Starting with California’s Proposition 13 in 1978, many states saw limits on taxation and, sometimes, mandatory spending for programs such as K-12 education and corrections placed in their constitutions. These factors are unique to each state and affect what states are able to devote to supporting higher education. States that rely heavily on revenue from retail sales taxes may not yet have adjusted to changes wrought by online shopping and a shift from purchase of goods to purchase of services.

Pursuing the goals of assuring higher education access, determining appropriate levels of support, and sorting out “who pays, who benefits,” in the context of state needs, resources, and other policy objectives, remains a complex task in every state.

**TABLE 9**
**PERSPECTIVES ON STATE AND LOCAL GOVERNMENT HIGHER EDUCATION FUNDING EFFORT BY STATE, FY 2015 AND FY 2014**

STATE	FISCAL 2015		FISCAL 2015		FISCAL 2014		
	HIGHER EDUCATION SUPPORT PER CAPITA	INDEXED TO U.S. AVERAGE	HIGHER EDUCATION SUPPORT PER \$1000 OF PERSONAL INCOME	INDEXED TO U.S. AVERAGE	TAX REVENUES AND LOTTERY PROFITS (THOUSANDS)	HIGHER EDUCATION SUPPORT (THOUSANDS)	ALLOCATION TO HIGHER EDUCATION
ALABAMA	\$303	1.06	\$7.96	1.28	\$14,548,034	\$1,447,160	9.9%
ALASKA	\$523	1.83	\$9.31	1.50	\$5,568,495	\$388,365	7.0%
ARIZONA	\$256	0.90	\$6.53	1.05	\$22,687,029	\$1,677,082	7.4%
ARKANSAS	\$344	1.21	\$8.99	1.45	\$11,224,475	\$1,033,799	9.2%
CALIFORNIA	\$373	1.31	\$6.94	1.12	\$212,721,653	\$12,947,901	6.1%
COLORADO	\$155	0.54	\$3.04	0.49	\$23,508,952	\$737,155	3.1%
CONNECTICUT	\$310	1.09	\$4.52	0.73	\$26,377,457	\$1,018,692	3.9%
DELAWARE	\$240	0.84	\$5.03	0.81	\$4,339,041	\$227,606	5.2%
FLORIDA	\$208	0.73	\$4.69	0.76	\$67,627,406	\$3,925,291	5.8%
GEORGIA	\$284	1.00	\$7.05	1.14	\$35,040,729	\$2,790,040	8.0%
HAWAII	\$401	1.40	\$8.30	1.34	\$8,102,950	\$530,388	6.5%
IDAHO	\$258	0.91	\$6.73	1.08	\$5,337,315	\$399,743	7.5%
ILLINOIS							
INDIANA	\$250	0.88	\$5.97	0.96	\$24,977,705	\$1,671,317	6.7%
IOWA	\$295	1.03	\$6.42	1.03	\$13,830,036	\$895,761	6.5%
KANSAS	\$349	1.22	\$7.39	1.19	\$12,780,474	\$977,296	7.6%
KENTUCKY	\$271	0.95	\$7.01	1.13	\$16,142,952	\$1,214,926	7.5%
LOUISIANA	\$240	0.84	\$5.59	0.90	\$18,249,259	\$1,125,251	6.2%
MAINE	\$205	0.72	\$4.79	0.77	\$6,446,392	\$271,864	4.2%
MARYLAND	\$358	1.25	\$6.39	1.03	\$34,411,538	\$2,050,322	6.0%
MASSACHUSETTS	\$215	0.75	\$3.44	0.55	\$41,593,833	\$1,342,073	3.2%
MICHIGAN	\$233	0.82	\$5.45	0.88	\$38,168,643	\$2,191,494	5.7%
MINNESOTA	\$263	0.92	\$5.18	0.83	\$30,908,631	\$1,394,503	4.5%
MISSISSIPPI	\$355	1.25	\$10.22	1.65	\$10,482,155	\$1,027,047	9.8%
MISSOURI	\$193	0.68	\$4.57	0.74	\$21,327,999	\$1,098,419	5.2%
MONTANA	\$240	0.84	\$5.75	0.93	\$3,941,113	\$233,779	5.9%
NEBRASKA	\$455	1.60	\$9.37	1.51	\$9,223,340	\$823,727	8.9%
NEVADA	\$169	0.59	\$4.02	0.65	\$10,997,963	\$485,641	4.4%
NEW HAMPSHIRE	\$93	0.32	\$1.66	0.27	\$5,819,338	\$109,000	1.9%
NEW JERSEY	\$245	0.86	\$4.08	0.66	\$58,602,527	\$2,184,586	3.7%
NEW MEXICO	\$501	1.76	\$13.21	2.13	\$8,315,357	\$983,321	11.8%
NEW YORK	\$318	1.11	\$5.41	0.87	\$169,259,951	\$6,051,659	3.6%
NORTH CAROLINA	\$388	1.36	\$9.52	1.54	\$36,511,044	\$3,837,537	10.5%
NORTH DAKOTA	\$541	1.90	\$9.67	1.56	\$7,219,903	\$409,694	5.7%
OHIO	\$199	0.70	\$4.56	0.74	\$49,693,411	\$2,270,448	4.6%
OKLAHOMA	\$281	0.98	\$6.16	0.99	\$13,898,563	\$1,100,192	7.9%
OREGON	\$222	0.78	\$5.07	0.82	\$16,797,784	\$834,338	5.0%
PENNSYLVANIA	\$139	0.49	\$2.79	0.45	\$61,298,707	\$1,756,319	2.9%
RHODE ISLAND	\$162	0.57	\$3.24	0.52	\$5,830,586	\$166,544	2.9%
SOUTH CAROLINA	\$212	0.74	\$5.52	0.89	\$15,873,719	\$974,626	6.1%
SOUTH DAKOTA	\$253	0.89	\$5.29	0.85	\$3,247,910	\$207,838	6.4%
TENNESSEE	\$239	0.84	\$5.68	0.92	\$20,580,484	\$1,587,787	7.7%
TEXAS	\$301	1.05	\$6.40	1.03	\$110,116,628	\$8,497,021	7.7%
UTAH	\$296	1.04	\$7.54	1.22	\$10,315,191	\$798,346	7.7%
VERMONT	\$146	0.51	\$3.01	0.49	\$3,495,860	\$92,686	2.7%
VIRGINIA	\$219	0.77	\$4.20	0.68	\$35,547,606	\$1,803,410	5.1%
WASHINGTON	\$220	0.77	\$4.25	0.68	\$32,335,293	\$1,570,807	4.9%
WEST VIRGINIA	\$274	0.96	\$7.45	1.20	\$7,314,436	\$511,876	7.0%
WISCONSIN	\$277	0.97	\$6.04	0.97	\$26,566,095	\$1,580,459	5.9%
WYOMING	\$705	2.47	\$12.57	2.03	\$3,472,604	\$386,890	11.1%
<b>U.S.</b>	<b>\$285</b>	<b>1.00</b>	<b>\$6.20</b>	<b>1.00</b>	<b>\$1,432,678,566</b>	<b>\$81,642,026</b>	<b>5.7%</b>

Excludes Illinois

**NOTE:** Higher education support is state and local tax and nontax support for public and independent higher education, including special purpose appropriations for research-agricultural-medical.

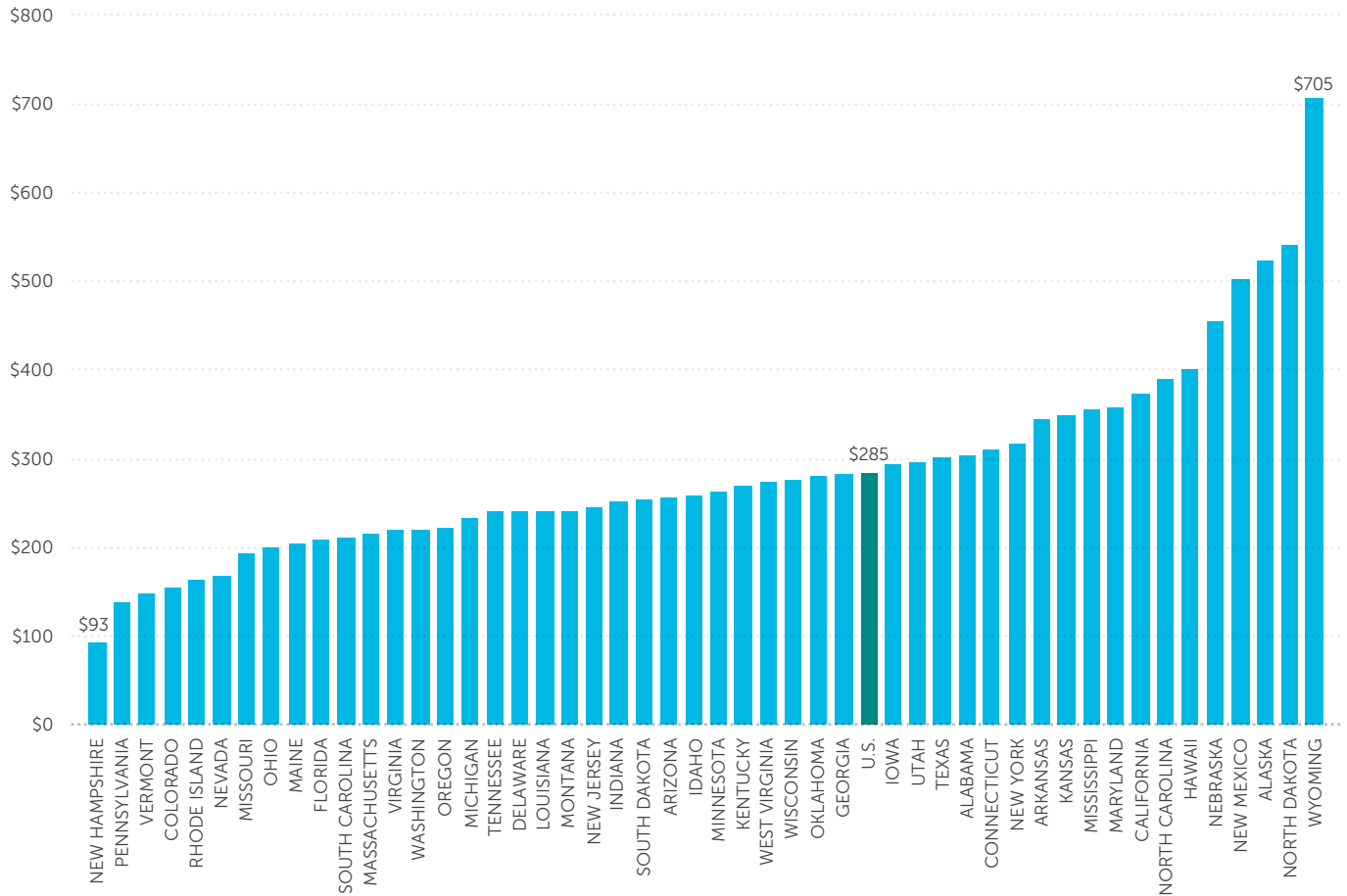
**SOURCES:** State Higher Education Executive Officers

Population and personal income data is from the U.S. Department of Commerce, Bureau of Economic Analysis, Regional Income Division.

State and local tax revenues data is from the U.S. Census Bureau; lottery profits data is from North American Association of State and Provincial Lotteries.

FIGURE 17

HIGHER EDUCATION SUPPORT PER CAPITA, BY STATE, FY 2015

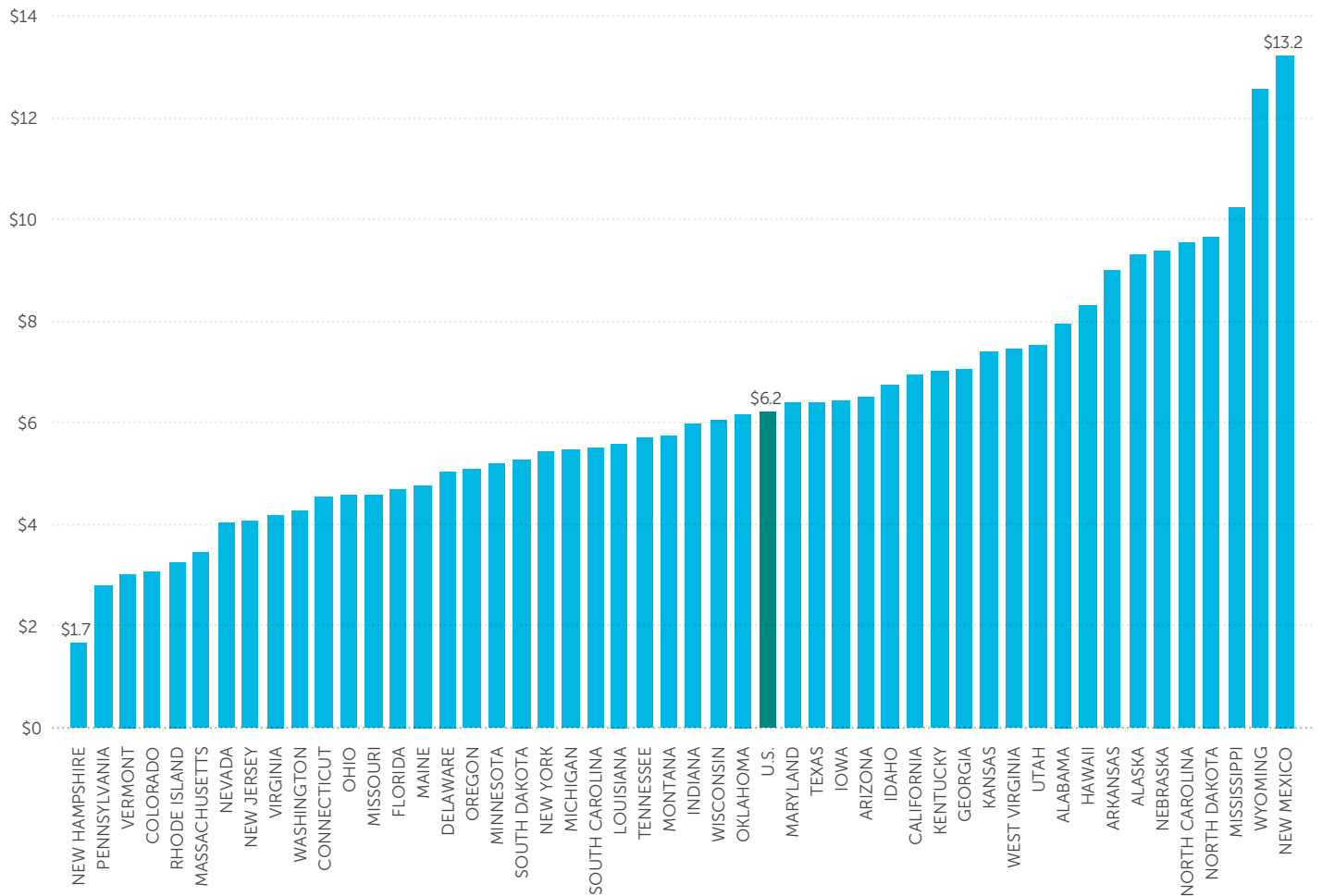


Excludes Illinois

**NOTE:** Higher education support is state and local tax and non-tax support for public and independent higher education, including special purpose appropriations for research-agricultural-medical.

**SOURCES:** State Higher Education Executive Officers, with data from the U.S Census Bureau

**FIGURE 18**  
**HIGHER EDUCATION SUPPORT PER \$1,000 OF PERSONAL INCOME, BY STATE, FY 2015**

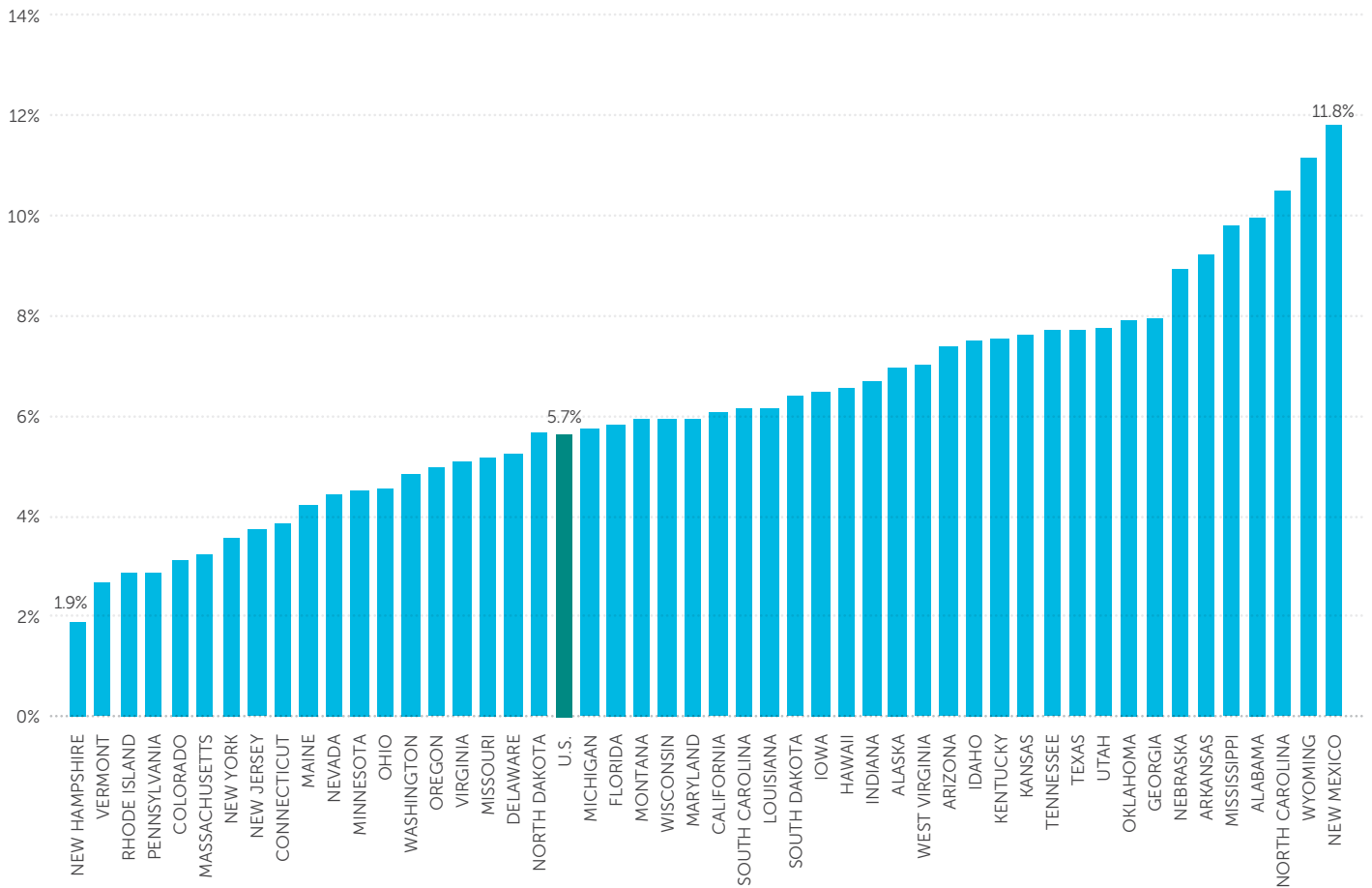


Excludes Illinois

**NOTE:** Higher education support is state and local tax and non-tax support for public and independent higher education, including special purpose appropriations for research-agricultural-medical.

**SOURCES:** State Higher Education Executive Officers, with data from the Bureau of Economic Analysis

**FIGURE 19**  
**PERCENT OF TAX REVENUES ALLOCATED TO HIGHER EDUCATION, FY 2014**



Excludes Illinois

**NOTE:** Higher education support is state and local tax and nontax support for public and independent higher education, including special purpose appropriations for research-agricultural-medical.

**SOURCES:** State Higher Education Executive Officers, with data from the U.S. Census Bureau and North American Association of State and Provincial Lotteries.



## CONCLUSION

This report has summarized higher education enrollment and funding data for 2016. The figures presented here do not include Illinois, as they are currently reviewing errors in their reported data. Illinois will once again be included in next years' report.

For the fourth year in a row, state and local financial support per student saw a moderate increase in 2016. Although the overall picture is promising, fifteen states reduced their support—five more than had done so in 2015. As shown in the 2017 Grapevine survey, states also reduced support for 2017 (and continue to do so), suggesting that the higher education funding picture in 2017 will be less rosy than in 2016, and that 2018 could see more states reducing their support for higher education.

Overall, the average level of public support per student provided by state and local governments in 2016 was 15 percent lower than the pre-recession (2008) level. Only five states (Indiana, Montana, Nebraska, North Dakota, and Wyoming) have seen public support per student reach or exceed pre-recession levels. However, some of those states have seen reductions since the end of the 2016 fiscal year.

Student enrollment at public 4-year institutions continued to increase modestly, while that at public 2-year colleges continued the post-recession decline that began in 2012. Tuition increases began to abate in 2016, with tuition income at public colleges and universities increasing 1.8 percent per FTE student in real terms. Part of this continued increase is due to the reduction in community college enrollment and subsequent shift toward more students at 4-year institutions with higher tuition. In the past few years, tuition growth has also occurred due to the impact of non-resident and international student enrollment. Finally, tuition increases have occurred due to rate increases in tuition paid by in-state undergraduate students, although some states saw reduced or frozen tuition rates for such students in 2016.

Tuition increases moderated in 2016, slightly reducing the share of costs paid through tuition to 47.3 percent (down from 47.6 percent in 2015). The all-time high was 48.5 percent in 2013. While total revenue per-student has been restored in most states, a much larger share of that revenue is paid by students and families through tuition. Many of these tuition charges are being financed through student loans, which, along with the shifting demography of American students to include more enrollment from lower-income groups, helps explain why affordability concerns have become much more acute than they were in 2008.

Colleges and universities have continued to increase the percentage of their students who receive degrees in a given year, with a new high of 27.5 per 100 students reached in 2015 (the most recent data available), up from 21.4 when we started tracking this statistic in 2005. This increase in the overall performance of public colleges and universities is substantial and deserves recognition.

In the past decade, two recessions and the larger macroeconomic challenges facing the United States have created what some are calling the "new normal" for state funding for public higher education and other public services. In the new normal, retirement and health care costs simultaneously drive up the cost of higher education and compete with education for limited public resources. The new normal no longer expects to see the level of recovery of state support for higher education that occurred repeatedly in the last half of the 20th century. This is borne out by the fact that public support per student remains 15 percent below 2008 pre-recession levels and 23 percent below the level seen prior to the dot-com bust early in 2001.

The new normal, therefore, expects students and their families to make increasingly greater financial sacrifices in order to complete a postsecondary education, and expects schools and colleges to find ways to increase productivity and absorb budget cuts, while increasing degree production without compromising quality.

At the same time, most states have adopted ambitious completion and attainment goals tied to expected workforce needs. These can be met only by better serving those students who have typically been underserved—first generation, low-income, adult, and minority students—students who may be less likely to understand how to navigate a complex higher education environment and who may require additional services and supports to succeed. To do so with reduced resources from appropriations will be challenging.

The nation and its educators must meet the challenge of these realities and create effective responses to them. Colleges and universities must find ways to reduce the cost of instruction, improve student progress and reduce the time to a degree, improve student learning, and increase the number of students who graduate ready to be productive citizens and workers. Parents, students, institutions, and states must make tough decisions about priorities—what investments are essential for a better future and where must spending be reduced?

Avoiding mistakes can be difficult when facing tough choices. Institutions may cut too many service corners or compete to raise revenue from “new” sources (such as out-of-state or international students) rather than make difficult decisions about priorities or the extra effort and investment required to create and effectively implement innovative practices. Policymakers may overestimate how many students can be well educated with existing resources, or make unrealistic assumptions about the potential for technology and new delivery methods to rapidly become a panacea offsetting the long-term negative effects of budget cuts or tuition increases on access to higher education and the quality of our workforce. Or the better-off public may be lulled into thinking that the American economy can get by with limited opportunities and 20th century standards for educational attainment, so long as their own families are well educated. The educational and economic edge the United States once enjoyed in comparison to other nations has been eroding. Sound judgment about priorities and extra measures of commitment and creativity are needed in order to regain our educational and economic momentum.

The data and analysis of this and future SHEF reports are intended to help higher education leaders and state policymakers focus on how discrete, year-to-year decisions fit into broader patterns of change over time, and to help them make decisions in the coming years that will meet the long-term needs of the American people to educate more Americans to higher standards than at any other time in our nation’s history.



# STATE HIGHER EDUCATION EXECUTIVE OFFICERS

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