



December 13, 2016

In 16 Charts: Higher Education Funding in Massachusetts

By Luc Schuster

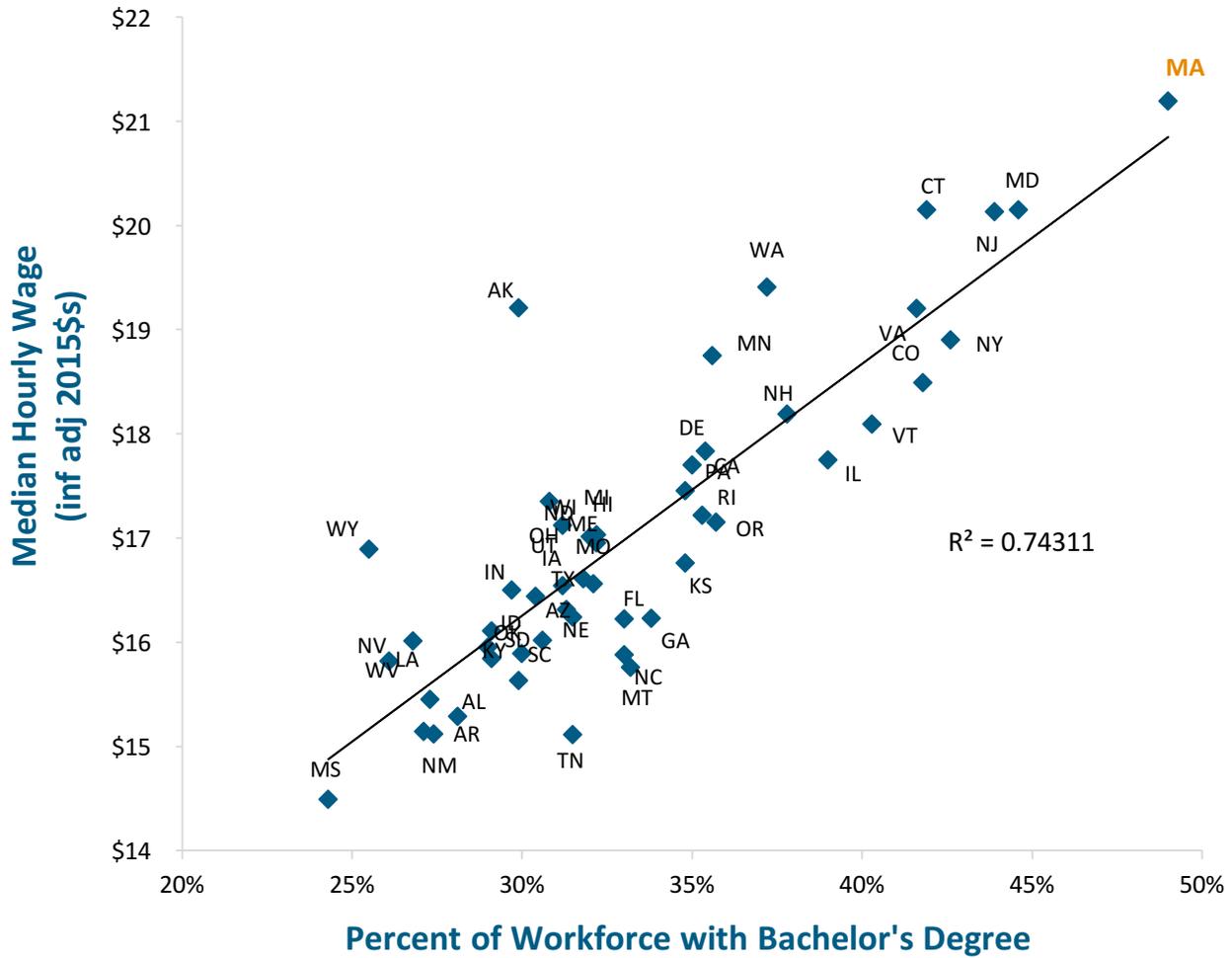
The majority of our state's public high school students who go on to college attend a public college or university in Massachusetts. And students attending public campuses are significantly more likely than those attending private ones to live and work in Massachusetts after graduation, contributing to our communities and our economy over the long-term.

Organized as a series of charts, this paper details major trends in enrollment and state support for our two-year community colleges, four-year state universities, and the UMass system. And it makes several comparisons to other states. Overall, we find that despite the growing importance of public higher education to the long-term health of our state, Massachusetts has cut support since Fiscal Year (FY) 2001, and tuition and fees have grown substantially as a result. Read on for more detail...

1) States with more college-educated workers have stronger, higher-wage economies.

States with a greater share of college-educated workers tend to have stronger, higher-wage economies, as shown in the graph below. States with the best-educated workforces tend to have median wages around \$20 an hour, whereas states near the bottom have wages around \$15 an hour. A few states with small populations, like Alaska, buck this trend, but it's remarkable how tightly clustered the rest of the states are around the upward trend line.

Strong Relationship Between Education and Wages, 2015



While the graph above focuses on the connection between higher wages and the share of a workforce with a bachelor’s degree, other postsecondary degrees – such as industry-recognized certificates and two-year associate’s degrees – also tend to lead to higher wages. Workers with a two-year associate’s degree, for instance, earn roughly \$9,400 more per year than those with just a high school diploma.ⁱ

Interestingly, the importance of increasing the share of a state’s workforce with a college degree is actually a relatively new phenomenon. Back in 1979, there was little clear relationship between education and wages at the state level. Today, however, it’s very hard to get a job that pays family-sustaining wages with only a high school diploma. For more detail on these trends and an analysis of their causes, please see [A Well-Educated Workforce is Key to State Prosperity](#).

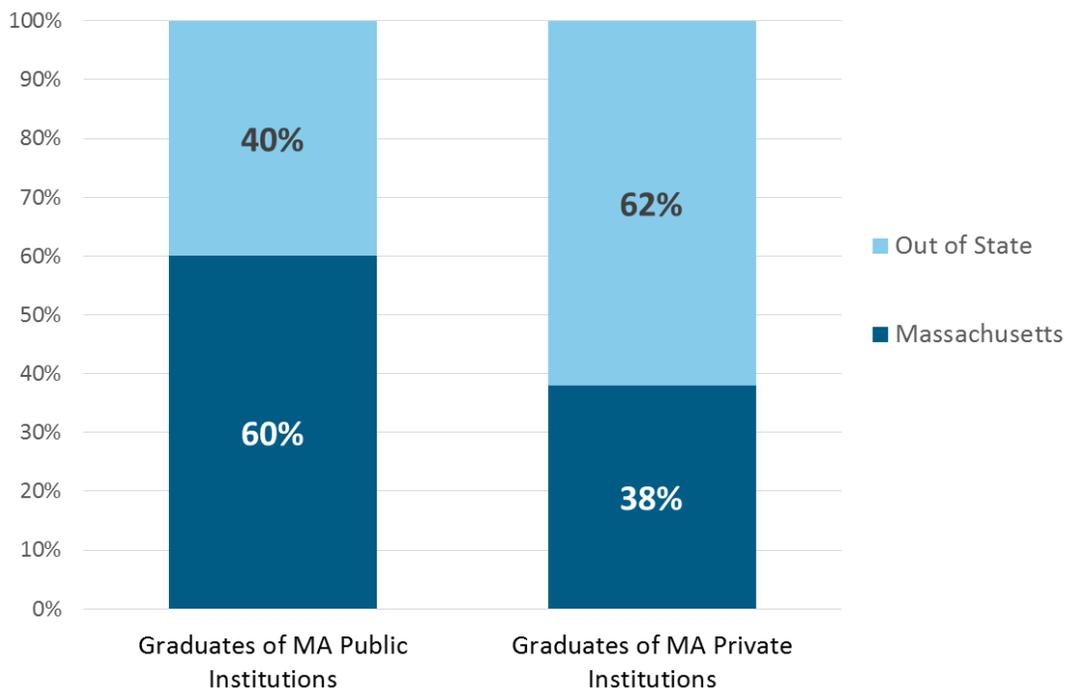
2) Graduates of public institutions are more likely to stay in Massachusetts after graduation.

The majority of our state’s public high school students who go on to college attend a public college or university in Massachusetts within 16 months of finishing high school. For those going on to college from the high school class of 2014, 27 percent went on to a Massachusetts community college, 12 percent went to a state university, and 14 percent went to a UMass campus. For more detail and for prior years, see [High School Graduates Attending College or University](#) on the Kids Count Data Center.

Further, graduates of our public campuses are more likely to live and work in Massachusetts after graduation, contributing to our communities and our economy over the longer-term. Specifically, according to the most comprehensive longitudinal study tracking the paths of American college students post-graduation, 60 percent of graduates of Massachusetts public colleges in 2008 were working in Massachusetts four years later (2012). Only 38 percent of private graduates in 2008 remained in-state in 2012 (see graph below).

Public Grads More Likely to Stay and Contribute to Massachusetts Economy

State of employment in 2012 for class of 2008 Massachusetts college graduates



Source: Baccalaureate & Beyond Longitudinal Survey, National Center for Education Statistics

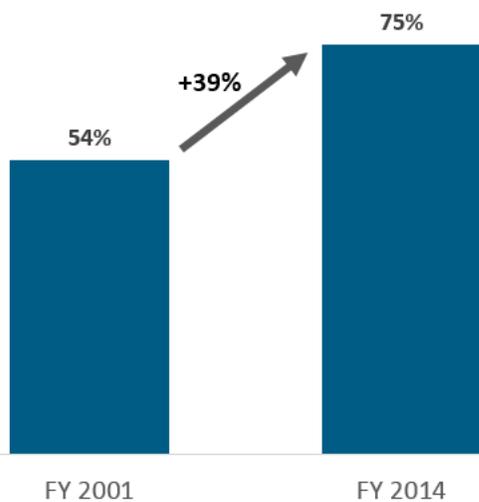
Data in the above graph is from the National Center for Education Statistics’s Baccalaureate & Beyond survey, which tracks a cohort of college graduates every eight years. The most recent cohort is the class of 2008, and the data above shows where those students were working in 2012, four years after graduation.

3) The share of graduates taking out loans has increased as has their total level of debt.

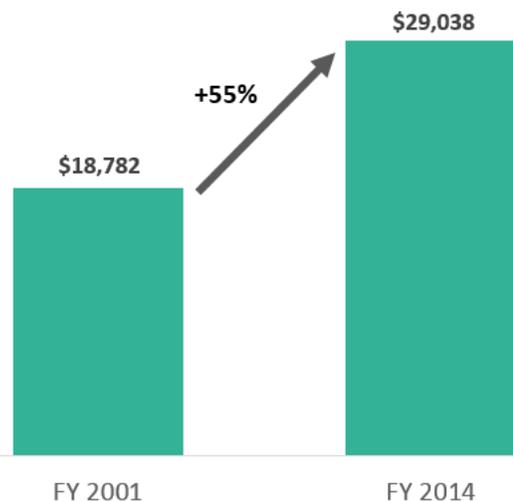
Despite the fact that having a highly-educated workforce is increasingly important for our state’s economic strength, and despite the fact that those attending public campuses are more likely to stay and work in Massachusetts after graduation, more students are taking out loans to help finance their college education and total debt levels have also increased. The share of graduates of public four-year colleges in Massachusetts who have student loans increased from 54 percent in FY 2001 to 75 percent in FY 2014. And cumulative student debt has increased 55 percent for graduates who took out student loans of some amount (see graph below).

More Students Are Taking out Loans... ..and Student Debt Has Increased.

Share of grads of public 4-year colleges in MA with debt.



Average student debt for grads of public 4-year colleges in MA who took out loans, adjusted for inflation (2014 \$).



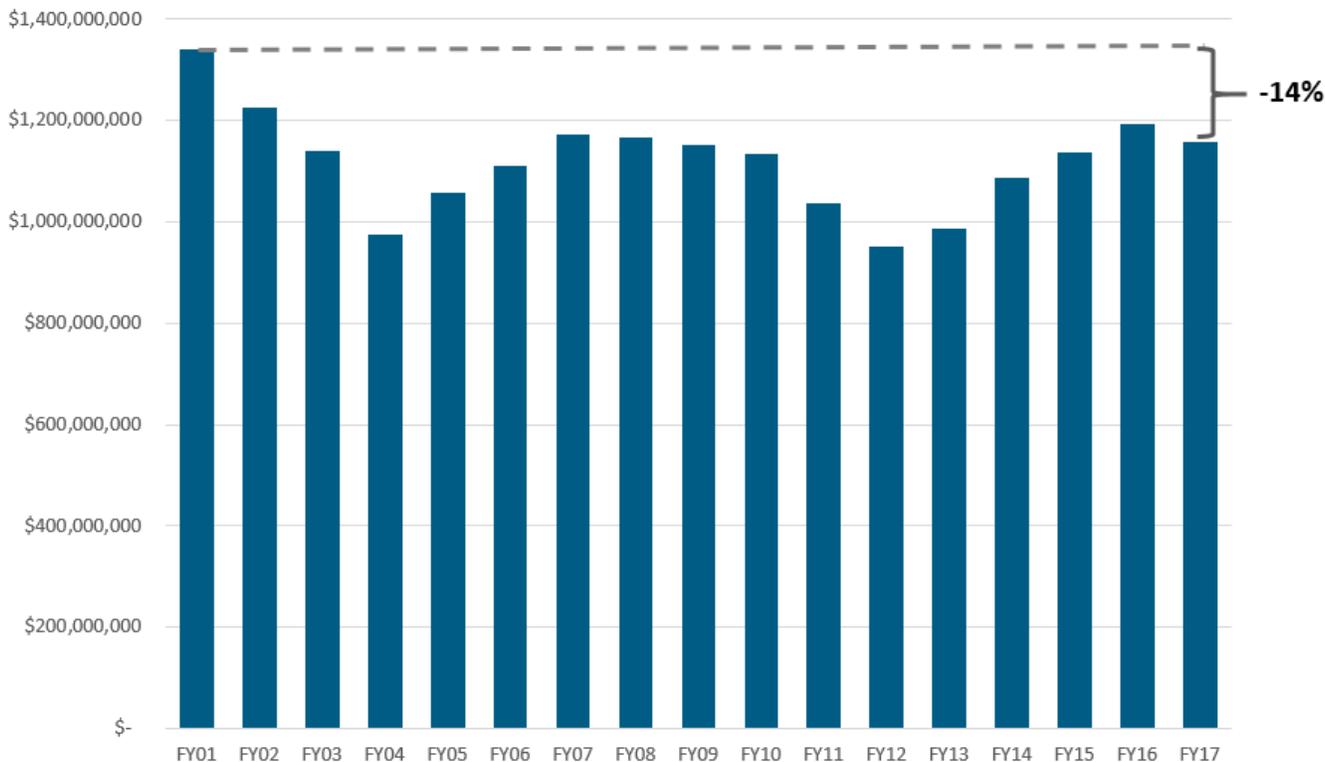
Source: The Institute for College Access & Success, College InSight, www.college-insight.org

4) Massachusetts cut higher education spending 14 percent since FY 2001.

A primary cause of rising student debt in Massachusetts is the fact that the state has cut higher education spending by 14 percent since FY 2001, as shown in the graph below. These state cuts have contributed to tuition and fees increases (which we detail in charts 9 through 12 below), leading students to borrow increasingly large amounts of money to finance their education.

Massachusetts Cut Higher Ed. by 14 Percent Since FY 2001

State spending on higher education, adjusted for inflation



Note: FY 2007 total is adjusted downwards to account for the fact that significant funding during this year was for capital investments that supported activity during other fiscal years.

State funding cuts were largely caused by budgetary pressure felt by all state programs since the early 2000s. Between 1998 and 2002, the state phased-in a series of cuts to the state income tax, which has led to a loss of over \$3 billion annually (for more detail, read [Income Tax Cuts and the Budget Deficit in Massachusetts](#)). As a result, many state programs have been cut over the past 15 years, including local aid, early education, public health, and public higher education.

Totals in the graph above do not capture spending done through the state's capital budget, which we discuss in charts 7 and 8 below. These totals also do not capture some fringe benefits costs that are funded through separate pension and health care accounts for all state employees combined. State spending on pensions for higher education employees hired after 1996 are very low and likely haven't increased much, if at all, over this timeframe. Most state spending on public employee pensions in recent years is for employees hired before 1996, since their required payroll deductions were lower (for more detail, see [Demystifying the State Pension System](#)). State spending on health care costs for higher education employees, by contrast, likely did increase over this timeframe as health care costs increased nationwide.

Note: Since FY 2001, several different policies have dictated when specific campuses must send certain categories of tuition revenue back to the state. When revenue must be sent to the state, it is not available for campus operations and has the same effect as reduced state funding to the campuses. To provide more accurate comparisons of state support to campuses over time, MassBudget deducts tuition revenue sent back to the state

from the direct appropriations to each campus type. For details on the policies at a given campus, select that campus in [MassBudget's Budget Browser section for Higher Education](#) read the NOTES section.

5) Higher education spending *per student* has been cut even more.

As total state funding declined, enrollment increased, meaning that *per student* funding decreased by even more. Adjusting state spending by the number of resident students enrolled in each of our campuses, as detailed in the graph below, shows a cut of 31 percent since FY 2001 (compared to 14 percent when just looking at total funding).

Per Student, Higher Ed. Cut by 31 Percent Since FY 2001

Massachusetts higher education spending, per resident student, adjusted for inflation



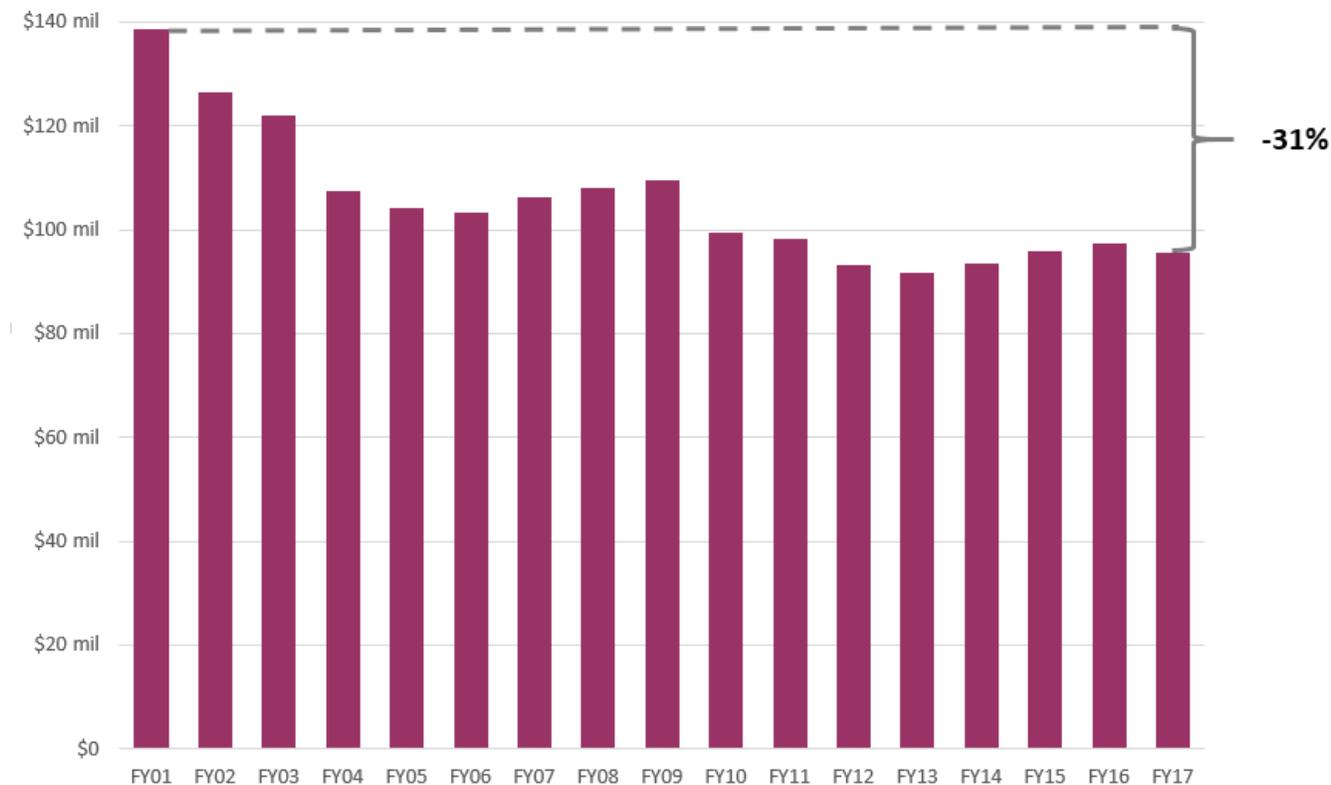
Note: FY 2007 total is adjusted downwards to account for the fact that significant funding during this year was for capital investments that supported activity during other fiscal years.

6) Massachusetts cut state scholarship funding by 31 percent.

Most of the roughly \$1 billion we spend annually on public higher education goes directly to the different community college, state university, and UMass campuses to help support their general operating budgets, but the state also supports scholarship programs for targeted student populations. Overall, we cut these state scholarships by 31 percent since FY 2001, as shown in the graph below. (While the trend is similar, it's purely a coincidence that per student funding and scholarship funding were both cut by 31 percent over this timeframe).

Massachusetts Cut Scholarships by 31 Percent Since FY 2001

State spending on State Scholarship Program, adjusted for inflation



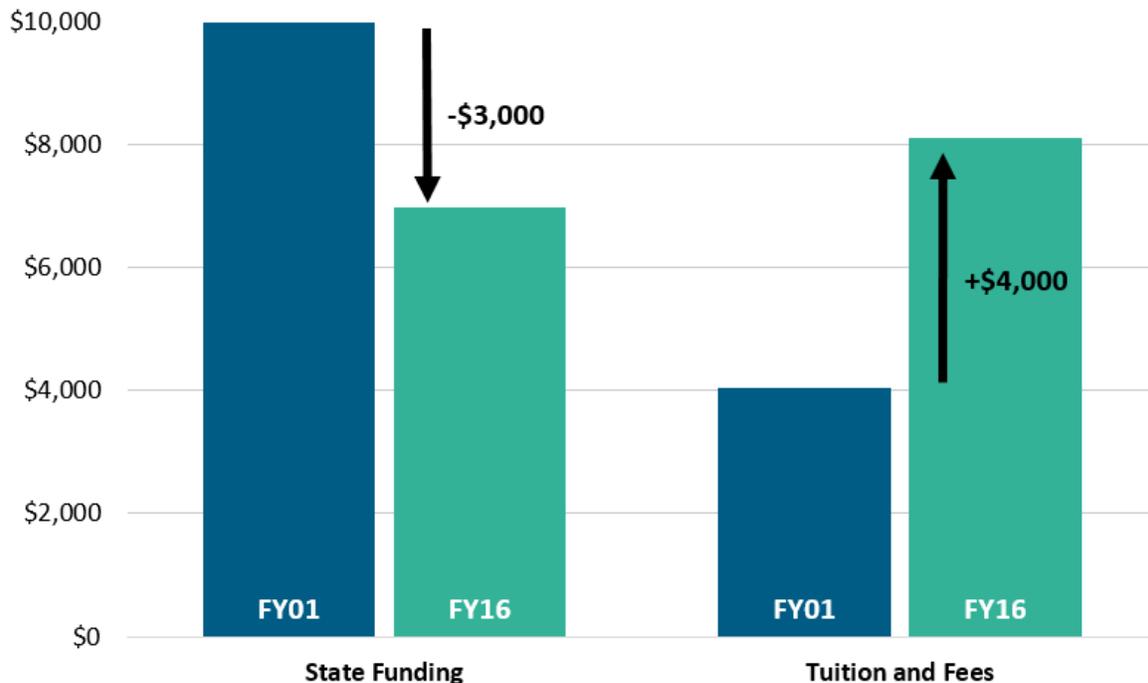
The largest portion of state scholarship funding goes to the need-based [MASSGrant](#) program for low-income college students. According to a [report of the Higher Education Finance Commission](#) in 2014, MASSGrant funding covers a much lower share of student costs than it once did: in 1988 MASSGrant covered 80 percent of a qualifying student's tuition and fees, whereas it only covered 9 percent in 2013. Reduced MASSGrant funding has been partially offset by increased campus-based scholarships (or "institutional aid"), which are funded in part by higher tuition and fees paid by all students.

7) State funding cuts played a major role in driving tuition & fee increases across all of our campuses.

State funding cuts have coincided with sharp increases in tuition and fees, as shown in the graph below. As campuses received less operating support from the state, they increased tuition and fees as one strategy for raising sufficient revenue. Combining all public institutions together, the state cut funding by about \$3,000 per student since FY 2001 and tuition and fees have increased by about \$4,000 per student. These numbers suggest that state funding cuts were responsible for a large share of tuition and fee increases.

As State Higher Ed. Funding Went Down... ...Tuition and Fees Went Up.

Per-student state appropriations and resident tuition and fees, adjusted for inflation (2016 \$). School-based financial aid not funded by state appropriations is netted out of tuition and fees.



Tuition alone has actually remained relatively level, but campuses have raised student costs by instead dramatically increasing mandatory fees. For FY 2016, for instance, tuition for a full-time resident student at Salem State University was only \$910, but mandatory fees cost \$8,336. UMass campuses had a similar split between tuition and mandatory fees through FY 2016, but starting this school year the two separate costs have been combined into one tuition amount. In order to capture the true student cost of attending any of our different public campuses, we combine tuition and fees throughout this paper.

Note: Tuition and fee data in the above graph and in the following three graphs are adjusted to net out institutional scholarships. These scholarships are funded through private donations and surplus tuition and fee revenue in order to help certain groups of students meet the cost of attending school. Much of this aid goes to help low-income students, in particular. Institutional aid has increased somewhat over this timeframe, especially at UMass, and without this added student support tuition and fees would likely have increased even more.

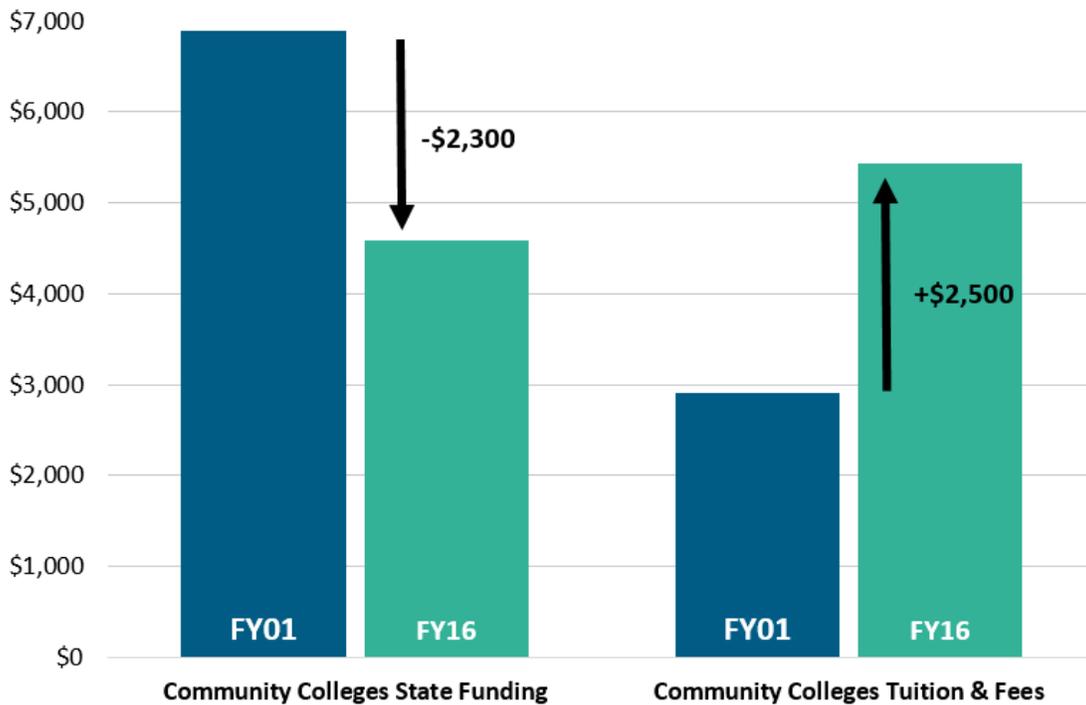
Additionally, for each of these graphs comparing state funding cuts to tuition and fee increases we use the FY 2016 General Appropriations Act (GAA) budget totals, rather than final FY 2016 budget amounts. The GAA, which is set at the beginning of the fiscal year, is closer in time to when campuses set tuition and fee amounts. Campuses did receive some increased funding for FY 2016 after the FY 2016 GAA was passed, but this occurred after tuition and fees had already been set for the fall semester.

8) Cuts played a major role in driving tuition & fee increases of \$2,500 per student at community colleges.

Just looking at our community colleges, state funding is down \$2,300 per student since FY 2001 while tuition and fees are up \$2,500 per student, an almost identical amount.

**As State Higher Ed. Funding Went Down...
...Tuition and Fees Went Up.**

Per-student state appropriations and resident tuition and fees, adjusted for inflation (2016 \$). School-based financial aid not funded by state appropriations is netted out of tuition and fees.

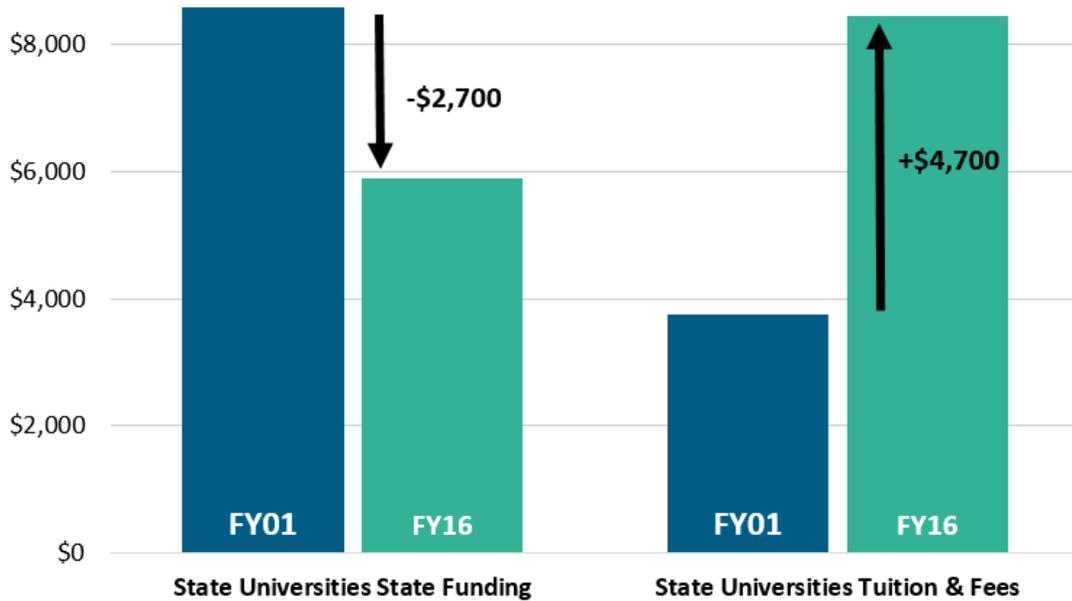


9) Cuts played a major role in driving tuition & fee increases of \$4,700 per student at state universities.

At our nine state universities, state support is down \$2,700 per student and tuition and fees are up \$4,700 per student.

As State Higher Ed. Funding Went Down... ...Tuition and Fees Went Up.

Per-student state appropriations and resident tuition and fees, adjusted for inflation (2016 \$).
School-based financial aid not funded by state appropriations is netted out of tuition and fees.
\$10,000

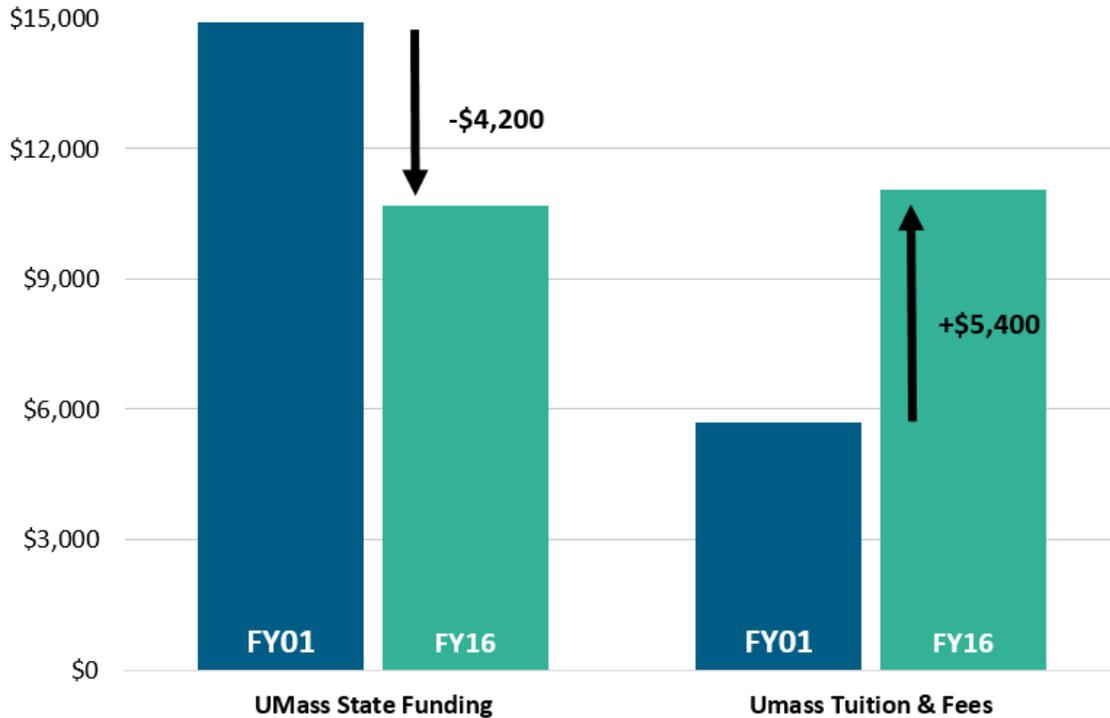


10) Cuts played a major role in driving tuition & fee increases of \$5,400 per student at UMass campuses.

And across our four undergraduate UMass campuses, state support is down \$4,200 per student, with tuition and fees up by \$5,400 per student.

As State Higher Ed. Funding Went Down... ...Tuition and Fees Went Up.

Per-student state appropriations and resident tuition and fees, adjusted for inflation (2016 \$). School-based financial aid not funded by state appropriations is netted out of tuition and fees.



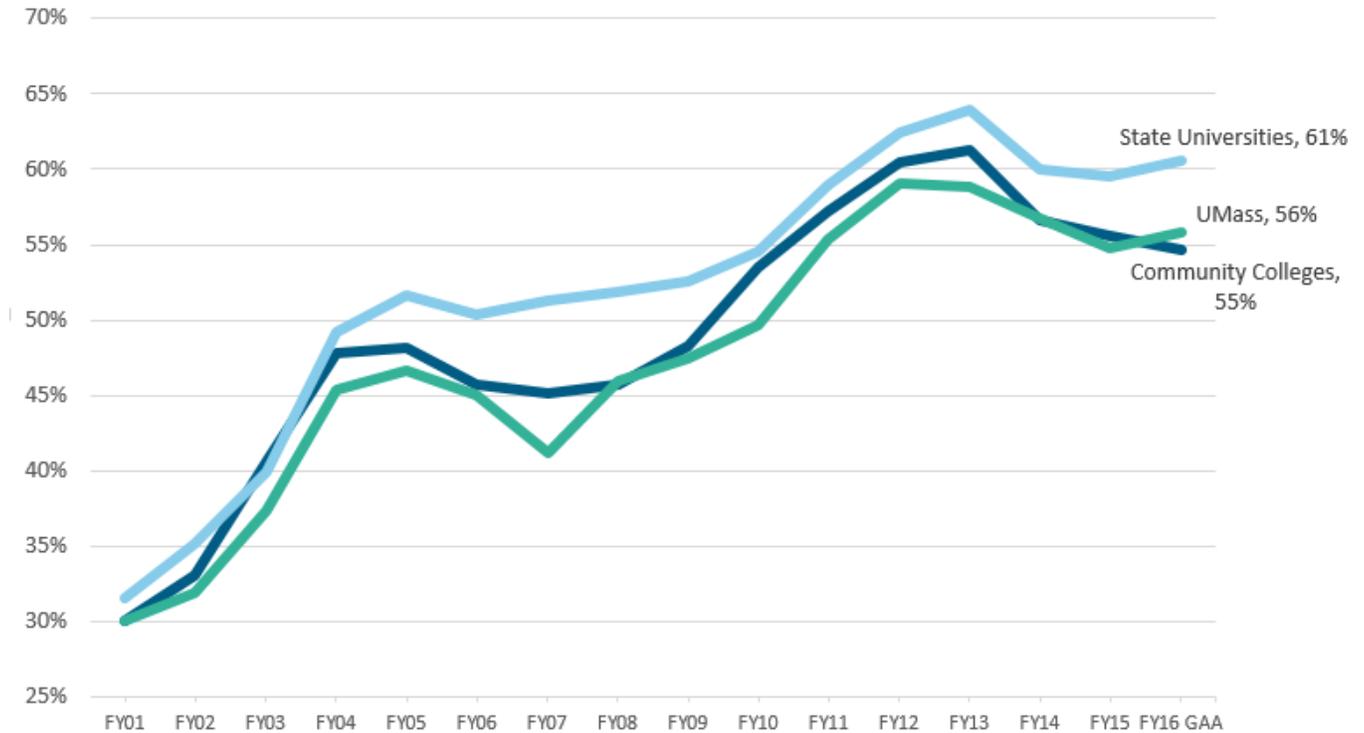
Note: A small portion of state appropriations to the UMass account in the state budget funds operations at UMass Medical School, but the vast majority of this state appropriation goes to fund the four undergraduate campuses, which are the focus of the analysis above.

11) Overall, the student share of higher education costs has risen substantially.

This trend of reduced state support paired with increased tuition and fees means that students themselves now pay for a larger portion of the college costs. As shown in the graph below, back in FY 2001 students paid for roughly one-third of higher education costs, whereas now they pay well over half.

The Student Share of Higher Ed Costs Has Risen Dramatically

Resident tuition & fees as a percentage of education revenue (resident tuition and fees + state appropriations)

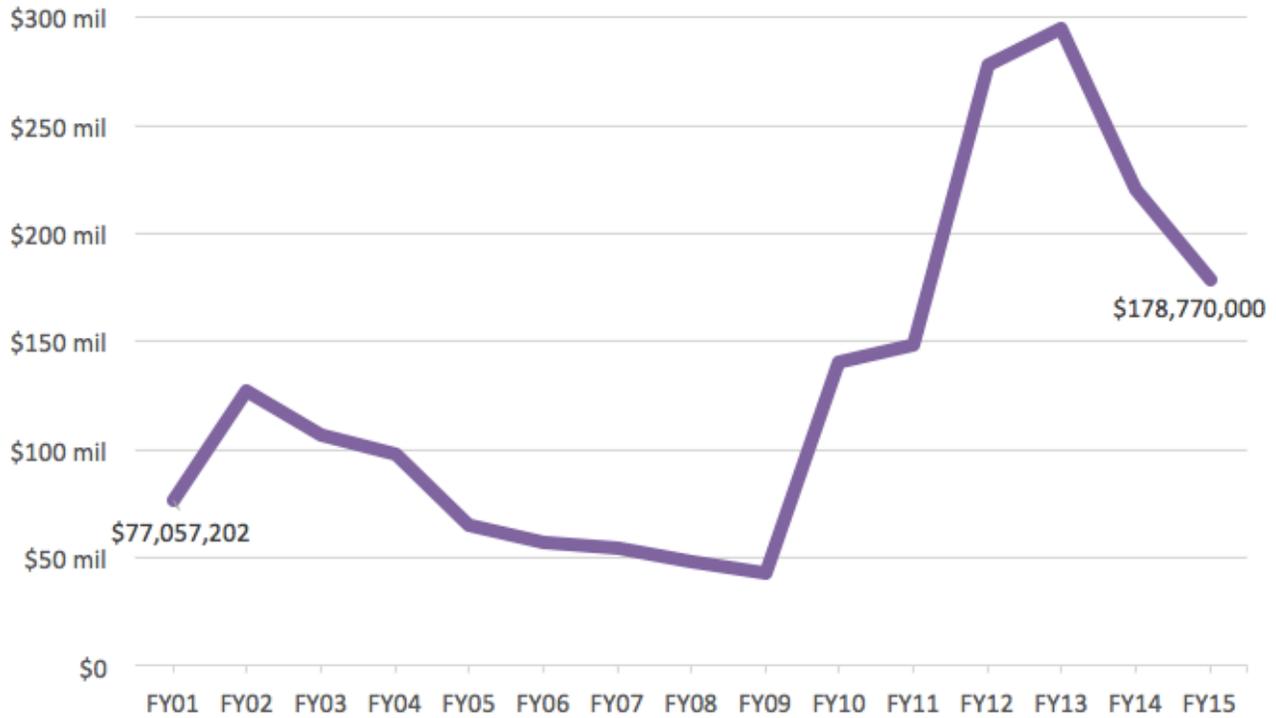


12) State capital spending on higher education increased somewhat, but much of this was to help offset low levels of prior investment.

After years of relatively low state capital investment compared to other states, the legislature in 2008 passed a ten-year, \$2.2 billion higher education bond bill to help address longstanding capital needs across our system. Of this total, \$1.2 billion was for community college and state university projects, and \$1.0 billion was for UMass projects. Resulting increases in state capital funding after FY 2009 (shown in the graph below) have been used to add academic space to better serve rising enrollment and to renovate and modernize existing buildings that had gone into disrepair.

State Higher Ed. Capital Spending Has Increased, But Is On The Decline

Massachusetts spending on higher education capital projects. Adjusted for inflation (2015 \$)



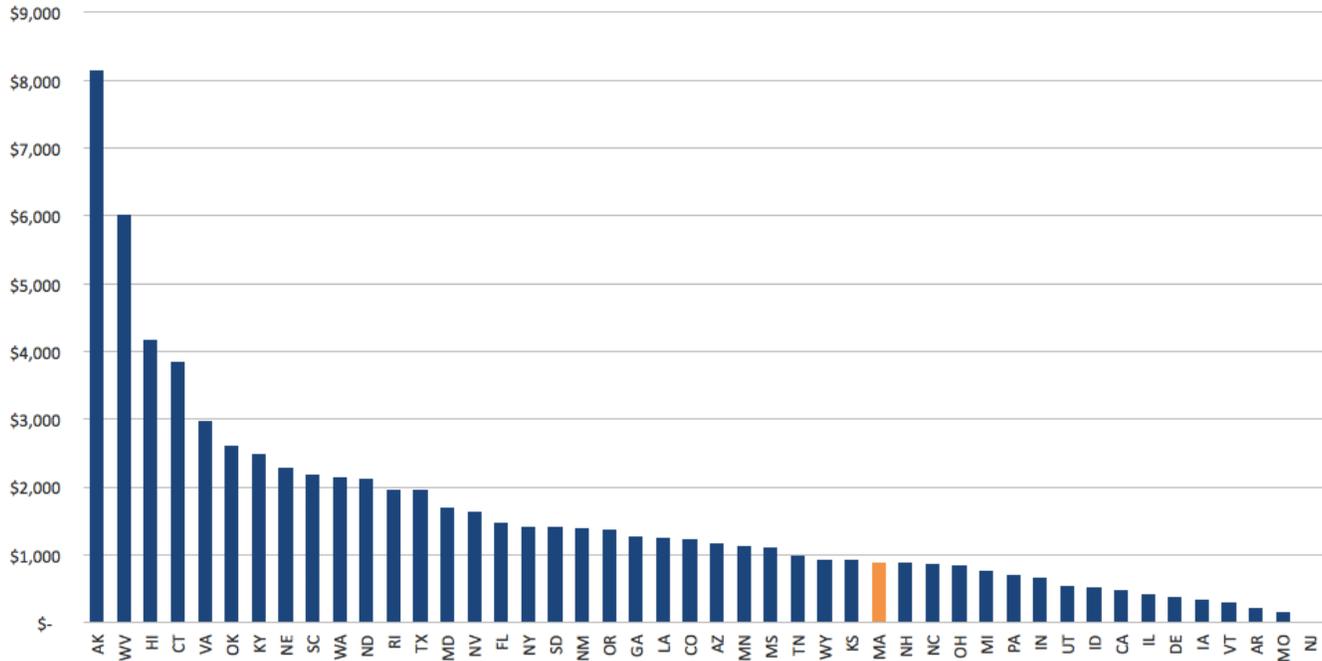
Source: National Association of State Budget Officers State Expenditure Reports. Table 48, Higher Ed. Capital Expenditures

13) Massachusetts ranks low in capital investment compared to other states.

Compared to other states, public spending on higher education capital projects lags in Massachusetts behind many other states. Looked at over the past fifteen years, Massachusetts ranks 30th in the country, as shown in the graph below.

MA Ranks 30th in Higher Ed. Capital Spending Per Student

Higher ed. capital spending per student, per year. FY01-15 average. Adjusted by number of students (2001/2015 average enrollment)
Adjusted for inflation (2015 \$)



Source: National Association of State Budget Officers. This year-by-year capital spending data is proprietary to NASBO. This data has been aggregated and analyzed by MassBudget. Due to reporting issues, Alabama, Maine, Montana, and Wisconsin are not included in this analysis.

Analyzing capital spending over a multi-year timeframe makes sense because spending on big capital projects is lumpy: states often invest in new projects over a year or two and then use the new (or refurbished) buildings for many years afterwards. In order to smooth these trends over time, we take all capital spending over a fifteen-year period and then adjust for the number of students that these buildings support. Taking an average over these fifteen years is especially useful for looking at Massachusetts spending since it captures the low levels of capital investment during the early 2000’s and the higher levels of investment during the early 2010’s. It is also important to adjust spending per student, as we do in this analysis, because states are supporting student bodies of different sizes with these capital investments.

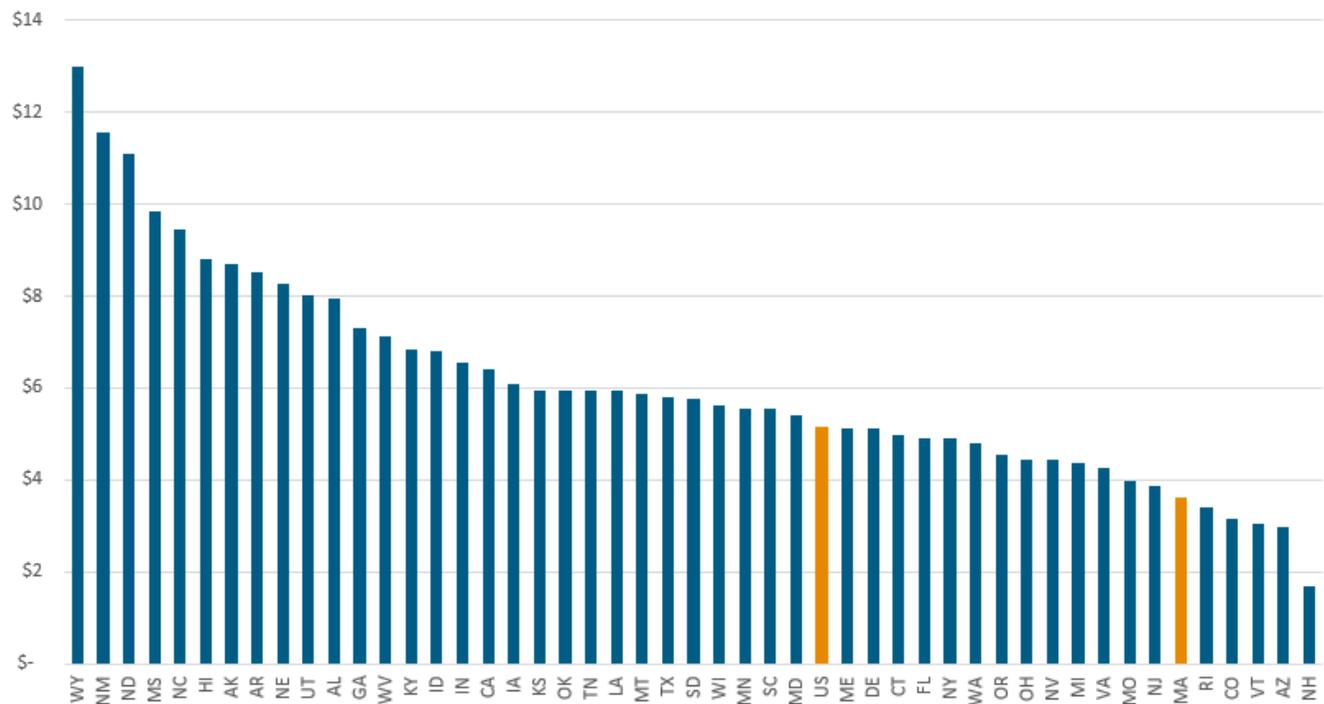
14) As a share of our economy, Massachusetts spends less on higher education.

Because states vary in so many different ways – e.g. relative income levels, student enrollment, the overall cost of living, state population – it’s hard to compare higher education spending across all 50 states using one single measure. Therefore, we end this paper with a few different 50-state comparisons.

First, we look at spending relative to the state’s overall economic resources. Compared to other states, Massachusetts spends much less on public higher education as a share of our economy. Currently, we rank 43rd in higher education support per \$1,000 of personal income, as shown in the graph below. We rank low both because we have cut total higher education spending over the past fifteen years and because we are a relatively high-income state overall.

Massachusetts Ranks 43rd in Higher Ed. Support Per \$1,000 of Personal Income

State and local higher education support per \$1,000 of personal income, FY 2016



Source: Grapevine, the Center for the Study of Education Policy at Illinois State University; and the State Higher Education Executive Officers Association data.

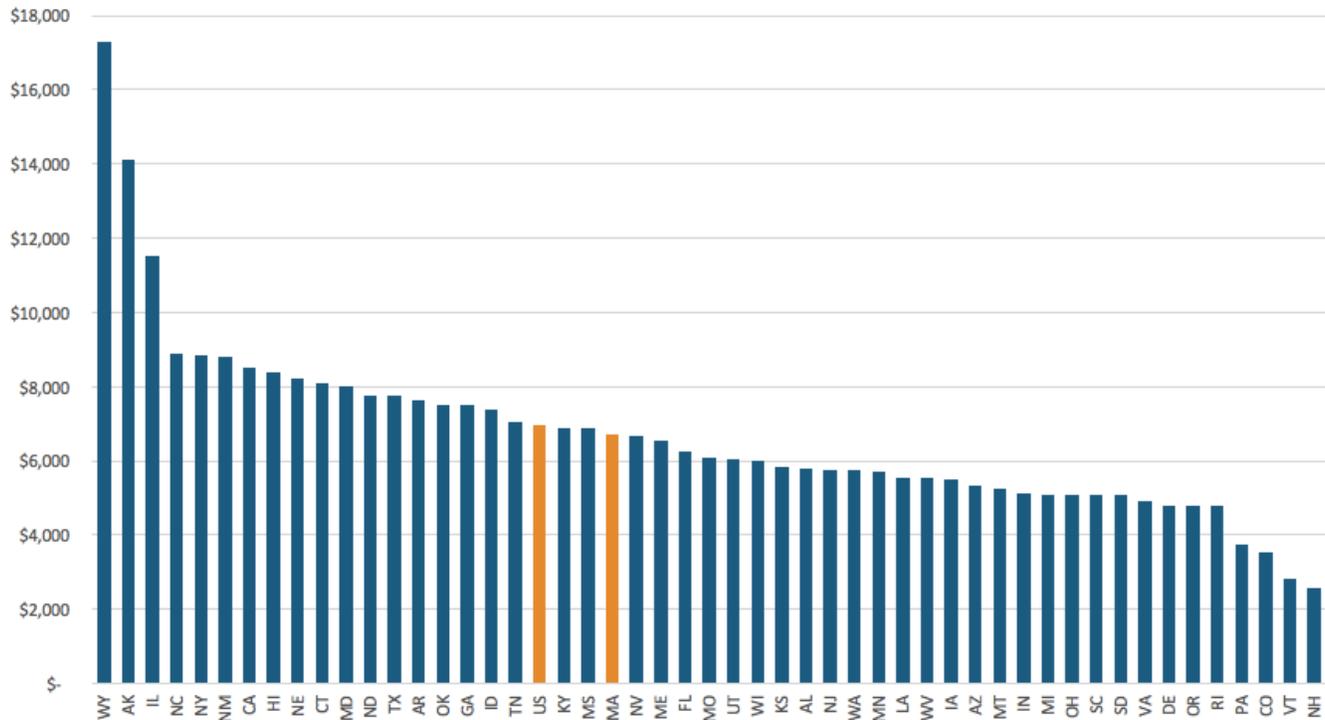
Due to data issues, Illinois and Pennsylvania were not reported for FY 2016.

15) Adjusted for cost of living, Massachusetts is roughly average in per student higher education spending.

The cost of living varies widely across states. Therefore, adjusting for interstate variations in cost of living helps us compare the relative purchasing power of state higher education appropriations. When making this adjustment, Massachusetts ranks roughly average (21st) in state higher education spending per student (see graph below).

Adjusted for Cost of Living, Massachusetts Ranks 21st in Higher Ed. Spending Per Student

State higher education spending per student, adjusted for cost of living and relative mix of undergraduate and graduate students, FY 2015



Source: State Higher Education Executive Officers Association (SHEEO) data. SHEEO spending totals include estimates of fringe benefit costs and are net of special-purpose, research, and medical appropriations.

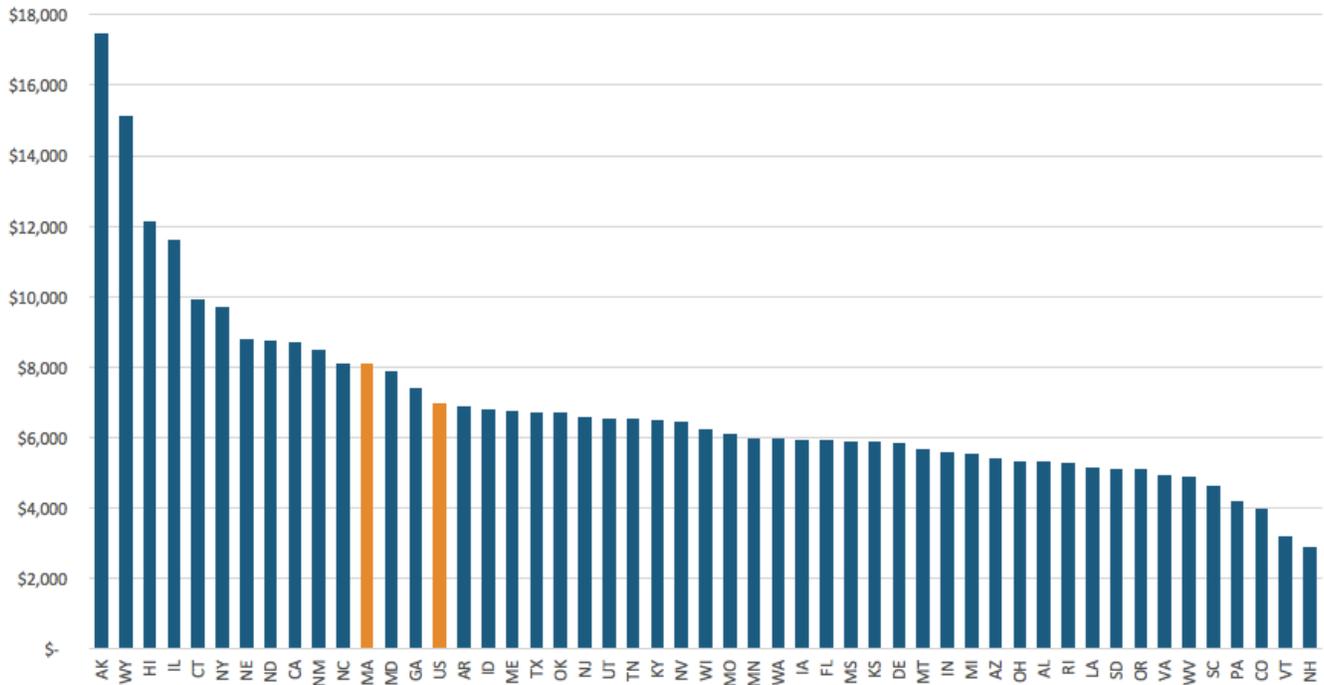
NOTE: In making adjustments for the graph above, we follow the methodology designed by the State Higher Education Executive Officers Association’s [State Higher Education Finance project](#) and detailed in this [Technical Paper](#). In addition to the cost of living adjustment, SHEEO recommends that for 50-state comparisons of state spending researchers also adjust for public higher education “enrollment mix,” which we include in the above analysis. Adjusting for enrollment mix is designed to capture the fact that each level of higher education has different associated costs, with undergraduate courses costing less to provide than graduate courses. And since state higher education systems have different relative proportions of students served at each of these levels, adjusting for enrollment mix can help facilitate more useful cross-state spending comparisons. In the case of Massachusetts, our enrollment mix is very close to the national average, so this adjustment makes little difference in our national ranking, whereas, by contrast, the cost of living adjustment moves us from near the top to towards the middle.

Comparing state higher education spending per student without making a cost of living adjustment brings our ranking up to 12th in the country, as shown in the graph below.

It’s important to note that there’s an interaction between operating support (shown in these two graphs) and capital spending (shown in graphs 12 and 13 above). When capital support is insufficient to cover campus needs, they often make up some of the difference by shifting resources from the operating budget, which would otherwise be available for classroom support. The graph below (and above) doesn’t adjust for such shifts that are particularly likely to affect campuses in states with lower levels of capital support like Massachusetts.

Unadjusted for Cost of Living, Massachusetts Ranks 12th in Higher Ed. Spending Per Student

State higher education spending per student, FY 2015



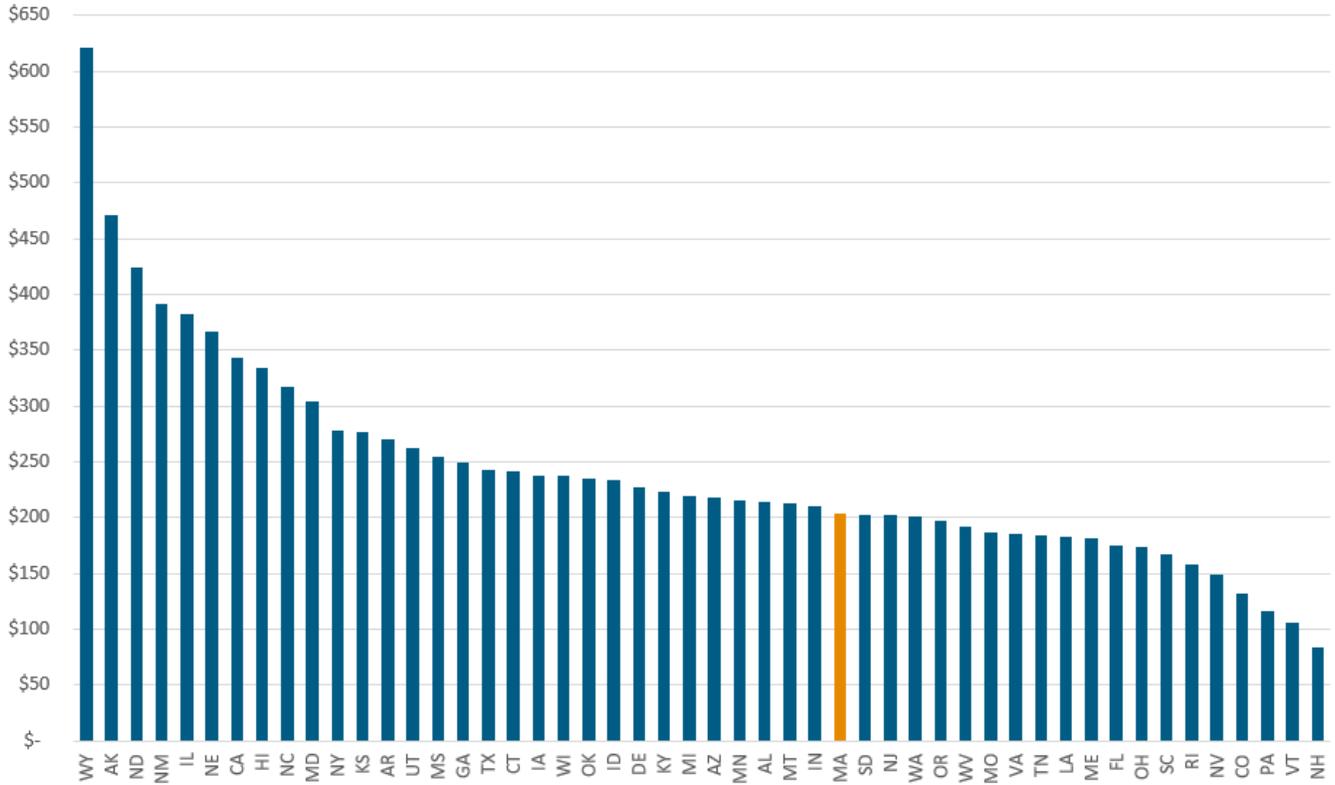
Source: State Higher Education Executive Officers Association (SHEEO) data. SHEEO spending totals include estimates of fringe benefit costs and are net of special-purpose, research, and medical appropriations.

16) Massachusetts ranks below average in higher education spending per capita.

And, finally, when looking at higher education spending adjusted for the total state population, Massachusetts is a bit below average, ranking 31st in the country. Our per capita ranking is lower than our per student ranking in large part because a smaller share of college students in Massachusetts attend public institutions.

Massachusetts Ranks 31st in Higher Ed. Spending Per Capita

State higher education spending per state resident, FY 2015



Source: State Higher Education Executive Officers Association (SHEEO) data.

SHEEO spending totals include estimates of fringe benefit costs and are net of special-purpose, research, and medical appropriations.

Population totals from US Census Bureau American Community Survey Estimates as of July 1, 2015

ⁱ Baum, Sandy, Jennifer Ma, and Kathleen Payea. "Education Pays 2013." *College Board*. 2013. Page 11