

Education and State Economic Strength: A Snapshot of Current Data

By Jeremy Thompson

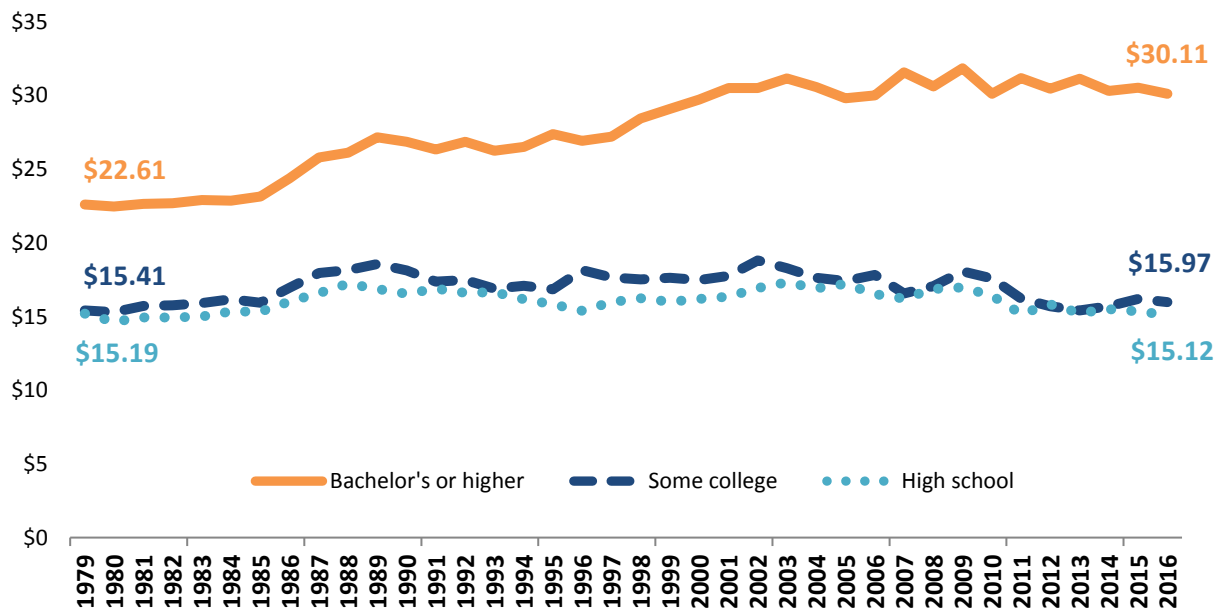
Education and State Economic Strength: A Snapshot of Current Data

The emergence of a knowledge-based economy over the past several decades has led to a widening gap between workers with bachelor’s degrees and those without. As we discuss below, the greatest increases in wages over the past four decades, and in the relative earnings benefit of attending college, are going to the highest-paid 10 percent of workers with bachelor’s degrees.

In 1979, the median wage for a Massachusetts worker with a bachelor’s degree was about 50 percent higher than the median wage for someone who had not attended college. Since then, real wages have grown by over one-third for college-educated workers in Massachusetts, while real wages have been flat for workers who have not attended college. As a result, Massachusetts workers with bachelor’s degrees now earn nearly double what workers who have not attended college earn.

Real Wages Grew Faster for Workers in MA with Higher Levels of Education

Real Median Hourly Wage in Massachusetts by Educational Level, 1979-2016 (2016\$)



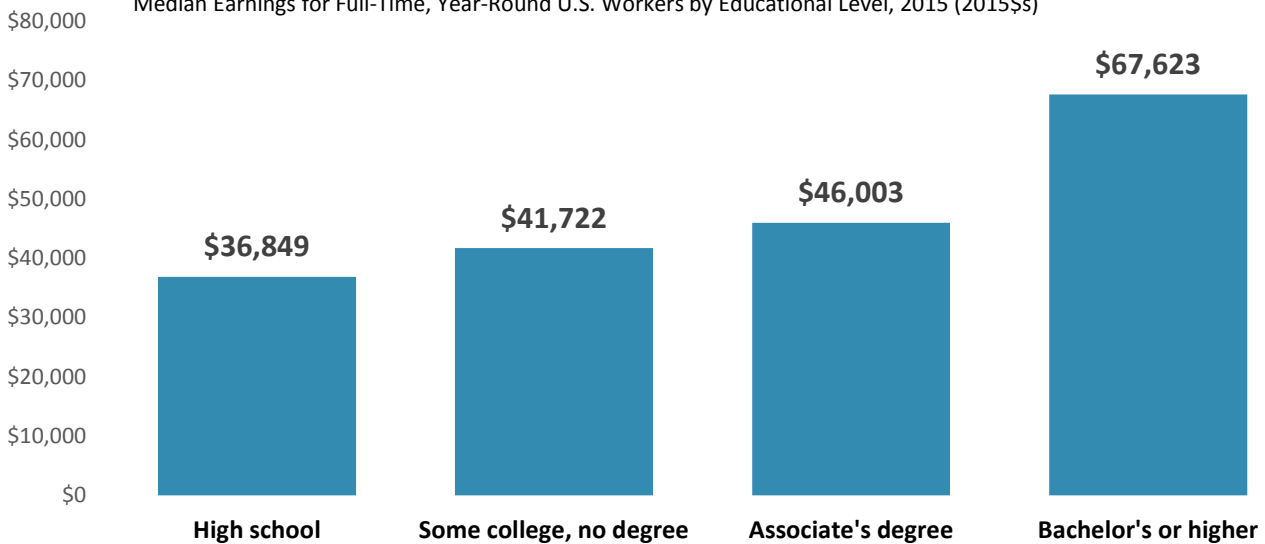
Source: Economic Policy Institute analysis of Current Population Survey data, values deflated using CPI-U-RS

Due to limitations in the data, this analysis does not break out wage earners who have earned an associate’s degree from those who have “some college” but no degree. However it is worth noting that

a growing body of research shows higher earnings for associate’s degree holders compared with workers who attended college but did not earn a degree. One recent study of a handful of states (not including Massachusetts) found that “completing an associate degree yields on average approximately \$4,640-\$7,160” in annual earnings above entering college but not completing.¹ Among full-time, year-round workers nationally, the U.S. Census Bureau reports that median annual earnings for those holding an associate’s degree were \$46,000 in 2015, compared with \$41,700 for those with some college but no degree (see chart below).

More Education Leads to More Earnings

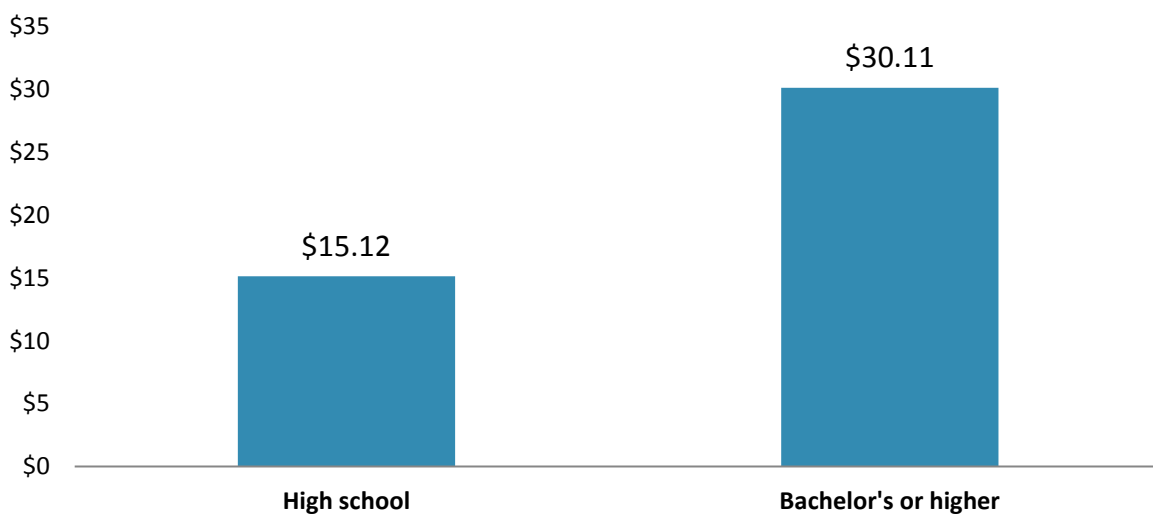
Median Earnings for Full-Time, Year-Round U.S. Workers by Educational Level, 2015 (2015\$)



Source: U.S. Census Bureau, *Income and Poverty in the United States*

Workers with Bachelor's Degrees Earn 99 Percent More Than Those Without

Median Hourly Wage in Massachusetts by Educational Level, 2016 (2016\$)



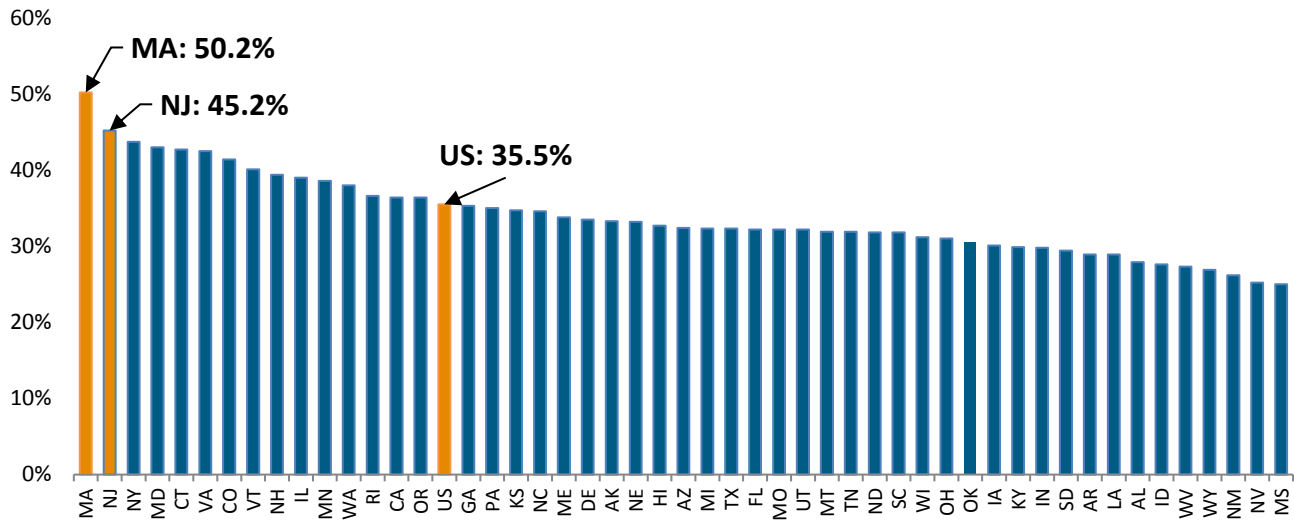
Source: Economic Policy Institute analysis of Current Population Survey data

Nationally, median earnings for full-time, year-round workers with bachelor's degrees were 84 percent higher than for high school graduates in 2015. As the chart above shows, hourly wages for workers in Massachusetts with a four-year college degree were about double the wages of those who have not attended college.²

Unsurprisingly, Massachusetts and New Jersey, which have the highest percentages of workers holding bachelor's degrees, also have the highest median hourly wages.

MA and NJ Have the Most Highly Educated Workforces in the Nation

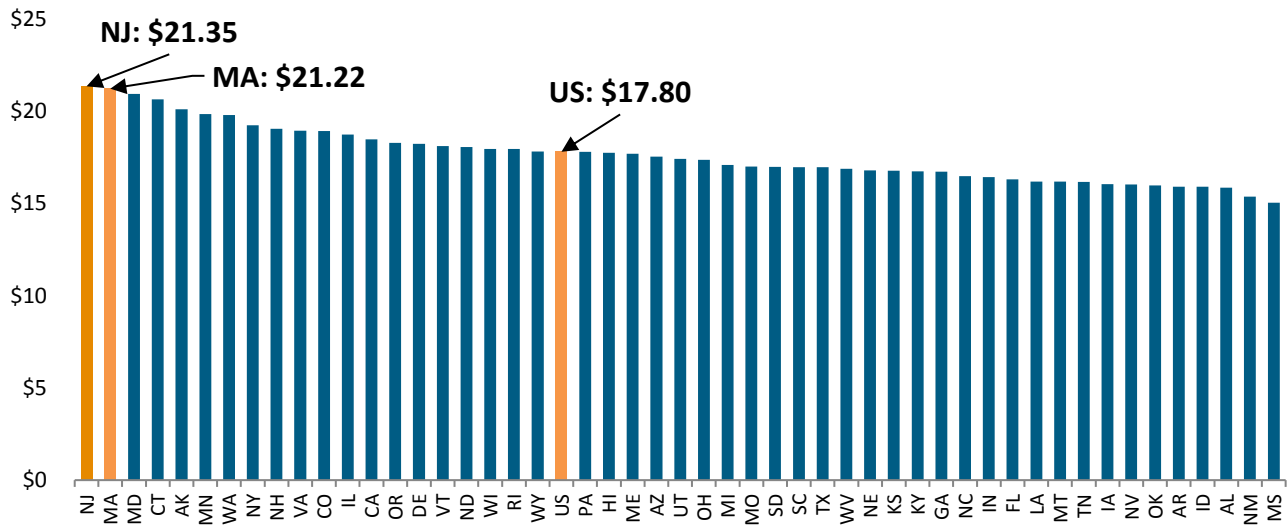
Share of Labor Force with a Bachelor's Degree or Higher, by State, 2016



Source: Economic Policy Institute analysis of Current Population Survey data

MA and NJ Have the Highest Median Wages in the Nation

Value of Median Hourly Wage by State, 2016 (2016\$)

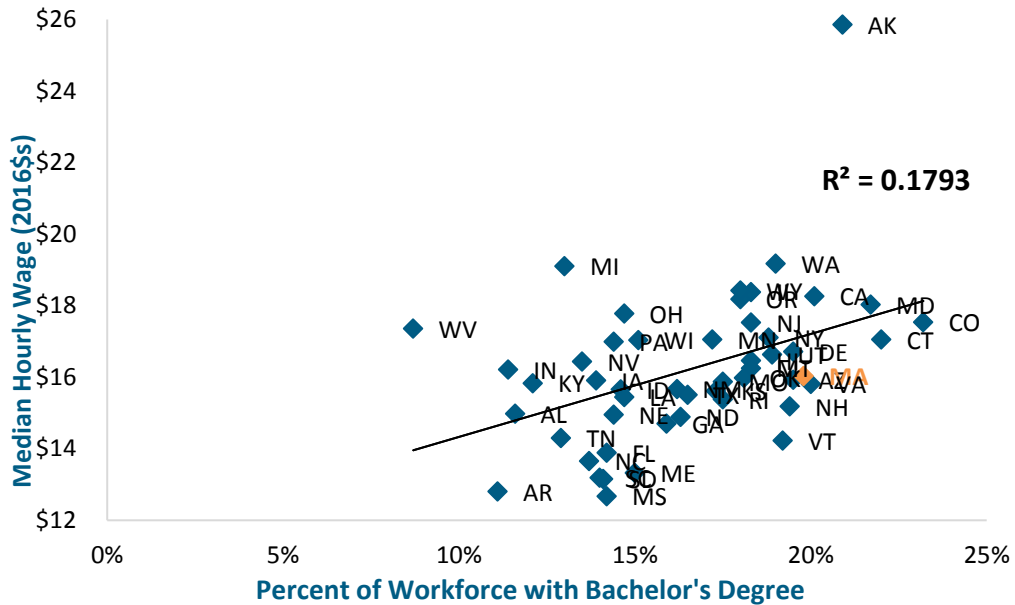


Source: Economic Policy Institute analysis of Current Population Survey data

While it might seem obvious in 2017 that higher levels of college education would be associated with higher earnings at the state level, this relationship is actually a fairly recent feature of the U.S. economy.

In 1979, the correlation between the educational attainment of a state's workforce and its median hourly wage was weak.

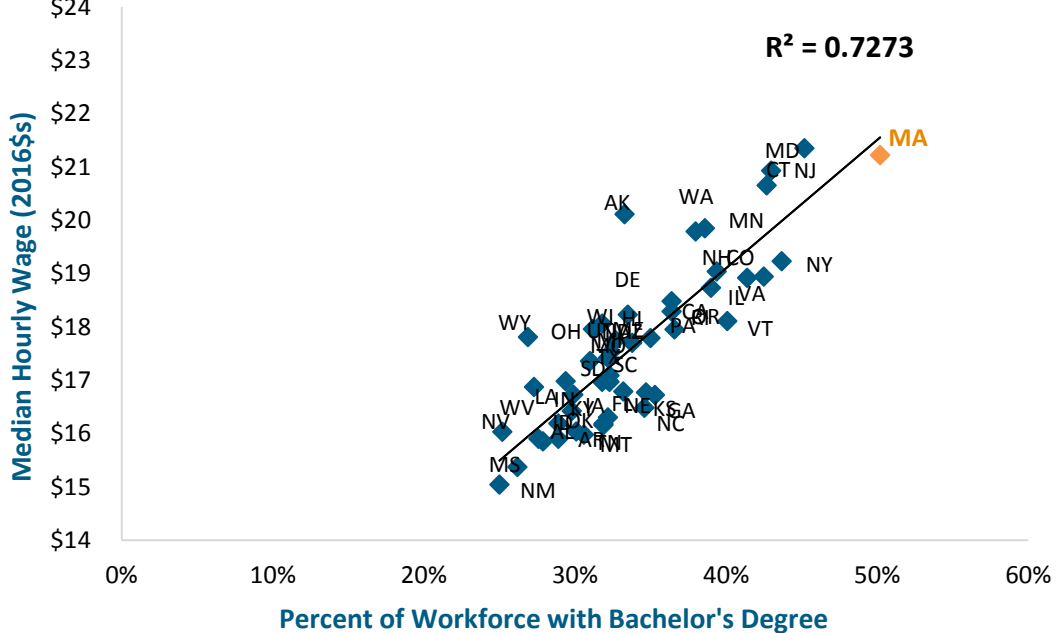
Weak Relationship Between Education and Wages in 1979



Source: Economic Policy Institute analysis of Current Population Survey data

Since then, the link between educational attainment and household income has grown much stronger, as seen in the following chart.³

Strong Relationship Between Education and Wages in 2016



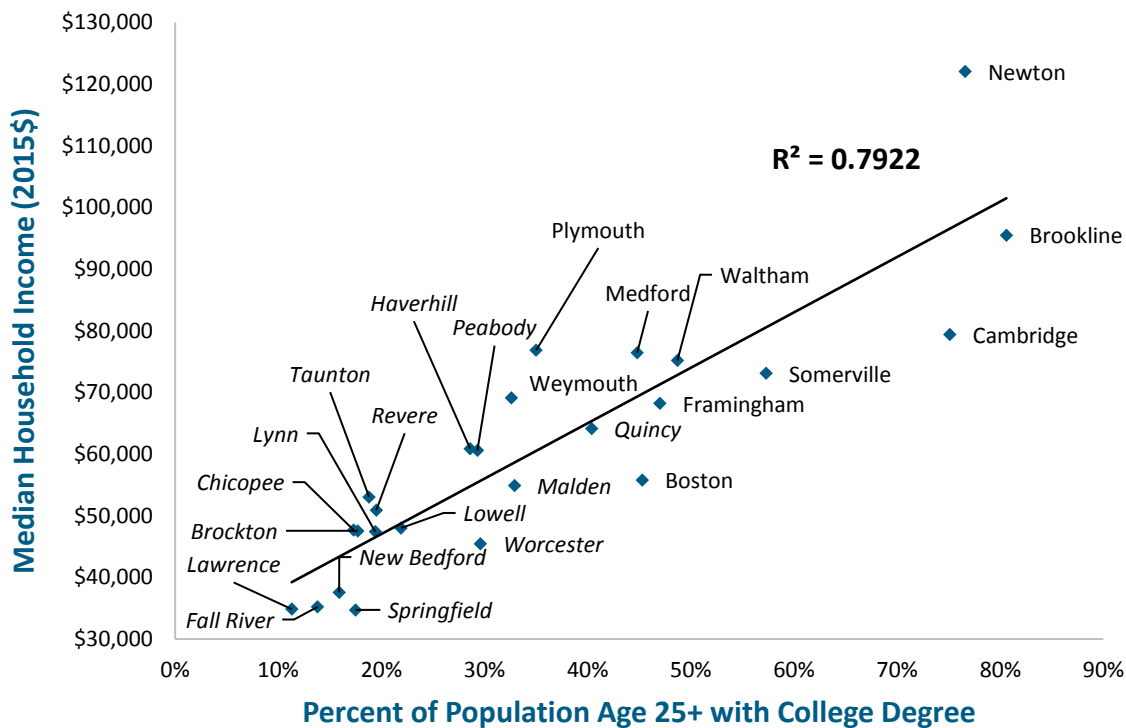
Source: Economic Policy Institute analysis of Current Population Survey data

This correlation can be seen within the largest Massachusetts municipalities, too. Cities and towns with the highest shares of bachelor’s degrees have the highest median household incomes; those with the lowest shares of bachelor’s degrees have the lowest household incomes.

These cities and towns at the lower end of distribution are almost all so-called “Gateway Cities.”⁴ (To learn more about our Gateway Cities see MassBudget’s report [Income Growth and Gateway Cities: What Happened, and Is There a Path Back to Broadly Shared Prosperity?.](#))

Strong Relationship Between Education and Income in 2015

Largest 25 Massachusetts Cities and Towns, U.S. Census Bureau, ACS 2011-2015 5-year Estimates

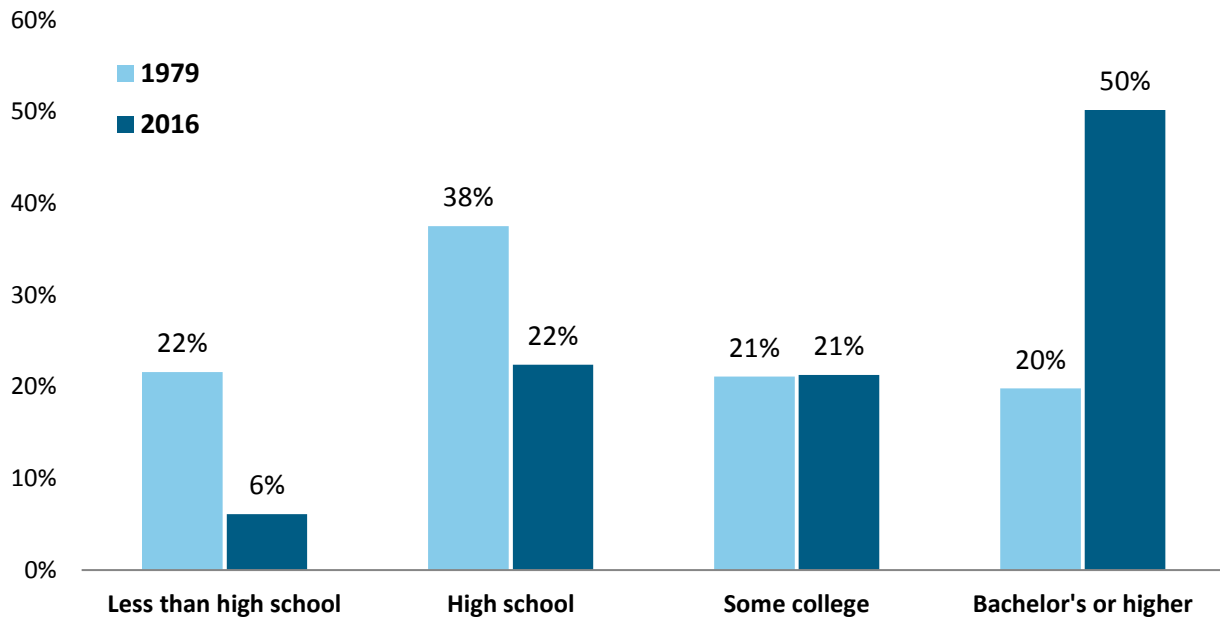


Source: U.S. Census Bureau, American Community Survey 2011-2015 5-year Estimates
Italics indicate Gateway City

Arguably no state has benefited from this ever-strengthening link between education and wages more than Massachusetts, where the share of workers with bachelor’s degrees has skyrocketed over the same period. Massachusetts saw a greater increase in the share of the labor force with bachelor’s degree than any other state from 1979 to 2016. In 1979, 20 percent of Massachusetts workers had a bachelor’s degree or higher. By 2016, this share had grown to 50 percent – **marking the first time that any state has had half of its workforce with four-year degrees.**

The Proportion of Workers with a College Education Has Grown Since 1979

Share of Labor Force by Education in Massachusetts, 1979 and 2016

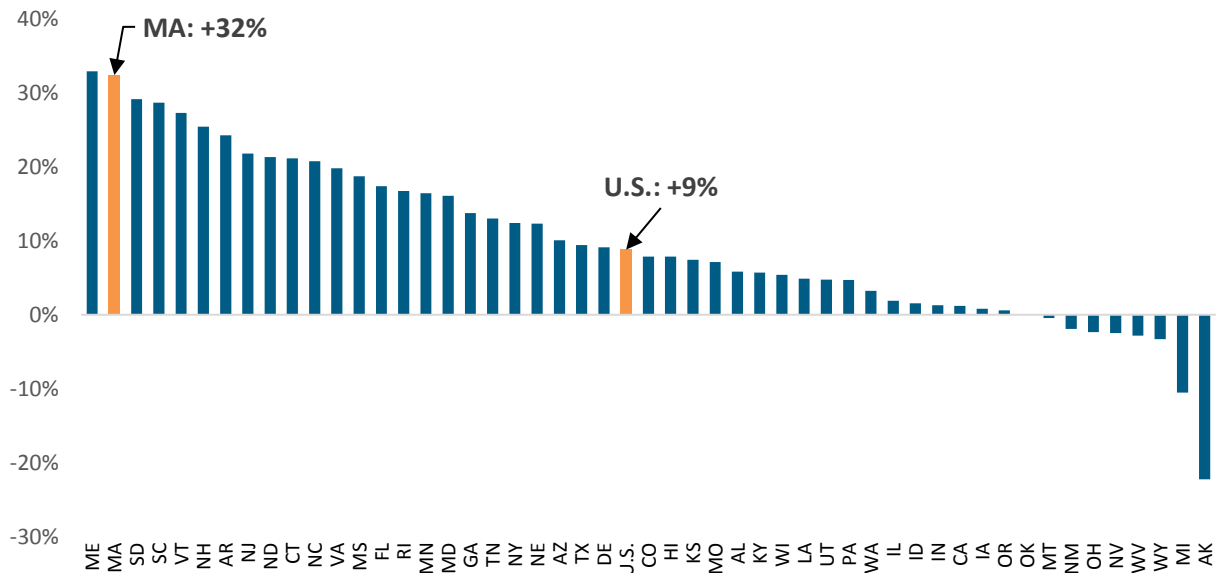


Source: Economic Policy Institute analysis of Current Population Survey data

Similarly, Massachusetts has seen its median wage – which was actually slightly below the U.S. median in 1979 – grow faster than all but one other state over the same period.

MA Has Seen 2nd-highest Median Wage Growth in the Nation Since 1979

Change in Value of Median Hourly Wage by State, 1979-2016 (2016\$)

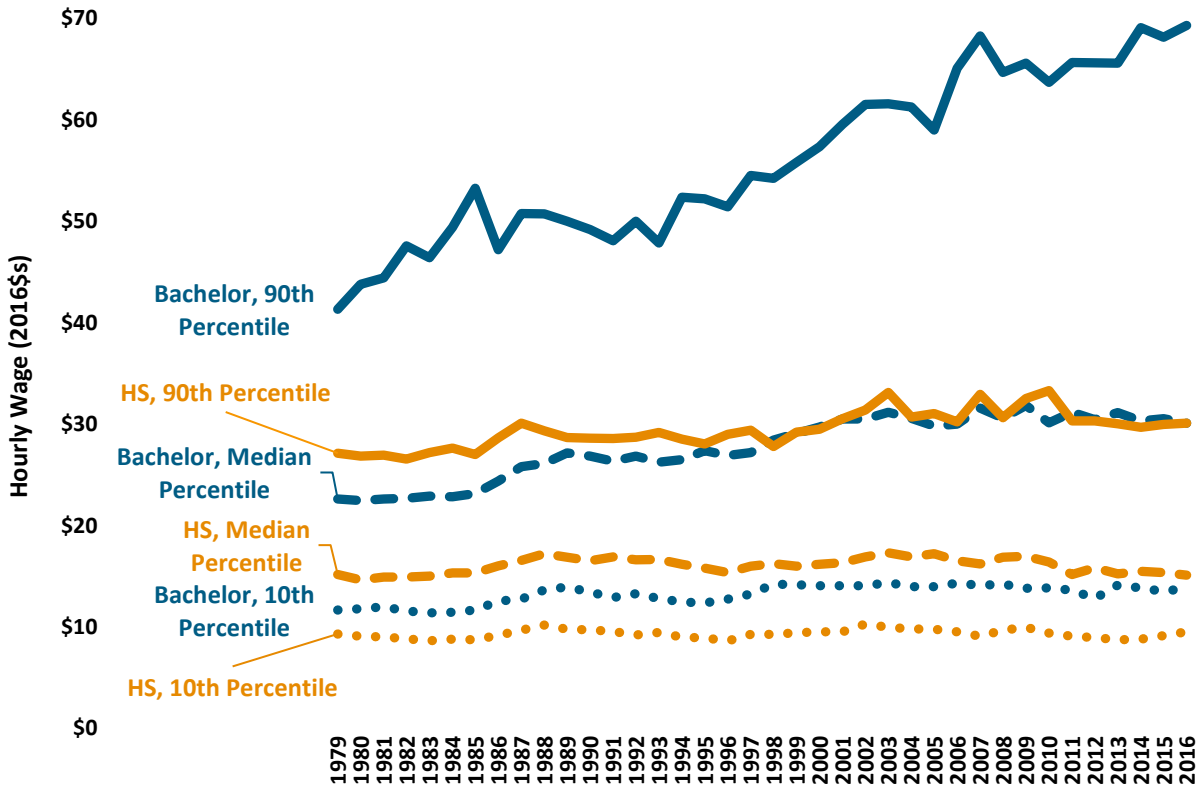


Source: Economic Policy Institute analysis of Current Population Survey data

As noted above, the tight correlation between bachelor's degrees and earnings is only a few decades old. The strengthening of this relationship is complex, and has not progressed uniformly for all workers. The following chart shows wages at the 10th, 50th, and 90th percentiles for Massachusetts workers with high school diplomas and workers with college degrees over the past four decades.

Gains from College Education in MA Have Gone Mainly to the Top

Wages in Massachusetts By Educational Attainment and Decile, 1979-2016 (2016\$)



Source: Economic Policy Institute analysis of Current Population Survey data

At all levels, wages for workers with no more than a high school diploma have been stagnant. Wages for the lowest-paid 10 percent of high school graduates haven't budged, growing just 2.4 percent since 1979, after adjusting for inflation. Even for the highest-paid 10 percent of high school graduates, wage growth has been sluggish, growing just 11 percent in 38 years.

Wages for college graduates at all levels have consistently been higher than their high-school graduate counterparts. This difference in earnings between workers with a college degree and those with no more than a high school diploma is called the "college wage premium." In 1979, the lowest-paid 10 percent of bachelor's degree holders earned 25 percent more than the lowest-paid 10 percent of high school graduates. By 2016, this college wage premium had risen to 45 percent. So there has been some increase in the relative wage benefits of a college education even at the low end of the earnings spectrum.

But this increase has been quite modest by comparison with workers higher up the distribution. In 1979, the median college graduate earned 49 percent more than the median high school graduate; by

2016 this premium had increased to 99 percent, as seen above in the chart titled “Workers with Bachelor's Degrees Earn 99 Percent More Than Those Without.”

The group that has seen by far the greatest increase in the relative earnings benefits of a college degree, however, is the highest-paid 10 percent. In 1979, wages for the highest-paid ten percent of Massachusetts workers with a bachelor’s degree were 52 percent higher than for the highest-paid ten percent of Massachusetts workers with a high school diploma. By 2016 this premium had increased to 130 percent.

But college degrees alone, as the above chart shows, have led only to modest gains in wages for the lowest-paid ten percent of Massachusetts workers with a college degree. Even the median wage for Massachusetts workers with a college degree stopped growing at the Great Recession, falling 5.5 percent from 2009 to 2016. Over the past four decades, the 90th-percentile has seen the greatest increases in wages among college graduates and the greatest increases in the college wage premium.

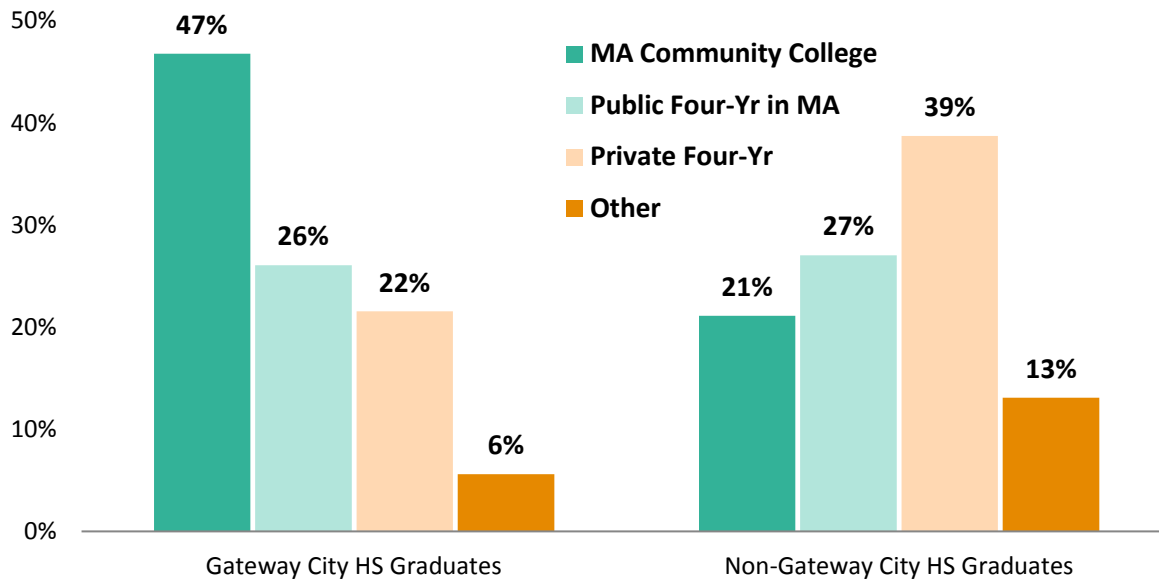
Expanding access to higher education can benefit both individual students and the overall state economy, as workers with a college degree earn more than those without. But the cost of attending college has been increasing steadily, and more students are taking on ever-increasing debt to pay those costs. The increase in student costs is largely the result of reductions in state funding for public higher education, which fell \$3,000 (on an inflation-adjusted basis) per student from 2001 to 2016. Meanwhile, costs have been shifted onto students, as tuition and fees rose \$4,000 per student over the same period. The University of Massachusetts recently announced a 3 percent tuition increase for the fiscal year 2018, marking the third consecutive year of increases. (To understand how students bear a greater share of the costs of higher education as the state has drawn down its support over the years, see [In 16 Charts: Higher Education Funding in Massachusetts.](#))

State funding for higher education is especially important for supporting students who come from Gateway Cities. As seen above, these cities have the lowest rates of college-educated workers and the lowest household incomes.

Most Massachusetts high school graduates who go on to college enroll at one of the state’s public colleges or universities. Among high school graduates who attend college, students from Gateway Cities are about as likely as students from non-Gateway Cities to attend one of the public four-year universities in Massachusetts. Gateway City high school graduates who attend college are more than twice as likely to attend one of the state’s community colleges, when compared with graduates from other Massachusetts high schools who attend college.

Gateway City HS Grads are More Likely to Attend Community College

Share of 2014-15 MA High School Graduates Attending College or University



Source: MassBudget analysis of MA Department of Elementary and Secondary Education data

Note: "Other" includes private two-year institutions and out-of-state public institutions

As we saw above, completing community college and earning a two-year associate's degree leads to higher income than attending college without completing. Earning a bachelor's degree has even greater benefits. Whether students end their studies after earning their associate's or go on to enroll in a four-year degree program, it's clear that community college can play a significant role in the success of Massachusetts high school graduates, particularly those from Gateway Cities.

¹ Clive Belfield and Thomas Bailey, "[The Labor Market Returns to Sub-Baccalaureate College: A Review](#)," March 2017, p. 7.

² At first glance the charts appear to contradict each other. On the one hand, there is very little difference between the median Massachusetts hourly wage of workers with no more than a high school diploma and that of workers with "some college." On the other, median earnings, nationally, increase fairly significantly with educational attainment. (A separate analysis of *average* – not median – earnings for full-time, year-round workers age 25 and over in Massachusetts, specifically, also shows significant increases for each higher level of educational attainment.) The "some college" category in the hourly wage chart combines workers who started college but haven't earned a degree with workers who have completed an associate's degree. In Massachusetts, according to the U.S. Census Bureau's 2011-2015 American Community Survey, there are twice as many of the former as there are of the latter. So the lower wages for workers who started college but haven't completed are bringing down the median wage for both groups combined. Separating the two would likely show more separation between the median wage of workers with associate's degrees and that of workers with no more than a high school diploma. But that would also show the median wage of workers who started college but haven't completed a degree as closer to that of workers with no more than a high school diploma, which would seem to clash with the finding of a significant difference in annual earnings between the two groups. It could be that full-time, year-round workers disproportionately hold jobs that pay higher hourly wages than the median, which would help resolve the contradiction, but further analysis is required.

³ Noah Berger and Peter Fisher, "[A Well-Educated Workforce Is Key to State Prosperity](#)," August 2013.

⁴ Massachusetts defines a Gateway City as "a municipality with a population greater than 35,000 and less than 250,000, a median household income below the commonwealth's average and a rate of educational attainment of a bachelor's degree or above that is below the commonwealth's average." ([MGL Ch. 23A §3A](#))