

Introduction

MassBudget is pleased to present this *State of Working Massachusetts 2017* report. Each year, in our *State of Working Massachusetts* reports, we look at how Massachusetts is faring with respect to jobs and the labor force, wages and income, and education. Throughout the report, we present data available from the U.S. Census Bureau, U.S. Bureau of Economic Analysis, U.S. Bureau of Labor Statistics, and various Massachusetts government agencies.¹ We invite you to read more about all of these topics and to explore the many other issues we cover and reports we provide on the [MassBudget website](#).

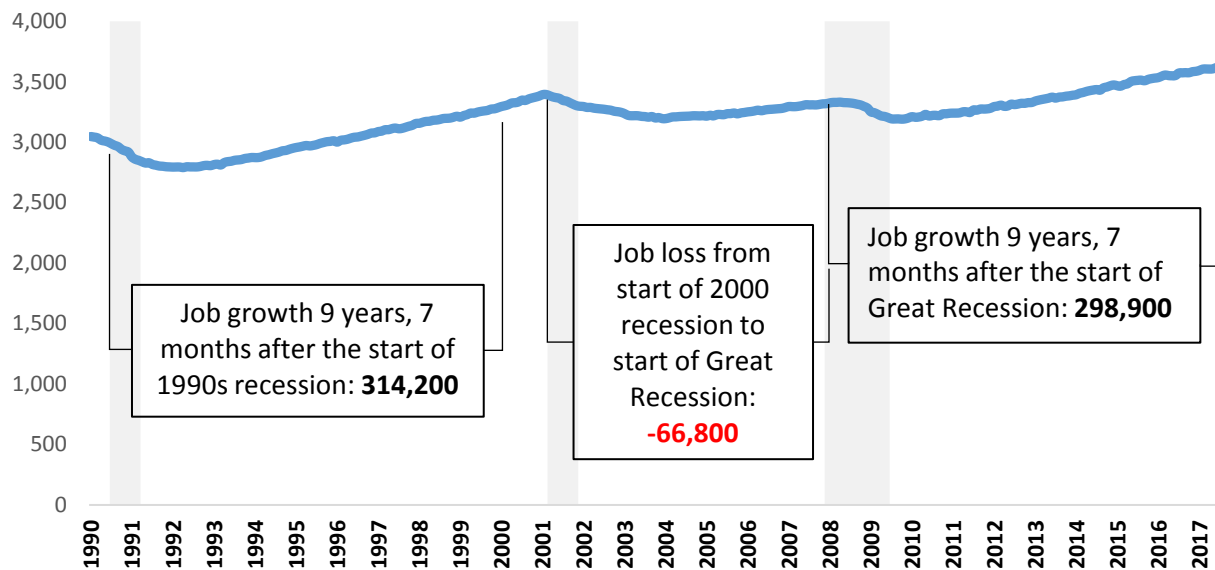
Each section is summarized below, followed by the three sections in full.

Jobs and the Labor Force

Eight years into the recovery from the Great Recession, Massachusetts is seeing more and more people joining the labor force, which has grown 3.2 percent so far in 2017 — **faster than any other state in the nation**. Massachusetts has added close to 300,000 jobs since the start of the Great Recession in 2007, representing 9.0 percent job growth — among the highest rates of job growth in the country over that time.

MA Jobs Have Grown Steadily Since the Great Recession...

Number of Total Nonfarm Jobs in Massachusetts, Seasonally Adjusted, in Thousands, January 1990-July 2017



Sources: MA Executive Office of Labor and Workforce Development, *Current Employment Statistics*; National Bureau of Economic Research, *US Business Cycle Expansions and Contractions*. Shaded areas show recessions.

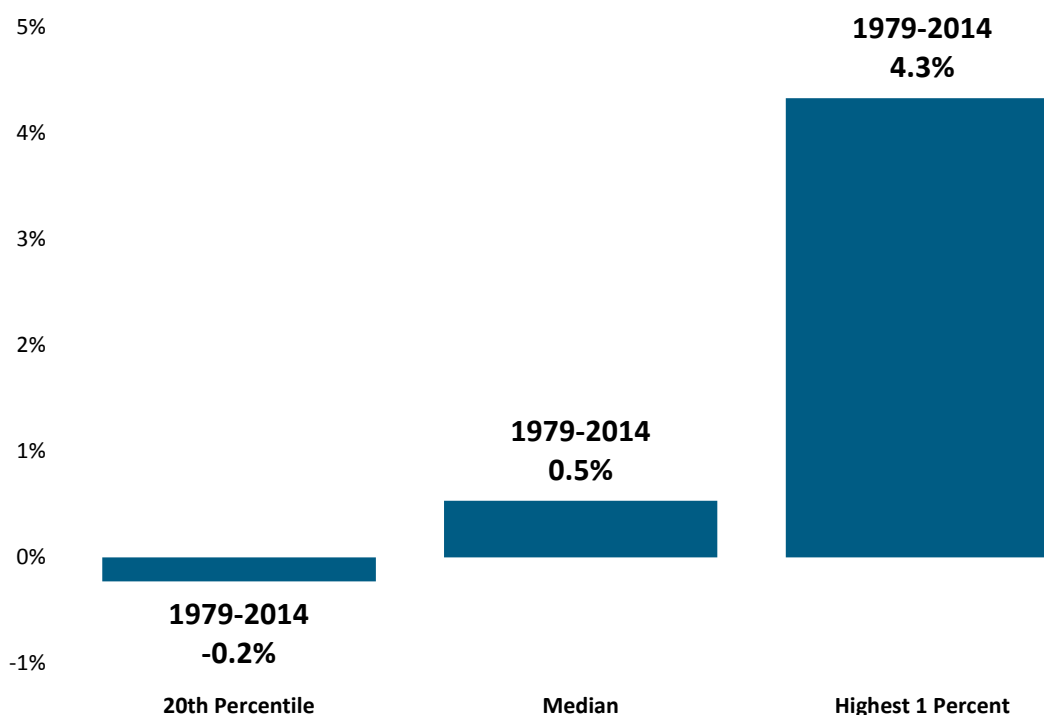
Wages and Income

Increases in jobs and in the overall labor force are signs of a strong and growing economy. Unfortunately, job gains are still not translating into strong, broad-based wage growth. This

continues a long-term trend in Massachusetts and in the United States: economic growth is not translating into wage and income growth for most workers and their families. Since 1979, median household income in Massachusetts has barely budged, growing only half a percentage point each year after adjusting for inflation. By contrast, among the highest-income one percent of households, income has risen by 4.3 percent annually.

Long-term Wage Stagnation Has Held Back Most MA Household Incomes

Annual change in real median MA household incomes by income group, 1979-2014 (2015\$)



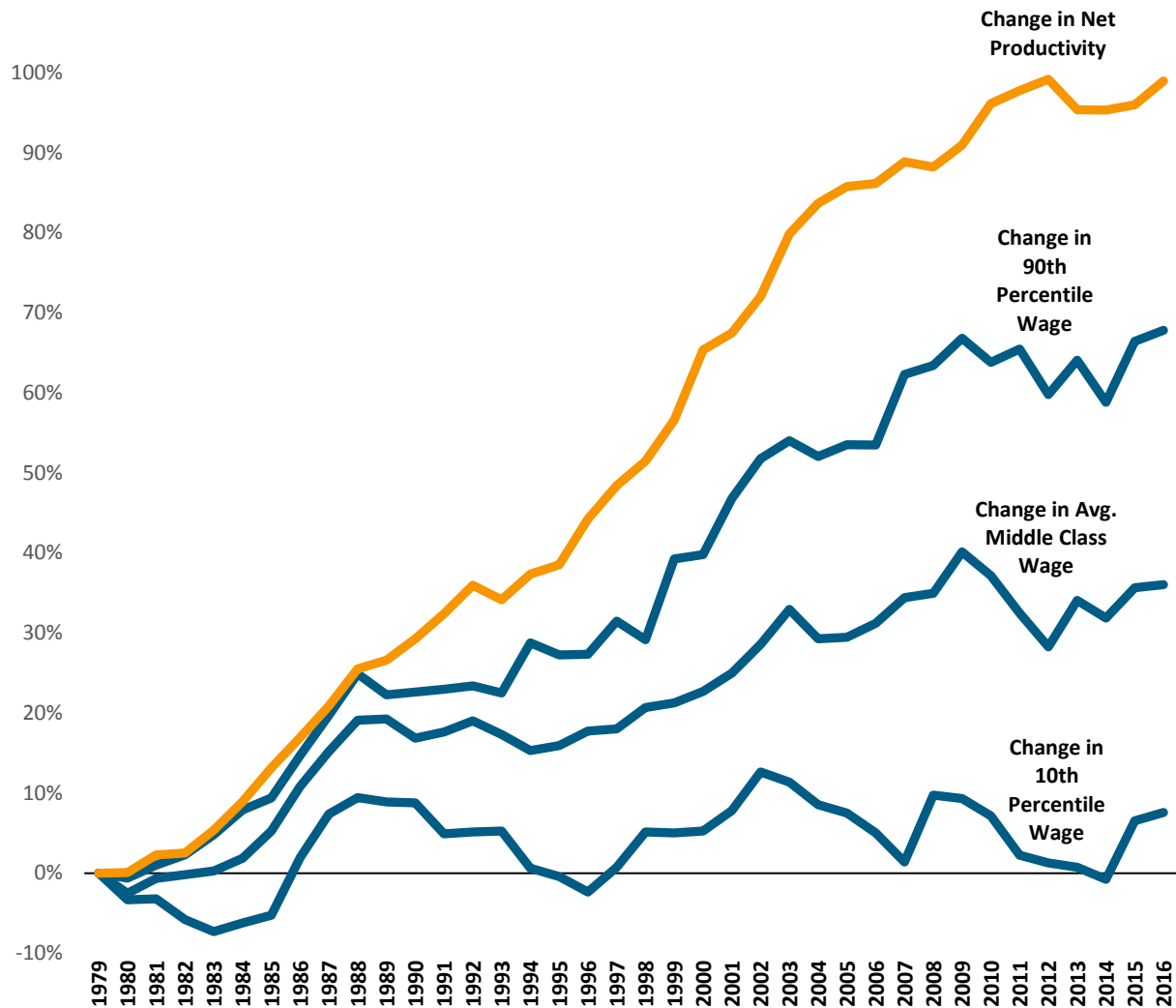
Source: Economic Policy Institute analysis of Current Population Survey data (20th percentile and median); Price and Sommeiler analysis of U.S. Internal Revenue Service Statistics of Income (highest 1 percent) (deflated using CPI-U-RS)

This is a national pattern, but it is particularly pronounced in Massachusetts, where **the highest-income one percent of households have seen more rapid income growth than in any other state**: 341 percent between 1979 and 2014 (the most recent year for which data is available). Ten percent of all Massachusetts income went to the highest-income one percent of households in 1979. In 2014 it was 25 percent.

This growing inequality is part of what is known as the “Great Decoupling” – the period, beginning in the 1970s, when growth in wages and income for most workers began to flatten even while productivity continued to increase.

MA Wage Growth Has Lagged Productivity Gains For Decades

Change in the Real Value of MA Wages and Net Productivity, 1979-2016 (2016\$)



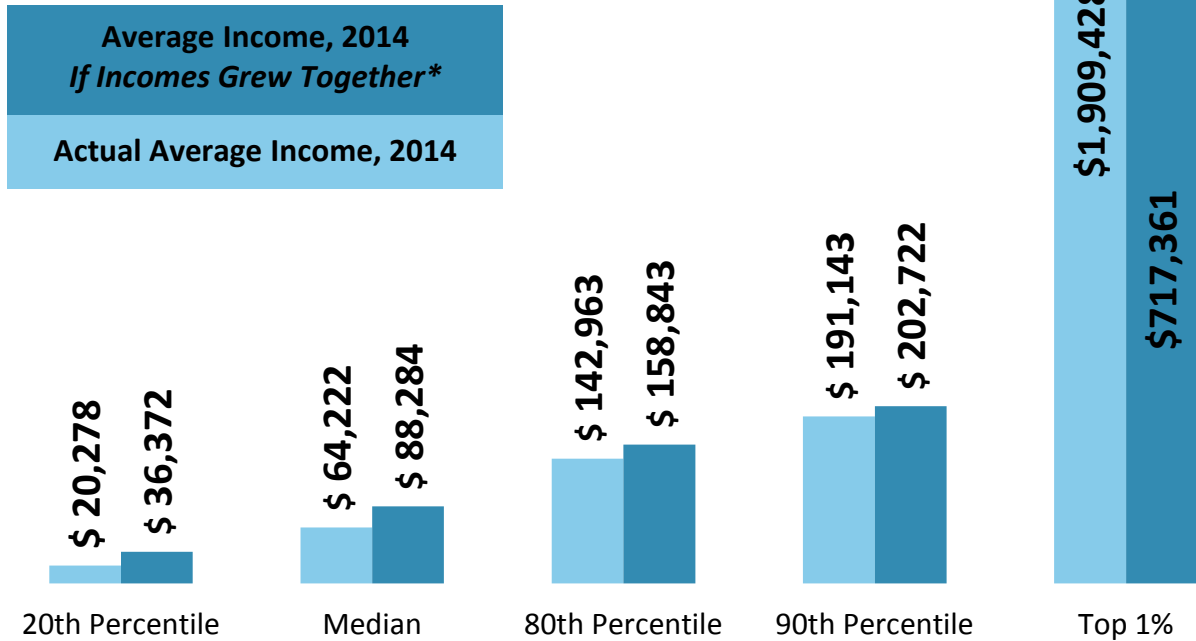
Sources: Productivity from Economic Policy Institute analysis of unpublished Total Economy Productivity data from Bureau of Labor Statistics' Labor Productivity and Costs program. Wages from Economic Policy Institute analysis of Current Population Survey data.

Note: The "average middle-class wage" is the average of wages between the 20th and 80th percentiles of the distribution.

The highest-income households, who derive relatively little of their income from wages, have made enormous gains, but what if all Massachusetts households had shared equally in income growth since 1979? The median household income would be \$88,300 – 37 percent higher than it is today.

If Incomes Had Grown Together, Most Would Have Benefitted

Average 2014 pre-tax income in Massachusetts by income group (2015\$)



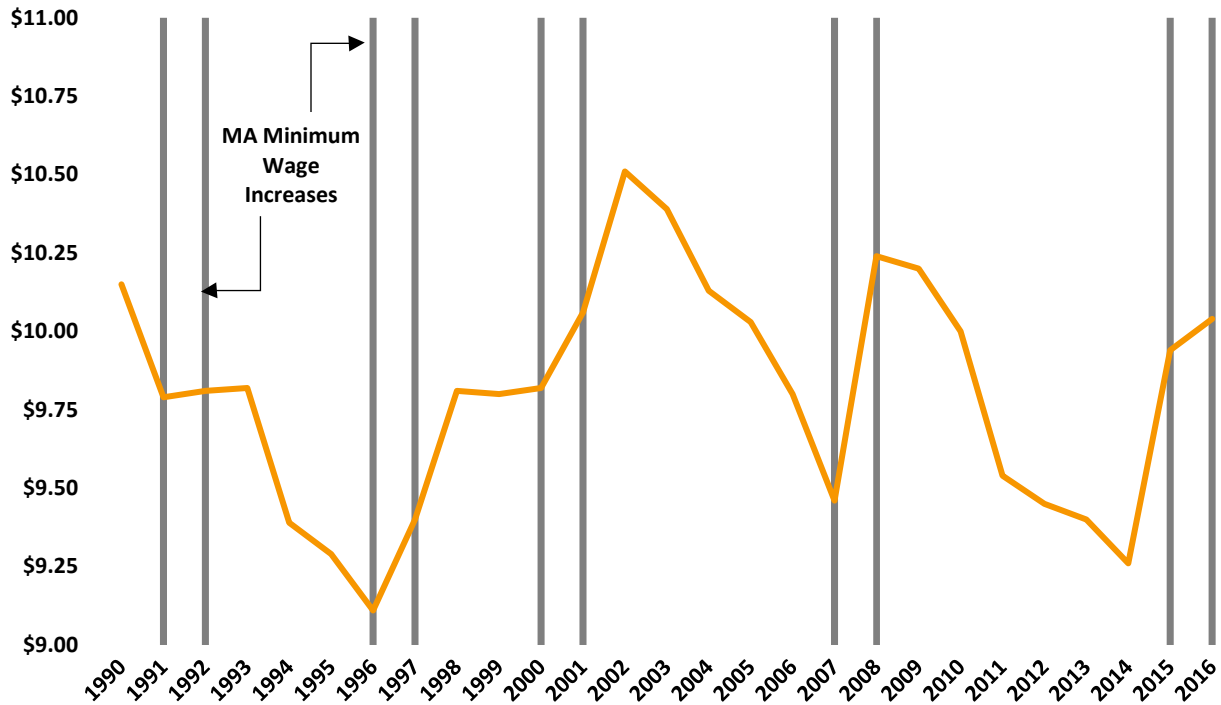
Source: Economic Policy Institute Analysis of Current Population Survey (90th percentile and below); Price and Sommeiler analysis of U.S. Internal Revenue Service Statistics of Income

*The overall MA pre-tax income growth rate between 1979 to 2014 is 65.6%.

While the above scenario of equal growth is hypothetical, we can observe one thing with certainty: since the recession of the early-1990s, **the only times Massachusetts's lowest-paid workers have seen wage increases have been after an increase in the state minimum wage.** After declining by almost 10 percent between 2008 and 2014, wages among the lowest-earning 10 percent of workers have increased by 8 percent since the state's minimum wage was increased by a dollar each year in 2015 and 2016.

Minimum Wage Increases Reverse Wage Declines for Lowest-Earning

Change in the Real Value of MA 10th-Percentile Wage, 1990-2016 (2016\$), with Minimum Wage Increases



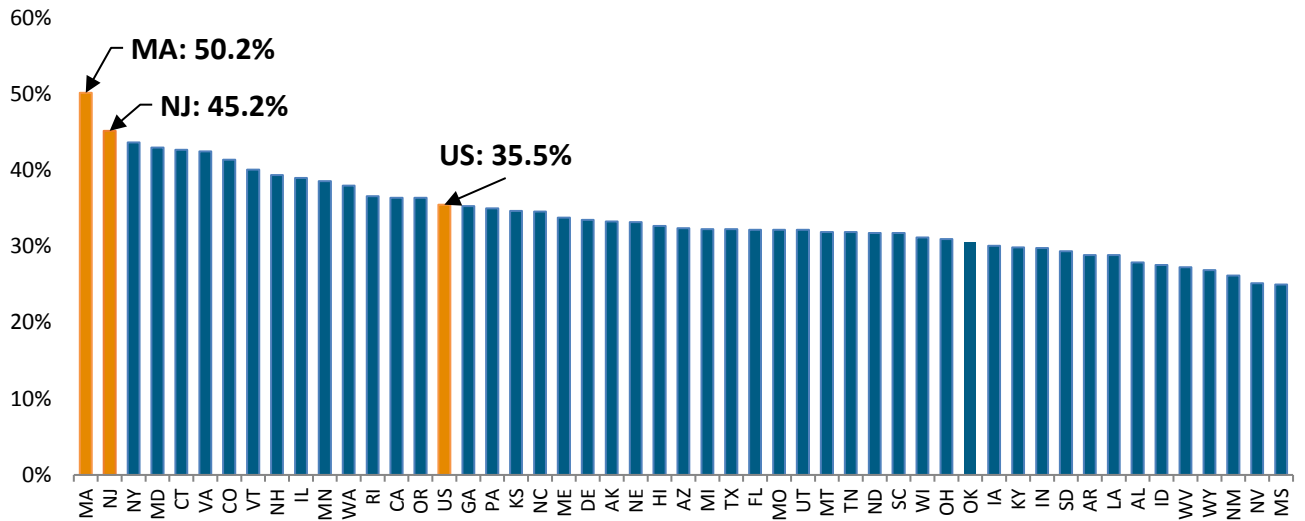
Sources: Productivity from Economic Policy Institute analysis of unpublished Total Economy Productivity data from Bureau of Labor Statistics' Labor Productivity and Costs program. Wages from Economic Policy Institute analysis of Current Population Survey data. MA minimum wage increase history from Federal Reserve Bank of Saint Louis.

Education and the Economy

In 2016 Massachusetts became **the first state ever with 50 percent of its workforce holding a four-year college degree**. Across the nation, states with the best-educated workforces consistently have stronger economies than those with less well-educated workforces. **Massachusetts and New Jersey have the two best-educated workforces and the two highest median wages in the United States.**

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

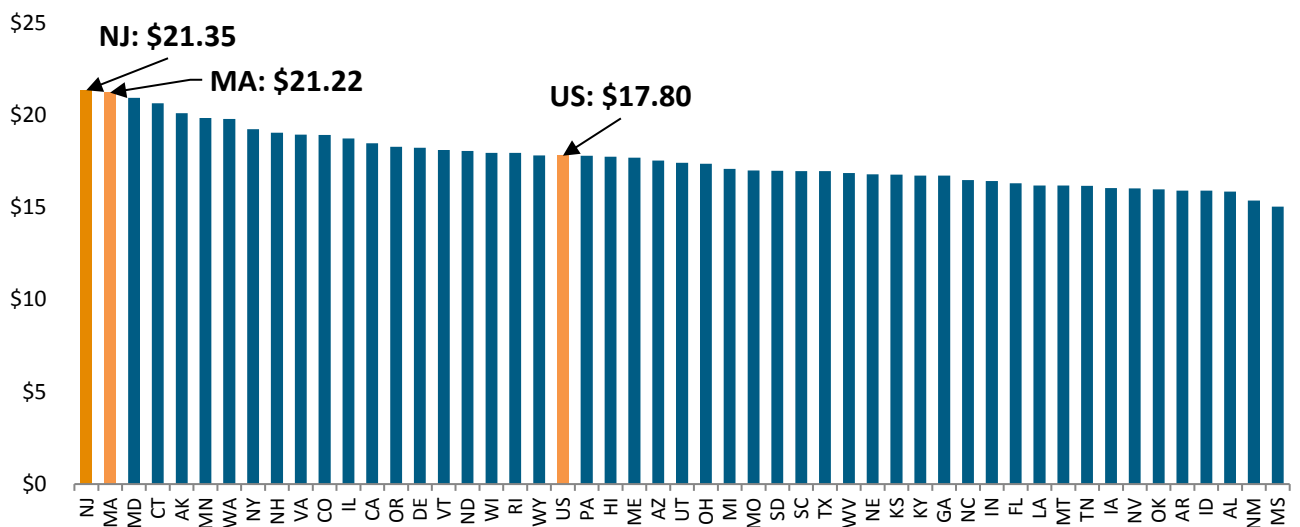
Share of Labor Force with a Bachelor's Degree or Higher, by State, 2016



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\$)



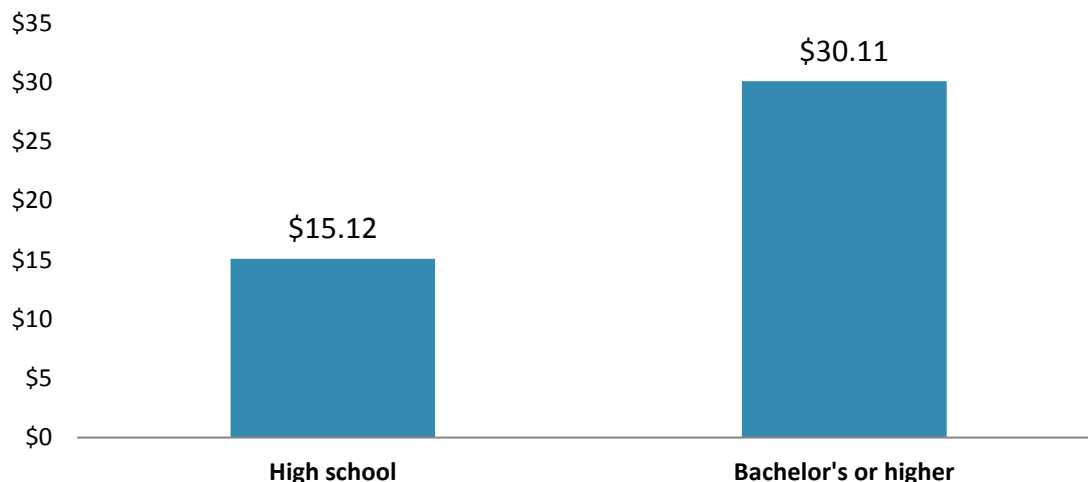
Source: Economic Policy Institute analysis of Current Population Survey data

Massachusetts is a prime example of the importance of access to higher education, as shown by nearly four decades of growth in the “college wage premium” — the additional amount earned by workers with a college degree compared to those who have not attended college. Since 1979, while actual wage growth has been flat or weak for most Massachusetts workers, including those with a college education, the relative earnings benefit of a bachelor’s degree has grown

steadily. By 2016, the median wage for Massachusetts workers with a college degree was about twice that of workers with no more than a high school diploma.

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

Expanding access to higher education clearly benefits both individual students and the overall state economy. But the state reduced funding for public higher education by \$3,000 per student from 2001 to 2016. Meanwhile, costs have been shifted onto students, with tuition and fees rising \$4,000 per student over the same period. (Both amounts have been inflation-adjusted to 2016 dollars.) The University of Massachusetts recently announced a 3 percent tuition increase for the fiscal year 2018, marking the third consecutive year of increases.

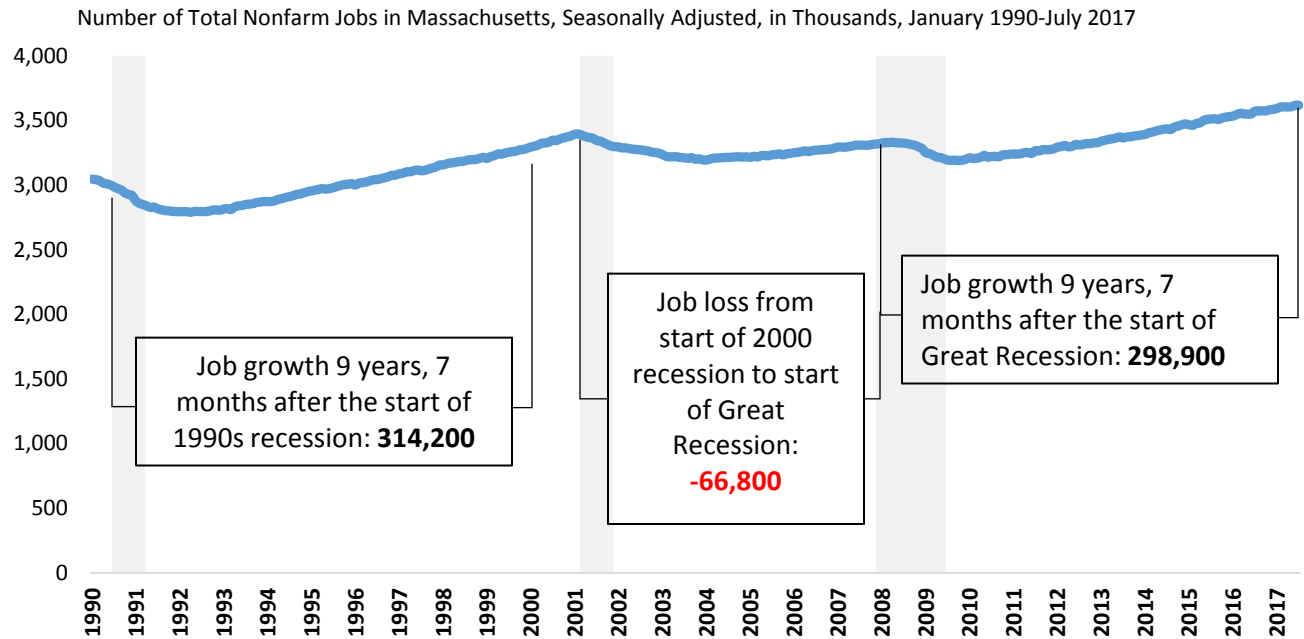
Strong job growth and the best-educated workforce in the country are key to making and keeping the Massachusetts economy one of the strongest in the nation. But stagnating wages and income threaten to leave many workers and their families behind. We hope this *State of Working Massachusetts 2017* report empowers the people of Massachusetts to focus on the challenge of building a Commonwealth in which everyone can contribute their full potential and all can benefit from a strong and vibrant economy.

The three sections appear in their entirety below.

1. Jobs & Employment

Since the start of the Great Recession, which lasted from December 2007 through June 2009, Massachusetts has added nearly 300,000 jobs.²

MA Jobs Have Grown Steadily Since the Great Recession...



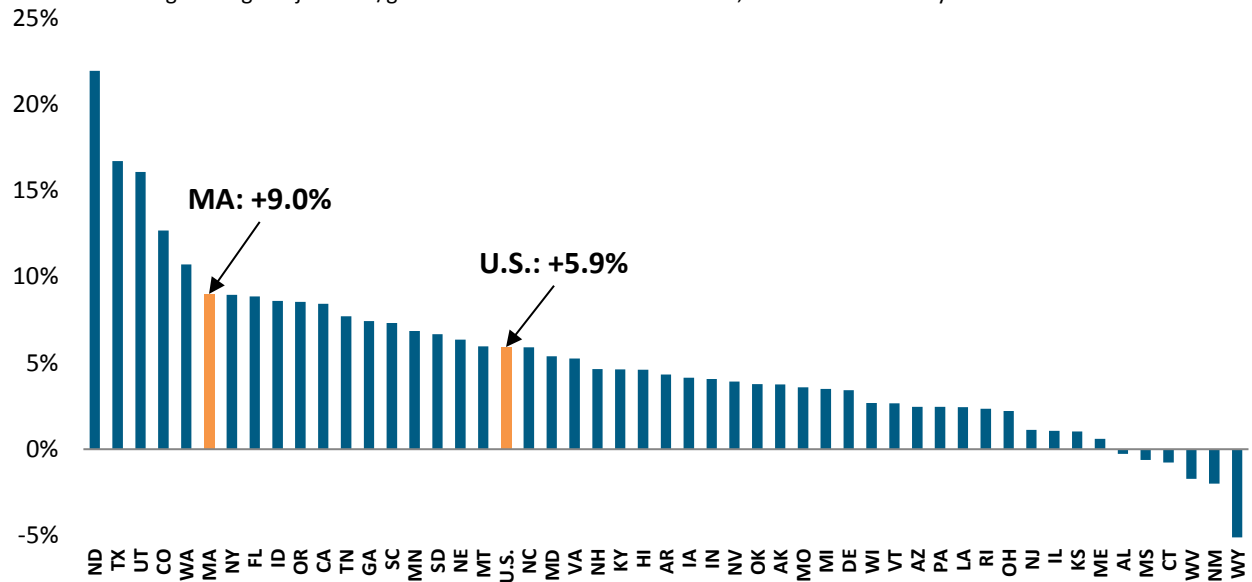
Sources: MA Executive Office of Labor and Workforce Development, *Current Employment Statistics*; National Bureau of Economic Research, *US Business Cycle Expansions and Contractions*. Shaded areas show recessions.

It took Massachusetts 61 months from the start of the early-1990s recession, and 57 months from the start of the Great Recession, to return to pre-recession employment levels each time. (By contrast, the state *never* regained the jobs lost during the 2001 recession by the time the next recession began.) This similarity in recoveries from the 1990-1991 recession and the Great Recession is especially impressive considering that the latter lasted twice as long as the former and was the worst the nation had seen since the Great Depression. (Though it should be noted that Massachusetts experienced worse job loss during the 1990-1991 recession than during the Great Recession.)

July 2017 marks another 58 months from the point at which Massachusetts recovered all the jobs it lost during the Great Recession, and job growth has continued apace. Massachusetts now has 9.0 percent more jobs than when the Great Recession began in December 2007, among the highest rates of job growth in the country over that time. Again, this is close to the state's 10.5 percent job growth seen at the same point relative to the start of the recession that began in July 1990.

Massachusetts Sees Strong Job Growth, Exceeds Pre-Recession Job Levels

Percentage change of jobs lost/gained from before Great Recession, December 2007-July 2017

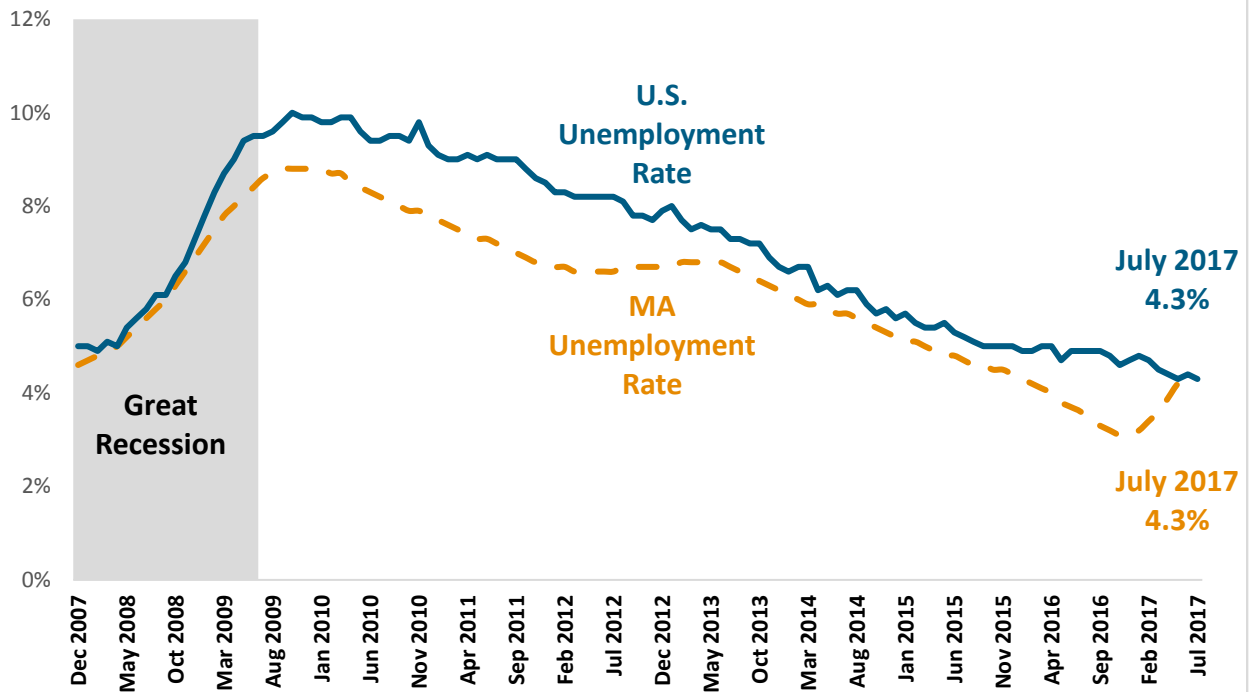


Source: U.S. Bureau of Labor Statistics, *Current Employment Statistics*

Alongside strong job growth, Massachusetts has seen the unemployment rate fall sharply since the Great Recession. The official measure of unemployment considers all people who (1) are available to work and (2) have actively looked for work in the four weeks preceding the monthly Current Population Survey administered by the federal government. That is shown in the chart below.

MA Unemployment Rate Has Fallen Sharply Since the Great Recession

Massachusetts and U.S. Unemployment Rates, Seasonally Adjusted, December 2007-July 2017



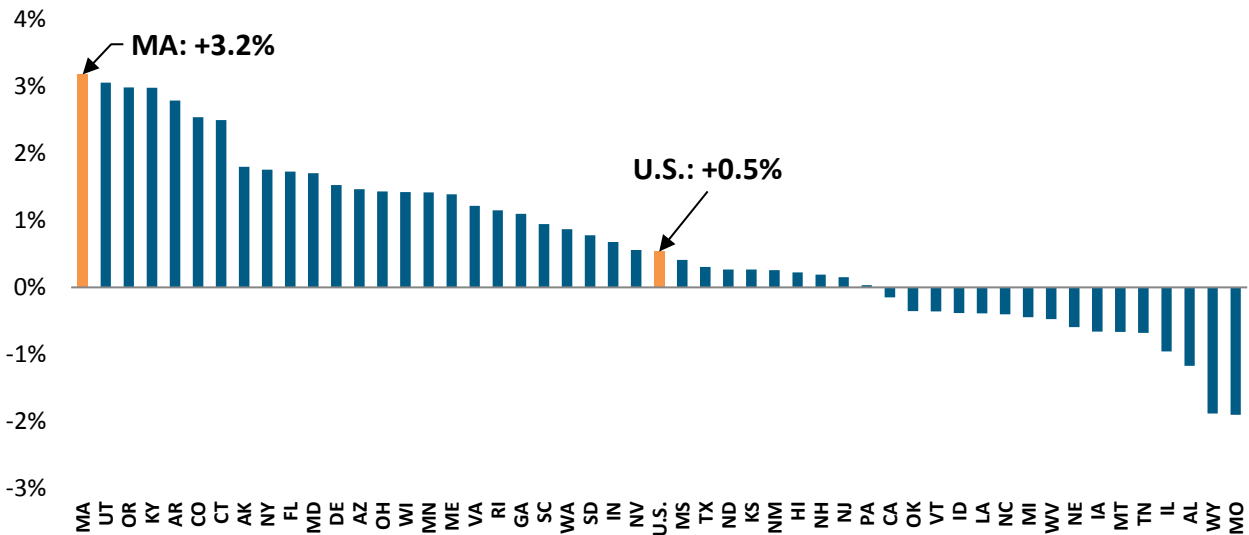
Source: U.S. Bureau of Labor Statistics

Because this measure includes only recent job seekers, it can increase with the entry of new or returning job seekers into the labor force *before they find work*. In a strengthening economy, there will be plenty of these types of workers, which can have the effect of increasing the unemployment rate in the short term.

As the chart above shows, the state unemployment rate as of July 2017 (4.3 percent) is more than a full percentage point higher than where it was in December 2016, just seven months previously (3.1 percent). This increase is due to rapid growth in the number of people newly looking for work — growth that has outpaced the increase in employment. This total number — employed workers plus active job seekers — is the **labor force**. As the following chart shows, Massachusetts leads the nation in labor force growth in the first seven months of 2017.

Massachusetts Leads the Nation in Labor Force Growth in 2017

Percentage change in civilian labor force, December 2017-July 2017



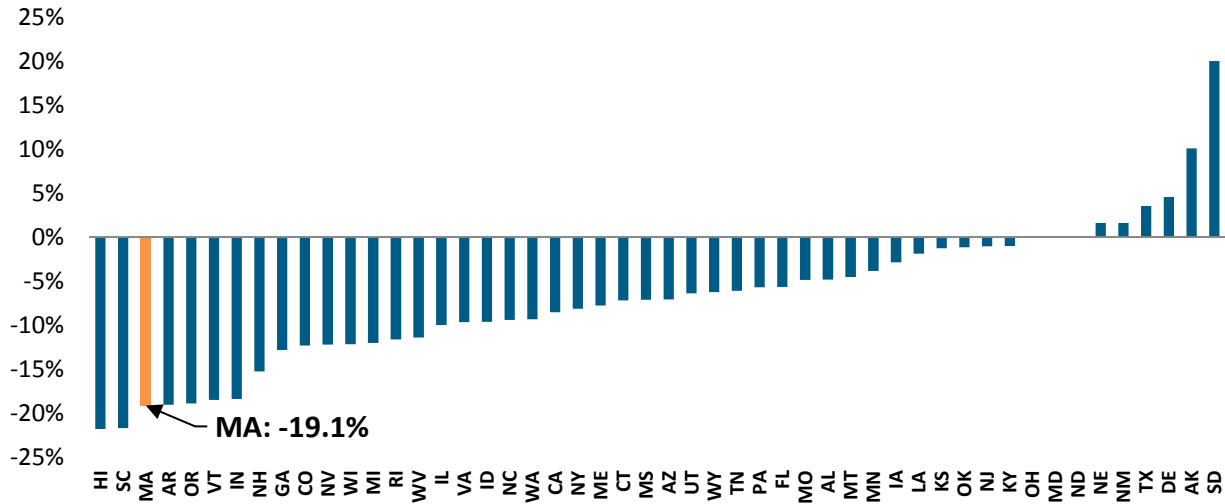
Source: U.S. Bureau of Labor Statistics, *Local Area Unemployment Statistics* (states) and *Current Employment Statistics* (U.S.)

To give ourselves a more complete understanding of recent changes in the labor market, it is helpful to consider not only how many workers are officially considered unemployed (those who were actively looking in the previous four weeks) but also how many (1) want to work but have given up looking and (2) want full-time work but can only find part-time work. These groups are called “marginally attached workers” and “involuntary part-time workers,” respectively. The U.S. Bureau of Labor Statistics (BLS) publishes statistics that measure all of these situations combined: it’s called **labor underutilization**.³

The underutilization rate dropped 19 percent in Massachusetts from the period covering July 2015 through June 2016 to the period covering July 2016 through June 2017, from 9.4 percent to 7.6 percent.⁴ Only two states had larger drops in the labor underutilization rate.

Labor Underutilization Is Dropping Sharply in Massachusetts

Percentage change in the share of workers who are marginally attached or working part-time involuntarily, from 4-quarter average ending June 2016 to 4-quarter average ending June 2017

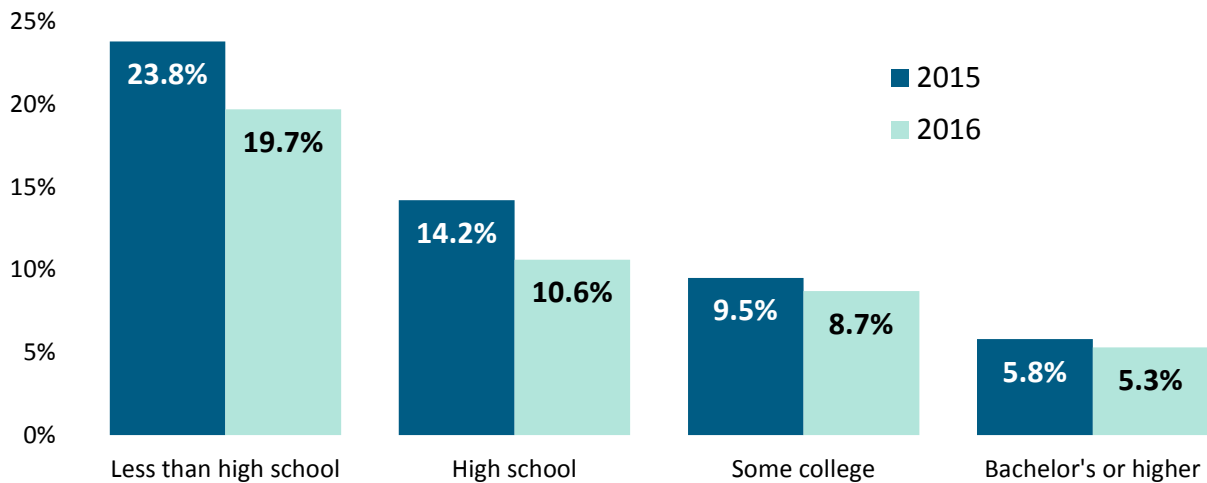


Source: U.S. Bureau of Labor Statistics, *Local Area Unemployment Statistics*

The increase in labor force participation and the sharp drop in the broader measure of underutilization suggest a growing recognition on the part of all workers in Massachusetts that they will be able to find jobs. In particular, while workers with more education fare better in the Massachusetts economy (as discussed in the **Education and the Economy** section), workers with no more than a high school diploma saw the biggest percentage declines in labor underutilization from 2015 to 2016.

Underutilization Fell More For MA Workers Who Haven't Attended College

Labor underutilization rates in Massachusetts by level of education attainment, 2015 and 2016

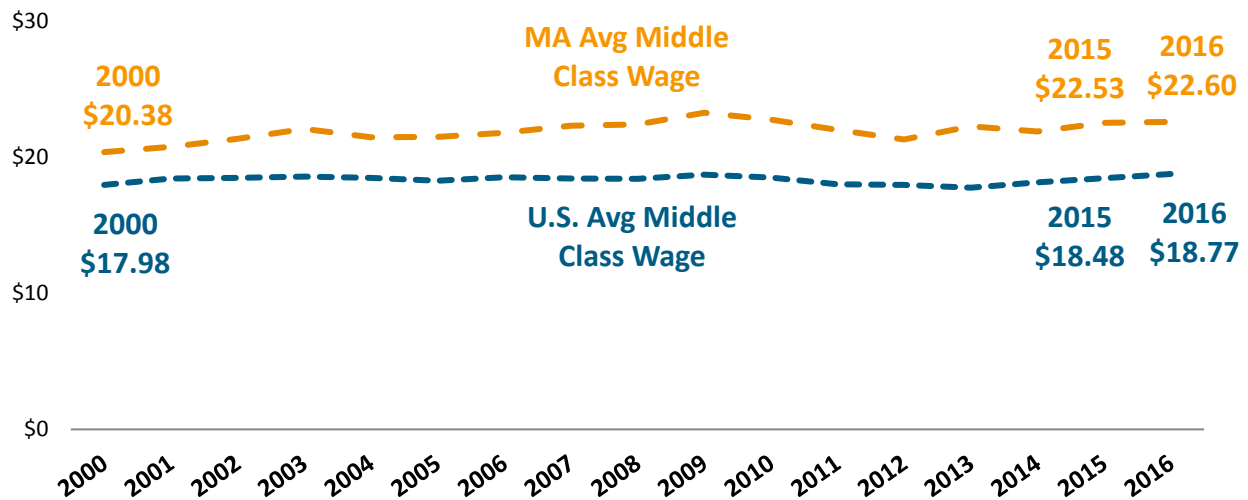


Source: Economic Policy Institute analysis of Current Population Survey (CPS) data

While the employment situation in Massachusetts continues to improve and to outpace most other states, wages still aren't increasing the way we would hope for in a tightening labor market. This is discussed in depth in the **Wages and Income** section, but here we can see that average wages for middle-class workers in Massachusetts (the middle 60 percent of the wage distribution) have barely moved in recent years. In 2007, just before the Great Recession, the average middle-class wage was \$22.33, in 2015 it was \$22.53, and in 2016 it was \$22.60, after adjusting for inflation.

Despite Job Gains, Massachusetts Middle-Class Wages Remain Flat

Real Value of Average Hourly Wage of All Workers Between the 20th to 80th Percentiles of Wage Earners in MA and U.S., 2000-2016 (2016\$)

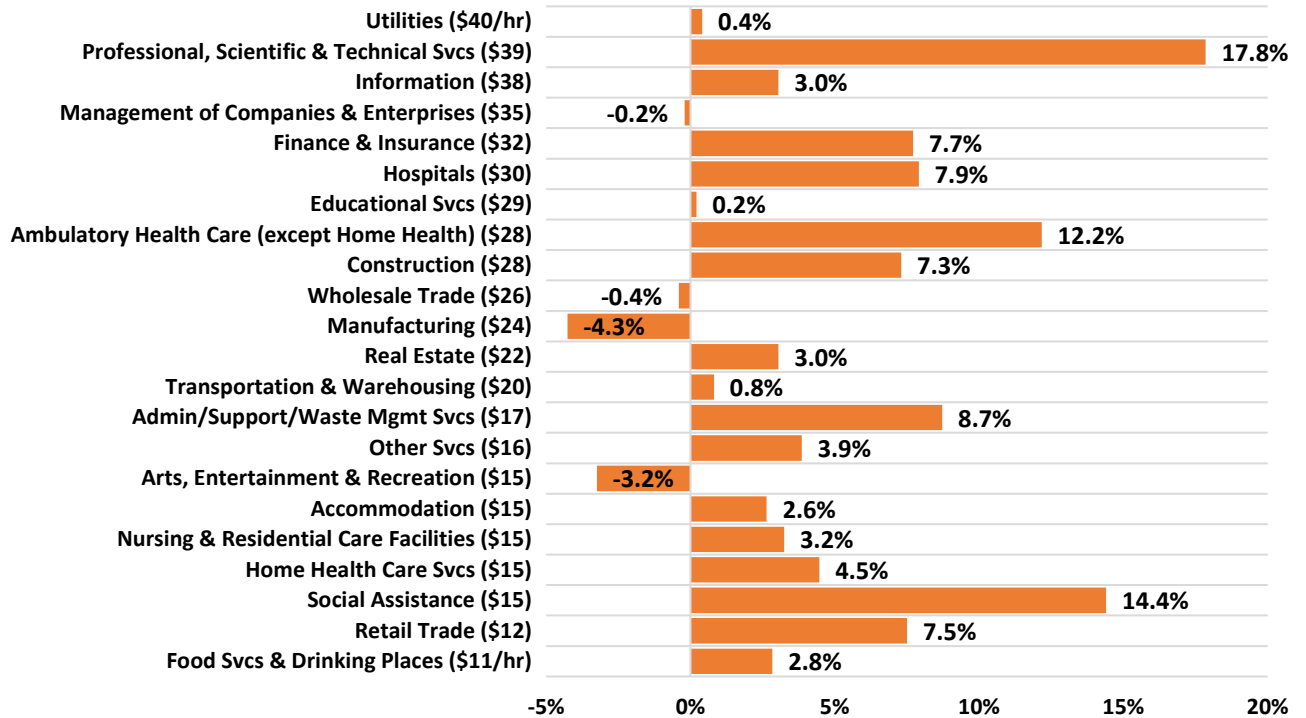


Source: Economic Policy Institute analysis of Current Population Survey data (deflated using CPI-U-RS).

The following chart shows the share of job growth from the first half of 2016 to the first half of 2017 by sector. Sectors with a median wage below \$20 per hour accounted for 46 percent of net new Massachusetts jobs from the first half of 2016 to the first half of 2017. This is close to the previous year-over-year change – the first half of 2015 to the first half of 2016 – when these sectors accounted for 51 percent of net new jobs.

Massachusetts Job Growth by Sector

Share of change in Massachusetts employment by industry/sector (shown with median hourly wage), January-July 2016 average to January-July 2017 average

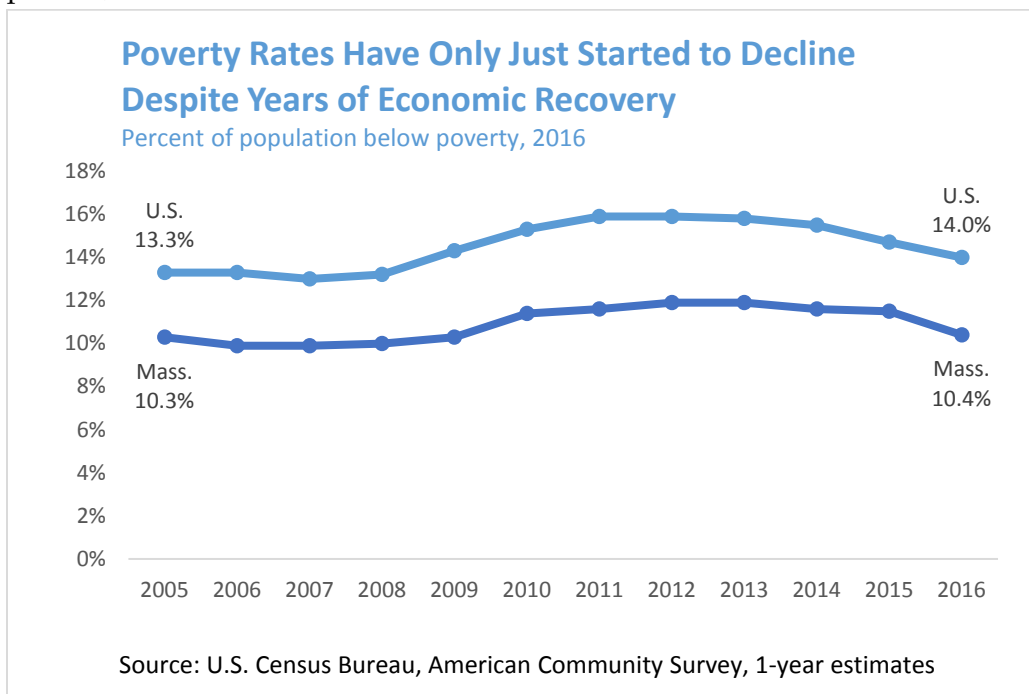


Sources: Employment from U.S. Bureau of Labor Statistics, *State and Metro Area Employment, Hours, & Earnings*;
Industry wages from BLS, *Occupational Employment and Statistics*

2. Poverty

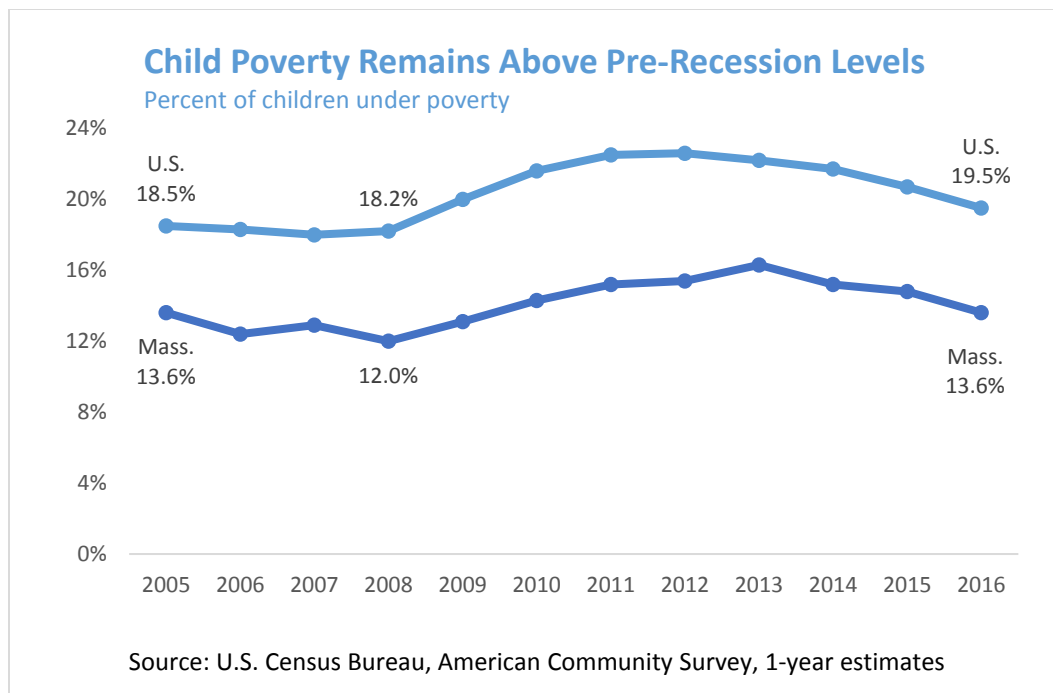
When wages are low, so are incomes. When incomes are too low, people may end up in poverty. Massachusetts has one of the highest median incomes in the nation, and in the past year, median household income grew 5.8 percent.⁵ Over the past several decades, however, wages and incomes have been stagnant or declining for most families, leaving a large number of children and families in poverty.⁶

Today, there are about 687,000 people in Massachusetts who live below the federal poverty line (an income of about \$24,900 per year for a family of four). This is 10.4 percent, or slightly more than one out of every ten people in Massachusetts, while nationally the poverty rate is 14.0 percent, or about one in seven.⁷



The national poverty rate shows a statistically significant decline between 2015 and 2016, and has, in fact, for the past few years. In Massachusetts, 2016 (the most recent year for which data are available) is the first year since the Great Recession that the decline in the poverty rate has been statistically significant.

The poverty rate for children is higher than the total poverty rate, at 19.5 percent nationally and 13.6 percent in Massachusetts. This is close to one out of every five children nationally living in poverty, and more than one in eight in Massachusetts — close to 185,000 children. The impacts of poverty on children can be significant, particularly when poverty is persistent throughout their childhood, or when children live in poorly resourced neighborhoods with concentrated poverty.⁸



Although the official poverty measure provides important information about economic well-being, the measure has limitations. It does not account for the actual costs of basic living expenses, and it does not account for a variety of non-cash and tax benefits. The original definition of poverty came from the Social Security Administration in 1964 based on an assumption that families spent a third of their income on food. The cost of a very basic food diet for different size families was then tripled, in order to estimate the poverty threshold. These same basic thresholds are still used today, updated annually to adjust for inflation, and computed on a national basis.⁹

Today, food no longer represents one-third of a typical family's costs, and there have been a number of non-cash benefits developed since 1964 that are significant for low-income households which are not counted in a family's income under the official poverty measure. Recognizing these limitations, the U.S. Census Bureau created the Supplemental Poverty Measure (SPM) as a more accurate way to measure poverty. This measure calculates the poverty threshold differently, by estimating household costs for covering a variety of basic needs, such as the costs of food, clothing, shelter, and utilities. The SPM calculates income in a different way, because it includes the value of non-cash public benefits such as SNAP (formerly known as "food stamps") and housing assistance, and the value of tax credits such as the Earned Income Tax Credit (EITC). The SPM also deducts the costs of child care for working parents or out-of-pocket medical expenses. Finally, the SPM adjusts for differences in the cost of living in different parts of the country.¹⁰

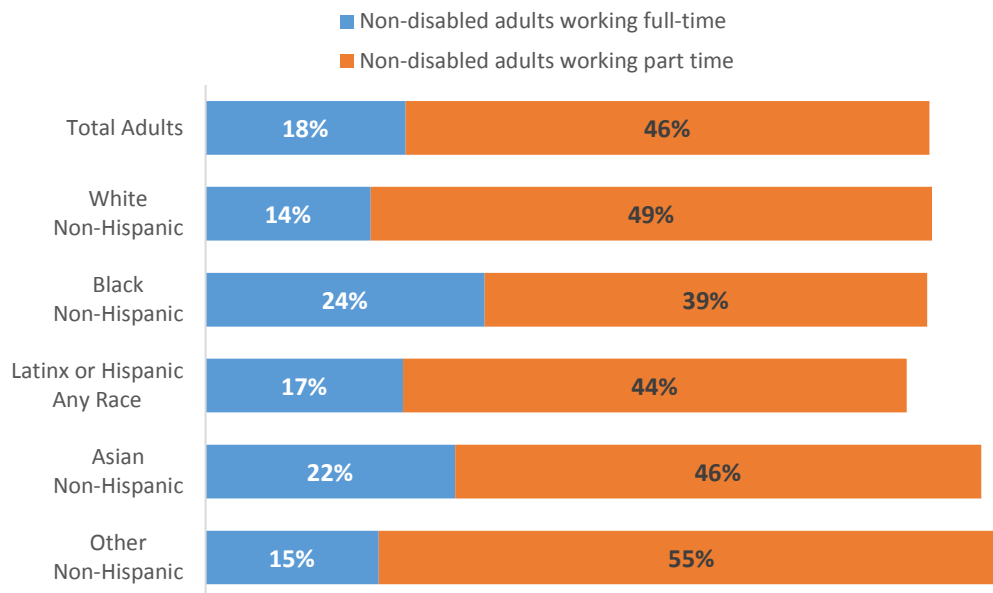
Unlike in some other parts of the country, the poverty rate in Massachusetts as measured by the Supplemental Poverty Measure is higher than the official poverty rate. Massachusetts, specifically eastern Massachusetts, has one of the highest poverty thresholds as calculated for the SPM, meaning a person would need to have a higher income in Massachusetts to not be

counted as poor.¹¹ The SPM poverty threshold is higher in Massachusetts in large part because of the state's high housing costs.¹²

The calculation of the Supplemental Poverty Measure allows for an analysis of the impact of a variety of non-cash and other benefits on poverty. Approximately 920,000 people in Massachusetts have been lifted over the poverty threshold by programs such as SNAP, Social Security, or tax credit programs (as calculated by this measure.)¹³

Poverty does not mean non-working. In today's economy, many jobs don't pay enough to cover the basics. Some people need to work at more than one job, or work many extra hours at a single job. In 2015, close to two thirds (63 percent) of Massachusetts working-age adults living below the official poverty line who do not have disabilities worked either full- or part-time at some point in the year. Most of these adults worked at least twenty hours a week for more than half of the year, yet were still living under the poverty line.¹⁴

Almost Two-Thirds of Non-Disabled Adults in Families With Incomes Below the Poverty Line Work Full or Part-Time



Source: Center on Budget and Policy Priorities analysis of U.S. Census Bureau, American Community Survey 2015, 1-year estimates

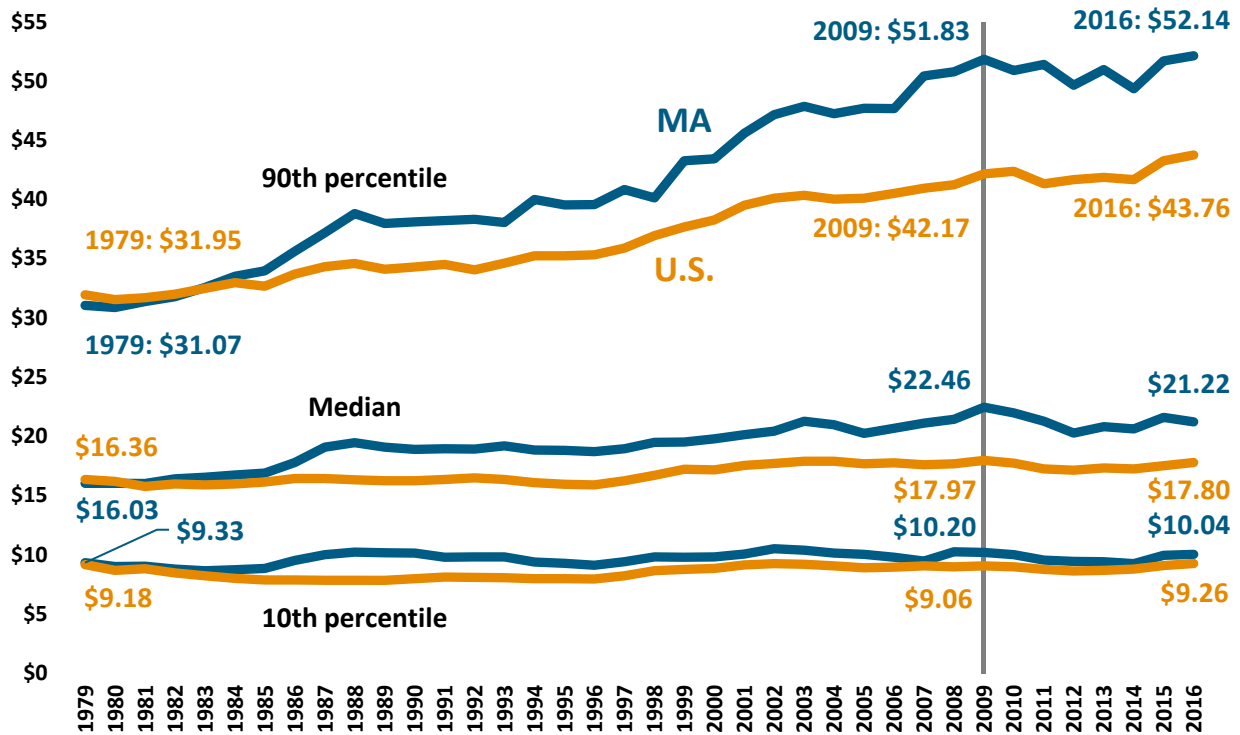
Federal and state policies that target poverty, boost wages and labor standards, and expand opportunities for low- and moderate-income families can and do have a large, positive effect. These policies improve the lives of millions of people throughout the Commonwealth and help lay the groundwork for a stronger, more prosperous economic future for all Massachusetts residents.

3. Wages and Income

For most workers, wages in Massachusetts have been stagnant for decades, as seen in the following chart.

Wages For Most MA Workers Have Stagnated Since Great Recession

Real Value of Hourly Wage for Selected Wage-Earning Groups in MA and U.S., 1979-2016 (2016\$)

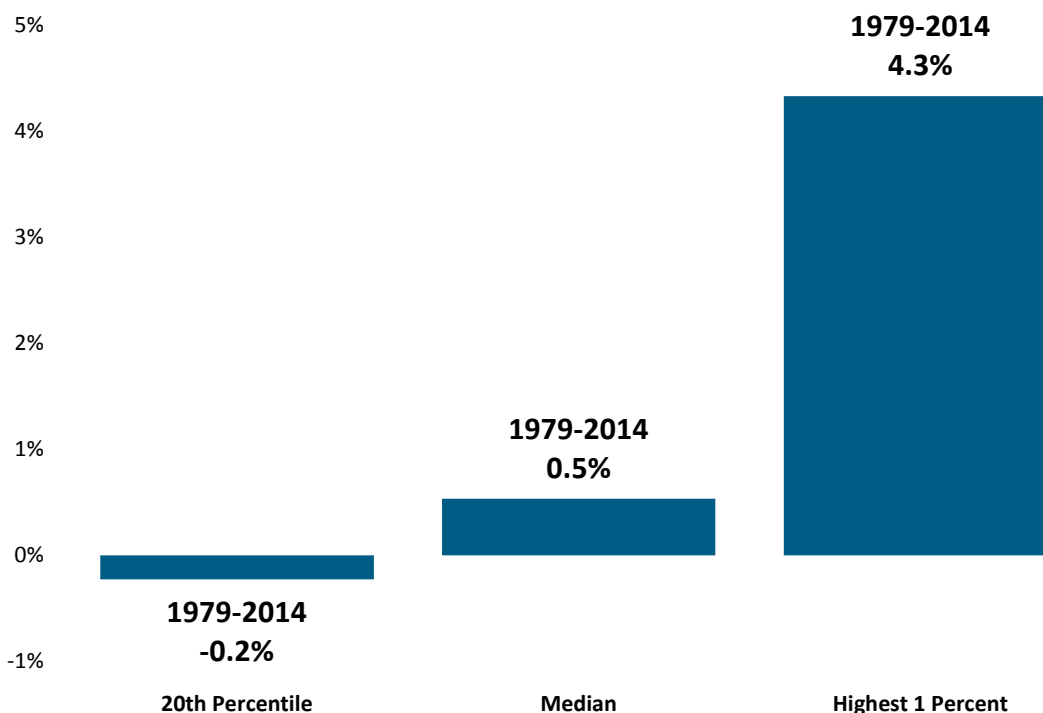


Source: Economic Policy Institute analysis of Current Population Survey data (deflated using CPI-U-RS).

Because most households rely on wages for the vast majority of their incomes, stagnating wages translates into weak overall income growth, which is what we have seen for most households in Massachusetts over the past four decades. Alongside this have come enormous gains for the highest-income households, who derive a relatively small share of their income from wages.¹⁵ From 1979 to 2014, a pattern of growing inequality emerges, as shown in the chart below.

Long-term Wage Stagnation Has Held Back Most MA Household Incomes

Annual change in real median MA household incomes by income group, 1979-2014 (2015\$)

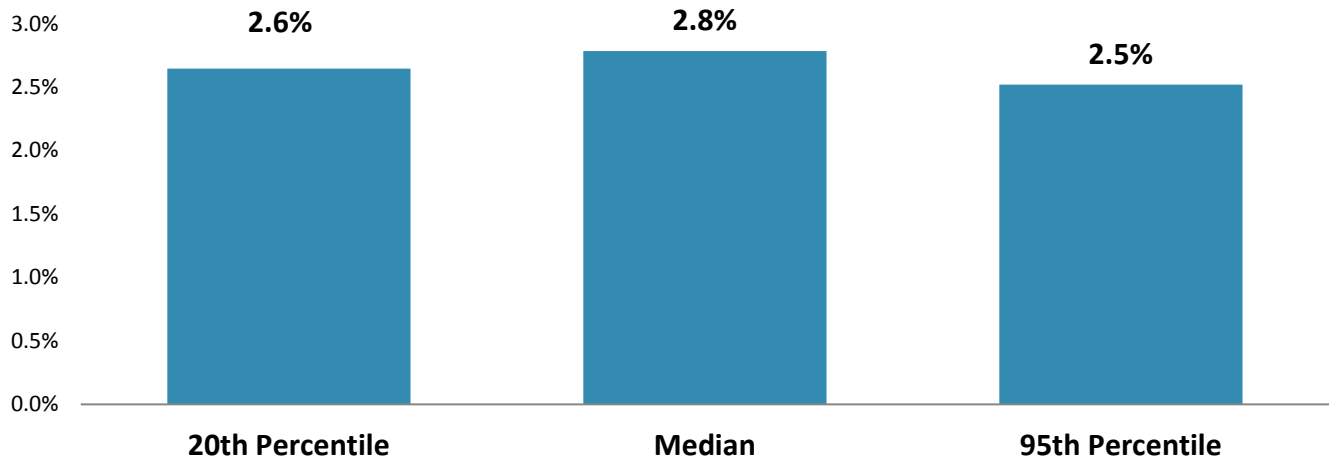


Source: Economic Policy Institute analysis of Current Population Survey data (20th percentile and median); Price and Sommerer analysis of U.S. Internal Revenue Service Statistics of Income (highest 1 percent) (deflated using CPI-U-RS)

Over this period, household income actually fell 0.2 percent per year at the 20th percentile. Median household income grew just 0.5 percent per year. By far the greatest gains have gone to the very highest-income households: from 1979 to 2014, the highest-income one percent of Massachusetts households saw their incomes grow 4.3 percent per year. Cumulatively, these households saw average income gains of 341 percent – **the greatest increase in the country over that period**. In 1979, the highest-income one percent of households earned 10 percent of all income in Massachusetts; in 2014 they earned over one-quarter.

It has not always been the case that a disproportionate share of income gains have gone to the very highest-income households. The three decades after World War II were an era of broadly shared prosperity, during which incomes grew both more rapidly *and* far more equitably than they have over the past four decades.¹⁶

U.S. Enjoyed Strong, Broadly-Shared Annual Income Growth, 1947-1973

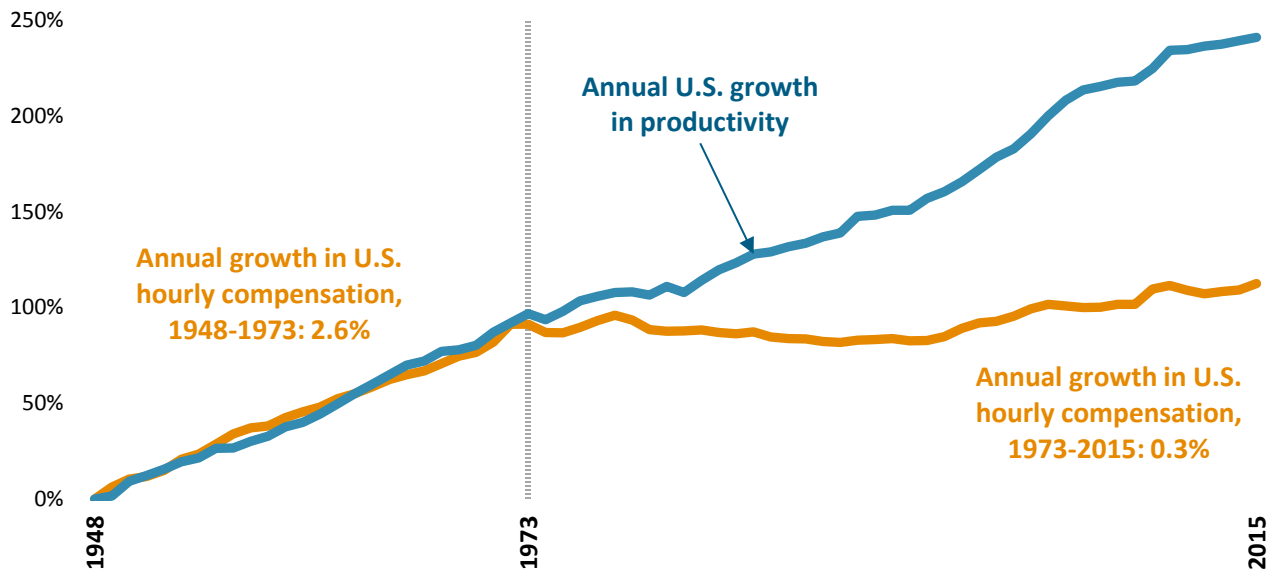


Source: U.S. Census, Current Population Survey, Annual Social and Economic Supplements

During this post-WWII period, wages grew in tandem with **productivity** – the measure of economic output per hour worked. As productivity grew, workers saw these gains translate into increases in their hourly wages, which grew 2.6 percent per year from 1948 to 1973. Since 1973, however, the link between productivity and wages has been broken, as shown in the following chart. During this period of disjuncture – referred to as the “Great Decoupling” – wages grew just 0.3 percent per year.

A Large Gap Has Opened Between Wage and Productivity Growth Since 1973

Cumulative Change in U.S. Hourly Wages for Private-Sector Production/Non-Supervisory Workers and Net Productivity, 1948-2015

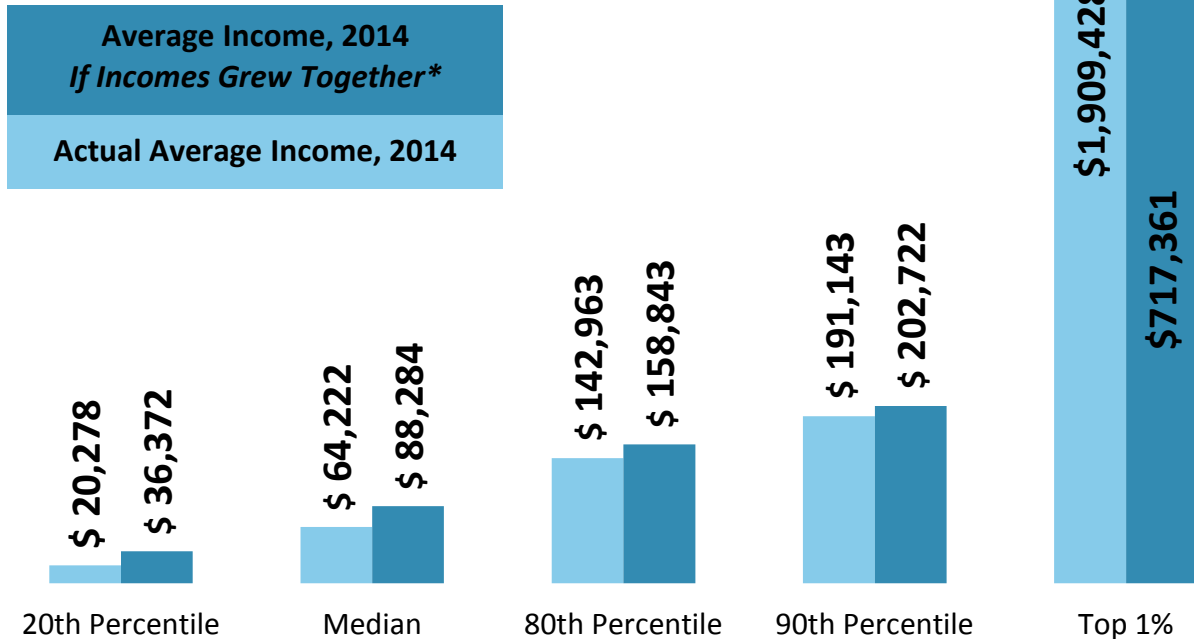


Source: Economic Policy Institute analysis of unpublished Total Economy Productivity data from Bureau of Labor Statistics' Labor Productivity and Costs program, wage data from the Bureau of Labor Statistics' Current Employment Statistics, Bureau of Labor Statistics' Employment Cost Trends data, and the Bureau of Economic Analysis' National Income and Product Accounts
Note: Wages are the inflation-adjusted average hourly compensation of private-sector production/nonsupervisory workers.

As we saw above, household income growth in Massachusetts has been highly uneven since 1979, declining at the 20th percentile and growing by over 4 percent per year among the highest-income one percent of households. Overall, pre-tax income in Massachusetts grew at an average rate of about 1.5 percent per year from 1979 to 2014. What if the post-war trend of shared prosperity had continued, and *all households* had seen their incomes grow at this average rate over the past four decades? Under that scenario, depicted in the following chart, 90 percent of households would have higher incomes today. Household incomes in the lowest-income 20 percent would be \$36,400 -- 79 percent higher per year than it actually is. The median household would have over \$88,300 in annual income -- 37 percent more than it does today. This kind of evenly distributed growth would have painted a very different picture of the Massachusetts economy from the one we actually see -- one of enhanced opportunity for many Massachusetts families.

If Incomes Had Grown Together, Most Would Have Benefitted

Average 2014 pre-tax income in Massachusetts by income group (2015\$)



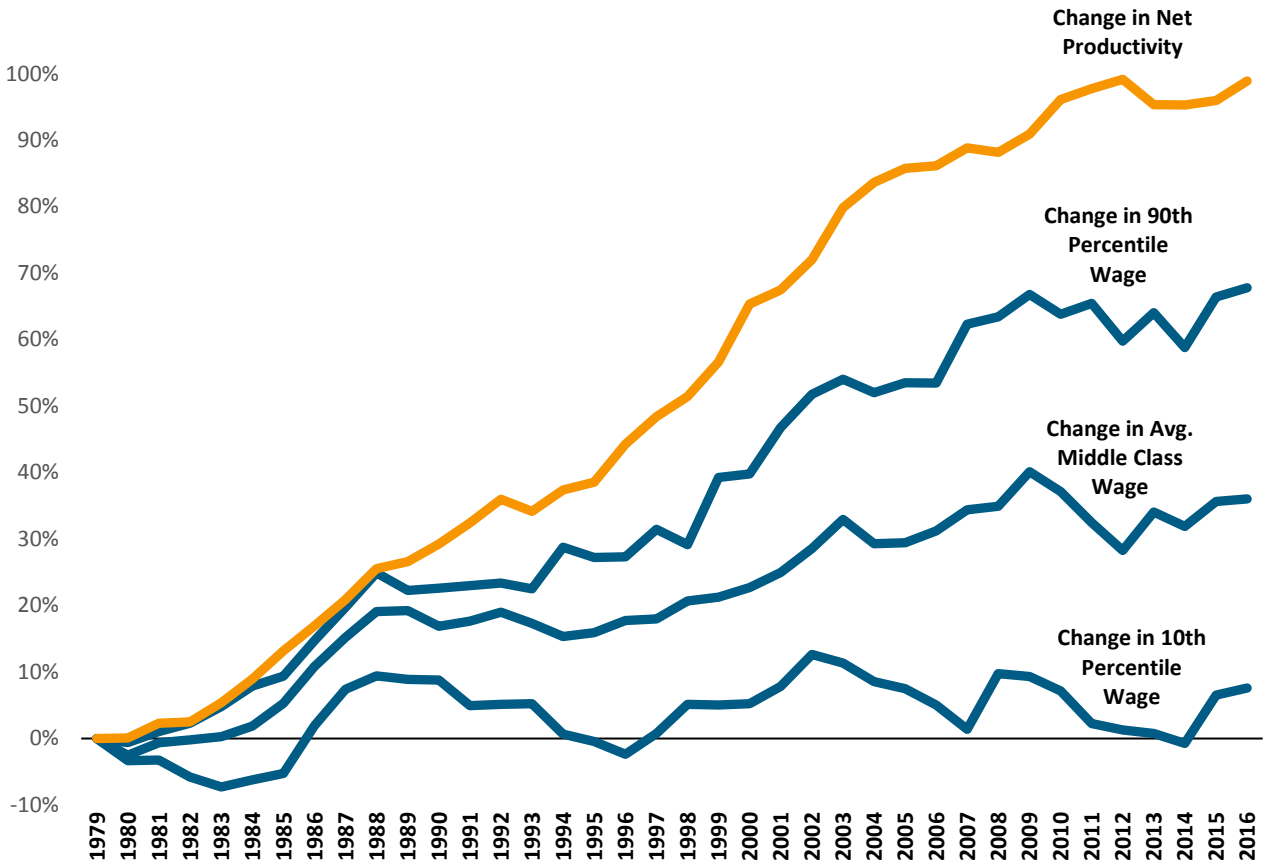
Source: Economic Policy Institute Analysis of Current Population Survey (90th percentile and below); Price and Sommeier analysis of U.S. Internal Revenue Service Statistics of Income

*The overall MA pre-tax income growth rate between 1979 to 2014 is 65.6%.

The drastically uneven distribution of the gains from economic growth is a national issue, to be sure, but the impact of the Great Decoupling can be seen clearly within Massachusetts, as well. Since the late-1980s, wage growth for most workers has not come close to keeping up with productivity gains in the state.

MA Wage Growth Has Lagged Productivity Gains For Decades

Change in the Real Value of MA Wages and Net Productivity, 1979-2016 (2016\$)



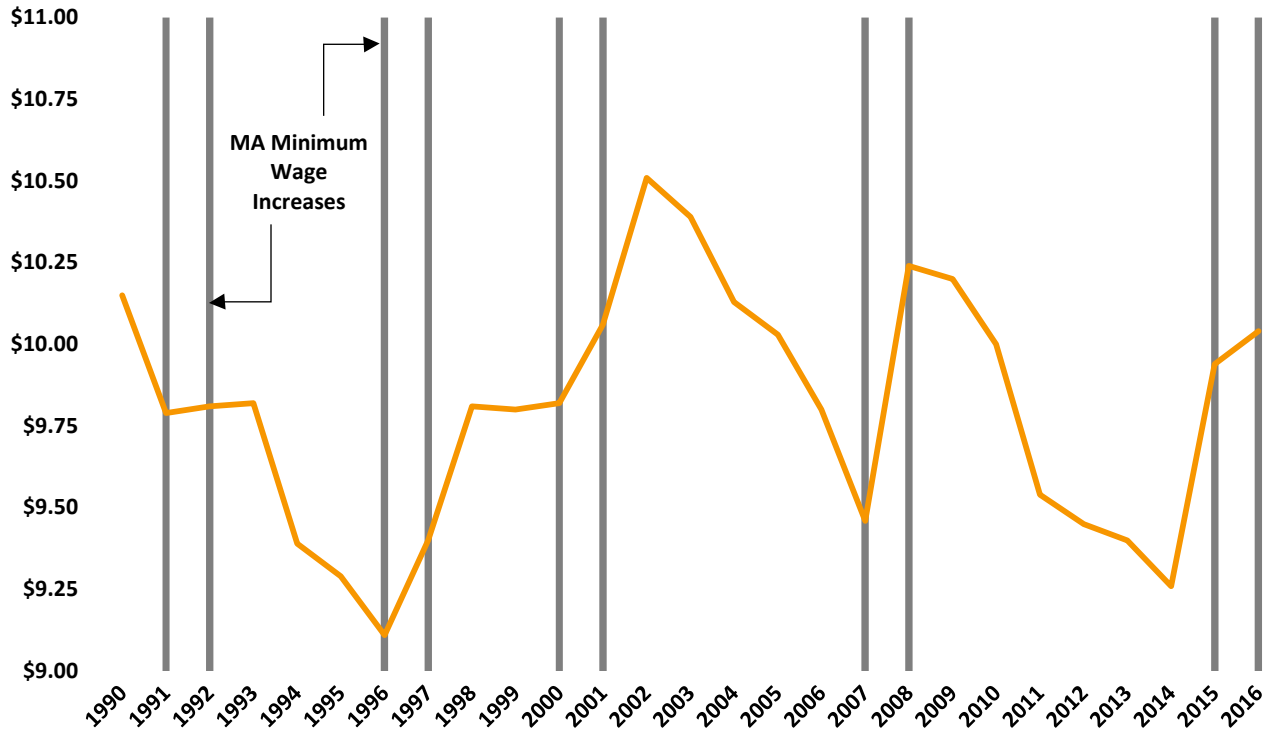
Sources: Productivity from Economic Policy Institute analysis of unpublished Total Economy Productivity data from Bureau of Labor Statistics' Labor Productivity and Costs program. Wages from Economic Policy Institute analysis of Current Population Survey data.

Note: The "average middle-class wage" is the average of wages between the 20th and 80th percentiles of the distribution.

The lowest-paid workers in Massachusetts (the 10th percentile) have seen the slowest wage growth over the past four decades – just 0.2 percent per year, for a total of 7.6 percent over the entire span¹⁷. As the above chart shows wages at the 10th percentile have not been meaningfully tied to productivity in Massachusetts since 1979. Since the recession in the early-1990's recession, in fact, as the following chart shows, *the only times the 10th-percentile wage has increased have been after an increase in the state minimum wage.*

Minimum Wage Increases Reverse Wage Declines for Lowest-Earning Workers

Change in the Real Value of MA 10th-Percentile Wage, 1990-2016 (2016\$), with Minimum Wage Increases

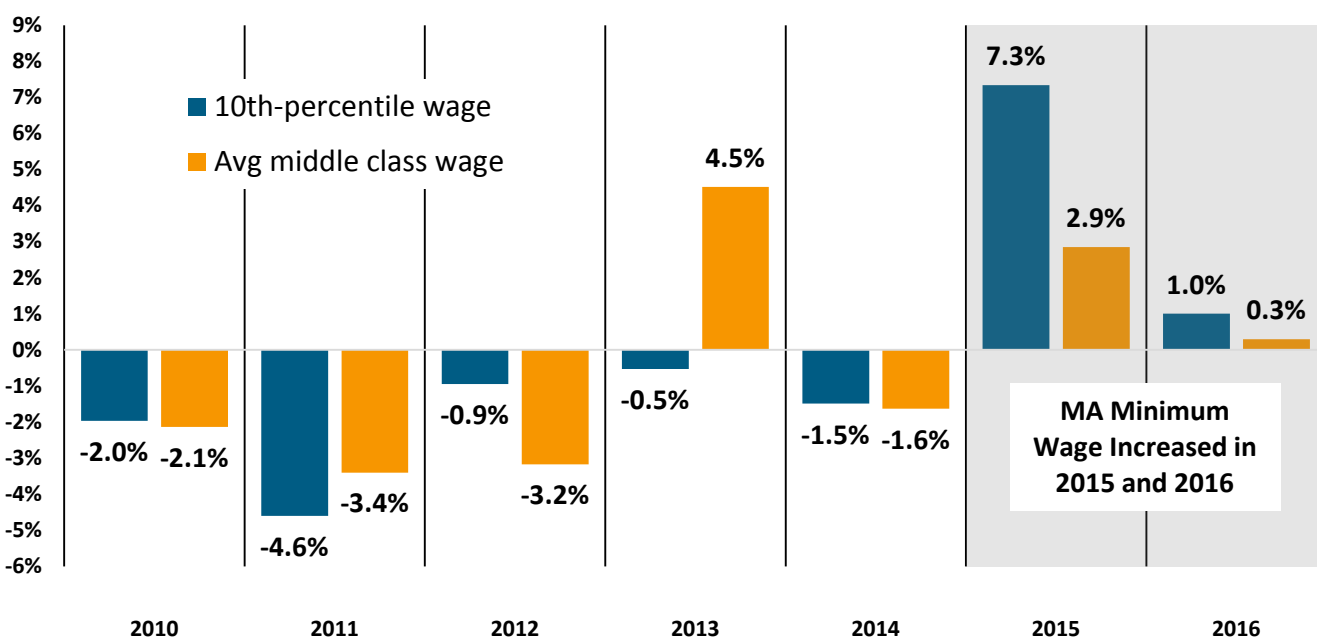


Sources: Productivity from Economic Policy Institute analysis of unpublished Total Economy Productivity data from Bureau of Labor Statistics' Labor Productivity and Costs program. Wages from Economic Policy Institute analysis of Current Population Survey data. MA minimum wage increase history from Federal Reserve Bank of Saint Louis.

In 2015, the Massachusetts minimum wage increased from \$8 per hour to \$9, the first of three yearly one-dollar increases that brought the state minimum wage to \$11 in 2017. From 2014 to 2015, wages for the lowest-earning 10 percent of workers increased over 7 percent, and another one percent from 2015 to 2016, as shown in the following chart. These two years of increases in the 10th-percentile wage followed five years of decline, keeping with the pattern seen above: wages for the lowest-paid workers go up when—and only when—Massachusetts increases the minimum wage.

Minimum Wage Increases Benefit Lowest-Earning MA Workers After Years of Decline

Year-over-Year Percentage Growth in Real Value of Massachusetts Hourly Wage (2016\$)



Source: Economic Policy Institute analysis of Current Population Survey data (deflated using CPI-U-RS).

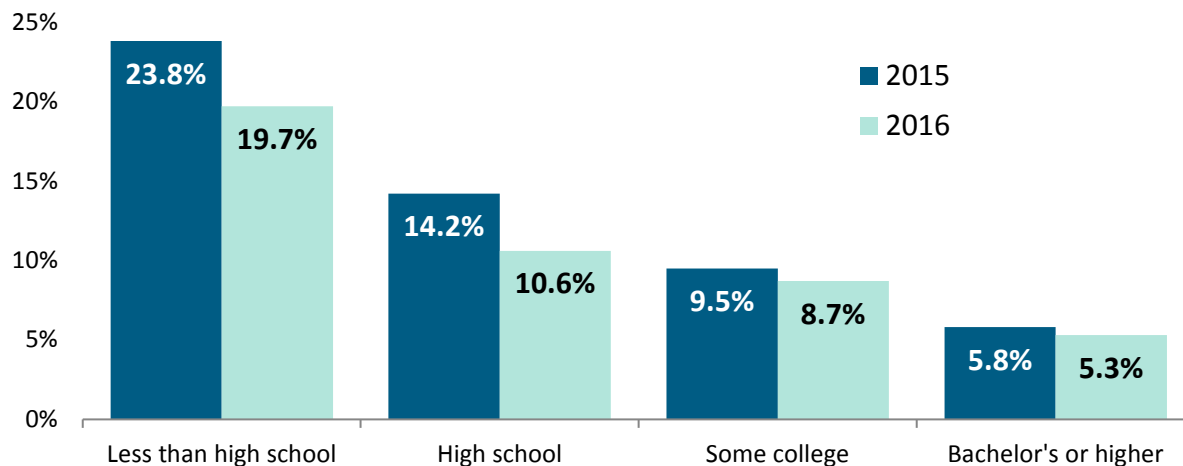
Note: Low-wage worker is defined as the 10th percentile. Middle-class wages defined as the average wage of workers in the 20th to 80th percentiles of wage earners.

Also shown in this chart are wage changes for the state’s middle-class workers (the middle 60 percent of the wage distribution), which grew just 0.3 percent last year after a nearly 3 percent gain from 2014 to 2015. This lack of strong middle-class wage growth from 2015 to 2016 is, seemingly, a puzzle, given the state’s continued strong job growth and marked declines in “**labor underutilization**” – a broader measure of the employment situation that counts not only workers who are “officially” unemployed (that is, who have looked for work in the previous four weeks), but also (1) those who want to work but have given up looking and (2) those who want full-time work but can only find part-time work. (See the **Jobs and Employment** section of this report for a discussion of these trends.) In a tightening labor market, wages should be growing.

Part of the explanation for the apparent wage stagnation could be found in *who* joined the workforce in 2016. Workers with lower levels of educational attainment – no more than a high school diploma – came off the sidelines at a much faster pace than workers who have attended college, as seen in the following chart.

Underutilization Fell More For MA Workers Who Haven't Attended College

Labor undertutilization rates in Massachusetts by level of education attainment, 2015 and 2016



Source: Economic Policy Institute analysis of U.S. Census, Current Population Survey (CPS) data

Similarly, recent years have seen young workers (ages 16-24) getting jobs at a higher rate, relative to their share of the population, than workers 25 and older. In 2014, the “employment-to-population ratio” for 16- to 24-year olds in Massachusetts was 47.4 percent; in 2016 it was up 4.5 percent to 51.9 percent. By contrast, 80 percent of Massachusetts residents ages 25 to 54 were working in 2014; that share had gone up just 0.4 percent by 2016.¹⁸

Disproportionate employment growth among young workers and those without a college education – both of whom are among the lowest-paid workers – are likely part of the explanation for what appears to be little movement in wages in the past year.¹⁹

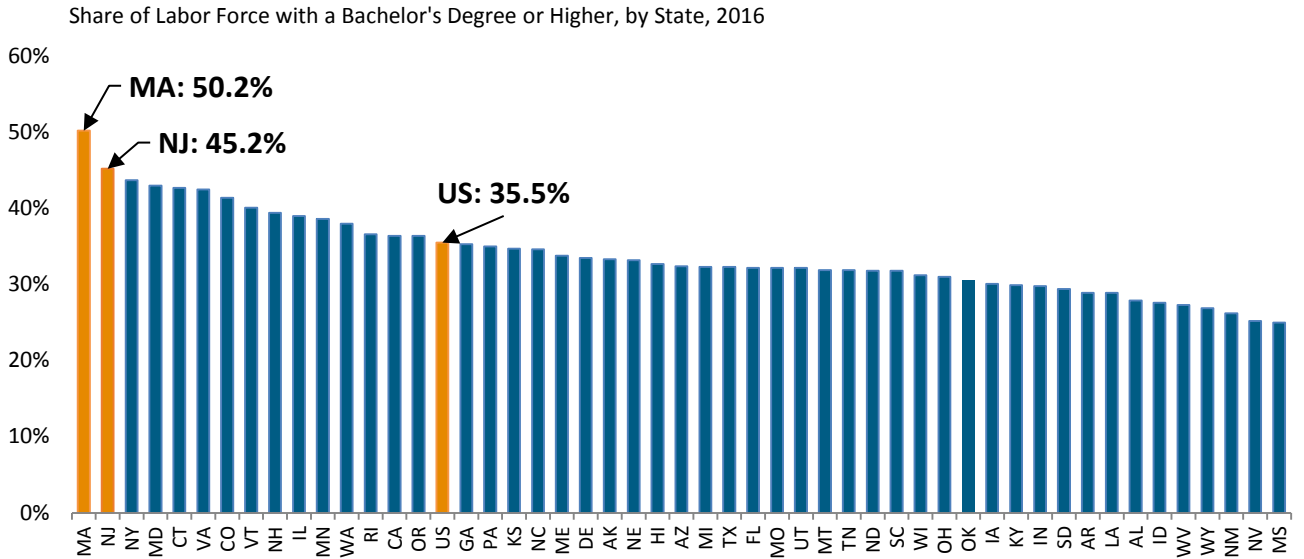
Economists who study wage dynamics using public data sets like the Current Population Survey try to account both for the effect of individual persons’ wage changes from one time period to another (a raise, or an increase from switching jobs) and for the effect of who makes up the workforce. These are known, respectively, as the **wage growth effect** and the **composition effect**.²⁰

Even though hourly wages at a given percentile may be flat, *individual workers earning at or below the median could still be getting raises*, as we would expect in a tightening labor market (the wage growth effect). But if the workforce is growing disproportionately below the median – which it likely is, given the relative increase in employment among young workers and those without a college degree – then the composition effect would pull down wages at particular percentile levels (e.g., 10th, 20th) at or below the median.

Massachusetts wages remain among the highest in the country. Tied to this, as discussed further in the **Education and the Economy** section of this report, is the high percentage of workers with bachelor’s degrees. Massachusetts and New Jersey have the highest median

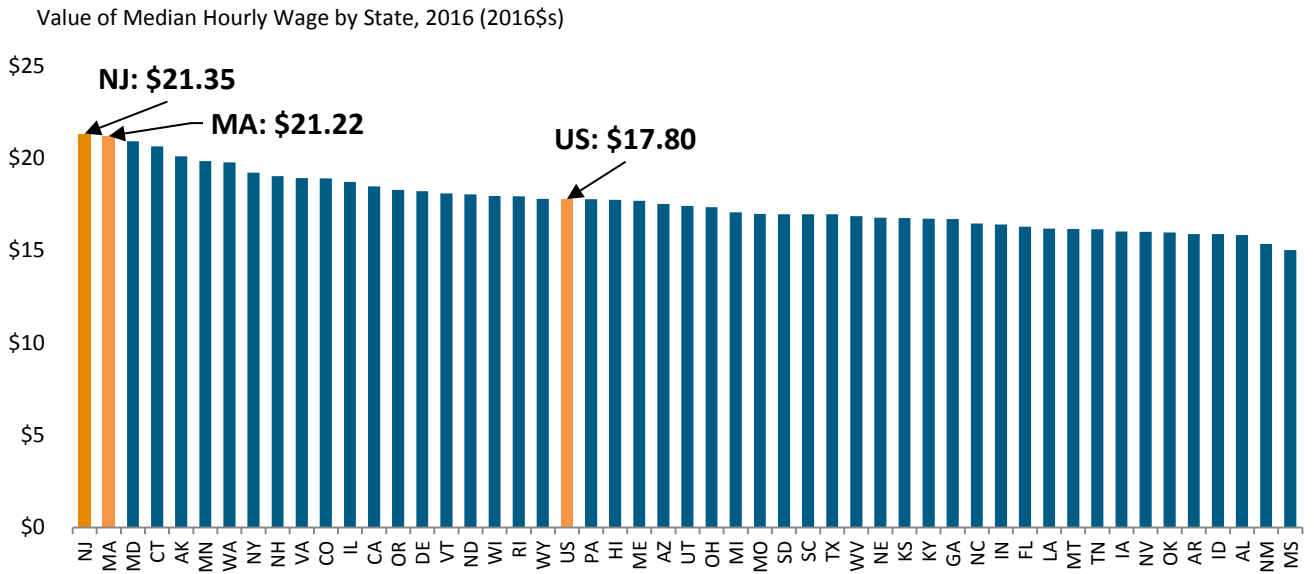
wages in the country, and the highest share of workers with college degrees. **In 2016, Massachusetts became the first state ever to have a workforce with over 50 percent college degree attainment.**

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



Source: Economic Policy Institute analysis of Current Population Survey data

MA and NJ Have the Highest Median Wages in the Nation



Source: Economic Policy Institute analysis of Current Population Survey data

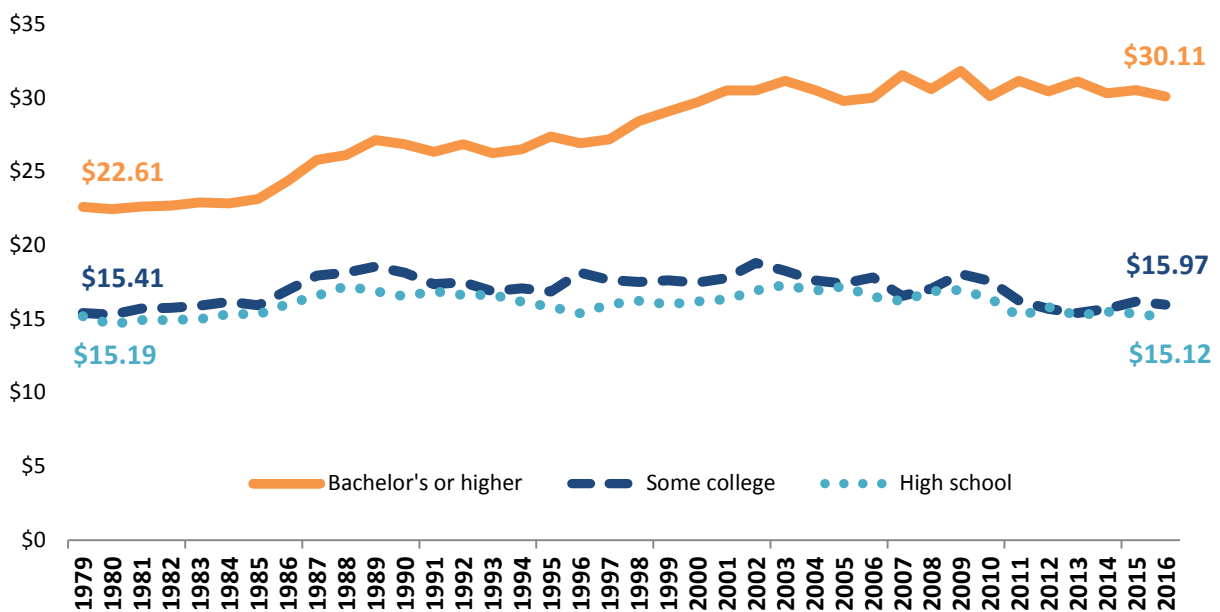
4. Education and the Economy

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\$)

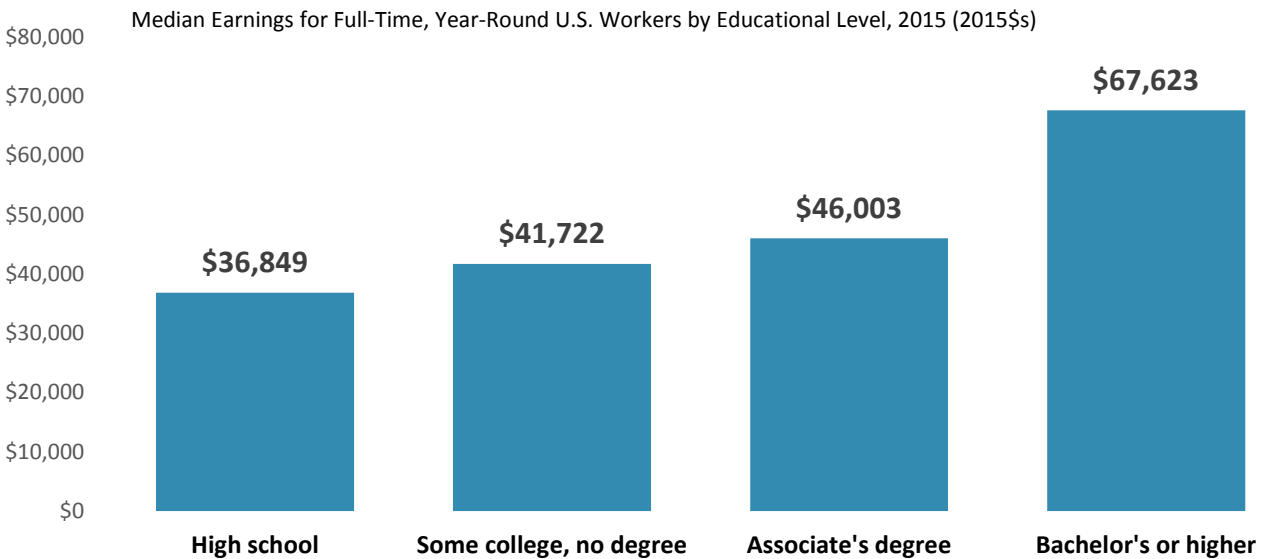


Source: Economic Policy Institute analysis of Current Population Survey data, values deflated using CPI-U-RS

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.²¹ 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

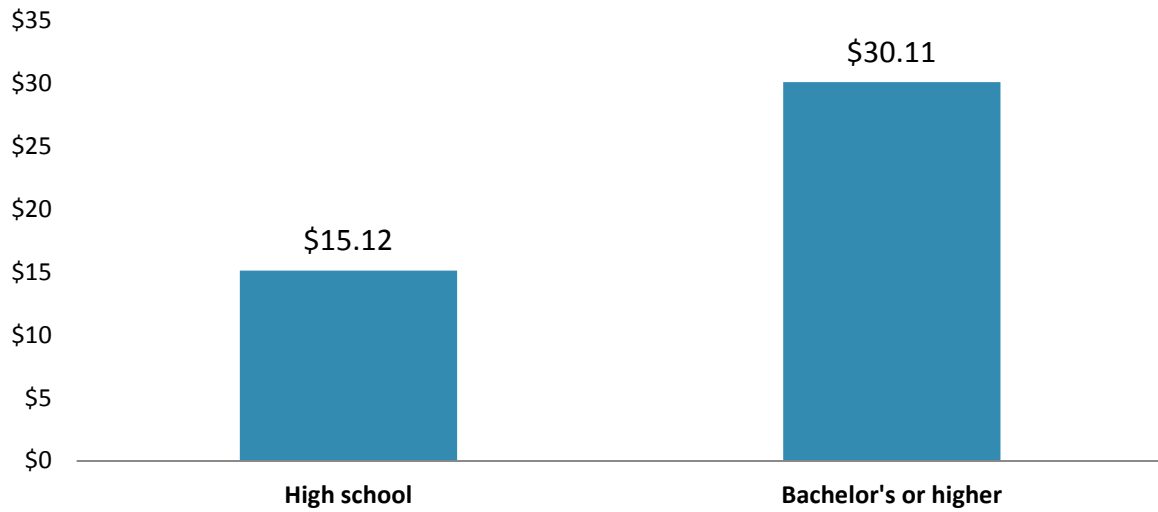


Source: U.S. Census Bureau, *Income and Poverty in the United States*

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 below 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.²²

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

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

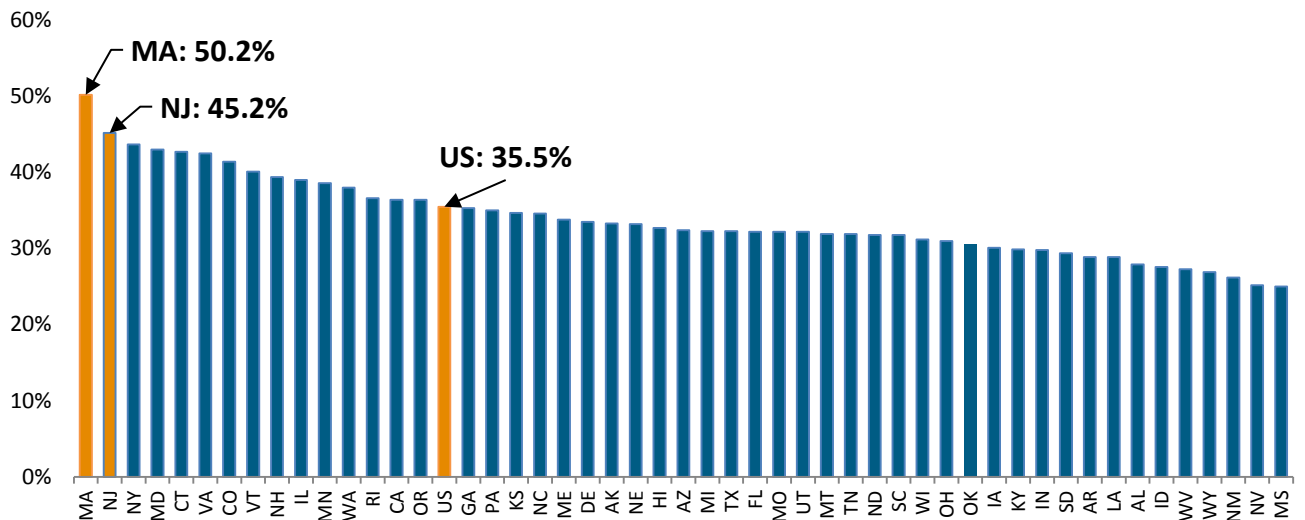


Source: Economic Policy Institute analysis of Current Population Survey data

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

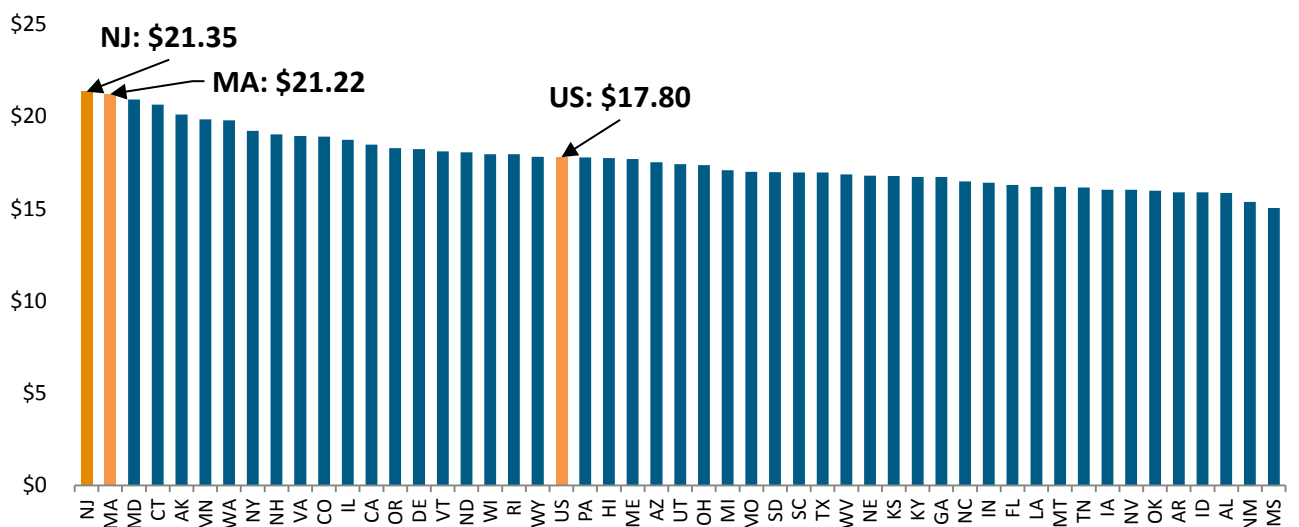
Share of Labor Force with a Bachelor's Degree or Higher, by State, 2016



Source: Economic Policy Institute analysis of Current Population Survey data

MA and NJ Have the Highest Median Wages in the Nation

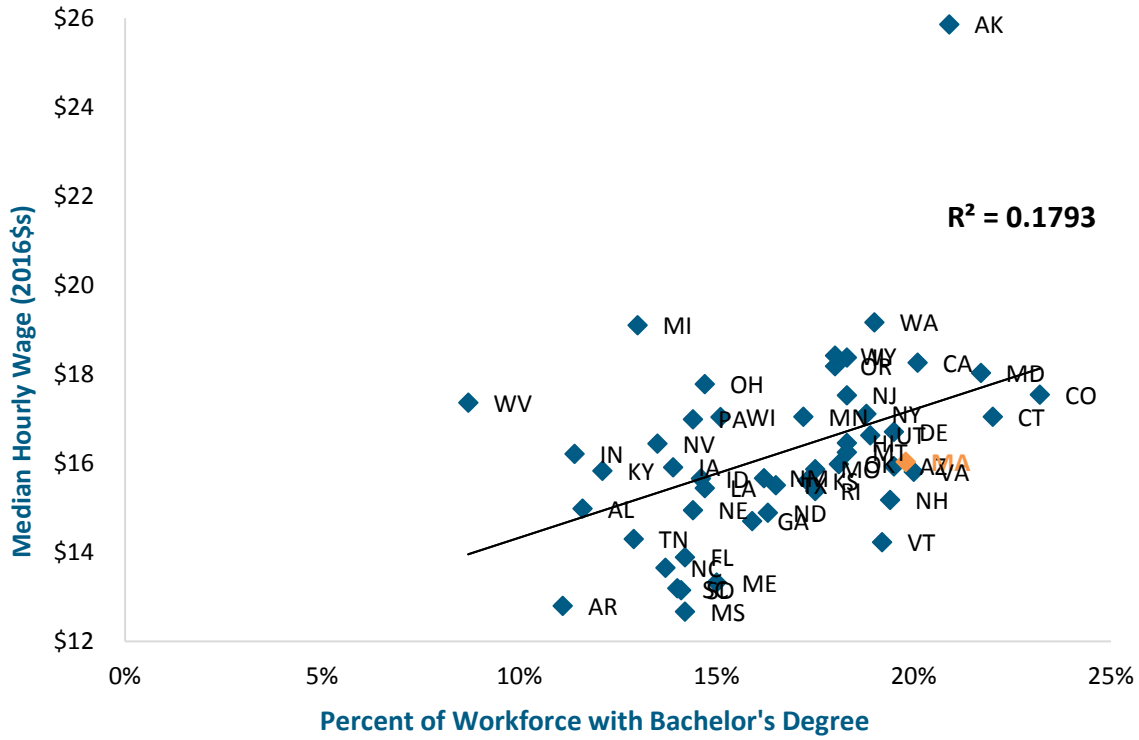
Value of Median Hourly Wage by State, 2016 (2016\$)



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.

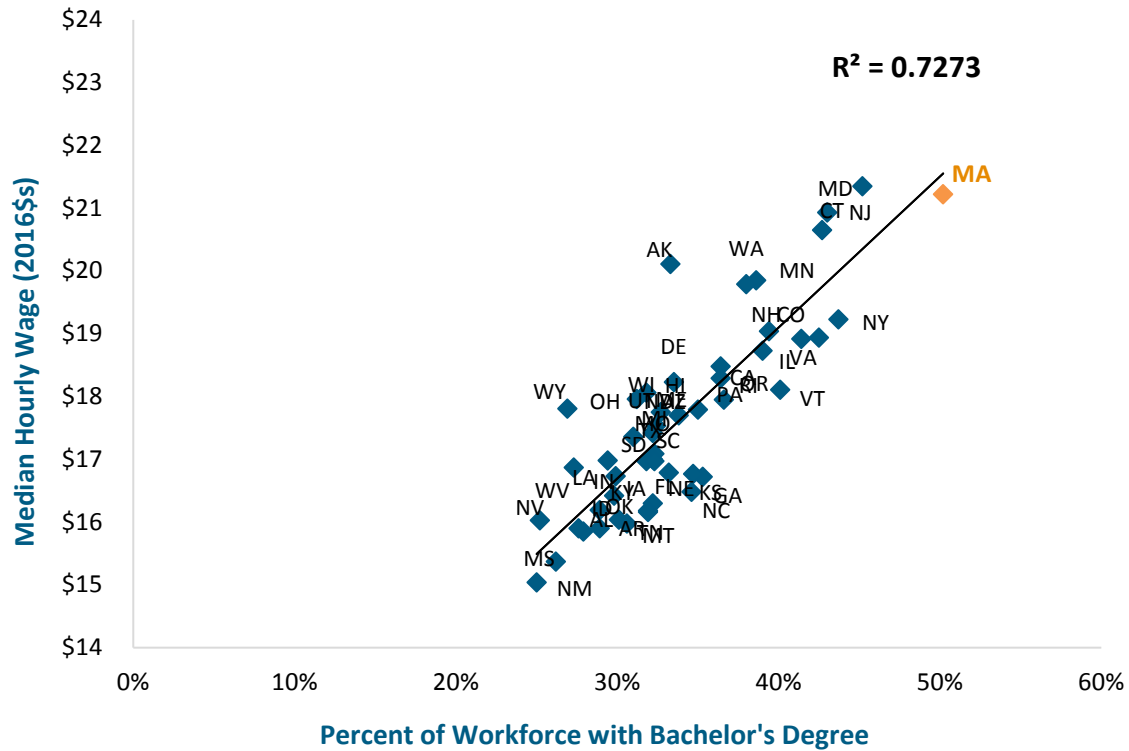
Weak Relationship Between Education and Wages in 1979



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. ²³

Strong Relationship Between Education and Wages in 2016



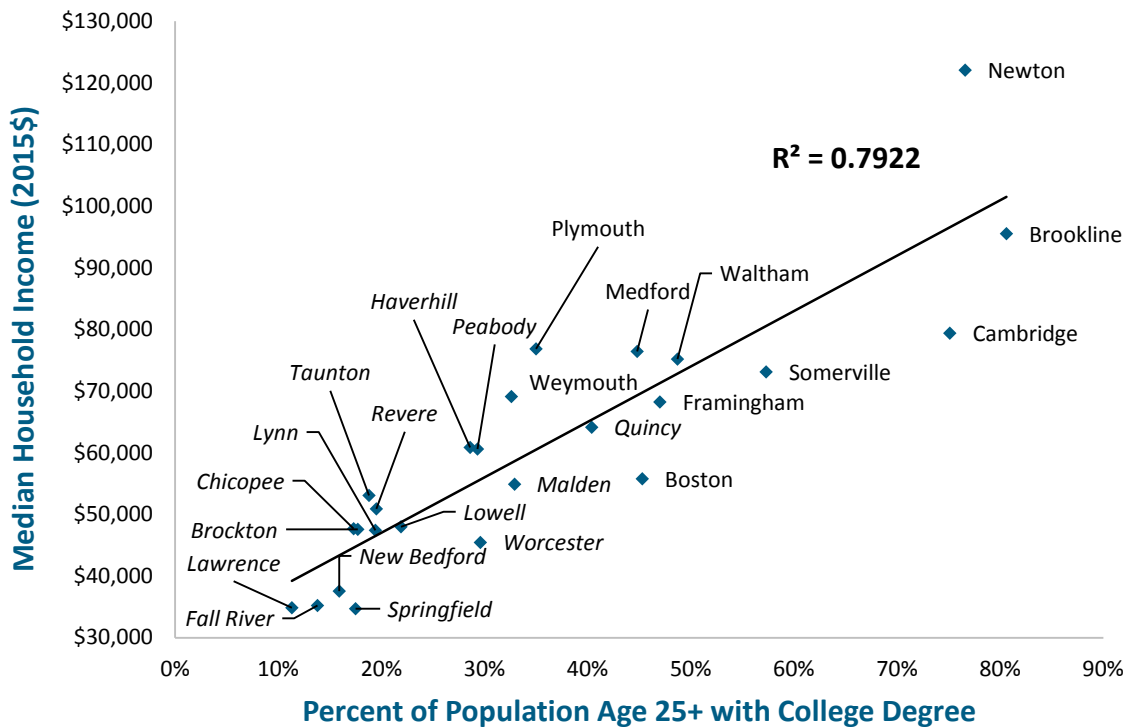
Source: Economic Policy Institute analysis of Current Population Survey data

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."²⁴ (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

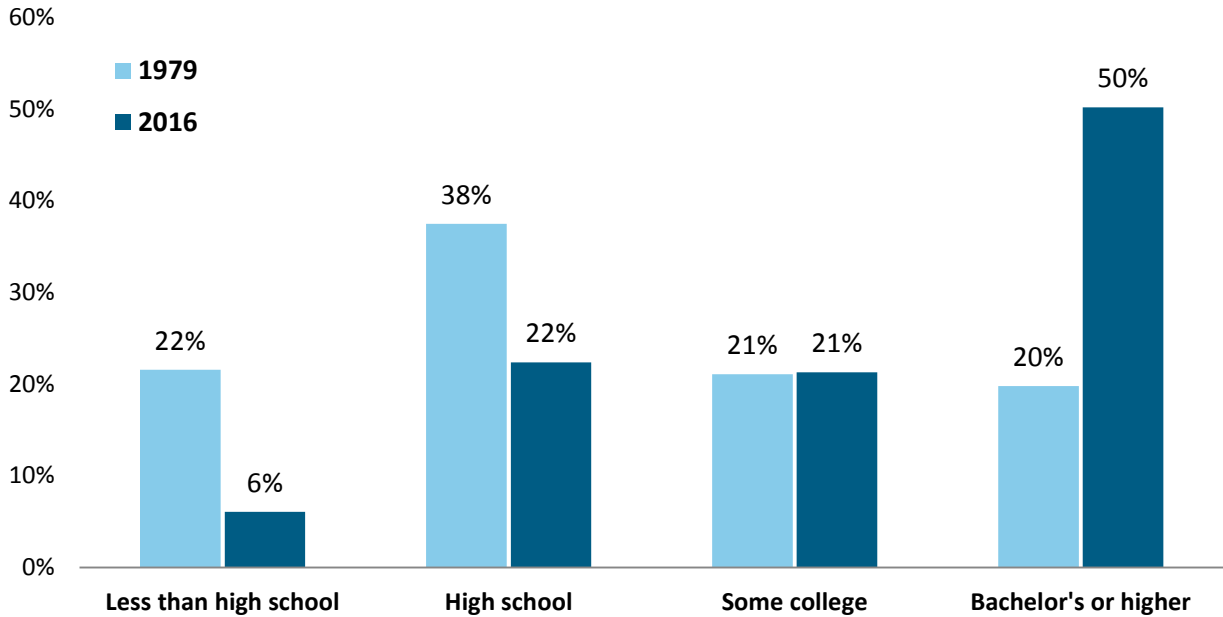


Source: U.S. Census Bureau, American Community Survey 2011-2015 5-year Estimates
Italics indicate Gateway City

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

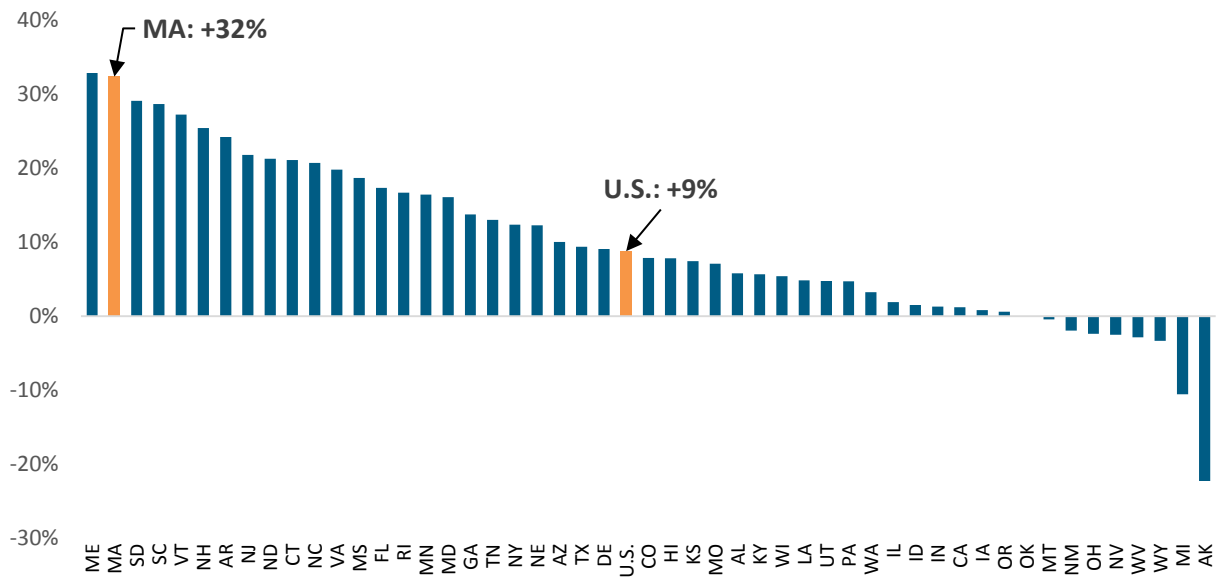


Source: Economic Policy Institute analysis of Current Population Survey data

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\$)

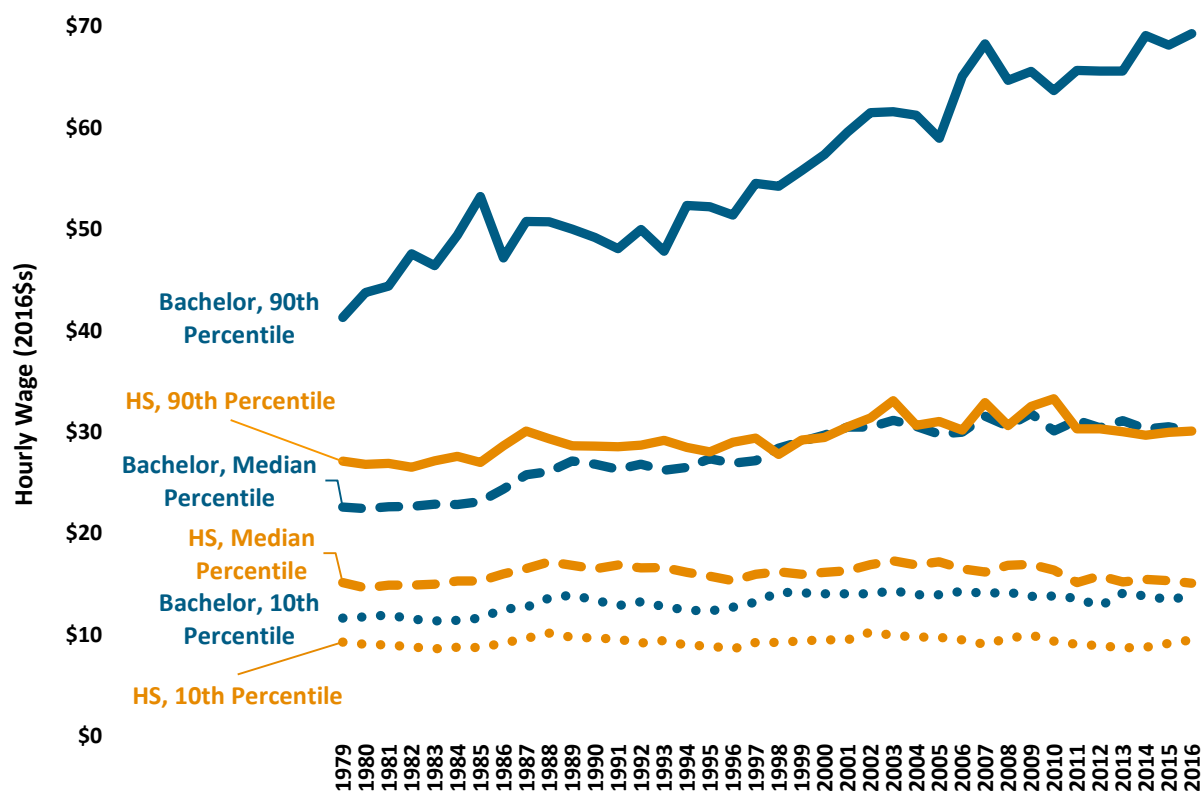


Source: Economic Policy Institute analysis of Current Population Survey data

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.

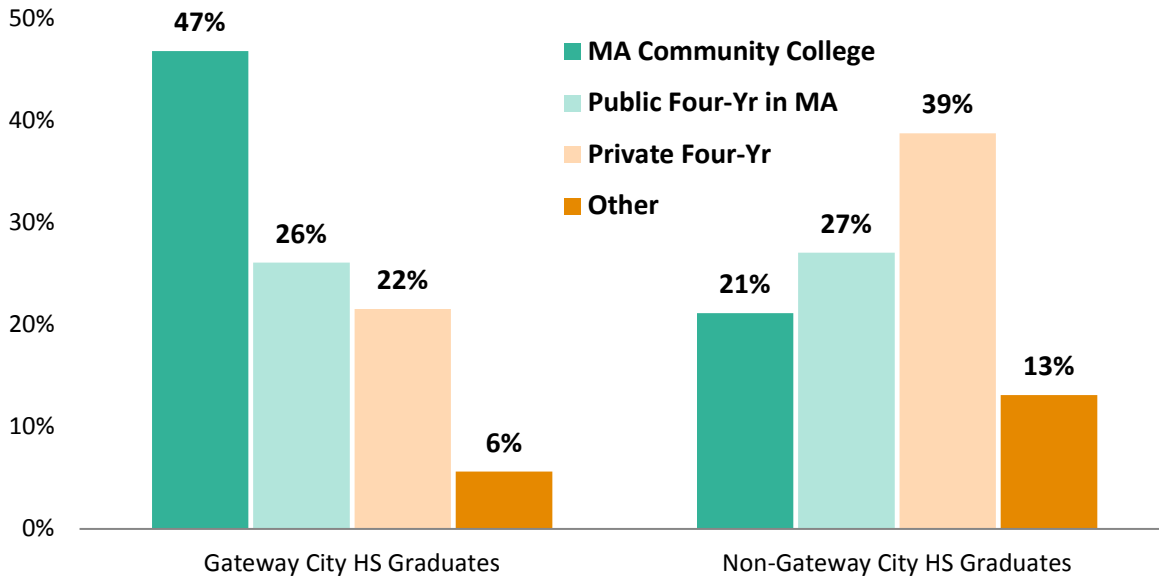
Expanding access to higher education can benefit both individual students and the overall state economy, as workers with a college degree earn more than those without. But the cost of attending college has been increasing steadily, and more students are taking on ever-increasing debt to pay those costs. 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 Much of the underlying data in the *State of Working Massachusetts 2017* comes from Economic Policy Institute (EPI) analysis of Current Population Survey data. To read more about their methodology in calculating income, wages, and other measures used throughout this report, please refer to the appendices of EPI's [The State of Working America 12th edition](#).

² 9 years, 7 months from the start of the recession.

³ U.S. Bureau of Labor Statistics, *Employment Situation Table A-15*, "Alternative measures of labor underutilization." <https://www.bls.gov/news.release/empsit.t15.htm>

⁴ The U.S. Bureau of Labor Statistics publishes state-level labor underutilization data on a four-quarter moving average basis in order to counteract the problem of small state-level sample sizes, and to eliminate regular seasonal changes in employment patterns. This approach increases the reliability of the estimate but may not reflect up-to-the-moment labor market conditions.

⁵ Jeremy Thompson, "MA Poverty Down, Incomes Up Substantially in 2016," Mass. Budget and Policy Center, September 14, 2017, http://massbudget.org/report_window.php?loc=MA-Poverty-Down,-Incomes-Up-Substantially-in-2016.html.

⁶ See "Wages & Income" section of this paper for more complete discussion.

⁷ Unless otherwise specified, all of the poverty data in this section from American Community Survey, 2016 1-year Estimates, “Poverty Status in the Past 12 Months”, available at [American FactFinder](#). Poverty thresholds from U.S. Census Bureau.

⁸ See, for example, Lisa Gennetian, Jens Ludwig, Thomas McDade, and Lisa Sanbonmatsu, “Why Concentrated Poverty Matters,” Stanford Center on Poverty & Inequality, Spring 2013, pp. 12-13 available at https://inequality.stanford.edu/sites/default/files/media/media/pdf/pathways/spring_2013/Pathways_Spring_2013_Gennetian_Ludwig_McDade_Sanbonmatsu.pdf.

⁹ See U.S. Census Bureau, *Measuring America: Poverty: The History of a Measure*, January 2014, https://www.census.gov/library/visualizations/2014/demo/poverty_measure-history.html.

¹⁰ “How the U.S. Census Bureau Measures Poverty,” https://www.census.gov/library/visualizations/2017/demo/poverty_measure-how.html.

¹¹ U.S. Census Bureau, “SPM Thresholds by Metro Area: 2016,” <https://www2.census.gov/programs-surveys/demo/tables/p60/261/pov-threshold-2016.xlsx>.

¹² Liana Fox, “The Supplemental Poverty Measure: 2016,” U.S. Census Bureau, Revised September 2017, p.8.

¹³ Center on Budget and Policy Priorities analysis of 2009-2012 Census Bureau data from the March U.S. Census Bureau Current Population Survey and SPM public use files.

¹⁴ Center on Budget and Policy Priorities analysis of 2015 U.S. Census Bureau data from the American Community Survey public use microdata.

¹⁵ For Massachusetts households with incomes of \$1 million or more, salaries and wages constituted 32 percent of income in 2015, about the same share as capital gains. U.S. Internal Revenue Service, *Statistics of Income, Table 2. Individual Income and Tax Data, by State and Size of Adjusted Gross Income, Tax Year 2015*. Downloaded August 14, 2017.

¹⁶ Economic Policy Institute, *Rising Income Inequality and the Role of Shifting Market-Income Distribution, Tax Burdens, and Tax Rates*, June 2013, pp. 1 & 3

¹⁷ The 7.6 percent total change is the 2016 10th-percentile wage of \$10.04 divided by the 1979 10th-percentile wage of \$9.33 (in 2016 dollars) minus one. The 0.2 percent annual change is the rate at which the 10th-percentile wage would need to grow, if it grew at the same rate each year from 1979 to 2016, to achieve a total growth rate of 7.6 percent over the period. (This is sometimes referred to as the “compound annual growth rate.”)

¹⁸ Economic Policy Institute analysis of U.S. Census, Current Population Survey data

¹⁹ Elise Gould, “[Wages for workers with a high school degree or less rose the fastest over the last year](#),” August 2, 2017.

²⁰ Mary C. Daly, Bart Hobijn, and Theodore S. Wiles, “[Dissecting Aggregate Real Wage Fluctuations: Individual Wage Growth and the Composition Effect](#),” May 2012.

²¹ Clive Belfield and Thomas Bailey, “[The Labor Market Returns to Sub-Baccalaureate College: A Review](#),” March 2017, p. 7.

²² 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.

²³ Noah Berger and Peter Fisher, "[A Well-Educated Workforce Is Key to State Prosperity](#)," August 2013.

²⁴ 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](#))