

# Socioeconomic Indicators for Massachusetts

November 5, 2024

UMassAmherst

Donahue Institute  
Economic and  
Public Policy Research

# Prepared by the UMass Donahue Institute's Economic & Public Policy Research Group

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This report was prepared by the UMass Donahue Institute and the information in text, tables, charts, and graphs are the most recently available information as of November 1<sup>st</sup>, 2024.

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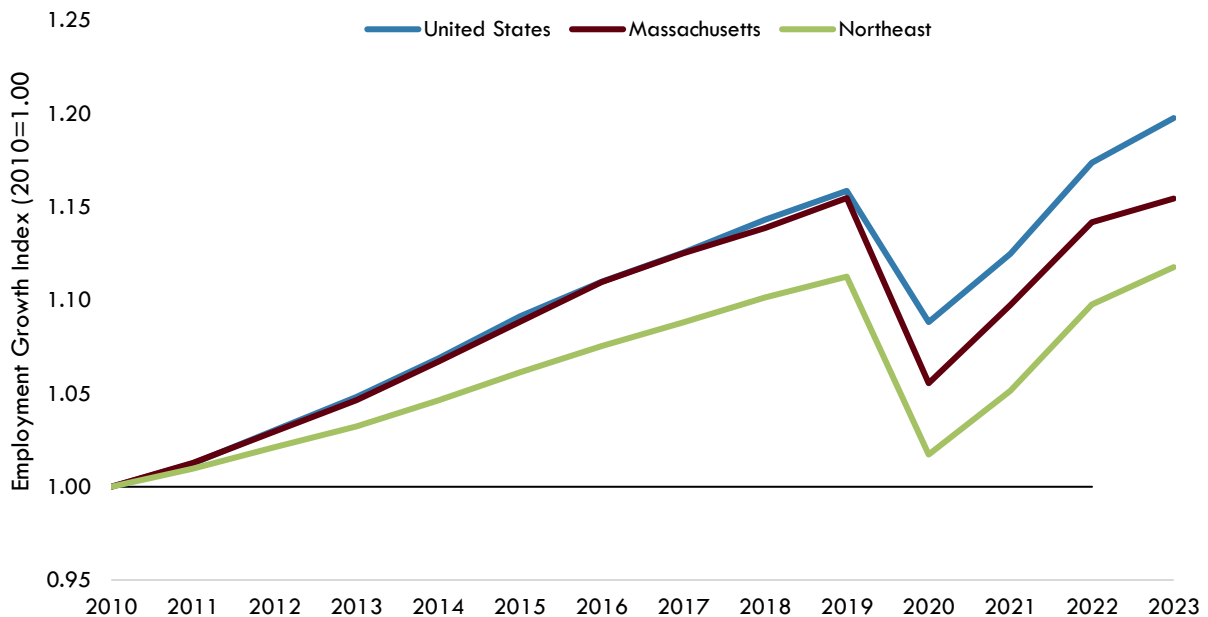
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## Economy

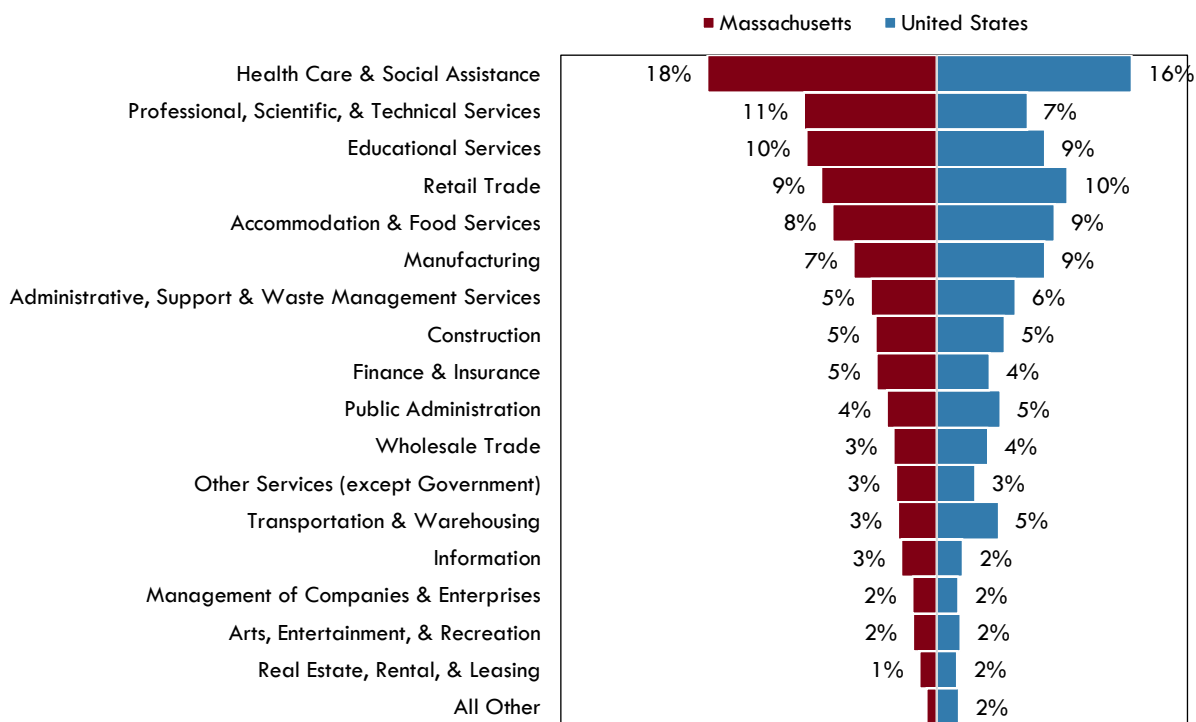
Over the past decade, Massachusetts has been a leader in job growth in the Northeast (Figure 1), driven largely by the state’s highly-educated workforce, the overall diversity of industries, and strengths in knowledge-based industries, such as health care, education, and professional services (Figure 2). Professional and technical services have been increasingly important in the state, both as a share of employment and in terms of its contribution to state gross domestic product (GDP). During the pandemic, professional and technical services moved from being fourth in the state in terms of employment, to second. In 2023, the industry accounted for 11 percent of jobs and the sector was first in the state as a share of GDP, making up 15 percent of the state GDP. While the sector includes everything from legal services to veterinary services, in Massachusetts the two leading subsectors in terms of employees are computer systems design and related services, and scientific research and development services. These subsectors benefit from the Commonwealth’s well-established higher education and health care sectors.

**Figure 1. Employment Growth Index in Massachusetts, the Northeast, and the United States, 2010-2023 (2010=1.00)**



Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW); UMDI analysis

**Figure 2. Industry Mix in Massachusetts and the United States, 2023 (Percent of Total Jobs)**



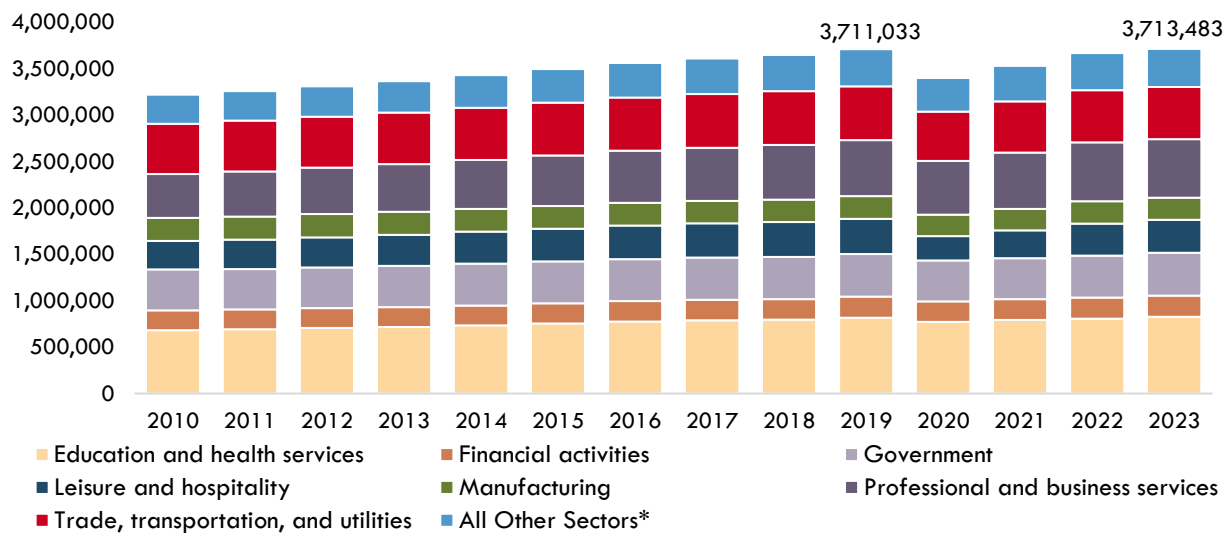
Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW), UMDI analysis.

Note: All Other includes: Utilities; Agriculture, Forestry, Fishing, & Hunting; and Mining, Quarrying, and Oil & Gas Extraction. QCEW divides government jobs between Public Administration (jobs directly related to public programs and governmental bodies) and all other industries where local, state, and federal employment could be categories, i.e. public school teachers will be categorized as Educational Services. Not seasonally adjusted.

Educational services and health care and social assistance have consistently been among the top industries in the state. The clusters of colleges, universities, and teaching hospitals contribute to Massachusetts being a hub for technology and research. Finance and insurance have played an important role in the Massachusetts economy, making up roughly five percent of jobs but contributing eight percent to the state GDP. While sixth in terms of employment in 2023, manufacturing has historically experienced declines. In recent years the decline has slowed considerably, but the Commonwealth’s share of manufacturing employment has remained lower than the share of employment in the United States as a whole.

Looking at Bureau of Labor Statistics supersectors, education and health services, professional and business services, and leisure and hospitality have grown to take the place of manufacturing in driving the Massachusetts economy and now account for almost half of total payroll employment, while financial activities, government, information, and trade, transportation and utilities have remained relatively level or declined in share (Figure 3).

**Figure 3. Annual Average Employment in Massachusetts by NAICS Supersector, 2010-2023**



Source: U.S. Bureau of Labor Statistics, Current Employment Statistics (CES); UMDI analysis. For purposes of analysis, the Bureau of Labor Statistics aggregates NAICS sectors into groupings called supersectors.  
 \*Includes the supersectors: Mining & Natural Resources, Construction, Information, and Other Services.

The COVID-19 pandemic interrupted the trajectory of the state’s economic growth and had short- and long-term ramifications for the state’s economy. Over 690,000 jobs were lost in spring 2020. By the third quarter of 2024, the Commonwealth has recovered the jobs lost during the pandemic; as of September 2024, Massachusetts had nearly the same number of jobs as the February 2020 peak (Figure 4). The growth of professional and technical services during the pandemic occurred during a period when retail trade, other services (which includes equipment repair, laundry and drycleaning, barbershops, and pet care among others), and accommodations and food services all suffered losses in terms of jobs. These generally lower-paying industries remain among the slowest sectors to recover in terms of absolute number of jobs lost and as a share of jobs lost compared to levels prior to the pandemic (Figure 4). The higher paying industries of construction and professional and technical services have both returned to well above their pre-pandemic levels (Figure 4). Since the onset of the pandemic through September 2024, professional and technical services saw the largest gains in employment, this includes growth in scientific research and development services.



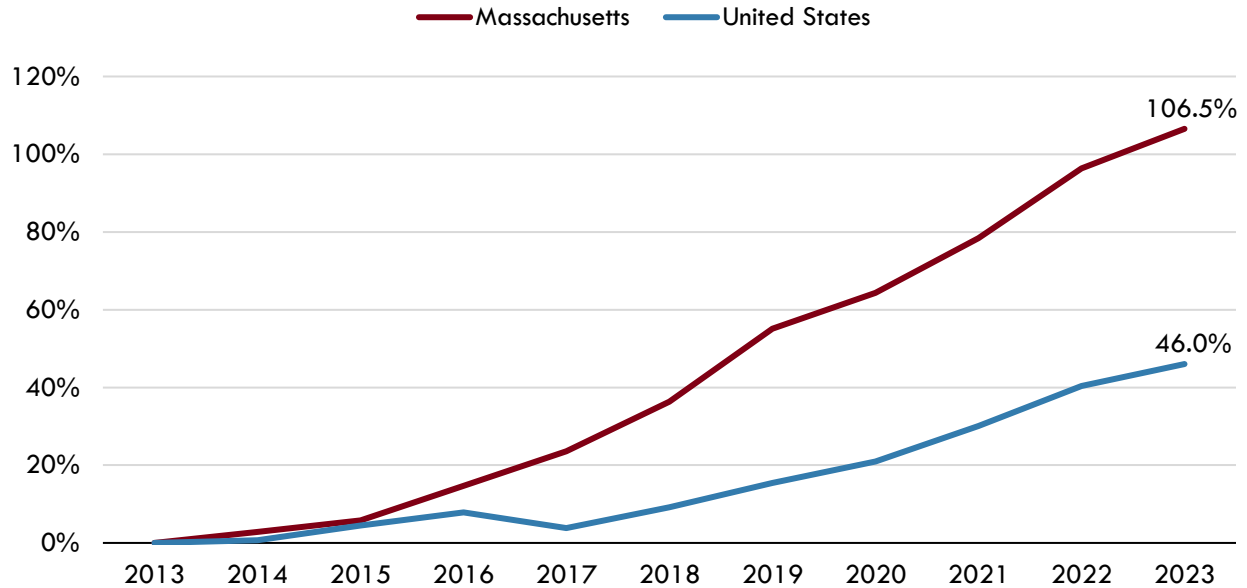
**Figure 4. Jobs Deficit in Massachusetts Relative to February 2020 Peak by 2-Digit NAICS Industry**

Industry	Massachusetts				U.S.
	Feb-20	Sep-24	Change (N)	Change (%)	Change (%)
Accommodation and food services	324	301	(24)	(7.3%)	(0.1%)
Retail trade	350	331	(19)	(5.5%)	1.0%
Manufacturing	243	233	(10)	(4.2%)	1.1%
Information	96	90	(5)	(5.5%)	3.1%
Arts, entertainment, and recreation	63	60	(3)	(5.2%)	7.5%
Management of companies and enterprises	73	73	(1)	(1.1%)	3.3%
Other services	142	142	(1)	(0.4%)	(0.4%)
Mining and logging	1	1	0	0.0%	(6.6%)
Wholesale Trade	123	123	0	0.2%	4.9%
Government	466	466	0	0.0%	2.4%
Real estate and rental and leasing	49	50	1	1.2%	5.7%
Finance and insurance	178	180	2	0.8%	3.8%
Transportation, warehousing and utilities	105	107	2	1.9%	14.3%
Educational services	185	189	4	2.1%	2.3%
Administrative and waste services	185	189	4	2.1%	1.4%
Construction	166	179	13	7.7%	9.0%
Health care and social assistance	646	662	17	2.6%	9.1%
Professional and technical services	351	370	19	5.4%	13.8%
<b>Total nonfarm</b>	<b>3,746</b>	<b>3,744</b>	<b>(2)</b>	<b>(0.06%)</b>	<b>4.5%</b>

Source: Massachusetts Executive Office of Labor and Workforce Development, Current Employment Statistics (CES-790); UMDI analysis

Scientific research and development (R&D) is intensely clustered in Massachusetts compared to the U.S. and has become more concentrated over the past decade. This is true when we look at both jobs in the industry and establishments. The concentration of research universities, hospitals, research institutes, and private companies pursuing advances in biomedical research, life sciences, and other areas of research and development has contributed to the competitiveness of this industry. Over the past decade, employment in this area has nearly doubled in the Commonwealth with roughly 104,000 individuals working in scientific R&D (Figure 5). While these numbers are meaningfully large, they likely understate the significance of the industry in the Massachusetts economy, when considering employment in other industries supports research and development. R&D activity here also constitutes a large portion of national scientific activity: in 2023, more than one in every 10 scientific research and development jobs in the nation were in Massachusetts. This is despite the Commonwealth being home to only one in every 40 jobs overall in the nation. Jobs in scientific R&D pay notably higher wages than average for both Massachusetts and the US.

**Figure 5: Employment Growth in Scientific Research and Development, 2013-2023**



Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages. NAICS Code 5417, Scientific Research and Development Activities

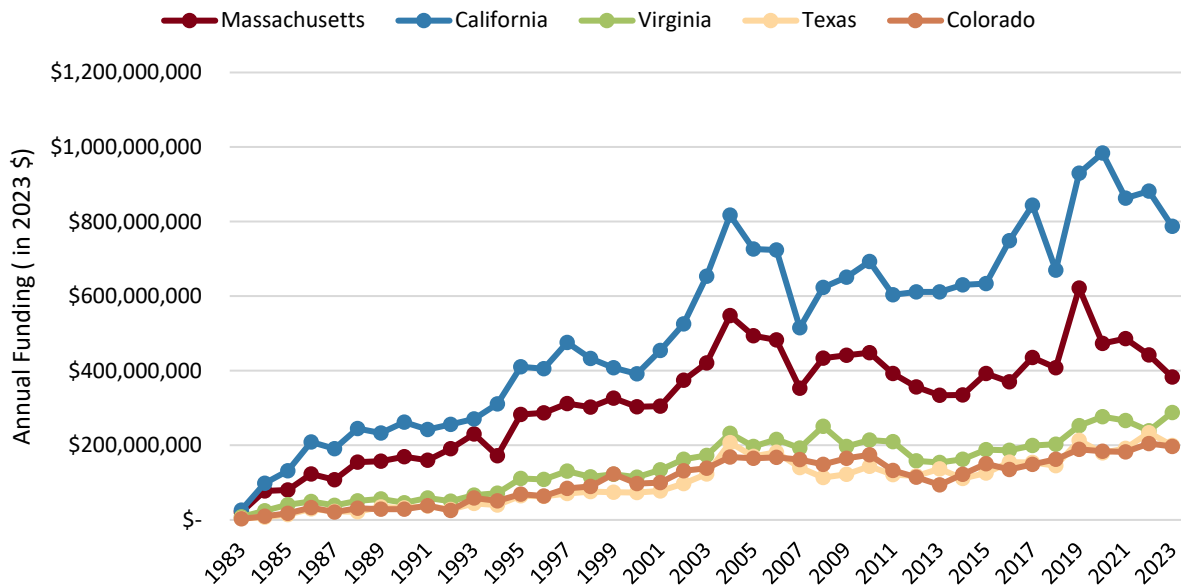
Much of the funding for research and development comes from the federal government. Trends in three prominent sources of this funding, National Institutes of Health, Small Business Administration, and National Science Foundation, illustrate the competitiveness of Massachusetts in research and development.

The National Institutes of Health (NIH) has a budget of over \$47 billion. Over 80 percent of that budget goes towards funding research through competitive grants. Researchers in Massachusetts have been successful at securing NIH awards at consistently high levels. In 2023, Massachusetts researchers were awarded over \$3.5 billion in funding from the NIH, behind only New York and California. When considered on a per capita level, Massachusetts has been first in the nation every year for the last decade. Within Massachusetts the majority of the funding is focused in the Greater Boston area, though Worcester (home of UMass Chan Medical School) and Western Massachusetts (home of UMass Amherst) have also received large shares of grants from the NIH.

Similar to NIH funding, Massachusetts also leads in the US Small Business Administration’s (SBA) innovation-focused programs (Figure 6). The Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs, administered by SBA, are highly competitive award programs that encourage American small businesses to engage in federal R&D with the potential for commercialization. Focused on stimulating high-tech innovation, the purpose of the SBIR/STTR program is tech transfer and to bridge the gap between basic science and commercialization of the resulting innovations for small businesses while meeting federal research needs. Businesses must be owned and located in the US and have less than 500 employees. In addition, for the STTR program, small businesses are required to do at least 40 percent of the research, while formally collaborating with nonprofit research institutions. In FY2023 Massachusetts

organizations and businesses received over \$383 million in SBIR and STTR funding, behind California in total awards, but first in the nation when considered on a per capita basis.

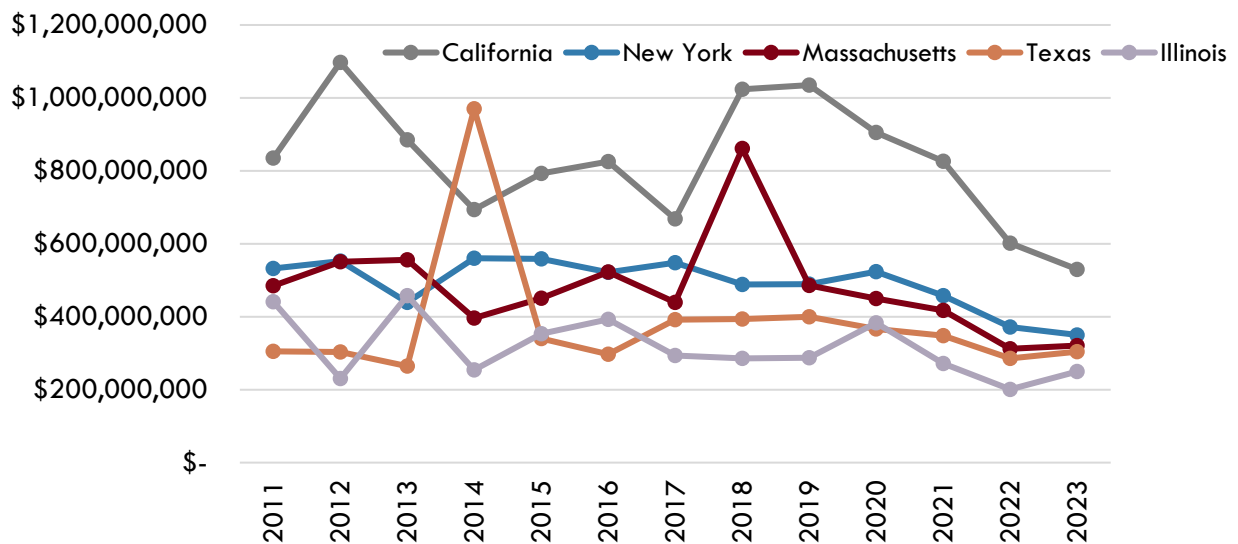
**Figure 6: Annual SBIR and STTR Funding for Top 5 States with Highest Funding in 2023**



Source: Small Business Administration, Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs. Bureau of Labor Statistics Consumer Price Index, All Urban Consumers, U.S. City Average.

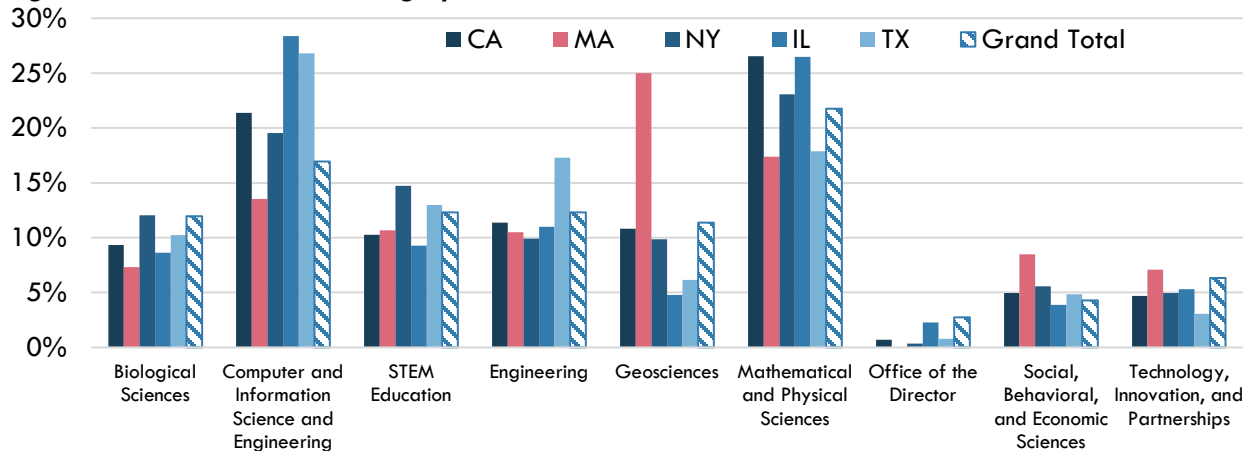
National Science Foundation (NSF) funding is another area where Massachusetts leads, among the top states in terms of overall funding, and first when funding is adjusted to reflect population size. In 2023, Massachusetts researchers were awarded over \$321 million in NSF funding (Figure 7), placing Massachusetts behind California and New York in terms of total funding, but first in the nation on a per capita basis. Within the state, the majority of funding is directed to universities in the Greater Boston area, though Woods Hole Oceanographic Institution on the Cape and University of Massachusetts in Western Massachusetts are consistently among the five top-funded institutions in the Commonwealth. NSF funds research in many disciplines: geosciences, computer and information sciences, and mathematical physical sciences account for more than half of NSF funding in the Commonwealth. Massachusetts is particularly competitive in the field of geosciences and social, behavioral, and economic sciences (Figure 8).

**Figure 7: Annual National Science Foundation Funding for Top 5 States with Highest Funding in 2023**



Source: National Science Foundation. Bureau of Labor Statistics Consumer Price Index, All Urban Consumers, U.S. City Average.

**Figure 8: Percent of State Funding by NSF Directorate for Massachusetts and Peer States, 2023**



Source: National Science Foundation

At nearly \$5 billion dollars in university expenditures in 2022, Massachusetts is among the top states in university research and development spending, and the states whose universities outspend Massachusetts have much larger populations, these include California, New York, Texas, Pennsylvania and Maryland.<sup>1</sup>

<sup>1</sup> The National Center for Science & Engineering Statistics conducts an annual Higher Education R&D survey which solicits responses directly from all universities and colleges that generate at least \$150,000 in R&D expenditures in a year. This survey accounts for R&D funding from all sources, including federal, state, and local governments; businesses and non-profit foundations; and the institution's own funding.

After adjusting for population size, Maryland and Massachusetts' per capita research spending at universities is noticeably higher than all other states in the U.S. Both states are home to large concentrations of urban research institutions.

The investment of federal funding for research may be a driving factor in Massachusetts' standing as leader in terms of patents. In 2020, 8,790 patents were awarded in Massachusetts, among the top five states in the country. California by far has the most, but again Massachusetts was nearly on par with California on a per capita basis.

The Commonwealth has also attracted venture capital funding. Though Greater Boston has been consistently behind San Francisco and Silicon Valley, the region has received similar levels of venture capital funding as the Los Angeles areas, despite that being the second most populous region in the country. In the third quarter of 2024, Greater Boston's venture capital deals totaled \$3.6 billion, compared to \$3.4 billion for the Los Angeles metro. Over several periods in the past ten years, Greater Boston has drawn similar levels of venture capital as the New York metro area, and as recently as the third quarter in 2023, Boston briefly exceeded New York.

Investment in research and development has also attracted talent from around the globe. Over the past two decades H-1B approvals in Massachusetts have increased dramatically, peaking in 2019 at almost 20,000 before retreating to 17,000 in 2020 and 2021 at the height of the COVID-19 Pandemic. Approvals increased in 2022 to nearly 19,000. Over the same period, the number of approvals in Cambridge, Waltham, and Somerville all more than tripled. In 2024, Boston was seventh in the nation among cities for total approved H-1B visas.

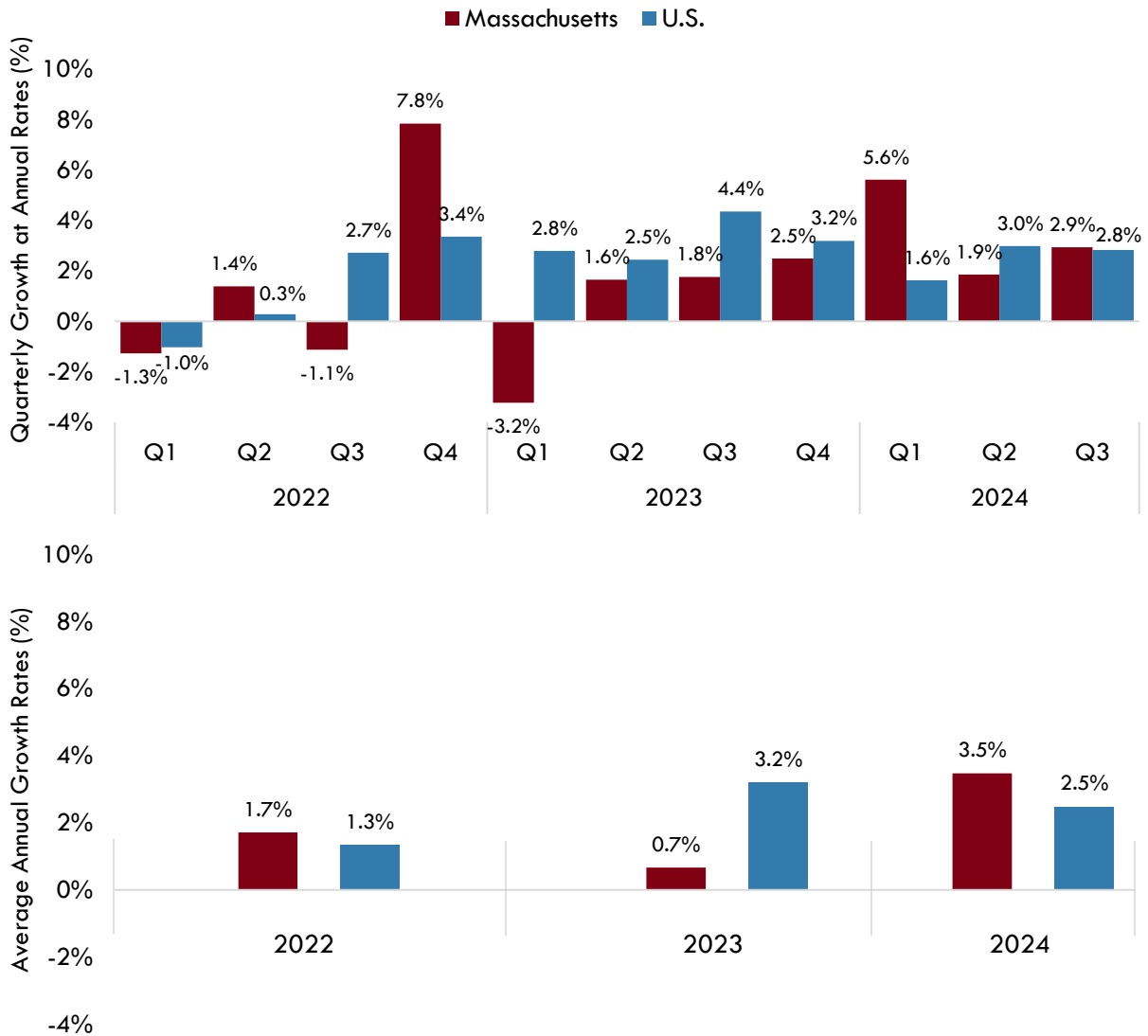
According to MassBenchmarks, the journal of the Massachusetts economy produced by the University of Massachusetts Donahue Institute (UMDI) and Federal Reserve Bank of Boston, in the third quarter of 2024, Massachusetts real gross state product (GDP) increased at an annual rate of 2.9 percent, while U.S. GDP increased at an annual rate of 2.8 percent, according to the U.S. Bureau of Economic Analysis (BEA). According to the BEA, in the second quarter of this year Massachusetts GDP grew at a 1.9 percent annual rate while U.S. GDP grew at a 3.0 percent rate; and in the first quarter Massachusetts GDP grew at an annual rate of 5.6 percent while U.S. GDP grew at a 1.6 percent rate.

Real output of both the Massachusetts and the U.S. economies continued to grow at a healthy rate while at the same time employment growth appears to be decelerating and inflation rates declining, outcomes that are consistent with a "soft landing." A boost in productivity in the third quarter and robust consumer spending – at least at the national level – have been supporting strong GDP growth while labor markets are softening.

Payroll employment growth in Massachusetts in the third quarter was a moderate 0.7 percent at an annual rate, weaker than the 1.1 percent growth for the U.S. This continued a trend of slower employment growth in Massachusetts relative to the U.S. In the second quarter, as state payrolls grew at a 0.5 percent annual rate versus 1.5 percent for the U.S. Relative to the third quarter of last year, payroll employment was up 1.0 percent in Massachusetts versus 1.6 percent for the U.S. The slower employment growth in the state has been partially offset by faster productivity growth, which recently has been running at a quarter of

percentage point higher per year in Massachusetts than the U.S., based on the ratio of GDP to payroll employment.

**Figure 9. Growth in Real Product, Massachusetts and the United States, 2024 Q3**



Source: U.S. Bureau of Economic Analysis, MassBenchmarks calculations by Dr. Alan Clayton-Matthews. U.S. projections from Wall Street Journal. Note: average annual growth is calculated by averaging the four quarters of annual growth rates for the calendar year.

Wage and salary income in Massachusetts appears to have been stagnant in the third quarter. Based on state withholding taxes on personal income, this income declined at a 0.3 percent annualized rate (a nominalized rate – not adjusted for inflation) in the third quarter. In the second quarter, the BEA estimated that state wage and salary income grew at 2.7 percent annualized rate. This growth was substantially slower than that for the U.S. over the same period. For the U.S., the BEA estimates that wage and salary

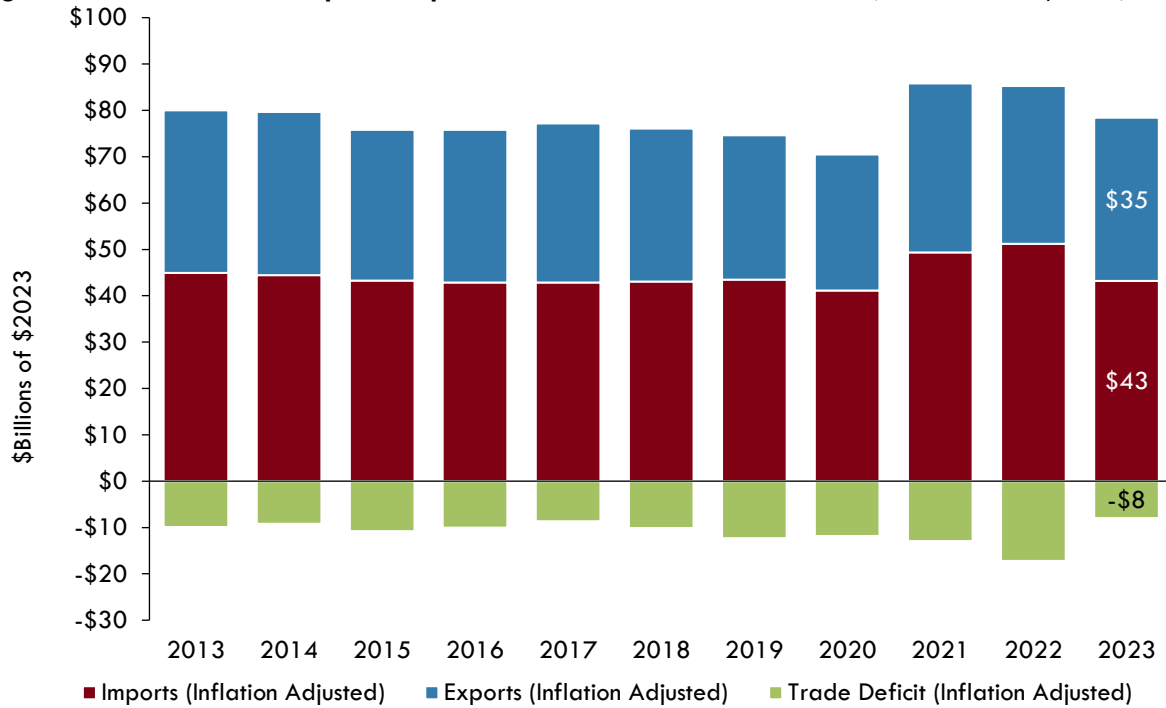
income grew at a 4.9 percent annualized rate in the third quarter and a 6.1 percent rate in the second quarter. It is too soon to make definitive conclusions from these data. State withholding taxes often fluctuate noisily from month to month or quarter to quarter, depending on timing and filing issues. On a year-over-year basis, the difference between Massachusetts and the U.S. is in line with relative rates of employment growth. Relative to the third quarter of last year, the withholding tax-based estimate of wage and salary income growth was up 5.8 percent in Massachusetts versus BLS's estimate of 6.4 percent in the U.S.

The rate of inflation decreased in the third quarter. The CPI-U of the Bureau of Labor Statistics (BLS), which is an index of prices paid by urban consumers, was essentially flat in the third quarter decreasing at a 0.2 percent annual rate in the Boston Metropolitan area and rising at only a 1.2 percent rate for the U.S. region consisting of all metro areas measured. However, for Boston this followed a sharp rate of inflation in the second quarter of 6.2 percent. Relative to the third quarter of last year, prices were up 3.4 percent in Boston and 2.6 percent in the U.S. Core price inflation rates, which exclude food and energy, were higher on a year-over-year basis, up 3.9 percent in Boston from the third quarter of 2023, and up 3.2 percent for the U.S.

The leading index for Massachusetts is projecting that the solid GDP growth in third quarter of this year will continue into the fourth quarter, at an annual rate of 2.8 percent, and then slow to a 1.6 percent annual rate in the first quarter of next year. The average projection of economists who participated in the Wall Street Journal survey of early October is for U.S. GDP growth of 1.7 percent in the fourth quarter and 1.7 percent in the first quarter of next year. Both these projections are consistent with the desired soft landing.

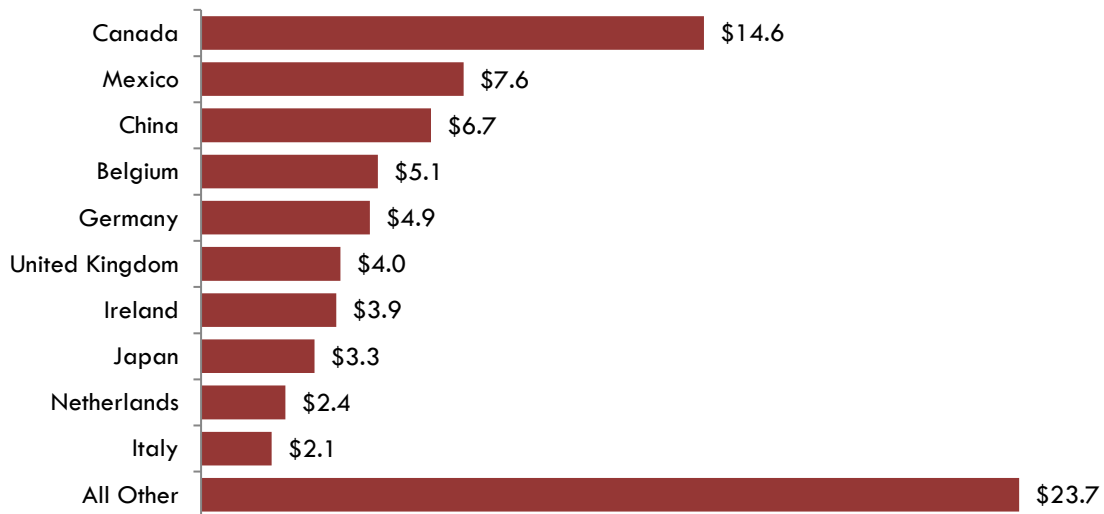
Massachusetts trade has stabilized since the pandemic declines in 2020 and after a large rebound in 2021. The Commonwealth's total trade volume (exports and imports) increased 24.2 percent from 2020-2021 and then fell -6.6 percent from 2021-2022 and subsequently rose 3.5 percent from 2022-2023; the total trade volume was \$78 billion in 2023 (Figure 10). Canada was by far our most valuable trading partner, with a trade volume of \$14.6 billion, 18.6 percent of the total state trade (Figure 11). Massachusetts' trade deficit, \$8 billion, decreased roughly by half from 2022 to 2023. Massachusetts ranked 16th in the U.S. in 2023 and first in New England with \$35.3 billion in exports. This was a 3.5 percent increase from the previous year's export value, while national exports decreased by 6.2 percent and total exports from New England were little changed, down by 0.2 percent (Figure 12). Belgium and China were our top two export destinations in 2023 with \$4.8 and \$3.3 billion each, respectively. Belgium is notable on this, as Massachusetts only exported \$784 million to the country in 2022. This change seems primarily driven by a roughly \$4 billion increase in pharmaceutical products export to Belgium between 2022 and 2023. Future data will show whether this is the start of a new trend or a one-year outlier. Imports decreased 15.7 percent year-over-year to \$43.2 billion in 2023. Canada was the largest source for Massachusetts imports in 2023, from which we imported \$11.3 billion, or 26.2 percent, of our total.

**Figure 10. Massachusetts Imports, Exports, and Trade Deficit, 2013-2023 (in Billions of \$2023)**



Source: WISERTrade.org; UMDI analysis

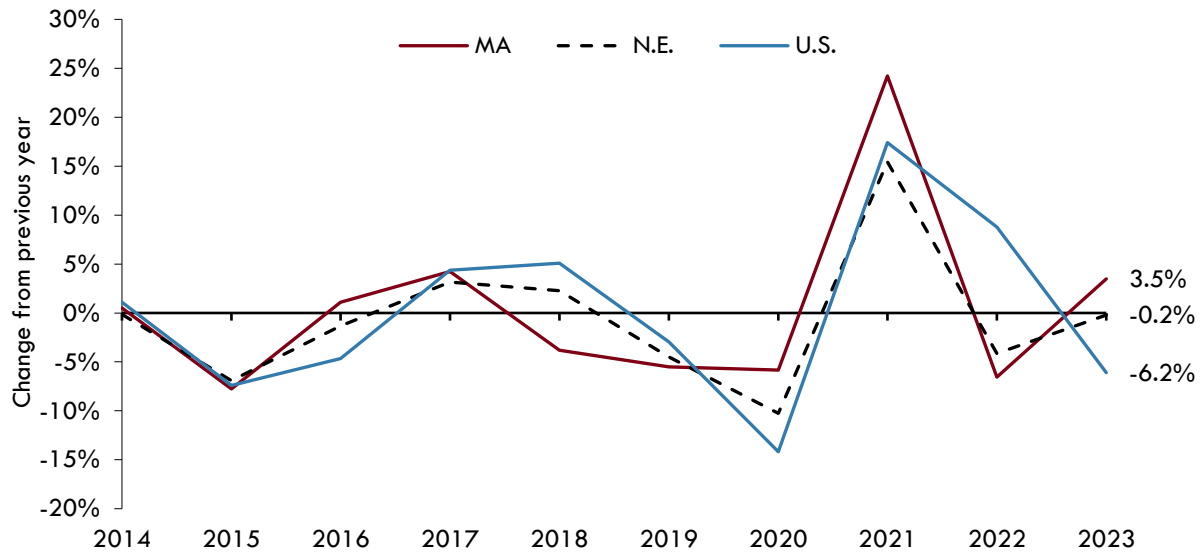
**Figure 11. Massachusetts Top 10 Trade Partners in 2023 (in Billions of \$2023)**



Source: WISERTrade.org; UMDI analysis



Figure 12. Export Growth for Massachusetts, the United States, and New England, 2014-2023

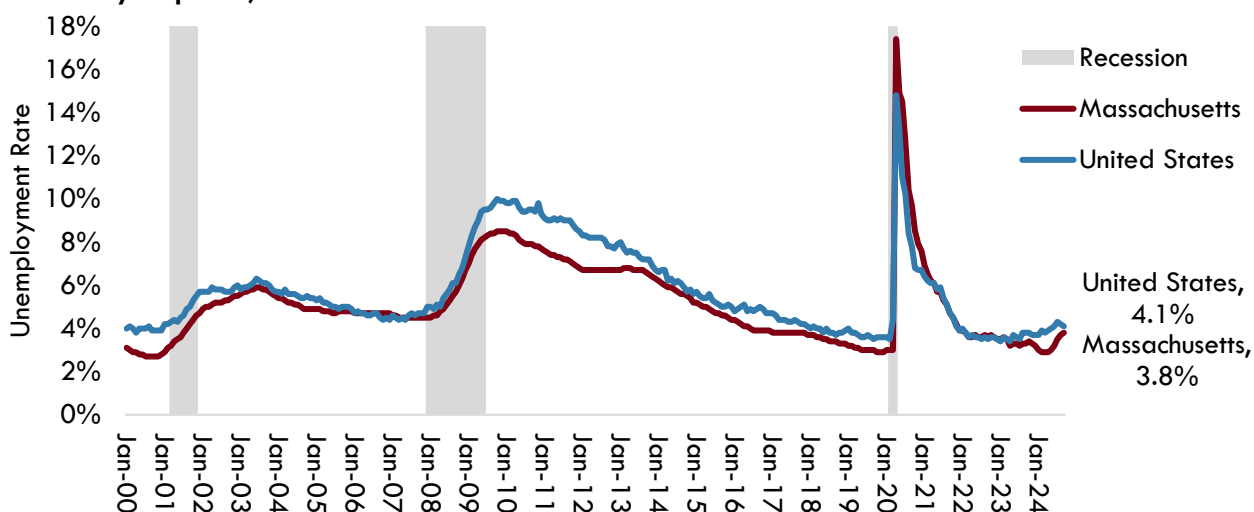


Source: WISERTrade.org; UMDI analysis

## Workforce

In recent history, the Massachusetts economy has generally outperformed the U.S., with the state unemployment rate typically below the nation. This was especially the case during and the period following the Great Recession. The Commonwealth's mix of knowledge-based industries and well-educated workforce led to high levels of labor force participation and low levels of unemployment in the state overall. The tightness of the current labor market is reflected in the unemployment rate, which has recently reached historically low levels. Unemployment rates in Massachusetts have continued to be lower than in the U.S., although the gap has narrowed. The headline (U-3) unemployment rate for Massachusetts in September 2024 was 3.8 percent, up from 3.2 percent in June and from 3.3 percent in September 2023. The headline unemployment rate for the U.S. was 4.1 percent in September 2024, unchanged from June and up from 3.8 percent in September of 2023 (Figure 13). Initial unemployment claims, as measured by the number of persons receiving a first week of payments, fell markedly in the second quarter by a third to a near-historic low.

**Figure 13. Unemployment Rates in Massachusetts and the United States as of September 2024 (Seasonally Adjusted)**



Source: Massachusetts Executive Office of Labor and Workforce Development, Local Area Unemployment (LAU) Statistics; UMDI analysis

The U-6 unemployed rate, which counts as unemployed part-time workers who want full-time jobs and workers who have not looked in the past four weeks but who sought work in the past year, followed a similar pattern. The U-6 rate was 7.4 percent in Massachusetts in September, up from 7.2 percent in June and 6.1 percent in September 2023. For the U.S., the U-6 rate in September was 7.7 percent, up from 7.4 percent in June and 7.0 percent in September 2023.

The reason that these unemployment rates rose more in Massachusetts than the U.S. does not appear to be due a more rapidly weakening labor market, but rather to a faster growing labor force in Massachusetts in recent quarters – a “healthy” rise in the unemployment rate that allows more room for employment

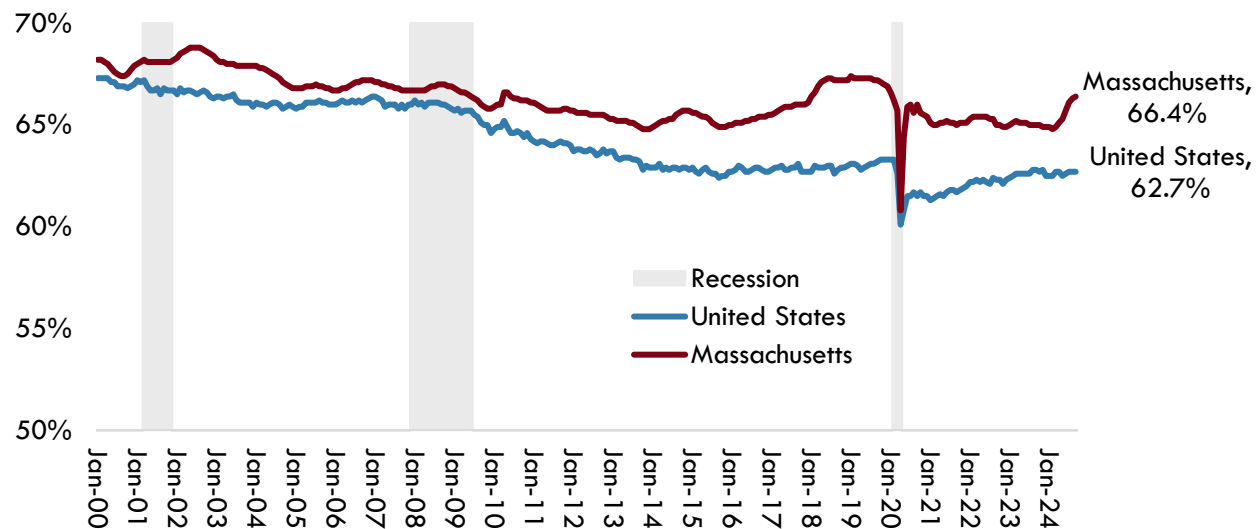
growth. The size of the labor force had remained relatively stable since Fall 2020 through early 2024 (Figure 14). Since March 2024, the labor force has increased by 93,000, or 2.5 percent. At the same time, Massachusetts has consistently maintained higher rates of labor force participation than the U.S.; the difference had narrowed considerably until the recent increase in the Massachusetts labor force. The labor force participation rate rose from 64.9 percent in March to 66.4 percent in September 2024. In September 2023, the state’s labor force participation rate was 65 percent. (Figure 15). The rate is up and approaching the pre-pandemic level of 66.6 percent in January 2020.

**Figure 14. Massachusetts Labor Force, January 2000-September 2024 (Seasonally Adjusted)**



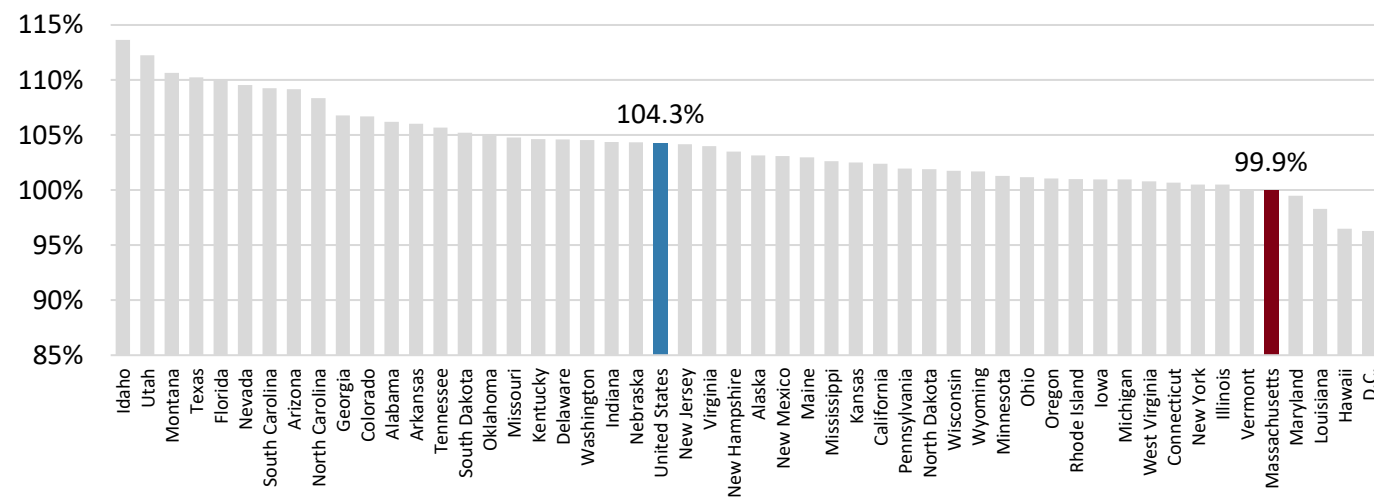
Source: Massachusetts Executive Office of Labor and Workforce Development, Local Area Unemployment (LAU) Statistics; UMDI analysis

**Figure 15. Labor Force Participation Rates in Massachusetts and the United States, January 2000-September 2024 (Seasonally Adjusted)**



Source: Massachusetts Executive Office of Labor and Workforce Development, Local Area Unemployment (LAU) Statistics; UMDI analysis

**Figure 16. Job recovery rates in Massachusetts and all states, February 2020 and September 2024 (Seasonally adjusted)**

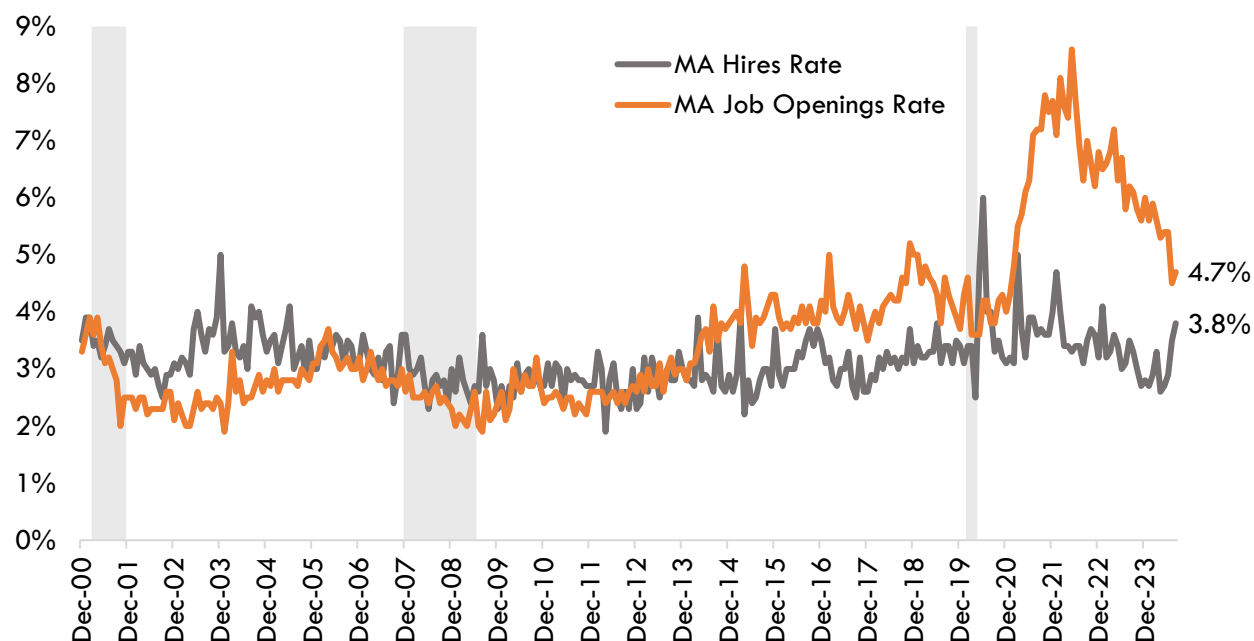


Source: Massachusetts Executive Office of Labor and Workforce Development, Current Employment Statistics (CES-790); UMDI analysis

As of September 2024, jobs in Massachusetts have mostly recovered to their pre-pandemic levels, but the recovery has been slower than in many states (Figure 16).<sup>2</sup>

The labor market is changing from the era of post-pandemic “Big Quit” when a combination of uneven job losses and recovery, and an overall decline in the total labor force size led to hiring and staffing challenges for employers. The gap between Massachusetts job openings and hire rates is still greater than it was before the pandemic but shrinking (Figure 17). The ongoing gap between job openings and hires in the state supports the narrative that employers are having a hard time filling current openings.

**Figure 17. Job openings rate and hire rate in Massachusetts, December 2000 – August 2024 (Seasonally adjusted)**

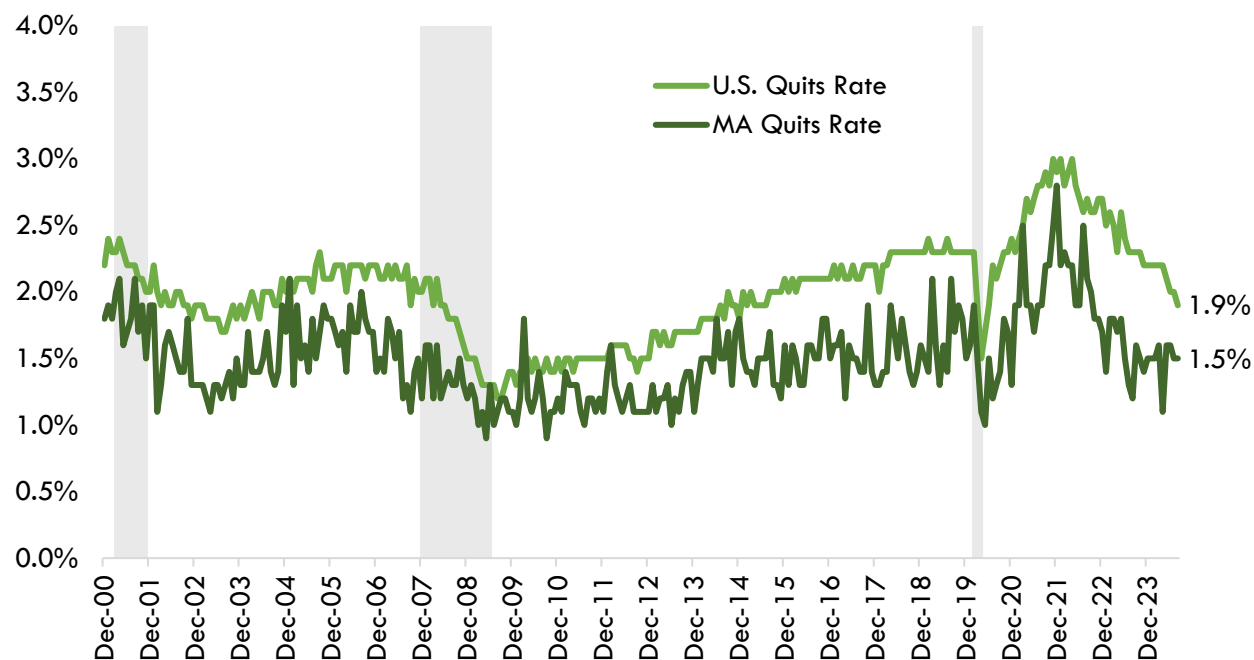


Source: U.S. Bureau of Labor Statistics, Job Openings and Labor Turnover Survey (JOLTS); UMDI analysis

At the same time the spike in voluntary job changes has subsided (Figure 18). The monthly job quit rate for Massachusetts and the U.S. have returned to pre-pandemic rates. As one would expect, quits tend to go down during recessionary periods in the economy and increase when labor demand is stronger. The quit rate for the U.S. tends to be a bit higher than Massachusetts historically. This is likely due to the high education attainment of Massachusetts workers coupled with the state’s industry mix.

**Figure 18. Job quits rate in Massachusetts and the United States, December 2000 – August 2024 (Seasonally adjusted)**

<sup>2</sup> Note the BLS issues revisions to its state employment figures in March of every year. March 2024 revisions significantly changed estimates of Massachusetts jobs recovery rates. This revisions extended back to 2019 and covered the period of the pandemic.



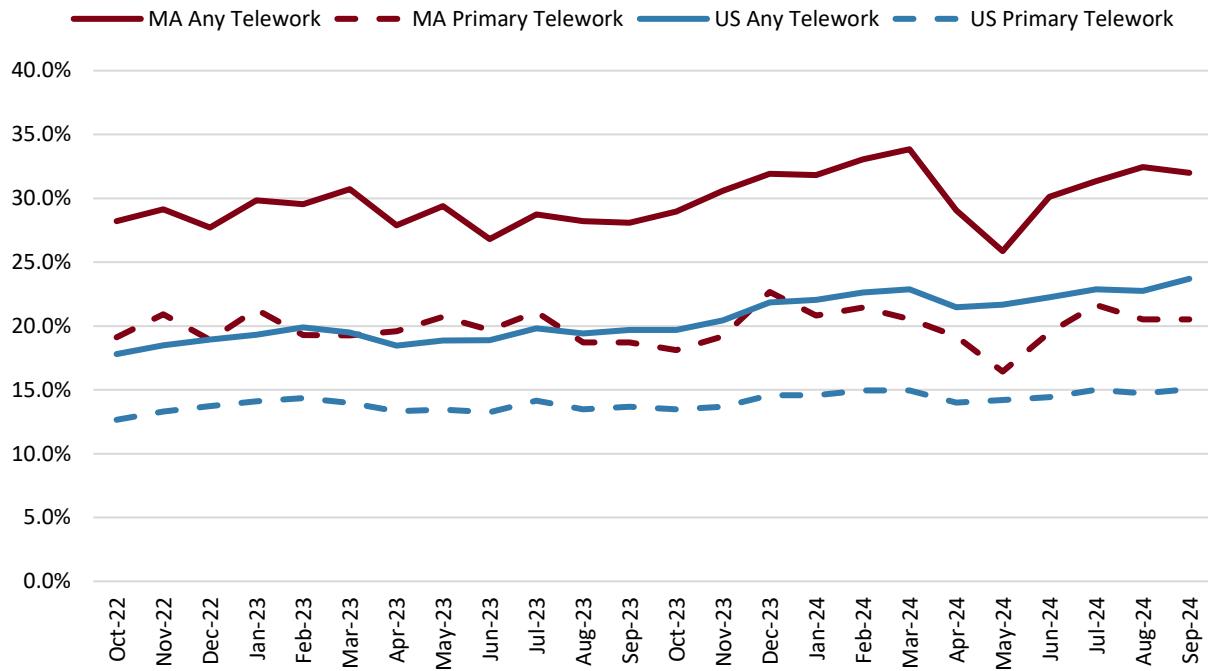
Source: U.S. Bureau of Labor Statistics, Job Openings and Labor Turnover Survey (JOLTS); UMDI analysis

Competition for workers in a tight labor market has led to wage increases across the Massachusetts economy. According to the BLS, year-over-year wages increased 11 percent from 2019 to 2020 and five percent from 2020 to 2021. In contrast, wage growth from 2021 to 2022 moderated to 2.3 percent, and only 0.7 percent between the fourth quarter of 2022 to the fourth quarter of 2023. Despite the wage gains experienced by many workers in the economic recovery period, those gains have largely failed to keep up with the rate of inflation, leading to households having reduced spending power, despite any wage gains experienced over the economic recovery period.

One way the pandemic appears to have permanently altered the workforce is by increasing the prevalence of teleworking. Prior to the pandemic the technology to work remotely existed, however uptake among firms was limited. Then nearly overnight in March 2020 employers and employees across industries and occupations were forced to adopt new ways of doing business and working. Analysis of American Community Survey data on commuting patterns estimate that in 2019 less than six percent of working adults worked from home in the week prior to responding to the survey. In contrast in 2022, 18 percent of respondents in Massachusetts reported working from home, three times the rate prior to the pandemic, but down from 2021. While the share of workers primarily working from home has declined since 2020, telework, remote work, hybrid work, and flexible schedules are unlikely to return to pre-pandemic levels. Nearly one in three employees in Massachusetts reported working remotely at least some of the time since the U.S. Census Current Population Survey incorporated remote work into their questionnaire in October 2022 (Figure 19). The embrace of remote and hybrid work has implications for employers, employees, businesses that cater to commuters in downtowns, and regions centered on dense urban cores.

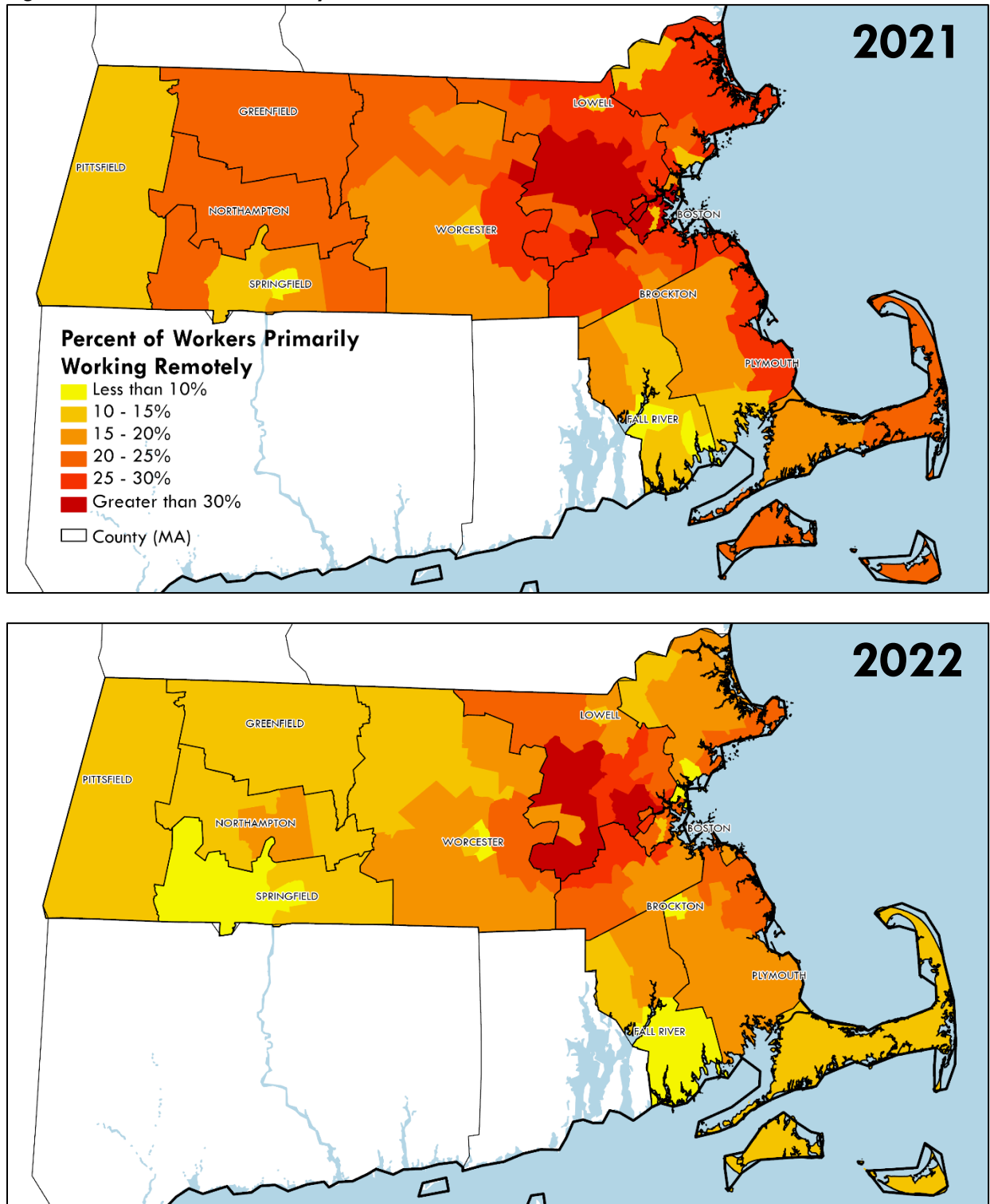
Throughout the nation and the Commonwealth rates of telework vary geographically. Massachusetts has higher rates of teleworking than the nation. Over 30 percent of workers in Massachusetts are working remotely at least part of the time and 20 percent are working from home primarily (Figure 19). While rates of remote work have declined somewhat since 2021 in the state, teleworking remains concentrated in the suburbs just west of Boston (Figure 20).

**Figure 19: Rate of Telework (all teleworkers and primary teleworkers) in Massachusetts and United States, 2022-2024**



Source: U.S. Census Bureau, Current Population Survey Microdata Massachusetts

Figure 20: Remote Work Rates by Public Use Microdata Areas in Massachusetts, 2021 and 2022

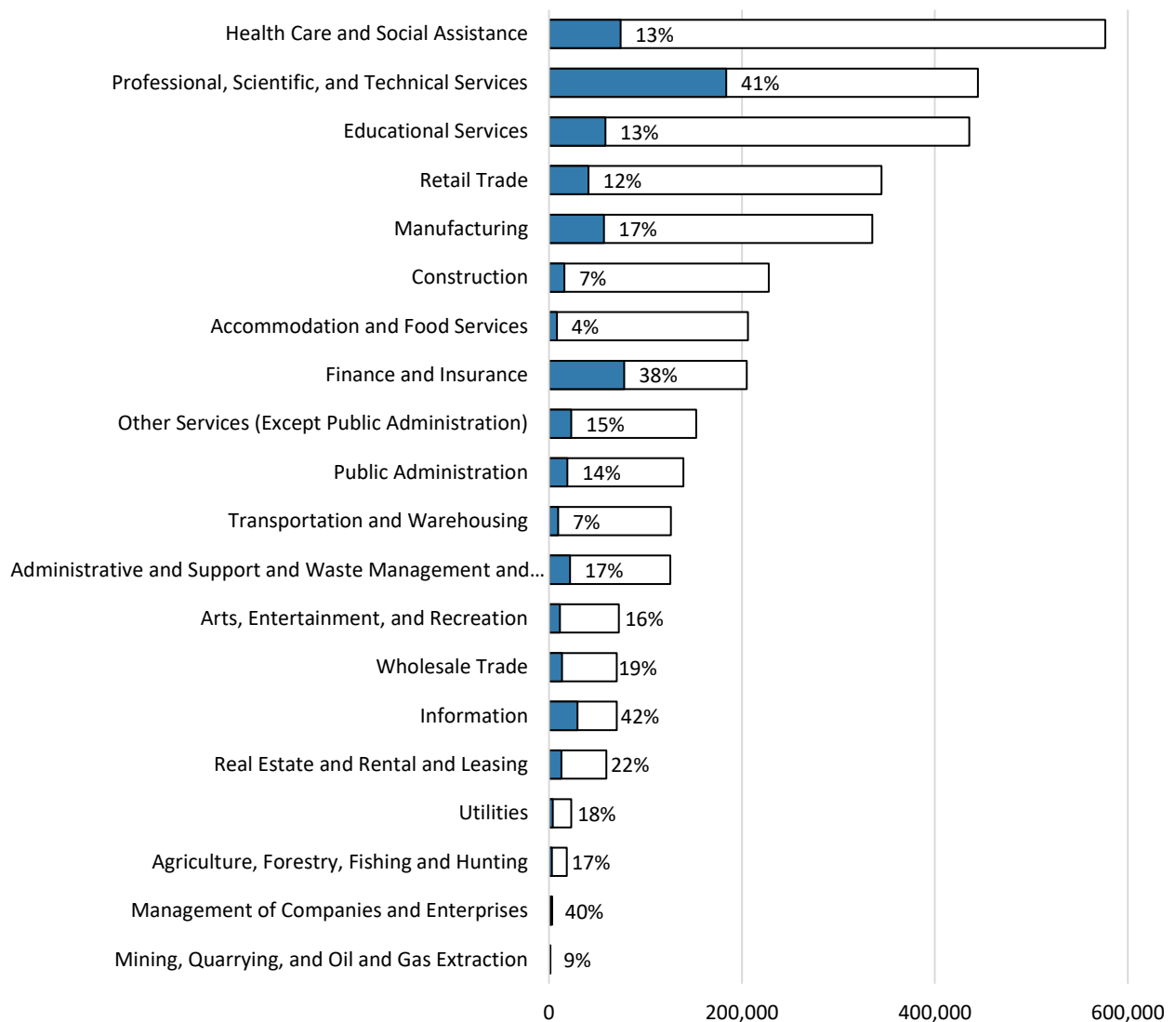


Source: U.S. Census American Community Survey Microdata via IPUMS. Calculations by UMDI.



Teleworking is also concentrated in certain industries: information, professional, scientific and technical services, finance and insurance, and management are all above the state average in terms of telework (Figure 21). Related to the industries where remote work is concentrated, it is not surprising that the advantages of flexible work arrangements are disproportionately accruing to workers who are relatively well-off. Remote workers are more likely to be college educated; more likely to be white or AAPI; and more likely to be high-wage earners. They are slightly more likely to be native born, to have children under the age of 18 in their household, and 35-44 years old.

**Figure 21: Remote Work Rates by Industry in Massachusetts, 2022**



Source: U.S. Census American Community Survey Microdata via IPUMS. Calculations by UMDI.

For employers, remote work offers advantages and disadvantages. Remote work or hybrid work is an amenity for many workers, so offering flexibility means that businesses may have an easier time attracting

workers. If employees only work in person once or twice a week or are completely remote, they can potentially live farther from the office, and the employer can search for new workers in a wider labor pool. Businesses that employ more remote or hybrid workers do not need to maintain as much physical office space and can save money on downtown office building leases. The productivity implications of a workforce that is primarily or partially working from home are still unclear and may depend on industry and other factors. It is also unknown to what extent remote and hybrid work will impact downtowns and office parks. Commercial real estate markets have been strained by the rise in vacancies and interest rate. While some see the potential to transform commercial real estate into much needed housing, the feasibility of such transformations in the short-term is limited. The decline in commercial real estate markets could have negative impacts on Boston's and other cities' revenues. Long-term declines in office space values could lead to revenue shortfalls in the future, which may in turn impact city services.

In addition to upending the labor market, the pandemic has had lasting impacts on transportation in the Commonwealth. Transportation and mobility are essential to the economy and workforce. On one side, the industry sectors – transportation, warehousing, and wholesale trade – are indicative of the activities related to the movement of people and freight in Massachusetts and can be measured by jobs and contribution to the state's GDP. On the other side, indicators like congestion levels, vehicle miles traveled (VMT), public transit ridership, and air passengers have traditionally served as proxy measures of how the economy is performing. It remains to be seen to what extent employees will resume commuting to work and how the relationship between mobility and employment will evolve.

For many workers the transition to remote or hybrid work has been beneficial as it reduced or eliminated commuting. Leading up to the pandemic, the delays that Massachusetts drivers faced for their commutes had risen dramatically. The typical driver in Boston sat in traffic for nearly 90 hours per year as compared to just over 30 in the early 1980s. Nationally, the Boston urban area has consistently ranked among the highest in the nation in terms of annual hours of delay and Boston's traffic congestion has outpaced other areas of the Commonwealth for this period, at times more than doubling the hours of delay incurred by Worcester or Springfield area drivers. All areas of the state saw unprecedented declines in 2020 as overall travel declined due to the COVID-19 pandemic.

Freeway daily vehicle miles traveled (VMT) throughout the three most populous regions of the state thoroughly outpaced population growth for the period of 1982-2019, increasing roughly 120 percent for the Boston, Springfield, and Worcester urban areas, regardless of the varying changes in population growth that each area experienced. This points potentially to statewide changes in driving behavior (e.g., more cars taking more and longer-distance trips) independent of population growth as well as land use patterns potentially favoring vehicle-focused types of development. Traffic volumes across the state have largely reversed and almost fully recovered from the significant dip in VMT that occurred in 2020 due to the pandemic, with average weekday and weekend VMT in September 2024 hovering between 85-115 percent of their pre-pandemic September 2019 levels.<sup>3</sup>

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<sup>3</sup> Massachusetts Department of Transportation Mobility Dashboard, Average Traffic Volumes at Select Count Locations. <https://mobility-massdot.hub.arcgis.com/>

In contrast to daily VMT, total public transit ridership has lagged the economic recovery in Massachusetts following the beginning of the COVID-19 pandemic in spring 2020 (Figure 22). Immediately following the emergence of COVID-19 and subsequent “stay at home” orders, transit authorities uniformly experienced a sharp decline in ridership. Total public transit ridership across the state has since started recovering, showing signs of seasonal variation with dips in the winters and relative peaks in summers.

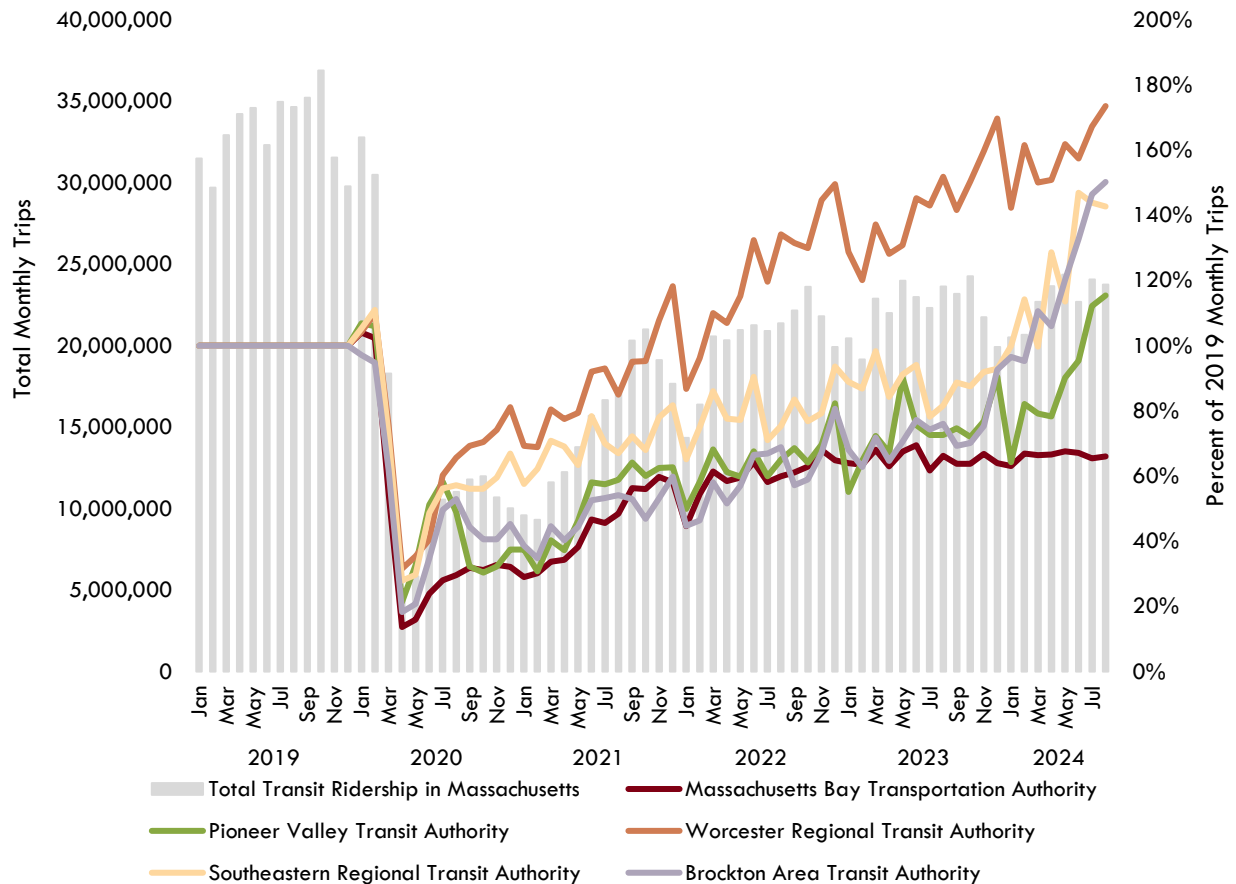
The Massachusetts Bay Transportation Authority (MBTA) and the Commonwealth’s regional transit authorities (RTAs) have seen highly variable rates of recovery. Among the top five largest transit authorities in the state measured by February 2020 ridership, the four RTAs have exceeded pre-pandemic ridership and are experiencing strong ridership growth especially over the course of 2024. The Worcester RTA was among the first RTAs to suspend fare collection on its buses since the beginning of the pandemic, and this is one possible explanation for why the region has consistently had the state’s best ridership recovery overall. Various funding was made available through 2023 and 2024 to extend fare free transit in Worcester and other regions of the state. The Fiscal Year 2025 state budget includes funding to allow all of Massachusetts’s Regional Transit Authorities to offer fare-free services.<sup>4</sup> The MBTA, however, has experienced relatively little ridership growth over the past several years.

Industry mix may explain some variation in ridership recovery across the Commonwealth as well. Worcester, with its emphasis on health care jobs, likely has many commuters who must still travel to their place of work. Boston, on the other hand, has a greater share of financial, tech, and professional services jobs - employees who are much more likely to work from home at least part of the time. Incomes may play a role as well. Low-income residents of Worcester may still rely on buses, whereas the MBTA serves different income groups across its commuter rail, rapid transit rail lines, and bus network. High-income workers may be less likely to return to transit if they have easier access to a personal vehicle.

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<sup>4</sup> MassBudget, “2025 Massachusetts Budget Showcases Accomplishments of Fair Share Amendment”. July 29, 2024. <https://massbudget.org/2024/07/29/fy2025-budget-showcases-fsa/>

**Figure 22. Monthly Transit Ridership, 2019-2024**



Source: National Transit Database. Note: total ridership is the sum of MBTA and Regional Transit Authority ridership per month. Top five transit authority by February 2020 ridership are shown as a share of their monthly ridership relative to the comparable month in 2019, e.g. September 2020 / September 2019.

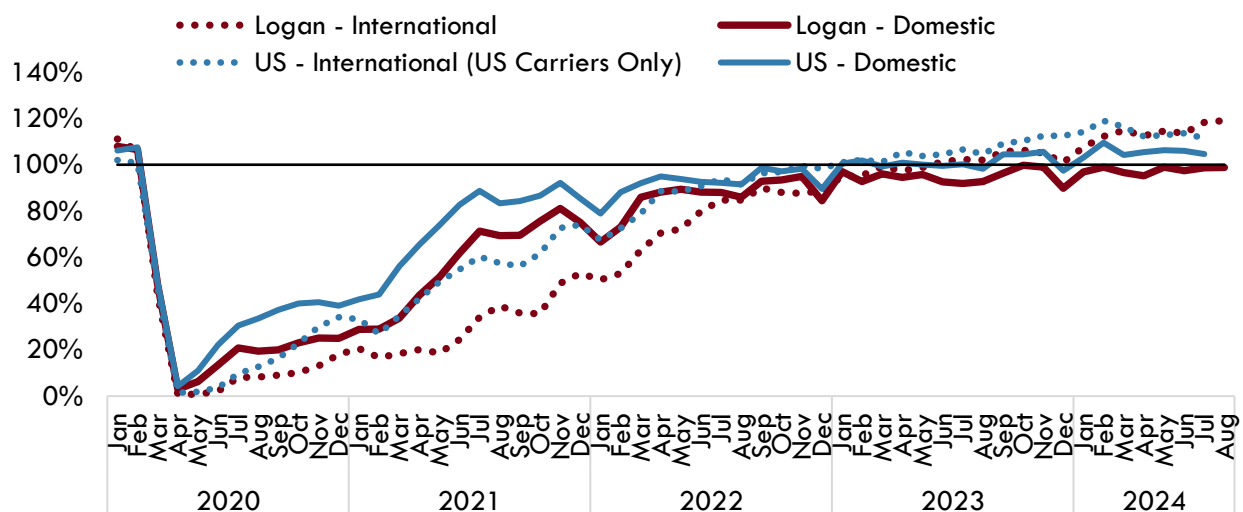
Public transportation continues to make progress in Massachusetts but still faces delays and headwinds. The MBTA over the past year has pursued repairs to its subway infrastructure through its Track Improvement Program, which plans to remove all slow zones from the system by the end of 2024. However, the scheme to expand Commuter Rail service to New Bedford and Fall River, both Gateway Cities, through the South Coast Rail project has been delayed to May 2025. In October 2023, the Massachusetts Department of Transportation released details on Compass Rail, an initiative that combines East-West Rail, a plan to connect Boston, Worcester, Springfield, and Pittsfield by passenger rail, with improvements in other rail routes particularly in Western Mass.<sup>5</sup> The effects of these expansion and redesign plans remain to be seen considering the uncertainty of future travel patterns from the pandemic.

<sup>5</sup> Compass Rail: Passenger Rail for the Commonwealth. October 18, 2023. <https://www.mass.gov/doc/compass-rail-passenger-rail-for-the-commonwealth-presentation-to-the-board-on-october-18-2023/download>

Logan International Airport, like the state’s transit agencies, logged a significant decline in passenger volume in 2020 and 2021 below record numbers seen in 2019 (Figure 23). After reaching over 42 million domestic and international passengers in the calendar year before the COVID-19 pandemic, passenger volumes collapsed to less than 13 million in 2020. Many air carriers expanded service to Asian, European, Middle Eastern, South American, and African destinations from Logan during the 2010s, but with the onset of COVID-19 and its travel restrictions, international passenger volumes were still only a fraction of the 2019 peak.

Logan initially lagged the U.S. overall in passenger recovery throughout 2020 and 2021 for both domestic flights and international flights carried out by U.S. carriers. Throughout 2022, resumption in overseas service and resurgent domestic travel helped passenger levels at Logan and across the country to continue their recovery. By July 2024, domestic passenger recovery was within 6 percentage points of the U.S. and international passenger growth at Logan exceeded that of the US compared to pre-pandemic levels. As a global hub of education, technology, finance, medicine, and tourism, Massachusetts benefits from higher service levels and the passengers they bring into the state via Logan Airport.

**Figure 23. Logan Airport and U.S. Monthly Passenger Volumes through 2024 as a Percent of 2019**



Source: MassPort; Bureau of Transportation Statistics, T-100 Domestic & International Market Note: U.S. International passenger data are from U.S. carriers only.

In late June 2023, the Healey-Driscoll Administration released the FY24 – FY28 Capital Investment Plan (CIP).<sup>6</sup> This document, in addition to the MassDOT and MBTA CIPs, as well as those from Massachusetts Municipal Planning Organizations (MPOs) steer significant funding toward transportation priorities in the Commonwealth. The Commonwealth’s CIP includes a commitment to replacing the aging Cape Cod Bridges

<sup>6</sup> *Five-Year Capital Investment Plan FY2024–FY2028*. (2023). Commonwealth of Massachusetts Executive Office for Administration and Finance. <https://budget.digital.mass.gov/capital/fy24/static/1475dce8ff3a8e8167606105e8acb94f/fy24capitalplanma.pdf>

as well as funding repair and modernization efforts at the MBTA and building out electric vehicle charging facilities across the state, in addition to many other projects.

## Environment

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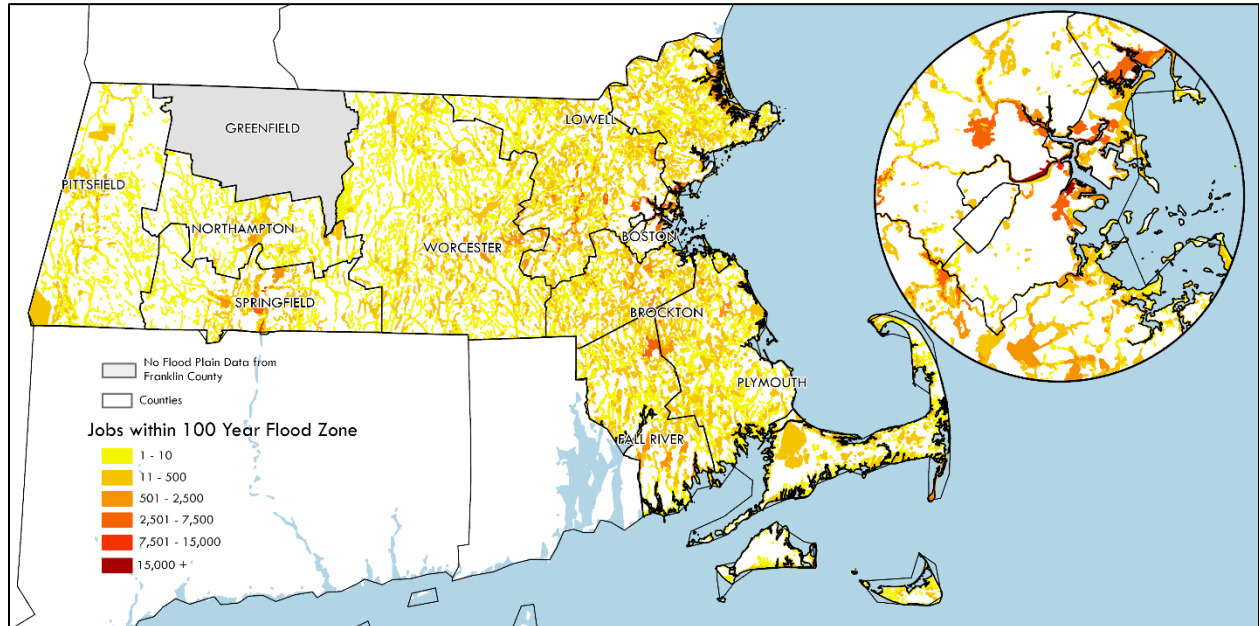
Massachusetts faces diverse risks related to climate change that will have broad economic impacts, depending on the extent to which adaptive measures are taken, at the state, national, and global levels. The threat posed by sea-level rise is of particular concern in Massachusetts because so much of the state's economic activity is concentrated along the coast, where the effects of climate change are already being felt. For example, in Boston the average number of flood days per year has increased from 2.8 days during the 1950s and 1960s to 13.8 days from 2010 through 2020. Furthermore, the 2022 Sea Level Rise Technical Report released by the National Oceanic and Atmospheric Administration estimated that sea levels along the East Coast will rise by 10-14 inches by 2050. The impact of coastal alteration, larger storm surges, and greater storm damage may be acutely felt where economic activity and residents are clustered. In 2021, approximately 620,000 jobs in Massachusetts were located in 100-year flood plains (Figure 24).<sup>7</sup> Considering the economic recovery that has since occurred of jobs lost during the pandemic, the number of jobs in flood zones in 2024 is most certainly greater than this. With rising sea levels, flooding in these areas is likely to be more frequent and intense. The summer of 2023 illustrated that flooding can occur far from the coast, as Central and Western Massachusetts experienced flooding that endangered residents and resulted in the loss of crops. Hurricanes are expected to threaten the East Coast more frequently.<sup>8</sup> The number of jobs potentially effected by hurricanes is significant in Massachusetts. There are almost 800,000 jobs in areas designated by the Army Corps of engineers as being in hurricane inundation zones (Figure 25).

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<sup>7</sup> This estimate excludes jobs located in Franklin County because flood maps for Franklin County were not available.

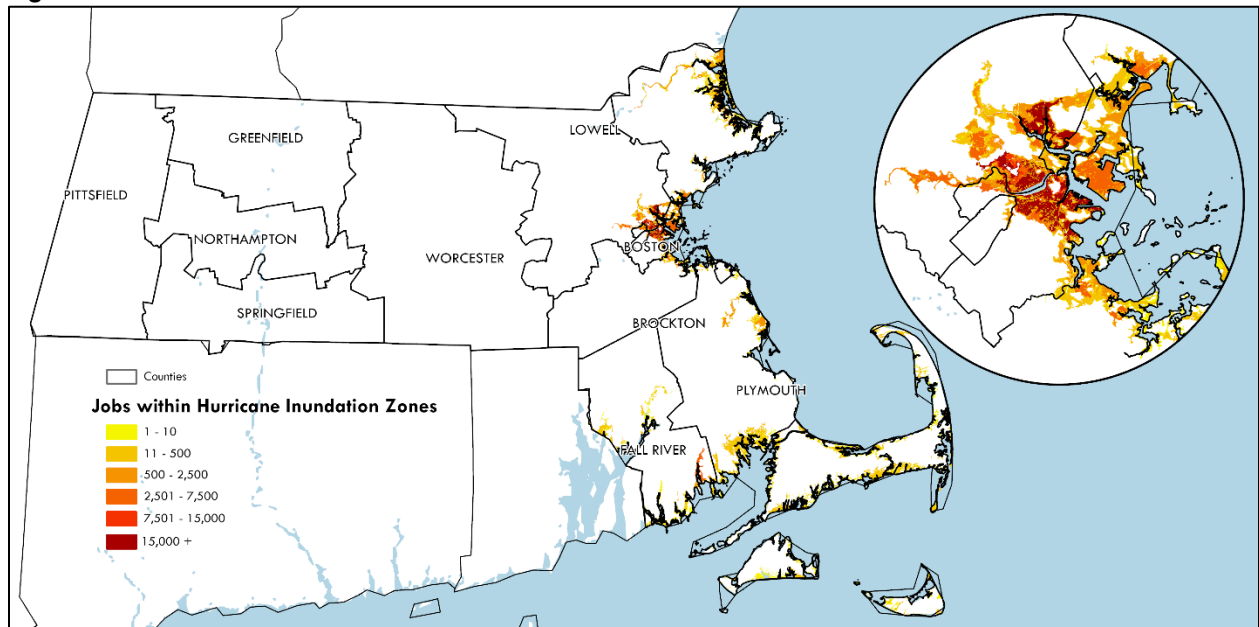
<sup>8</sup> Gori, A., Lin, N., Xi, D. *et al.* Tropical cyclone climatology change greatly exacerbates U.S. extreme rainfall–surge hazard. *Nat. Clim. Chang.* 12, 171–178 (2022). <https://doi.org/10.1038/s41558-021-01272-7>

**Figure 24. Jobs Located in 100-Year Flood Zones**



Source: FEMA National Flood Hazard Layer via MA GIS, U.S. Census Bureau 2021 LODES data on Total Jobs; UMDI analysis  
 Note: Counts of jobs in this table represent jobs in Census Blocks or parts of blocks that intersect or are fully contained within areas designated as 100 Year Flood Zones by FEMA and assumes an even distribution of jobs in those blocks. FEMA's current national flood hazard layer does not contain finalized flood data for Berkshire, Franklin or Hampshire counties; data from the previous flood map was used for Berkshire and Hampshire counties. Data for Franklin County was not available.

**Figure 25. Jobs Located in Hurricane Inundation Zones**



Source: U.S. Army Corps of Engineers Hurricane Surge Inundation Zones via MA GIS, U.S. Census Bureau 2021 LODES data on Total Jobs, Analysis by the Donahue Institute



There are also risks associated with rising temperatures. According to the 2022 National Oceanic and Atmospheric Administration National Centers for Environmental Information State Climate Summaries temperatures in Massachusetts have risen by 3.5 degrees Fahrenheit since the beginning of the 20<sup>th</sup> century and are predicted to continue to rise to historically unprecedented levels.

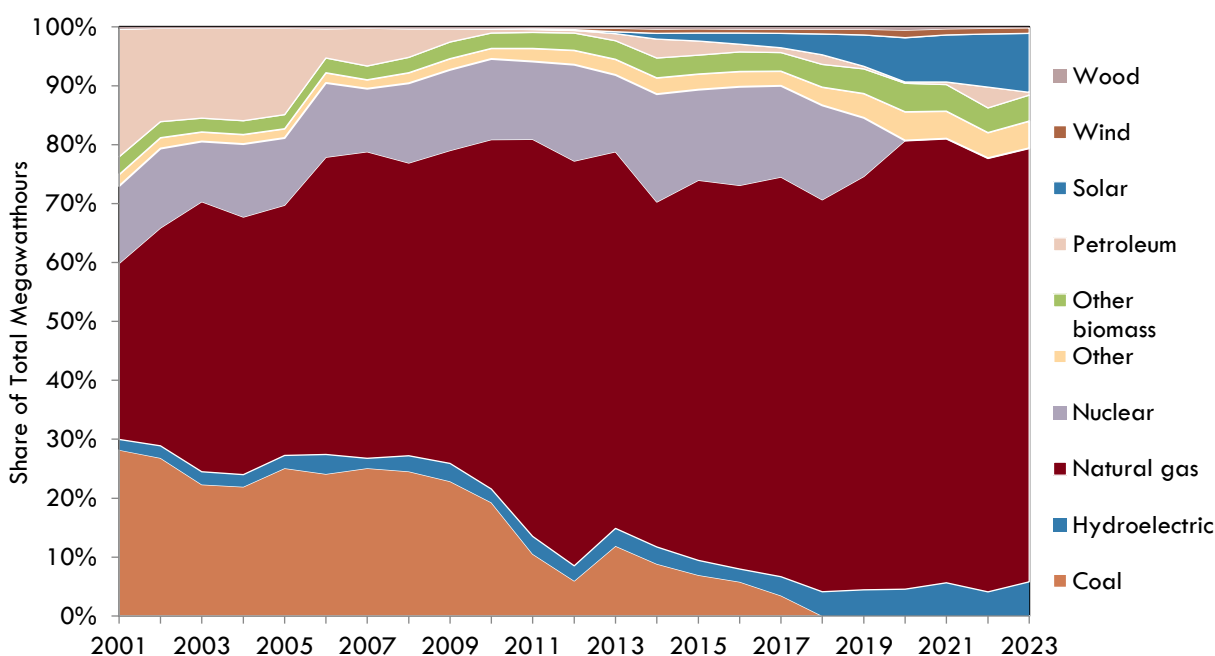
While the full effects of climate change are hard to predict at this time, it is certain that some industries will bear more of the burden than others. For example, the tourism industry will likely be affected as there are more than a dozen ski areas in the Commonwealth that will face challenges as precipitation is expected to shift from snow to rain with warmer winter temperatures. Agriculture will be impacted by changes to the growing season and increased risk of drought. Fisheries will be impacted as increasing temperatures change the habitats of ocean species. The health of residents may be impacted by climate change. For example, changes in temperature will likely increase the risk or incidence of acute respiratory diseases, such as asthma, and increase the presence of ticks that carry Lyme disease and mosquitoes carrying West Nile Virus. The risks vary across the state, within communities, and from resident to resident. Vulnerability to climate change is a function of exposure, sensitivity, and adaptive capacity. The most vulnerable are often the young, old, and medically vulnerable, those who live in areas with higher risk of extreme events and those without the resources to adapt.

Changes to the environment, such as extreme weather events, do not respect political boundaries, therefore, policy makers have limited ability to mitigate the course of environmental change. However, local officials can prepare for natural disasters and plan for predicted changes in the environment, such as rising temperatures and sea-levels. To this end Massachusetts established the Municipal Vulnerability Preparedness grant program that supports city and towns through grants and technical assistance that fund and support local assessments of vulnerability to climate change and adaptation projects. The grants have funded a wide-variety of projects that support different stages of adaptation, from the development of local climate action plans to construction projects related to river restoration. Over 90 percent of municipalities in the state have enrolled in the program.

There have been significant legislative efforts to address the environmental risks of climate change. In August 2022, legislation was passed and signed that, among other provisions focused on creating local clean energy economy and modernizing the grid, requires that all new vehicles in the state be zero-emission beginning in 2035. This builds on the March 2021 net-zero emissions law that set the goal of Massachusetts achieving net-zero emissions by 2050. In addition, the law sets interim emission targets and sets targets for six sectors: electricity, transportation, commercial and industrial buildings, residential buildings, industrial processes, and natural gas distribution. In October 2023, the States new Climate Chief released a set of recommendations to outline how the Commonwealth will meet its goals related to climate change. The Governor's 2023 Economic Development Plan also includes a strategy to support the growth of "climatetech" in the Commonwealth. In 2022, Massachusetts consumed twice as much electricity as the state produced. Overall, Massachusetts consumes about 17 times more energy than it produces and relies on the regional grid to meet demand. However, Massachusetts uses less energy to produce a dollar of GDP than all but one other state, New York. Furthermore, according to the U.S. Energy Information Administration, Massachusetts used less energy per capita than all but four other states in 2020.

Over the past 20 years, Massachusetts has increasingly been reliant on natural gas for electric power generation, with the share of electric power from natural gas more than doubling from 2001 to 2020; (Figure 26). The state receives the majority of its natural gas through pipelines that bring in natural gas from sources in Appalachia and offshore Nova Scotia in Canada. In addition, natural gas arrives in the state through liquefied natural gas import terminals in Everett and offshore in Massachusetts Bay. The Commonwealth is generating less energy from coal, petroleum, and nuclear; the last nuclear power plant in the state closed in 2019. Solar energy has steadily increased. Electricity prices in Massachusetts are higher than in the nation as a whole. As of April 2024, Massachusetts consumers faced the fourth highest electricity prices in the nation.

**Figure 26. Electric Power Generation by Primary Energy Source, 2001-2023**



Source: U.S. Dept. of Energy, <http://www.eia.doe.gov/>; state electricity profiles.  
 Note: Other includes batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, tire-derived fuels and misc. technologies. Pumped storage is omitted from the graph because it represents the storage of power generated elsewhere rather than newly generated power.

The state Capital Investment Plan (CIP)<sup>9</sup> for the five years of FY24 – FY28 plans to invest in decarbonization efforts through efforts toward promoting electric vehicles and making school buildings, housing, and public transportation more efficient. Additionally, the CIP funds the Municipal Vulnerability Preparedness grant program at \$125 million, which will assist towns and cities as they manage the effects of extreme weather, heat, and other effects of climate change. The future of the Governor’s efforts to address climate change were hampered by the state legislature’s failure to pass a comprehensive climate

<sup>9</sup> Five-Year Capital Investment Plan FY2024–FY2028. (2023). Commonwealth of Massachusetts Executive Office for Administration and Finance. <https://budget.digital.mass.gov/capital/fy24/static/1475dce8ff3a8e8167606105e8acb94f/fy24capitalplanma.pdf>

bill before August 2024, however, as of November 2024 there are continuing efforts on Beacon Hill to pass a climate and clean energy bill before the end of 2024.

## Residents

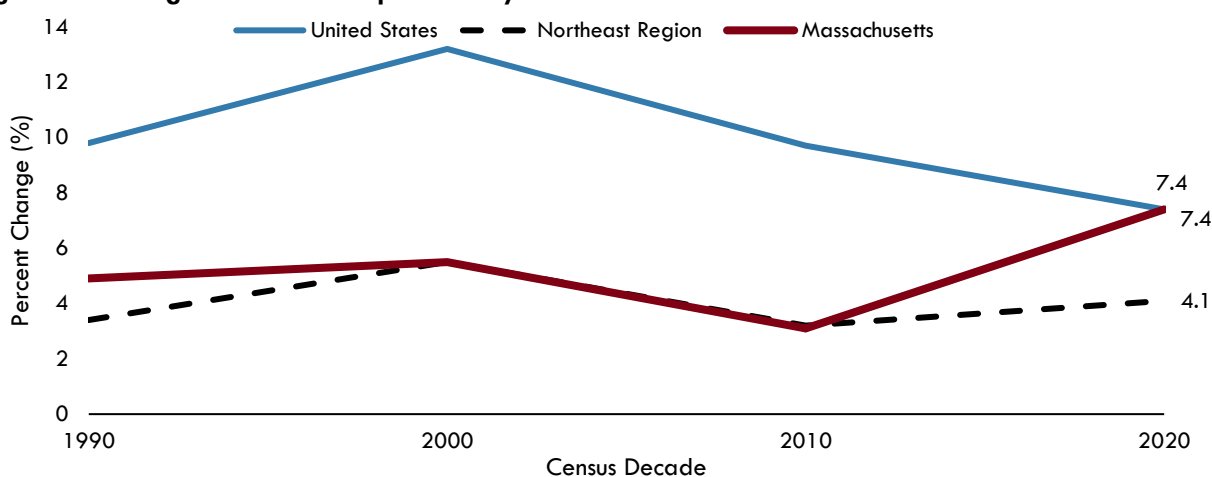
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From 2010 through 2020, Massachusetts enjoyed a sustained period of population growth, driven largely by significant gains in the state's foreign-born population. That said, there has been a great deal of attention on modest year-over-year declines in the total Massachusetts population that occurred during the pandemic. Increases in domestic out migration over the last few years have alarmed economists and public policy makers alike; in 2023 Massachusetts's population grew again for the first time since 2020, albeit at a slow rate. While Massachusetts has long had a significant churn of young adults moving into and out of the state around college-aged years, the combination of decreased immigration and increased retirement during the pandemic, coupled with increased domestic out migration has led to the Massachusetts labor force being smaller today than it was pre-pandemic. With the baby boomer generation increasingly reaching retirement ages in the coming years, the state's ability to attract and retain workers will be paramount in maintaining the economic strength and competitiveness that Massachusetts has enjoyed over the last couple of decades.

When seeking to understand state population trends, the primary sources of data come from the U.S. Census Bureau. The gold standard in demographic data in the U.S. continues to be the official decennial census enumeration. This is the official total population of an area as of April 1<sup>st</sup> of the enumeration year and these are the figures used, most notably, for determining congressional representations and political redistricting. The Census Bureau also annually estimates the total population for locations by estimating the various components of population change (natural change and migration) and applying them to the estimated population from the previous year. This estimate represents the total population of an area as of July 1<sup>st</sup> of the year in question. In addition, the Census Bureau fields an annual survey called the American Community Survey (ACS). The ACS captures detailed socioeconomic and demographic characteristics of the population, including information like educational attainment, household income, nativity status, and other variables. The combination of these three data sources provides a rich understanding of population patterns, especially as it relates to state population growth, decline, and migration.

While New England has been a slow growth region for much of the last several decades, as higher numbers of people move to the southeast and western parts of the U.S., Massachusetts stands out as maintaining relatively strong population growth decade-to-decade among the New England states. Between the 2000 and 2010 census decennial enumerations, Massachusetts resident population grew at the same rate as the Northeast region. From 2010-2020, Massachusetts experienced considerable resident population growth, placing it well above the average population change throughout the Northeast region (Figure 27).<sup>10</sup> Between the 2010 and 2020 Census, the Massachusetts population grew from approximately 6.5 million to 7.0 million residents. This marked a 7.4 percent increase in the state’s population, in line with the U.S. overall growth and making the Bay State the fastest growing state in the Northeast. In contrast, the average population growth in the Northeast was 4.1 percent.

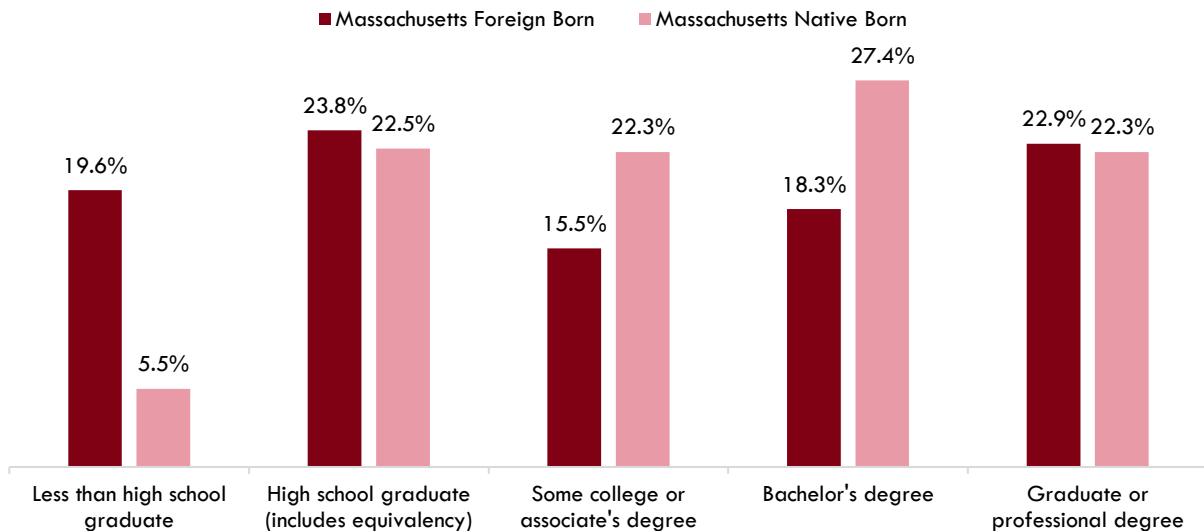
**Figure 27. Change in Resident Population by Decade**



Source: U.S. Census Bureau; UMDI analysis

As mentioned above, annual population estimates from the Census Bureau build on the enumerations generated by the decennial census. The Census Bureau compiles data on the various components of population change (i.e., birth, death, in-and-out migration) each year to estimate an annual population. These components of change offer insights on broad demographic patterns. For example, during the 2000s population growth in Massachusetts has largely been driven by significant gains in international migration. Massachusetts’ combination of higher education institutions and knowledge-based industries appears to be an important factor in attracting and retaining foreign-born residents. The foreign-born in Massachusetts has a bimodal education distribution with a high concentration with less than a high school education (19.6% in 2023) and a significant concentration with college degree or more (41.2%). A similar proportion of immigrants in the state hold a graduate degree as native-born residents (22.9% and 22.3%, respectively) (Figure 28).

<sup>10</sup> The Northeast includes: Maine, New Hampshire, Vermont, Massachusetts, New York, Connecticut, Rhode Island, Pennsylvania, and New Jersey.

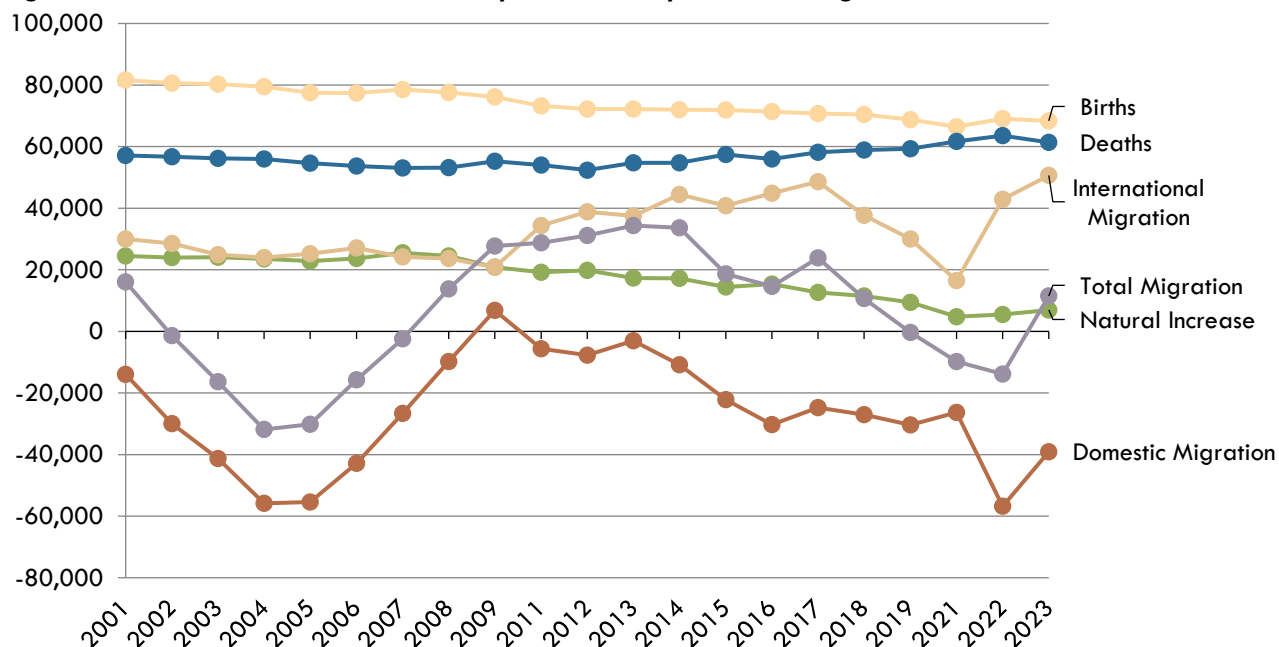
**Figure 28. Educational Attainment of the Foreign Born in Massachusetts, 2023**

Source: U.S. Census Bureau, 2023 1-Year American Community Survey; UMDI analysis.

These gains in international migration have offset typical losses in domestic outmigration (i.e. people moving from Massachusetts to another state). The decline in natural population increases (i.e. the difference between births and deaths) is notable as well. Massachusetts has an extremely well-educated population, with high labor force participation from women. This often equates to later family formation and smaller household sizes. Couple this with an aging population and a global pandemic reducing birth rates and increasing death rates, the natural increase in Massachusetts has declined precipitously over the last several years.

While Massachusetts showed steady growth between the 2010 and 2020 Census, the onset of the global COVID pandemic appears to have spurred some unique and new population patterns in the state. For example, while Massachusetts has experienced net population losses through domestic outmigration over the last 20 years, 2022 showed a dramatic increase in the state's domestic outmigration rate, essentially doubling from the typical outmigration seen in the state over the last several years (Figure 29). Outmigration recovered slightly in 2023, though still negative and on a downward trend over the long term. Conversely, in both 2020 and 2021 international migration, which had slowed somewhat during the early part of the Trump administration, slowed dramatically due to pandemic related restrictions, only to finally return to a more typical rate for the state in 2022 and 2023.

**Figure 29. Massachusetts Estimated Components of Population Change, 2000-2023**



UMass Donahue Institute. Source Data: ST-2000-7; CO-EST2010-ALLDATA; and NST-EST2023-ALLDATA, U.S. Census Bureau Population Division. Components of population change data for decennial Census years are based on only three months of data, and so are excluded.

The U.S. Census Bureau Population Estimates Program provides a view of the changes in domestic migration and population changes within the Northeast states from 2019-2022. During this period, Massachusetts experienced an out-of-state migration rate that doubled from -0.4 percent to -0.8 percent. The United States experienced a 0.6 percent increase in population between 2020-2022, and in contrast Massachusetts’ population declined by -0.7 percent placing the Commonwealth below the national average of population growth.

The outmigration rate in Massachusetts increased between 2020-2022 compared to other states in the Northeast region who experienced net increases in domestic migration. The one state in the Northeast that has experienced a higher rate of out-migration than Massachusetts is New York, which experienced an outmigration rate of -1.5 percent in 2022 compared to -0.9 percent in 2019. In 2023, migration trends started to revert to pre-pandemic rates; though still negative, Massachusetts’s outmigration rate improved slightly to -0.6 percent in 2023 from -0.8 percent in 2022. Many other states in the Northeast that were benefitting from outmigration from Massachusetts and New York reversed as well and saw declining in-migration in 2023 compared to 2022. There is empirical evidence that the dramatic spike in out-migration following 2020 can largely be attributed to the fact that Massachusetts has some of the highest rates of remote work in the nation due to the state’s industry mix.<sup>11</sup> With the embrace of work from home

<sup>11</sup> Bick, Alexander, Hannah Rubinton, Adam Blandin, and Karel Mertens. “Work from Home and Interstate Migration,” 2024. <https://doi.org/10.20955/wp.2024.012>.

arrangements many workers in Massachusetts were newly able to live further from their employer and chose to move out of state.

Across the country, young adults are the most mobile and this is true in Massachusetts as well. Using microdata from the 2022 U.S. Census Bureau's American Community Survey, net migration to Massachusetts is most concentrated throughout the 18–24-year-old age group. This group includes a large number of young adults who migrate to Massachusetts for their college education. The age group experiencing the largest number of out-migration is 25–34-year-olds. This group contains post graduate professionals, many of whom are at a point in their life where personal priorities include focusing on home ownership and starting families. It is likely that this group finds the cost of living, particularly with housing costs, challenging, and so are moving to states where the cost of living is lower. The most popular destinations for those leaving Massachusetts were within New England, as well as Florida and Texas. New Jersey, California, New York, North Carolina, and Pennsylvania all sent more residents to Massachusetts than they received.

**Figure 30: Net Migration to Massachusetts, 2022-2023**

Rank	State	In-Migration	Out-Migration	Net Migration	Total Migration
1	New York	16,247	21,001	-4,754	37,248
2	Florida	12,758	24,002	-11,244	36,760
3	New Hampshire	11,508	16,362	-4,854	27,870
4	Connecticut	10,437	13,428	-2,991	23,865
5	California	12,160	10,101	2,059	22,261
6	Rhode Island	7,264	9,208	-1,944	16,472
7	Texas	6,165	10,162	-3,997	16,327
8	Pennsylvania	9,392	6,379	3,013	15,771
9	North Carolina	5,217	8,935	-3,718	14,152
10	New Jersey	6,272	4,851	1,421	11,123
	All Other States and D.C.	47,601	60,105	-12,504	107,706
	<b>Total</b>	<b>145,021</b>	<b>184,534</b>	<b>-39,513</b>	<b>329,555</b>

Source: U.S. Census Bureau, American Community Survey State-to-State Migration Flows, 2023

Looking at the out-migration trend during the pandemic raises understandable concern over the increase in the rate of former residents moving out of the state. It is important to note that the COVID crisis upended residential patterns and migration trends. At this point, it is unclear which of these patterns are short-term reactions to the pandemic and which ones may be more durable over the term. With that, state migration trends should be analyzed cautiously as the years following the pandemic are likely not representative of an average year of out migration. Indeed, the U.S. Census Population Estimates data for 2023 has signaled the start of a return to pre-pandemic trends.

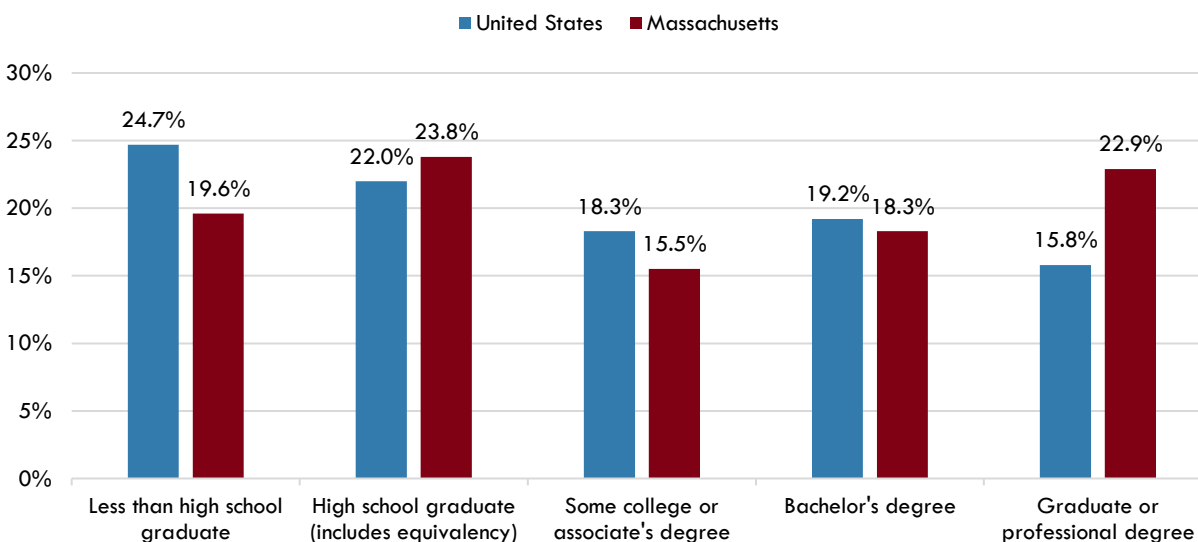
Even if domestic outmigration trends in the state reverse, the Commonwealth and the Northeast face population headwinds due to the aging of the population. Immigration buoys the Commonwealth's



population in part because fertility rates among foreign-born women are generally higher, though like native-born women, rates have declined in recent years. Most importantly though, international migration will be essential to ensuring that the state has enough prime-age workers to support an aging population both in terms of providing health care and other essential services and generating economic activity to ensure that the state economy and public services remain strong. Opportunities for employment, access to services, and participation in civic life are often tied to citizenship. According to American Community Survey data in 2023, 53 percent of foreign-born residents in Massachusetts were naturalized citizens and the remaining 47 percent did not hold citizenship. International immigrants live throughout the Commonwealth, though immigrant communities are clustered in Boston and the Gateway Cities where immigrants made up 28 and 27 percent of the population respectively in 2022. In Chelsea, Everett, Revere, Lawrence, and Malden foreign-born residents make up over 40 percent of the population.

From 1990 through 2023, foreign-born workers accounted for 80 percent of the growth in the state's labor force, with the native-born population accounting for only 20 percent. This is driven in large part by the aging of the population. In 2023, foreign born workers made up 22 percent of the Massachusetts labor force, up from 10 percent in 1990. This shift is also driven by the fact that labor force participation rates are slightly higher among foreign-born residents, 71.3 percent versus 66.1 percent among native-born residents.

Immigration to Massachusetts is diverse. Forty-two percent of the state's foreign-born population are originally from Latin America, just under a third are from Asia, 17 percent are from Europe, and just under 10 percent are from Africa. Reflecting the regions of origin Spanish, Portuguese, Chinese and Haitian Creole are the most common languages other than English spoken in Massachusetts. As noted before, the educational attainment of foreign-born residents represents the diversity in the population. While foreign-born residents are more likely not to have a high school diploma, they are also just as likely to have a graduate degree as native-born residents. Furthermore, the foreign-born population in Massachusetts has higher levels of educational attainment as the Commonwealth attracts a higher share of immigrants with advanced degrees (Figure 31).

**Figure 31: Educational Attainment for Foreign Born Population in US and MA, 2023**

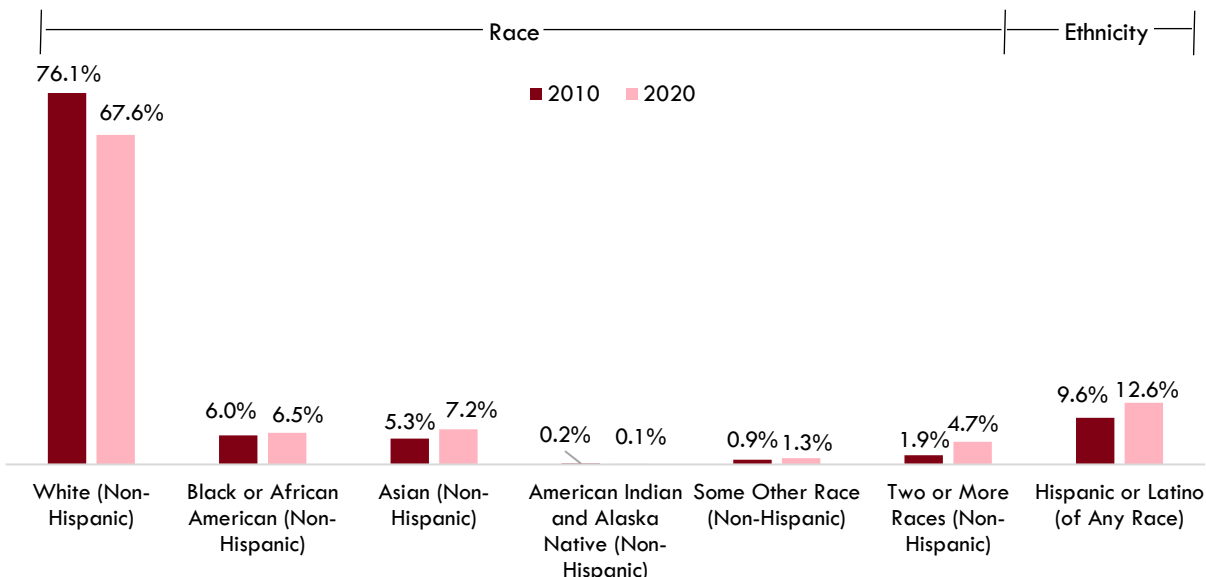
Source: U.S. Census Bureau American Community Survey, 1-Year Estimate 2023.

Reflecting the importance of foreign-born workers to the health care industry, in Massachusetts 26 percent of foreign-born workers are employed in Educational Services, and Health Care and Social Assistance. The second most common industry is Professional, Scientific, and Management, and Administrative and Waste Management Services, in which 17 percent of foreign-born workers are employed.

For those with graduate degrees, many come to the U.S. with visas sponsored by their employers or education visas and can put their high-level of training to good use. However, there are also many immigrants and refugees to the Commonwealth who struggle to find employment that matches their skill sets due to language barriers or challenges obtaining the necessary certifications and licenses to work in the U.S. In Massachusetts, just under one in ten residents speak English less than very well or have low English proficiency and one in 20 live in a linguistically isolated household, many of these residents are immigrants. To enhance the productivity of foreign-born workers with low levels of English language proficiency the Commonwealth invests in ESOL services, however the state's investment has not kept pace with growth in the population.

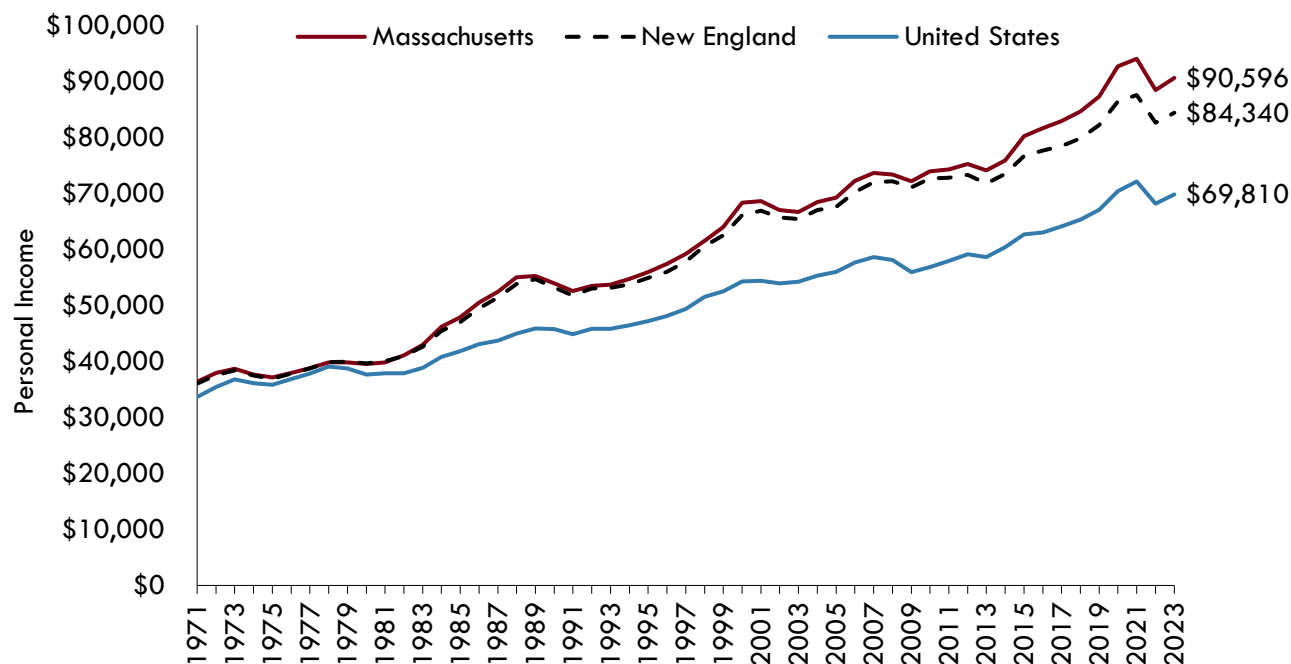
As with the nation, immigration and other factors are leading to Massachusetts becoming more racially and ethnically diverse. The share of the population that identifies as non-Hispanic, white decreased from 76 percent to 68 percent from 2010 to 2020, while the shares that identify as Black non-Hispanic, Asian non-Hispanic, and Hispanic increased to 6.5 percent, 7.2 percent, and 12.6 percent respectively. The share that identifies as two or more races (non-Hispanic) more than doubled to 4.7 percent (Figure 32). The state's population is older than the nation as a whole—the median age is 40.3 compared to 39.2 for the nation in 2023. The Commonwealth has the lowest median age in New England, due to the presence of higher education institutions.

**Figure 32. Share of Total Massachusetts Population by Race and Ethnicity in 2010 and 2020**



Source: 2010 Source Data: Census 2010 Summary File 1; 2020 Source Data: Census 2020 PL-91-171; UMDI analysis

Massachusetts' residents earn some of the highest incomes in the nation. Real per capita income has consistently exceeded incomes in the New England and the U.S. and in 2023, Massachusetts had the highest real per capita personal income in the nation, excluding the District of Columbia. In 2023, the Commonwealth's real per capita income was just over \$90,000 compared to approximately \$84,000 in New England and just under \$70,000 in the U.S. (Figure 33). High inflation in 2021-2022 eroded some purchasing power for consumers nationwide, and so inflation adjusted incomes in 2022 were lower than in 2020 or 2021 but bounced back in 2023 as inflation eased. The relatively high-income levels reflect the high level of education and the concentration of high-wage industries such as health care, professional services, and finance and insurance. The poverty rate is lower in Massachusetts than in the nation at 10.4 percent compared to 12.5 percent according to the 2023 One-Year American Community Survey. However, in several cities the poverty rate exceeds the state average: for example, in the Gateway cities of Springfield and Worcester poverty rates were 29.9 percent and 20.6 percent, respectively. Boston is also above the state average with a rate of 15.6 percent. Higher rates of poverty in these Gateway Cities and Boston are particularly concerning because Gateway Cities are home to a large share of the state's communities of color and immigrant communities. The concentration of poverty in these cities raises concerns about equity and quality of life.

**Figure 33. Real Per Capita Personal Income in Massachusetts, the United States, and New England, 1971-2023 (in \$2023)**

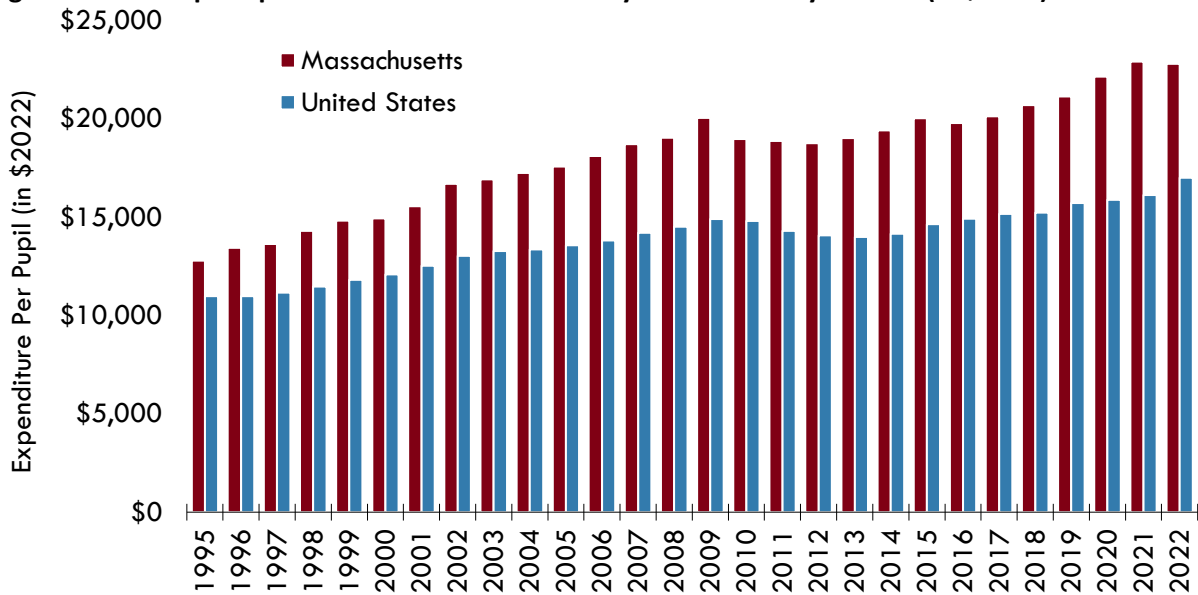
Source: U.S. Department of Commerce, Bureau of Economic Analysis

The presence of a skilled and well-educated population is an important resource for the Commonwealth. At the primary and secondary level, the state invests more than the national average in its public schools (Figure 34). Furthermore, students in Massachusetts's K-12 public schools consistently outperform their peers in the U.S. on national assessments. The state has the most well-educated population in the country, with over 47 percent of all residents 25 years of age or older earning a bachelor's degree or more. However, educational attainment varies significantly across racial groups: Black and Hispanic residents are less likely to have a bachelor's degree than the state average, at 32 percent and 25 percent respectively. Fifty-two percent of white residents and 65 percent of Asian residents hold a bachelor's degree or higher. That said, across all racial groups, educational attainment rates are higher than the national average (Figure 35). For adults without a high school diploma and/or low English proficiency, the state has recently increased investment in adult basic education and English for speaker of other languages services through its Department of Elementary and Secondary Education. For adults with a high school diploma but no college degree (associates or bachelor's), the state included in the FY 24 budget a program called MassReconnect which offers free tuition at Massachusetts's 15 public community colleges.<sup>12</sup> Implementation of this program started in Fall 2023, and the effects of which will start being seen in the coming years as the first cohorts of students complete their degrees.

<sup>12</sup> <https://www.mass.edu/osfa/programs/massreconnect.asp>

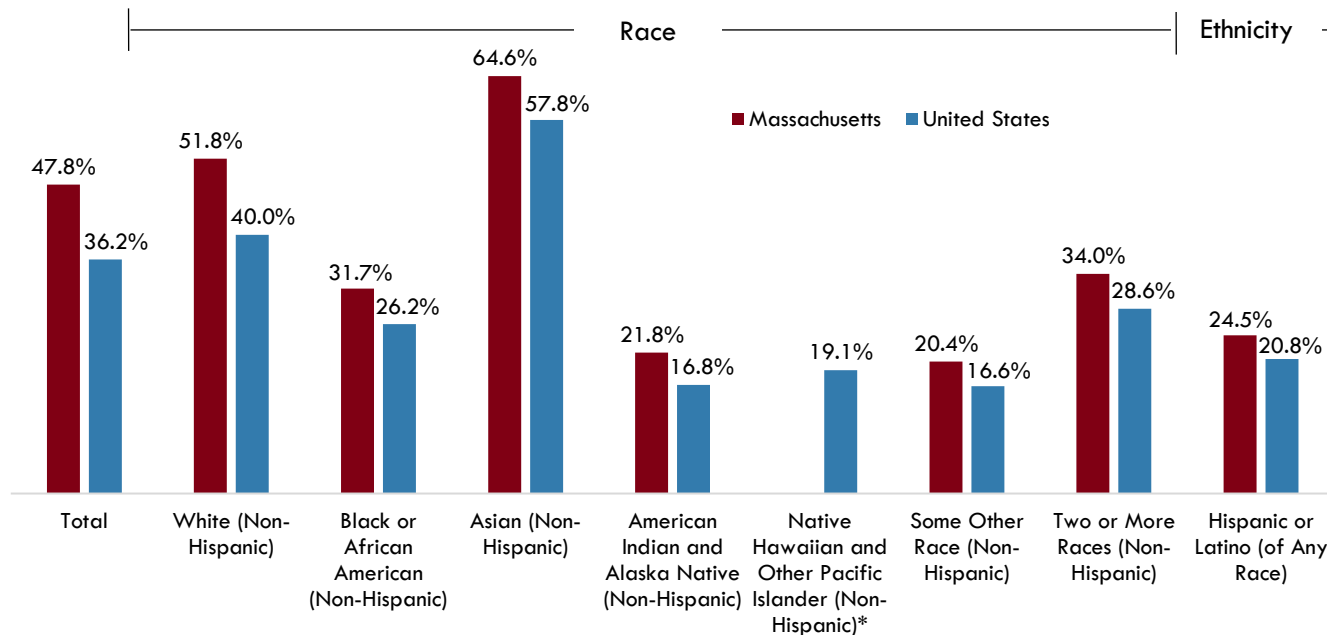
The well-educated population supports and is a product of the concentration of elite public and private colleges and universities in the state. Educational services is the third largest industry in Massachusetts in terms of jobs. Nearly half a million students are enrolled in higher education in the state. The number of international students has rebounded from pandemic-era lows of 66,000 in the 2020/2021 academic year to an all-time high of 79,800 international students in the 2022/2023 academic year.

**Figure 34: Per Pupil Expenditure in Public Elementary and Secondary Schools (in \$2023)**



Source: U.S. Census Bureau, Public Elementary–Secondary Education Finance Data.

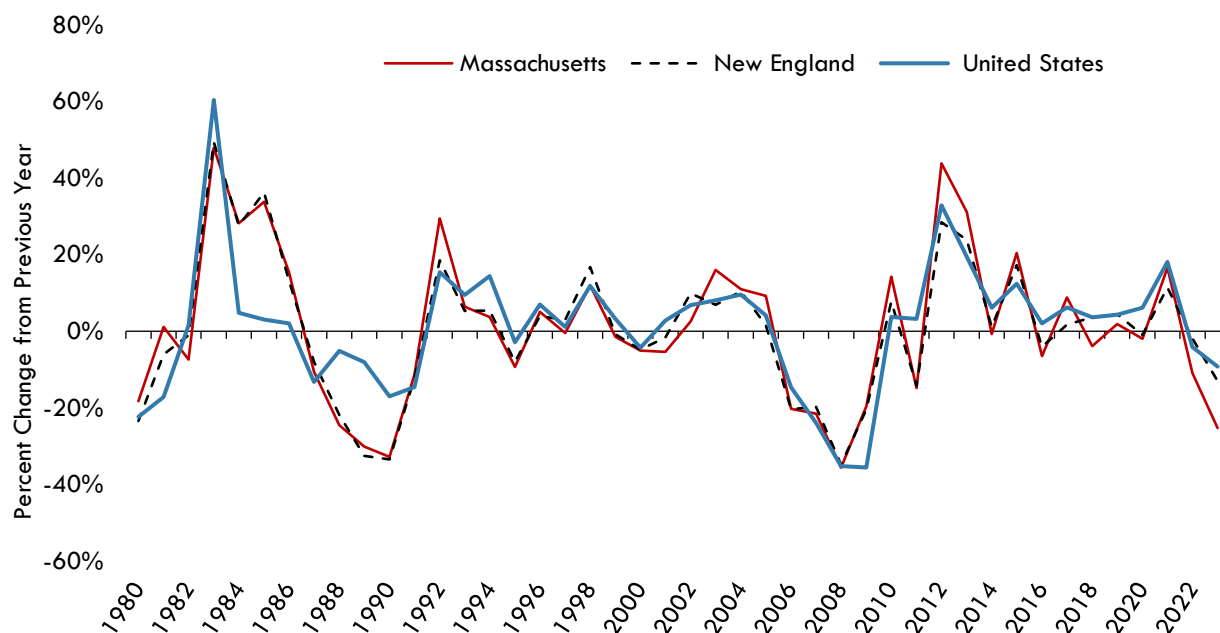
**Figure 35. Persons in Massachusetts and the United States 25 Years and Older with a Bachelor's Degree or Higher by Race and Ethnicity in 2023**



Source: U.S. Census Bureau, 2023 1-Year American Community Survey; UMDI analysis.

\*Note: The estimate for Native Hawaiian and Other Pacific Islander (Non-Hispanic) in Massachusetts cannot be displayed because there were an insufficient number of sample cases in the selected geographic area.

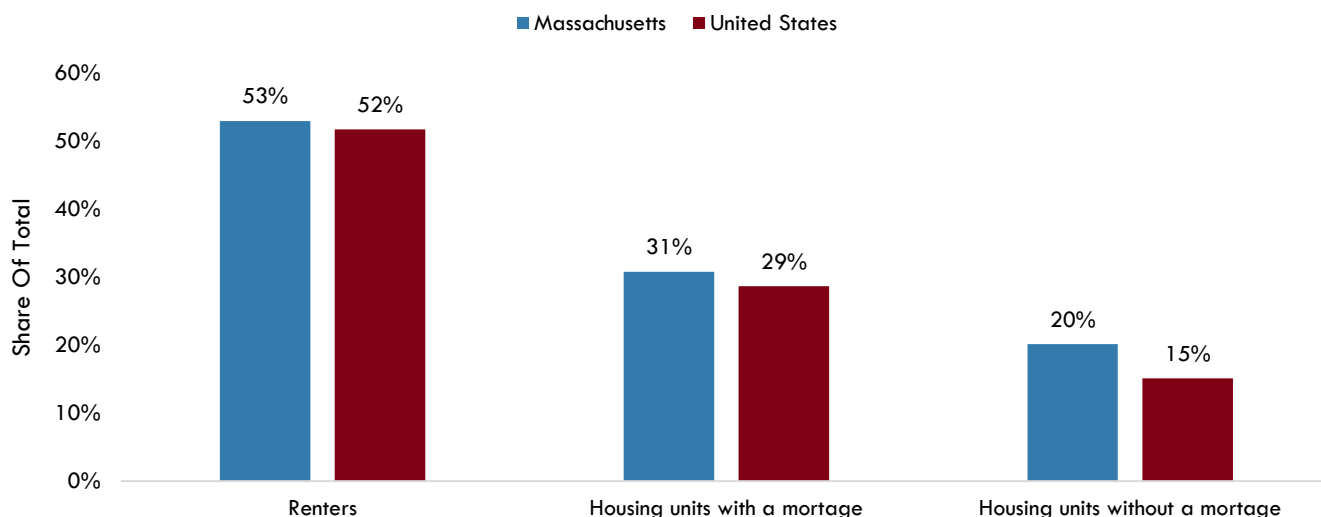
While residents enjoy higher incomes than most other states, the cost of housing in Massachusetts is a burden for many, especially for Black and Hispanic households. Housing costs remain high across the Commonwealth, driven in part by population and economic growth and inadequate housing production over the last couple of decades. The sales price of existing homes continued to increase, but at a slower rate, and higher interest rates have further increased the cost of owning a home. In 2023, median single-family home prices increased to \$600,000 from \$571,810 in 2022, a 4.9 percent increase. Prices have remained well above the national median of existing homes, which according to the National Association of Realtors was \$ 389,300 in 2023. Construction is not keeping up with demand. Nationally, the number of building permits decreased 9.2 percent from 2022 to 2023, but in Massachusetts the decline was greater, permits decreased 25 percent over the same period (Figure 36).

**Figure 36. Housing Units Authorized by Building Permit, Percent Change from Previous Year, 1975-2023**

Source: U.S. Census Bureau Building Permits Survey; UMDI analysis  
 Note: Reported data plus data imputed for non-reporters & partial reporters.

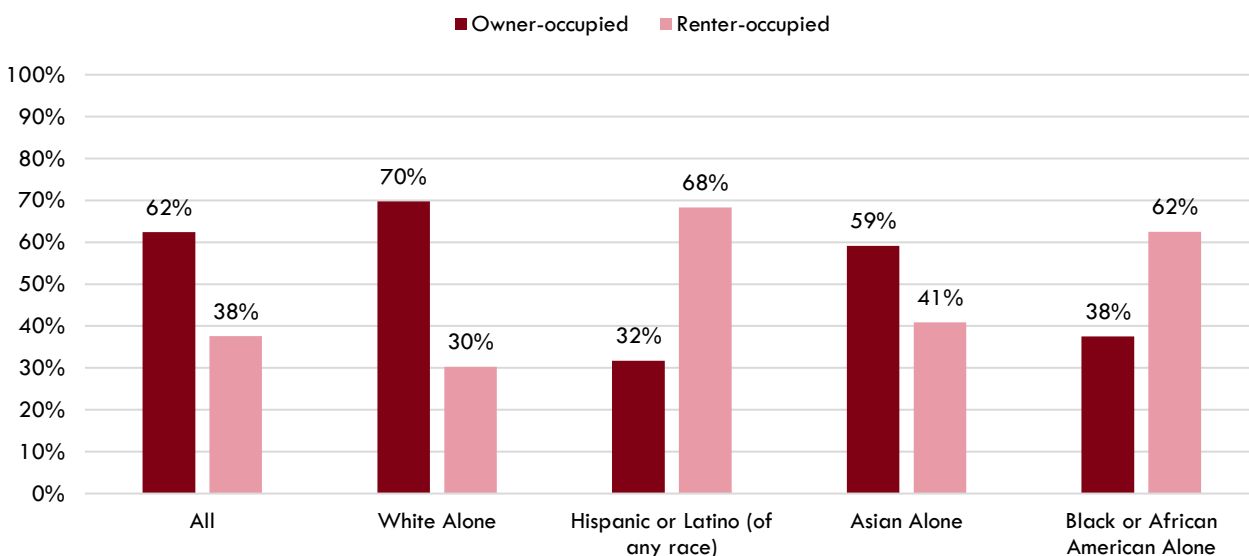
The increase in sale prices and the low supply of homes for sale has translated into high rental costs as well. In addition, low vacancy rates have contributed to higher costs. Mirroring rates in the U.S., half of renters are cost burdened, meaning they spend over 30 percent of their income on housing costs, and nearly a quarter (23%) of Massachusetts renters are severely cost burdened, meaning they spend 50 percent or more of their income on housing (Figure 37). In contrast, 31 percent of owners with a mortgage are cost burdened and 10 percent are severely cost burdened. The rates of cost burden are highest among low-income residents, as well as Black and Hispanic households. It is important to note that rates of housing cost burden depend on both the income of residents and housing costs. For example, in the Boston Metro Area 53 percent of renters were cost burdened in 2022, compared to 58 percent in Springfield Metro Area, where rents are relatively lower than the Boston Metro Area, but out-of-reach for many lower income families. Due to a history of discriminatory housing policies, rates of homeownership vary by race and ethnicity. Among the most detrimental federal policies that originated in the 1930's was "redlining," which meant that racial and ethnic identity were a primary factor in the determination of loan risk, leading to the racist assignment of lower ratings to communities of color than neighboring and similar white communities. This system kept people of color from buying their own homes, one of the most important forms of intergenerational wealth. The harmful impact of this system is still felt today in the disproportionate rate that people of color rent, where they live, and their substantially lower levels of wealth than their white peers.

**Figure 37. Housing-Cost-Burdened Households by Housing Tenure in Massachusetts and the United States (Spending 30 Percent or More of Income on Housing Costs)**



Source: ACS 2023 1-Year Estimate, Table DP04.

**Figure 38. Housing Tenure in Massachusetts in 2023 by Race and Ethnicity**



Source: ACS 2023 1-Year Estimate, Table B25003, A through I.

Overall, 62 percent of households in Massachusetts are owner-occupied and 38 percent are renter-occupied. The majority of white and Asian households own their homes and Black and Latino households are more likely to rent (Figure 38). The disparity in homeownership rates matters because homeownership is a fundamental mechanism for building wealth in the U.S. and homeowners are far less likely to experience severe housing cost burden.



With the goal of increasing housing production, particularly near transit hubs, the Commonwealth passed legislation to amend the state Zoning Act. The Massachusetts Bay Transportation Authority (MBTA) communities law includes several provisions to remove zoning-related barriers to housing production. The law changed voting standards for local city councils or town meetings to adopt or change zoning ordinances and bylaws from two-thirds to a simple majority. Among other measures, the Act requires “by right”, multi-family zoning in 177 MBTA communities. Communities that fail to comply with the law shall not be eligible for certain funds from the State. Governor Healey’s Affordable Homes Act was signed into law in August 2024. The bill authorizes \$5.2 billion in spending and numerous policy changes to support the construction of housing and address the housing crisis in the state. Notably, it legalizes accessory dwelling units statewide.