Annual Economic Analysis Report

Massachusetts Workforce and Labor Area Review
Program Year 2023

Executive Office of Labor and Workforce Development
Department of Economic Research
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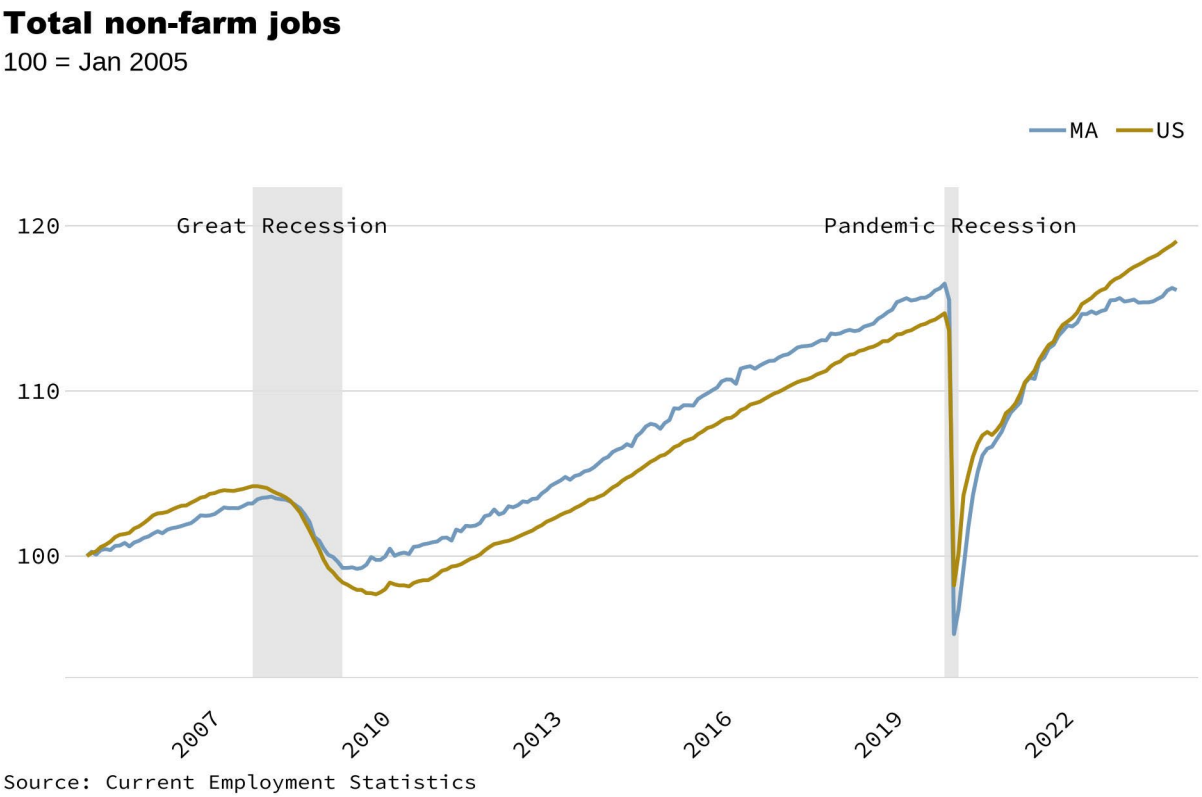
Massachusetts Economic Analysis

Following the COVID-19 pandemic, initial employment estimates painted an optimistic picture for Massachusetts' economic recovery in 2023. Revised employment data and a deeper analysis of key sectors, however, demonstrate Massachusetts falls behind other states in recovering from the pandemic.

The Commonwealth's job growth lagged considerably behind national trends throughout 2022 and 2023, resulting in a delayed recovery of pandemic-era employment losses. This is a departure from the state's experience following the Great Recession, as illustrated by the divergence shown in Figure 1. During the previous recession, Massachusetts experienced a smaller decline in employment compared to the nation and subsequently enjoyed a robust recovery. In contrast, the current recovery has been markedly slower, with the state's total non-farm employment trailing the US recovery by a significant margin.

Figure 1



This slower employment recovery is further evident when examining job growth across major sectors. As shown in Figure 2, Massachusetts has lagged behind the US in employment growth across nearly every major sector. This broad-based lag is a key indicator of the challenges Massachusetts has

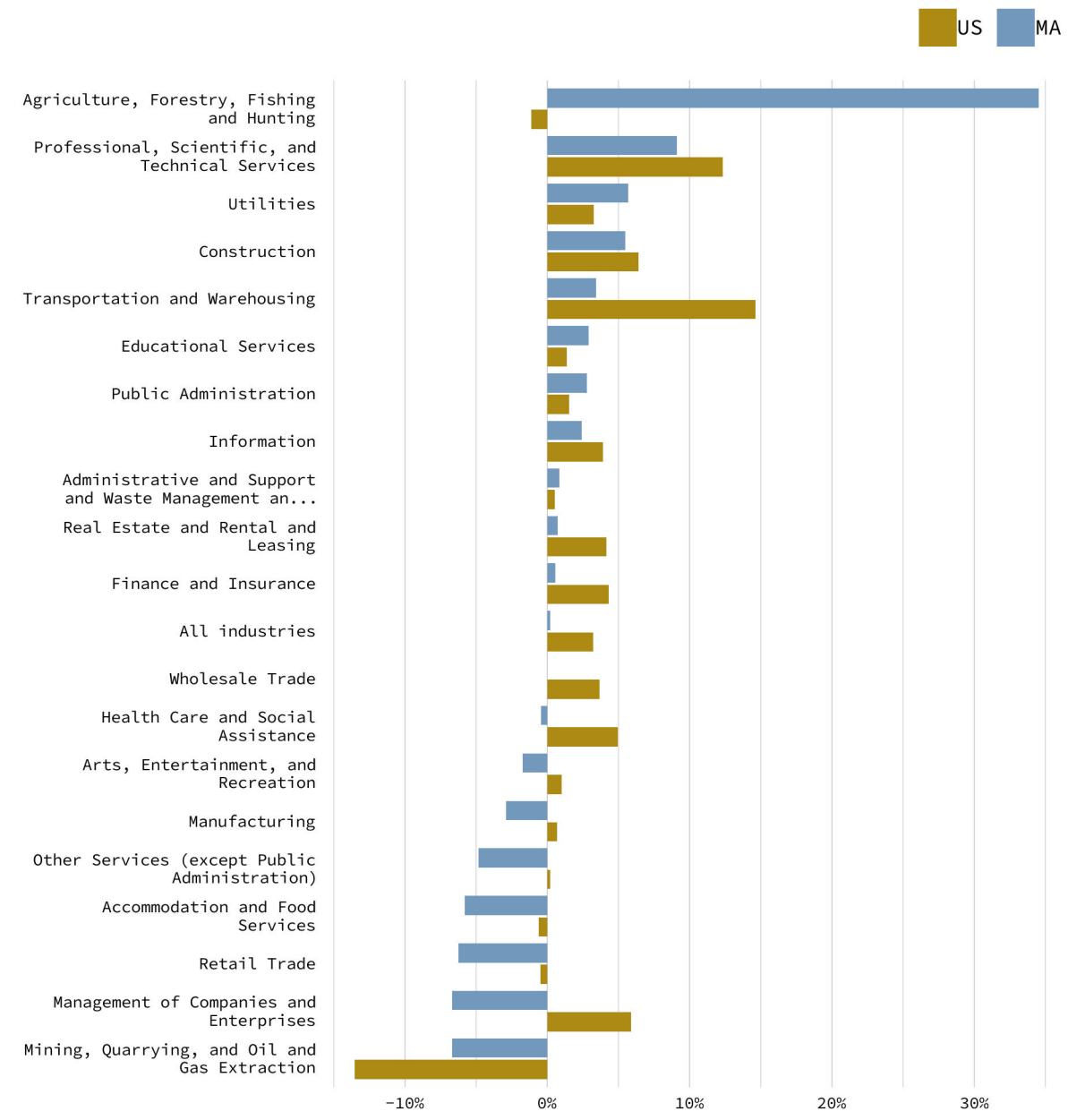
faced in regaining its economic footing. While some sectors, like Professional, Scientific, and Technical Services, have experienced positive growth, this growth has been slower than the national average. Moreover, sectors like Accommodation and Food Services, Retail Trade, and Manufacturing have experienced more pronounced employment declines in Massachusetts, indicating a deeper and more prolonged impact of the pandemic on the economy.

One of the most concerning aspects of this divergent recovery is the sluggish performance of the Health Care and Social Assistance sector. Despite being a cornerstone of the Massachusetts economy and a major source of employment, the Health Care and Social Assistance sector still lagged pre-pandemic levels in 2023, despite significant growth in the sector nationally. This is particularly alarming given the aging population in Massachusetts and the increasing demand for healthcare services. The challenges faced by the healthcare sector are multifaceted, including labor shortages, rising costs, and the lingering effects of the pandemic on healthcare facilities and workers.

Figure 2

Employment growth by sector

2019 - 2023



Source: Quarterly Census of Employment and Wages

One potential explanation for this divergent recovery lies in the nature of the shocks that triggered each recession. The Great Recession was primarily a financial crisis, originating in the housing market and spreading throughout the financial system. Massachusetts, with its strong concentration in higher-wage service industries like technology, education, and healthcare, was relatively insulated from the initial impact of this crisis. In contrast, the COVID-19 pandemic triggered a more widespread economic shock, affecting nearly every sector of the economy. This broader impact may have

disproportionately affected Massachusetts, given its reliance on sectors like tourism, hospitality, education, and healthcare, which were particularly hard-hit by the pandemic and associated restrictions.

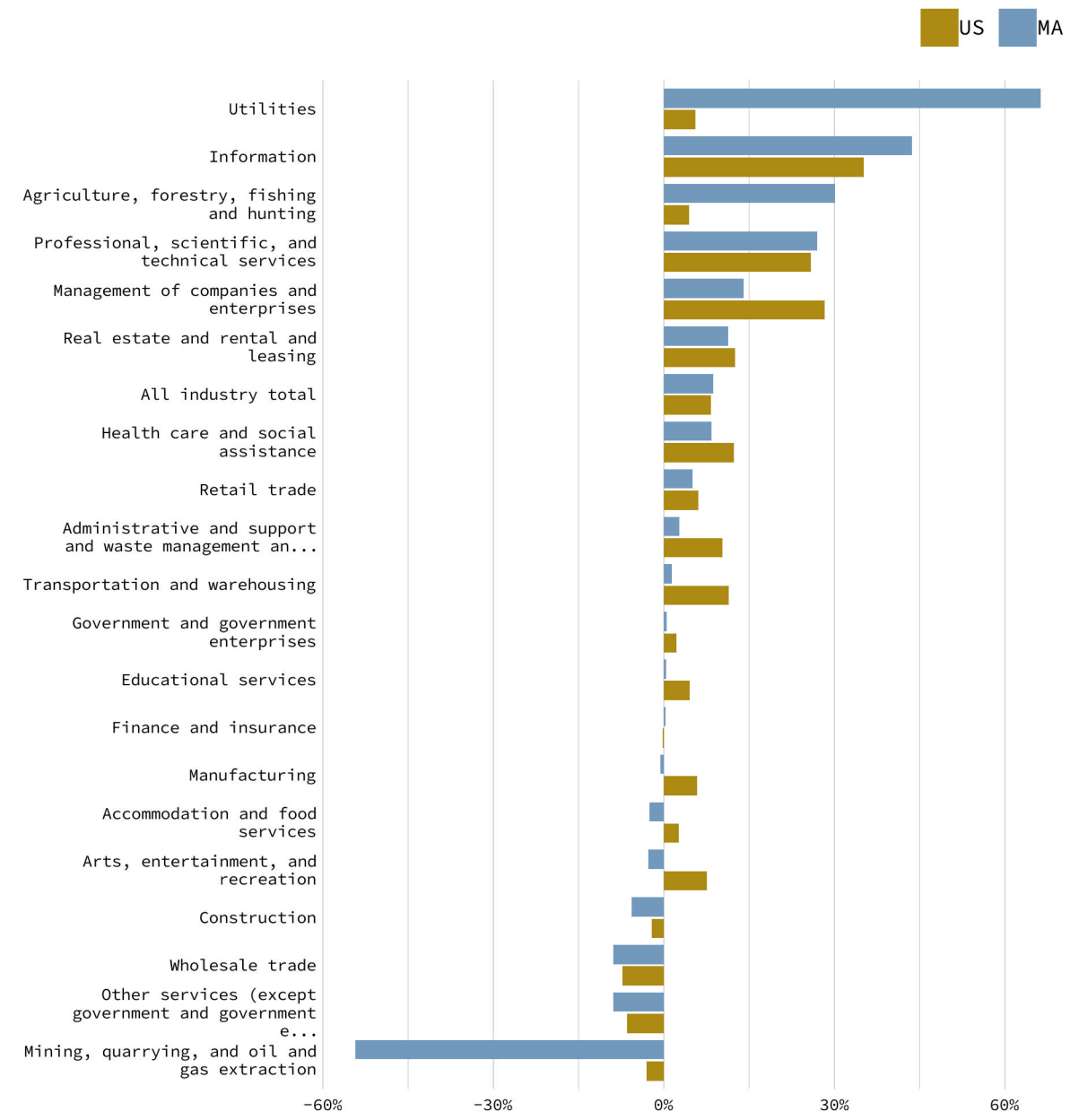
Furthermore, the pandemic accelerated pre-existing trends, such as the increasing importance of digital technologies. One of the most significant impacts of this acceleration in the digital economy was the rapid rise of remote work. Prior to the pandemic, the share of wage and salary workers working from home in Massachusetts grew from 2.5% in 2010 to 4.0% in 2019, before rising to 23.2% in 2021 (American Community Survey). These trends may have created both opportunities and challenges for Massachusetts. On the one hand, the state's strong foundation in technology and innovation could position it to benefit from the shift towards a more digital economy. On the other hand, the increase in remote work could lead to an outflow of high-skilled workers from the state, potentially impacting employment growth and tax revenue.

This divergence is further underscored by an examination of GDP growth across key sectors. While Massachusetts has experienced overall GDP growth that exceeds the nation, the composition of this growth differs from national trends. As shown in Figure 3, sectors like Professional, Scientific, and Technical Services and Information have actually outperformed the US in terms of real GDP growth. This suggests that these sectors, despite the slower employment recovery, have experienced strong productivity gains or potentially benefited from an increase in the share of out-of-state remote workers contributing to the state's economic output.

Figure 3

Real GDP percentage growth by sector

2019 Q4 - 2023 Q4



Source: Bureau of Economist Analysis

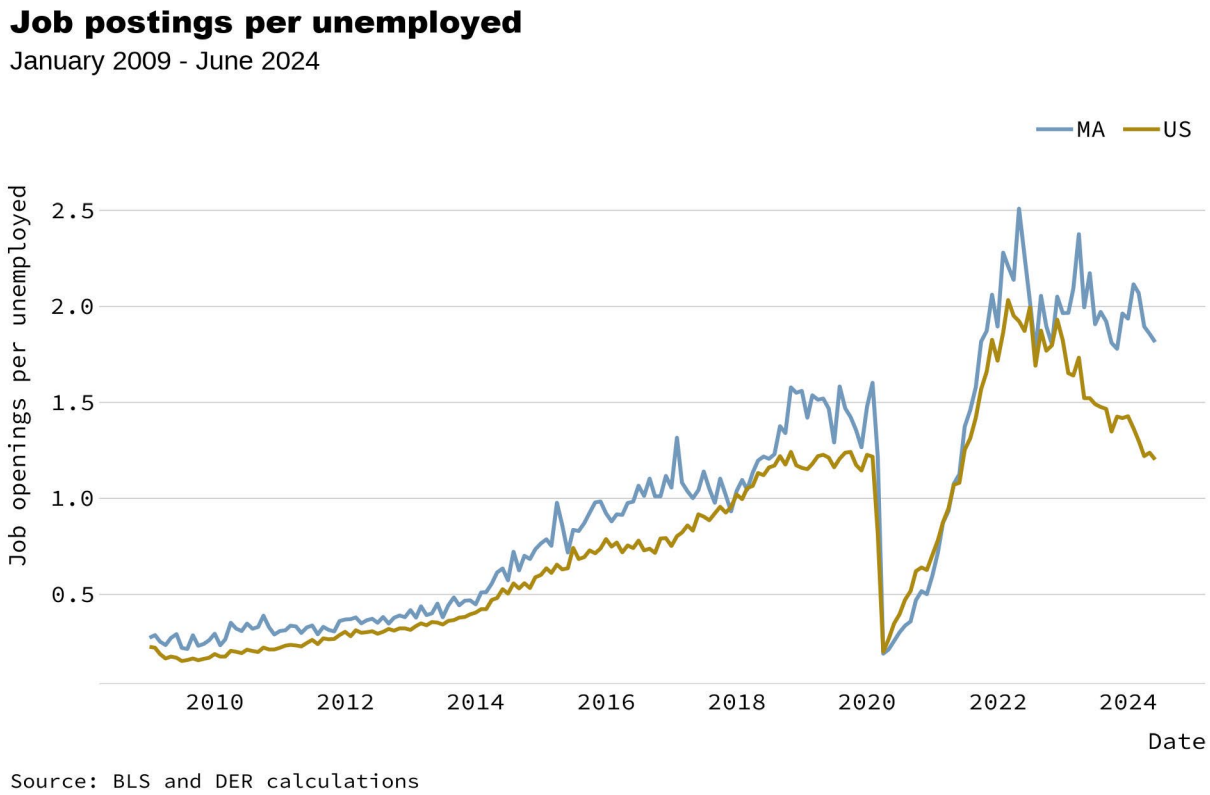
However, this positive trend is not universal. The Construction sector, for example, has experienced a steeper decline in real GDP in Massachusetts compared to the nation. This weaker performance in construction may reflect challenges specific to the state, such as high costs and regulatory hurdles, which could be hindering investment and growth in this sector. Additionally, the Accommodation and Food Services sector, which plays a significant role in the state's economy, has seen a sharper real GDP contraction in Massachusetts compared to the nation. Similarly, the

Manufacturing sector, while showing signs of growth in some sub-sectors, has experienced an overall decline. These sectoral challenges, combined with the sluggish employment recovery and variations in GDP growth across industries, show that the state is navigating a complex and uneven economic rebound.

Labor Market Dynamics: Tightness and Participation

As depicted in Figure 4, the number of job openings per unemployed worker in Massachusetts has consistently exceeded that of the US since the onset of the pandemic recovery. Additionally, Massachusetts has experienced historically low unemployment rates. During 2023, the unemployment rate ranged from 3.6% to 3.2% and was consistently lower than the national rate as indicated in Figure 5. This trend has continued into 2024, with preliminary estimates showing the unemployment rate falling to a low of 2.9% in April, before rising to 3.2% in June.

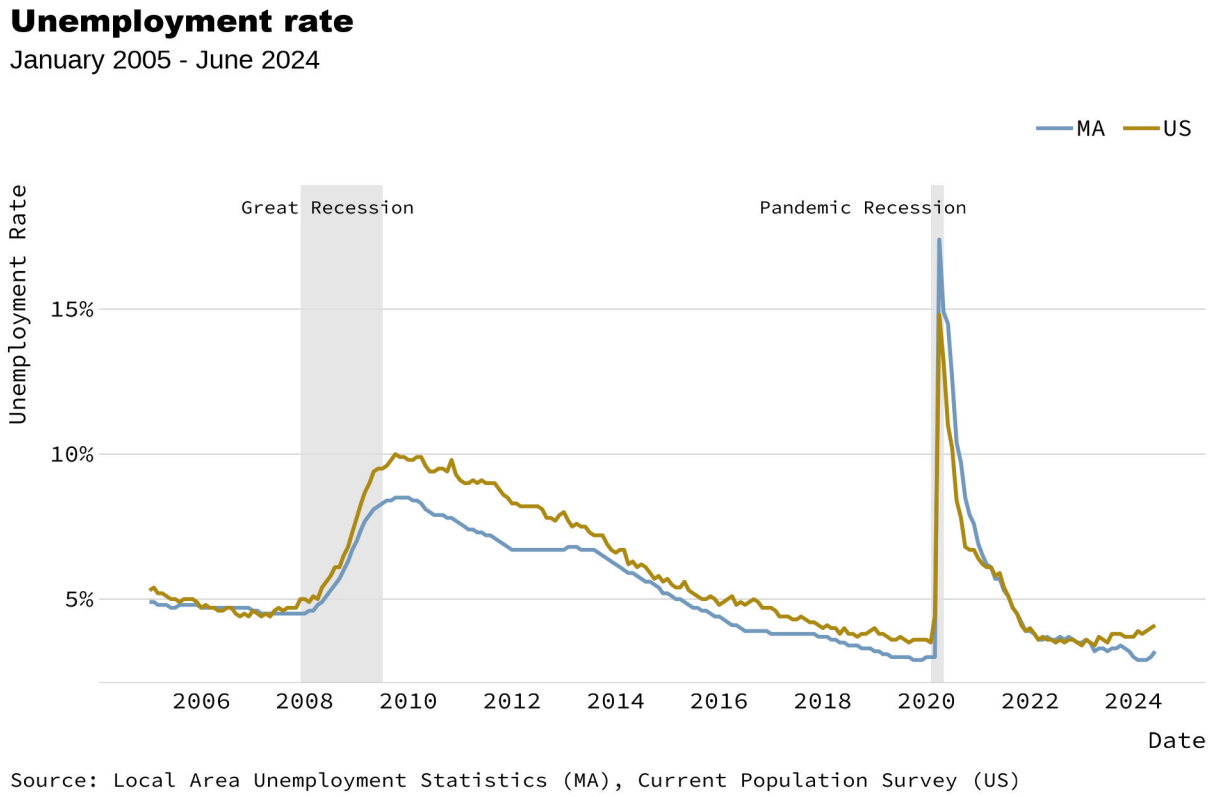
Figure 4



This measure suggests a heightened level of competition for workers, potentially leading to increased wages and difficulties for businesses in filling open positions. While this can be beneficial for

workers in terms of bargaining power and earning potential, it also creates challenges for employers, particularly in sectors with acute labor shortages.

Figure 5

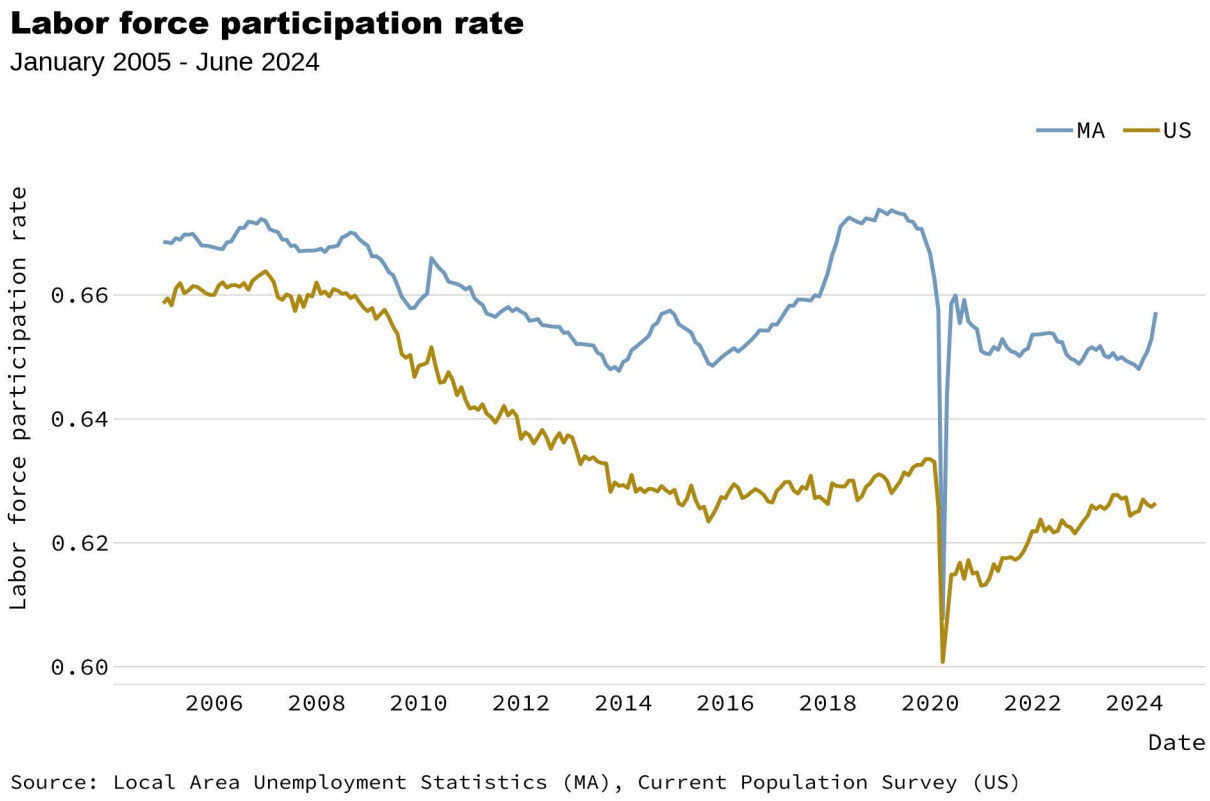


Source: Local Area Unemployment Statistics (MA), Current Population Survey (US)

A 2024 survey published by the Massachusetts Business Roundtable (MBR) highlights the economic risks posed by a persistently tight labor market. The survey finds that challenges related to attracting and retaining talent is leading more business to consider growing their workforce outside of Massachusetts. Forty percent of respondents indicated plans to expand their workforce outside of Massachusetts, compared to 7% in 2022. Additionally, one-third of respondents reported intentions to expand their remote workforce based outside of Massachusetts.

While the Massachusetts labor force was slow to respond to these tight conditions in 2022 and 2023, initial estimates show a positive trend with a surge in labor force participation in 2024. Figure 6 shows that while Massachusetts historically had a higher labor force participation rate than the US, this gap narrowed significantly during the pandemic. However, in recent months, Massachusetts's labor force participation has rebounded strongly, even surpassing pre-pandemic levels. This recent uptick in labor force participation has been driven by growth in the foreign-born labor force, along with increases in the labor force participation rate of domestic-born workers.

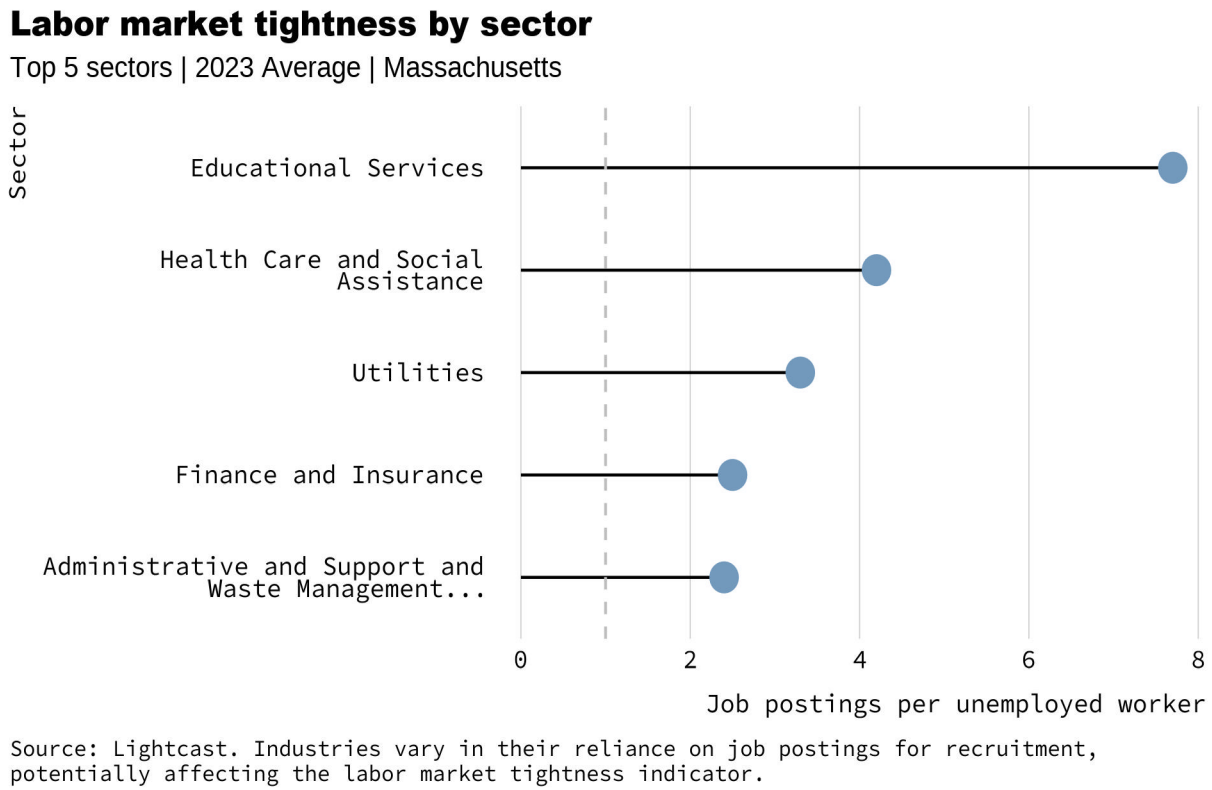
Figure 6



Source: Local Area Unemployment Statistics (MA), Current Population Survey (US)

Examining labor market tightness by sector and occupation reveals where these pressures are most acute. As shown in Figure 7, the sectors with the tightest labor markets in Massachusetts include Educational Services, Healthcare and Social Assistance, and Finance and Insurance. These sectors often require specialized skills and credentials, contributing to a skills gap that exacerbates labor market tightness. The time needed to acquire these qualifications can slow the labor market's response to surging demand, leading to persistent shortages and challenges for employers.

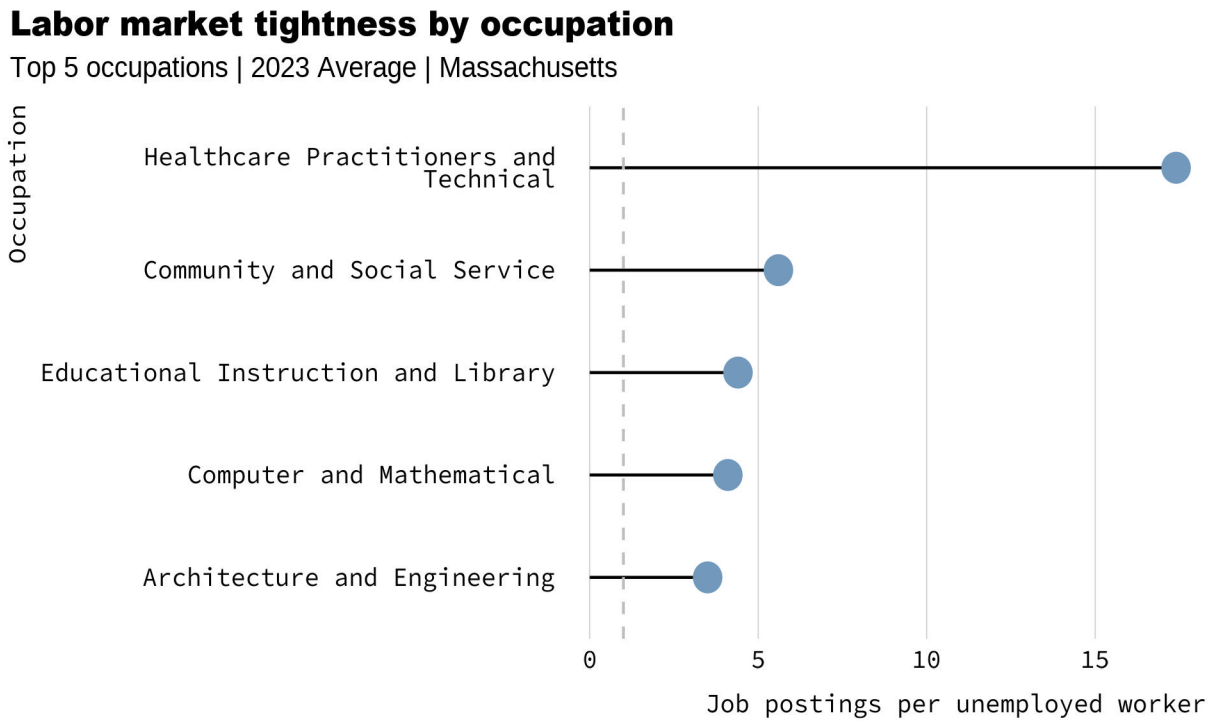
Figure 7



Source: Lightcast. Industries vary in their reliance on job postings for recruitment, potentially affecting the labor market tightness indicator.

Within these sectors, certain occupations face particularly intense competition for talent. Figure 8 also shows that Healthcare Practitioners and Technical Occupations, Educational Instruction and Library Occupations, and Community and Social Service Occupations have the highest ratios of job postings per unemployed worker. This highlights the critical need for skilled workers in these fields and the challenges faced by employers in attracting and retaining qualified personnel. Other occupations with tight labor markets include Legal Occupations and Computer and Mathematical Occupations, reflecting the ongoing demand for professionals in these high-skilled fields.

Figure 8



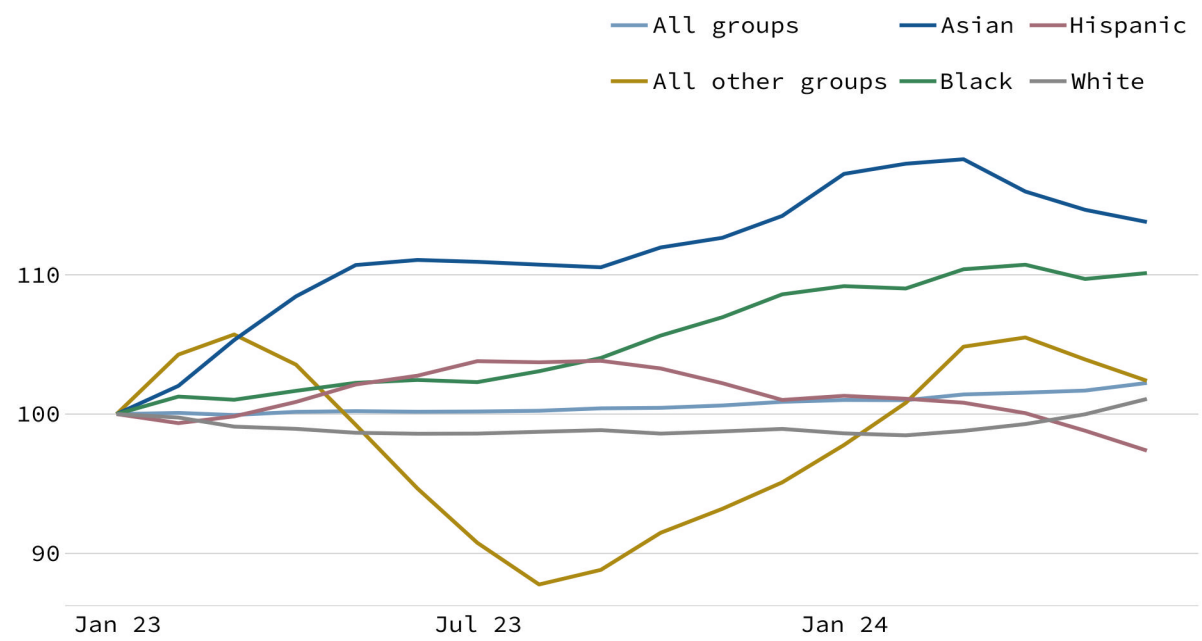
Source: Lightcast. Employers vary in their reliance on job postings for recruitment of specific occupations, potentially affecting the labor market tightness indicator.

As previous DER research has shown, tight labor market conditions can benefit workers who might otherwise face employment barriers, increasing labor market participation and employment. The tight labor market in Massachusetts has yielded mixed impacts on specific demographic groups. For women, the tight labor market has corresponded with increased employment and labor force participation among the age 25-54 population. However, the experience of Black and Hispanic or Latino workers has been more complex. Figure 9 shows that employment growth for Black workers has outpaced most other racial and ethnic groups since January 2023. While this growth has been accompanied by an increase in the unemployment rate among Black workers, unemployment insurance data suggests that it is likely driven by new labor market entrants. Between 2022 and 2023, average monthly UI claims among Black workers increased by 7%, compared to an increase of nearly 30% across all workers. This suggests that while more Black workers are entering the labor force and finding employment, the growth in the Black labor force is outstripping the available job opportunities, leading to a higher unemployment rate.

Figure 9

Employment growth by race and ethnicity

100 = Jan 2023 | 12-month average employment



Source: Current Population Survey

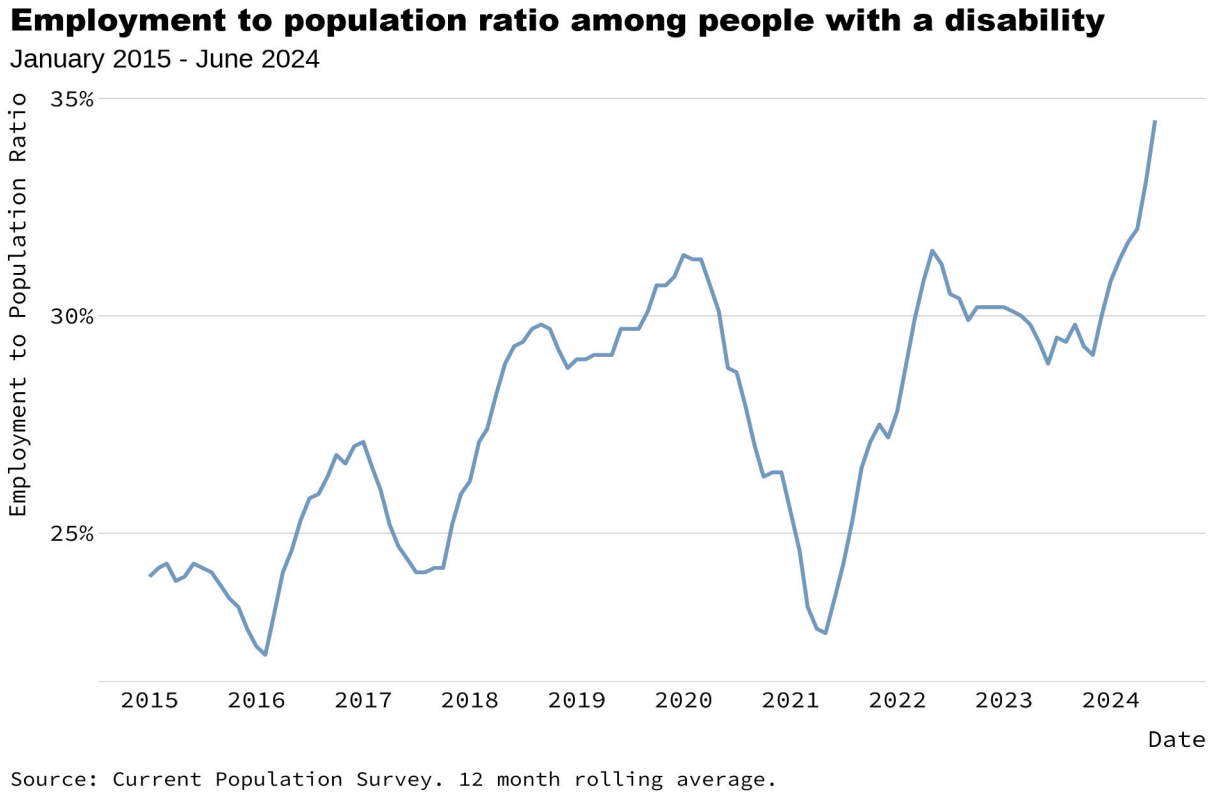
Hispanic or Latino workers in Massachusetts are facing significant challenges in the labor market, experiencing elevated unemployment rates, declining employment levels, and a 16% increase in average monthly unemployment insurance claims. This concerning trend contrasts with the experience of Black workers, who have seen strong employment growth, even as their unemployment rate has also increased.

One factor contributing to this divergence is the uneven demand across occupations and industries in the post-pandemic economy. For example, Black workers are 80% more likely than the overall working population to be employed in Health Care and Social Assistance. As a result, Black workers have been more likely to benefit from tight labor market conditions in the sector. Conversely, Hispanic or Latino workers are about 50% more likely than the overall working population to work in the Accommodation and Food Services, which has experienced a lagging recovery and less tight labor market. These findings underscore the need for targeted support and policy interventions to help workers transition to growing occupations and industries in the Massachusetts.

The tight labor market has also corresponded with an increase in labor force participation among people with disabilities (Figure 10). While the unemployment rate for this group has trended upwards in the first half of 2024, it has been accompanied by a large increase in the labor force itself,

suggesting that more individuals with disabilities are actively seeking employment. This trend highlights the potential for a more inclusive labor market where individuals with disabilities have greater access to opportunities, particularly given the growing prevalence of remote work.

Figure 10



Source: Current Population Survey. 12 month rolling average.

Furthermore, the tight labor market appears to have benefited workers without a bachelor's degree, as evidenced by increased labor force participation among those with some college or an associate degree. Between 2022 and 2023, average monthly unemployment insurance claims among those with an associate's degree or vocational training increased at half the rate of all other workers.

The combination of a tight labor market and increasing labor force participation suggests that there is still significant employment growth potential in Massachusetts. While the increased supply of labor can potentially alleviate some of the pressures on businesses, the underlying demand for workers remains strong, particularly in key sectors.

Sectoral Analysis: Deep Dive into Key Industries

While the preceding section provided an overview of the Massachusetts economy, this section delves deeper into the performance of key industries. This granular analysis reveals a mixed picture of growth and decline, with some sectors exhibiting resilience while others grapple with lingering challenges from the pandemic and evolving economic forces.

Professional, Scientific, and Technical Services

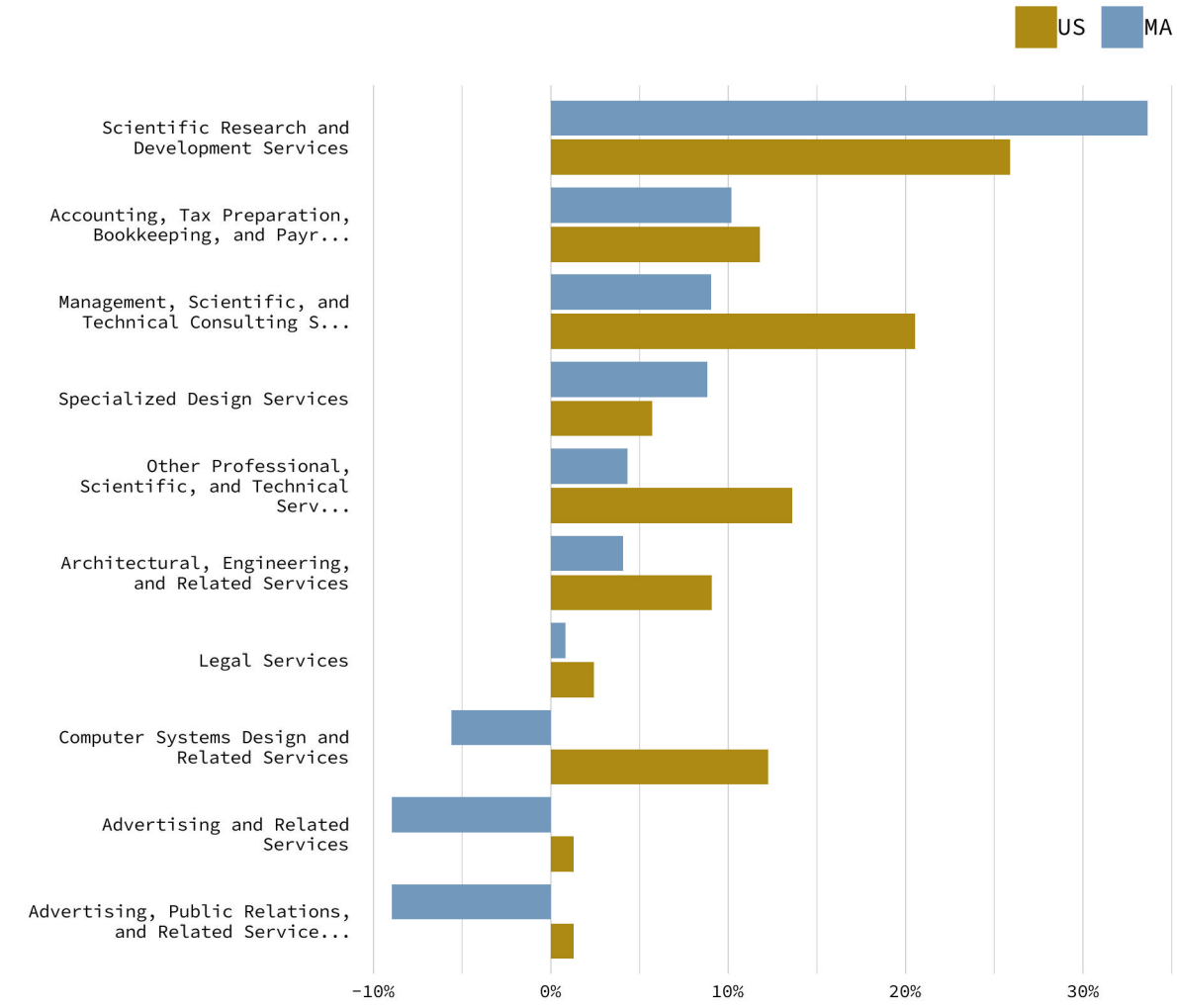
This sector, a major driver of economic growth in Massachusetts, faced significant headwinds in 2023, with average monthly unemployment insurance claims among people who worked in Professional, Scientific, and Technical Services increasing by more than 90% compared to 2022. Yet, more detailed industry data presents a complex and somewhat contradictory picture.

On the one hand, Figure 11 shows that Scientific Research and Development Services industry–employing more than 100,000 people in 2023–has experienced robust employment growth exceeding 30%. This strength reflects the state's thriving life sciences cluster and its continued investment in research and innovation.

Figure 11

Profesional, Scientific, and Technical Services industry employment growth

2019 - 2023



Source: QCEW

On the other hand, the Computer Systems Design and Related Services industry–employing more than 81,000 people in 2023–has lagged significantly behind national employment growth, with Massachusetts losing more jobs in the industry than any other state between 2019 and 2023. This is a concerning trend for an IT industry where Massachusetts has traditionally maintained a strong advantage. Over this period, QCEW data shows that emerging and established tech hubs like Texas, Florida, Colorado, North Carolina, and Washington experienced growth rates in the industry exceeding 25% between 2019 and 2023, suggesting that Massachusetts will face growing competition from these regions.

Remote work has likely contributed to this trend, with some workers choosing to relocate to another state after shifting to full-time work-from-home arrangements. Professional, Scientific, and Technical Services has one of the highest rates of remote work, with nearly 60% of workers in the sector nationally working from home at least part of the time in June 2024 (BLS). Research from the Federal Reserve Bank of St. Louis estimates that half of the increase in migration between 2019 and 2022 can be accounted for by the rise increase in work-from-home, with Massachusetts experiencing one of the largest increases in work-from-home nationally. Since employment is counted based on where the employee completes their work, out-of-state remote workers would not be counted as employed in Massachusetts, even if their employer is based here.

The tech sector–including Computer Systems Design and Related Services industry–experienced a downturn in 2023. The Boston Business Journal tracked more than 50 tech companies with presence in Massachusetts that reported layoffs in 2023, with companies often citing a challenging economic climate that forced them prioritize profitability and operational efficiency, coupled with strategic shifts including restructuring, refocusing core businesses, and navigating mergers and acquisitions. Average monthly unemployment insurance claims among people working in Computer and Math Occupations increased by 134% in 2023, compared to a 50% increase nationally. Despite this increase in layoffs, the number of job postings per unemployed worker in Computer and Math Occupations remained elevated in 2023 (Figure 8).

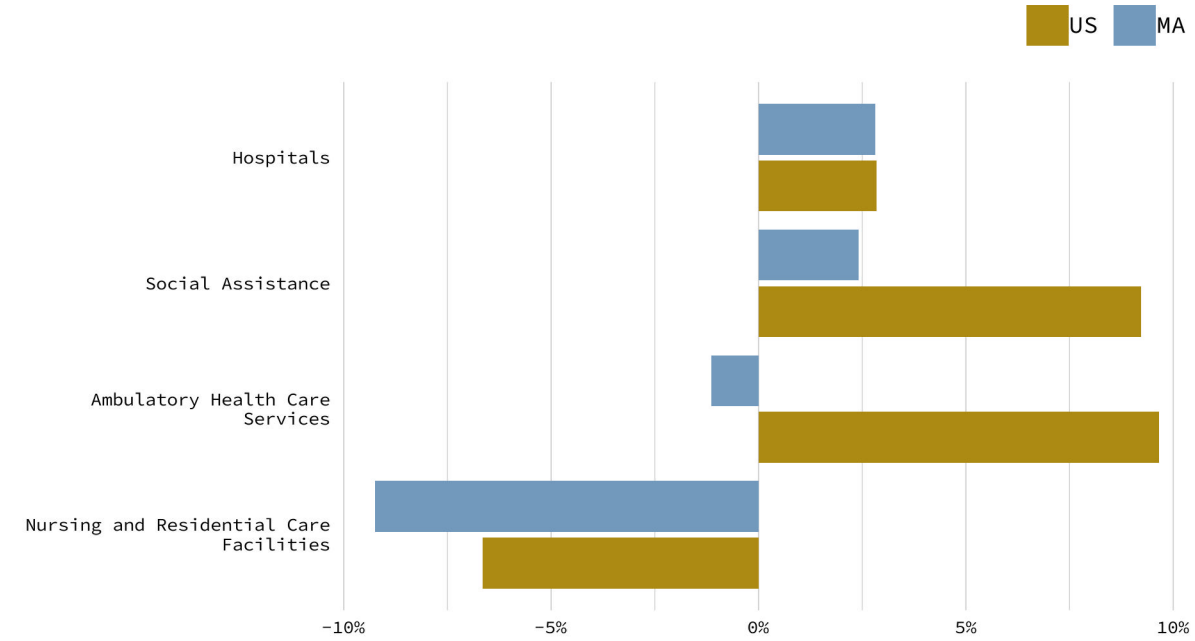
Healthcare & Social Assistance

As a cornerstone of the Massachusetts economy, the healthcare sector warrants close attention. However, as shown in Figure 11, the sector's performance has lagged behind the national average. While hospitals have seen employment growth roughly in line with the national average, employment in Ambulatory Health Care Services and Nursing and Residential Care Facilities has significantly lagged national growth. These trends likely reflect the ongoing challenges faced by the healthcare industry in attracting and retaining workers, particularly in lower-paying roles, amidst a tight labor market.

Figure 12

Health & Social Assistance industry employment growth

2019 - 2023

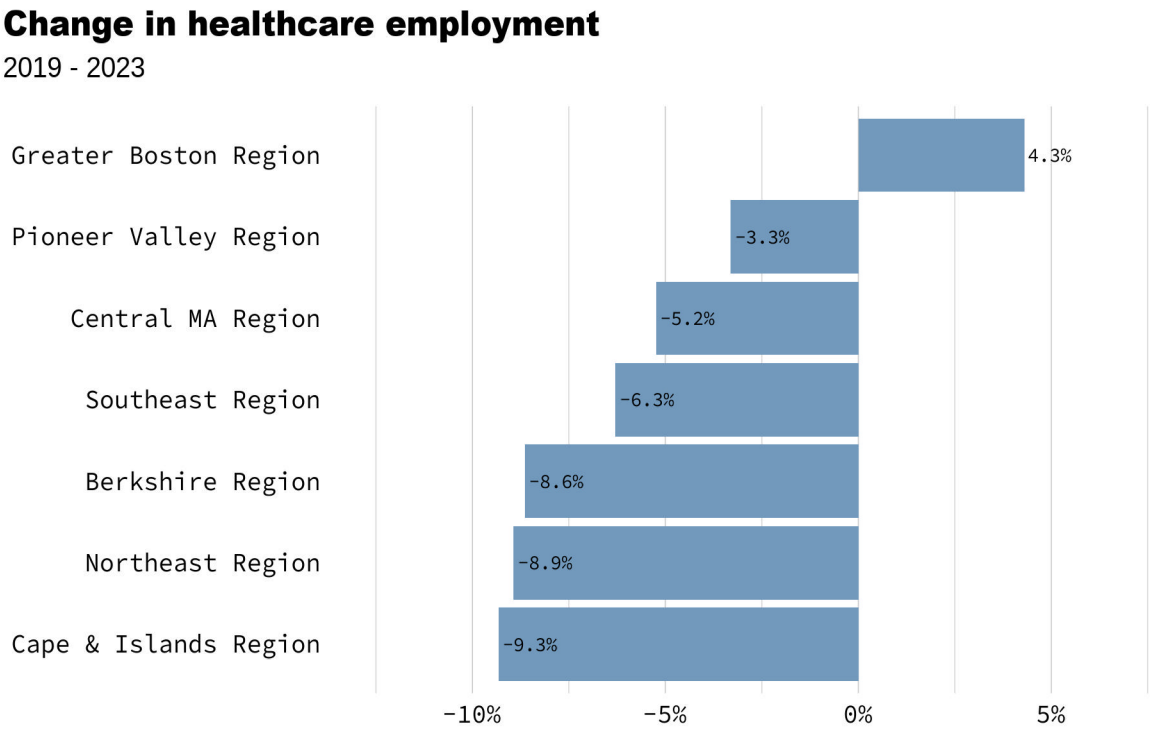


Source: Quarterly Census of Employment and Wages

These challenges are further underscored by findings from the Center for Health Information and Analysis (CHIA) Massachusetts Health Care Workforce Survey 2023. The survey found that vacancy rates were highest for full-time registered nurses (RNs) in home healthcare (20%) and nursing homes (19%). Moreover, full-time RNs had the highest turnover rates in adult day health (47%), home healthcare (36%), and nursing homes (34%). These high vacancy and turnover rates point to a critical shortage of nurses in these settings, exacerbating the difficulties faced by providers in delivering quality care.

The tight labor market has particularly impacted healthcare employers outside of Greater Boston. While healthcare employment in the Greater Boston region exceeded pre-pandemic levels by 4.3% in 2023, other regions experienced persistent employment gaps, as shown in Figure 12. The gap between 2019 and 2023 employment ranged from a 3.3% in the Pioneer Valley to a 9.3% in the Cape & Islands, highlighting the uneven recovery of the healthcare workforce across the Commonwealth. This geographic disparity may reflect several factors, including wages, cost of living, and the availability of qualified healthcare professionals in different regions.

Figure 13



Source: Quarterly Census of Employment and Wages

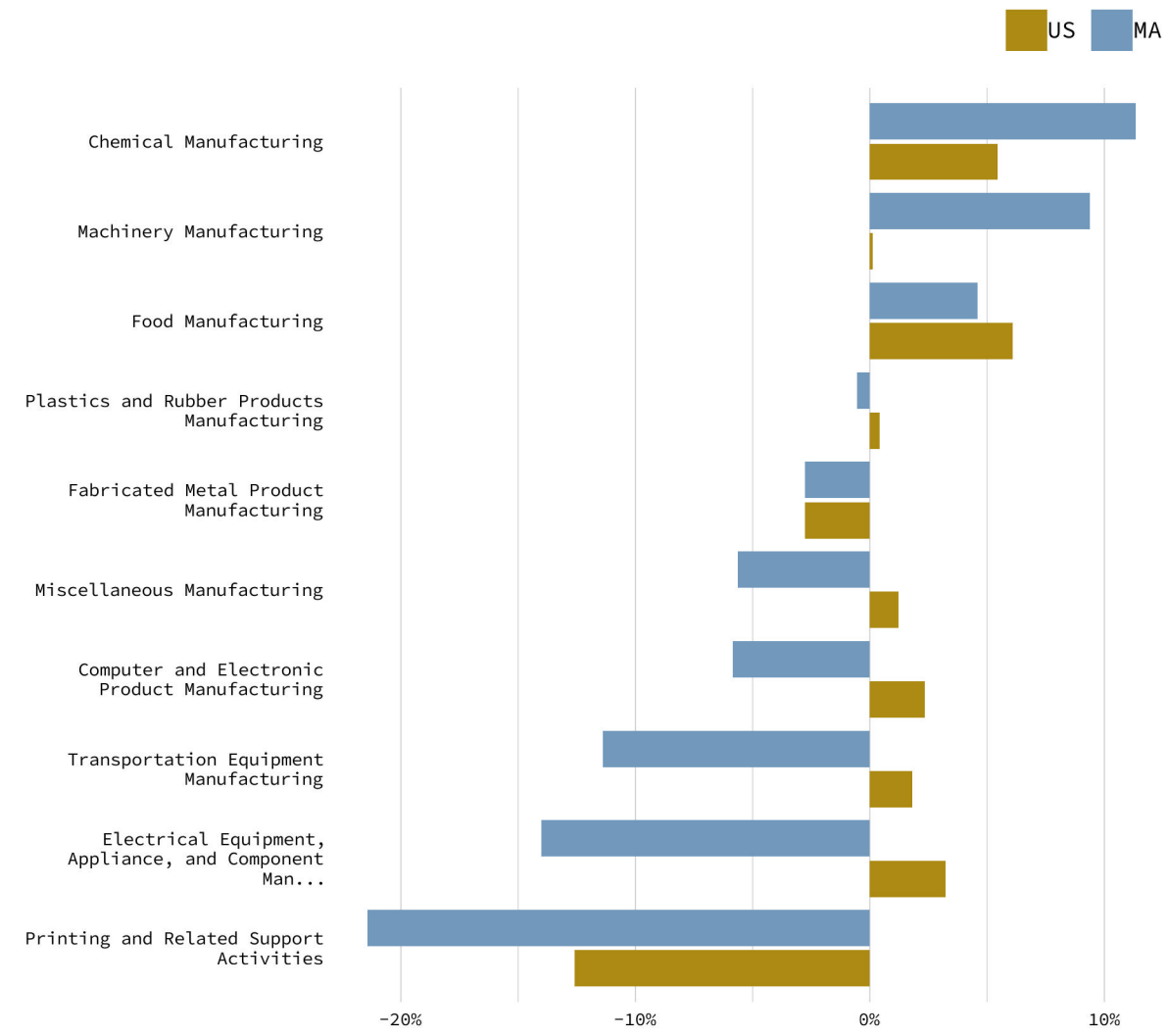
Manufacturing

The manufacturing sector in Massachusetts faces a mixed outlook. Figure 14 shows positive employment growth in Chemical Manufacturing—which includes pharmaceutical manufacturing— and Machinery Manufacturing, exceeding national rates and suggesting resilience and potential for future growth in these segments. However, employment in Computer and Electronic Product Manufacturing–the largest manufacturing industry in the state–has declined by more than 5% despite national growth in this industry, raising concerns about the state's competitiveness in this increasingly important industry.

Figure 14

Manufacturing industry employment growth

2019 - 2023 | Top 10 industires by employment



Source: Quarterly Census of Employment and Wages

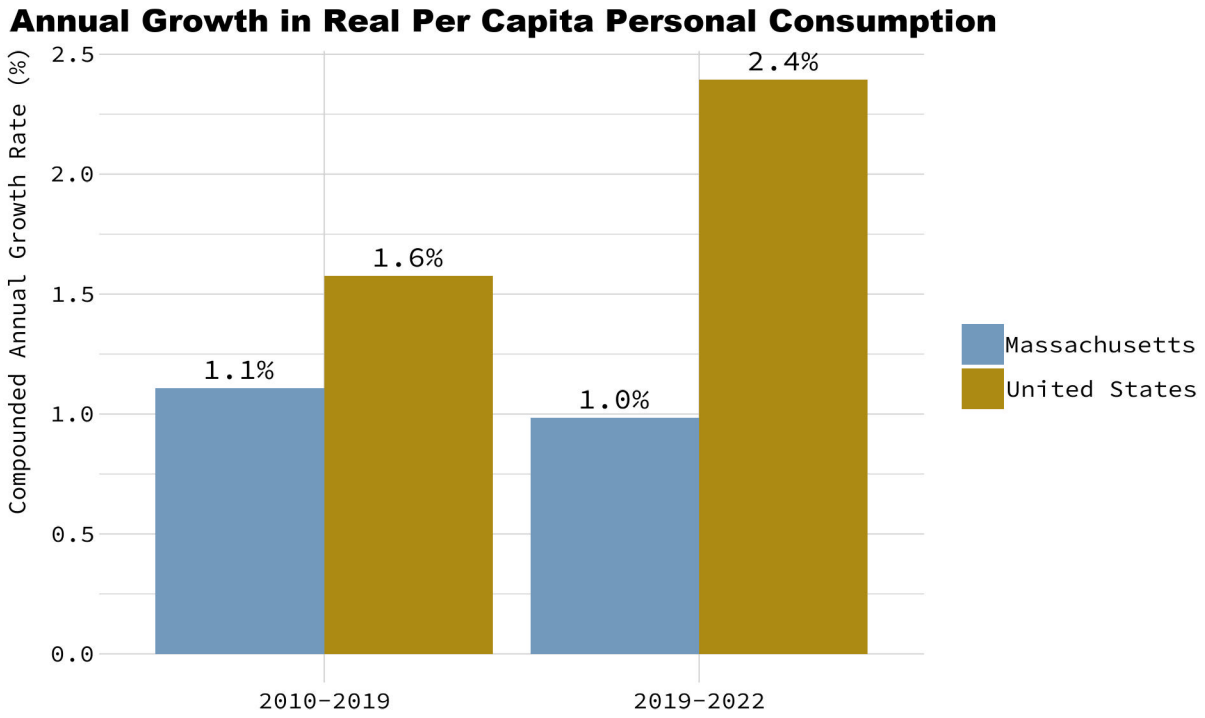
However, positive developments in 2023 indicate potential on the horizon for this sector. In 2023, Massachusetts was selected to host the Northeast Microelectronics Coalition Hub (NEMC) through the federal CHIPS and Science Act. This initiative aims to strengthen domestic semiconductor research and development, manufacturing, and supply chains, and it is expected to create new opportunities and jobs in the microelectronics industry in Massachusetts. The NEMC Hub represents a significant investment in the state's manufacturing future and could play a crucial role in boosting competitiveness and innovation within this sector.

Accommodation and Food Services

The Accommodation and Food Services sector continues to face significant challenges in its recovery from the pandemic. Employment in restaurants, bars, and hotels remains well below pre-pandemic levels, lagging the national recovery.

While a portion of this gap can be attributed to reduced foot traffic in downtown areas due to fewer workers commuting to offices and a decrease in business travel—particularly in Boston and Cambridge— the sector's weakness is also evident in other regions. Several factors likely contribute to this sluggish performance, including diminished demand due to inflation, evolving consumer preferences, persistent labor shortages, and slower population growth. Data from the Bureau of Economic Analysis highlight the impact of rising prices on consumer spending. Between 2019 and 2022, real per-capita personal consumption in Massachusetts grew by just 1%, compared to a 2.4% increase nationally, suggesting that inflationary pressures are squeezing disposable income and hindering spending on discretionary items like dining out Figure 15. Additionally, slow population growth in the Commonwealth relative to the rest of the country contributes to slower growth in the Accommodation and Food Services sector.

Figure 15



Source: Bureau of Economic Analysis

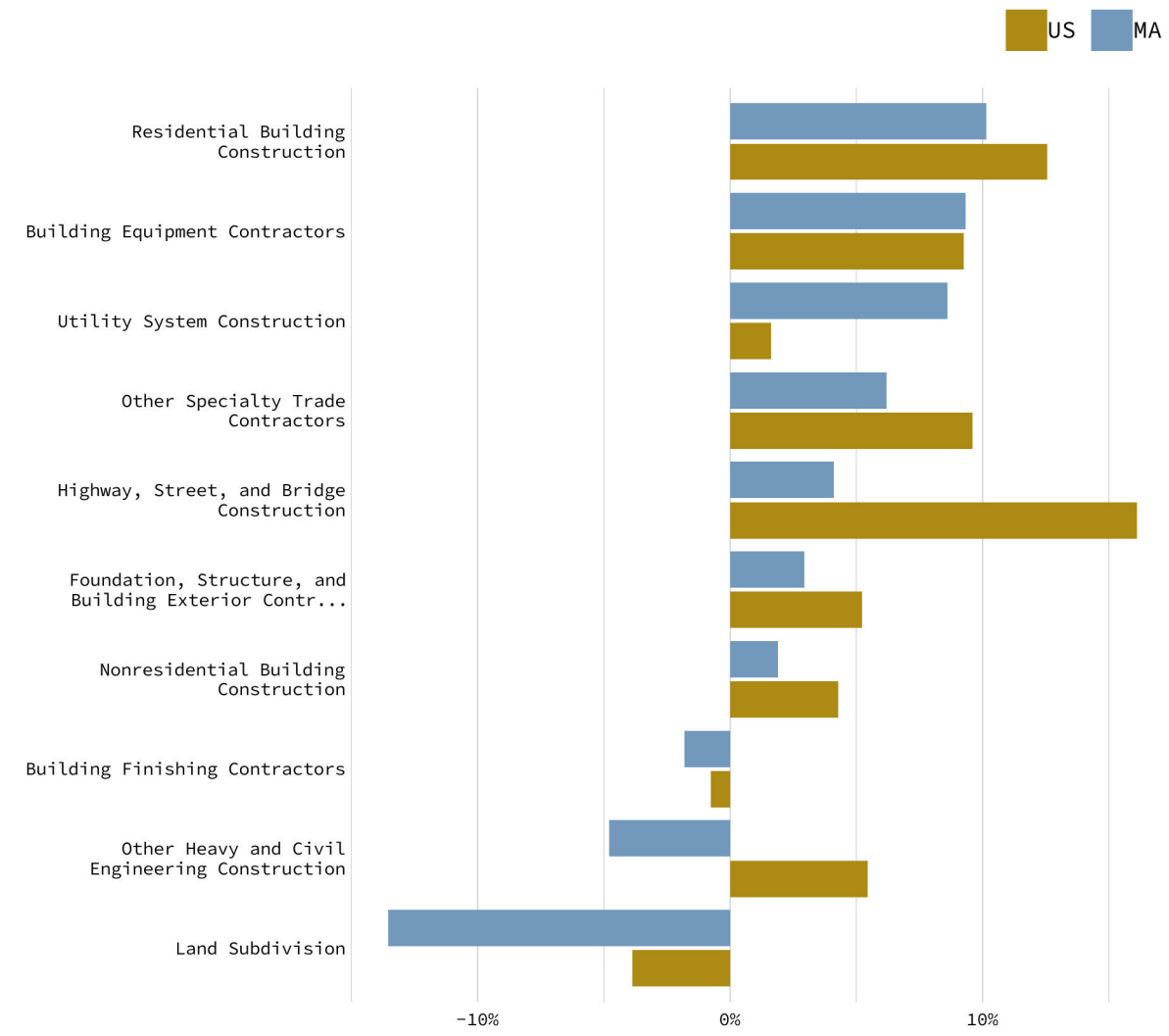
Construction

The construction sector in Massachusetts presents a more optimistic picture than some other industries, with most sub-sectors experiencing robust employment growth (Figure 16). Notably, employment in Residential Building Construction, while showing growth, has lagged behind the national rate since 2019. This is concerning given that Massachusetts already has a smaller share of employment in residential construction compared to the US average, reflecting pre-existing challenges related to housing supply constraints. The Affordable Homes Act, signed in August 2024, aims to address this issue. It provides a comprehensive strategy encompassing funding, policy changes, and the establishment of dedicated commissions. The Act authorizes $4.12 billion in capital to support a range of housing initiatives, from public housing improvements to new construction and preservation programs. It also introduces significant policy changes, such as allowing accessory dwelling units by-right in single-family zones and streamlining the process for developing state-controlled land for housing. These provisions are expected to stimulate demand for workers in the residential construction industry, potentially leading to significant employment growth and increased demand for training and apprenticeships in the coming years.

Figure 16

Construction industry employment growth

2019 - 2023



Source: Quarterly Census of Employment and Wages

A Special Consideration: The Impact of Remote Work

The rise of remote work has become a significant factor shaping the Massachusetts economy, requiring closer examination due to its multifaceted impacts on various aspects of the state's economic performance. This section expands beyond the report's primary focus on traditional economic indicators, but it is crucial for understanding the evolving dynamics of the labor market, sectoral performance, and geographic distribution of economic activity within the Commonwealth.

Massachusetts, with its high concentration of knowledge-based industries and technology-driven jobs, has been at the forefront of the shift towards remote work. Prior to the pandemic, the state already had among the highest shares of employment in remote-friendly occupations in the US. The pandemic dramatically accelerated this trend, with nearly 35% of workers in the state working from home at least part of the time in March 2024, compared to roughly 24% nationally. This widespread adoption of remote work has significant implications for how we measure economic activity and understand the dynamics of the labor market.

One potential impact of remote work is on employment figures. As discussed earlier, the slower-than-expected employment recovery in Massachusetts may be partially attributed to the rise of remote work. If a significant portion of workers in key sectors, such as Professional, Scientific, and Technical Services, are now residing outside of the state while working for Massachusetts-based companies, this could lead to a disconnect between employment data, which is typically based on where workers reside, and actual economic output, which is based on where the work is performed. This discrepancy could explain the observed divergence between employment and GDP growth in certain sectors.

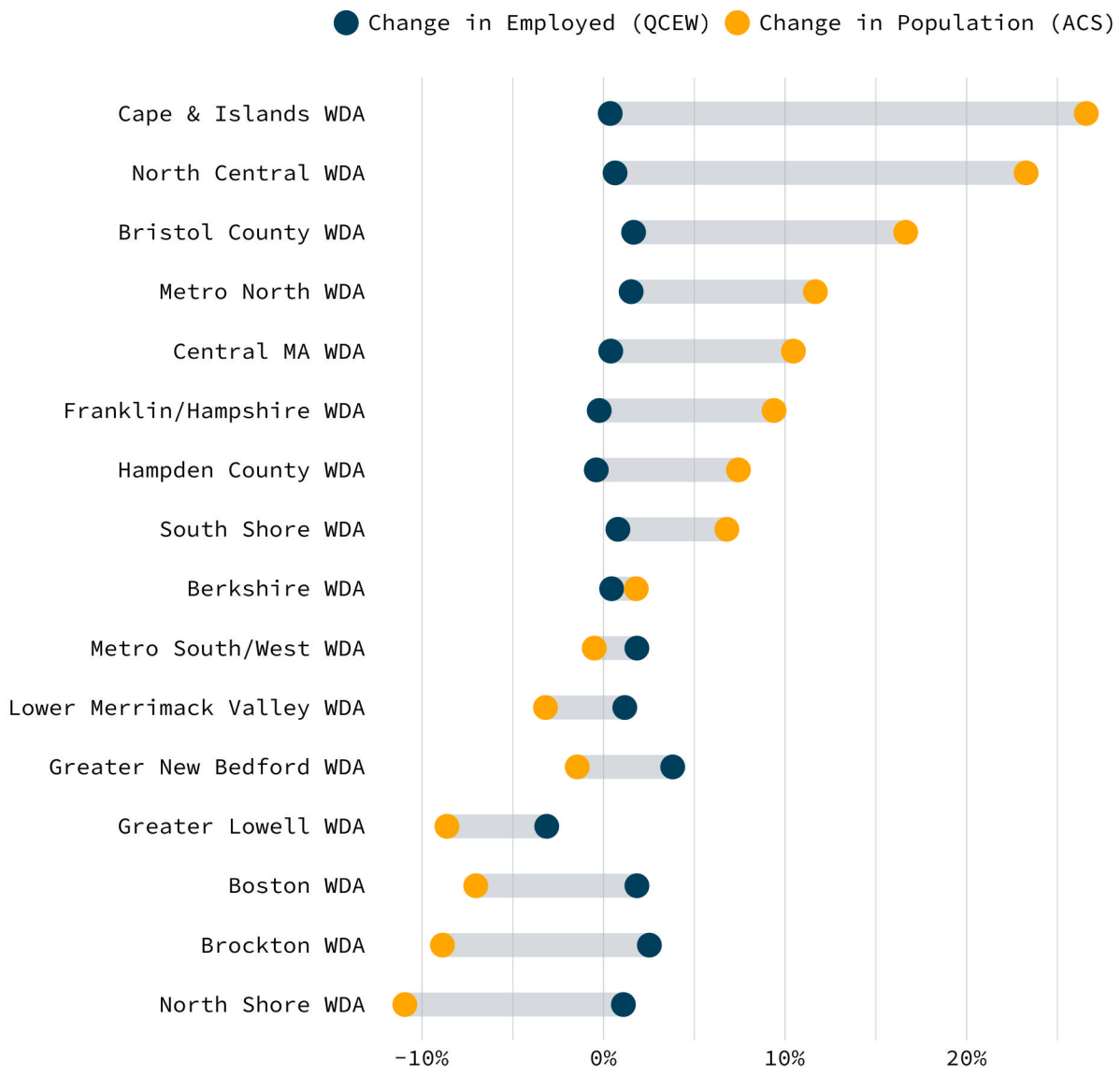
Furthermore, remote work has the potential to reshape the geographic distribution of economic activity within the state. If workers are no longer tethered to a specific location, this could lead to a decentralization of economic activity away from traditional urban centers. While this could bring new opportunities to less densely populated areas, it also raises questions about the future of commercial real estate, transportation infrastructure, and the vitality of urban economies.

This potential for geographic shifts is already evident in the data. Figure 17 illustrates this trend by focusing on changes in employment among local firms and changes in the local population in the Professional, Financial, and Information Services sector across Massachusetts's 16 Workforce Development Areas (WDAs). These sectors have the highest rates of remote work, and the chart reveals a notable divergence between employment and population growth. While some WDAs, primarily those outside of Greater Boston, have experienced population growth, employment growth in these sectors has remained concentrated in the Boston WDA and a few other areas. This suggests that remote work may be enabling workers in these fields to relocate to different parts of the state while maintaining their employment in the Greater Boston area.

Figure 17

Change in Professional, Financial, & Information Services employment

2019-2022



This potential for geographic shifts is supported by new research from the Federal Reserve Bank of St. Louis. The research shows that remote work is a significant contributor to interstate migration, particularly outmigration from states like Massachusetts where remote work is especially prevalent. This suggests that remote work may be facilitating a re-sorting of the population, with some workers choosing to relocate to areas with lower costs of living or different lifestyle amenities.

While the long-term implications of remote work are still unfolding, it is clear that this trend is reshaping the Massachusetts economy in profound ways. Understanding the dynamics of remote

work, its impact on different sectors and demographics, and its implications for economic policy will be crucial in navigating the challenges and harnessing the opportunities of this evolving landscape.

Conclusion

The Massachusetts economy is at a pivotal juncture. While the Commonwealth has experienced overall economic growth since the COVID-19 pandemic, its recovery has been markedly uneven and slower than the national rebound. This economic divergence, influenced by factors such as shifts in consumer demand, the adoption of remote work, labor market conditions, and the composition of the state's industries, highlights the complexities of the state's economic landscape and its potential long-term trajectory.

This report has highlighted several key findings:

- **Delayed Employment Recovery:** Massachusetts's employment growth has lagged behind the US, with certain sectors, like Accommodation and Food Services, Retail Trade, and parts of Manufacturing, experiencing particularly pronounced declines. While initial estimates suggest a strong rebound in the overall labor force participation rate in 2024, driven by both domestic-born and foreign-born workers, the employment recovery has lagged.
- **Persistent Labor Market Tightness:** The Massachusetts labor market remains exceptionally tight, creating challenges for employers, particularly in sectors like Healthcare and Education. This tightness, combined with skills gaps in certain occupations, is contributing to persistent labor shortages, putting upward pressure on wages, and potentially hindering growth in these critical sectors.
- **Uneven Sectoral Performance:** The recovery has been uneven across sectors, with some industries, like Professional, Scientific, and Technical Services, showing strength, while others, like Healthcare, face significant challenges related to labor shortages and slow growth. The Accommodation and Food Services sector continues to struggle, reflecting the lingering impacts of the pandemic and inflationary pressures on consumer spending.
- **Transformative Impact of Remote Work:** The rise of remote work is reshaping the Massachusetts economy, influencing employment figures, productivity, geographic distribution of economic activity, and migration patterns. This trend presents both opportunities and challenges, requiring a nuanced understanding of its long-term implications and potential policy responses.

Regional Analysis

The uneven recovery in Massachusetts is also evident at the regional level. This section examines regional shifts in key labor market indicators, focusing on four regions—the Northeast, Southeast, Pioneer Valley, and Berkshires—that appear to be lagging behind the statewide recovery. The analysis explores the sectoral challenges contributing to these regional disparities and integrates findings from previous sections to provide a comprehensive understanding of the factors at play.

Fewer Jobs Outside of Boston

The uneven nature of the recovery in Massachusetts is readily apparent when examining job growth across the seven Workforce Skills Cabinet (WSC) regions including the Berkshires, Pioneer Valley, Central, Northeast, Greater Boston, Southeast, and Cape & Islands. These regions group together one or more Workforce Development Areas (WDAs) to facilitate regional economic planning.[1]

The Greater Boston region is the only region to fully recover jobs lost since the pandemic (Table 1). All other WSC regions had fewer jobs in 2023 than they did in 2019, indicating a slower and less complete recovery in these areas. The Pioneer Valley and Berkshire regions have experienced the most significant gaps, with employment levels approximately 4% below pre-pandemic levels in each region. The Southeast and Northeast regions have also faced challenges, with employment around 2% lower than pre-pandemic levels in each area. This uneven job growth across regions mirrors the broader pattern of a slower-than-expected statewide recovery.

[1] The Berkshire WSC region contains the Berkshire WDA; the Cape & Islands WSC region contains the Cape & Islands WDA; the Central MA WSC region contains the North Central and Central MA WDAs; the Greater Boston WSC region contains the Boston WDA, Metro North WDA, and Metro South-West WDA; the Northeast WSC region contains the Greater Lowell WDA, Lower Merrimack Valley WDA, and North Shore WDA; the Pioneer Valley WSC region contains the Hampden County WDA and the Franklin-Hampshire WDA; and the Southeast WSC region contains the South Shore WDA, Brockton WDA, Briston County WDA, and Greater New Bedford WDA.

Table 1: Total Jobs by Region

Region	2019	2023	Percent Change
Berkshire	61,112	58,638	-4.05
Cape & Islands	114,541	113,564	-0.85
Central MA	356,325	354,952	-0.39
Greater Boston	1,714,954	1,720,135	0.30
Northeast	456,984	446,798	-2.23
Pioneer Valley	310,564	299,043	-3.71
Southeast	568,782	556,980	-2.07

Source: Quarterly Census of Employment and Wages (QCEW)

While unemployment rates have returned to pre-pandemic levels across Massachusetts, a regional analysis reveals underlying disparities that warrant further examination. As of July 2024, the average 12-month unemployment rate is low across all WSC regions, ranging from 3.01% in Greater Boston to 4.20% in the Cape & Islands Table 2.

While these rates are comparable to 2019 levels, the patterns of change since the pandemic reveal a potentially concerning trend. Counterintuitively, the regions farthest from major job centers in Greater Boston have experienced the most significant declines in unemployment, suggesting a tighter labor market in these areas. This trend coincides with relatively large job losses in the two Western Massachusetts regions (Berkshire and Pioneer Valley), indicating that the tight labor market may be hindering the recovery of jobs in these areas, as discussed previously. This finding raises questions about the underlying causes of these regional disparities in labor market tightness and their potential implications for the uneven recovery across the Commonwealth.

Table 2: Unemployment Rate by Region

Region	2019	2024	Difference
Berkshire	3.89	3.49	-0.40
Cape & Islands	4.33	4.20	-0.12
Central MA	3.43	3.46	0.04
Greater Boston	2.61	3.02	0.40
Northeast	3.27	3.50	0.22
Pioneer Valley	3.93	3.77	-0.16
Southeast	3.58	3.67	0.09

Source: Local Area Unemployment Statistics (LAUS)

Note: 2019 is July 1, 2018 - June 30, 2019. 2024 is July 1, 2023 - June 30, 2024.

Uneven Trends in Labor Force Participation

Regional disparities in labor force participation present a complex challenge for the Massachusetts. Data from the American Community Survey (ACS) reveals significant variation in labor force participation rates (LFPR) across region. In 2022—the latest year of data available for reliable estimates of regional LFPR—the LFPR ranged from 70.23% in Greater Boston to 59.81% in the Pioneer Valley Table 3. Furthermore, the trends from 2019 to 2022 highlight an uneven pattern of change, with all regions except Central MA experiencing a decline in LFPR, most notably in the Northeast region and the Pioneer Valley.

These declining LFPRs raise concerns about worker availability in these regions, particularly given the tight labor market conditions discussed previously. These declines may be driven by lingering economic distress stemming from the pandemic, especially in cities like Springfield and Lowell. However, changes in the LFPR could also reflect changing demographics, such as an increase in the retiree population. To better understand these dynamics, the following analysis will delve deeper into the underlying factors contributing to regional LFPR variations, examining changes in the size of the labor force and the participation rate among prime-age workers.

Table 3: Labor Force Participation Rate (LFPR) by Region

Region	2019	2022	Difference
Berkshire	63.61	62.92	-0.70
Cape & Islands	61.41	60.82	-0.59
Central MA	67.25	67.50	0.24
Greater Boston	70.96	70.23	-0.73
Northeast	69.90	68.14	-1.77
Pioneer Valley	63.20	59.81	-3.39
Southeast	67.50	67.41	-0.09

Source: American Community Survey (ACS) Public Use Microdata Sample (PUMS)

Pool of Workers is Shrinking, Especially in Western MA

Analyzing changes in the absolute size of the labor force provides a clearer picture of regional labor market dynamics. Data from the Local Area Unemployment Statistics (LAUS) program reveals that all regions experienced a decline in labor force participants between 2019 and 2024 Table 4. However, the most significant losses occurred in the Berkshire and Pioneer Valley regions, with decreases of 4.98% and 4.35% respectively. This trend suggests a shrinking pool of available workers in these regions, potentially exacerbating the challenges posed by the already tight labor market. Meanwhile, the Northeast exhibited a relatively more moderate 1.57% decrease in the size of its labor force.

Table 4: Labor Force by Region

Region	2019	2024	Percent Change
Berkshire	65,748	62,472	-4.98
Cape & Islands	133,985	131,958	-1.51
Central MA	468,806	459,429	-2.00
Greater Boston	1,432,375	1,423,179	-0.64
Northeast	596,106	586,750	-1.57
Pioneer Valley	375,290	358,973	-4.35
Southeast	768,611	760,257	-1.09

Source: Local Area Unemployment Statistics (LAUS)

Fewer Prime-Age People Working in Western MA

Further insights emerge when examining the prime-age labor force participation rate (LFPR), which measures the percentage of adults aged 25-54 who are in the labor force. This segment of the population is crucial for economic growth, as they tend to be at their peak productivity and experience levels. Data from the ACS reveals that the prime-age LFPR for the two Western Massachusetts regions (Berkshire and Pioneer Valley) is lower than in other regions Table 5. The Pioneer Valley's rate in 2022 was 81.8%, approximately 7 percentage points lower than Greater Boston's rate of 88.5%. Furthermore, both regions experienced sizable declines in prime-age LFPR from 2019 to 2022, suggesting potential economic weakness and a lack of opportunities for prime-age workers in these areas.

The combination of a shrinking labor force and declining prime-age participation rates in Western Massachusetts raises significant concerns about the long-term economic prospects of these regions. The lack of available workers could hinder business growth, limit economic expansion, and exacerbate existing social and economic disparities. Understanding the underlying causes of these trends, such as skills mismatches, lack of affordable housing, or inadequate transportation infrastructure, will be crucial for developing effective policy interventions to address these challenges.

Table 5: Prime-Age Labor Force Participation Rate (LFPR) by Region

Region	2019	2022	Difference
Berkshire	87.79	84.73	-3.07
Cape & Islands	87.43	87.15	-0.28
Central MA	84.94	85.27	0.32
Greater Boston	88.73	88.45	-0.28
Northeast	87.90	87.53	-0.37
Pioneer Valley	83.32	81.84	-1.48
Southeast	86.24	87.71	1.48

Source: American Community Survey (ACS) Public Use Microdata Sample (PUMS)

Job Losses by Sector & Region

As was noted previously, Pioneer Valley, Berkshire, Northeast, and Southeast regions had the largest gaps between current in pre-pandemic employment in 2023 (Table 1). To understand the factors contributing to the delayed recovery, it is essential to examine the decline in employment by sector. This analysis will reveal which industries have been most impacted in each region, providing insights into the underlying structural shifts and potential vulnerabilities of these local economies.

To explore what could be driving the issues in the Pioneer Valley, Berkshire, and Northeast regions, it is helpful to break down the decline in employment by sector in these regions. Since the Southeast also experienced a significant employment gap compared to pre-pandemic levels (-2.07%), this region is included in the analysis, although the focus is on the other three regions.

Sector-Wide Trends and Regional Variations

Across all four regions, several sectors stand out as significant contributors to the decline in employment from 2019 to 2023 Table 6. The Healthcare and Social Assistance sector and the Accommodation and Food Services sector experienced declines in every region, reflecting the statewide trends of labor shortages and lagging consumer spending discussed previously. The Information sector also exhibited significant declines across all four regions, likely reflecting the broader national trend of layoffs in the tech industry in recent years.

However, a closer look reveals important regional variations. The Northeast region, for example, experienced relatively large declines across multiple sectors, including a striking 26.2% decline in the Management of Companies and Enterprises sector. However, unlike the other three regions, the Northeast did not experience a decline in Manufacturing employment, which is a positive sign for this region, given its status as a hub for advanced manufacturing in industries like robotics, semiconductors, aerospace, pharmaceuticals, and defense.

In the Pioneer Valley, two key sectors—Finance and Insurance and Manufacturing—stand out as particularly concerning. The Finance and Insurance sector lost 14.8% of its jobs, raising concerns about the region's connection to the national insurance hub of Hartford, CT, and its status as the headquarters of MassMutual. The 5.5% decline in Manufacturing employment is also troubling, given the sector's long-standing importance to the Pioneer Valley economy and its designation as a priority industry for the region.

Table 6: Percent Change in Employment from 2019-2023 by Sector and Region

Sector	Northeast	Southeast	Pioneer Valley	Berkshire
Accommodation and Food Services	-6.2	-3.4	-8.4	-4.9
Finance and Insurance	-15.4	-8.0	-14.8	-7.9
Health Care and Social Assistance	-3.5	-3.6	-2.5	-3.3
Information	-23.2	-34.7	-18.8	-21.1
Management of Companies and Enterprises	-26.2	-15.8	-3.1	42.9
Manufacturing	0.6	-4.5	-5.5	-11.4

Source: Quarterly Census of Employment and Wages (QCEW)

Connecting Sectoral Decline to Labor Market Dynamics

To determine whether the observed job losses in specific sectors are primarily due to a tight labor market or reduced employer demand, it is crucial to examine job posting trends. Analyzing changes in job postings over time can provide valuable insights into the hiring needs and priorities of employers in each region.

The data reveals a mixed picture, with some regions experiencing robust growth in job postings in certain sectors, while others show signs of declining demand (Table 7).

Table 7: Percent Change in Job Postings from 2019-2023 by Sector and Region

Region	Northeast	Southeast	Pioneer Valley	Berkshire
Accommodation and Food Services	13.0	15.6	49.4	42.1
Finance and Insurance	-37.8	-11.6	35.3	-9.4
Health Care and Social Assistance	25.0	50.2	67.0	220.9
Information	-36.4	-33.9	14.8	-40.8
Management of Companies and Enterprises	-18.3	100.8	-43.6	-100.0
Manufacturing	-7.3	14.2	89.5	17.9

Source: Lightcast Annual Job Postings

Pioneer Valley

The situation in the Pioneer Valley is particularly complex. On the one hand, the low prime-age labor force participation rate, shrinking pool of workers, and employment declines in key sectors Finance and Insurance and Manufacturing could suggest slowing economic growth. On the other hand, the job posting data suggest that demand for workers is strong. In five out of the six sectors analyzed, employers in the Pioneer Valley posted more jobs in 2023 than in 2019. Notably, the region is the only one of the four where job postings increased in both the Finance and Insurance and Information sectors during this period. This suggests that the labor market challenges in the Pioneer Valley may stem from a mismatch between the skills of available workers and the requirements of employers, rather than a lack of job opportunities. This potential skills mismatch, coupled with factors like wage expectations and the availability of alternative employment options, could be contributing to the region's low labor force participation and hindering job growth.

Berkshires

The Berkshires faces an exceptionally tight labor market, particularly in sectors related to tourism and healthcare. Job postings in Accommodation and Food Services and Healthcare and Social Assistance have surged since 2019, increasing by 42.4% and 220.9%, respectively. This surge in demand suggests that employers in these sectors are struggling to find enough workers to fill these positions. Additionally, with Healthcare and Social Assistance being among the top industries for the region, the high demand for healthcare workers is concerning, given the region's aging demographics and the potential strain on the healthcare system.

Northeast

The Northeast region presents a more complex picture. The data reveals a decline in both employment and job postings in the Finance and Insurance, Information, and Management of Companies and Enterprises sectors, suggesting a reduction in employer demand for workers in these industries. This points to a potential sectoral restructuring within the region, with a shift away from these industries. However, the Manufacturing sector, a key driver of the Northeast economy, has experienced a recovery in employment since the pandemic. At the same time, job postings in the region have decreased by 7.3%. This decrease in postings, despite the increase in employment, could indicate that workers in the region are successfully transitioning into manufacturing roles, suggesting a more balanced labor market in this sector.

Conclusions

This section has illuminated some differences among the regions of Massachusetts in terms of recovery from the pandemic. What stands out immediately is that the Pioneer Valley, Berkshire, Northeast, and Southeast regions have lagged behind the other regions of the Commonwealth in terms of job recovery (Table 1). A deep dive into the other economic indicators reveals that the Western MA regions (Pioneer Valley and Berkshire) and Northeast regions in particular have experienced the most change.

The data suggests that Western MA has developed tight labor markets since the pandemic. From 2019-2023, both the Pioneer Valley and the Berkshire regions exhibit large declines in employment, declines in their unemployment rates, declines in their prime-age labor force participation rates, and declines in the size of their labor forces. However, there are some differences between the two regions.

The Pioneer Valley has seen elevated demand for workers in high skilled sectors, which suggests that there could be a skills mismatch issue driving the tight labor market. Consistent with this story, local leaders have identified in their Regional Blueprint that about 30% of the region's Hispanic residents have less than a high school diploma. It may be that many in the population have lacked the opportunity to develop the skills that employers are demanding, particularly in the Finance and Insurance, Manufacturing, and Information sectors, and are dropping out of the labor market. However, more research is needed to say definitively this is the case.

Meanwhile, the Berkshire region is experiencing especially high demand in the Health Care and Social Assistance sector, as well as in the Accommodation and Food Services sector. These are key sectors for the Berkshires, which has an aging population and is reliant on tourism. As discussed in the Berkshire regional planning blueprint, the region is facing a shortage of Millennials (ages 25-39) compared to national and state averages. This suggests that additional workers may be needed in the region to fill jobs in these key sectors.

The Northeast region, on the other hand, does not display as much evidence of a tight labor market. While it does have a slightly smaller pool of workers in 2023 than in 2019, the prime-age labor force participation rate is relatively high and has not declined. Instead, the data points to a restructuring of sectors in the region – with a net decrease in jobs. If this is the case, there will likely be lower employment in the Finance and Insurance, Information, and Management of Companies and Enterprises sectors going forward, but consistent or increased employment in the Manufacturing sector.

MassTalent Industries: In-Demand Occupations

To better understand how job and workforce development opportunities align with the economic shifts discussed above, this analysis provides a deeper assessment of the industrial and occupational composition of four industry groups that have been identified as key sectors that are critical to the future economic growth of the state or are emerging sectors.

The first four industry groups considered are industries that have been prioritized by the state through the MassTalent initiative:

- **Advanced Manufacturing:** This industry group is composed of manufacturing industries that employ a high level of STEM occupations and engage in a high degree of research and development.

- **Life Sciences:** This industry group that encompasses various fields such as advanced and applied sciences that expand the understanding of human physiology and have the potential to lead to medical advances or therapeutic applications. This analysis uses definitions of life sciences published by MassBio.
- **Healthcare and Social Assistance:** This sector encompasses healthcare industries like ambulatory health care services, hospitals, and nursing and residential care facilities, and social assistance industries like individual and family services, community food and housing, and emergency and other relief services, and child day care services.
- **Clean Energy:** The clean energy sector encompasses organizations engaged in renewable energy, energy efficiency, alternative transportation, and carbon management technologies.

In assessing the labor market dynamics within these key sectors, this analysis employs two key indicators: the "Demand Star" rating and the "Tightness Index." The Demand Star rating evaluates occupations based on long-term demand and wages, with a higher number of stars indicating greater projected demand and earning potential. This provides a valuable perspective on the long-term career prospects within each sector. The Tightness Index captures the current intensity of competition for workers by combining posting intensity, posting growth, and posted salary growth. A higher Tightness Index suggests a more competitive labor market where employers are actively seeking to fill vacancies, highlighting immediate hiring needs and potential areas for workforce development efforts.

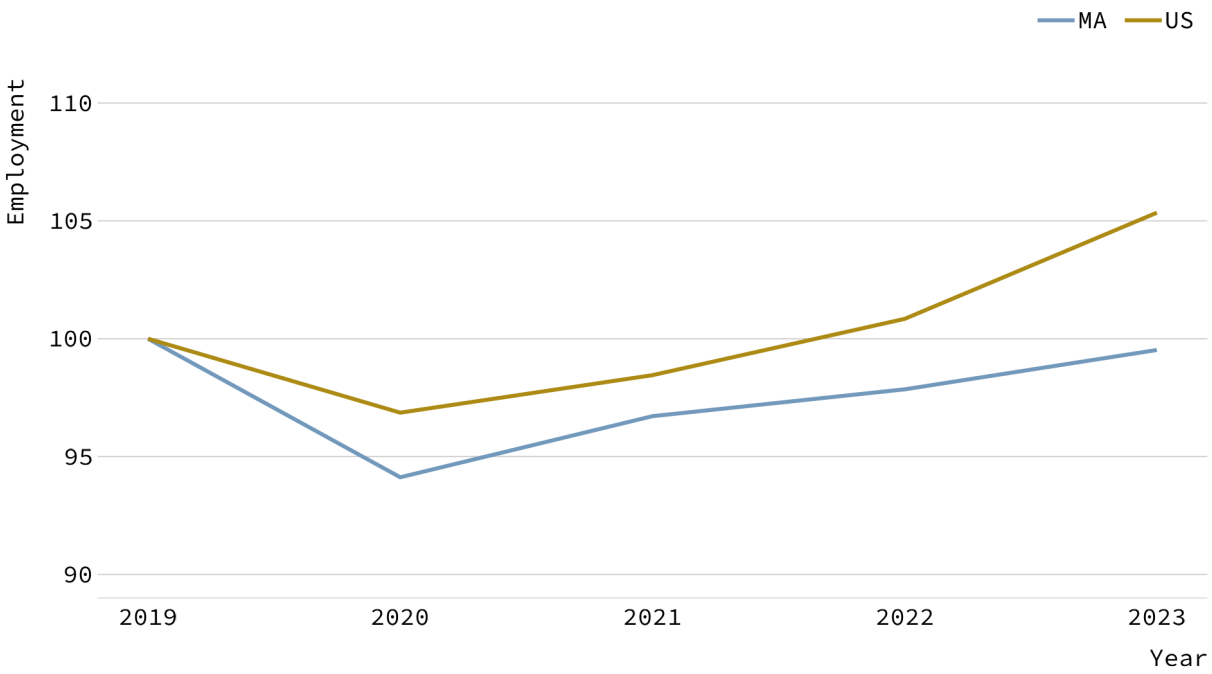
Healthcare and Social Assistance

The healthcare and social assistance sector, the largest employer in Massachusetts, has faced a challenging path to recovery following the COVID-19 pandemic. As shown in Figure 18, total employment in the sector peaked at nearly 640,000 jobs in 2019, but experienced a sharp decline of almost 6% in 2020 due to pandemic-related shutdowns and reduced demand for non-critical care services. This decline was steeper than the national average, and the subsequent recovery has been comparatively slower in Massachusetts.

Figure 18

Healthcare & social assistance employment trends

MA vs. U.S. | Employment indexed to 2019



Source: Lightcast. Includes NAICS industries 621-624.

While the sector has rebounded to pre-pandemic employment levels, it continues to grapple with a persistently tight labor market, exacerbated by worker burnout and stress stemming from the pandemic. National surveys have revealed alarming trends, with a significant portion of nurses considering leaving their positions due to staffing shortages, concerns about their health, and the overall impact of the pandemic on their well-being. This shortage of qualified healthcare professionals is particularly acute in Massachusetts, where the aging population is driving increased demand for healthcare services.

The mismatch between the growing demand for healthcare services and the limited supply of workers is projected to intensify in the coming years. National studies indicate a substantial shortfall of registered nurses and physicians by 2030, driven by factors such as the aging population, an increase in life expectancy, and a wave of retirements among healthcare professionals. This aging trend is even more pronounced in Massachusetts, where a larger share of the population is over 75 compared to the national average.

Long-term projections for Massachusetts highlight this looming workforce shortage. Estimates indicate approximately 900 annual openings for physicians, while only about 660 new medical school graduates entered the workforce in 2022 (IPEDS). Similarly, while there are nearly 6,000 projected

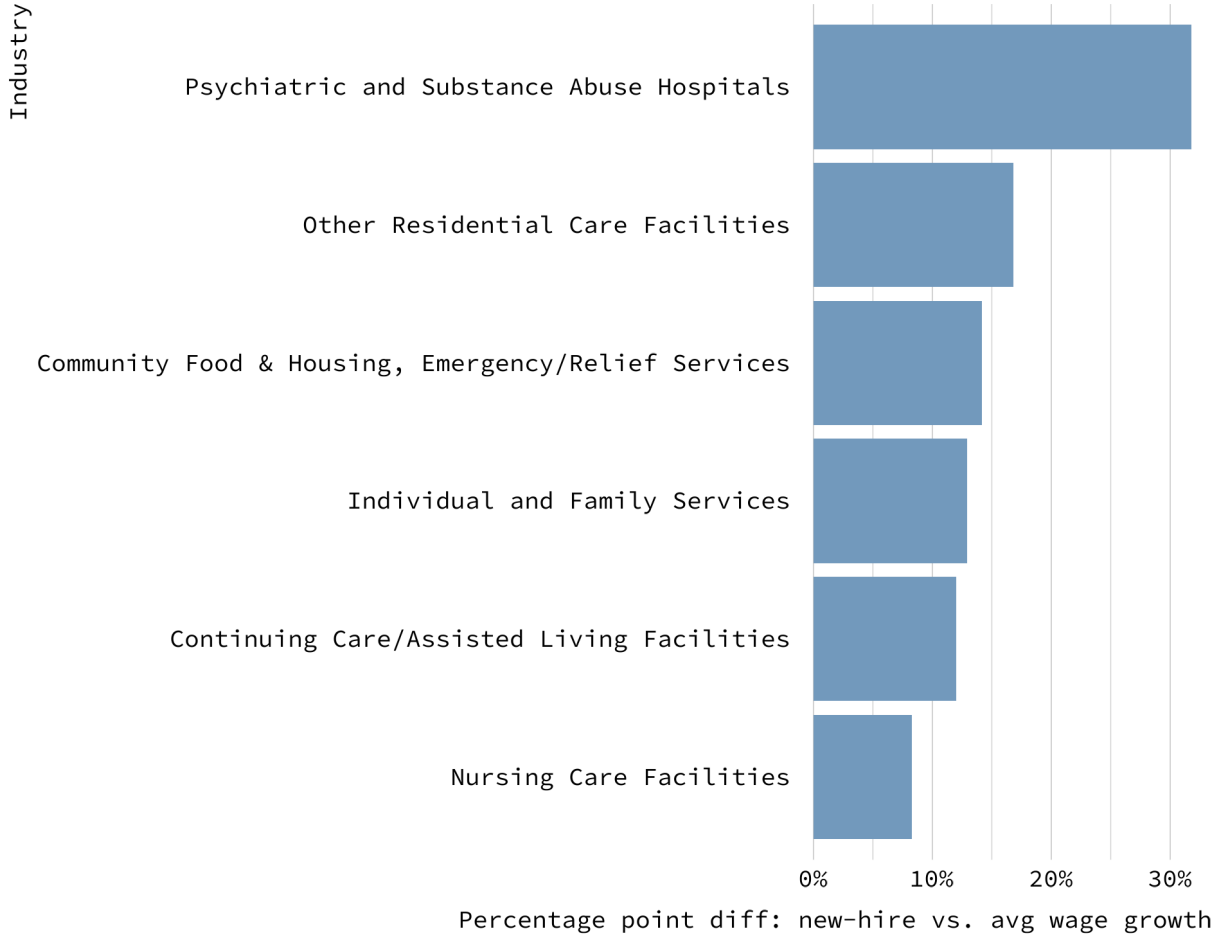
annual openings for registered nurses, with a comparable number of new graduates from nursing programs, employers are facing significant challenges in filling these positions, as evidenced by elevated job posting intensity.

Compounding these challenges are the stringent credentialing and training requirements for many healthcare roles. Registered nurses, mental health counselors, and certified nursing assistants all require specialized education, training, and licensing, creating a barrier to entry for potential workers and limiting the immediate expansion of the workforce. Furthermore, the healthcare training infrastructure itself faces constraints, such as limited faculty, space, and budget, further hindering the ability to produce qualified healthcare professionals at the pace needed to meet the growing demand.

Figure 19

Healthcare & social assistance new-hire vs. overall wage growth

2019-2023 | Massachusetts



Source: Census QWI. New hire wage growth from 2019 to 2023. Other residential care facilities are related to non-retirement based housing such as foster homes, halfway group homes, or housing for delinquent youth.

The sector's ability to attract and retain workers is crucial for its continued viability. Figure 19 highlights the significant wage pressure within the industry, particularly for new hires. Psychiatric and substance abuse hospitals, for example, have seen a dramatic increase in new-hire wage growth relative to overall wage growth in the sector, reflecting the intense competition for qualified workers in this field. This surge in demand for mental health services is likely driven by the pandemic's impact on mental well-being, as evidenced by increased rates of depression, anxiety, and substance abuse.

Long-term residential care facilities are also facing workforce challenges. Despite the increasing demand for these services, employment in nursing care facilities has declined sharply since the pandemic. Several factors contribute to this trend, including high operating costs for nursing homes, financial difficulties for residents seeking care, and a growing preference for in-home care options.

Despite these challenges, wages in long-term care facilities have risen significantly, reflecting the persistent need to attract and retain workers in these critical roles.

According to the 2023 Massachusetts Health Care Workforce Survey, 77% of nursing homes cited a shortage of eligible applicants, and about half noted difficulties with retention due to burnout and competitive salary/benefits. In response to labor market tightness, 71% of surveyed nursing homes have implemented wage increases and hiring bonuses to attract and retain these workers.

Table 8: Health Care & Social Assistance In-Demand Jobs

Occupation	Typical Entry Level Education	Demand Star	Tightness Index
Dentists, General	Doctoral or professional degree	-	63
Dietitians and Nutritionists	Bachelor's degree	★	60
Dental Assistants	Postsecondary non-degree award	-	59
Medical Equipment Preparers	High school diploma or equivalent	-	55
Preschool Teachers, Except Special Education	Associate's degree	-	54
Registered Nurses	Bachelor's degree	★★	53
Counselors, All Other	Master's degree	-	52
Substance Abuse, Behavioral Disorder, and Mental Health Counselors	No formal educational credential	-	51
Mental Health and Substance Abuse Social Workers	Bachelor's degree	★	50
Licensed Practical and Licensed Vocational Nurses	Postsecondary non-degree award	★★	49

Source: Demand Stars are from the DER Regional Occupation Explorer. The Tightness Index is based on the 12-month average posting intensity, posting growth, and posted salary growth. 100 corresponds to an occupation being the top ranked occupation across all criteria.

The healthcare and social assistance sector is experiencing a tight labor market across a variety of occupations, particularly for those requiring specialized skills and training. Table 8 highlights the top 10 occupations in healthcare with the highest "Tightness Index," a measure that captures the intensity of competition for workers by combining posting intensity, posting growth, and posted salary growth.

A higher Tightness Index indicates a more competitive labor market where employers are actively seeking to fill vacancies.

- **High Demand for Dental Care:** The dental care field continues to experience a very tight labor market. Dentists, requiring a doctoral or professional degree, have a Tightness Index of 63, indicating the challenges in finding qualified candidates. Dental Assistants, typically requiring a postsecondary non-degree award, also face a tight labor market with a Tightness Index of 59. This high demand likely reflects the growing need for dental care services as the population ages and access to dental insurance expands.
- **Sustained Need for Registered Nurses:** Registered Nurses, despite recent signs of softening in the labor market, remain in high demand with a Tightness Index of 53. This essential occupation, typically requiring a bachelor's degree and a two-star Demand Star rating, continues to face a competitive hiring landscape as the healthcare sector grapples with staffing shortages and the increasing needs of an aging population.
- **Growing Demand for Mental Healthcare:** The mental healthcare field is also experiencing a tight labor market and strong long-term demand. Counselors and Substance Abuse, Behavioral Disorder, and Mental Health Counselors have high Tightness Index scores, reflecting the urgent need for these professionals. This demand is likely driven by increasing awareness of mental health issues, the lingering impacts of the pandemic on mental well-being, and rising rates of substance abuse.
- **Opportunities Across Education Levels:** The data reveals opportunities for individuals with various educational backgrounds. While many in-demand roles require a bachelor's degree or higher, there are also opportunities for those with associate degrees, such as Preschool Teachers (Except Special Education) (Tightness Index of 54), and those with postsecondary non-degree awards, like Licensed Practical and Licensed Vocational Nurses (Tightness Index of 50).

The healthcare and social assistance sector in Massachusetts faces a complex set of challenges. Addressing the labor shortages, improving working conditions, expanding training programs, and developing strategies to retain skilled workers will be essential for ensuring the sector's ability to meet the growing healthcare needs of the state's population. Focusing on occupations with both a high Tightness Index and a strong Demand Star rating can help guide workforce development efforts toward areas of both immediate need and long-term opportunity.

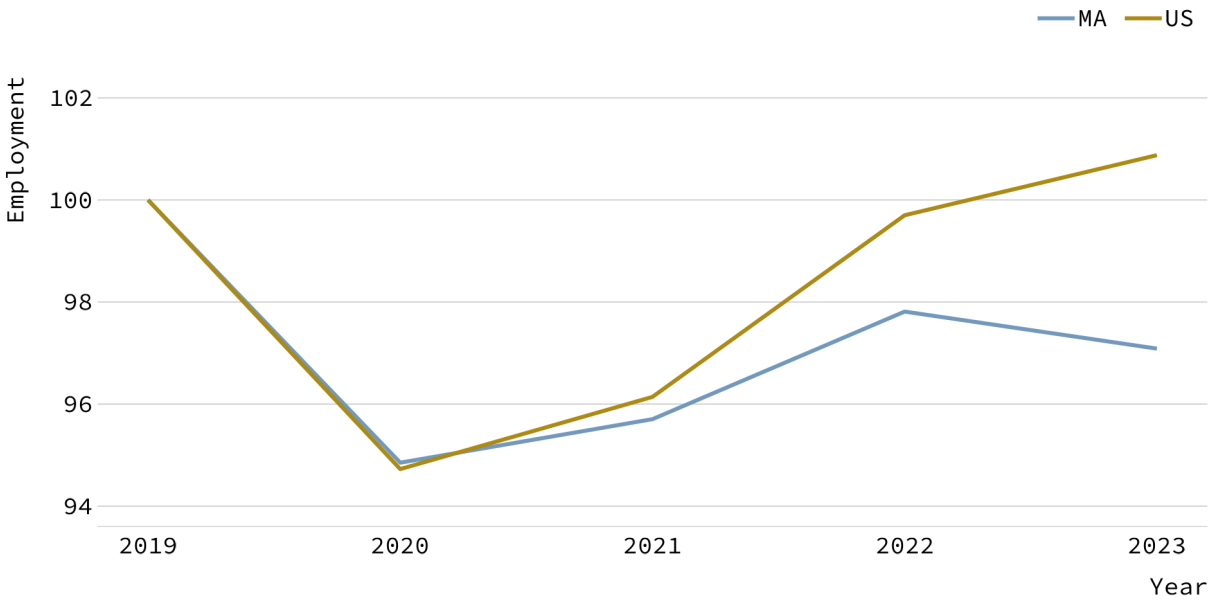
Advanced Manufacturing

This sector specializes in manufacturing high-value components and parts for areas such as scientific research, aviation, and medical equipment, requiring substantial investment in research and development. As the second largest MassTalent sector, it employed approximately 211,000 workers in 2023 (Lightcast). Key industries include navigational, measuring, electromedical, and control instruments, as well as semiconductor and medical equipment manufacturing.

Figure 20

Advanced manufacturing employment trends

MA vs. U.S. | Employment indexed to 2019



Source: Lightcast. Industries include the following NAICS codes: 3112-3119,3131, 3221-3222, 3231, 3241, 3251-3256, 3259, 3261, 3271, 3279, 3311, 3313, 3315, 3321-3329, 3331-3336,3339, 3341-3346, 3351-3353, 3359, 3361-3366, 3369, 3391, 3399

As shown in Figure 20, advanced manufacturing jobs have not returned to pre-pandemic levels. In 2019, there were about 217,000 manufacturing jobs, but this number fell by 5% in 2020 due to the pandemic and has struggled to recover. The pandemic's impact, including lockdowns and recessionary fears, reduced consumer demand for products, affecting the manufacturing sector. Despite some recovery, the overall industry growth has been muted and has lagged the advanced manufacturing recovery nationally.

Even prior to the pandemic, U.S. advanced manufacturing's share of total employment has been declining since the 1980s due to increasing dependence on global outsourcing and an emphasis

on advanced services like management consulting, computer systems design, and engineering. By 2008, national employment in advanced services surpassed advanced manufacturing, and this gap has continued to widen (Brookings).

Despite a long-term decline in manufacturing in Massachusetts, there is growing momentum behind reshoring semiconductor capacity that has emerged through the CHIPS and Science Act of 2022. From 2010 to 2019, semiconductor employment in Massachusetts fell from 17,000 to 14,500 jobs, a nearly 15% decline. After a 4% drop in employment due to the pandemic in 2020, the sector recovered half of the lost jobs and fully rebounded by 2022. In 2023, there have been signs of increasing semiconductor employment, with levels approaching those seen in 2013, when employment was at 15,000 workers. An additional sign of growth is that employment of semiconductor processing technicians has increased by 27% from 2022 to 2023. These workers are critical to the manufacturing process, as they operate the equipment that transforms semiconductor wafers, preparing them for use in building microelectronics.

In 2023, Massachusetts was also chosen to host the Northeast Microelectronics Coalition Hub (NEMC) under the federal CHIPS and Science Act, demonstrating a commitment to semiconductor technologies. This hub will address the microelectronics needs of the U.S. Department of Defense while creating jobs, workforce training opportunities, and driving investment in the state's advanced manufacturing and technology sectors. The initiative will also enhance domestic semiconductor research and development, manufacturing, and supply chains, potentially generating new opportunities and jobs in the microelectronics industry.

Table 9: Advanced Manufacturing In-Demand Jobs

Occupation	Typical Entry Level Education	Demand Star	Tightness Index
Accountants and Auditors	Bachelor's degree	★★	62
Inspectors, Testers, Sorters, Samplers, and Weighers	High school diploma or equivalent	-	62
Production Workers, All Other	High school diploma or equivalent	-	58
Electrical Engineers	Bachelor's degree	★★	57
Computer Occupations, All Other	Bachelor's degree	★★	54
Financial Managers	Bachelor's degree	★★★	50
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	High school diploma or equivalent	★★★	50
First-Line Supervisors of Production and Operating Workers	High school diploma or equivalent	★★	50
Logisticians	Bachelor's degree	★★	49
Financial Analysts	Bachelor's degree	★	48

Source: Demand Stars are from the DER Regional Occupation Explorer. The Tightness Index is based on the 12-month average posting intensity, posting growth, and posted salary growth. 100 corresponds to an occupation being the top ranked occupation across all criteria.

Table 9 highlights the top 10 occupations in advanced manufacturing with the highest "Tightness Index," a measure that captures the intensity of competition for workers. The advanced manufacturing sector in Massachusetts, while still recovering from the pandemic, shows signs of a tight labor market, particularly for roles demanding specialized skills and those offering long-term career prospects.

- **High Demand for Business Professionals:** The sector is experiencing a surge in demand for professionals who can manage finances and ensure operational efficiency. Accountants and Auditors, with a Tightness Index of 62, lead the pack, reflecting a highly competitive hiring landscape. This demand aligns with their strong, two-star Demand Star rating, suggesting favorable long-term demand and earning potential in these fields. Financial Managers, also with a two-star Demand Star rating, have a Tightness Index of 50, further indicating a strong need for financial expertise within the sector.

- **Critical Need for Quality Assurance:** The high Tightness Index for Inspectors, Testers, Sorters, Samplers, and Weighers (61) underscores the crucial role of quality control and precision in advanced manufacturing. Despite not having a Demand Star rating, this occupation, typically requiring a high school diploma or equivalent, is currently experiencing significant hiring demand, highlighting the value of these essential skills.
- **Technical Expertise Remains Crucial:** The continued importance of technical skills in advanced manufacturing is evident in the high Tightness Index scores for Electrical Engineers (57) and Computer Occupations (54). These roles, both with two-star Demand Star ratings, reflect the industry's reliance on technology and innovation, offering both immediate job opportunities and strong long-term career prospects.
- **Diverse Opportunities Across Functions:** The data reveals a diverse range of in-demand jobs across various functions within advanced manufacturing. Production Workers (Tightness Index of 58), Sales Representatives (Tightness Index of 50), First-Line Supervisors of Production and Operating Workers (Tightness Index of 50), and Logisticians (Tightness Index of 49) all feature among the top occupations, highlighting the need for a wide array of skills and educational backgrounds.

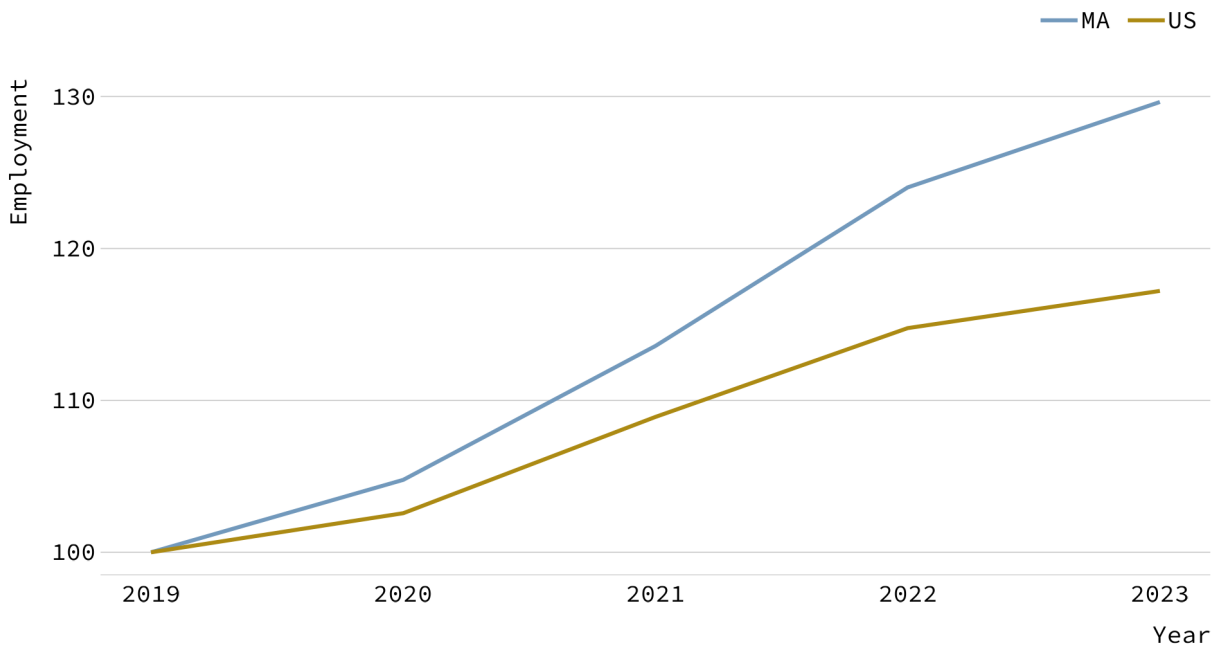
Life Sciences

Massachusetts stands as a national leader in the life sciences sector, a dynamic and rapidly growing industry focused on developing pharmaceuticals, biotechnology, and medical research and development (R&D). The sector, employing over 117,000 individuals in 2023, has experienced significant growth in recent years, exceeding both pre-pandemic levels and national growth rates. This success is driven by a combination of factors, including a robust research and development ecosystem, the presence of major pharmaceutical and biotechnology companies, and a highly skilled workforce. The sector's strength is evident in its impressive drug pipeline, second in size only to California, and its global leadership in advanced therapies.

Figure 21

Life sciences employment trends

MA vs. U.S. | Employment indexed to 2019



Source: Lightcast. Life Sciences industry definitions are based on the 2022 Massachusetts Life Sciences Workforce Analysis report by MassBio.

However, recent years have brought about new challenges that have tempered this growth. Funding for life sciences ventures has become more difficult to secure as investors have become more risk-averse in the face of economic uncertainty and rising interest rates. This tightening of the financial markets has slowed the pace of investment in new startups and research initiatives, potentially impacting the sector's future growth trajectory. Additionally, increased competition from other emerging life sciences hubs, both domestically and internationally, is putting pressure on Massachusetts to maintain its competitive edge. The 2024 Massbio Industry Snapshot notes that the first half of 2024 saw venture capital funding for Massachusetts-based companies fall to its lowest level since 2019. Notably, this slowdown in growth has been more pronounced in biomanufacturing, while R&D has continued to add jobs.

Table 10: Life Sciences In-Demand Jobs

Occupation	Typical Entry Level Education	Demand Star	Tightness Index
Phlebotomists	Postsecondary non-degree award	-	65
Production Workers, All Other	High school diploma or equivalent	-	64
Public Relations Managers	Bachelor's degree	★★	56
Chemists	Bachelor's degree	★	56
Database Architects	Bachelor's degree	★★	45
Statisticians	Master's degree	★★	45
Market Research Analysts and Marketing Specialists	Bachelor's degree	★★	40
Project Management Specialists	Bachelor's degree	★★	39
Medical Scientists, Except Epidemiologists	Doctoral or professional degree	★★★	38
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	High school diploma or equivalent	-	37

Source: Demand Stars are from the DER Regional Occupation Explorer. The Tightness Index is based on the 12-month average posting intensity, posting growth, and posted salary growth. 100 corresponds to an occupation being the top ranked occupation across all criteria.

Despite these headwinds, the demand for skilled workers in the life sciences sector remains strong, as evidenced by the high Tightness Index scores for several key occupations. Table 10 highlights the top 10 occupations in life sciences with the highest Tightness Index, indicating the intensity of employer demand and the challenges faced in filling these roles.

- **Tight Labor Market for Lab and Production Roles:** Occupations related to laboratory work and production processes top the list for labor market tightness. Phlebotomists, who typically require a postsecondary non-degree award, lead with a Tightness Index of 65, followed closely by Production Workers with a Tightness Index of 64. This high demand reflects the ongoing need for skilled technicians and production staff to support the research, development, and manufacturing activities within the life sciences industry.

- **Demand for Public Relations and Chemists:** The Life Sciences sector is also experiencing a tight labor market for professionals who can effectively communicate and manage its scientific advancements. Public Relations Managers, who typically require a bachelor's degree, have a Tightness Index of 56, highlighting the growing need for individuals who can navigate the complex landscape of public perception and scientific communication. Chemists, also typically requiring a bachelor's degree, have a Tightness Index of 56, reflecting the continued importance of their expertise in research, development, and manufacturing processes.
- **Competition for Data and Project Management Roles:** The increasing reliance on data analysis and project management within the life sciences is evident in the high Tightness Index scores for occupations like Statisticians (45), Project Management Specialists (45), and Market Research Analysts and Marketing Specialists (40). These roles, typically requiring a bachelor's or master's degree, are essential for driving innovation and ensuring the efficient execution of research and development projects.
- **Balancing Short-Term Demand and Long-Term Prospects:** While the Tightness Index provides valuable insights into the immediate hiring needs within the life sciences sector, the Demand Star rating offers perspective on long-term career prospects and earning potential. Medical Scientists (except Epidemiologists), requiring a doctoral or professional degree, have a three-star Demand Star rating, signifying strong long-term demand and wages. Other occupations with favorable long-term prospects include Database Architects and Market Research Analysts and Marketing Specialists, both with two-star Demand Star ratings.

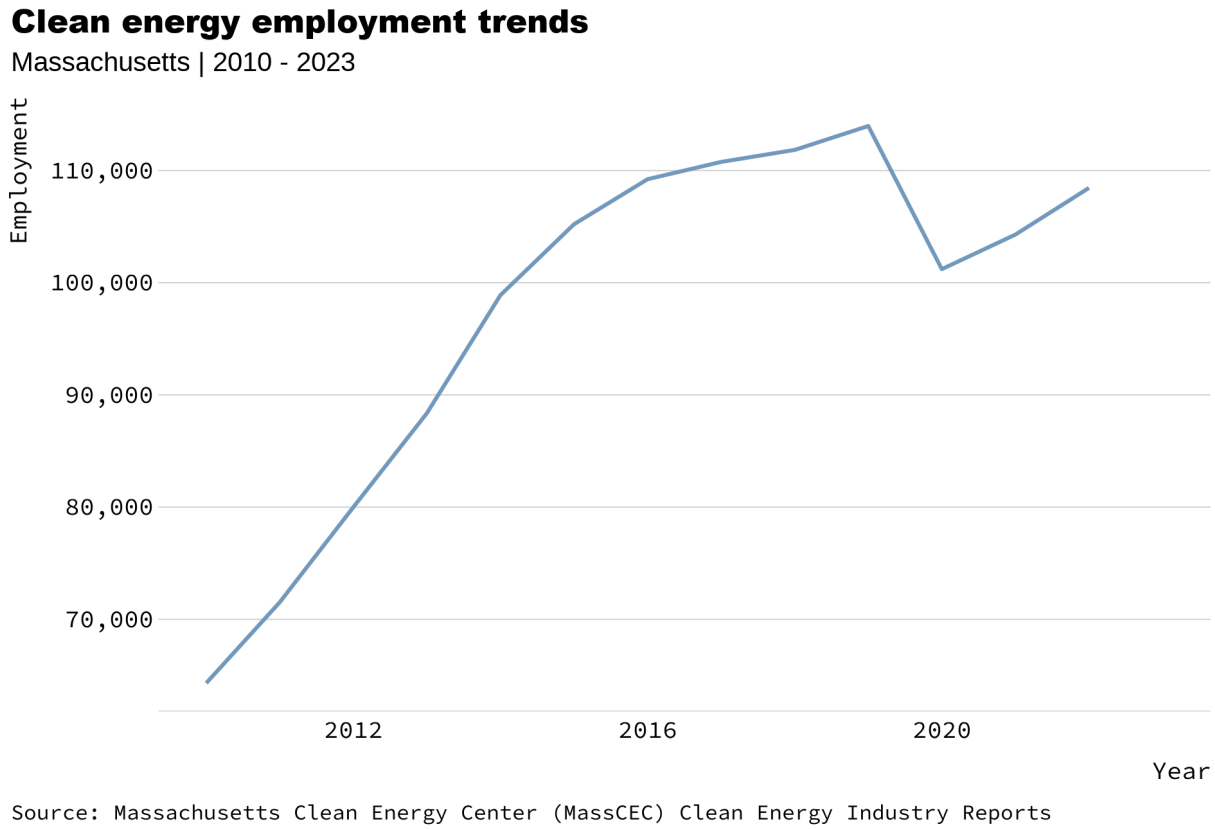
The Massachusetts life sciences sector is at a critical juncture. While it continues to be a major engine of economic growth and innovation, recent challenges highlight the need for proactive strategies to maintain the state's leadership position in this dynamic industry. Fostering a supportive environment for investment, nurturing a skilled and adaptable workforce, and promoting collaboration between industry, academia, and government will be crucial for navigating these headwinds and ensuring the continued success of the life sciences sector in Massachusetts.

Clean Energy

The clean energy sector in Massachusetts encompasses a diverse range of activities related to renewable energy, energy efficiency, alternative transportation, and carbon management technologies. The 2023 MassCEC Clean Energy Industry Report estimated approximately 108,000 clean energy jobs in Massachusetts, accounting for 2.8% of all jobs in the state (Figure 22). While the sector experienced rapid growth from 2010 to 2019, the pandemic disrupted this momentum, leading to a significant decline in employment in 2020. Despite some recovery in subsequent years, the clean energy sector has yet to fully rebound to pre-pandemic levels.

Unlike other sectors, clean energy is not easily defined by specific industries or occupations. Instead, it spans various sectors, including utilities, construction, and technical services, where firms and workers may fully or partially engage in clean energy-related activities. This complexity makes it challenging to precisely measure the sector's size and impact, but it also highlights the wide array of opportunities for workers with diverse skills and backgrounds. For this analysis, demand for clean energy jobs is identified using job postings that include at least one of a list of 315 clean energy skills.

Figure 22



Source: Massachusetts Clean Energy Center (MassCEC) Clean Energy Industry Reports

Despite the sector's recent challenges, there are clear signs of a tight labor market within clean energy, particularly for certain occupations with high demand and strong growth potential. Table 11 highlights the top 10 occupations in clean energy with the highest "Tightness Index," reflecting the intensity of employer demand.

Table 11: Clean Energy In-Demand Jobs

Occupation	Typical Entry Level Education	Demand Star	Tightness Index
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	High school diploma or equivalent	★★★	69
Bus and Truck Mechanics and Diesel Engine Specialists	High school diploma or equivalent	★★	67
Sales Managers	Bachelor's degree	★★★	51
Construction and Building Inspectors	High school diploma or equivalent	-	45
First-Line Supervisors of Mechanics, Installers, and Repairers	High school diploma or equivalent	★★	39
Helpers--Installation, Maintenance, and Repair Workers	High school diploma or equivalent	-	36
Construction Managers	Bachelor's degree	★★★	34
Mechanical Engineers	Bachelor's degree	★	34
Maintenance and Repair Workers, General	High school diploma or equivalent	-	33
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	Bachelor's degree	★★	32

Source: Demand Stars are from the DER Regional Occupation Explorer. The Tightness Index is based on the 12-month average posting intensity, posting growth, and posted salary growth. 100 corresponds to an occupation being the top ranked occupation across all criteria.

- **Strong Demand for Sales and Mechanical Expertise:** The clean energy sector is experiencing a surge in demand for sales professionals and individuals with mechanical expertise. Sales Representatives (Wholesale and Manufacturing, Except Technical and Scientific Products), who typically require a high school diploma or equivalent, have the highest Tightness Index (69), indicating a very competitive hiring landscape. This suggests a strong need for individuals who can effectively promote and sell clean energy products and solutions. Bus and Truck Mechanics and Diesel Engine Specialists, also typically requiring a high school diploma or equivalent, have a Tightness Index of 67, further highlighting the demand for skilled mechanics to support the transition to clean transportation.
- **Management and Supervisory Roles in High Demand:** The need for effective leadership and management within the clean energy sector is evident in the high Tightness Index scores for Sales Managers (51) and First-Line Supervisors of Mechanics, Installers, and Repairers (39).

Sales Managers, who typically require a bachelor's degree, play a crucial role in driving sales and business development, while First-Line Supervisors, who typically require a high school diploma or equivalent, are essential for overseeing teams of technicians and ensuring efficient operations.

- **Engineering Expertise Crucial for Growth:** The clean energy sector relies heavily on engineering expertise to design, develop, and implement innovative solutions. Mechanical Engineers, who typically require a bachelor's degree, have a Tightness Index of 33, indicating a strong demand for their skills in this rapidly evolving field. This aligns with the sector's long-term growth potential, as reflected in the one-star Demand Star rating for Mechanical Engineers.
- **Opportunities Across Educational Levels:** The data also reveals opportunities for individuals with various educational backgrounds. While some roles, like Sales Managers and Mechanical Engineers, typically require a bachelor's degree, others, like Sales Representatives, Bus and Truck Mechanics, and First-Line Supervisors, often require a high school diploma or equivalent. This diversity of educational requirements underscores the accessibility of careers in the clean energy sector for individuals with a range of skills and experience.

The clean energy sector in Massachusetts is poised for continued growth, driven by factors such as increasing demand for renewable energy, government policies supporting clean energy initiatives, and technological advancements. Addressing the labor market tightness in key occupations, particularly through workforce development programs and initiatives that attract and retain skilled workers, will be crucial for maximizing the sector's potential and ensuring a sustainable and prosperous clean energy future for Massachusetts.

The analysis of these four key sectors reveals a dynamic and evolving landscape of opportunities and challenges in the Massachusetts economy. While the Healthcare and Social Assistance sector remains the largest employer, facing a tight labor market and a growing need for skilled professionals, Advanced Manufacturing and Clean Energy are striving to rebound to pre-pandemic levels while navigating intense competition for talent in specialized roles. The Life Sciences sector, experiencing rapid growth and a surge in demand for skilled workers, has recently faced headwinds from tightening financial markets and increased global competition. Across all four sectors, the data underscores the importance of strategic workforce development initiatives that address both short-term hiring needs and long-term skill gaps. Investing in education and training programs, promoting career pathways in high-demand fields, and fostering collaboration between industry, academia, and government will be crucial for ensuring a robust and adaptable workforce that can drive the future success of these key sectors and the overall Massachusetts economy.

Conclusion

The Massachusetts economy is navigating a complex and evolving landscape, characterized by both promising signs of recovery and persistent challenges that demand attention. This report has provided a comprehensive analysis of the state's economic performance since the COVID-19 pandemic, highlighting key trends, disparities, and opportunities across various sectors, labor markets, and regions.

The findings of this report reveal a multifaceted narrative, underscoring the need for a nuanced and proactive approach to economic policy in Massachusetts. Here are the key takeaways from each section:

- **Delayed and Uneven Recovery:** The Massachusetts economy has experienced a slower-than-expected rebound from the pandemic, lagging behind the national recovery in terms of employment growth. This uneven recovery is evident across sectors, with some industries outperforming national trends while others struggle, and is further reflected in regional disparities, where areas outside of Greater Boston face more pronounced challenges.
- **Persistent Labor Market Tightness:** Despite a recent surge in labor force participation, the Massachusetts labor market remains exceptionally tight, driven by strong demand for workers, particularly in sectors like Healthcare, Education, and Advanced Manufacturing. This tightness, coupled with skill gaps in certain occupations, creates challenges for employers while offering opportunities for workers in terms of wages and bargaining power.
- **Transformative Impact of Remote Work:** The rise of remote work has profoundly reshaped the Massachusetts economy, influencing employment patterns, sectoral performance, and geographic distribution of economic activity. This trend presents both opportunities, such as increased worker flexibility and productivity, and challenges, including the potential for outmigration of skilled workers and the need for policy adaptations.
- **Regional Disparities and Strategies:** A regional lens reveals significant variation in economic performance across the Commonwealth. The Pioneer Valley and Berkshire regions, characterized by tight labor markets, shrinking labor forces, and declining prime-age labor force participation, face distinct challenges related to skills mismatches and the need to attract and retain workers. Employment data on the Northeast region suggests a sectoral restructuring, with potential for growth in advanced manufacturing but declines in other industries. Addressing these regional disparities will require tailored policy interventions and investments.
- **Sectoral Shifts and Opportunities:** The pandemic has accelerated existing trends and created new opportunities in certain sectors. The Life Sciences industry, despite some recent

challenges, remains a key driver of innovation and economic activity, while the Clean Energy sector is poised for continued expansion. However, other sectors, like Accommodation and Food Services and traditional manufacturing, face significant headwinds, requiring strategic interventions to support their recovery and adaptation.

These findings underscore the need for a multifaceted and forward-looking approach to economic policy in Massachusetts. Policymakers must consider a range of strategies that not only address immediate challenges but also lay the groundwork for a more sustainable, inclusive, and innovative future.

Areas for Future Research

This report has identified several areas where further research and analysis are needed to deepen our understanding of the Massachusetts economy and inform effective policy decisions:

- **Quantifying the Impact of Remote Work:** More research is needed to measure the long-term impact of remote work on the Massachusetts economy, including its effects on employment, productivity, tax revenue, real estate markets, and migration patterns. This research should explore the implications for different sectors, occupations, and demographic groups.
- **Addressing Skills Mismatches:** A deeper understanding of the specific skills gaps facing key industries and regions is crucial for developing effective workforce development strategies. Research should focus on identifying the in-demand skills, assessing the adequacy of existing training programs, and exploring innovative approaches to upskilling and reskilling the workforce.
- **Supporting Sectoral Transitions:** Further analysis is needed to assess the long-term viability of sectors facing decline. Research should focus on identifying potential growth areas within these sectors, supporting the development of new industries, and facilitating worker transitions to in-demand occupations.
- **Promoting Regional Equity:** More research is needed to understand the root causes of the persistent regional disparities in economic performance. This research should explore factors such as access to education and training, transportation infrastructure, housing affordability, and the availability of quality jobs across different regions of the Commonwealth.

Appendix

Figure 1 **Total non-farm jobs. 100 = Jan 2005**

Date	Massachusetts	United States
January 2005	100	100
February 2005	100	100
March 2005	100	100
April 2005	100	101
May 2005	100	101
June 2005	100	101
July 2005	101	101
August 2005	101	101
September 2005	101	101
October 2005	101	101
November 2005	101	102
December 2005	101	102
January 2006	101	102
February 2006	101	102
March 2006	101	102
April 2006	102	103
May 2006	101	103
June 2006	102	103
July 2006	102	103
August 2006	102	103
September 2006	102	103
October 2006	102	103
November 2006	102	103
December 2006	102	103

Date	Massachusetts	United States
January 2007	102	104
February 2007	102	104
March 2007	102	104
April 2007	103	104
May 2007	103	104
June 2007	103	104
July 2007	103	104
August 2007	103	104
September 2007	103	104
October 2007	103	104
November 2007	103	104
December 2007	103	104
January 2008	103	104
February 2008	104	104
March 2008	104	104
April 2008	104	104
May 2008	103	104
June 2008	103	104
July 2008	103	104
August 2008	103	103
September 2008	103	103
October 2008	103	103
November 2008	103	102
December 2008	102	102
January 2009	101	101
February 2009	101	100
March 2009	100	100

Date	Massachusetts	United States
April 2009	100	99
May 2009	100	99
June 2009	100	99
July 2009	99	98
August 2009	99	98
September 2009	99	98
October 2009	99	98
November 2009	99	98
December 2009	99	98
January 2010	100	98
February 2010	100	98
March 2010	100	98
April 2010	100	98
May 2010	100	98
June 2010	100	98
July 2010	100	98
August 2010	100	98
September 2010	100	98
October 2010	101	98
November 2010	101	98
December 2010	101	99
January 2011	101	99
February 2011	101	99
March 2011	101	99
April 2011	101	99
May 2011	101	99
June 2011	101	99

Date	Massachusetts	United States
July 2011	102	99
August 2011	101	100
September 2011	102	100
October 2011	102	100
November 2011	102	100
December 2011	102	100
January 2012	102	100
February 2012	102	101
March 2012	103	101
April 2012	103	101
May 2012	103	101
June 2012	103	101
July 2012	103	101
August 2012	103	101
September 2012	103	101
October 2012	103	101
November 2012	103	102
December 2012	103	102
January 2013	104	102
February 2013	104	102
March 2013	104	102
April 2013	104	102
May 2013	105	102
June 2013	105	103
July 2013	105	103
August 2013	105	103
September 2013	105	103

Date	Massachusetts	United States
October 2013	105	103
November 2013	105	103
December 2013	105	103
January 2014	106	104
February 2014	106	104
March 2014	106	104
April 2014	106	104
May 2014	106	104
June 2014	107	105
July 2014	107	105
August 2014	107	105
September 2014	107	105
October 2014	107	105
November 2014	108	106
December 2014	108	106
January 2015	108	106
February 2015	108	106
March 2015	108	106
April 2015	108	106
May 2015	109	107
June 2015	109	107
July 2015	109	107
August 2015	109	107
September 2015	109	107
October 2015	110	107
November 2015	110	108
December 2015	110	108

Date	Massachusetts	United States
January 2016	110	108
February 2016	110	108
March 2016	111	108
April 2016	111	108
May 2016	111	108
June 2016	110	109
July 2016	111	109
August 2016	111	109
September 2016	111	109
October 2016	111	109
November 2016	112	109
December 2016	112	110
January 2017	112	110
February 2017	112	110
March 2017	112	110
April 2017	112	110
May 2017	112	110
June 2017	112	110
July 2017	113	111
August 2017	113	111
September 2017	113	111
October 2017	113	111
November 2017	113	111
December 2017	113	111
January 2018	113	111
February 2018	113	112
March 2018	113	112

Date	Massachusetts	United States
April 2018	113	112
May 2018	114	112
June 2018	114	112
July 2018	114	112
August 2018	114	112
September 2018	114	112
October 2018	114	113
November 2018	114	113
December 2018	114	113
January 2019	115	113
February 2019	115	113
March 2019	115	113
April 2019	115	113
May 2019	115	113
June 2019	116	114
July 2019	115	114
August 2019	116	114
September 2019	116	114
October 2019	116	114
November 2019	116	114
December 2019	116	114
January 2020	116	115
February 2020	117	115
March 2020	116	114
April 2020	95	98
May 2020	97	100
June 2020	99	104

Date	Massachusetts	United States
July 2020	102	105
August 2020	104	106
September 2020	105	107
October 2020	106	107
November 2020	107	108
December 2020	107	107
January 2021	107	108
February 2021	108	108
March 2021	108	109
April 2021	109	109
May 2021	109	109
June 2021	109	110
July 2021	110	111
August 2021	111	111
September 2021	111	111
October 2021	112	112
November 2021	112	112
December 2021	113	113
January 2022	113	113
February 2022	113	114
March 2022	114	114
April 2022	114	114
May 2022	114	114
June 2022	114	115
July 2022	115	115
August 2022	115	115
September 2022	115	116

Date	Massachusetts	United States
October 2022	115	116
November 2022	115	116
December 2022	115	116
January 2023	115	117
February 2023	116	117
March 2023	116	117
April 2023	115	117
May 2023	115	117
June 2023	116	118
July 2023	115	118
August 2023	115	118
September 2023	115	118
October 2023	115	118
November 2023	116	118
December 2023	116	118
January 2024	116	119
February 2024	116	119
March 2024	116	119
April 2024	116	119
May 2024	116	119
June 2024	117	119

Source: Current Employment Statistics

Figure 2 **Employment growth by sector. 2019 - 2023**

Sector	Massachusetts	United States
All industries	0.2%	3.2%
Agriculture, Forestry, Fishing and Hunting	34.5%	-1.1%
Mining, Quarrying, and Oil and Gas Extraction	-6.7%	-13.5%
Utilities	5.7%	3.3%
Construction	5.5%	6.4%
Manufacturing	-2.9%	0.7%
Wholesale Trade	0.0%	3.7%
Retail Trade	-6.2%	-0.5%
Transportation and Warehousing	3.4%	14.6%
Information	2.4%	3.9%
Finance and Insurance	0.6%	4.3%
Real Estate and Rental and Leasing	0.7%	4.1%
Professional, Scientific, and Technical Services	9.1%	12.3%
Management of Companies and Enterprises	-6.7%	5.9%
Administrative and Support and Waste Management and Remediation Services	0.9%	0.5%
Educational Services	2.9%	1.4%
Health Care and Social Assistance	-0.4%	5.0%
Arts, Entertainment, and Recreation	-1.8%	1.0%
Accommodation and Food Services	-5.8%	-0.6%
Other Services (except Public Administration)	-4.8%	0.2%
Public Administration	2.8%	1.5%

Sector	Massachusetts	United States
Unclassified		141.0%

Source: Quarterly Census of Employment and Wages

Figure 3 Real GDP percentage growth by sector. 2019 Q4 - 2023 Q4.

Sector	Massachusetts	United States
All industry total	8.6%	8.2%
Utilities	66.3%	5.6%
Construction	-5.6%	-2.1%
Manufacturing	-0.6%	5.9%
Agriculture, forestry, fishing and hunting	30.1%	4.4%
Wholesale trade	-8.9%	-7.3%
Retail trade	5.0%	6.1%
Transportation and warehousing	1.4%	11.4%
Information	43.7%	35.1%
Finance and insurance	0.3%	-0.2%
Real estate and rental and leasing	11.4%	12.6%
Mining, quarrying, and oil and gas extraction	-54.3%	-3.1%
Professional, scientific, and technical services	27.0%	25.9%
Management of companies and enterprises	14.1%	28.3%
Administrative and support and waste management and remediation services	2.8%	10.3%
Educational services	0.4%	4.5%
Health care and social assistance	8.4%	12.4%
Arts, entertainment, and recreation	-2.7%	7.6%
Accommodation and food services	-2.5%	2.6%
Other services (except government and government enterprises)	-8.9%	-6.5%

Sector	Massachusetts	United States
Government and government enterprises	0.5%	2.2%

Source: Bureau of Economic Analysis

Figure 4 Job Postings per unemployed

Date	Massachusetts	United States
January 2009	0.274	0.227
February 2009	0.288	0.222
March 2009	0.254	0.189
April 2009	0.236	0.166
May 2009	0.273	0.176
June 2009	0.293	0.170
July 2009	0.221	0.153
August 2009	0.216	0.158
September 2009	0.287	0.166
October 2009	0.232	0.157
November 2009	0.242	0.164
December 2009	0.261	0.170
January 2010	0.295	0.189
February 2010	0.235	0.176
March 2010	0.265	0.176
April 2010	0.352	0.206
May 2010	0.322	0.201
June 2010	0.309	0.194
July 2010	0.348	0.212
August 2010	0.321	0.205

Date	Massachusetts	United States
September 2010	0.330	0.200
October 2010	0.389	0.223
November 2010	0.329	0.213
December 2010	0.291	0.213
January 2011	0.309	0.222
February 2011	0.313	0.233
March 2011	0.337	0.237
April 2011	0.333	0.234
May 2011	0.299	0.229
June 2011	0.328	0.247
July 2011	0.338	0.263
August 2011	0.292	0.241
September 2011	0.331	0.271
October 2011	0.315	0.266
November 2011	0.307	0.268
December 2011	0.361	0.288
January 2012	0.369	0.305
February 2012	0.371	0.282
March 2012	0.380	0.313
April 2012	0.349	0.300
May 2012	0.365	0.303
June 2012	0.373	0.308
July 2012	0.352	0.295
August 2012	0.382	0.305
September 2012	0.348	0.320
October 2012	0.378	0.311
November 2012	0.390	0.323

Date	Massachusetts	United States
December 2012	0.381	0.323
January 2013	0.418	0.315
February 2013	0.379	0.335
March 2013	0.438	0.349
April 2013	0.392	0.339
May 2013	0.401	0.356
June 2013	0.452	0.353
July 2013	0.381	0.343
August 2013	0.443	0.362
September 2013	0.484	0.366
October 2013	0.443	0.379
November 2013	0.467	0.382
December 2013	0.469	0.396
January 2014	0.448	0.405
February 2014	0.510	0.423
March 2014	0.512	0.423
April 2014	0.556	0.471
May 2014	0.614	0.481
June 2014	0.635	0.527
July 2014	0.573	0.504
August 2014	0.722	0.557
September 2014	0.625	0.531
October 2014	0.701	0.558
November 2014	0.684	0.533
December 2014	0.735	0.589
January 2015	0.765	0.601
February 2015	0.787	0.636

Date	Massachusetts	United States
March 2015	0.753	0.612
April 2015	0.977	0.655
May 2015	0.860	0.630
June 2015	0.718	0.636
July 2015	0.836	0.742
August 2015	0.830	0.684
September 2015	0.871	0.694
October 2015	0.925	0.729
November 2015	0.979	0.714
December 2015	0.984	0.739
January 2016	0.922	0.788
February 2016	0.880	0.749
March 2016	0.917	0.770
April 2016	0.914	0.719
May 2016	0.976	0.755
June 2016	0.983	0.741
July 2016	1.066	0.780
August 2016	1.013	0.729
September 2016	1.103	0.738
October 2016	1.011	0.716
November 2016	1.011	0.791
December 2016	1.117	0.793
January 2017	1.056	0.752
February 2017	1.316	0.803
March 2017	1.082	0.822
April 2017	1.037	0.859
May 2017	1.001	0.832

Date	Massachusetts	United States
June 2017	1.043	0.917
July 2017	1.140	0.905
August 2017	1.050	0.886
September 2017	0.977	0.922
October 2017	1.103	0.956
November 2017	1.017	0.926
December 2017	0.932	0.955
January 2018	1.038	1.020
February 2018	1.096	0.996
March 2018	1.045	1.053
April 2018	1.134	1.065
May 2018	1.197	1.132
June 2018	1.218	1.121
July 2018	1.206	1.161
August 2018	1.230	1.171
September 2018	1.376	1.220
October 2018	1.340	1.176
November 2018	1.578	1.242
December 2018	1.550	1.172
January 2019	1.560	1.159
February 2019	1.420	1.152
March 2019	1.537	1.180
April 2019	1.514	1.220
May 2019	1.520	1.227
June 2019	1.467	1.212
July 2019	1.291	1.162
August 2019	1.583	1.207

Date	Massachusetts	United States
September 2019	1.469	1.238
October 2019	1.424	1.242
November 2019	1.355	1.174
December 2019	1.266	1.145
January 2020	1.477	1.227
February 2020	1.602	1.217
March 2020	1.220	0.822
April 2020	0.191	0.201
May 2020	0.213	0.267
June 2020	0.258	0.349
July 2020	0.302	0.396
August 2020	0.337	0.472
September 2020	0.359	0.517
October 2020	0.470	0.621
November 2020	0.517	0.640
December 2020	0.501	0.627
January 2021	0.598	0.705
February 2021	0.719	0.782
March 2021	0.872	0.875
April 2021	0.934	0.947
May 2021	1.076	1.071
June 2021	1.126	1.081
July 2021	1.374	1.253
August 2021	1.460	1.313
September 2021	1.579	1.420
October 2021	1.817	1.569
November 2021	1.872	1.660

Date	Massachusetts	United States
December 2021	2.061	1.826
January 2022	1.895	1.717
February 2022	2.280	1.863
March 2022	2.209	2.033
April 2022	2.138	1.951
May 2022	2.509	1.923
June 2022	2.262	1.872
July 2022	2.026	1.995
August 2022	1.763	1.691
September 2022	2.055	1.874
October 2022	1.896	1.769
November 2022	1.803	1.797
December 2022	2.051	1.931
January 2023	1.965	1.823
February 2023	1.966	1.652
March 2023	2.092	1.640
April 2023	2.376	1.733
May 2023	1.995	1.522
June 2023	2.173	1.522
July 2023	1.907	1.491
August 2023	1.971	1.476
September 2023	1.922	1.466
October 2023	1.810	1.348
November 2023	1.779	1.426
December 2023	1.963	1.418
January 2024	1.936	1.428
February 2024	2.115	1.365

Date	Massachusetts	United States
March 2024	2.069	1.300
April 2024	1.895	1.220
May 2024	1.857	1.238
June 2024	1.732	1.161
July 2024	1.325	1.071

Source: Job Openings and Labor Turnover Survey; Local Area Unemployment Statistics.

Figure 5 Unemployment rate

Date	United States	Massachusetts
January 2005	5.3%	4.9%
February 2005	5.4%	4.9%
March 2005	5.2%	4.8%
April 2005	5.2%	4.8%
May 2005	5.1%	4.8%
June 2005	5.0%	4.7%
July 2005	5.0%	4.7%
August 2005	4.9%	4.8%
September 2005	5.0%	4.8%
October 2005	5.0%	4.8%
November 2005	5.0%	4.8%
December 2005	4.9%	4.8%
January 2006	4.7%	4.7%
February 2006	4.8%	4.7%
March 2006	4.7%	4.7%
April 2006	4.7%	4.7%
May 2006	4.6%	4.7%

Date	United States	Massachusetts
June 2006	4.6%	4.7%
July 2006	4.7%	4.7%
August 2006	4.7%	4.7%
September 2006	4.5%	4.7%
October 2006	4.4%	4.7%
November 2006	4.5%	4.7%
December 2006	4.4%	4.7%
January 2007	4.6%	4.6%
February 2007	4.5%	4.6%
March 2007	4.4%	4.5%
April 2007	4.5%	4.5%
May 2007	4.4%	4.5%
June 2007	4.6%	4.5%
July 2007	4.7%	4.5%
August 2007	4.6%	4.5%
September 2007	4.7%	4.5%
October 2007	4.7%	4.5%
November 2007	4.7%	4.5%
December 2007	5.0%	4.5%
January 2008	5.0%	4.5%
February 2008	4.9%	4.6%
March 2008	5.1%	4.6%
April 2008	5.0%	4.8%
May 2008	5.4%	4.9%
June 2008	5.6%	5.1%
July 2008	5.8%	5.3%
August 2008	6.1%	5.5%

Date	United States	Massachusetts
September 2008	6.1%	5.7%
October 2008	6.5%	6.0%
November 2008	6.8%	6.3%
December 2008	7.3%	6.7%
January 2009	7.8%	7.0%
February 2009	8.3%	7.4%
March 2009	8.7%	7.7%
April 2009	9.0%	7.9%
May 2009	9.4%	8.1%
June 2009	9.5%	8.2%
July 2009	9.5%	8.3%
August 2009	9.6%	8.4%
September 2009	9.8%	8.4%
October 2009	10.0%	8.5%
November 2009	9.9%	8.5%
December 2009	9.9%	8.5%
January 2010	9.8%	8.5%
February 2010	9.8%	8.4%
March 2010	9.9%	8.4%
April 2010	9.9%	8.3%
May 2010	9.6%	8.1%
June 2010	9.4%	8.0%
July 2010	9.4%	7.9%
August 2010	9.5%	7.9%
September 2010	9.5%	7.9%
October 2010	9.4%	7.8%
November 2010	9.8%	7.8%

Date	United States	Massachusetts
December 2010	9.3%	7.7%
January 2011	9.1%	7.6%
February 2011	9.0%	7.5%
March 2011	9.0%	7.4%
April 2011	9.1%	7.4%
May 2011	9.0%	7.3%
June 2011	9.1%	7.3%
July 2011	9.0%	7.2%
August 2011	9.0%	7.2%
September 2011	9.0%	7.1%
October 2011	8.8%	7.0%
November 2011	8.6%	6.9%
December 2011	8.5%	6.8%
January 2012	8.3%	6.7%
February 2012	8.3%	6.7%
March 2012	8.2%	6.7%
April 2012	8.2%	6.7%
May 2012	8.2%	6.7%
June 2012	8.2%	6.7%
July 2012	8.2%	6.7%
August 2012	8.1%	6.7%
September 2012	7.8%	6.7%
October 2012	7.8%	6.7%
November 2012	7.7%	6.7%
December 2012	7.9%	6.7%
January 2013	8.0%	6.7%
February 2013	7.7%	6.8%

Date	United States	Massachusetts
March 2013	7.5%	6.8%
April 2013	7.6%	6.8%
May 2013	7.5%	6.7%
June 2013	7.5%	6.7%
July 2013	7.3%	6.7%
August 2013	7.2%	6.7%
September 2013	7.2%	6.6%
October 2013	7.2%	6.5%
November 2013	6.9%	6.4%
December 2013	6.7%	6.3%
January 2014	6.6%	6.2%
February 2014	6.7%	6.1%
March 2014	6.7%	6.0%
April 2014	6.2%	5.9%
May 2014	6.3%	5.9%
June 2014	6.1%	5.8%
July 2014	6.2%	5.7%
August 2014	6.1%	5.6%
September 2014	5.9%	5.6%
October 2014	5.7%	5.5%
November 2014	5.8%	5.4%
December 2014	5.6%	5.2%
January 2015	5.7%	5.2%
February 2015	5.5%	5.1%
March 2015	5.4%	5.0%
April 2015	5.4%	5.0%
May 2015	5.6%	4.9%

Date	United States	Massachusetts
June 2015	5.3%	4.8%
July 2015	5.2%	4.7%
August 2015	5.1%	4.7%
September 2015	5.0%	4.6%
October 2015	5.0%	4.6%
November 2015	5.1%	4.5%
December 2015	5.0%	4.4%
January 2016	4.8%	4.4%
February 2016	4.9%	4.3%
March 2016	5.0%	4.2%
April 2016	5.1%	4.1%
May 2016	4.8%	4.1%
June 2016	4.9%	4.0%
July 2016	4.8%	3.9%
August 2016	4.9%	3.9%
September 2016	5.0%	3.9%
October 2016	4.9%	3.9%
November 2016	4.7%	3.9%
December 2016	4.7%	3.9%
January 2017	4.7%	3.8%
February 2017	4.6%	3.8%
March 2017	4.4%	3.8%
April 2017	4.4%	3.8%
May 2017	4.4%	3.8%
June 2017	4.3%	3.8%
July 2017	4.3%	3.8%
August 2017	4.4%	3.8%

Date	United States	Massachusetts
September 2017	4.3%	3.8%
October 2017	4.2%	3.8%
November 2017	4.2%	3.8%
December 2017	4.1%	3.7%
January 2018	4.0%	3.7%
February 2018	4.1%	3.7%
March 2018	4.0%	3.6%
April 2018	4.0%	3.6%
May 2018	3.8%	3.5%
June 2018	4.0%	3.5%
July 2018	3.8%	3.4%
August 2018	3.8%	3.4%
September 2018	3.7%	3.4%
October 2018	3.8%	3.3%
November 2018	3.8%	3.3%
December 2018	3.9%	3.3%
January 2019	4.0%	3.2%
February 2019	3.8%	3.2%
March 2019	3.8%	3.1%
April 2019	3.7%	3.1%
May 2019	3.6%	3.0%
June 2019	3.6%	3.0%
July 2019	3.7%	3.0%
August 2019	3.6%	3.0%
September 2019	3.5%	3.0%
October 2019	3.6%	2.9%
November 2019	3.6%	2.9%

Date	United States	Massachusetts
December 2019	3.6%	2.9%
January 2020	3.6%	3.0%
February 2020	3.5%	3.0%
March 2020	4.4%	3.0%
April 2020	14.8%	17.4%
May 2020	13.2%	14.9%
June 2020	11.0%	14.5%
July 2020	10.2%	12.6%
August 2020	8.4%	10.4%
September 2020	7.8%	9.7%
October 2020	6.8%	8.5%
November 2020	6.7%	7.9%
December 2020	6.7%	7.6%
January 2021	6.4%	6.9%
February 2021	6.2%	6.5%
March 2021	6.1%	6.2%
April 2021	6.1%	6.1%
May 2021	5.8%	5.7%
June 2021	5.9%	5.7%
July 2021	5.4%	5.3%
August 2021	5.1%	5.1%
September 2021	4.7%	4.7%
October 2021	4.5%	4.5%
November 2021	4.1%	4.2%
December 2021	3.9%	3.9%
January 2022	4.0%	3.9%
February 2022	3.8%	3.8%

Date	United States	Massachusetts
March 2022	3.6%	3.6%
April 2022	3.7%	3.6%
May 2022	3.6%	3.7%
June 2022	3.6%	3.6%
July 2022	3.5%	3.6%
August 2022	3.6%	3.7%
September 2022	3.5%	3.6%
October 2022	3.6%	3.7%
November 2022	3.6%	3.6%
December 2022	3.5%	3.5%
January 2023	3.4%	3.5%
February 2023	3.6%	3.6%
March 2023	3.5%	3.5%
April 2023	3.4%	3.2%
May 2023	3.7%	3.3%
June 2023	3.6%	3.3%
July 2023	3.5%	3.2%
August 2023	3.8%	3.3%
September 2023	3.8%	3.3%
October 2023	3.8%	3.4%
November 2023	3.7%	3.3%
December 2023	3.7%	3.2%
January 2024	3.7%	3.0%
February 2024	3.9%	2.9%
March 2024	3.8%	2.9%
April 2024	3.9%	2.9%
May 2024	4.0%	3.0%

Date	United States	Massachusetts
June 2024	4.1%	3.2%

Source: Current Population Survey; Local Area Unemployment Statistics.

Figure 6 Labor force participation rate

Date	United States	Massachusetts
January 2005	65.9%	66.9%
February 2005	65.9%	66.9%
March 2005	65.8%	66.8%
April 2005	66.1%	66.9%
May 2005	66.2%	66.9%
June 2005	66.0%	67.0%
July 2005	66.1%	67.0%
August 2005	66.1%	67.0%
September 2005	66.1%	66.9%
October 2005	66.1%	66.8%
November 2005	66.0%	66.8%
December 2005	66.0%	66.8%
January 2006	66.0%	66.8%
February 2006	66.2%	66.7%
March 2006	66.2%	66.7%
April 2006	66.1%	66.8%
May 2006	66.2%	66.9%
June 2006	66.2%	67.0%
July 2006	66.1%	67.1%
August 2006	66.2%	67.1%
September 2006	66.1%	67.2%

Date	United States	Massachusetts
October 2006	66.2%	67.2%
November 2006	66.3%	67.2%
December 2006	66.3%	67.2%
January 2007	66.4%	67.2%
February 2007	66.3%	67.1%
March 2007	66.2%	67.0%
April 2007	66.0%	67.0%
May 2007	65.9%	66.9%
June 2007	66.0%	66.9%
July 2007	66.0%	66.8%
August 2007	65.7%	66.8%
September 2007	66.0%	66.7%
October 2007	65.8%	66.7%
November 2007	66.0%	66.7%
December 2007	66.0%	66.7%
January 2008	66.2%	66.7%
February 2008	66.0%	66.7%
March 2008	66.1%	66.7%
April 2008	66.0%	66.8%
May 2008	66.1%	66.8%
June 2008	66.1%	66.8%
July 2008	66.0%	66.9%
August 2008	66.0%	67.0%
September 2008	66.0%	67.0%
October 2008	66.0%	67.0%
November 2008	65.9%	66.9%
December 2008	65.8%	66.8%

Date	United States	Massachusetts
January 2009	65.7%	66.8%
February 2009	65.8%	66.6%
March 2009	65.6%	66.6%
April 2009	65.7%	66.6%
May 2009	65.8%	66.5%
June 2009	65.6%	66.4%
July 2009	65.5%	66.3%
August 2009	65.4%	66.2%
September 2009	65.0%	66.0%
October 2009	65.0%	65.9%
November 2009	65.0%	65.8%
December 2009	64.7%	65.8%
January 2010	64.9%	65.9%
February 2010	64.9%	66.0%
March 2010	64.9%	66.0%
April 2010	65.2%	66.6%
May 2010	64.8%	66.5%
June 2010	64.6%	66.4%
July 2010	64.6%	66.4%
August 2010	64.8%	66.2%
September 2010	64.6%	66.2%
October 2010	64.4%	66.2%
November 2010	64.5%	66.1%
December 2010	64.3%	66.1%
January 2011	64.2%	66.1%
February 2011	64.2%	66.0%
March 2011	64.1%	65.9%

Date	United States	Massachusetts
April 2011	64.2%	65.8%
May 2011	64.1%	65.7%
June 2011	64.0%	65.7%
July 2011	63.9%	65.6%
August 2011	64.1%	65.7%
September 2011	64.2%	65.8%
October 2011	64.1%	65.8%
November 2011	64.1%	65.7%
December 2011	64.0%	65.8%
January 2012	63.7%	65.7%
February 2012	63.8%	65.7%
March 2012	63.7%	65.6%
April 2012	63.6%	65.6%
May 2012	63.7%	65.6%
June 2012	63.8%	65.5%
July 2012	63.7%	65.5%
August 2012	63.5%	65.5%
September 2012	63.7%	65.5%
October 2012	63.8%	65.5%
November 2012	63.6%	65.4%
December 2012	63.7%	65.4%
January 2013	63.7%	65.3%
February 2013	63.5%	65.2%
March 2013	63.3%	65.2%
April 2013	63.4%	65.2%
May 2013	63.3%	65.2%
June 2013	63.4%	65.2%

Date	United States	Massachusetts
July 2013	63.3%	65.1%
August 2013	63.3%	65.0%
September 2013	63.3%	64.9%
October 2013	62.8%	64.8%
November 2013	63.0%	64.8%
December 2013	62.9%	64.8%
January 2014	62.9%	64.9%
February 2014	62.9%	65.0%
March 2014	63.1%	65.1%
April 2014	62.8%	65.2%
May 2014	62.9%	65.2%
June 2014	62.8%	65.3%
July 2014	62.9%	65.3%
August 2014	62.9%	65.5%
September 2014	62.8%	65.6%
October 2014	62.9%	65.7%
November 2014	62.9%	65.7%
December 2014	62.8%	65.7%
January 2015	62.9%	65.7%
February 2015	62.6%	65.5%
March 2015	62.6%	65.5%
April 2015	62.7%	65.4%
May 2015	62.9%	65.4%
June 2015	62.7%	65.2%
July 2015	62.6%	65.2%
August 2015	62.6%	65.0%
September 2015	62.3%	64.9%

Date	United States	Massachusetts
October 2015	62.4%	64.9%
November 2015	62.6%	64.9%
December 2015	62.7%	65.0%
January 2016	62.7%	65.0%
February 2016	62.9%	65.1%
March 2016	62.9%	65.1%
April 2016	62.9%	65.1%
May 2016	62.7%	65.1%
June 2016	62.8%	65.2%
July 2016	62.8%	65.3%
August 2016	62.9%	65.3%
September 2016	62.8%	65.4%
October 2016	62.8%	65.4%
November 2016	62.7%	65.4%
December 2016	62.7%	65.5%
January 2017	62.8%	65.5%
February 2017	62.9%	65.6%
March 2017	63.0%	65.7%
April 2017	63.0%	65.8%
May 2017	62.8%	65.8%
June 2017	62.8%	65.9%
July 2017	62.9%	65.9%
August 2017	62.9%	65.9%
September 2017	63.1%	65.9%
October 2017	62.7%	66.0%
November 2017	62.7%	66.0%
December 2017	62.7%	66.2%

Date	United States	Massachusetts
January 2018	62.6%	66.4%
February 2018	63.0%	66.6%
March 2018	62.9%	66.8%
April 2018	62.9%	67.1%
May 2018	62.9%	67.2%
June 2018	63.0%	67.3%
July 2018	63.0%	67.2%
August 2018	62.7%	67.2%
September 2018	62.8%	67.2%
October 2018	62.9%	67.2%
November 2018	63.0%	67.2%
December 2018	63.1%	67.2%
January 2019	63.1%	67.4%
February 2019	63.1%	67.3%
March 2019	63.0%	67.3%
April 2019	62.8%	67.4%
May 2019	62.9%	67.3%
June 2019	63.0%	67.3%
July 2019	63.1%	67.3%
August 2019	63.1%	67.2%
September 2019	63.2%	67.2%
October 2019	63.3%	67.1%
November 2019	63.3%	67.1%
December 2019	63.4%	66.9%
January 2020	63.4%	66.7%
February 2020	63.3%	66.3%
March 2020	62.6%	65.8%

Date	United States	Massachusetts
April 2020	60.1%	60.8%
May 2020	60.7%	64.4%
June 2020	61.5%	65.9%
July 2020	61.5%	66.0%
August 2020	61.7%	65.5%
September 2020	61.4%	65.9%
October 2020	61.7%	65.6%
November 2020	61.5%	65.5%
December 2020	61.5%	65.5%
January 2021	61.3%	65.1%
February 2021	61.3%	65.1%
March 2021	61.4%	65.0%
April 2021	61.7%	65.2%
May 2021	61.5%	65.1%
June 2021	61.8%	65.3%
July 2021	61.8%	65.2%
August 2021	61.8%	65.1%
September 2021	61.7%	65.1%
October 2021	61.8%	65.0%
November 2021	61.9%	65.1%
December 2021	62.0%	65.1%
January 2022	62.2%	65.4%
February 2022	62.2%	65.4%
March 2022	62.4%	65.4%
April 2022	62.2%	65.4%
May 2022	62.3%	65.4%
June 2022	62.2%	65.4%

Date	United States	Massachusetts
July 2022	62.2%	65.2%
August 2022	62.4%	65.2%
September 2022	62.3%	65.0%
October 2022	62.2%	65.0%
November 2022	62.2%	64.9%
December 2022	62.2%	64.9%
January 2023	62.3%	65.0%
February 2023	62.4%	65.1%
March 2023	62.6%	65.2%
April 2023	62.5%	65.1%
May 2023	62.6%	65.2%
June 2023	62.5%	65.0%
July 2023	62.6%	65.0%
August 2023	62.8%	65.1%
September 2023	62.8%	65.0%
October 2023	62.7%	65.0%
November 2023	62.7%	64.9%
December 2023	62.4%	64.9%
January 2024	62.5%	64.9%
February 2024	62.5%	64.8%
March 2024	62.7%	65.0%
April 2024	62.6%	65.1%
May 2024	62.6%	65.3%
June 2024	62.6%	65.7%

Source: Current Population Survey; Local Area Unemployment Statistics.

Figure 7 Labor market tightness by sector. 2023 average for Massachusetts.

Sector	Job postings per unemployed
Educational Services	7.7
Health Care and Social Assistance	4.2
Utilities	3.3
Finance and Insurance	2.5
Administrative and Support and Waste Management...	2.4

Source: Lightcast; Local Area Unemployment Statistics.

Figure 7 Labor market tightness by occupation. 2023 average for Massachusetts.

Description	Job postings per unemployed
Healthcare Practitioners and Technical	17.4
Community and Social Service	5.6
Educational Instruction and Library	4.4
Computer and Mathematical	4.1
Architecture and Engineering	3.5

Source: Lightcast; Local Area Unemployment Statistics.

Figure 9 Employment by race and ethnicity 12-month rolling average employment

Date	Asian	Black	White	Hispanic	All other groups	All groups
January 2023	262,416	250,382	2,570,839	426,265	85,902	3,595,805
February 2023	267,729	253,528	2,564,444	423,491	89,573	3,598,766
March 2023	276,369	252,959	2,547,702	425,564	90,812	3,593,405
April 2023	284,594	254,559	2,543,587	429,982	88,953	3,601,675
May 2023	290,502	256,001	2,536,326	435,323	85,238	3,603,389
June 2023	291,457	256,519	2,534,576	438,023	81,310	3,601,885
July 2023	291,105	256,128	2,534,864	442,464	77,964	3,602,526
August 2023	290,575	258,087	2,538,165	442,121	75,392	3,604,339
September 2023	290,077	260,474	2,541,200	442,577	76,294	3,610,622
October 2023	293,812	264,497	2,534,815	440,232	78,581	3,611,938
November 2023	295,639	267,793	2,538,856	435,713	80,060	3,618,062
December 2023	299,756	271,910	2,543,448	430,594	81,690	3,627,397
January 2024	307,676	273,382	2,535,243	431,858	83,995	3,632,154
February 2024	309,592	272,962	2,531,646	430,965	86,597	3,631,763
March 2024	310,434	276,419	2,539,830	429,747	90,060	3,646,491
April 2024	304,353	277,234	2,552,424	426,551	90,629	3,651,191
May 2024	300,907	274,675	2,570,498	421,172	89,271	3,656,523
June 2024	298,612	275,738	2,598,754	415,090	87,956	3,676,151

Source: Current Population Survey

Figure 10 Employment to population ratio among people with a disability

Date	Employment to Population Ratio
January 2015	24.0%
February 2015	24.2%
March 2015	24.3%
April 2015	23.9%
May 2015	24.0%
June 2015	24.3%
July 2015	24.2%
August 2015	24.1%
September 2015	23.8%
October 2015	23.5%
November 2015	23.3%
December 2015	22.8%
January 2016	22.4%
February 2016	22.2%
March 2016	23.1%
April 2016	24.1%
May 2016	24.6%
June 2016	25.3%
July 2016	25.8%
August 2016	25.9%
September 2016	26.3%
October 2016	26.8%
November 2016	26.6%
December 2016	27.0%
January 2017	27.1%

Date	Employment to Population Ratio
February 2017	26.5%
March 2017	26.0%
April 2017	25.2%
May 2017	24.7%
June 2017	24.4%
July 2017	24.1%
August 2017	24.1%
September 2017	24.2%
October 2017	24.2%
November 2017	25.2%
December 2017	25.9%
January 2018	26.2%
February 2018	27.1%
March 2018	27.4%
April 2018	28.2%
May 2018	28.9%
June 2018	29.3%
July 2018	29.4%
August 2018	29.7%
September 2018	29.8%
October 2018	29.7%
November 2018	29.2%
December 2018	28.8%
January 2019	29.0%
February 2019	29.0%
March 2019	29.1%
April 2019	29.1%

Date	Employment to Population Ratio
May 2019	29.1%
June 2019	29.7%
July 2019	29.7%
August 2019	29.7%
September 2019	30.1%
October 2019	30.7%
November 2019	30.7%
December 2019	30.9%
January 2020	31.4%
February 2020	31.3%
March 2020	31.3%
April 2020	30.7%
May 2020	30.1%
June 2020	28.8%
July 2020	28.7%
August 2020	27.9%
September 2020	27.0%
October 2020	26.3%
November 2020	26.4%
December 2020	26.4%
January 2021	25.5%
February 2021	24.6%
March 2021	23.3%
April 2021	22.8%
May 2021	22.7%
June 2021	23.5%
July 2021	24.3%

Date	Employment to Population Ratio
August 2021	25.3%
September 2021	26.5%
October 2021	27.1%
November 2021	27.5%
December 2021	27.2%
January 2022	27.8%
February 2022	28.9%
March 2022	29.9%
April 2022	30.8%
May 2022	31.5%
June 2022	31.2%
July 2022	30.5%
August 2022	30.4%
September 2022	29.9%
October 2022	30.2%
November 2022	30.2%
December 2022	30.2%
January 2023	30.2%
February 2023	30.1%
March 2023	30.0%
April 2023	29.8%
May 2023	29.4%
June 2023	28.9%
July 2023	29.5%
August 2023	29.4%
September 2023	29.8%
October 2023	29.3%

Date	Employment to Population Ratio
November 2023	29.1%
December 2023	30.0%
January 2024	30.8%
February 2024	31.3%
March 2024	31.7%
April 2024	32.0%
May 2024	33.1%
June 2024	34.5%

Source: Current Population Survey

Figure 11 Professional, Scientific, and Technical Services industry employment growth. 2019 - 2023

Industry	Massachusetts	United States
Accounting, Tax Preparation, Bookkeeping, and Payroll Services	10.2%	11.8%
Advertising and Related Services	-9.0%	1.3%
Advertising, Public Relations, and Related Services	-9.0%	1.3%
Architectural, Engineering, and Related Services	4.1%	9.1%
Computer Systems Design and Related Services	-5.6%	12.2%
Legal Services	0.8%	2.4%
Management, Scientific, and Technical Consulting Services	9.0%	20.5%
Other Professional, Scientific, and Technical Services	4.3%	13.6%
Scientific Research and Development Services	33.6%	25.9%
Specialized Design Services	8.8%	5.7%

Source: Quarterly Census of Employment and Wages

Figure 12 Health Care and Social Assistance industry employment growth 2019 - 2023

Industry	Massachusetts	United States
Ambulatory Health Care Services	-1.1%	9.7%
Hospitals	2.8%	2.8%
Nursing and Residential Care Facilities	-9.2%	-6.7%
Social Assistance	2.4%	9.2%

Source: Quarterly Census of Employment and Wages

Figure 13 Change in healthcare employment by region 2019-2023

Region	Change in Employment
Berkshire Region	-8.6%
Cape & Islands Region	-9.3%
Central MA Region	-5.2%
Greater Boston Region	4.3%
Northeast Region	-8.9%
Pioneer Valley Region	-3.3%
Southeast Region	-6.3%

Source: Quarterly Census of Employment and Wages

Figure 14 Manufacturing industry employment growth. 2019 - 2023

Industry	Massachusetts	United States
Apparel Manufacturing	-38.0%	-18.6%
Beverage and Tobacco Product Manufacturing	14.8%	16.8%
Chemical Manufacturing	11.3%	5.4%
Computer and Electronic Product Manufacturing	-5.9%	2.4%
Electrical Equipment, Appliance, and Component Manufacturing	-14.0%	3.2%
Fabricated Metal Product Manufacturing	-2.8%	-2.8%
Food Manufacturing	4.6%	6.1%
Furniture and Related Product Manufacturing	3.4%	-7.4%
Leather and Allied Product Manufacturing	-2.9%	-4.4%
Machinery Manufacturing	9.4%	0.1%
Miscellaneous Manufacturing	-5.6%	1.2%
Nonmetallic Mineral Product Manufacturing	-12.9%	0.1%
Paper Manufacturing	-9.4%	-1.8%
Petroleum and Coal Products Manufacturing	-5.4%	-4.9%
Plastics and Rubber Products Manufacturing	-0.6%	0.4%
Primary Metal Manufacturing	10.2%	-3.7%
Printing and Related Support Activities	-21.4%	-12.6%
Textile Mills	-12.7%	-16.5%
Textile Product Mills	-8.1%	-10.9%

Industry	Massachusetts	United States
Transportation Equipment Manufacturing	-11.4%	1.8%
Wood Product Manufacturing	1.8%	3.2%

Source: Quarterly Census of Employment and Wages

Figure 15 Annual growth in real per capita personal consumption

Region	Time Period	Change in Real Per Capita Consumption
United States	2010-2019	1.6%
United States	2019-2022	2.4%
Massachusetts	2010-2019	1.1%
Massachusetts	2019-2022	1.0%

Source: Bureau of Economic Analysis

Figure 16 Construction industry employment growth. 2019 - 2023

Industry	Massachusetts	United States
Building Equipment Contractors	9.3%	9.3%
Building Finishing Contractors	-1.8%	-0.8%
Foundation, Structure, and Building Exterior Contractors	2.9%	5.2%
Highway, Street, and Bridge Construction	4.1%	16.1%
Land Subdivision	-13.5%	-3.9%
Nonresidential Building Construction	1.9%	4.3%

Industry	Massachusetts	United States
Other Heavy and Civil Engineering Construction	-4.8%	5.5%
Other Specialty Trade Contractors	6.2%	9.6%
Residential Building Construction	10.2%	12.6%
Utility System Construction	8.6%	1.6%

Source: Quarterly Census of Employment and Wages

Figure 17 Change in Professional, Financial, and Information Services Employment 2019-2022

Workforce Development Area	Change in Population (ACS)	Change in Employed (QCEW)	Difference
Boston WDA	-7,447	5,840	-13,287
Metro South/West WDA	-736	5,297	-6,033
North Shore WDA	-5,475	508	-5,983
Greater Lowell WDA	-3,004	701	-3,705
Brockton WDA	-2,227	195	-2,422
Lower Merrimack Valley WDA	-1,207	534	-1,741
Greater New Bedford WDA	-205	144	-350
Berkshire WDA	162	154	8
Franklin/Hampshire WDA	1,319	188	1,131
Hampden County WDA	1,847	434	1,413
South Shore WDA	4,453	995	3,458
Central MA WDA	5,119	794	4,325
Bristol County WDA	4,780	394	4,386
North Central WDA	5,281	182	5,099
Cape & Islands WDA	5,650	325	5,325

Workforce Development Area	Change in Population (ACS)	Change in Employed (QCEW)	Difference
Metro North WDA	13,914	4,526	9,388

Source: American Community Survey; Quarterly Census of Employed and Wages.

Figure 18 Healthcare and social assistance employment trends

Geography	Year	Employment	Base Employment	Normalized Employment
MA	2019	639,385	639,385	100
MA	2020	601,795	639,385	94
MA	2021	618,373	639,385	97
MA	2022	625,652	639,385	98
MA	2023	636,327	639,385	100
US	2019	20,184,056	20,184,056	100
US	2020	19,550,905	20,184,056	97
US	2021	19,871,884	20,184,056	98
US	2022	20,353,997	20,184,056	101
US	2023	21,263,545	20,184,056	105

Source: Lightcast. Includes NAICS industries 621-624.

Figure 19 Healthcare and social assistance new hires vs overall wage growth. 2019 – 2023

Industry	New hires monthly earnings growth	All employees monthly earnings growth	Percentage point difference	Percentage change	Employment
Psychiatric and Substance Abuse Hospitals	48.4%	16.7%	31.8%	190.8%	8,978.25
Other Residential Care Facilities	52.3%	35.5%	16.8%	47.3%	7,417.25
Community Food & Housing, Emergency/Relief Services	43.5%	29.4%	14.2%	48.2%	8,091.50
Individual and Family Services	37.7%	24.8%	12.9%	52.1%	116,388.25
Continuing Care/Assisted Living Facilities	42.3%	30.3%	12.0%	39.5%	26,713.25
Nursing Care Facilities	43.1%	34.8%	8.3%	23.8%	44,282.50

Source: Census QWI. New hire wage growth from 2019 to 2023. Other residential care facilities are related to non-retirement based housing such as foster homes, halfway group homes, or housing for delinquent youth.

Figure 20 Advanced manufacturing employment trends

Geography	Year	Employment	Base Employment	Normalized Employment
MA	2019	217,239	217,239	100
MA	2020	206,054	217,239	95
MA	2021	207,906	217,239	96
MA	2022	212,486	217,239	98
MA	2023	210,910	217,239	97

Geography	Year	Employment	Base Employment	Normalized Employment
US	2019	10,749,515	10,749,515	100
US	2020	10,182,546	10,749,515	95
US	2021	10,334,629	10,749,515	96
US	2022	10,717,310	10,749,515	100
US	2023	10,843,834	10,749,515	101

Source: Lightcast. Industries include the following NAICS codes: 3112-3119, 3131, 3221-3222, 3231, 3241, 3251-3256, 3259, 3261, 3271, 3279, 3311, 3313, 3315, 3321-3329, 3331-3336, 3339, 3341-3346, 3351-3353, 3359, 3361-3366, 3369, 3391, 3399

Figure 21 Life sciences employment trends

Geography	Year	Employment	Base Employment	Normalized Employment
MA	2019	89,891	89,891	100
MA	2020	94,178	89,891	105
MA	2021	102,100	89,891	114
MA	2022	111,481	89,891	124
MA	2023	116,535	89,891	130
US	2019	1,303,970	1,303,970	100
US	2020	1,337,526	1,303,970	103
US	2021	1,420,167	1,303,970	109
US	2022	1,496,384	1,303,970	115
US	2023	1,528,313	1,303,970	117

Source: Lightcast. Life Sciences industry definitions are based on the 2022 Massachusetts Life Sciences Workforce Analysis report by MassBio.

Figure 22 Clean energy employment trends

Geography	Year	Employment	Base Employment	Normalized Employment
MA	2019	89,891	89,891	100
MA	2020	94,178	89,891	105
MA	2021	102,100	89,891	114
MA	2022	111,481	89,891	124
MA	2023	116,535	89,891	130
US	2019	1,303,970	1,303,970	100
US	2020	1,337,526	1,303,970	103
US	2021	1,420,167	1,303,970	109
US	2022	1,496,384	1,303,970	115
US	2023	1,528,313	1,303,970	117

Source: Massachusetts Clean Energy Center (MassCEC) Clean Energy Industry Reports