

Annual Economic Analysis Report
Massachusetts Workforce and Labor Area Review
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Executive Summary

The following report on the labor market conditions in Massachusetts is prepared as part of the funding requirement from the Employment and Training Administration, U.S. Department of Labor. This report is targeted toward practitioners and considers three time periods pre-pandemic (2019), pandemic (2020), and early pandemic recovery (2021). Analysis of unemployment and labor force participation rates and demographics as well as wages, employment, and growth across industries and occupations from these time periods can be used to gauge the progress of recovery. These comparisons seek to answer how close the Massachusetts economy may be to returning to pre-COVID conditions.

Overall, the Massachusetts economy has entered a period of early pandemic recovery in 2021. Massachusetts' unemployment rate has recovered substantially to 4.6% (December 2021) since the high of 17.1% (April 2020) during the pandemic, but has not yet fully recovered to the pre-pandemic unemployment rate of 2.9% in February 2020. However, recovery has been uneven across industries, demographics, and geographics. Certain sectors have fully recovered job losses from the pandemic including Construction; Transportation, Warehousing, and Utilities; Wholesale Trade; Professional, Scientific, and Business Services; and Federal Government. Other sectors, such as Leisure and Hospitality still face a net loss of 63,100 jobs since February 2020 (53,200 in Food and Accommodation). Although unemployment is down overall, the unemployment rate of Blacks and Hispanics have not recovered as quickly as the unemployment rate of Whites. Women were more affected by unemployment during the pandemic than men, particularly at the beginning of the pandemic recovery period, but this has shifted and now men make up the majority (52%) of Unemployment Insurance (UI) claimants. Demographic analysis of unemployment claims data presented in the report finds that Asians had the greatest number of UI claims in 2019, with American Indian or Alaskan Natives a close second. While Asian UI claims decreased slightly in 2021 and American Indian or Alaskan Native UI claims increased, these two groups still make up the highest number of claims across all demographics.

State of the State

How has the unemployment rate in Massachusetts changed throughout 2021?

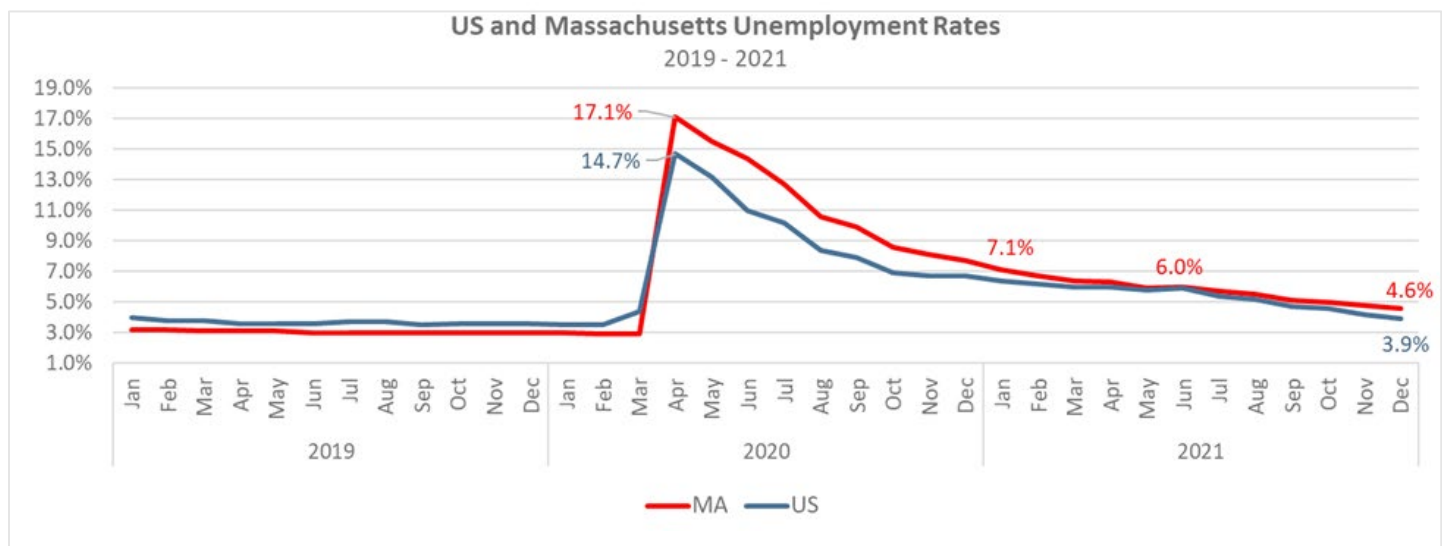
State of the State: Unemployment Rate in Massachusetts

In January of 2021, Massachusetts saw a 7.1% unemployment rate: 3,471,400 residents were employed and 264,200 were unemployed for an estimated labor force total of 3,735,600. The Massachusetts unemployment rate declined throughout 2021 but remained above the national unemployment rate as shown in Figure 1. In January 2021, the national rate was 6.4%.

On May 29, 2021, all COVID-19 business operation restrictions in Massachusetts were lifted. In June of 2021, the unemployment rate in Massachusetts fell to 6.0%. An additional 63,900 residents were employed and 39,000 fewer residents were unemployed in comparison to the beginning of 2021, for a labor force total of 3,760,400. This allowed more industries to fully reopen and may help explain the decrease in unemployment in following months. The national unemployment rate in June of 2021 was 5.9%.

By December 2021, the state's unemployment rate continued its trend, falling to 4.6%, compared to the national rate of 3.9%. In Massachusetts, 105,900 more residents were employed, and 90,000 fewer residents were unemployed since the beginning of 2021, increasing the labor force by 15,900 for a labor force total of 3,751,493 by the end of the year.

Figure 1



Source: U.S. Bureau of Labor Statistics (BLS) Seasonally Adjusted Local Area Unemployment Statistics (LAUS), 2019-2021

State of the State: Labor Force Participation in Massachusetts

The labor force participation rate (LFPR) in Massachusetts remained relatively stable throughout 2021, fluctuating between a low of 65.1% in February of 2021 and a high of 65.7% between June and October of 2021. While the LFRP experienced a slow decline in 2019, from 67.1% at the beginning of that year to 66.5%

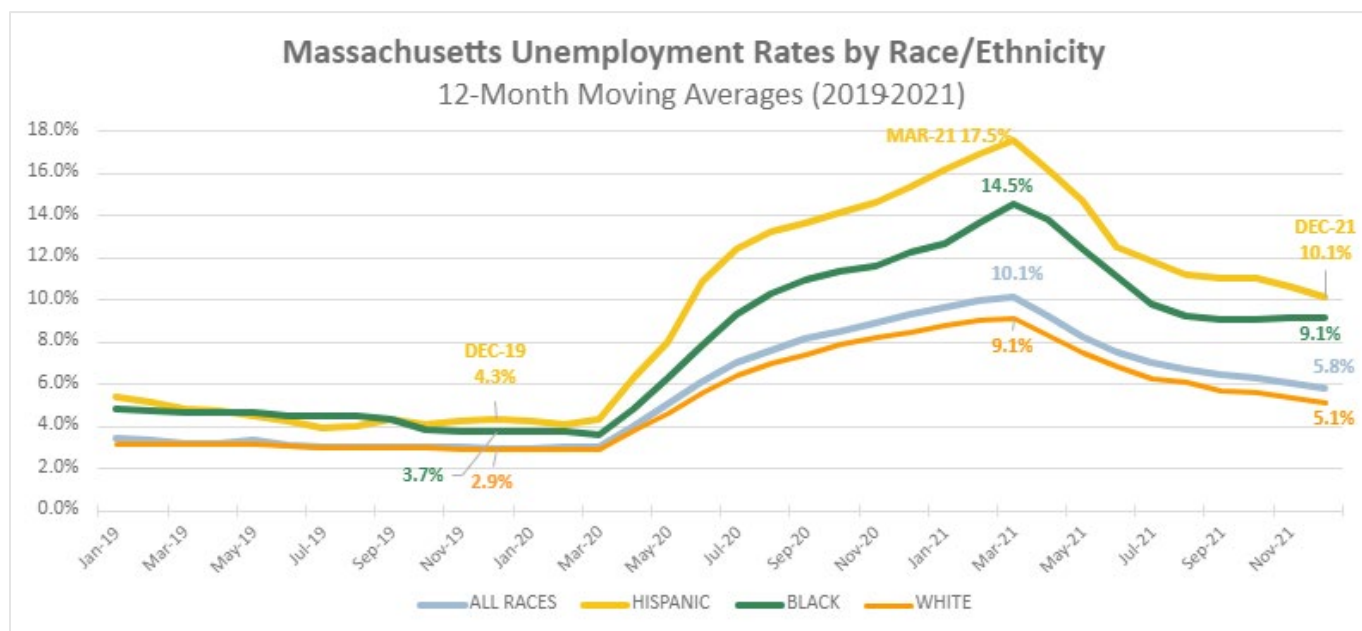
by its end, the pandemic exacerbated this, reaching a low of 60.5% in April of 2020. That the 2021 LFPR was still below the lowest 2019 levels suggests some workers who exited the labor force in 2020 and 2021 have yet to return. These workers may include early retirees and displaced workers seeking new industries, but additional research is needed to identify them specifically.

State of the State: Unemployment Rate Demographics

Race and Ethnicity

The 12-month moving average unemployment rates among all races had generally been declining since March 2021, although Blacks ended the year with a slight uptick in their November and December rates. With a decrease of over thirteen percent in the twelve-month average unemployment level in June, Hispanics had the largest drop of 2.2 percentage points from May to June in the twelve-month moving average unemployment rate in 2021. While the average unemployment rates among the Hispanic ethnicity and all races had mostly been trending down throughout 2021, they were still above the 2019 levels at the end of the year.

Figure 2

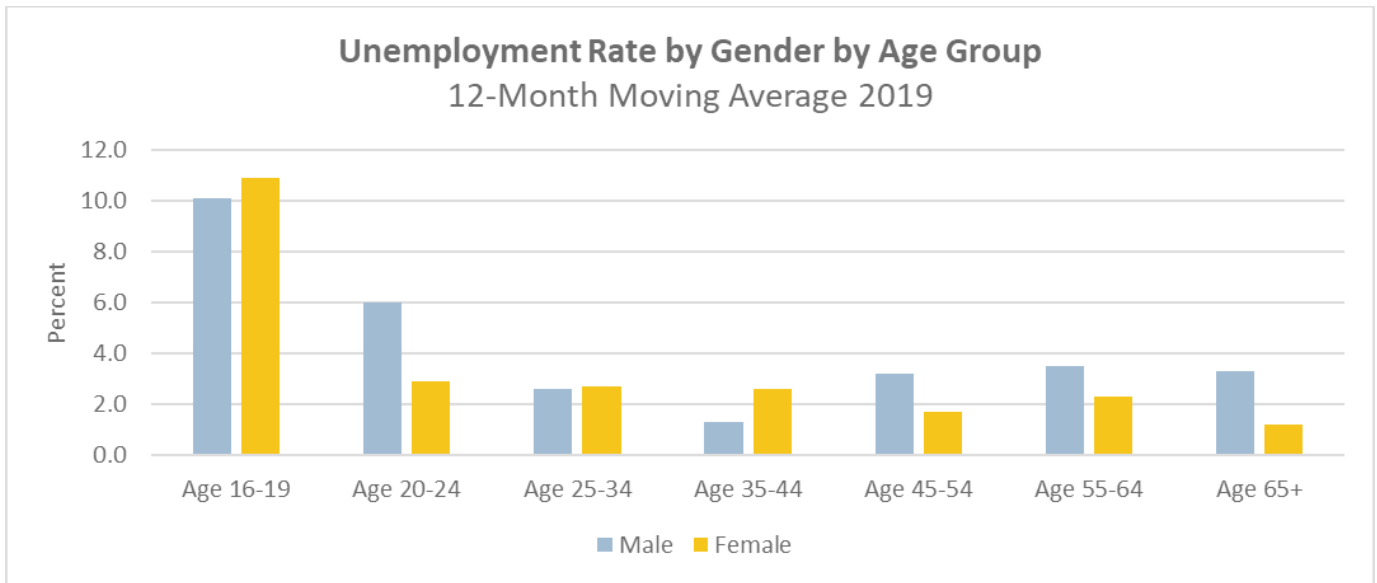


Source: U.S. Bureau of Labor Statistics (BLS) Unpublished Current Population Survey (CPS), 2019-2021 12-Month Moving Averages

Gender and Age

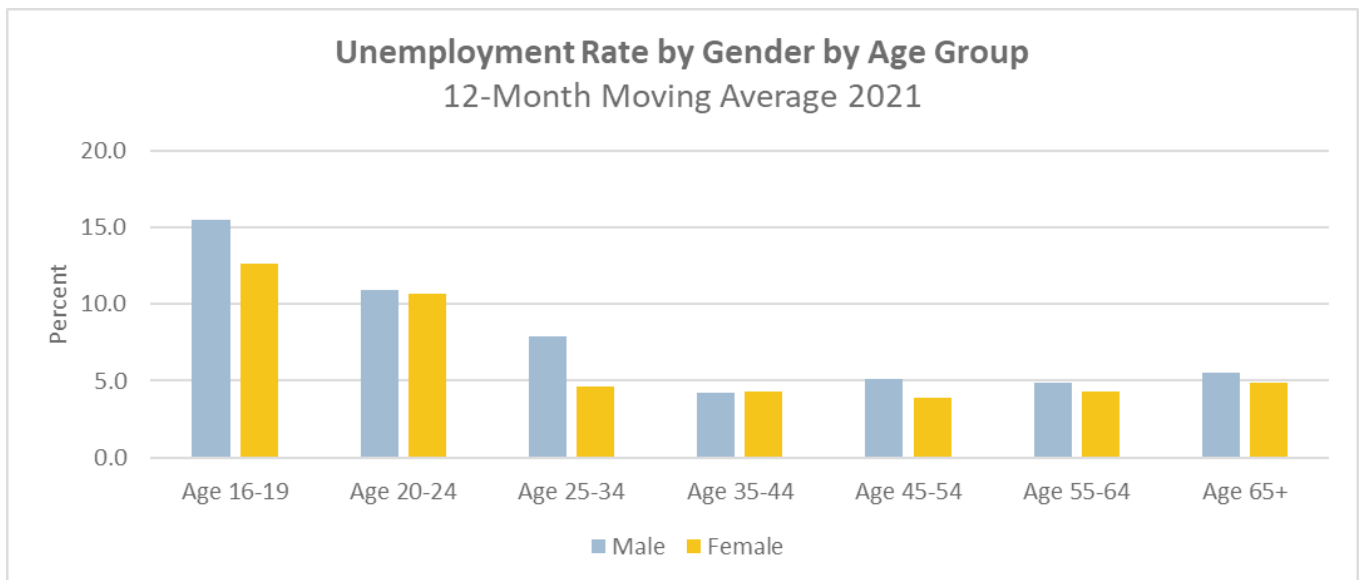
Per 12-month moving average 2019 CPS data, older males generally had higher rates of unemployment than older females, while the reverse was true for ages 25-34 and 35-44. Meanwhile, teenage females had relatively high unemployment, but relatively low unemployment from ages 20-24, as compared to males. By 2021, male unemployment outpaced female unemployment in every age group except those 35-44 years old.

Figure 3



Source: U.S. Bureau of Labor Statistics (BLS) Unpublished Current Population Survey (CPS), 2019-2021 12-Month Moving Averages

Figure 4

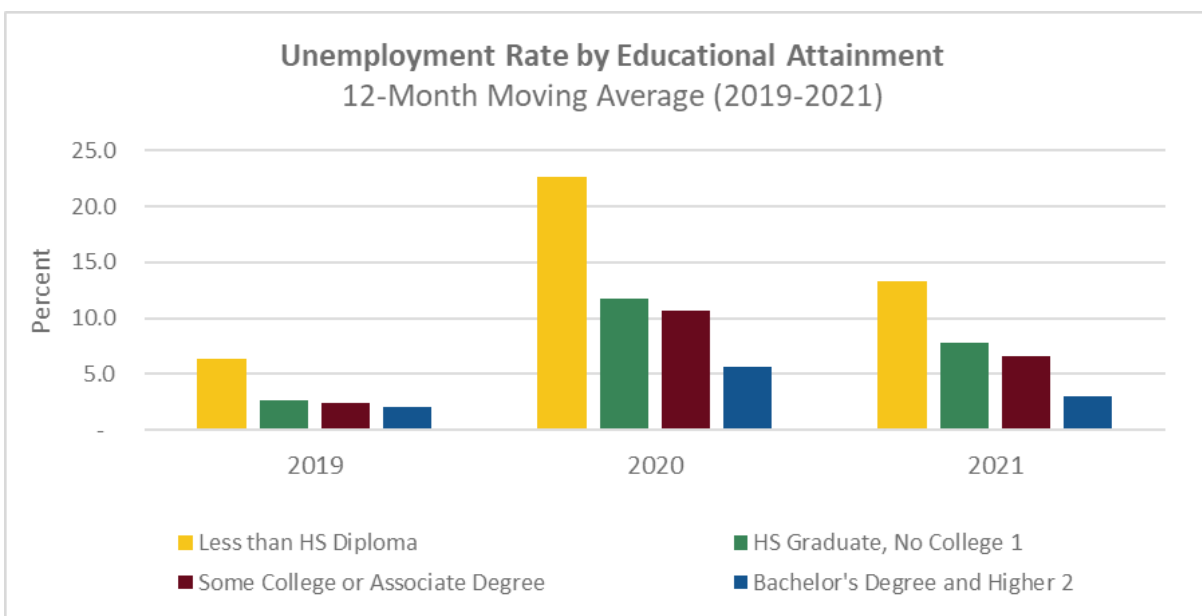


Source: U.S. Bureau of Labor Statistics (BLS) Unpublished Current Population Survey (CPS), 2019-2021 12-Month Moving Averages

Educational Level

The state average unemployment rate trends lower for higher levels of educational attainment. Although the 2021 average rates have dropped for all levels of education compared to the 2020 annual averages, only those with a bachelor's degree and higher saw anything close to a full recovery compared to 2019 annual averages.

Figure 5



Source: U.S. Bureau of Labor Statistics (BLS) Current Population Survey (CPS), 2019-2021 12-Month Moving Averages

¹Includes persons with a high school diploma or equivalent

²Includes person with bachelor's, master's, professional and doctoral degrees

New England States

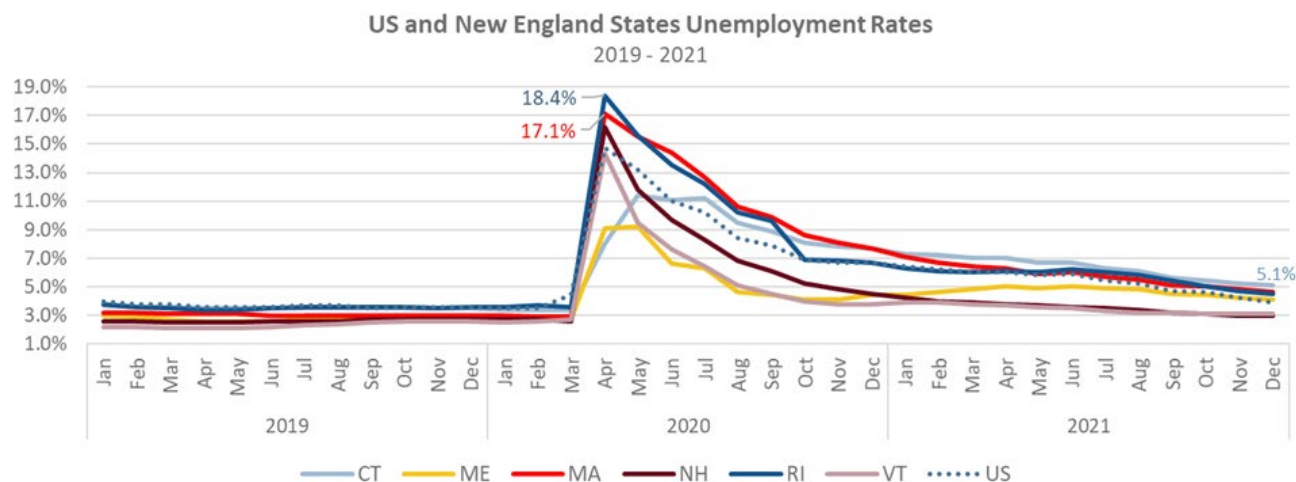
How did Massachusetts fare in comparison to other New England states?

New England States: Unemployment Rates

In 2020, all New England states saw the highest unemployment rate in their individual historical series. Massachusetts, New Hampshire, Rhode Island, and Vermont saw their highest rate in April 2020, while Connecticut and Maine saw their highest rates in May 2020. At the pandemic's peak, Rhode Island had the highest unemployment rate of 18.4%, followed by Massachusetts at 17.1%, and New Hampshire at 16.2%, which were all above the nation's 14.7% peak unemployment rate.

Unemployment rates have since declined among the New England States in 2021, but some states are recovering more slowly than others. Throughout 2021, the unemployment rate in Massachusetts remained higher than the national rate. As seen in Figure 6, this was also the case in Connecticut and Rhode Island. In contrast, Maine, New Hampshire, and Vermont had relatively low monthly unemployment rates, lower than the national rates during the same time period. When comparing unemployment rates in December 2021 to pre-pandemic unemployment rates in 2019, New Hampshire was the closest to its pre-pandemic rates at 3.0% and 2.7% respectively. The same comparisons for Massachusetts and Connecticut indicate slower recovery, as their unemployment rates remained elevated, with 5.1% and 4.6% unemployment rates at the end of 2021 compared to 3.5% and 3.0% at the end of 2019, respectively.

Figure 6



Source: U.S. Bureau of Labor Statistics (BLS) Seasonally Adjusted Local Area Unemployment Statistics (LAUS), 2019-2021

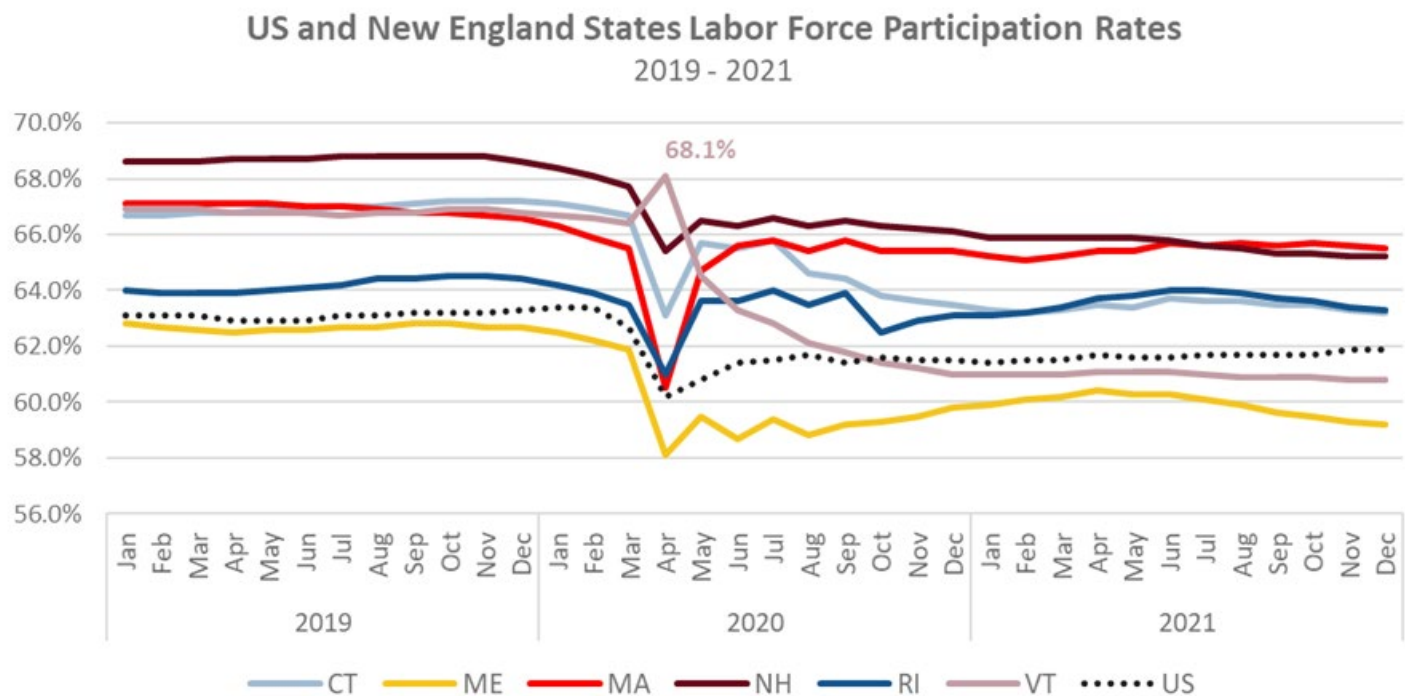
New England States: Labor Force Participation in New England States

Between January 2010 and December 2019, the median labor force participation rate (LFPR) in Massachusetts was 65.7%. By the end of 2021, Massachusetts had recovered to 65.5%, just 0.2 percentage points below. In January 2022, the state surpassed it by 0.1 percentage point.

The labor force participation rates in all the New England states in 2021 have not reverted to pre-pandemic levels. All the New England states but Vermont exhibited a large decrease in their labor force participation rates in April 2020 at the height of the COVID-19 pandemic. While the labor force participation rates in the other New England states fell between 2.3% and 5% over-the-month from March 2020, Vermont's rose by 1.7%, the result of a growth in the labor force.

Vermont's labor force grew by 8,900 as 42,600 more residents were unemployed and 33,700 fewer were employed in April compared to March 2020. In contrast, Massachusetts, with a loss of 285,900 in the labor force over-the-month in April 2020, had the largest drop in the labor force participation rate among the New England states, falling 5% to 60.5 percent in April 2020. Since the uptick in April 2020, Vermont's labor force participation rate had been on a downward trend throughout most of 2021, which contrasts with a recovery in labor force participation in 2021 for most other New England states, including Massachusetts. Vermont, and to some extent Maine, appear to be the only states in the region that are not on track to recover to their pre-pandemic levels of labor force participation. At the end of 2021, of the New England states, the labor force participation rates of Massachusetts and Rhode Island most closely resemble their pre-pandemic levels in December 2019, with a difference of 1.1%. More information related to labor force participation can be found in the Labor Force Changes section of the report.

Figure 7



Source: U.S. Bureau of Labor Statistics (BLS) Seasonally Adjusted Local Area Unemployment Statistics (LAUS), 2019-2021

COVID-19 Impact and Early Recovery

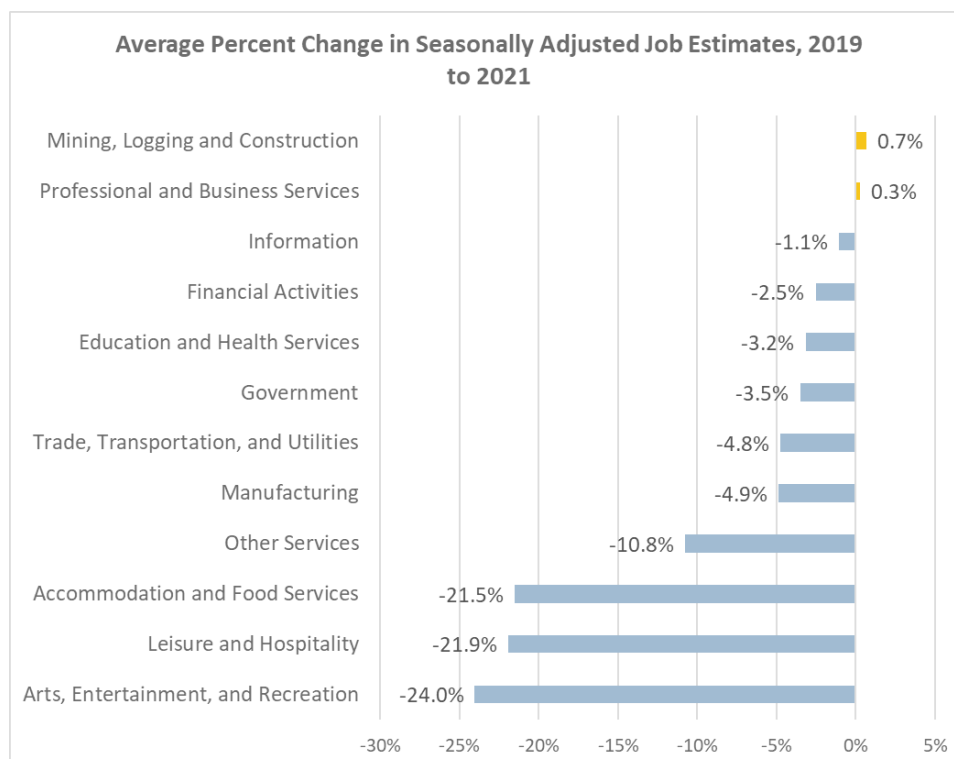
What does the data reveal about the impact of COVID-19 pandemic and early recovery across sectors and industries?

COVID-19 Impact and Early Recovery: Employment by Industry

The Leisure and Hospitality industry saw some of the greatest employment losses in 2020 as a result of the COVID-19 pandemic, according to Current Employment Statistics (CES) data. These losses can be attributed to restaurant closures and travel restrictions, which reduced the demand for accommodations. However, Leisure and Hospitality also saw the greatest job increase (107.0%) from April 2020 to December 2021. Similarly, this increase can be attributed to businesses reopening as COVID-19 restrictions were lifted in May of 2021.

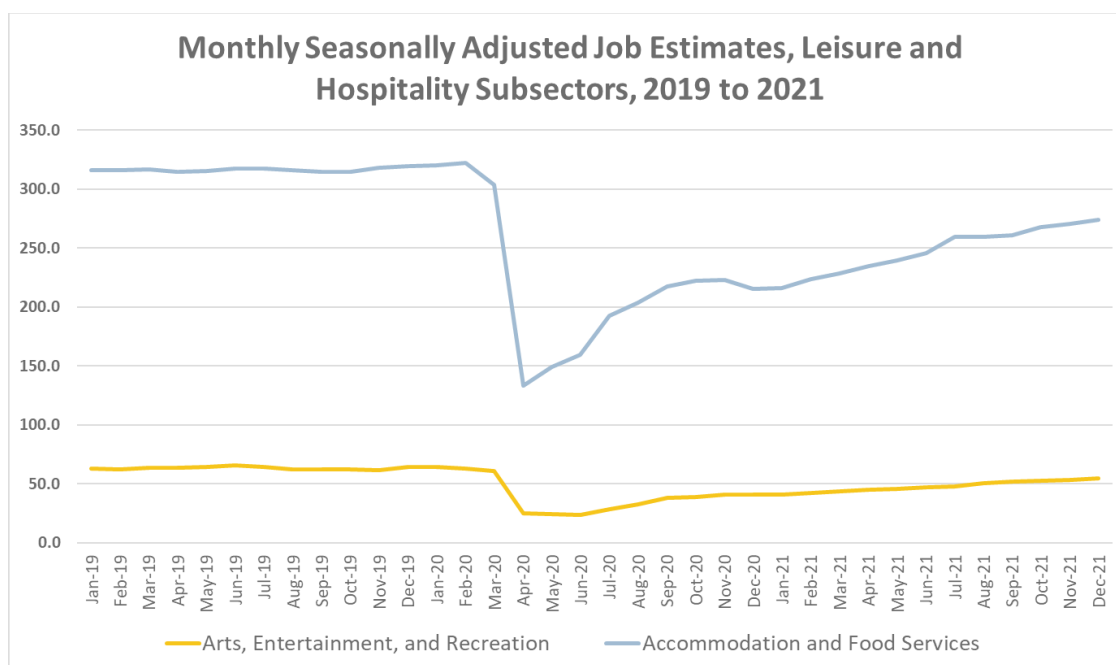
Despite this increase, the Leisure and Hospitality industry continues to struggle to recover to pre-pandemic levels. When comparing 2019 monthly averages to 2021 monthly averages, Leisure and Hospitality jobs have declined by 21.9%; subsectors including Arts, Entertainment and Recreation as well as Accommodation and Food services saw reductions of 24.0% and 21.5%, respectively. Thus, while the Leisure and Hospitality sector is recovering, it has not reached pre-pandemic levels.

Figure 8



Source: U.S. Bureau of Labor Statistics (BLS) Seasonally Adjusted Current Employment Statistics (CES-790), 2019-2021

Figure 9



Source: U.S. Bureau of Labor Statistics (BLS) Seasonally Adjusted Current Employment Statistics (CES-790), 2019-2021

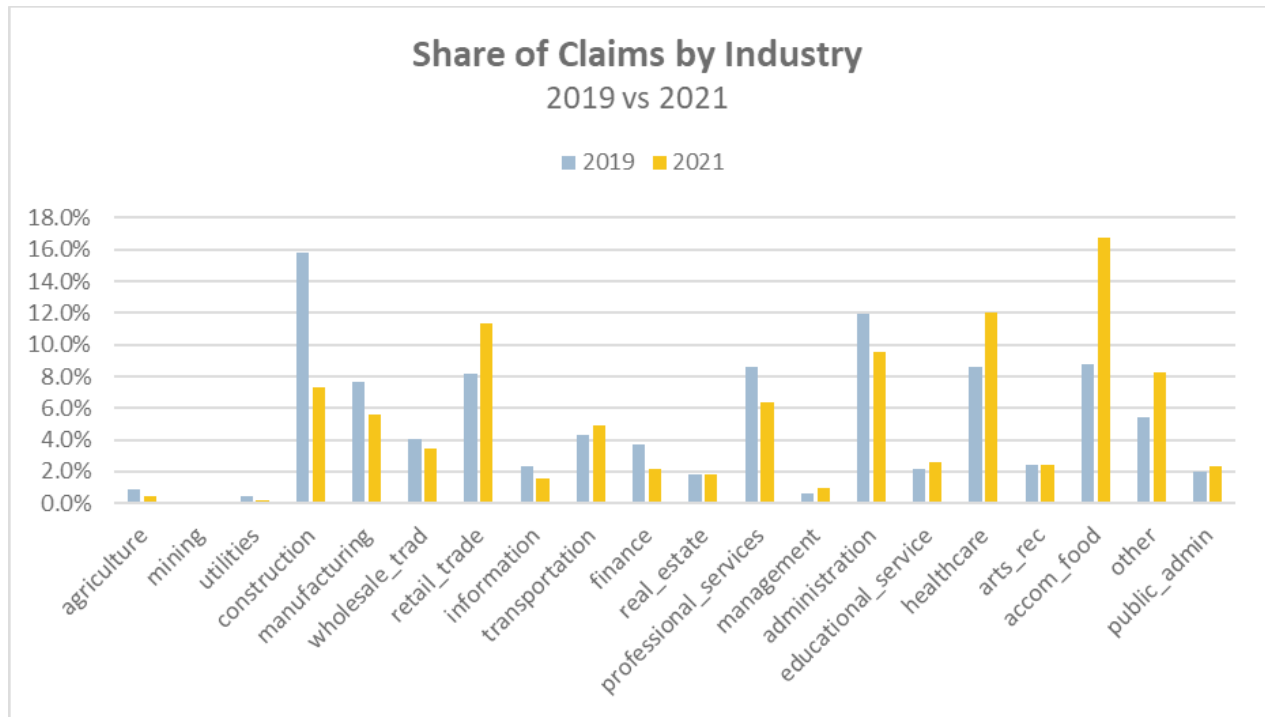
Slow recovery is also seen in the Other Services sector, which includes occupations such as machine repair, dry cleaning and laundry services, temporary parking services, and photofinishing services. This sector experienced an 11% reduction in average employment between 2019 to 2021. Slow recovery in this sector could indicate increased automation in these services, increased outsourcing, or low labor supply, among other factors. For example, there may be less demand for dry cleaning services as more office workers are working remotely.

The few industries which saw increases in 2021 employment compared to their 2019 levels were Mining, Logging and Construction (0.7%) and Professional and Business Services (0.3%).

COVID-19 Impact and Early Recovery: Unemployment Claimants by Industry

Analysis of Unemployment Insurance (UI) claims by industry from 2019 to 2021 provides additional insight about recovery across industries. In 2019, the highest share of claimants by industry were within Construction (15.8%), Administration (12%), Food and Accommodation (8.8%), Healthcare (8.6%), and Professional Services (8.6%). As seen in Figure 11, the highest share of claimants by industry in 2021 were Food and Accommodations (16.8%), Healthcare (12%), Retail Trade (11.4%), Administration (9.5%) and Construction (7.4%). The change in top industry by UI claims reflect the disproportionate effect of COVID-19 related business closures on the food service industry.

Figure 10



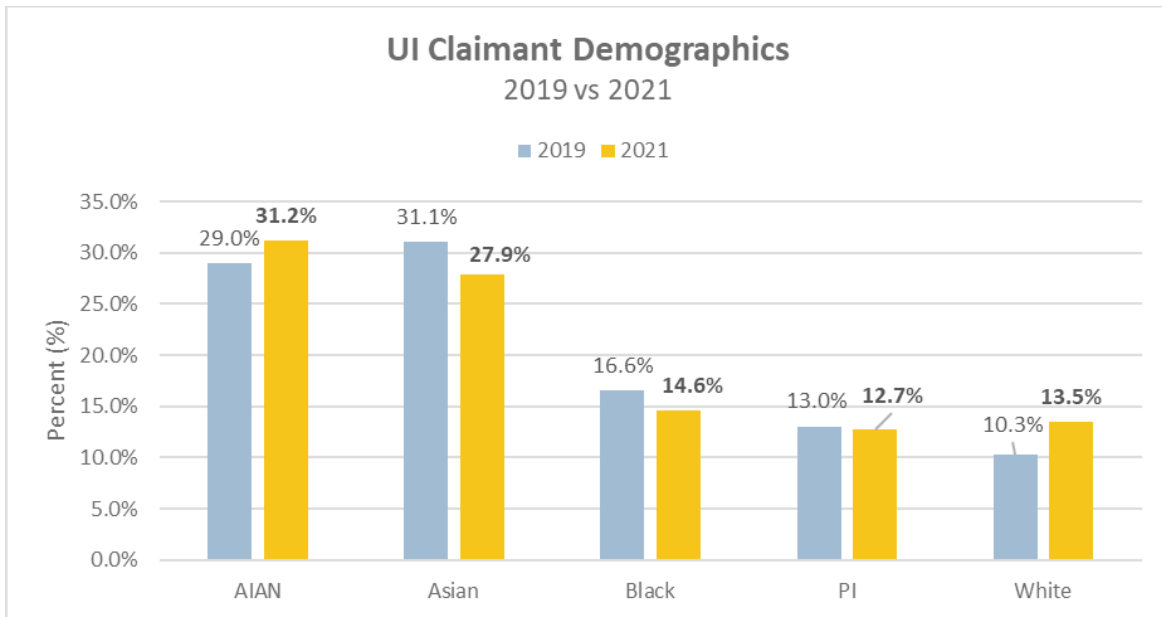
Source: Massachusetts Department of Unemployment Assistance (DUA) Claims Data, 2019-2021

COVID-19 Impact and Early Recovery: Unemployment Claimants by Demographic

Race and Ethnicity

The proportion of claimants who identified as White in 2021 increased 3.0% from 2019 levels, and the proportion of claimants who identified as American Indian or Alaskan Native (AIAN) increased 2.2% from 2019 levels. By contrast, the proportion of claimants who identified as Asian decreased 3.2%, as did the proportion of claimants who identified as Black (-2.0%) and as Pacific Islander (-0.3%).

Figure 11

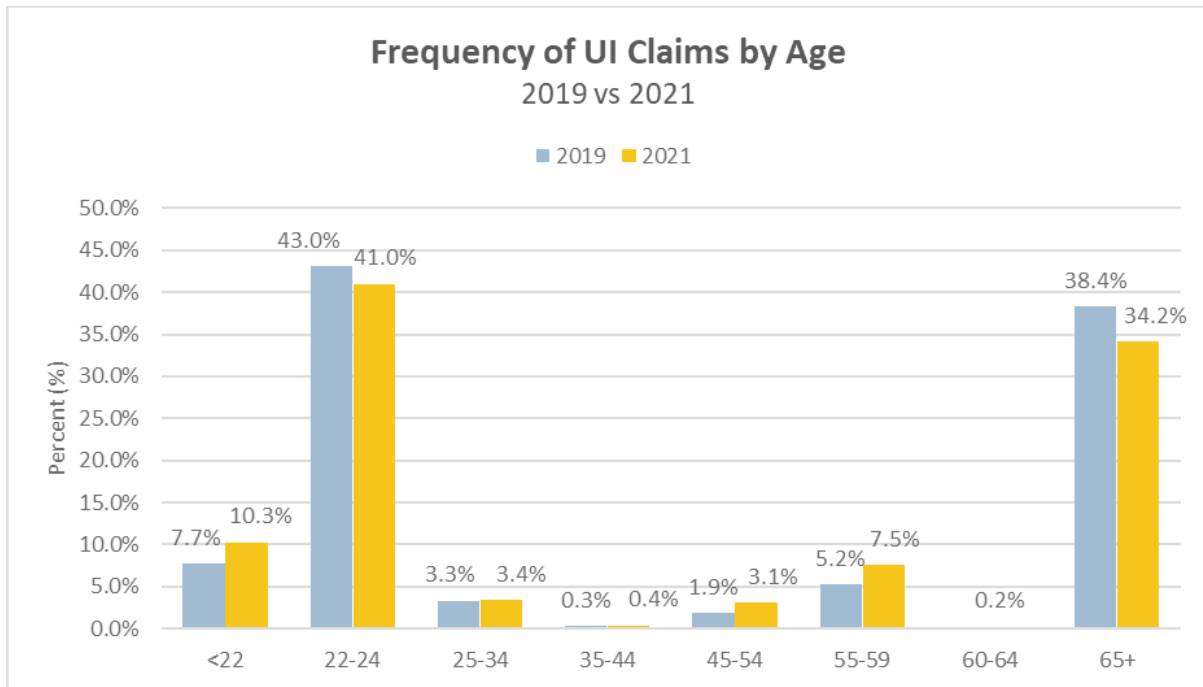


Source: Massachusetts Department of Unemployment Assistance (DUA) Claims Data, 2019-2021

Age

Figure 12 compares the frequency of UI claims by age between 2019 and 2021. 2019 figures suggest that the pandemic affected younger workers and older workers the most, but 2021 figures suggest younger and middle-aged workers are facing a slower recovery. Between 2019 and 2021, the share of claimants under 22 increased by 2.6%; the share of workers between 44-54 and between 55-59 also increased by 1.2% and 2.3% respectively. In contrast, the share of claimants aged 22-24 and 65+ have decreased by 2% and 4.2% respectively. One possible explanation for the reduction in claimants aged 65+ is that people may be retiring from the workforce and leaving the labor force.

Figure 12

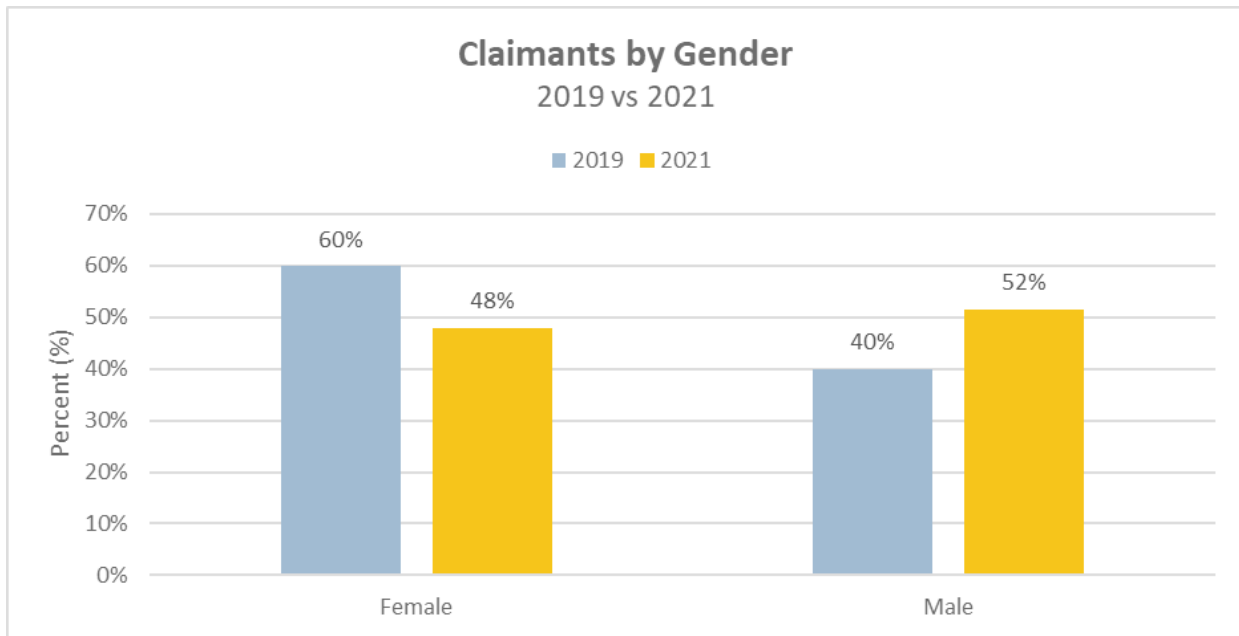


Source: Massachusetts Department of Unemployment Assistance (DUA) Claims Data, 2019-2021

Gender

UI claimants by gender reveal an interesting shift from pre-pandemic 2019 to pandemic recovery in 2021. As seen in Figure 14, UI claimants in 2019 were 60.0% female and 40.0% male. In 2021, UI Claimants were 48.0% female and 52.0% male.

Figure 13

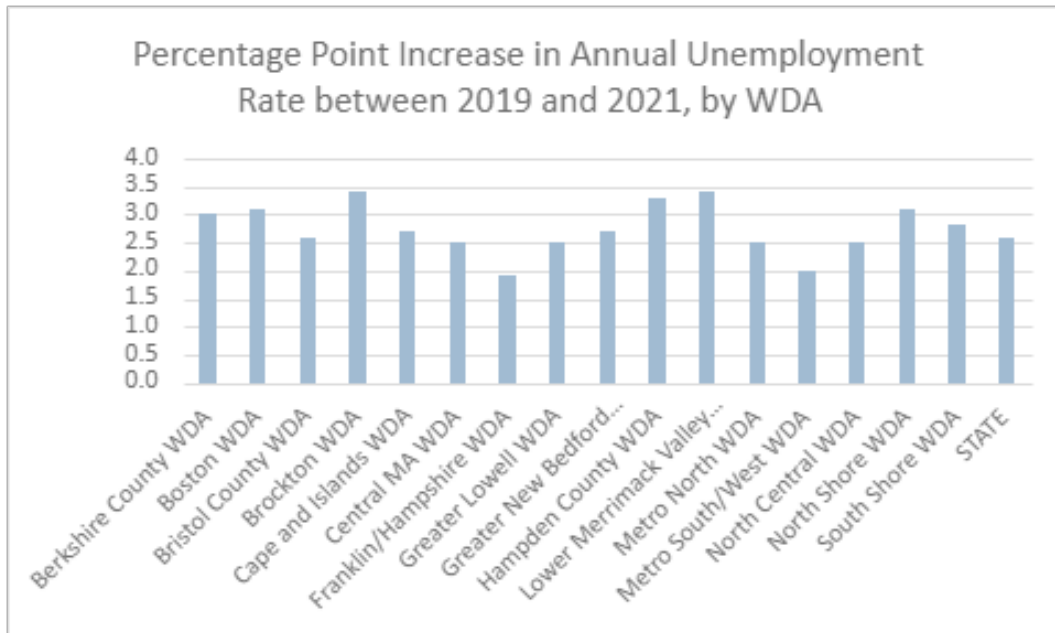


Source: Massachusetts Department of Unemployment Assistance (DUA) Claims Data, 2019-2021

COVID-19 Impact and Early Recovery: Regional Analysis

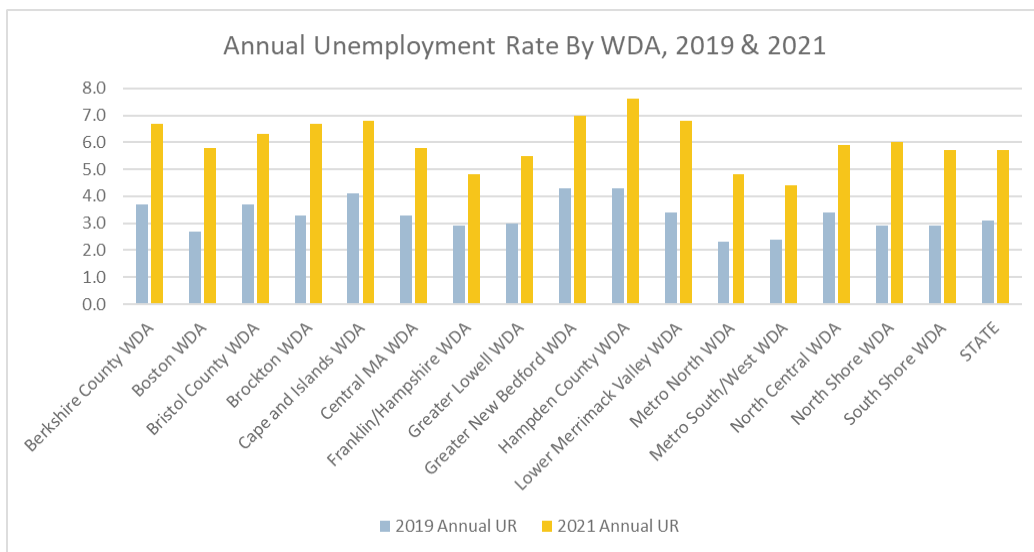
Massachusetts is comprised of 16 Workforce Development Areas (WDA). The 2021 average annual unemployment in all WDAs was higher than in 2019, consistent with an increase in the overall state unemployment rate rising from 3.1% in 2019 to 5.7% in 2021. Some WDAs have recovered more than others. The Franklin/Hampshire WDA and the Metro South/West WDA are the only WDAs to see their 2021 average annual unemployment decline to within two percentage points of their 2019 annual average rates. Other WDAs, which include Brockton, Lower Merrimack Valley, and Hampden, have seen relatively weak recoveries, remaining well over three percentage points above their 2019 annual average.

Figure 14



Source: Massachusetts Department of Unemployment Assistance (DUA), UI Claimant Profiles compiled by the Massachusetts Department of Economic Research (DER) 2019-2021

Figure 15



Source: U.S. Bureau of Labor Statistics (BLS) Not Seasonally Adjusted Local Area Unemployment Statistics (LAUS) 2019-2021

Claims data paint an encouraging picture across the state at the WDA level. All WDAs started 2021 well above the level of claims that they saw at any point in 2019. Relatively high continued claims counts in the Retail

Trade (NAICS 44-45), Health Care and Social Assistance (NAICS 62), and Accommodation and Food Services (NAICS 72) appear to have been the main drivers of elevated claims counts. However, despite the weaknesses in those three industries, by the end of 2021 the Berkshire County, Bristol County, Cape & Islands, Greater Lowell, Lower Merrimack Valley, Metro Southwest, North Central, and South Shore WDAs had all dipped below their December 2019 claims level. One possible driver of this reduction in claims in certain areas is that Construction industry (NAICS 23) claims were down significantly in four of these eight WDAs that crossed below their 2019 level (Bristol County, Greater Lowell, Lower Merrimack Valley, and Berkshire County). The Bristol WDA claims volume of claims was furthest beneath the December 2019 claims level – a 33% decrease – despite the unemployment rate remaining above the 2019 level.

Meanwhile, the other eight WDAs finished 2021 with higher claims counts than they saw in 2019. The Franklin/Hampshire WDA was only 2% above the December 2019 claims volume as of December 2021, while the Greater New Bedford WDA was within 3% of its 2019 claims volume, and the Hampden County WDA was within 4% of its respective claims volume. The Boston, Brockton, and Metro North, and North Shore WDAs were somewhat further behind in their respective recoveries. The Brockton, Metro North, and North Shore WDAs all saw increased claims in the Transportation and Warehousing industry (NAICS 48-49), the Professional, Scientific, and Technical Services industries (NAICS 54), and the Admin & Support, Waste Management & Remediation industries (NAICS 56). The Boston WDAs higher claims counts appear to be driven by the Admin & Support, Waste Management & Remediation industries (NAICS 56), while the Central Massachusetts WDA appears to have particularly struggled with NAICS 61 (Educational Services). Graphs that display industry claims by WDA can be found in the appendix of this report.

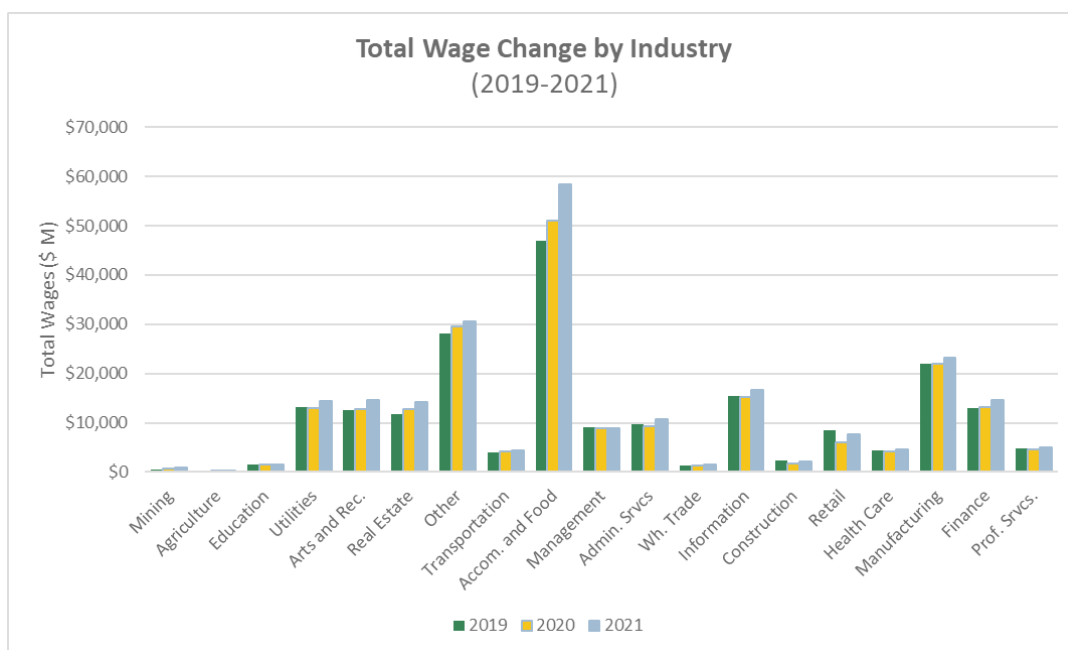
Labor Demand

What are the trends in labor demand during the recovery period in Massachusetts?

Labor Demand: Which sectors saw the sharpest decrease and increase in wages?

Three sectors whose total wages decreased from 2019 to 2021 were Construction, Retail Trade, and Agriculture sectors. Construction saw the highest level of wage decline at \$272 million (-11.1%), followed by Retail Trade at \$929 million (-10.9%), and Agriculture at a \$4.3 million reduction in wages (-5.9%). However, many industries also saw strong wage growth. Accommodation and Food Services saw a \$11.4 billion (24.4%) wage increase, followed by Real Estate's \$2.6 billion (22.4%) and Arts and Recreation's \$2.1 billion (16.3%). The increases in these sectors are likely driven by the tight labor market where increased demand and competition for workers have naturally increased wage levels.

Figure 16



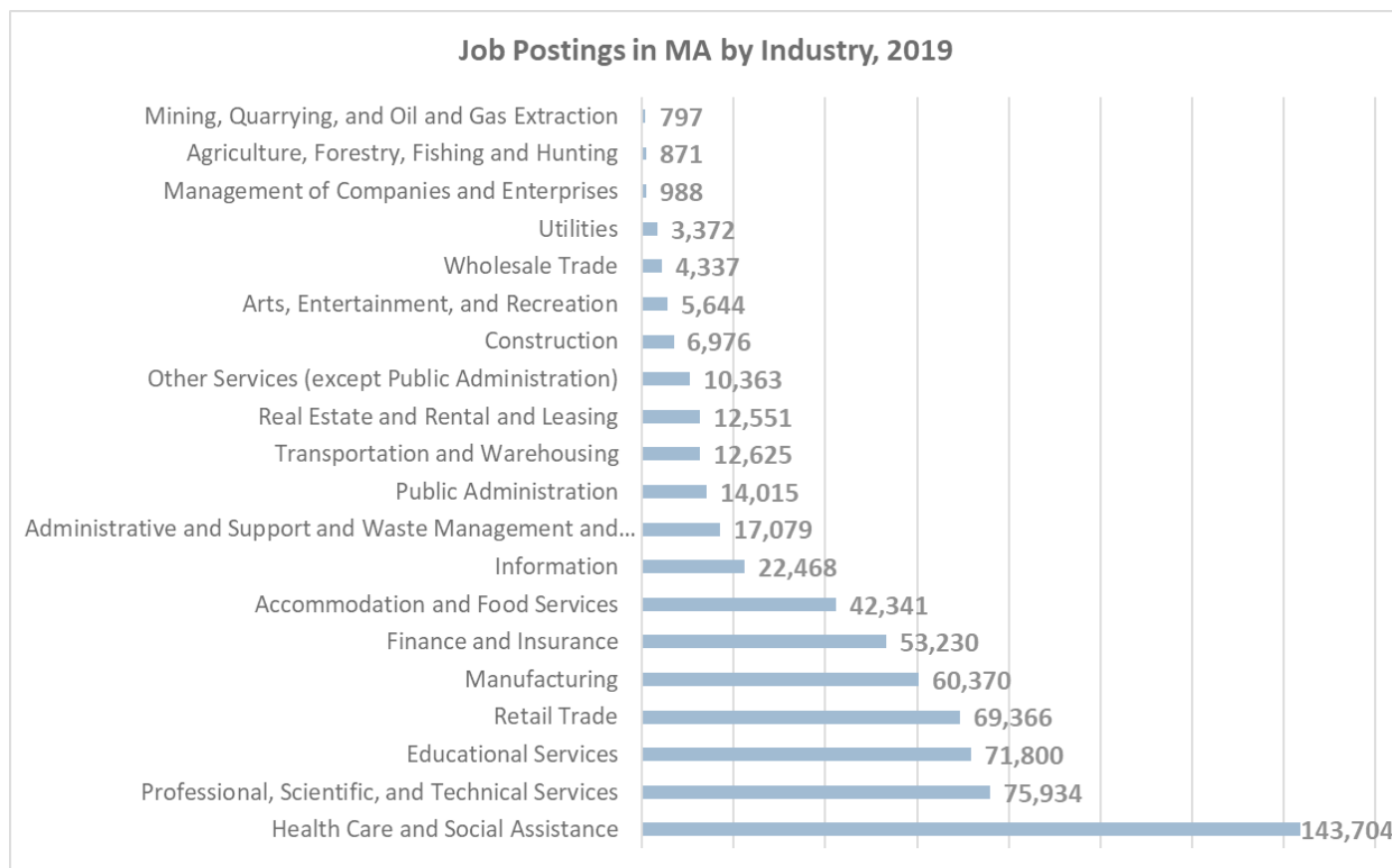
Source: U.S. Bureau of Labor Statistics (BLS) Quarterly Census of Employment and Wages (QCEW), 2019-2021

Labor Demand: What do job postings data reveal about shift in labor demand 2019 to 2021?

In 2019 and 2021 job postings were driven by Healthcare and Social Assistance with 143,704 and 181,406 job postings respectively. Lack of available staff is a trend that was exacerbated by pandemic, which led to individuals leaving the industry permanently. Also in 2019, Professional, Scientific, and Technical Services, Educational Services, Retail Trade, and Manufacturing rounded out the top five for number of job postings. In contrast, Retail Trade jumped to number two in 2021 with 121,843 job postings. This is followed by Educational Services; Professional, Scientific, and Technical Services; and Manufacturing. Retail Trade and

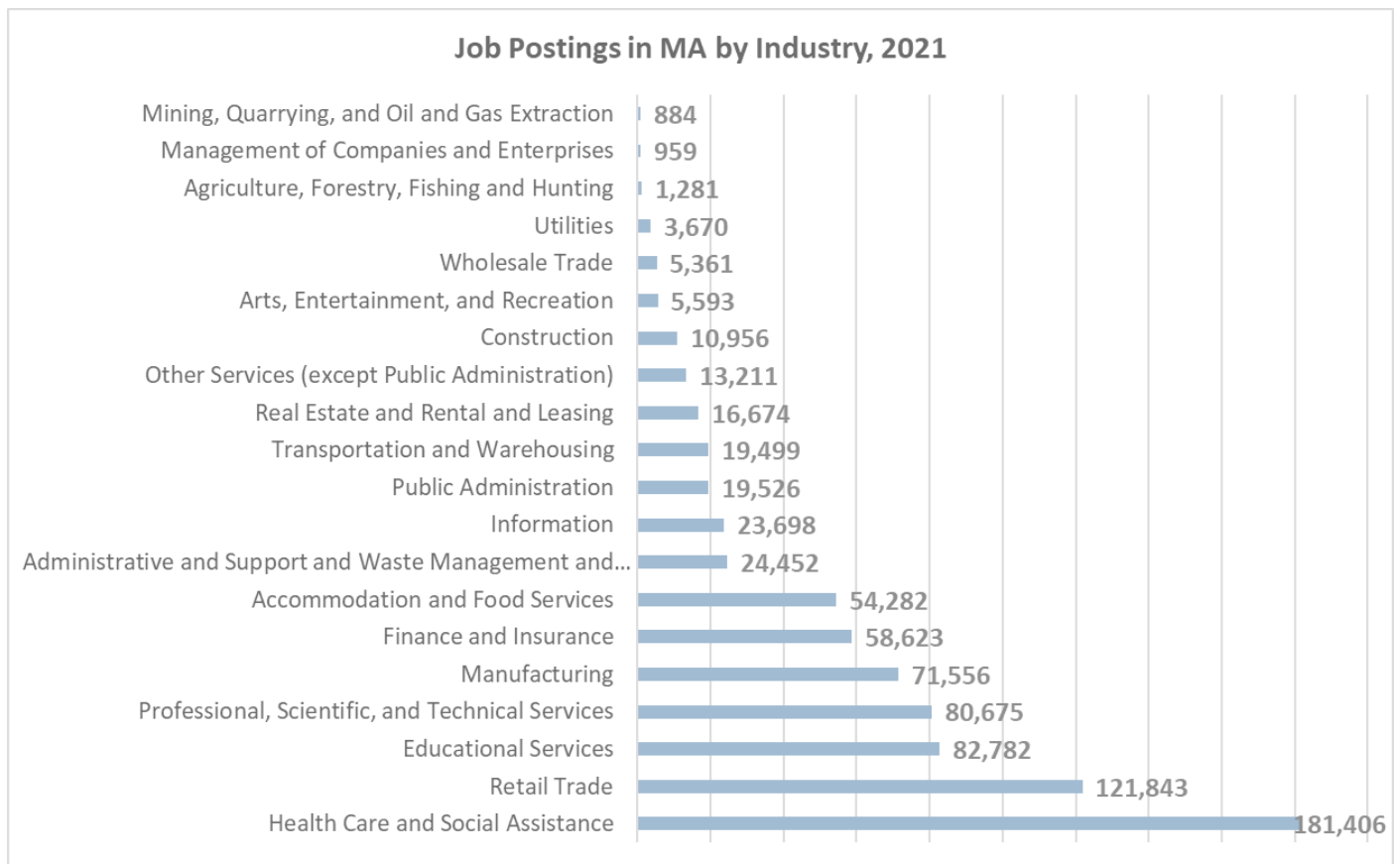
Educational Services were two of the hardest hit industries in Massachusetts during the pandemic, so it unsurprising to see a high number of job postings as these industries still haven't fully recovered to pre-pandemic levels.

Figure 17



Source: Burning Glass Labor Insight Job Postings Data, 2019-2021

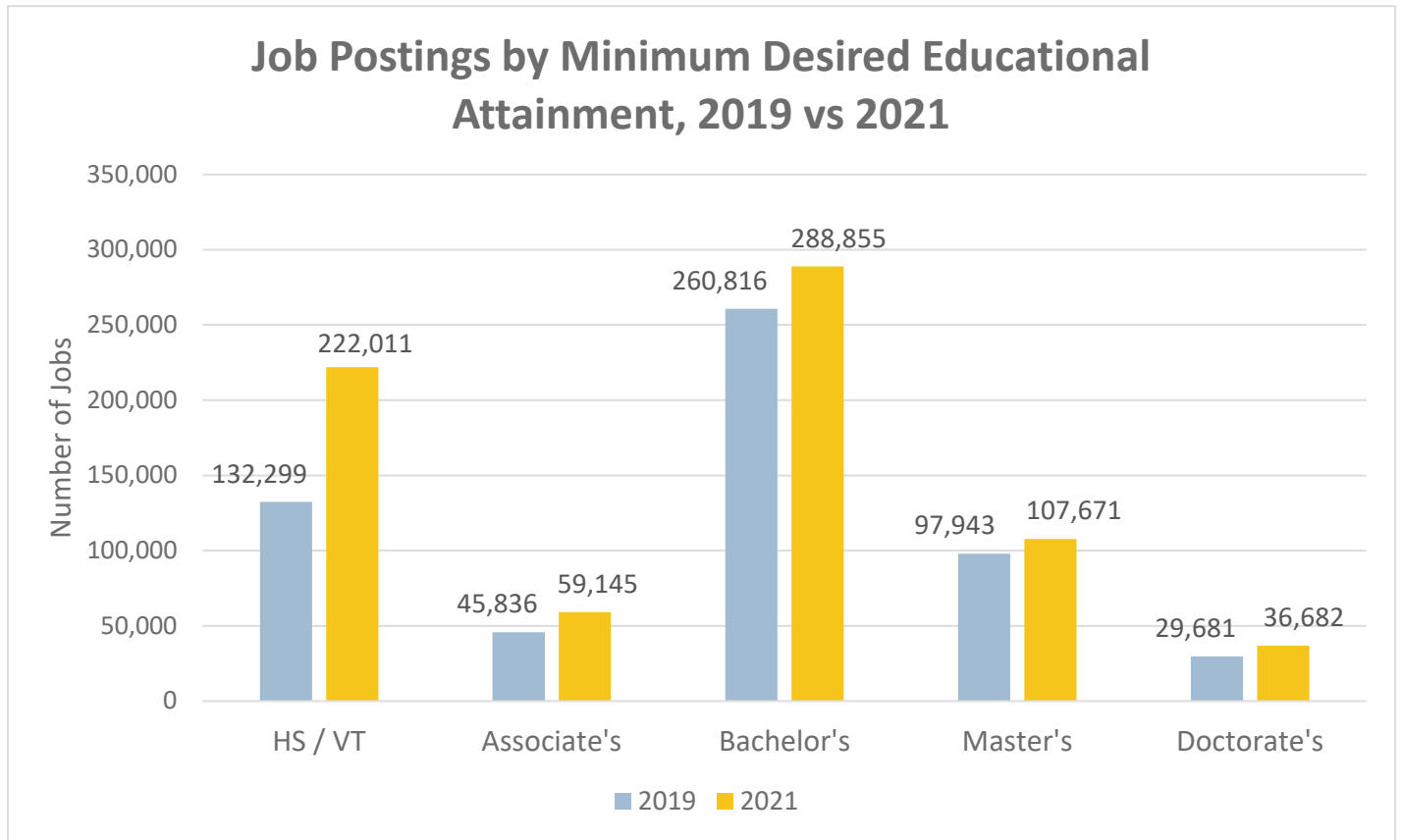
Figure 18



Source: Burning Glass Labor Insight Job Postings Data, 2019-2021

Figure 19 compares the number of annual job postings by minimum desired educational attainment in 2019 and 2021. All five desired minimal education levels had an increase in annual job postings for the 2021 levels compared to their 2019 levels. High school or vocational training saw the largest increase of 89,012 job postings (+66%), followed by Bachelor's degrees which increased by 28,039 (+10%), Associate's degrees which increased by 13,309 (+29%), Master's degrees which increased by 9,728 (+9%), and Doctorate's Degrees which increased by 7,001(+23%).

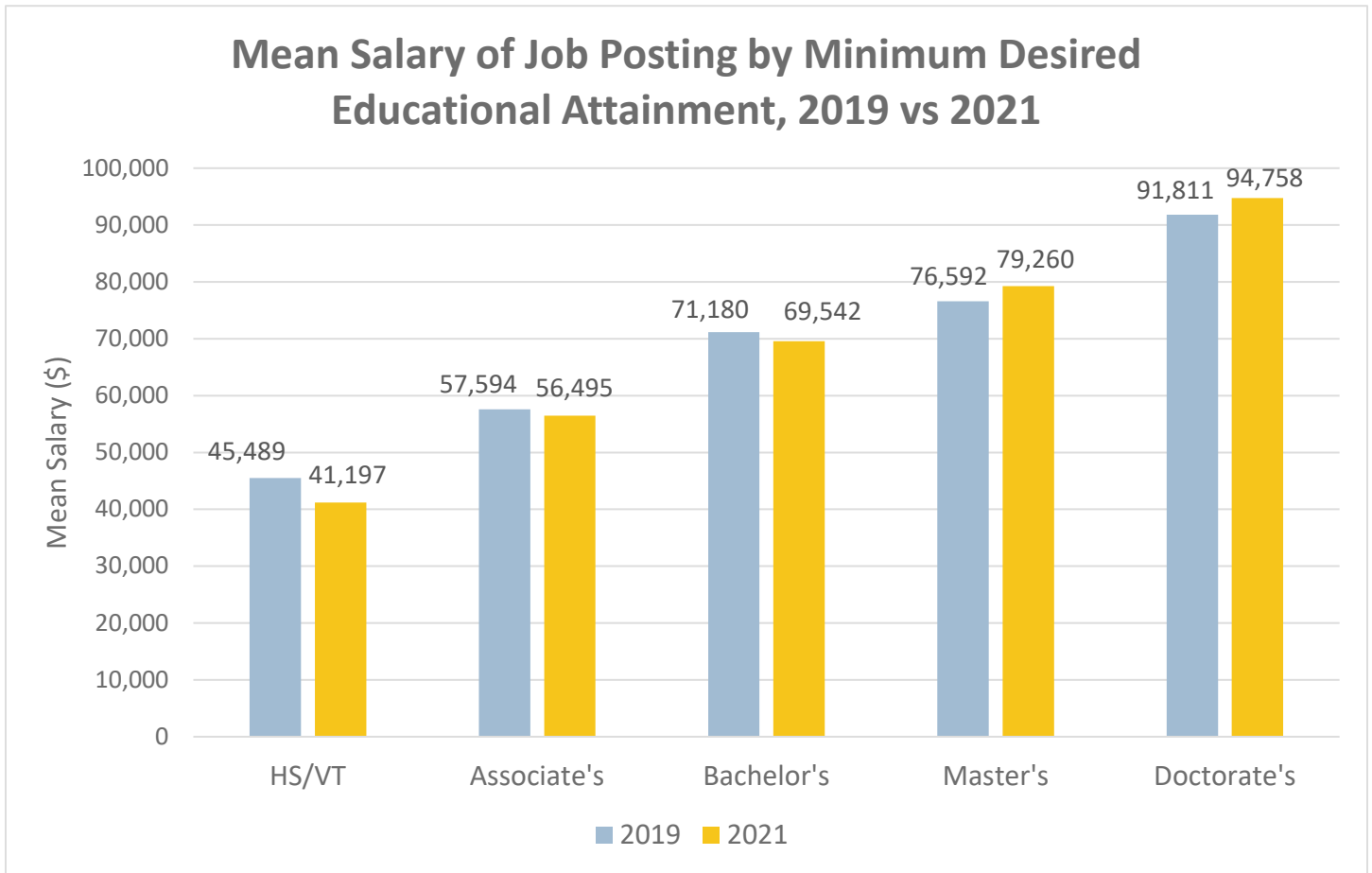
Figure 19



Source: Burning Glass Labor Insight Job Postings Data, 2019-2021

Although there were across-the-board increases in number of job postings by educational attainment, wage increases have been less consistent. Figure 20 compares the mean salaries for job postings by minimum desired educational attainment in 2019 and 2021. Only the Master's and Doctorate's degrees saw increases in mean salary for job postings, by \$2,668 (+3.4%) and \$2,947 (+3.2%) respectively. The High School and Vocational Training job posting mean salary decreased by \$4,292 (-9.4%), for Associate's it decreased by \$1,099 (-1.9%) and for Bachelor's it decreased by \$1,638 (-2.3%). Despite an increase in number of job postings for all five educational levels, the mean salaries for these job postings have only increased for jobs requiring Master's and Doctorate's degrees. For most job postings requiring a Bachelor's, Associate's, or High School and Vocational Training, the salary offered in 2021 is less than in 2019. This drop in salary has occurred while the country is experiencing major inflationary pressure, meaning the jobs being offered are offering salaries where the real (inflation-adjusted) wage is notably less than it was in 2019.

Figure 20

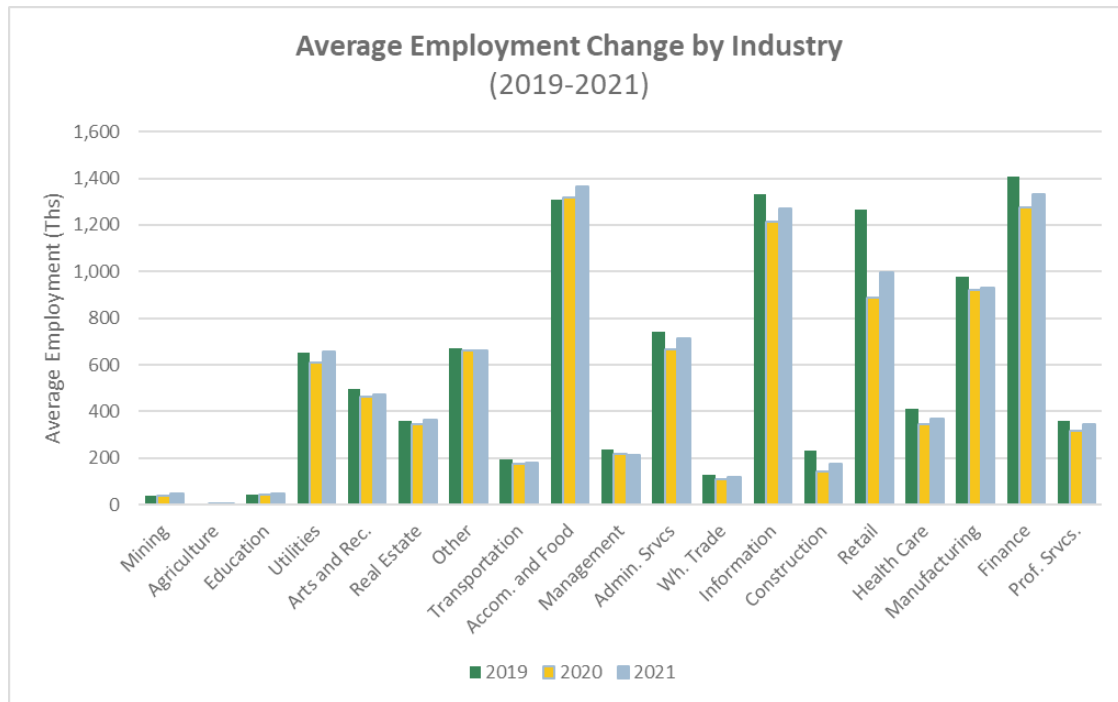


Source: Burning Glass Labor Insight Job Postings Data, 2019-2021

Labor Demand: Which sectors are not seeing a comeback in employment?

Analysis of Quarterly Census of Employment and Wages (QCEW) data indicates employment levels have continued to increase since 2020 lows but have yet to reach pre-pandemic levels seen in 2019. The Construction and Retail Trade industries have seen the slowest recovery, with employment down 23.6% and 21.2% respectively. Other industries experiencing slower recoveries in terms of employment include Health Care Services (-10%), Agriculture (-9.9%), Wholesale Trade (-7.5%), and Transportation (-6.7%). Few industries have experienced employment growth, but there have been small gains in Education Services (5.9%), Food and Accommodation (4.2%), and Mining (28%).

Figure 21



Source: U.S. Bureau of Labor Statistics (BLS) Quarterly Census of Employment and Wages (QCEW), 2019-2021

Pre-COVID vs Recovery Labor Force Changes

How has COVID changed the labor force in Massachusetts compared to pre-pandemic?

Labor Force Changes: Labor Force Exits and Turnover

The rates for both separations and hires across employment sectors remain elevated in 2021 compared to 2019. However, the spread between separations and hires within the same year has narrowed: 0.4 percentage points in 2021 versus 0.5 percentage points in 2019. This variance corroborates anecdotal evidence of renewed hiring and job switching beginning in the early recovery of 2021 at rates higher than pre-pandemic levels.

Figure 22

| Annual Average % (2019-2021) | | |
|------------------------------|-------------|-------|
| | Separations | Hires |
| 2019 | 2.9 | 3.4 |
| 2020 | 4.3 | 3.7 |
| 2021 | 3.2 | 3.6 |

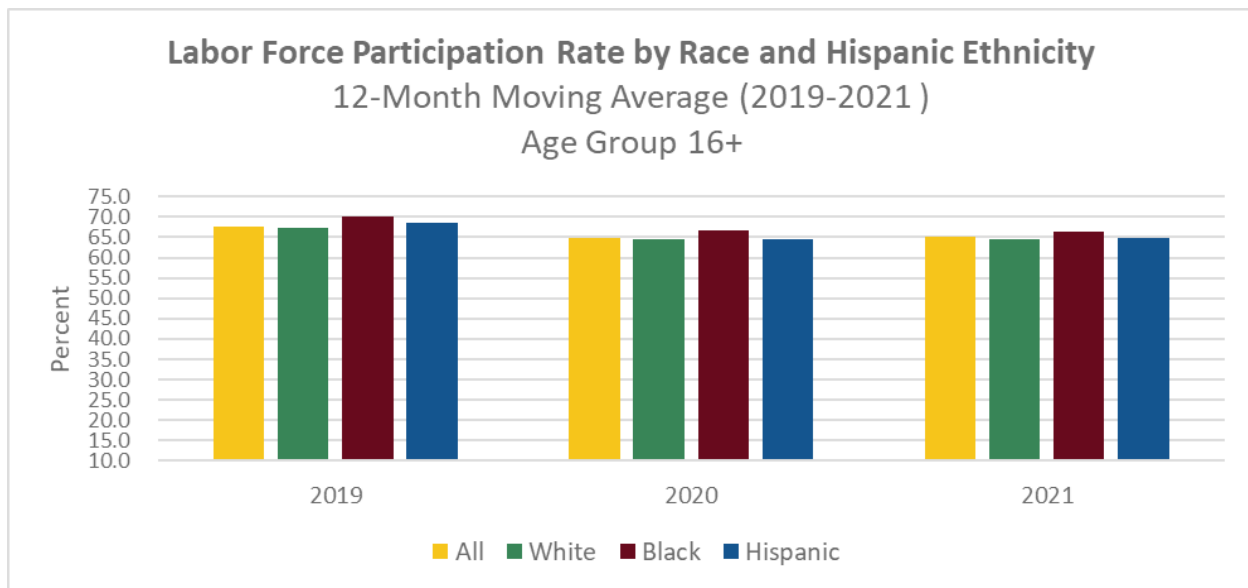
Source: U.S. Bureau of Labor Statistics (BLS) Job Openings and Labor Turnover Survey (JOLTS), 2019-2021

Labor Force Changes: Participation Rates by Demographic

Race and Ethnicity

Per a 12-month moving average analysis of CPS data, trends in labor force participation rates by race have remained relatively stable during the pandemic and dating back to before the pandemic. Blacks have had the highest labor force participation rate dating back to prior to the pandemic. One noteworthy development during the early stages of the pandemic is that Hispanic labor force participation rates fell to beneath the rate for Whites before bouncing back to re-surpass the White rate in 2021.

Figure 23



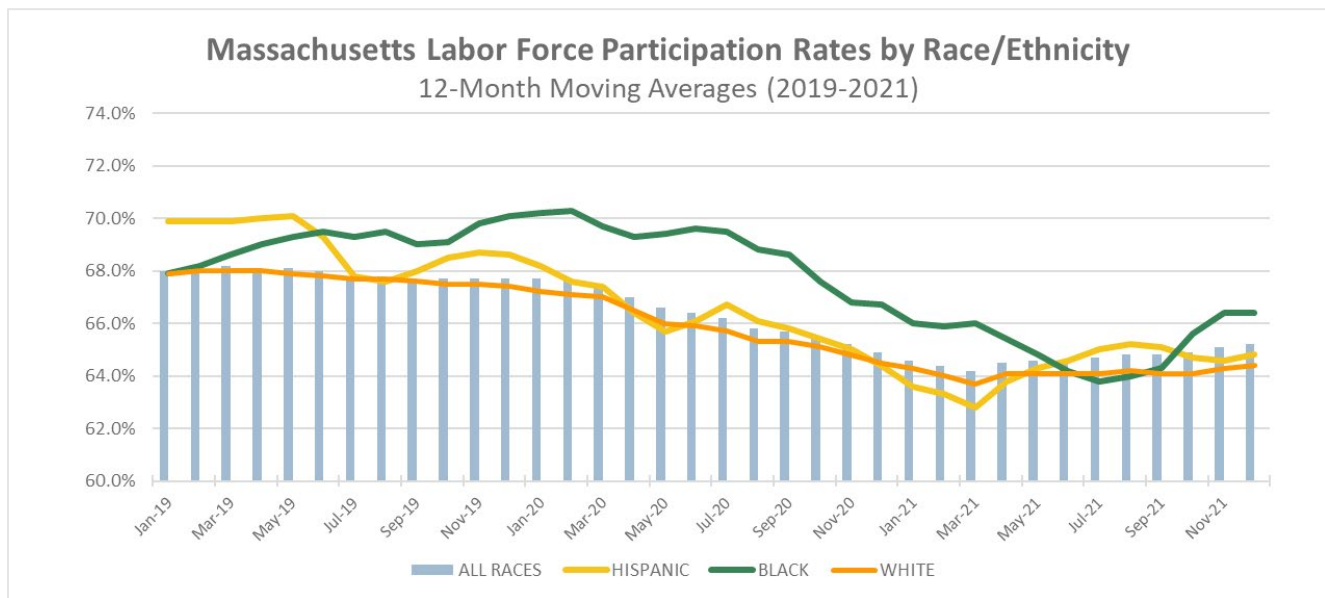
Source: U.S. Bureau of Labor Statistics (BLS) Unpublished Current Population Survey (CPS), 2019-2021 12-Month Moving Averages

Hispanics and Blacks experienced higher labor force participation rates compared to other races during 2019. The labor force participation rate of Blacks showed an upward trend from May 2019 until March 2020, the onset of the pandemic. From June 2020 to May 2021, the average labor force participation rates of Blacks trended downward but remained higher than the average rates of other races and those of Hispanic ethnicity. It was not until October 2021 that the Black average labor force participation rate experienced an increase.

The labor force participation rate for Whites had the closest average labor force participation rate at the end of 2021 compared to December 2019. However, during this 24-month period, Whites had a drop in the average labor force almost every month, which lowered their average labor force participation rate.

The average labor force participation rates of other races and those of Hispanic ethnicity rose slowly from June 2021 throughout the rest of the year but remained below the 2019 average rates. While this indicates a continuing recovery from the effects of COVID-19 pandemic, other factors are at play. For example, Hispanics generally had larger average population increases compared to their labor force, which contributes to lowering the labor force participation rate.

Figure 24

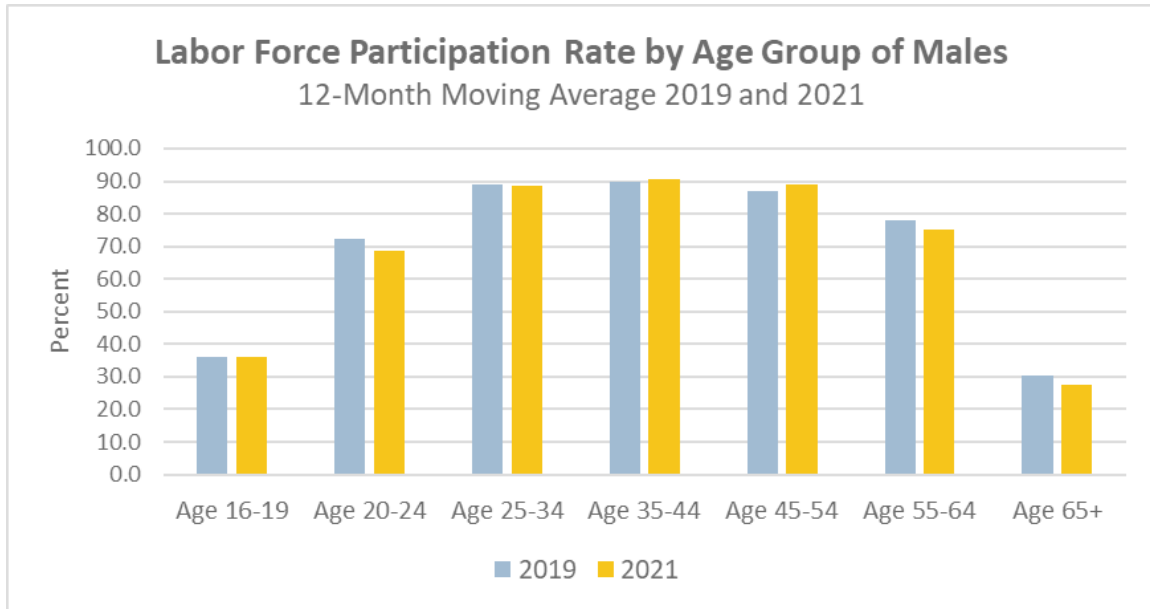


Source: U.S. Bureau of Labor Statistics (BLS) Unpublished Current Population Survey (CPS), 2019-2021 12-Month Moving Averages

Age and Gender

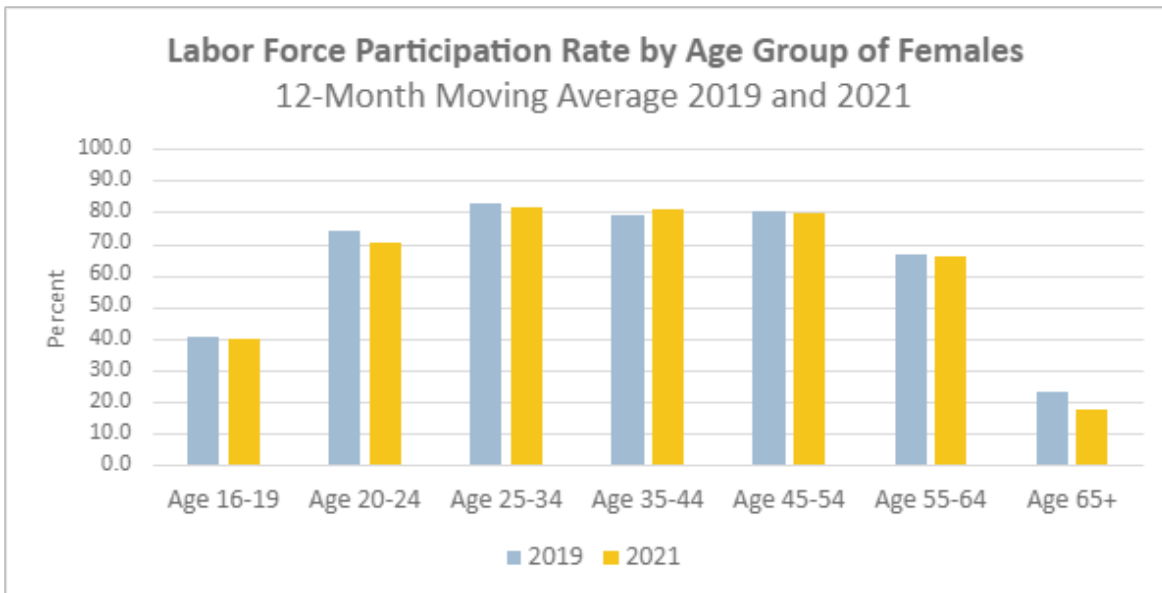
Per a 12-month moving average analysis of CPS data, male and female labor force participation rates remain under pre-pandemic levels for younger and older age groups, while the labor force participation rates of middle-aged groups have generally shown more signs of recovery. These trends are unsurprising given that older workers may face higher pandemic-related health risks, while younger individuals with less established careers may have struggled to find their footing during the pandemic, and many may have stepped out of the labor force to re-evaluate their career trajectory during this economically turbulent time. The continued re-entry of younger and older workers into the labor forces should continue to be evaluated in 2022.

Figure 25



Source: U.S. Bureau of Labor Statistics (BLS) Unpublished Current Population Survey (CPS), 2019-2021 12-Month Moving Averages

Figure 26

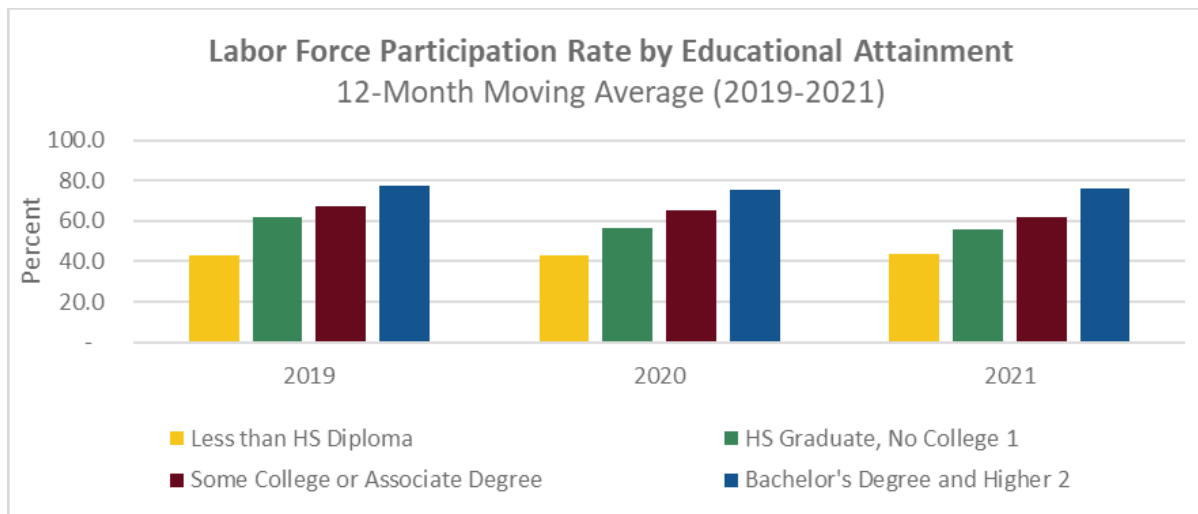


Source: U.S. Bureau of Labor Statistics (BLS) Unpublished Current Population Survey (CPS), 2019-2021 12-Month Moving Averages

Educational Attainment

The 12-month moving average labor force participation rate by educational attainment of Massachusetts's non-institutional population 25 years of age and over is shown in Figure 27 below. The figure illustrates the general trend that higher levels of educational attainment are associated with higher the labor force participation rates. The 2021 twelve-month moving average labor force participation rates of those with less than a high school diploma and those with a bachelor's degree or higher showed the strongest signs of recovery and were the closest to their respective 2019 annual averages.

Figure 27



Source: U.S. Bureau of Labor Statistics (BLS) Unpublished Current Population Survey (CPS), 2019-2021 12-Month Moving Averages

¹Includes persons with a high school diploma or equivalent

²Includes person with Bachelor's, Master's, Professional and Doctoral degrees

Labor Force Changes: Employment-to-Population Ratio

The employment-population ratio is the ratio of total civilian employment to the working age civilian, noninstitutional population. It is the portion of the working age population that is employed. The ratio is used primarily as a measure of job holders and to track the pace of job creation, relative to the adult population, over time. The Massachusetts Employment-to-Population ratio consistently showed an increase every month throughout 2021 after a substantial over-the-month decline in April 2020.

Remaining Challenges and Opportunities

What are the demographic impacts of the post-pandemic recovery and how do we create more equitable access to recession resilient growth industries in Massachusetts?

Moving from 2021 to 2022, we continue to see average weekly wages climb, but failing to keep pace with inflation. And while the unemployment rate fell substantially in 2021 and into 2022, the pace of recovery has slowed as fears of a global recession have set in.

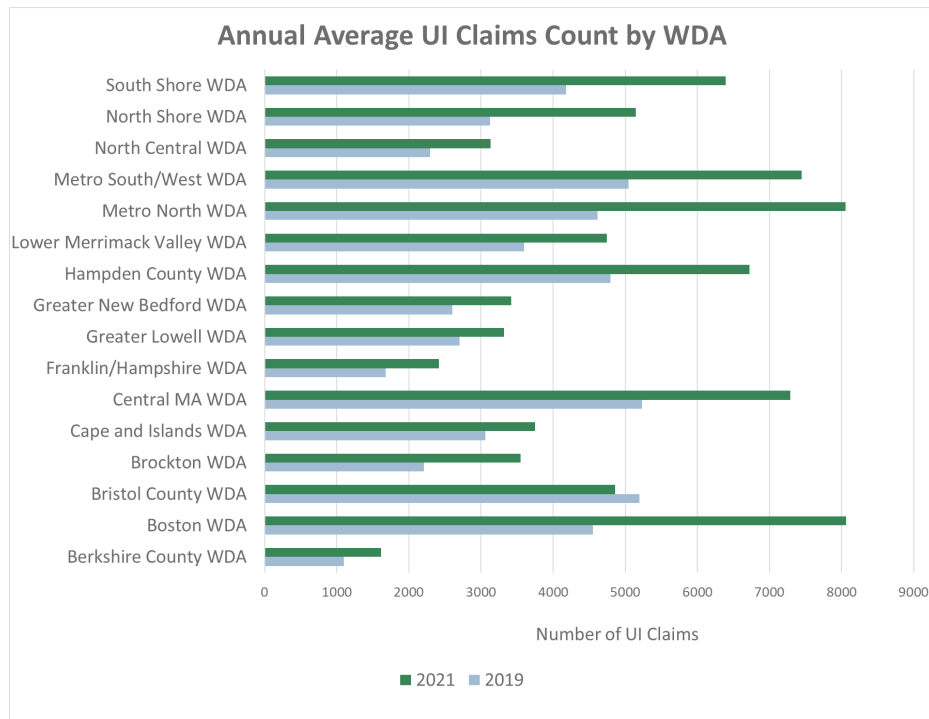
Most significantly, the recovery remains inequitable across gender, race, and ethnicity. The White unemployment rate in Massachusetts was down to 3.6% in August of 2022. While the Black unemployment rate is still at 5%. And the Latino unemployment rate is at 6.9%, almost double their White counterparts in the Commonwealth. The Food and Accommodations sector continues to struggle, failing to lure staff back at pre-pandemic levels. This is potentially accelerating the pace of automation in this job category. This is an industry that over indexes to communities of color and another shock to that sector could significantly impact those demographic groups.

But there are also bright spots on the employment horizon for Massachusetts. Professional, Business and Scientific Services has recovered past pre-pandemic levels. This is one of the largest and highest wage sectors of the economy and continued growth in this area will be key to sustaining wage growth and job opportunities of the future. The Health Care and Social Assistance industry, the largest in Massachusetts, has nearly recovered to pre-pandemic levels. During the previous non-pandemic-related recession the Health Care and Social Assistance industry actually gained jobs every month during that downturn and can be expected to be less affected by an economic-driven recession. That said, policies and programs must keep pace to ensure trained individuals are available to fill these critical positions. The manufacturing sector, another higher wage industry in Massachusetts, in another sector that has nearly recovered all jobs lost during the pandemic and proved more resilient to that recession than most other industries.

Increasing access to jobs in these higher paying, more recession resilient industries, will be critical in order to create a more equitable employment and talent ecosystem in the Commonwealth. The Department of Economic Research recently released [equity dashboards](#) to help policymakers and workforce practitioners better understand these demographic differences in the workforce. As we head into 2023 and beyond continuing to monitor these metrics will help us evaluate whether policy and business decisions are indeed leading to a more sustainable and equitable economy in Massachusetts.

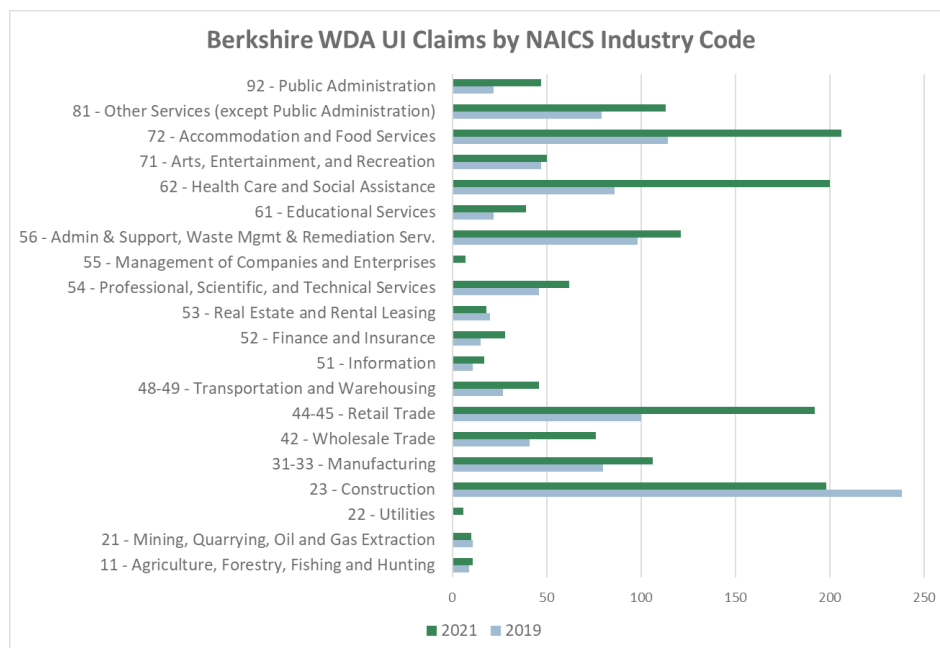
Appendix

Figure 28



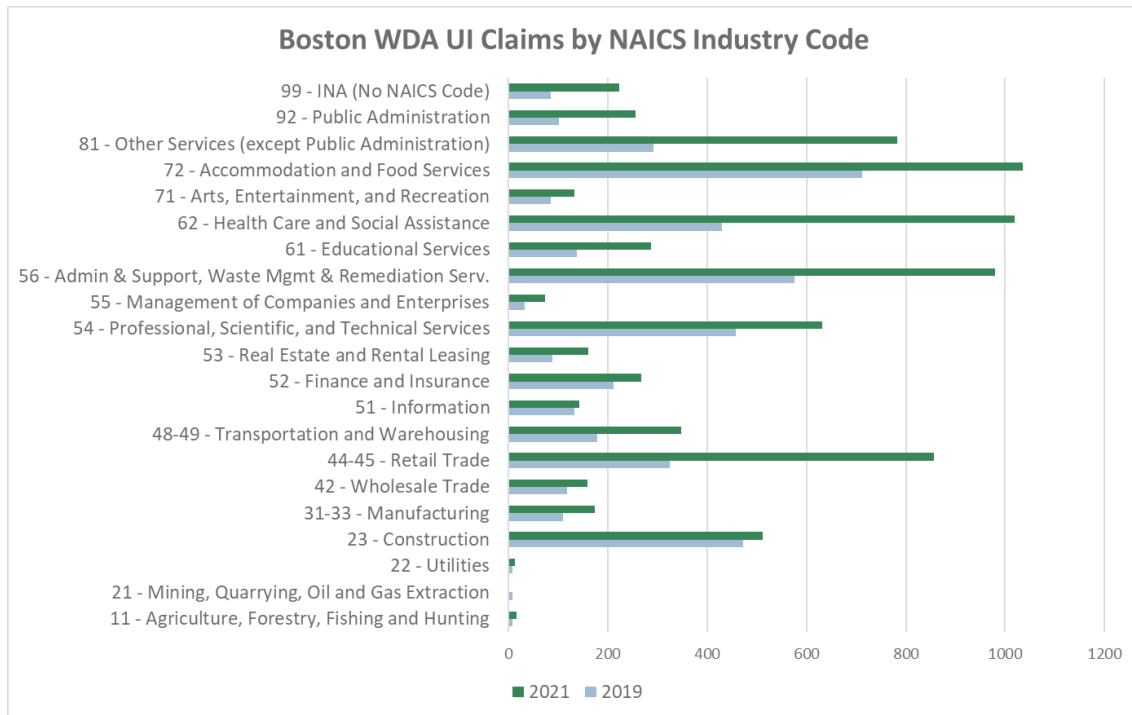
Source: Massachusetts Department of Unemployment Assistance Claimant Data, 2019-2021

Figure 29



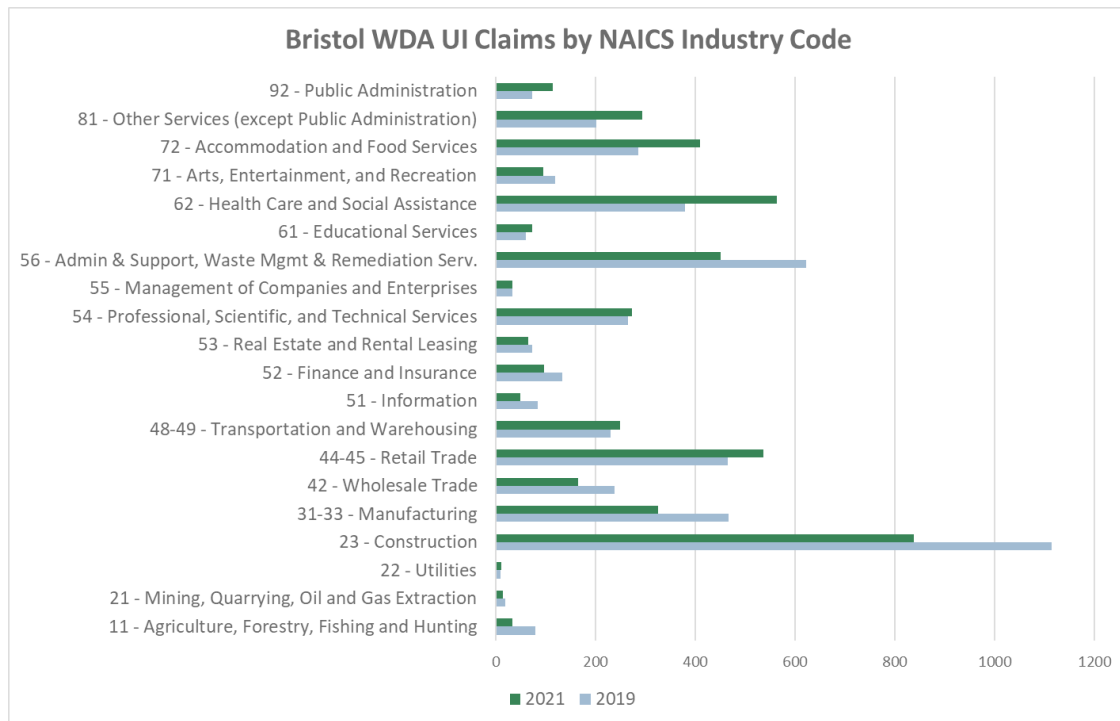
Source: Massachusetts Department of Unemployment Assistance Claimant Data, 2019-2021

Figure 30



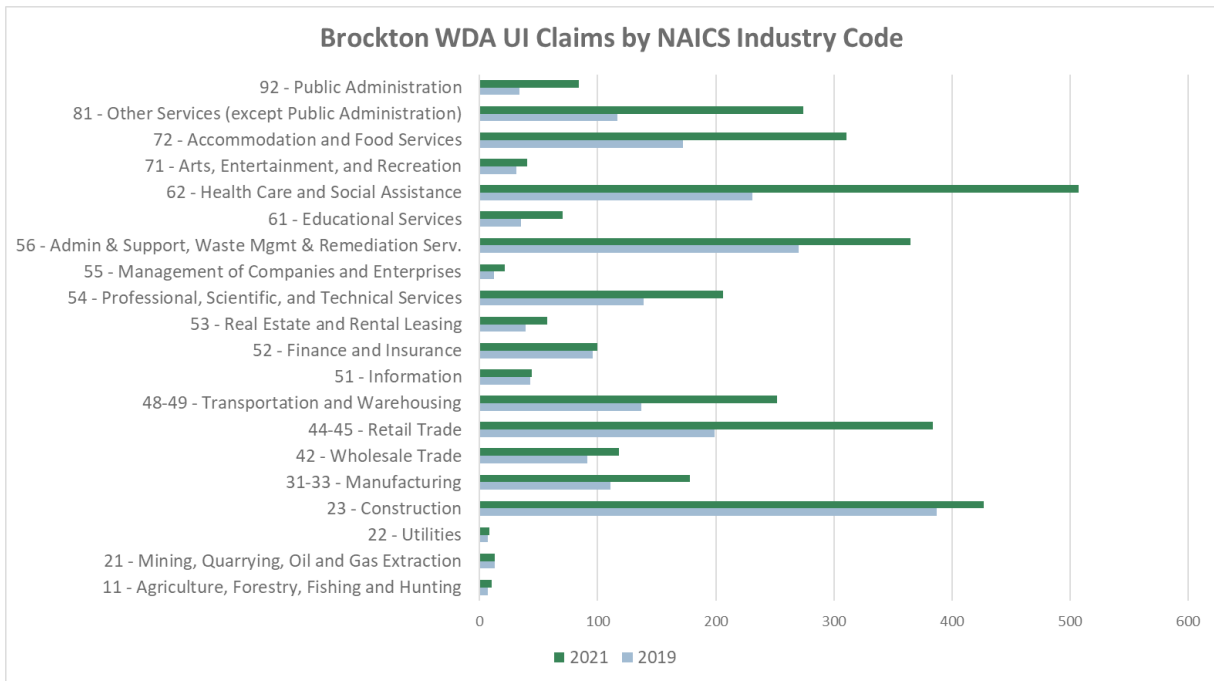
Source: Massachusetts Department of Unemployment Assistance Claimant Data, 2019-2021

Figure 31



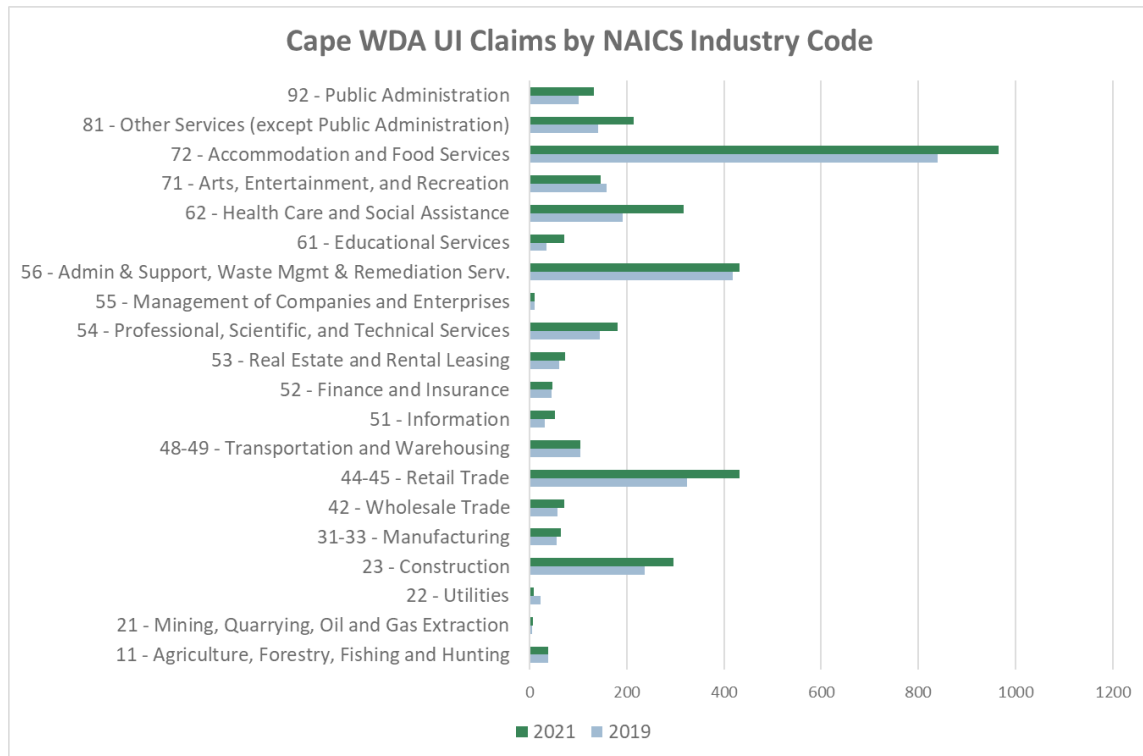
Source: Massachusetts Department of Unemployment Assistance Claimant Data, 2019-2021

Figure 32



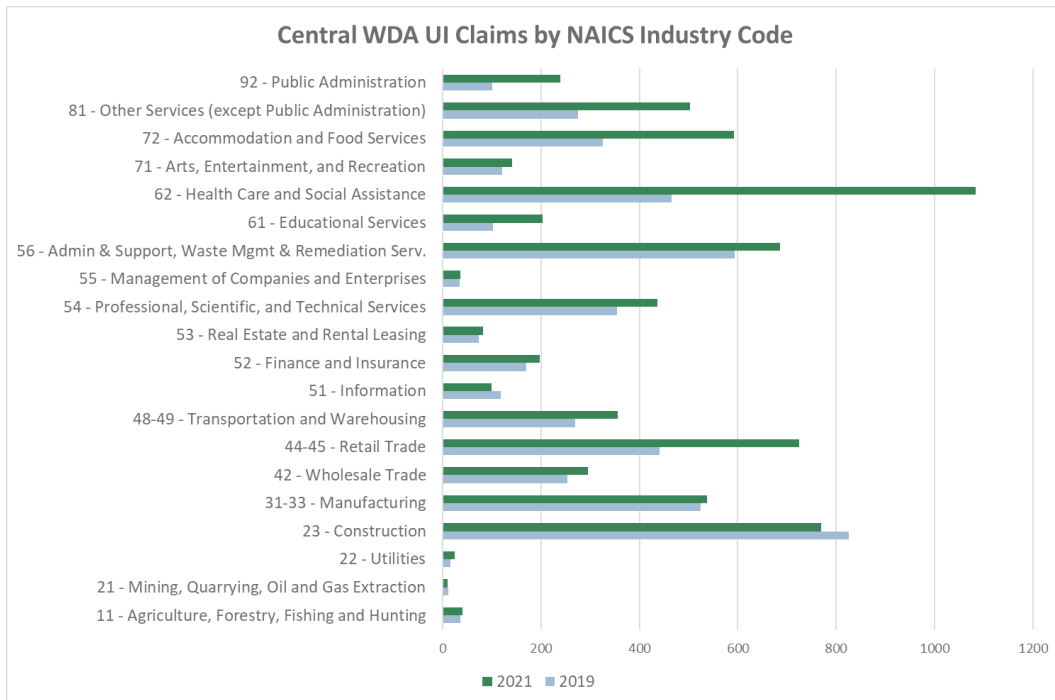
Source: Massachusetts Department of Unemployment Assistance Claimant Data, 2019-2021

Figure 33



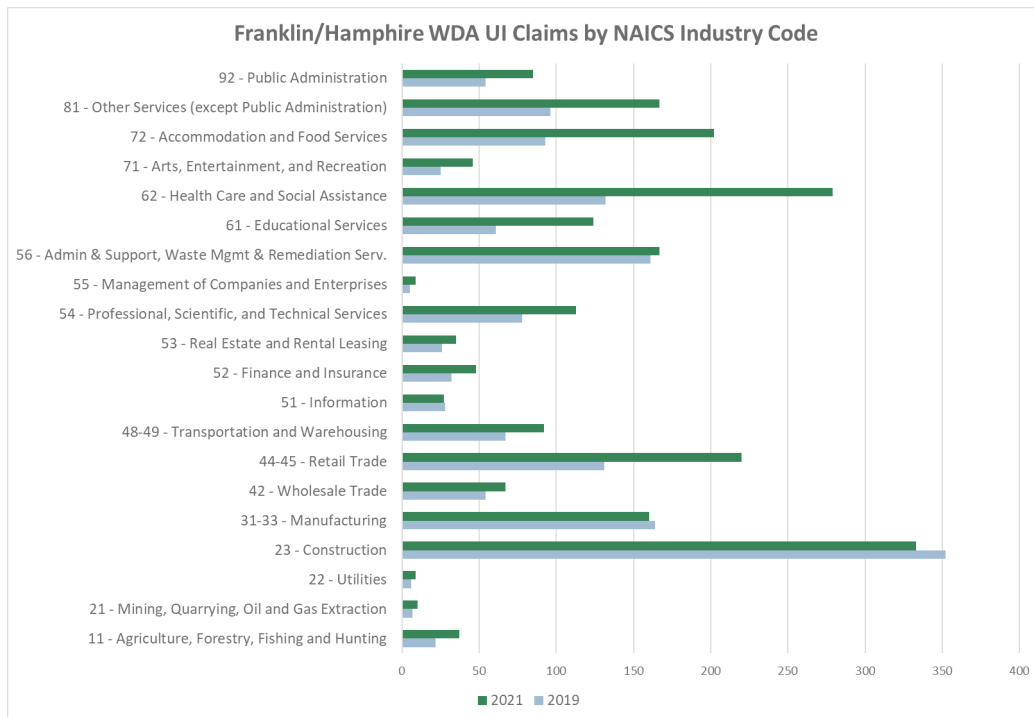
Source: Massachusetts Department of Unemployment Assistance Claimant Data, 2019-2021

Figure 34



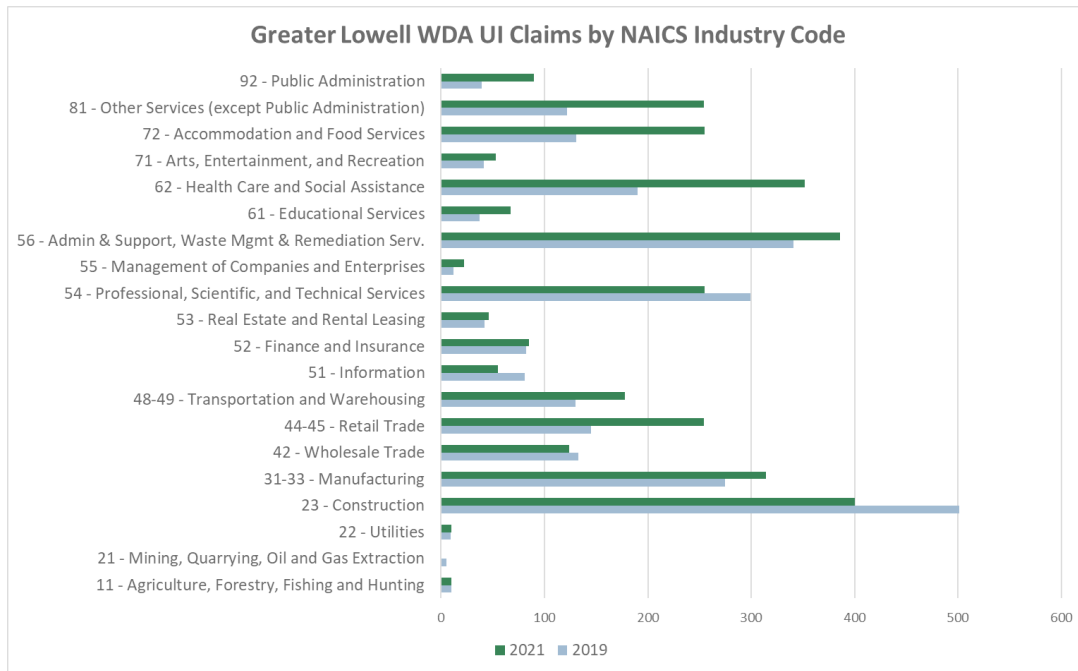
Source: Massachusetts Department of Unemployment Assistance Claimant Data, 2019-2021

Figure 35



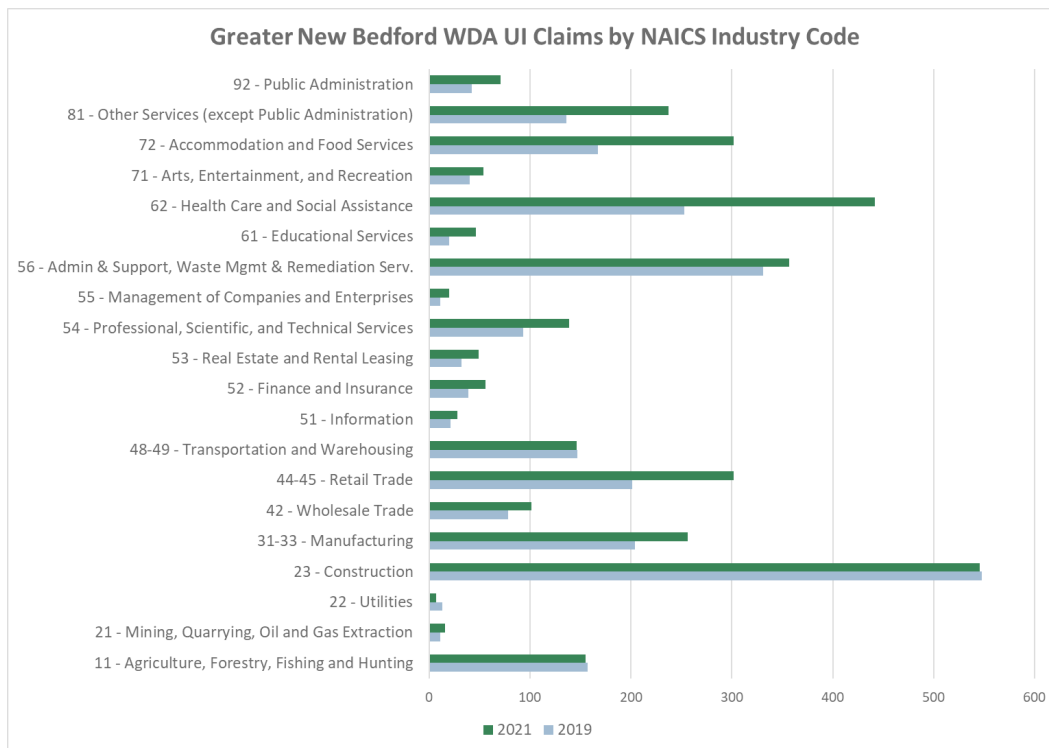
Source: Massachusetts Department of Unemployment Assistance Claimant Data, 2019-2021

Figure 36



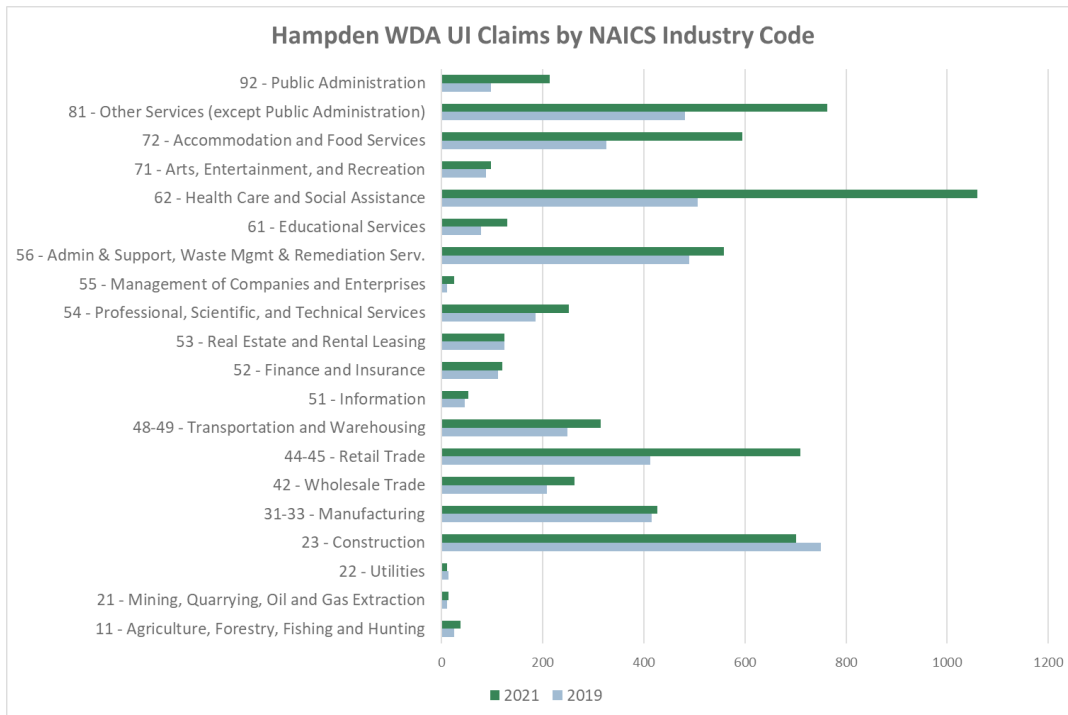
Source: Massachusetts Department of Unemployment Assistance Claimant Data, 2019-2021

Figure 37



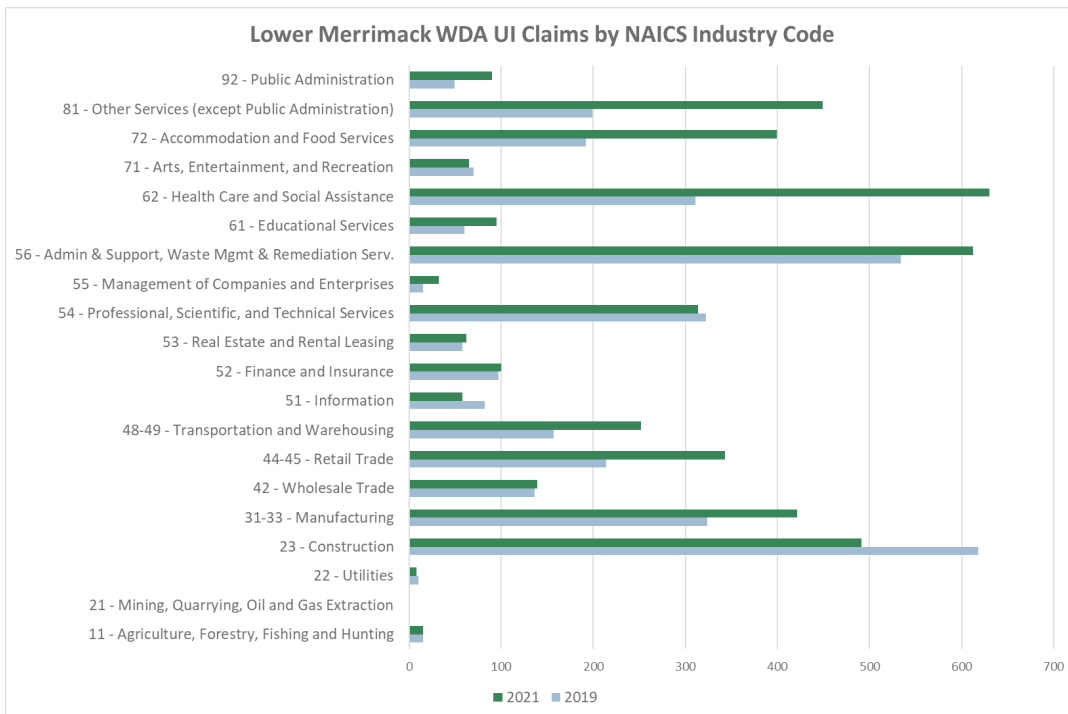
Source: Massachusetts Department of Unemployment Assistance Claimant Data, 2019-2021

Figure 38



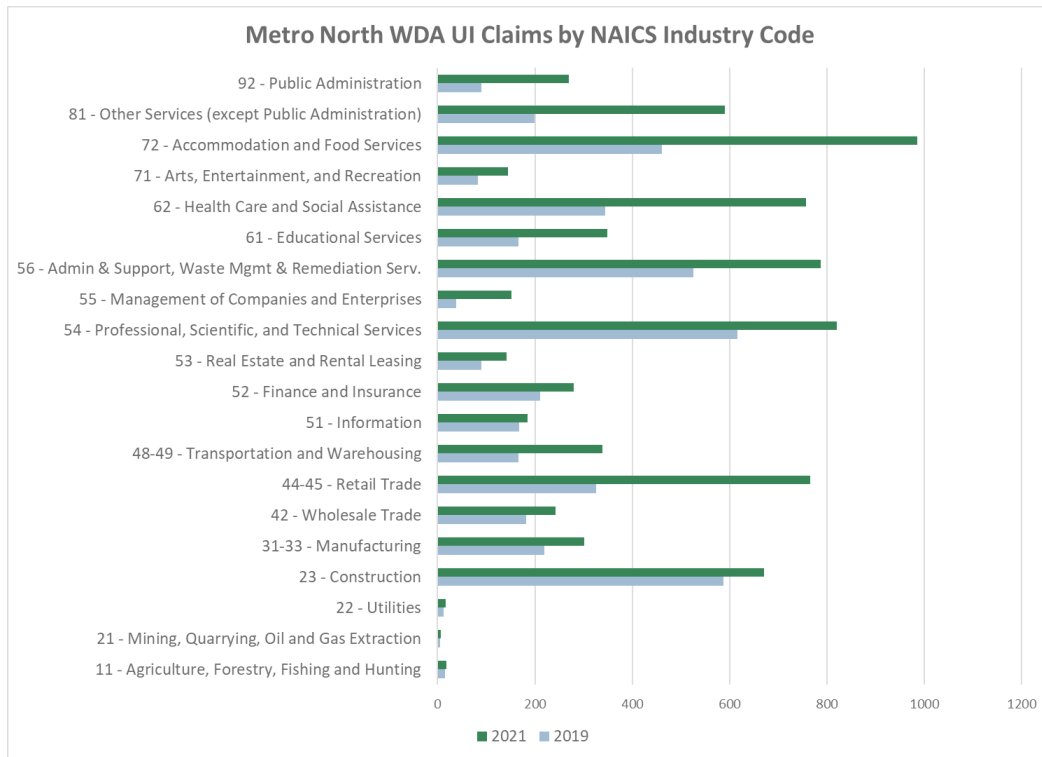
Source: Massachusetts Department of Unemployment Assistance Claimant Data, 2019-2021

Figure 39



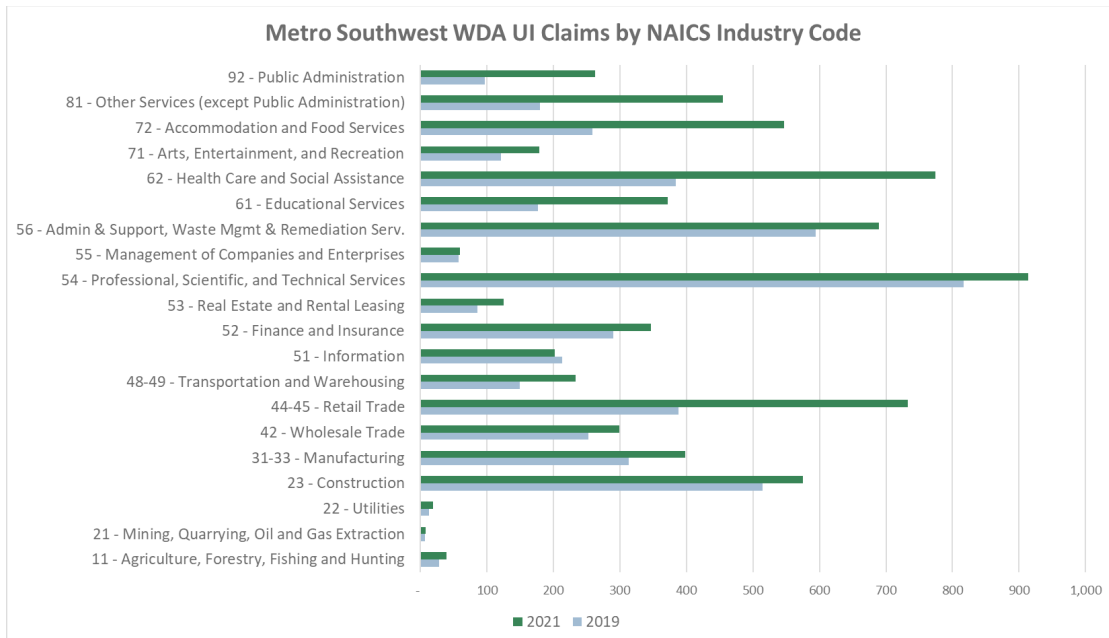
Source: Massachusetts Department of Unemployment Assistance Claimant Data, 2019-2021

Figure 40



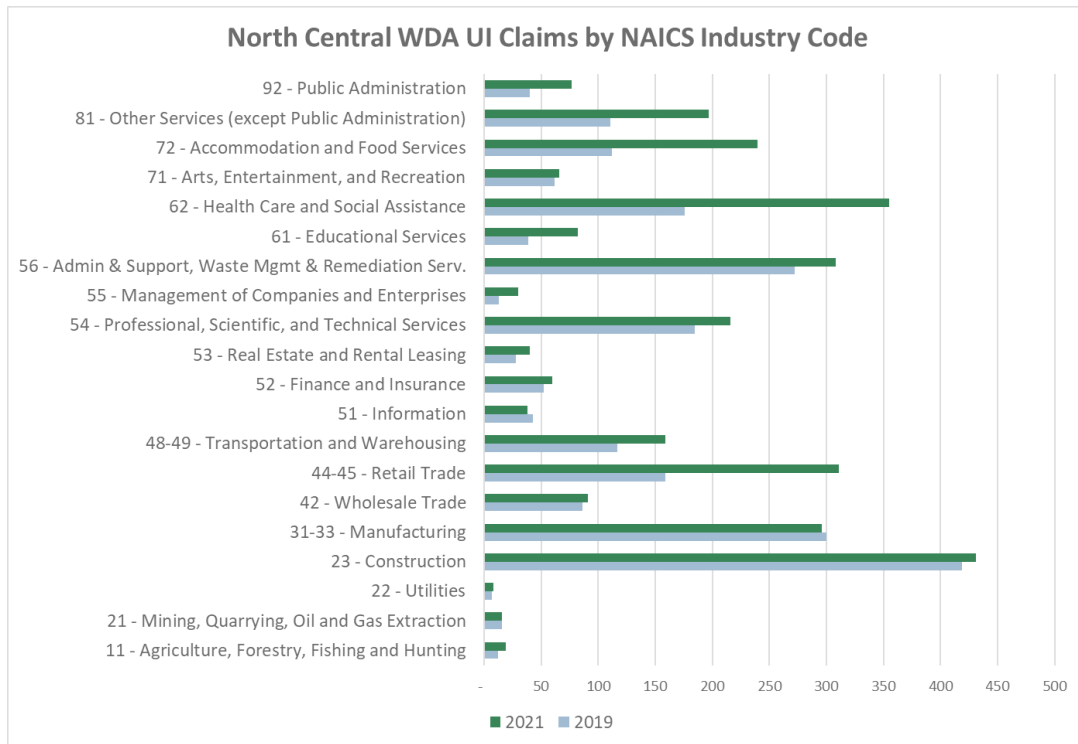
Source: Massachusetts Department of Unemployment Assistance Claimant Data, 2019-2021

Figure 41



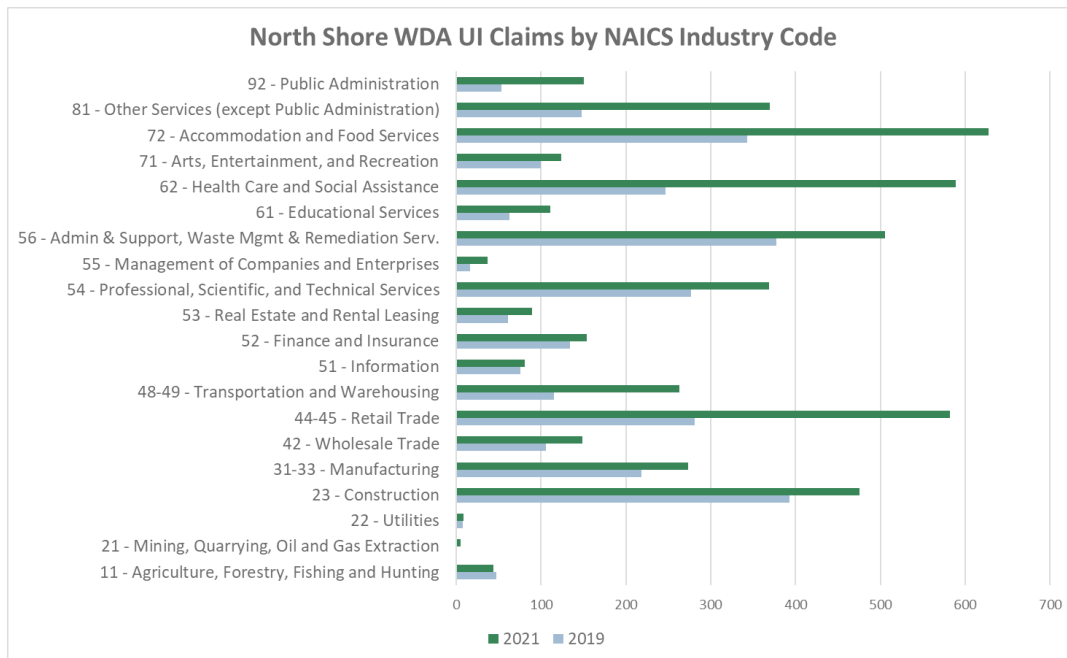
Source: Massachusetts Department of Unemployment Assistance Claimant Data, 2019-2021

Figure 42



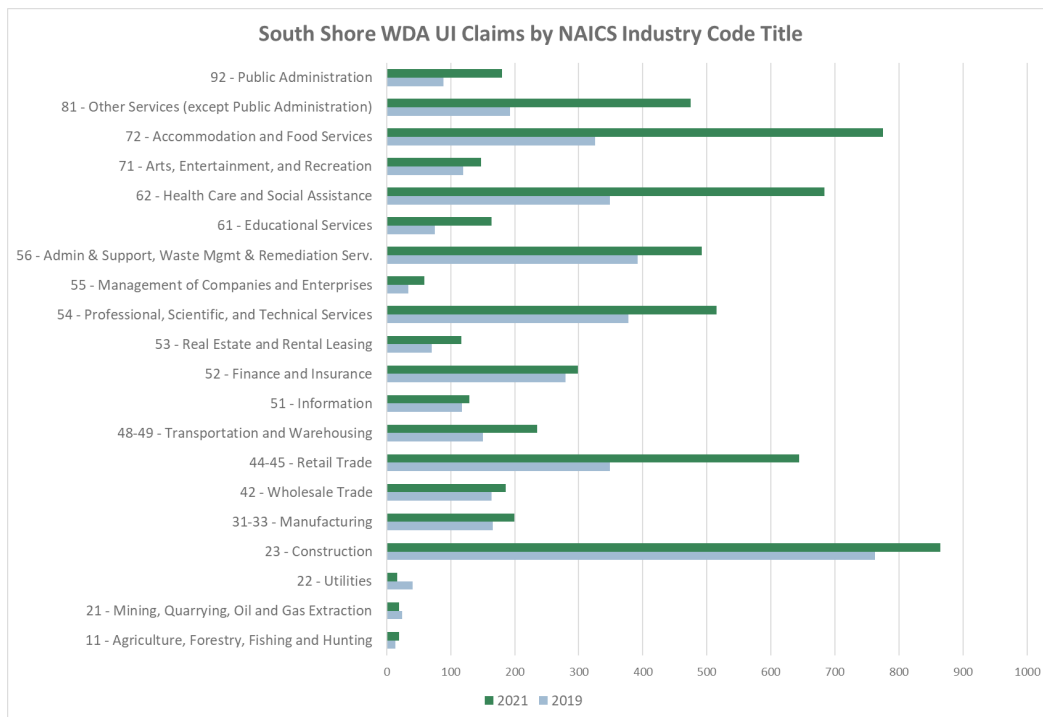
Source: Massachusetts Department of Unemployment Assistance Claimant Data, 2019-2021

Figure 43



Source: Massachusetts Department of Unemployment Assistance Claimant Data, 2019-2021

Figure 44



Source: Massachusetts Department of Unemployment Assistance Claimant Data, 2019-2021