



Labor Market Trends in the **Boston/Metro North Region**

October 2012

A joint project of the Commonwealth Corporation and
New England Public Policy Center of the Federal Reserve Bank of Boston

NEW ENGLAND PUBLIC POLICY CENTER AT THE FEDERAL RESERVE BANK OF BOSTON

The Federal Reserve Bank of Boston has a decades-long tradition of supporting the New England public policy community. In 2005, the Bank established the New England Public Policy Center to reinvigorate and institutionalize that support.

The Center promotes better public policy in New England by conducting and disseminating objective, high-quality research and analysis of strategically identified regional economic and policy issues and, when appropriate, works with regional and Bank partners to advance identified policy options.

The Center's research investigates policy issues that are important to New England's economy, focusing in two primary areas: demographic and labor markets trends and state and local public finance. For more information about the Center, visit our website, www.bostonfed.org/neppc.

This profile was developed by Robert Clifford, a policy analyst at the New England Public Policy Center.

COMMONWEALTH CORPORATION

Commonwealth Corporation strengthens the skills of Massachusetts youth and adults by investing in innovative partnerships with industry, education, and workforce organizations. We seek to meet the immediate and emerging needs of businesses and workers so they can thrive in our dynamic economy.

Through its work, Commonwealth Corporation is known for its expertise in: meeting the needs of workers and businesses; developing nationally recognized and innovative programming; creating multiple education and employment pathways for teens and young adults to succeed; and building the Commonwealth's workforce development capacity.

Commonwealth Corporation is a quasi-public organization within the Executive Office of Labor and Workforce Development. For more information about Commonwealth Corporation, visit our website, www.commcorp.org.

TABLE OF CONTENTS

OVERVIEW

- 3 Executive Summary
 - 5 Geography of the Regional Labor Markets
 - 6 Boston/Metro North Region
 - 7 Employment Trends and Recessions
- SECTION I: Measuring Labor Supply—Demographic Trends of Residents Who Live in Boston/Metro North**
-
- 8 Population Growth Trends
 - 9 Demographic Characteristics of the Resident Population of Boston/Metro North
 - 10 Growth in the Working-Age Population by Nativity Status
 - 11 Growth in the Civilian Labor Force by Nativity Status
 - 12 The Age Profile of the Working-Age Population
 - 13 The Age Profile of the Civilian Labor Force
 - 14 Educational Attainment of the Working-Age Population
 - 15 Educational Attainment of the Civilian Labor Force
 - 16 Educational Attainment by Age Group
 - 17 Unemployment Rate Trends
 - 18 The Unemployed: Age Distribution (2000 and 2008-2010)
 - 19 The Unemployed: Educational Attainment (2000 and 2008-2010)
 - 20 Commuting Patterns of Residents and Workers: Boston/Metro North (2008-2010)

SECTION II: Measuring Labor Demand—Employment Trends of Jobs and Workers in Boston/Metro North

- 21 Employment Trends
- 22 Demographic Characteristics of the Population Employed in Boston/Metro North
- 23 Distribution of Employment by Supersector (Q4 2010)
- 24 Changes in Employment During the Economic Downturn by Major Industry: Boston/Metro North
- 25 Changes in Employment During the Economic Downturn by Major Industry: Massachusetts
- 26 Industries Driving the Recovery: Boston/Metro North
- 27 Industries Driving the Recovery: Massachusetts
- 28 Educational Attainment of Employees by Major Industry in Boston/Metro North (2008-2010)
- 29 Educational Attainment of Employees by Major Industry in Massachusetts (2008-2010)
- 30 Employment by Major Occupation: Boston/Metro North (2008-2010)
- 31 Employment by Major Occupation: Massachusetts (2008-2010)
- 32 Distribution of Occupations Across Supersectors in Greater Boston (2008-2010)
- 34 Distribution of Occupations Within Supersectors in Greater Boston (2008-2010)

TABLE OF CONTENTS

- 36 Educational Attainment of Employees by Major Occupation in Boston/Metro North (2000)
- 37 Educational Attainment of Employees by Major Occupation in Boston/Metro North (2008-2010)
- 38 Educational Attainment of Employees by Major Occupation in Massachusetts (2008-2010)
- 39 Job Vacancies in the Great Recession and Recovery
- 40 Job Vacancies and Vacancy Rates by Major Occupation in Greater Boston (Q4 2010)
- 41 Job Vacancies and Vacancy Rates by Major Occupation in Massachusetts (Q4 2010)
- 42 Comparing Vacancy Rates and Educational Attainment: Peak Labor Market
- 43 Comparing Vacancy Rates and Educational Attainment: Recovering Labor Market
- SECTION III: Measuring the Pipeline—Educational Supply from Post-Secondary Degrees Granted by Institutions Located in Boston Metro/North**

- 44 Growth in Potential Supply of Educated Workers: Full-Time Enrollment Trends in the Past Decade
- 45 Number of Full-Time Enrollees by Type of Degree Granting Institution in Boston/Metro North (2000-2010)
- 46 Growth in Potential Supply of Educated Workers: Part-Time Enrollment Trends in the Past Decade
- 47 Number of Part-Time Enrollees by Type of Degree Granting Institution in Boston/Metro North (2000-2010)
- 48 Graduation Rates by Type of Degree (2009)
- 49 Crossing the Finish Line: Trends in Degree Completions Over the Past Decade (2000-2010)
- 50 Educational Institutions Awarding the Most Degrees in Boston/Metro North (2010)
- 51 Number of Degree Completions by Degree Type: Boston/Metro North (2000-2010)
- 52 Certificates Awarded by Major Field of Study (2000-2010)
- 53 Annual Completions by Top Five Certificate Majors in Boston/Metro North (2000-2010)
- 54 Associate's Degrees Awarded by Major Field of Study (2000-2010)
- 55 Annual Completions by Top Five Associate's Degree Majors in Boston/Metro North (2000-2010)
- 56 Bachelor's Degrees Awarded by Major Field of Study (2000-2010)
- 57 Annual Completions by Top Five Bachelor's Degree Majors in Boston/Metro North (2000-2010)

EXECUTIVE SUMMARY

Using the most recent data available, this Boston/Metro North Regional labor market profile provides a detailed picture of the region's current and future labor supply.¹ For context, it also provides detailed information on labor demand in the region over the past decade. This profile is designed to help guide workforce development professionals, policy makers, and civic, education, and business leaders as they make decisions about education and training opportunities.

The charts and analysis are divided into three sections:

1. Labor Supply: Demographic Trends of Residents Who Live in Boston/Metro North
2. Labor Demand: Employment Trends of Jobs and Workers in Boston/Metro North
3. The Pipeline: Educational Supply of Post-Secondary Degrees Granted by Institutions Located in Boston/Metro North

The past decade has been challenging for the Boston/Metro North labor market. After two recessions and a decade of declining employment, the region is now gaining jobs and recovering at a modest pace. However, the recovery from the Great Recession has been somewhat slower in Boston/Metro North than in the state as a whole. The labor market recovery in the region and state are being driven by most of the same industries, such as Professional & Business Services and Education & Health Services. The concentration of highly educated employees within these industries is also benefiting the region. In fact, Boston/Metro North workers tend to have higher educational attainment than their statewide counterparts in nearly all industries and occupations. And there is still demand for highly educated workers, as job vacancies in the region tend to be most common among occupations where workers have higher levels of post-secondary education. But Boston/Metro North employment concentrations in fields that are recovering slowly, such as Financial Activities, are weighing down the region's recovery.

Both the residents of Boston/Metro North and its workforce (which includes people who commute from other regions and other states) have remarkably high levels of education. Massachusetts is one of the states with the most highly educated populations; the education levels of the residents of Boston/Metro North are even higher. The share of working-age people living in Boston/Metro North who had a Bachelor's Degree or higher continued to increase over the last decade, and exceeded 40 percent by 2008-2010 compared with 35.6 percent of Massachusetts residents. But the region also has smaller shares of workers with Some College education or an Associate's Degree than does Massachusetts, making the overall share of residents and workers with a post-secondary education fairly similar to the state. Boston/Metro North also has a considerable number of residents at the lower end of the education distribution. In particular, the region has a larger share of the working-age and civilian labor force with less than a high school education than does Massachusetts. Given that those with lower educational attainment tend to be

¹This profile builds on the work of the 2008 regional labor market profiles completed by Paul Harrington and Neeta Fogg, formerly at Northeastern University's Center for Labor Market Studies. This work employs their methodology and includes expanded analysis of the educational attainment of the region's population, more detailed analysis of the distribution of occupations by industry, and a review of trends over a longer time period.

disproportionately represented among the unemployed, it is likely that education and training opportunities would benefit such residents in this high-skilled regional economy.

A major advantage for Boston/Metro North is the large share of young residents and workers in the region. While most regions in the state face the demographic challenges of an aging population and potential shortfalls in workers with required educational levels, Boston/Metro North has a larger concentration of residents and workers under the age of 35 than any other region. In 2008-2010, 45 percent of the region's civilian labor force was under 35. The younger groups in the region also tend to be well-educated, with a large number having a Bachelor's Degree or higher. This mitigates some of the concerns facing other regions with older labor forces, but the concentration of younger workers in higher educational attainment groups in Boston/Metro North may result in potential shortages of workers with lower or middle education levels. For example, the number of residents and workers in Boston/Metro North

with an Associate's Degree declined over the last decade. This decline partly reflects the transition to higher levels of educational attainment for residents and employees, but it also signals a potential shortage of workers as baby boomers retire from occupations where an Associate's Degree is the norm. Because the region is a major destination for commuters and a net importer of workers, some of these workforce challenges can be addressed by attracting people to commute into the region.

To foster strong economic growth in the future, Boston/Metro North may want to further align the education of its labor force to meet the needs of the region's employers. The higher education institutions in the region can play a key role in meeting the increasing demand for workers with post-secondary degrees. National and state enrollment patterns indicate that more and more individuals have been seeking post-secondary education over the last decade, and Boston/Metro North has seen an increase in full-time enrollments at both less-than-two-year and four-year institutions. Part-time en-

rollments at the region's two-year institutions have also been rising in recent years; however, full time enrollments at these institutions have been declining.

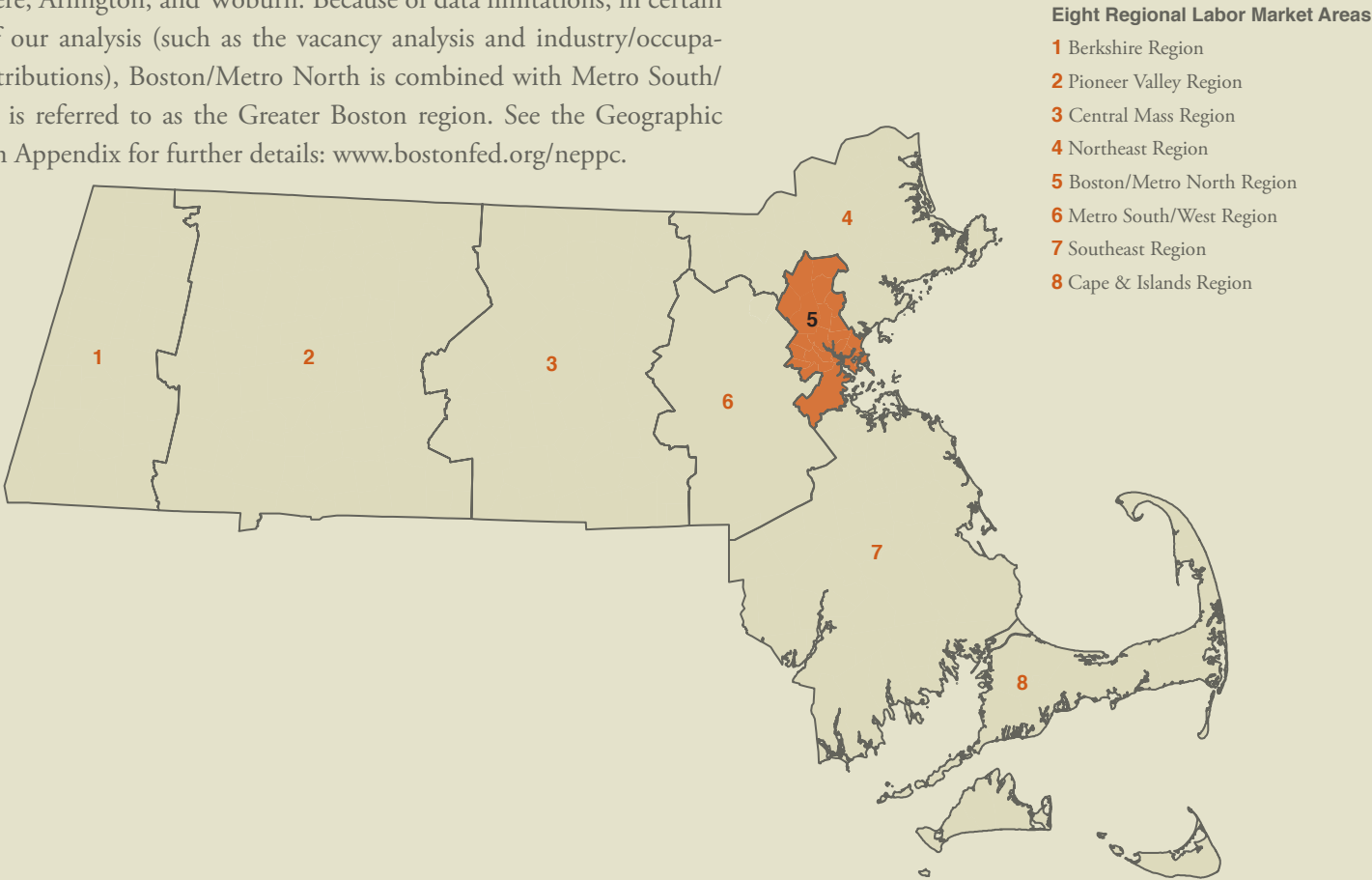
In terms of the number of students actually completing post-secondary degrees, the institutions in the region have, as a whole, trailed the growth patterns of Massachusetts and the United States. The slowest growth in the past decade occurred among Associate's Degrees, making it the type of post-secondary education with the fewest graduates in the region.

Boston/Metro North has seen growth in a variety of areas of study for each degree type. In particular, Health Science certificates and degrees have become an increasingly popular field of study, potentially reflecting the strength of the industry in the region and the industry's consistent job growth throughout the decade.

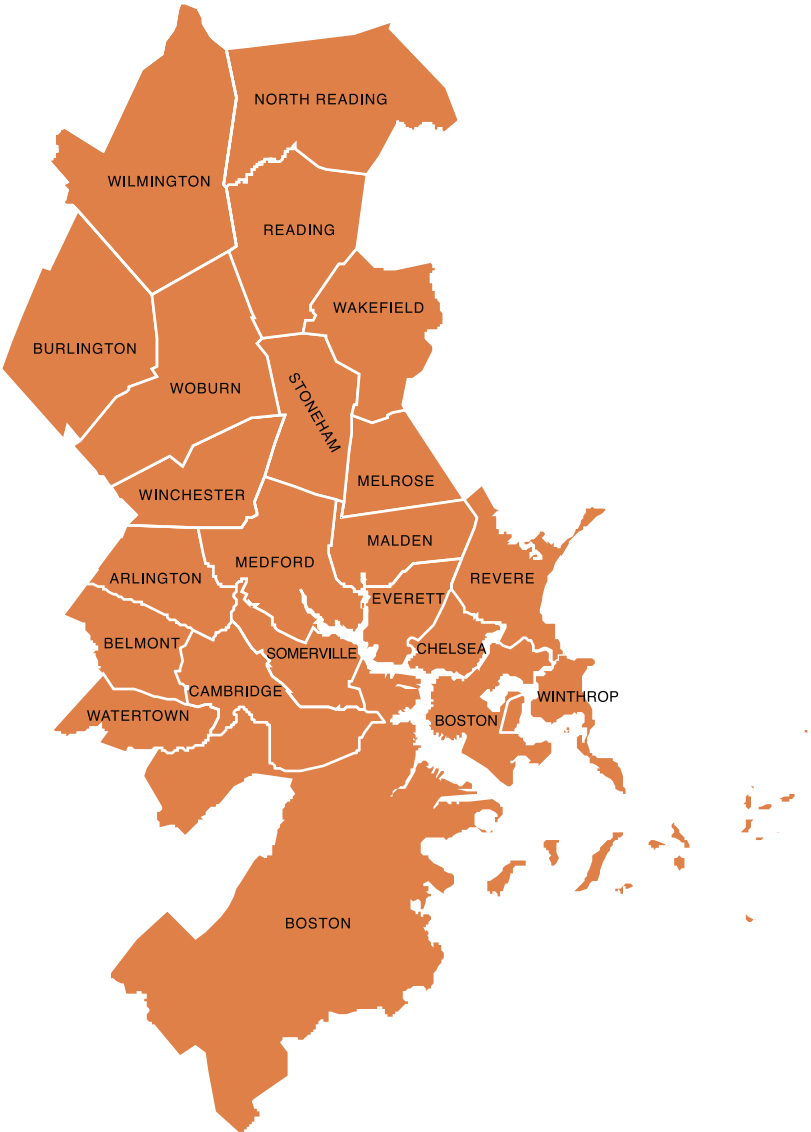
Please visit www.bostonfed.org/neppc for appendices describing geography and methodology, and for additional data.

GEOGRAPHY OF THE REGIONAL LABOR MARKETS

The Boston/Metro North labor market borders three regional labor markets: Metro South/West, Northeast, and Southeast. It is composed of 21 Massachusetts cities and towns in Suffolk and Middlesex counties. Along with the state’s capital and most populous city, Boston, the region contains a number of large cities and towns, including: Cambridge, Somerville, Malden, Medford, Revere, Arlington, and Woburn. Because of data limitations, in certain aspects of our analysis (such as the vacancy analysis and industry/occupational distributions), Boston/Metro North is combined with Metro South/West and is referred to as the Greater Boston region. See the Geographic Definition Appendix for further details: www.bostonfed.org/neppc.



BOSTON/METRO NORTH REGION



EMPLOYMENT TRENDS AND RECESSIONS

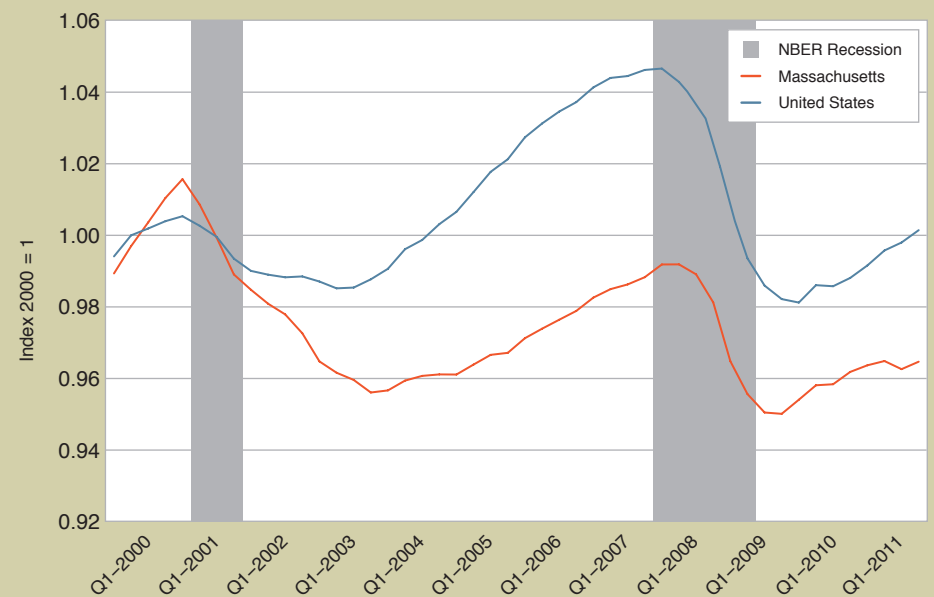
Massachusetts reached peak employment in 2001 and remained 5.0 percent below its peak (meaning a loss of 169,800 jobs) at the end of 2011. Over the same time period, total employment in the United States ended at only 0.4 percent (513,700 jobs) below its 2001 peak. One reason for the difference was that the short national recession at the beginning of the decade created a prolonged contraction and slow recovery in Massachusetts. By the start of the Great Recession, Massachusetts had still not recovered all of the jobs it had lost during the previous downturn. In contrast, the nation experienced a shorter labor market contraction in 2001, followed by a strong recovery that expanded employment up until the Great Recession. The Great Recession impacted the nation severely, while Massachusetts experienced a less pronounced downturn, with a slightly stronger recovery through 2010 followed by slower employment growth in 2011.

These differences between Massachusetts and the United States over the economic cycles are important to keep in mind when evaluating the performance of the eight regional labor markets. When possible, these labor market profiles will look at labor market information for the beginning of the millennium, the period preceding the Great Recession, and the decline in and recovery from the Great Recession.

Source: US Bureau of Labor Statistics.

Note: Shaded bars are national recessions dated by the National Bureau of Economic Research.

Non-Agricultural Employment for United States and Massachusetts, Q1 2000 to Q4 2011



POPULATION GROWTH TRENDS

The second largest region by total population, Boston/Metro North accounted for 19.2 percent of the state's residents at the end of the decade. After growing at the same annual rate as Massachusetts (0.2 percent) early in the decade, Boston/Metro North's population growth slightly outpaced the state's toward the end of the decade, increasing at an annual rate of 0.4 percent. While such growth rates were in the middle of the pack among the regional labor markets in Massachusetts, they lagged far behind the nation's 1.0 percent annual population growth over the course of the decade.

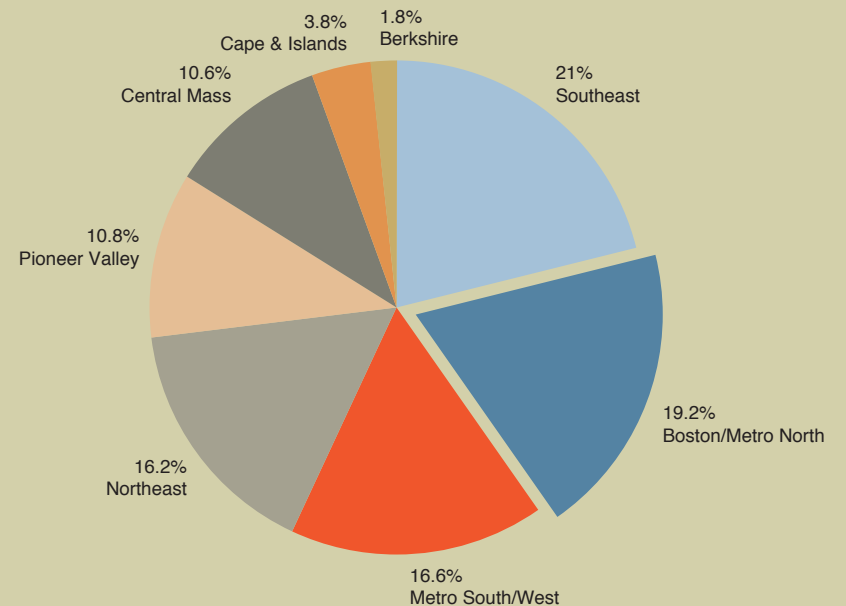
Source: US Census Bureau 2000 Decennial Census Public Use Microdata Samples (PUMS) data files, 2005-2007 and 2008-2010 American Community Survey Public Use Micro Sample (PUMS) data files.

Note: The use of the three-year American Community Survey was necessary to capture accurate sample size for the small geographic areas. The three-year sample is representative of the demographic and employment characteristics of the region over a 36-month period.

Annual Growth Rates



Massachusetts Population Distribution Across Regional Labor Markets, 2008-2010



DEMOGRAPHIC CHARACTERISTICS OF THE RESIDENT POPULATION OF BOSTON/METRO NORTH

Over the decade, the number of people living in Boston/Metro North increased at an annual rate of 0.3 percent. The growth of the region's immigrant population (an annual rate of 1.5 percent) offset a decline in the native-born population. The region also became more diverse in the past decade, with strong growth among Asian and Hispanic populations. Even though the region is one of the state's youngest, the region's population became increasingly older over the decade as baby boomers (born between 1946 and 1964) neared retirement age. In particular, the 55-64-year-old age cohort grew at the fastest annual rate (2.9 percent) among age groups in the region. The second fastest growing age cohort in the region was 16-24-year-olds, who are mostly the children of both immigrants and native-born baby boomers (whose children are commonly referred to as the echo-boom generation). Boston/Metro North was also the only region in Massachusetts to see growth, albeit modest growth, among residents between the ages of 25 and 34, the region's largest age cohort.

Source: US Census Bureau 2000 Decennial Census PUMS data files and 2008-2010 American Community Survey PUMS data files.

Note: Further data for racial/ethnic and gender characteristics for the residential population, as well as the working-age, civilian labor force, unemployed, and employed populations are available in the on-line Data Appendix.

	2000	2008-2010	Absolute Change	Annual Growth Rate (Percent)
Resident Population	1,176,638	1,206,646	30,008	0.3
Gender				
Male	565,865	584,472	18,607	0.4
Female	610,773	622,174	11,401	0.2
Nativity				
Native Born	879,971	866,209	-13,762	-0.2
Immigrant	296,667	340,437	43,770	1.5
Race/Ethnicity				
White, non-Hispanic	752,646	718,680	-33,966	-0.5
Black, non-Hispanic	166,977	177,111	10,134	0.7
Asian, non-Hispanic	78,305	103,081	24,776	3.1
Hispanic	129,604	171,442	41,838	3.2
Other race, non-Hispanic	49,106	36,332	-12,774	-3.3
Age				
Less than age 16	218,590	203,102	-15,488	-0.8
Age 16-24	150,969	173,000	22,031	1.5
Age 25-34	240,026	244,276	4,250	0.2
Age 35-44	189,819	168,333	-21,486	-1.3
Age 45-54	142,504	158,068	15,564	1.2
Age 55-64	93,573	121,129	27,556	2.9
Age 65+	141,157	138,738	-2,419	-0.2

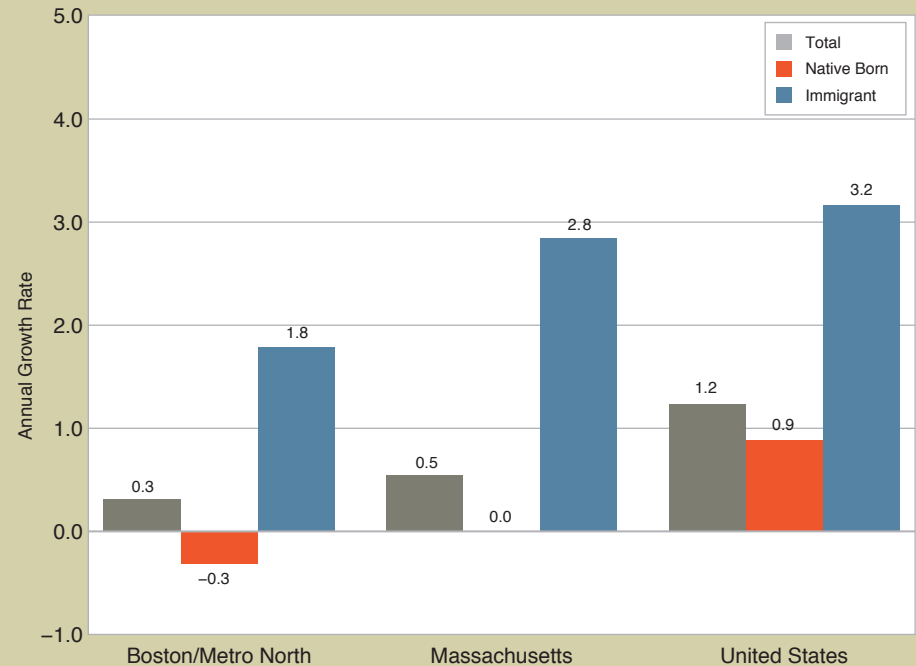
GROWTH IN THE WORKING-AGE POPULATION BY NATIVITY STATUS

Immigrants in Boston/Metro North have been a major driver of growth in the working-age population (a region's potential labor supply, typically defined as people 16 years of age or older). But between 2000 and 2005-2007, the annual growth of the region's immigrant population lagged behind both the state and national rates. Because of the slow growth in immigrants and a declining native-born population, Boston/Metro North's working-age population grew by only 0.3 percent, trailing both Massachusetts and the United States in the first part of the last decade. In recent years, however, the native-born population has rebounded and working-age immigrants have continued to grow at a consistent pace, causing the working-age population to grow at an annual rate of 0.9 percent. Because the influx of immigrants has been slowing both statewide and nationally in recent years, the Boston/Metro North working-age population growth has exceeded that of Massachusetts and has approached the national trend.

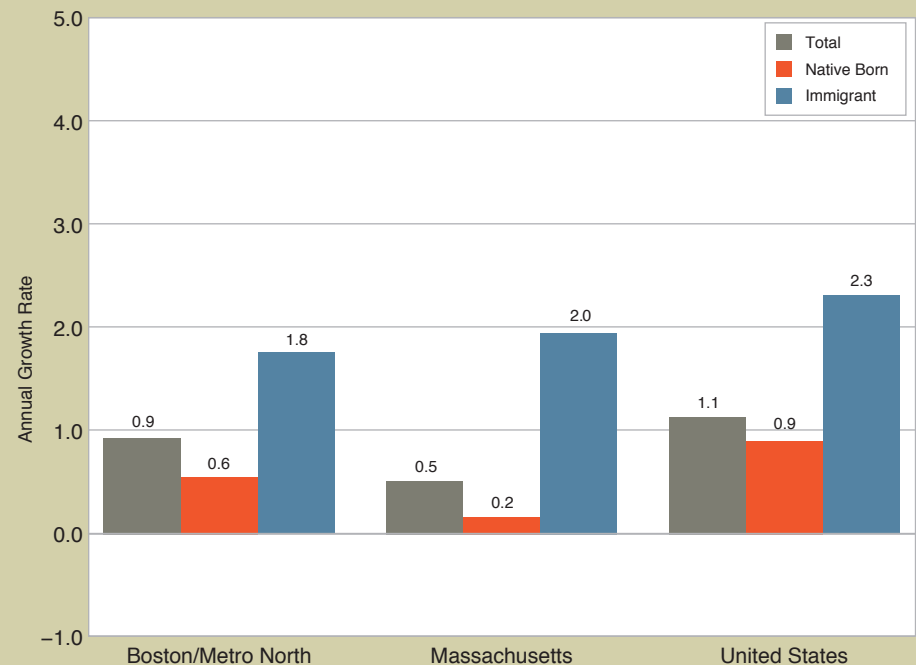
Source: US Census Bureau 2000 Decennial Census PUMS data files, 2005-2007 and 2008-2010 American Community Survey PUMS data files.

Note: The civilian labor force is all individuals 16 years of age or older who are classified as employed or unemployed and actively looking for work. Immigrants are individuals born outside the country.

Annual Growth Rate, 2000 to 2005-2007



Annual Growth Rate, 2005-2007 to 2008-2010



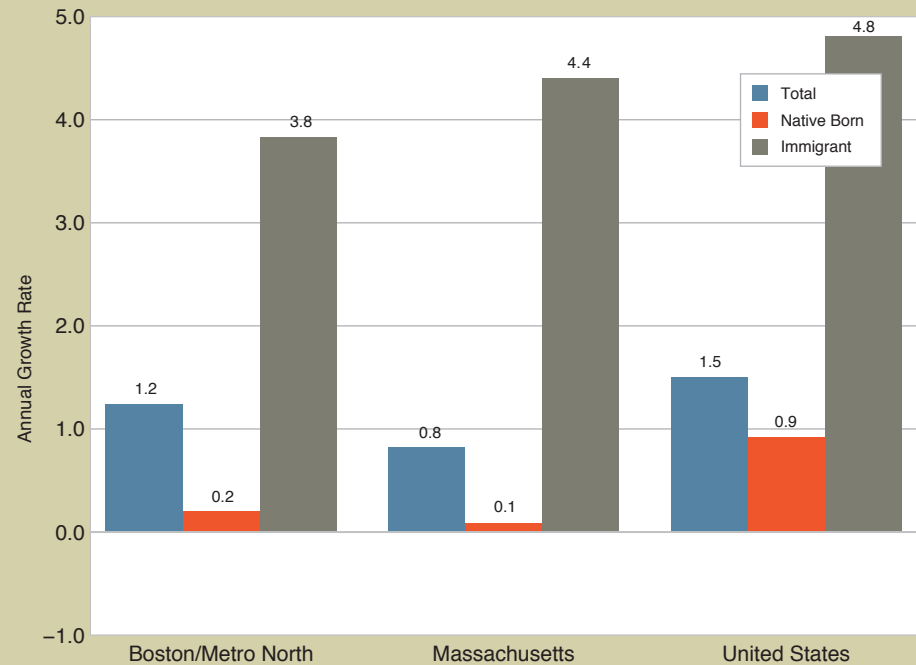
GROWTH IN THE CIVILIAN LABOR FORCE BY NATIVITY STATUS

The civilian labor force consists of residents who are either working or unemployed but actively looking for work (a region's actual labor supply). Like the region's working-age population, the Boston/Metro North civilian labor force has grown due to increases in both immigrant and native-born residents participating in the labor market. With only modest annual growth in the native-born civilian labor force between 2000 and 2005-2007, nearly all of the region's labor force growth came from immigrants. But as the growth rates of immigrants slowed in recent years, Boston/Metro North compensated with a 1.7 percent annual increase in the native-born civilian labor force. The region's total civilian labor force grew at a strong annual rate of 2.1 percent between 2005-2007 and 2008-2010, far exceeding the growth in Massachusetts and the United States.

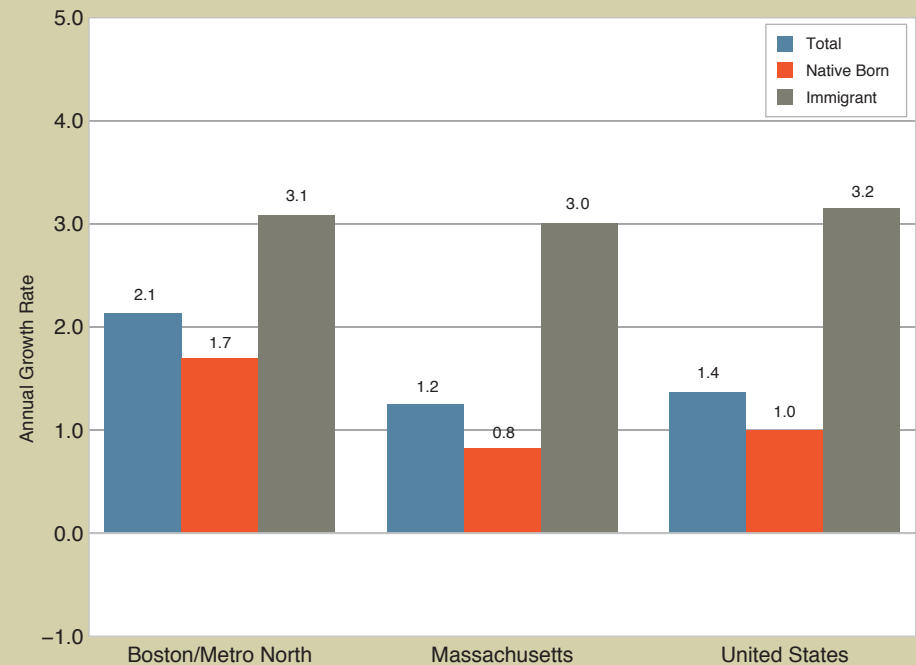
Source: US Census Bureau 2000 Decennial Census PUMS data files, 2005-2007 and 2008-2010 American Community Survey PUMS data files.

Note: The civilian labor force is all individuals 16 years of age or older who are classified as employed or unemployed and actively looking for work. Immigrants are individuals born outside the country.

Annual Growth Rate, 2000 to 2005-2007



Annual Growth Rate, 2005-2007 to 2008-2010

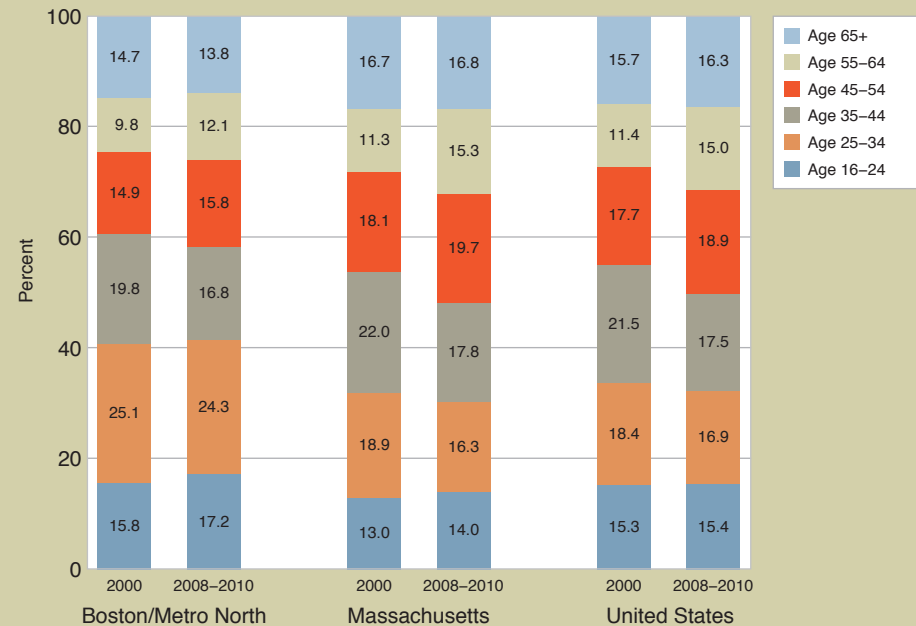


THE AGE PROFILE OF THE WORKING-AGE POPULATION

While Massachusetts is one of the older states in the country, Boston/Metro North is a fairly young region. In Massachusetts, over 50 percent of the working-age population is 45 years of age or older, but the opposite is true in Boston/Metro North, with nearly 60 percent of the region's population age 44 or younger. The difference is largely the result of the size of the 25-34-year-old age cohort, which accounts for nearly 25 percent of the region's population. As such, among all of the state's regional labor markets, Boston/Metro North has the largest share of working-age population between the ages of 16 and 34.

Source: US Census Bureau 2000 Decennial Census PUMS data files and 2008-2010 American Community Survey PUMS data files.

Age Distribution of the Working-Age Population, 2000 and 2008–2010



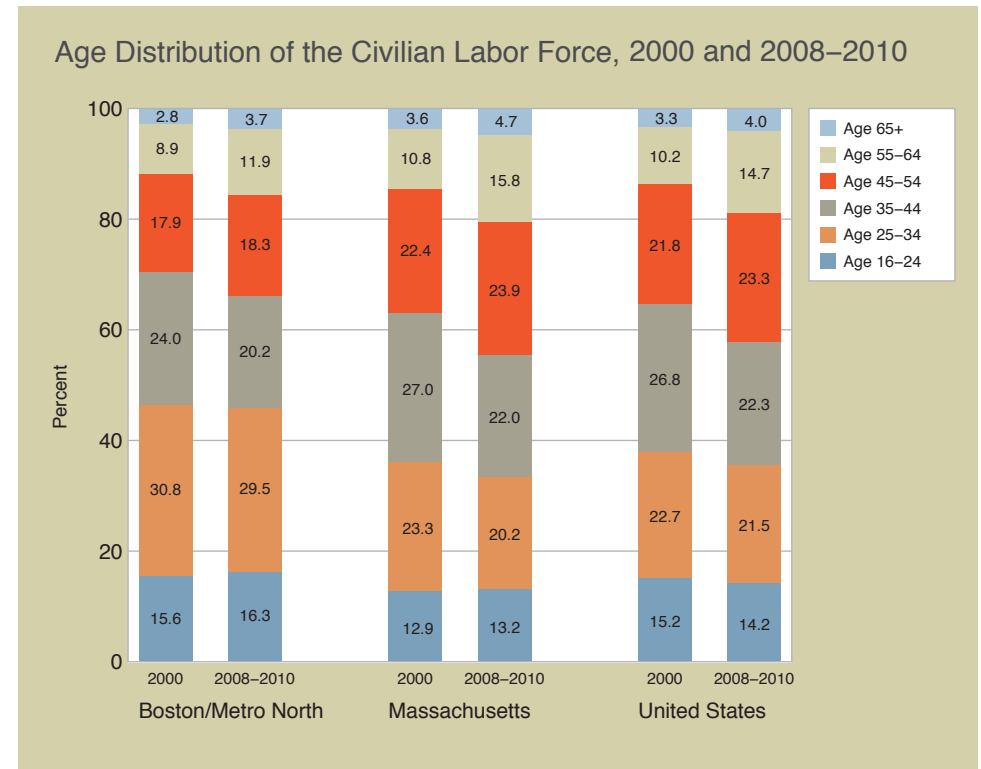
Growth of Working-Age Population by Age in Boston/Metro North

	2000	2008-2010	Absolute Change	Annual Growth Rate (Percent)
Age 16-24	150,969	173,000	22,031	1.5
Age 25-34	240,026	244,276	4,250	0.2
Age 35-44	189,819	168,333	-21,486	-1.3
Age 45-54	142,504	158,068	15,564	1.2
Age 55-64	93,573	121,129	27,556	2.9
Age 65+	141,157	138,738	-2,419	-0.2

THE AGE PROFILE OF THE CIVILIAN LABOR FORCE

Given the age of the region's population, it is not surprising that the civilian labor force in Boston/Metro North is much younger than the labor forces in the state and nation. While the Boston/Metro North civilian labor force has remained young in relative terms, it saw an increase in the share of population in the older age cohorts over the past decade, as did Massachusetts and the United States. In 2008-2010, over 65 percent of the region's labor force was age 44 or younger, down from over 70 percent at the beginning of the decade. The two fastest growing age groups were 55-64-year-olds and those 65 years of age or older. The only age group among the region's civilian labor force to shrink over the past decade was 35-44-year-olds. The region, however, maintained nearly the same share of civilian labor force who were ages 16 to 34 (46 percent) over the course of the decade, while the shares of the same age cohorts in the state and nation declined.

Source: US Census Bureau 2000 Decennial Census PUMS data files and 2008-2010 American Community Survey PUMS data files.



Growth of Civilian Labor Force Population by Age in Boston/Metro North

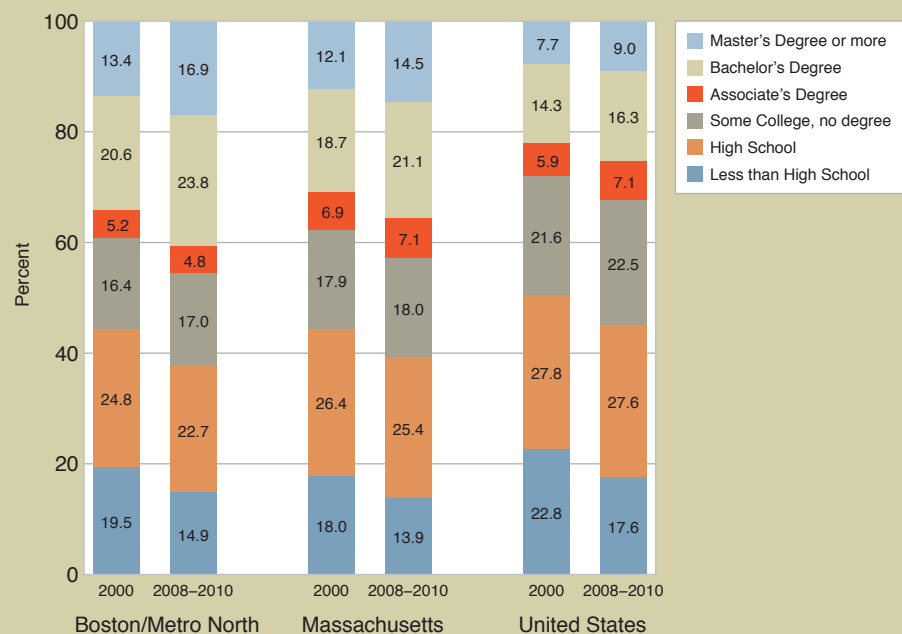
	2000	2008-2010	Absolute Change	Annual Growth Rate (Percent)
Age 16-24	98,573	118,639	20,066	2.1
Age 25-34	195,035	214,609	19,574	1.1
Age 35-44	152,143	146,994	-5,149	-0.4
Age 45-54	113,288	132,747	19,459	1.8
Age 55-64	56,604	86,350	29,746	4.8
Age 65+	17,859	27,152	9,293	4.8

EDUCATIONAL ATTAINMENT OF THE WORKING-AGE POPULATION

Of the eight regional labor markets in Massachusetts, Boston/Metro North has the second highest share of working-age people with a college degree (Metro South/West has the highest). By 2008-2010, over 40 percent of the working-age population had a Bachelor's Degree or higher. The region's educational attainment exceeds that of Massachusetts, which has one of the highest rates of residents with a college degree in the country. Over the last decade, the share and number of working-age individuals in Boston/Metro North with Some College education and with a Bachelor's Degree or higher increased, but there were declines in the share and number of individuals with an Associate's Degree. By comparison, in Massachusetts and the United States, the number and share of working-age individuals with Some College education and with an Associate's Degree increased. And while the region has seen a declining number of individuals with a High School Degree or less, Boston/Metro North continues to have a higher share of working-age individuals with less than a High School Degree compared with Massachusetts.

Source: US Census Bureau 2000 Decennial Census PUMS data files and 2008-2010 American Community Survey PUMS data files.

Educational Distribution of the Working-Age Population, 2000 and 2008–2010



Growth of Working-Age Population by Educational Attainment in Boston/Metro North

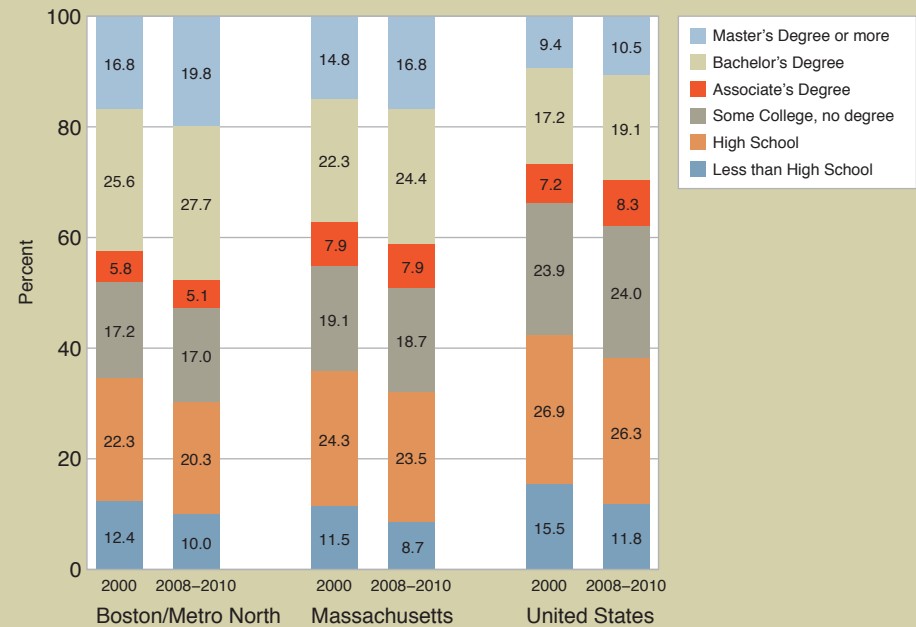
	2000	2008-2010	Absolute Change	Annual Growth Rate (Percent)
Less than High School	186,941	149,994	-36,947	-2.4
High School Graduate	238,001	227,328	-10,673	-0.5
Some College, no degree	157,224	170,295	13,071	0.9
Associate's Degree	49,474	47,858	-1,616	-0.4
Bachelor's Degree	197,753	238,801	41,048	2.1
Master's Degree or more	128,655	169,268	40,613	3.1

EDUCATIONAL ATTAINMENT OF THE CIVILIAN LABOR FORCE

It is not surprising that a highly educated working-age population translates into a highly educated civilian labor force. At the end of the last decade, nearly 50 percent of the Boston/Metro North civilian labor force had a Bachelor's Degree or higher, above the 41 percent in Massachusetts. Over the decade, Boston/Metro North saw the strongest growth at the highest levels of educational attainment (Bachelor's and Master's Degrees), with only modest growth among the middle levels of education (Some College and Associate's Degrees). At the end of the decade, 70 percent of the civilian labor force in Boston/Metro North had completed at least some post-secondary education (Some College or higher). This was only slightly higher than the share in Massachusetts, but it greatly exceeded the share nationwide (62 percent). In fact, the only educational attainment group to decline among the region's civilian labor force in the past decade was those with less than a high school education. However, such declines were slower in Boston/Metro North than in Massachusetts and the United States.

Source: US Census Bureau 2000 Decennial Census PUMS data files and 2008-2010 American Community Survey PUMS data files.

Educational Distribution of the Civilian Labor Force, 2000 and 2008–2010



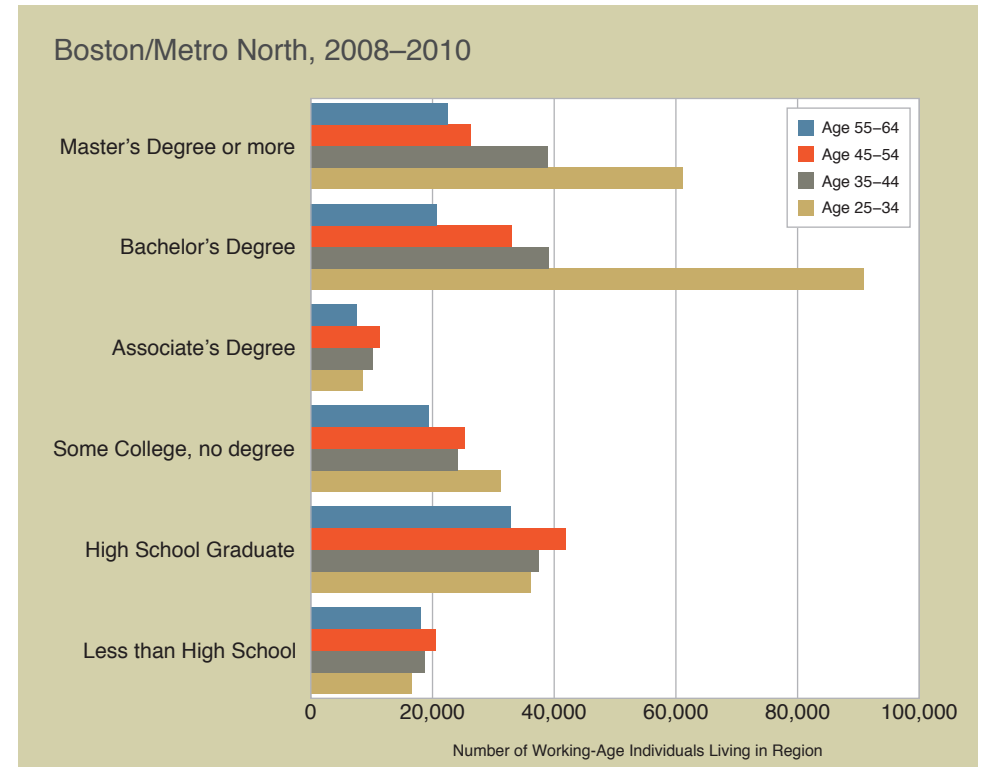
Growth of Civilian Labor Force Population by Educational Attainment in Boston/Metro North

	2000	2008-2010	Absolute Change	Annual Growth Rate (Percent)
Less than High School	78,314	72,910	-5,404	-0.8
High School Graduate	141,568	147,332	5,764	0.4
Some College, no degree	109,134	123,163	14,029	1.4
Associate's Degree	36,454	37,341	887	0.3
Bachelor's Degree	161,903	201,580	39,677	2.5
Master's Degree or more	106,129	144,165	38,036	3.5

EDUCATIONAL ATTAINMENT BY AGE GROUP

If we look at the region's population by both age and education, we get an understanding of the workers who will be replacing the baby boomers. As the baby boomers have aged, 45-54-year-olds have become the largest age cohort in nearly all educational attainment groups in most Massachusetts labor markets. Most labor markets in the state face potential shortfalls of 25-34- and 35-44-year-olds, the population that can replace retiring boomers. In contrast, Boston/Metro North has an abundance of such workers in most educational attainment groups. However, in 2008-2010 there were nearly 11,300 individuals between the ages of 45 and 54 with an Associate's Degrees in Boston/Metro North but only 8,500 between the ages of 25 and 34 with such degrees, a difference of 2,800 individuals. This amounts to a shortfall of nearly 25 percent in the potential labor supply that could replace the 45-54 year-olds with the same education levels as they leave the workforce. However, this potential shortfall is likely much smaller, as educational requirements for most industries and occupations have increased over time, and some positions that were traditionally filled by Associate's Degree holders are now held by those with a Bachelor's Degree or higher.

Source: US Census Bureau 2008-2010 American Community Survey PUMS data files.



UNEMPLOYMENT RATE TRENDS

During the Great Recession, unemployment rates nationwide increased sharply. Beginning the decade at 2.6 percent, the unemployment rate in Boston/Metro North climbed to about 5.8 percent in 2003, matching Massachusetts's experience in the early years of the decade. As employment grew, the region's rate fell to 4.0 percent in 2007, nearly half a percentage point lower than the state rate. In the Great Recession, the region's unemployment rate jumped, reaching 7.5 percent in 2010, but it remained below the Massachusetts rate. The 2010 unemployment rate in Boston/Metro North was the second lowest among all regional labor markets in Massachusetts.

Source: US Bureau of Labor Statistics and Massachusetts Executive Office of Labor and Workforce Development.

Note: The annual unemployment rate is a 12-month average of the non-seasonally-adjusted unemployment rate.

Unemployment Rate, 2000 to 2010



Boston/Metro North Unemployment

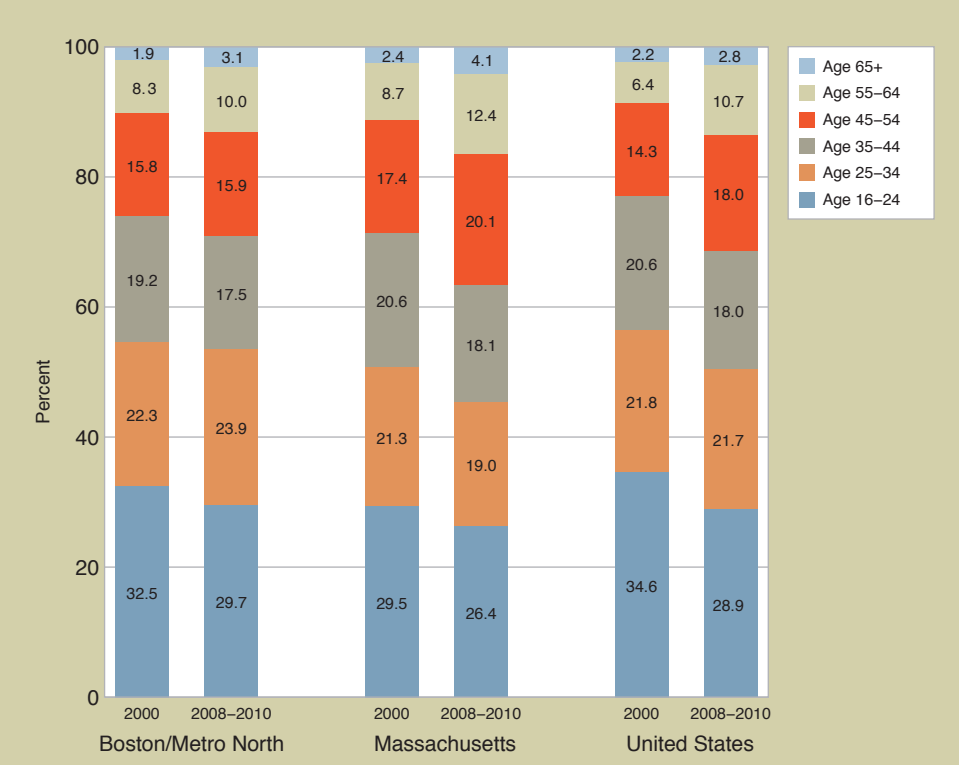
	2000	2010	Relative Change	Annual Growth Rate (Percent)
Unemployed	18,802	55,922	37,120	11.5
Employed	701,143	690,010	-11,133	-0.2
Civilian Labor Force	719,945	745,932	25,987	0.4
Unemployment Rate	2.6	7.5	-	-

THE UNEMPLOYED: AGE DISTRIBUTION (2000 AND 2008-2010)

Given that the largest share of the Boston/Metro North civilian labor force is age 34 or younger, it is not surprising the region also has the largest share of people in that age group among the unemployed. While only 45 percent of the unemployed in Massachusetts were age 34 or younger, nearly 54 percent of Boston/Metro North's unemployed were in that age group. Generally, there is a tendency for the younger age cohorts to be disproportionately represented among the unemployed. For example, in 2008-2010, 16-24-year-olds accounted for the largest share of the unemployed among age cohorts (29.7 percent), but they accounted for only 16.3 percent of the civilian labor force in Boston/Metro North.

Source: US Census Bureau 2000 Decennial Census PUMS data files and 2008-2010 American Community Survey PUMS data files.

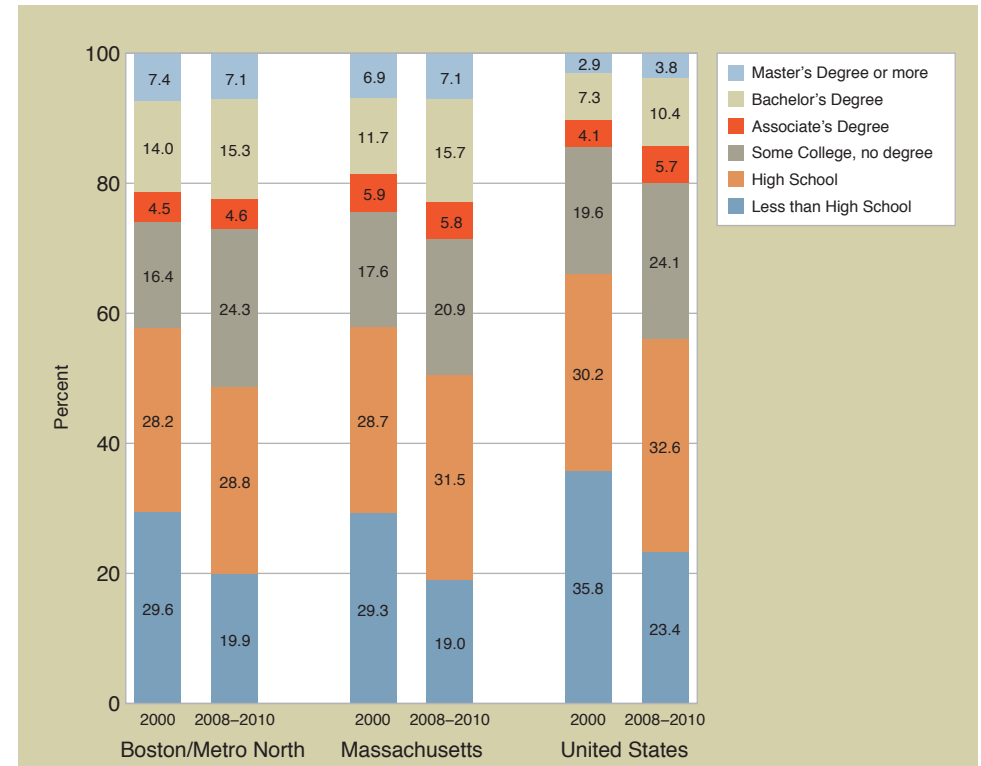
Note: Unemployed are individuals age 16 or older not employed and actively looking for work.



THE UNEMPLOYED: EDUCATIONAL ATTAINMENT (2000 AND 2008-2010)

A slim majority of the unemployed in Boston/Metro North have some post-secondary education, in contrast to the state overall. While a relatively large share of the civilian labor force in the region has Bachelor's Degrees, the region mostly differs from the state in its large share of the unemployed who have Some College but no degree. In 2000, the share of the unemployed in Boston/Metro North who had Some College was 16.4 percent, actually lower than the share in Massachusetts. By the end of the decade that figure had grown to 24.3 percent in the region, more closely matching the share at the national level. However, lower educational attainment cohorts continue to be disproportionately represented among the unemployed. For example, in 2008-2010, those with less than a high school education accounted for 19.9 percent of the unemployed but were only 10.0 percent of the civilian labor force.

Source: US Census Bureau 2000 Decennial Census PUMS data files and 2008-2010 American Community Survey PUMS data files.



COMMUTING PATTERNS OF RESIDENTS AND WORKERS: BOSTON/METRO NORTH (2008–2010)

As a major employment center of the New England region, Boston/Metro North relies heavily on commuters from across the state and from nearby states. More than 400,000 people, or 46 percent of those employed in the region, commute into Boston/Metro North for work. Most of them come from the bordering labor markets of Metro South/West (15.9 percent of all workers in Boston/Metro North), the Northeast region (12.2 percent), and the Southeast region (11.8 percent). The region also draws some 38,000 commuters from outside Massachusetts. At the same time, 75.8 percent of Boston/Metro North's employed residents also work in the region, with 13 percent of residents commuting out to Metro South/West and smaller shares commuting to the Northeast region (5.7 percent) and the Southeast region (3.2 percent). With its heavy reliance on commuters, Boston/Metro North is a net importer of workers, with 258,000 more commuting into the region than commuting out.

Source: US Census Bureau 2008-2010 American Community Survey PUMS data files.

	Number	Percent of Total
Total number of employed persons living in the Boston/Metro North...	644,222	100.0
...who work in:		
Boston/Metro North	488,387	75.8
Metro South/West	85,621	13.3
Northeast	36,693	5.7
Southeast	20,692	3.2
Central Mass	2,859	0.4
Other parts of Massachusetts	792	0.1
New Hampshire	2,432	0.4
Rhode Island	907	0.1
Other places outside Massachusetts	5,839	0.9
Total number of persons working in Boston/Metro North...	902,144	100.0
...who live in:		
Boston/Metro North	488,387	54.1
Metro South/West	143,259	15.9
Northeast	110,133	12.2
Southeast	106,686	11.8
Central Mass	11,564	1.3
Other parts of Massachusetts	4,003	0.4
New Hampshire	20,077	2.2
Rhode Island	7,494	0.8
Other places outside Massachusetts	10,541	1.2
Net In-Commuting (Number of Persons Employed in Region Minus Number of Persons Living in Region)	257,922	-

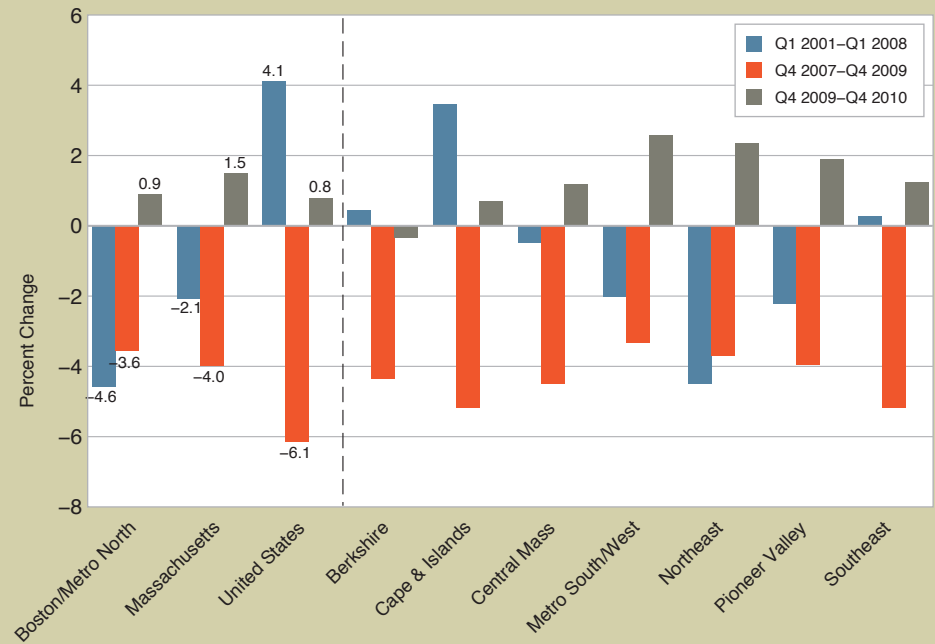
EMPLOYMENT TRENDS

Boston/Metro North is the largest labor market in the state, accounting for 29.6 percent of the state's employment, or roughly 931,500 jobs. Following a challenging start to the decade, the Boston/Metro North employment situation has come more into line with that of Massachusetts in recent years. Employment in Boston/Metro North declined by 4.6 percent between the first quarters of 2001 and 2008; this was the steepest decline among all eight labor markets and more than double the rate of Massachusetts. But the region's losses during the Great Recession (from the fourth quarter of 2007 to the fourth quarter of 2009) were more modest than in the United States and slightly less than those in the state (3.6 percent versus 4.0 percent). During the recent recovery, Boston/Metro North experienced modest growth of 0.9 percent between the fourth quarters of 2009 and 2010, trailing the state's growth of 1.5 percent over the same time.

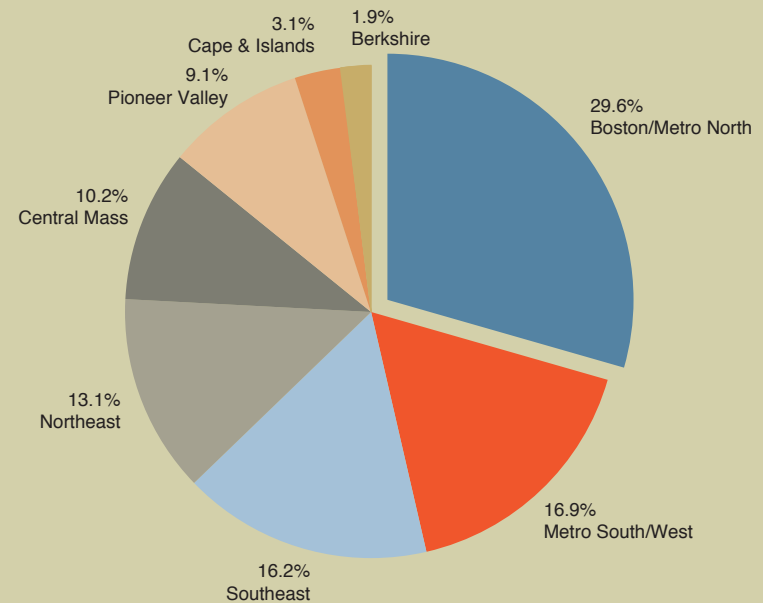
Source: US Bureau of Labor Statistics Quarterly Census of Employment and Wages (QCEW) and Massachusetts Executive Office of Labor and Workforce Development ES-202.

Note: ES-202 and QCEW are not seasonally adjusted. Therefore, comparisons need to be made across consistent time periods, such as the first quarter of one year to the first quarter of another. Comparisons between different quarters will be distorted, as seasonal employment in industries such as Retail Trade and Leisure & Hospitality vary considerably across regions.

Changes in Total Employment



Distribution of Employment Across Regional Labor Markets, Q4 2010



DEMOGRAPHIC CHARACTERISTICS OF THE POPULATION EMPLOYED IN BOSTON/METRO NORTH

The demographics of individuals employed in the region are similar to the demographics of the population who live in the region, despite the fact that nearly 50 percent of the region's workers live outside the region. Over the past decade, the region has increasingly employed more immigrants. The region's workers have also become more racially diverse, with growth in Black, Asian, and Hispanic employees. And much like the residential population of Boston/Metro North, there is a strong concentration of younger employees, and the fraction of jobs held by workers with a Bachelor's Degree or Master's Degree has increased at the fastest rate of all education levels in the past decade.

Source: US Census Bureau 2000 Decennial Census PUMS data files and 2008-2010 American Community Survey PUMS data files.

Note: Further data for racial/ethnic and gender characteristics for total, working-age, and civilian labor force population are available in the on-line Data Appendix.

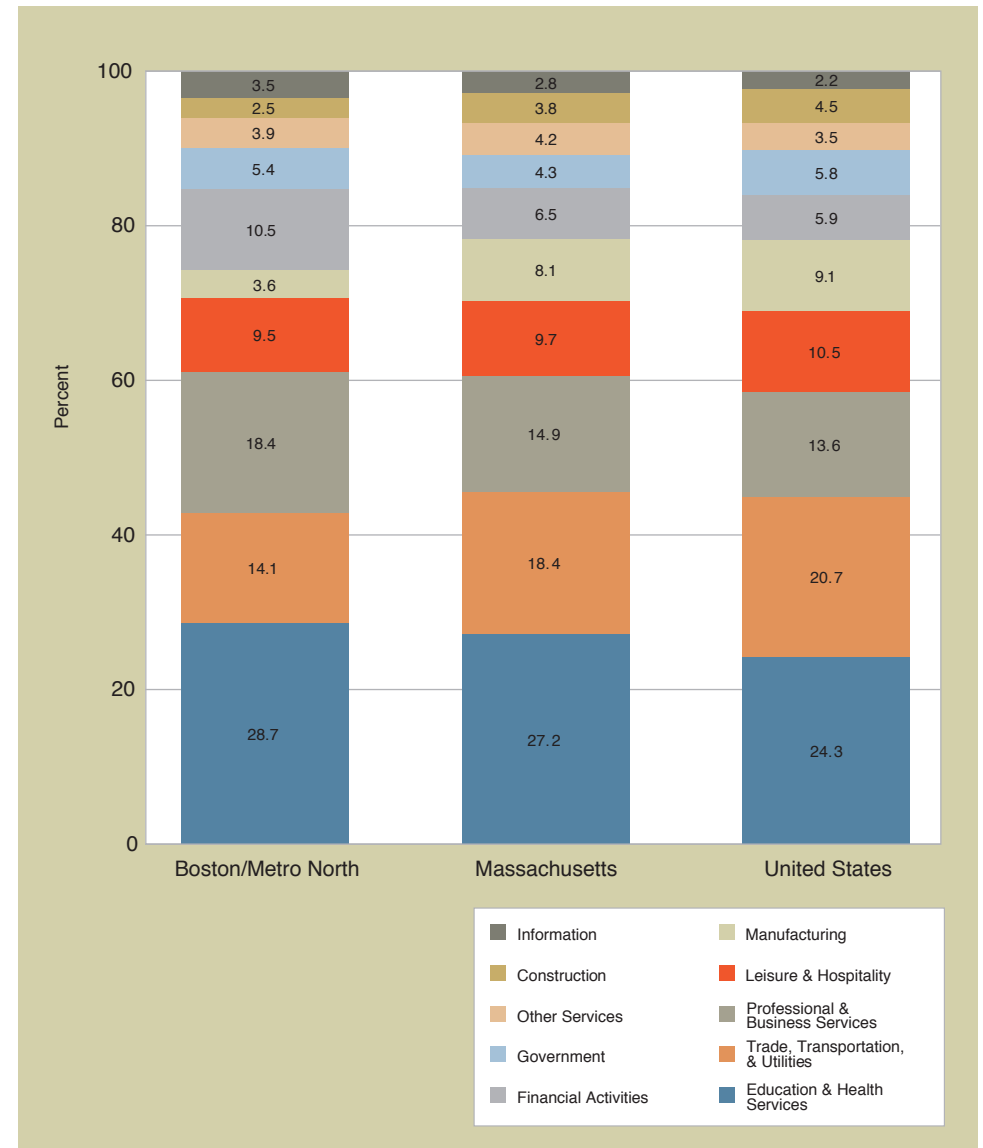
	2000	2008-2010	Absolute Change	Annual Growth Rate (Percent)
Employed Population	852,858	902,144	49,286	0.6
Gender				
Male	459,163	483,011	23,848	0.6
Female	393,695	419,133	25,438	0.7
Nativity				
Native Born	673,292	661,587	-11,705	-0.2
Immigrant	179,566	240,557	60,991	3.3
Race/Ethnicity				
White, non-Hispanic	666,056	641,576	-24,480	-0.4
Black, non-Hispanic	62,534	82,501	19,967	3.1
Asian, non-Hispanic	47,423	73,582	26,159	5.0
Hispanic	52,396	85,805	33,409	5.6
Other race, non-Hispanic	24,449	18,680	-5,769	-2.9
Age				
Age 16-24	96,795	107,376	10,581	1.2
Age 25-34	239,260	226,616	-12,644	-0.6
Age 35-44	233,628	206,339	-27,289	-1.4
Age 45-54	178,344	202,422	24,078	1.4
Age 55-64	80,088	125,326	45,238	5.1
Age 65+	24,743	34,065	9,322	3.6
Educational Attainment				
Less than High School	71,756	59,506	-12,250	-2.1
High School Graduate	164,135	161,439	-2,696	-0.2
Some College, no degree	143,760	140,187	-3,573	-0.3
Associate's Degree	56,514	54,913	-1,601	-0.3
Bachelor's Degree	241,178	270,797	29,619	1.3
Master's Degree or more	175,515	215,302	39,787	2.3

DISTRIBUTION OF EMPLOYMENT BY SUPERSECTOR (Q4 2010)

As in Massachusetts, the largest sector of employment in Boston/Metro North is Education & Health Services. But the region has a much stronger employment concentration in Professional & Business Services (18.4 percent) than is the case statewide or nationally. There is a smaller share of jobs in Trade, Transportation, & Utilities (14.1 percent) compared with Massachusetts and the United States. Also of note is that the region's Financial Activities supersector employment is larger than the state's. Accounting for 10.5 percent of employment in Boston/Metro North, the size of the region's Financial Activities supersector is nearly double the share of employment in the sector nationwide (5.9 percent). In comparison, the region's employment in Manufacturing (3.6 percent) is less than half the size of that sector statewide (8.1 percent) and nationally (9.1 percent).

Source: US Bureau of Labor Statistics QCEW and Massachusetts Executive Office of Labor and Workforce Development ES-202.

Note: Supersectors are grouping of major industry categories. See the Data Appendix for the major industries that make up supersectors.



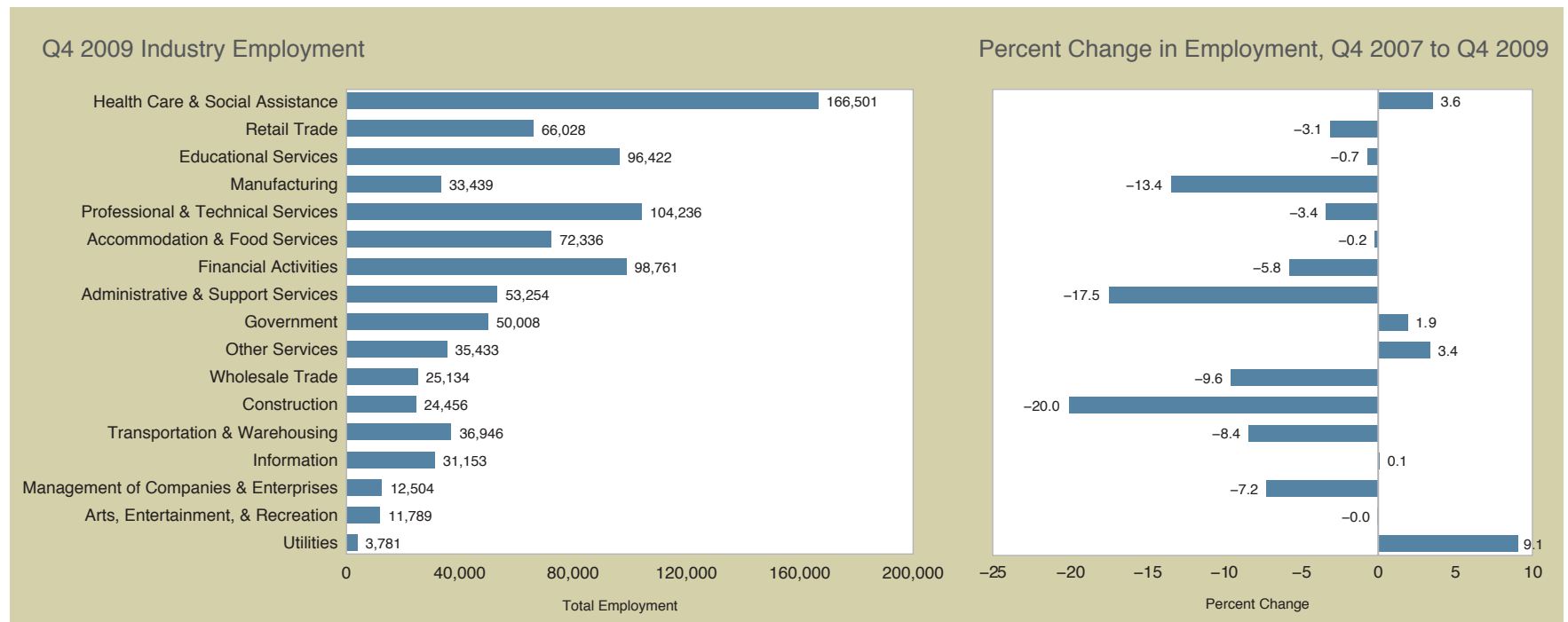
CHANGES IN EMPLOYMENT DURING THE ECONOMIC DOWNTURN BY MAJOR INDUSTRY: BOSTON/METRO NORTH

Between 2007 and 2009, Boston/Metro North lost jobs, but the region did not fare as poorly as other parts of the state, partly because of its industry mix. Health Care & Social Assistance, one of the few industries that increased employment during the Great Recession, is by far the largest industry in Boston/Metro North. The industry grew 3.6 percent between 2007 and 2009, adding over 5,700 jobs. The employment increases were mostly from two sub-industries: Ambulatory Health Care Services (2,600 jobs) and Hospitals (2,800 jobs). However, these gains were more

than offset by a loss of 22,600 jobs in industries hit hardest by the Great Recession: Manufacturing (-13.4 percent), Administrative & Support Services (-17.5 percent), and Construction (-20.0 percent). Employment contractions in the large regional industries of Financial Activities (-5.8 percent) and Professional & Technical Services (-3.4 percent) resulted in an additional loss of 9,700 jobs.

Source: Massachusetts Executive Office of Labor and Workforce Development ES-202.

Note: Industries are sorted by size in Massachusetts in Q4 2009. See the on-line Data Appendix for supersector and major industry employment trends.

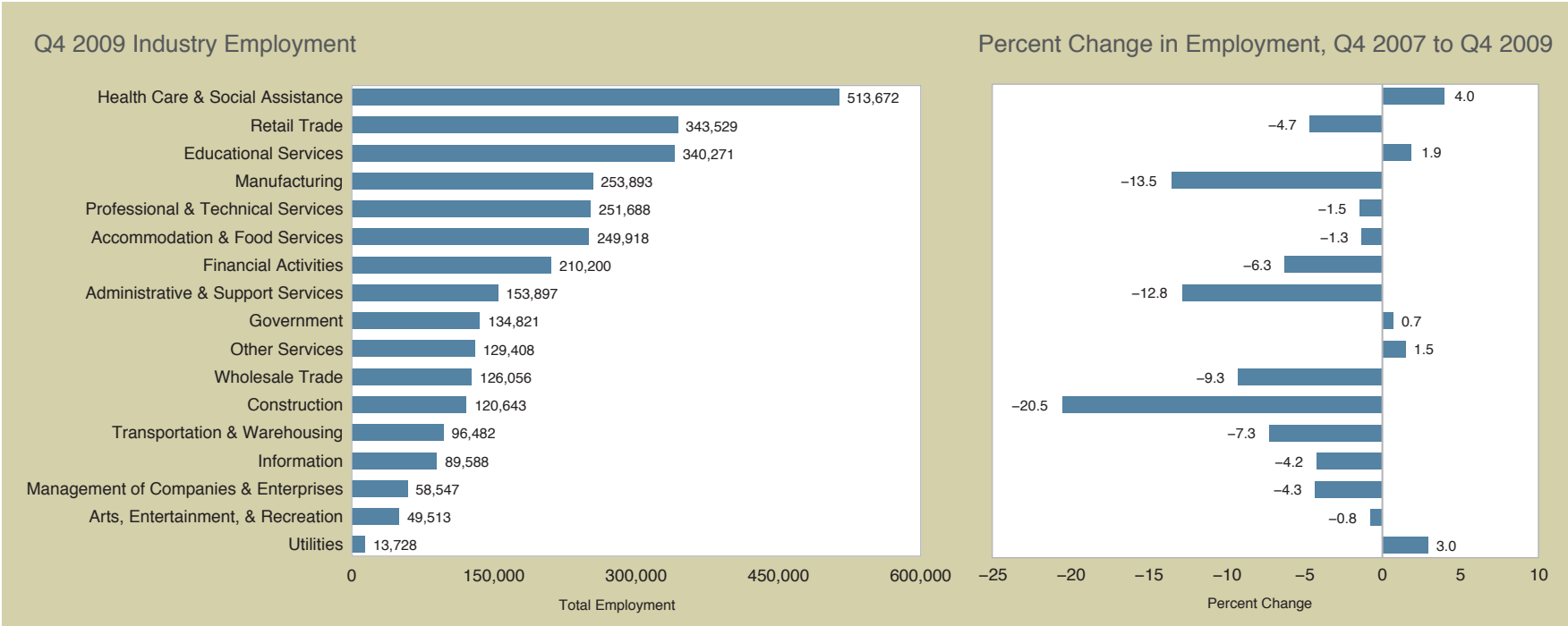


CHANGES IN EMPLOYMENT DURING THE ECONOMIC DOWNTURN BY MAJOR INDUSTRY: MASSACHUSETTS

Massachusetts faced a slightly tougher downturn than did Boston/Metro North in the Great Recession (2007-2009). The state's strongest employment gains also came in the Health Care & Social Assistance industry (4.0 percent), as a result of strong growth in the sub-industry of Ambulatory Health Care Services (7.7 percent). Further gains in Education Services (1.9 percent) were more than offset by significant losses in Manufacturing (-13.5 percent) and Construction (-20.5 percent). Within the Trade, Transportation, & Utilities supersector, the state experienced large losses from two

major industries: Retail Trade (-4.7 percent) and Wholesale Trade (-9.3 percent). Further losses in Financial Activities (-6.3 percent) and Administrative & Support Services (-12.8 percent) resulted in a statewide percentage decline in employment that exceeded that of Boston/Metro North during the Great Recession.

Source: Massachusetts Executive Office of Labor and Workforce Development ES-202.
Note: Industries are sorted by size in Massachusetts in Q4 2009.



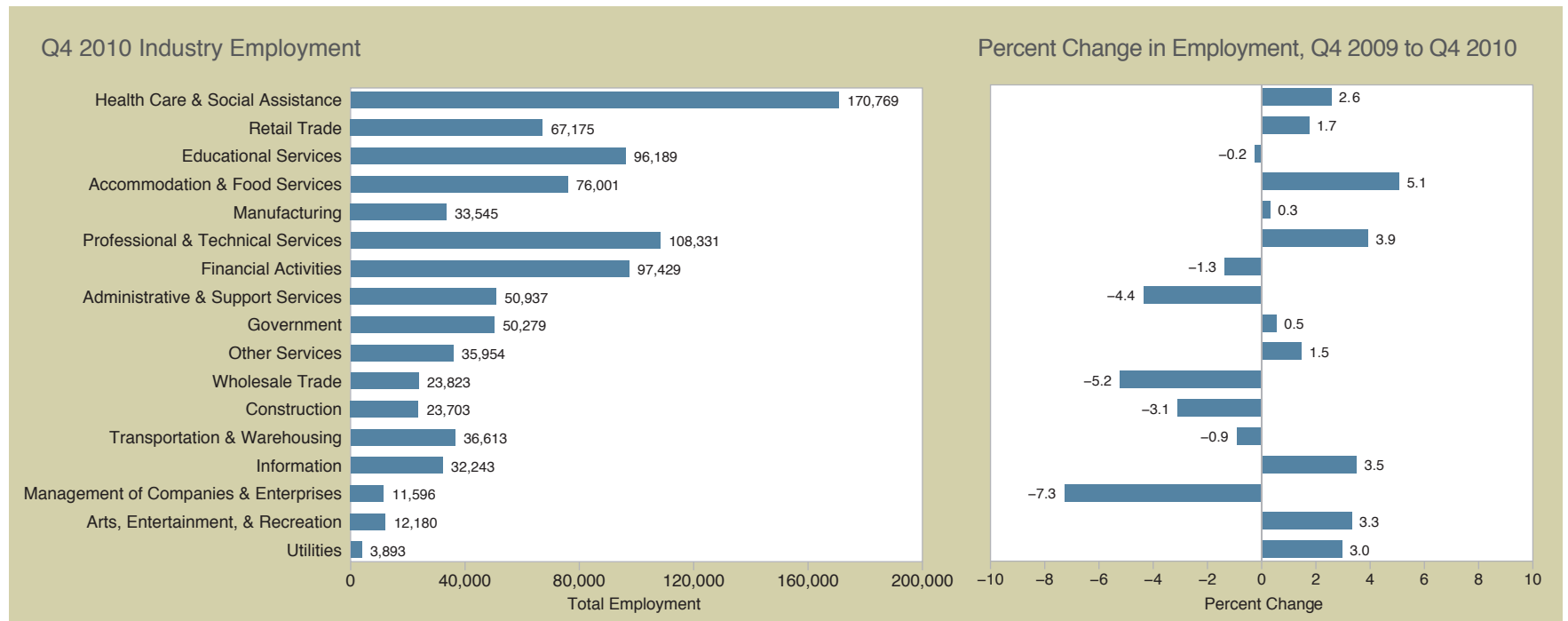
INDUSTRIES DRIVING THE RECOVERY: BOSTON/METRO NORTH

Since the trough of the downturn, Boston/Metro North has experienced modest growth across a broad set of industries. Seven industries continued to contract in the early stages of the recovery (between the fourth quarters of 2009 and 2010), with the largest decline coming from Administrative & Support Services: 2,300 jobs, or -4.4 percent. During the same period, the Professional & Business Services supersector expanded employment, thanks to an increase of nearly 4,100 jobs in the Professional & Technical Service industry. Health Care & Social Assistance continued to expand with an additional 4,200 jobs, up 2.6 percent. However,

employment gains in Boston/Metro North were concentrated in the sub-industries of Hospitals (3,400 jobs) and Social Assistance (1,400 jobs), in contrast to the gain for Ambulatory Health Care Services during the recession.

Source: Massachusetts Executive Office of Labor and Workforce Development ES-202.

Note: Industries are sorted by size in Massachusetts in Q4 2010.

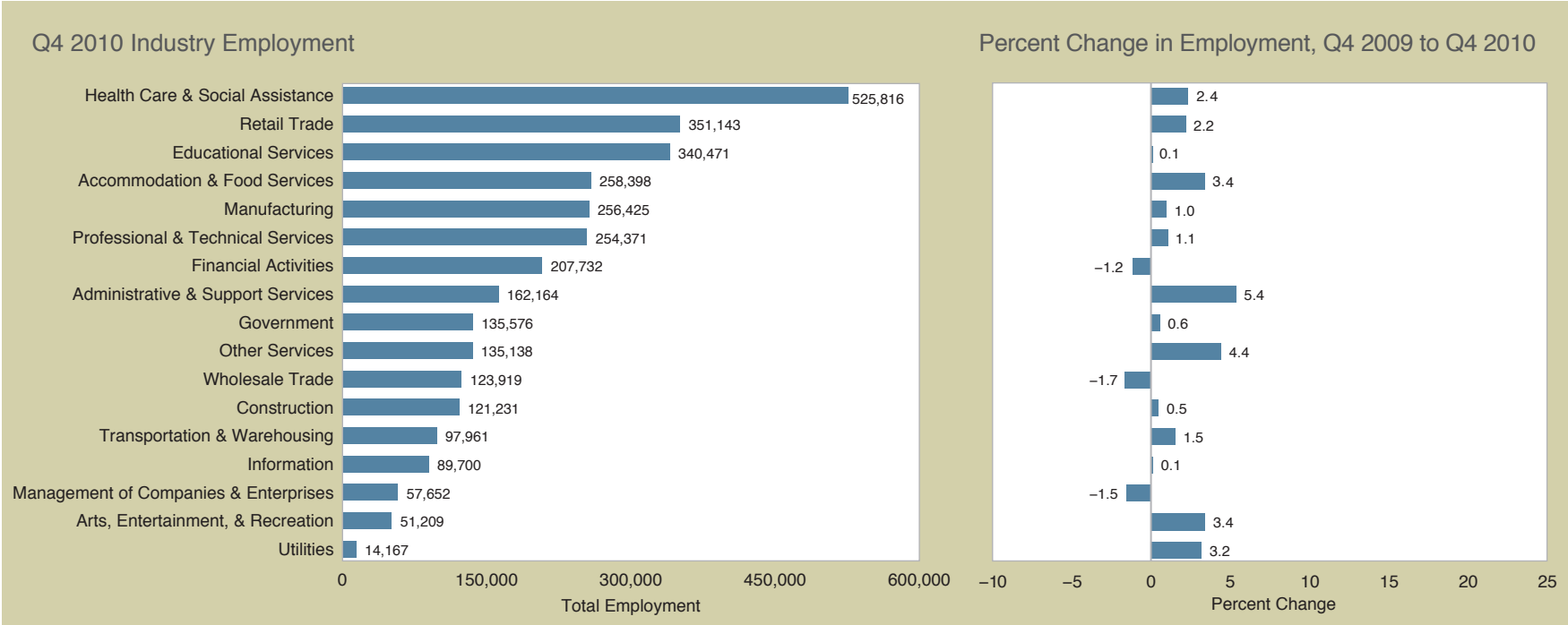


INDUSTRIES DRIVING THE RECOVERY: MASSACHUSETTS

Massachusetts as a whole has had a more broad-based recovery than has Boston/Metro North. The state expanded employment in industries ranging from a 0.1 percent increase in both the Information and Educational Services industries to a 5.4 percent increase in Administrative & Support Services industry between the fourth quarters of 2009 and 2010. During the same period, the Health Care & Social Assistance industry added over 12,100 jobs, a 2.4 increase in employment. Job growth was spread across a number of the sub-industries that make up Health Care & Social Assistance, including: Social Assistance (3,200 jobs), Ambulatory

Health Care Services (3,400 jobs), and Hospitals (5,700 jobs). Between the fourth quarters of 2009 and 2010, the state experienced slight declines in only three industries: Financial Activities, Wholesale Trade, and Management of Companies & Enterprises. As a result, employment growth between the fourth quarters of 2009 and 2010 was 1.5 percent, exceeding the 0.9 percent increase in Boston/Metro North.

Source: Massachusetts Executive Office of Labor and Workforce Development ES-202.
Note: Industries are sorted by size in Massachusetts in Q4 2010.

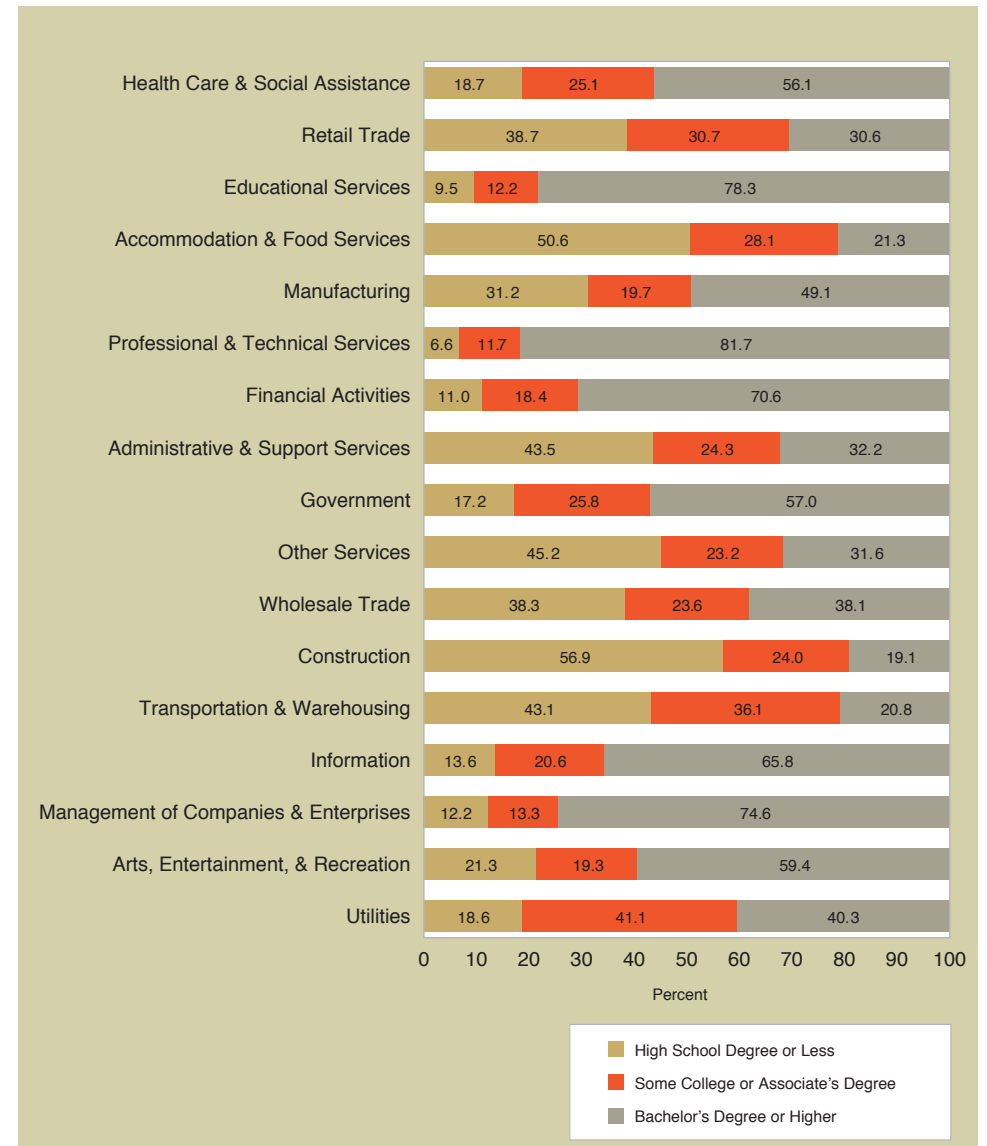


EDUCATIONAL ATTAINMENT OF EMPLOYEES BY MAJOR INDUSTRY IN BOSTON/METRO NORTH (2008-2010)

With a highly educated population working and living in Boston/Metro North, it is not surprising that most industries in the region employ a highly educated workforce. In 2008-2010, 10 of the 17 major industries in the region had a workforce where more than 40 percent of employees had a Bachelor's Degree or higher. Notably, the region also had high concentrations of employees with a Bachelor's Degree or higher in industries that often employ less educated workers, such as Manufacturing (49.1 percent). Only seven industries in Boston/Metro North had a workforce where a High School Degree or less was the most common level of educational attainment among the employed. Even in these industries, the majority of employees tended to have Some College education or more. Construction and Accommodation & Food Services were the two industries that had a majority of employees with a High School Degree or less.

Source: US Census Bureau 2008-2010 American Community Survey PUMS data files.

Note: Industries are sorted by size in Massachusetts in Q4 2010.

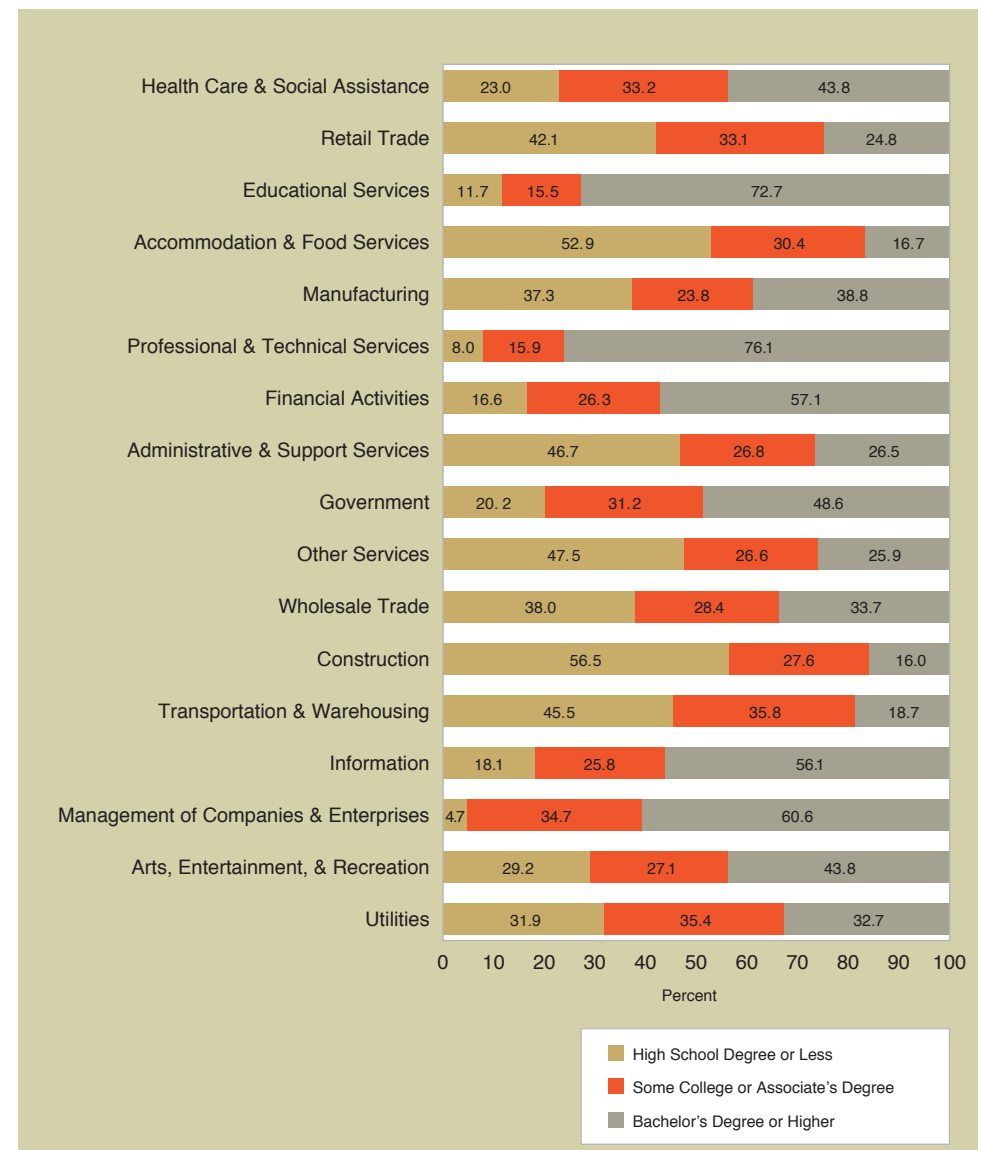


EDUCATIONAL ATTAINMENT OF EMPLOYEES BY MAJOR INDUSTRY IN MASSACHUSETTS (2008-2010)

The educational attainment across the industries of Boston/Metro North is much higher than that of the same industries in Massachusetts. In Massachusetts, only eight of the 17 major industries have a workforce where more than 40 percent of employees have a Bachelor's Degree or higher. And in every major industry statewide, the share of employees with a Bachelor's Degree or higher is less than their industrial counterparts in Boston/Metro North. In particular, industries with employees that traditionally have lower levels of educational attainment, such as Utilities, Wholesale Trade, and Manufacturing, have a higher share of employees with a Bachelor's Degree or higher in Boston/Metro North. Conversely, nearly every major industry statewide has a larger share of employees with a High School Degree or less compared with Boston/Metro North, with the exception of Wholesale Trade, Construction, and Management of Companies & Enterprises.

Source: US Census Bureau 2008-2010 American Community Survey PUMS data files.

Note: Industries are sorted by size in Massachusetts in Q4 2010.

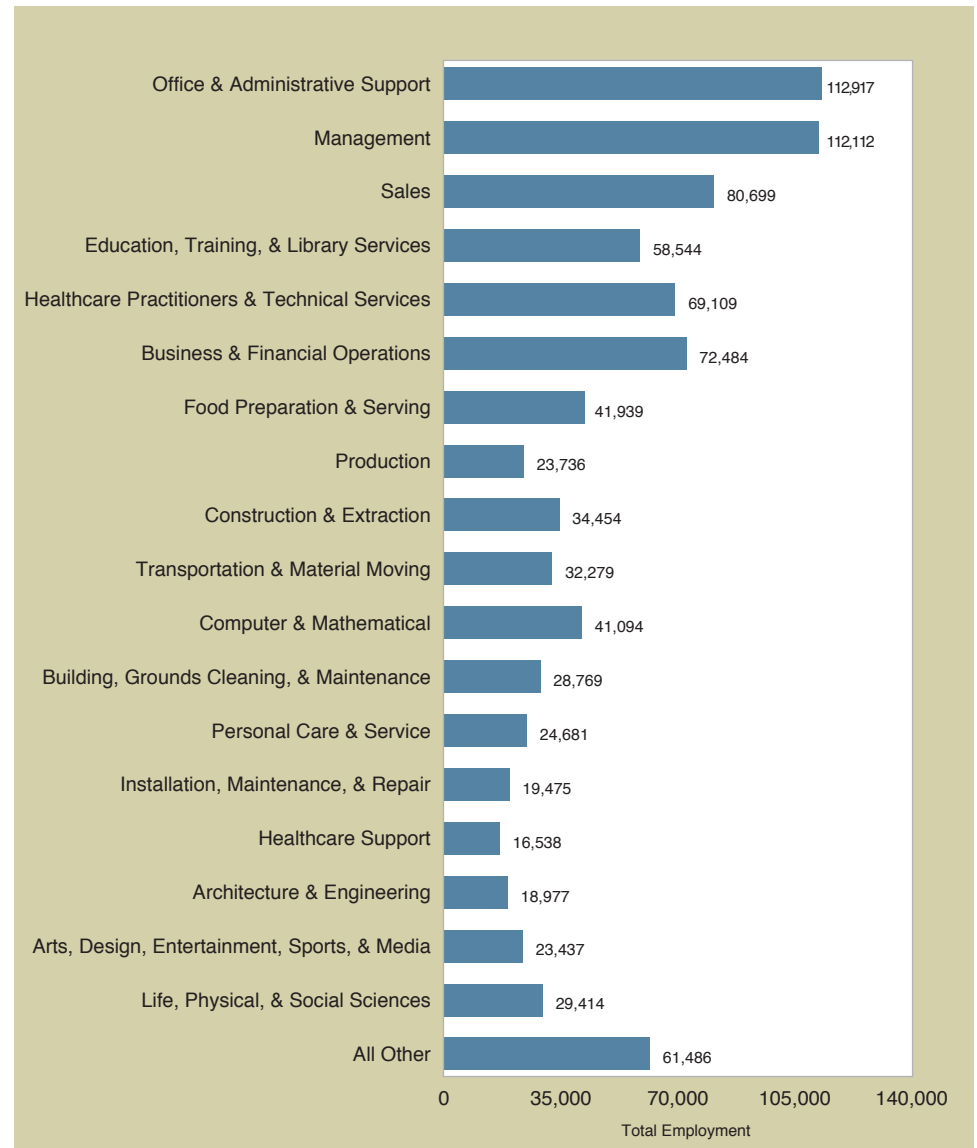


EMPLOYMENT BY MAJOR OCCUPATION: BOSTON/METRO NORTH (2008-2010)

Industries are where people work, and occupations are what people do. Occupational data help to capture what types of workers are in demand by businesses. In Boston/Metro North, Office & Administrative Support was the largest occupational group at the end of the last decade, accounting for 12.5 percent of the region's jobs. However, the number of jobs in this occupation in 2008-2010 was actually fewer than in 2000. Management occupations were a narrow second, with 12.4 percent of the region's jobs in 2008-2010, but they have increased over the course of the last decade. Occupations that are closely associated with growing industries have also increased, such as Healthcare Practitioners & Technical Services. These occupations have very high employment concentrations in the Health Care & Social Assistance industry. Similarly, some occupations that are strongly concentrated in declining industries have contracted, such as Production occupations in the Manufacturing sector.

Source: US Census Bureau 2008-2010 American Community Survey PUMS data files.

Note: "All Other" occupations are composed of Community & Social Services, Legal, Protective Services, Farming, Fishing, & Forestry, and Military Specific. Occupations are sorted largest to smallest by size in Massachusetts in 2008-2010. See the on-line Data Appendix for occupational employment trends.

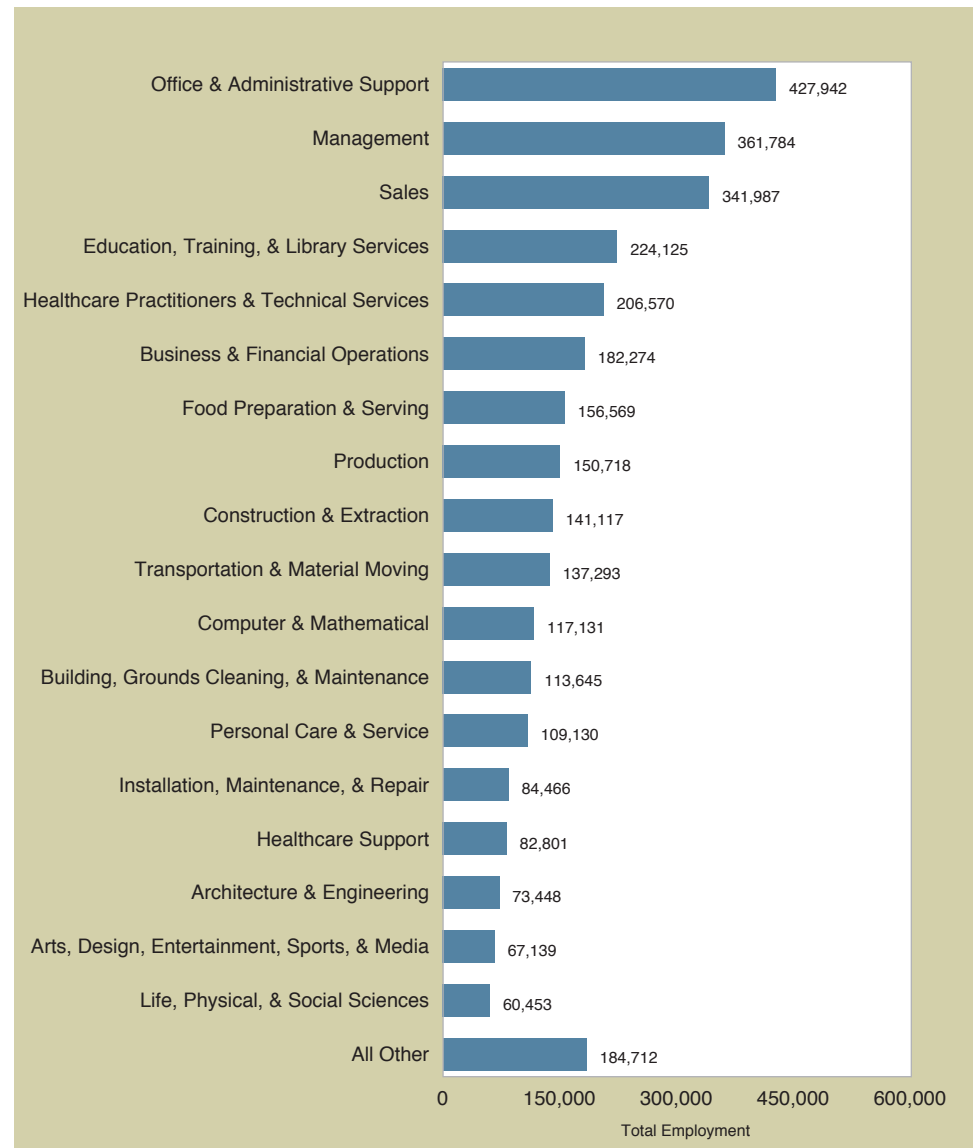


EMPLOYMENT BY MAJOR OCCUPATION: MASSACHUSETTS (2008-2010)

Massachusetts has a higher concentration of employees in Office & Administrative Support occupations (13.3 percent) and a lower share of Management occupations (11.2 percent) than does Boston/Metro North. The state also has lower shares of employees in occupations such as Healthcare Practitioners & Technical Services and Business & Financial Operations, and higher shares in Production and Sales occupations. Despite these variations in occupational composition, overall occupational growth was similar in Boston/Metro North and in Massachusetts over the past decade. The few exceptions were the stronger growth in Management occupations at the state level, stronger growth in Food Preparation & Serving and Education & Library Services in Boston/Metro North, and a slight decline in Construction & Extraction occupations in Massachusetts (while employment in this category grew slightly in Boston/Metro North).

Source: US Census Bureau 2008-2010 American Community Survey PUMS data files.

Note: "All Other" occupations are composed of Community & Social Services, Legal, Protective Services, Farming, Fishing, & Forestry, and Military Specific. Occupations are sorted largest to smallest by size in Massachusetts in 2008-2010. See the on-line Data Appendix for occupational employment trends.



DISTRIBUTION OF OCCUPATIONS ACROSS SUPERSECTORS IN GREATER BOSTON (2008-2010)

Because changes in industries and occupations impact each other, it is important to see how occupations are distributed across industries. Unfortunately, data limitations make this difficult to do for small geographic areas. However, due to the similarities and integration between the Metro South/West and Boston/Metro North labor markets, we can combine the regions to see where groups of employees are concentrated in what we call the Greater Boston region. Some occupations are largely concentrated in one or a few industries, while other occupations are spread across a number of industries. Consider that nearly 90 percent of Healthcare Practitioners & Technical occupations are located in the Education & Health Services supersector. In contrast, jobs in Manage-

ment occupations are distributed across many industries. Other occupations are split between a few major industries. For example, Business & Financial Operations occupations are strongly concentrated in the supersectors of Professional & Business Services (30.5 percent) and Financial Activities (32.2 percent).

Source: US Census Bureau 2008-2010 American Community Survey PUMS data files.

Note: Due to sample size limitations in the Census and American Community Survey, it is not possible to provide an occupational distribution across industries for small geographic areas. Therefore, Metro South/West was grouped with Boston/Metro North to increase observations to provide an occupation/industry distribution for Greater Boston. While there are differences between these two labor markets, industrial and occupational concentrations are similar enough to be representative of the distributions for both labor markets.

DISTRIBUTION OF OCCUPATIONS ACROSS SUPERSECTORS IN GREATER BOSTON (2008-2010)

	Education & Health Services	Trade, Transportation, & Utilities	Professional & Business Services	Manufacturing	Leisure & Hospitality	Financial Activities	Construction	Other	All Industries
Office & Administrative Support	22.9	22.9	15.1	6.3	3.5	14.3	2.0	12.8	100.0
Management	19.4	6.9	20.2	12.2	6.6	16.0	6.0	12.7	100.0
Sales	2.0	58.5	6.0	5.1	4.7	17.6	0.4	5.7	100.0
Education, Training, & Library Services	93.7	0.4	1.2	0.2	1.1	0.2	0.0	3.2	100.0
Healthcare Practitioners & Technical Services	89.5	4.1	3.3	0.6	0.1	0.5	0.0	2.0	100.0
Business & Financial Operations	8.9	8.6	30.5	7.1	1.2	32.2	1.2	10.1	100.0
Food Preparation & Serving	10.6	3.8	0.4	0.9	82.4	0.3	0.0	1.7	100.0
Production	3.4	12.1	5.5	61.6	2.5	1.6	2.1	11.2	100.0
Construction & Extraction	1.8	3.5	2.2	2.1	0.5	1.3	85.5	3.1	100.0
Transportation & Material Moving	4.0	66.2	5.7	6.4	4.8	2.1	3.6	7.2	100.0
Computer & Mathematical	11.9	5.3	48.0	11.6	0.4	12.5	0.2	10.1	100.0
Building, Grounds Cleaning, & Maintenance	19.7	4.3	44.3	1.9	10.3	3.7	0.7	15.2	100.0
Personal Care & Service	36.0	7.2	1.8	0.1	15.0	0.2	0.0	39.8	100.0
Installation, Maintenance, & Repair	5.6	25.7	7.3	10.7	1.9	6.0	8.9	34.0	100.0
Healthcare Support	88.0	1.4	2.1	0.0	0.9	0.3	0.0	7.3	100.0
Architecture & Engineering	2.8	4.9	42.3	37.0	0.7	0.5	4.0	7.8	100.0
Arts, Design, Entertainment, Sports, & Media	11.2	6.5	27.8	6.2	16.1	2.1	0.4	29.7	100.0
Life, Physical, & Social Sciences	41.0	0.8	36.7	14.0	1.1	1.5	0.1	4.8	100.0
All Other	21.5	1.7	31.5	1.2	2.0	2.8	0.1	39.3	100.0
All Occupations	26.1	15.0	17.0	8.1	7.1	9.3	5.1	12.3	100.0

DISTRIBUTION OF OCCUPATIONS WITHIN SUPERSECTORS IN GREATER BOSTON (2008-2010)

We can also consider what the distribution of occupations within a given supersector looks like. Certain occupations account for the majority of employment within a supersector. For example, nearly 50 percent of employment in Greater Boston's Education & Health Services supersector comes from two occupations: Education, Training, & Library Services and Healthcare Practitioners & Technical occupations. Further, the Construction supersector has two-thirds of its employment in Construction & Extraction occupations. While some occupations account for an overwhelming majority of the employment in a given supersector, others can be found in large numbers in all or nearly all the supersectors. In

fact, the two largest occupational groups—Office & Administrative Support and Management—together account for more than 20 percent of the employment in almost every supersector.

Source: US Census Bureau 2008-2010 American Community Survey PUMS data files.

Note: Due to sample size limitations in the Census and American Community Survey, it is not possible to provide an occupational distribution across industries for small geographic areas. Therefore, Metro South/West was grouped with Boston/Metro North to increase observations to provide an occupation/industry distribution for Greater Boston. While there are differences between these two labor markets, industrial and occupational concentrations are similar enough to be representative of the distributions for both labor markets.

DISTRIBUTION OF OCCUPATIONS WITHIN SUPERSECTORS IN GREATER BOSTON (2008-2010)

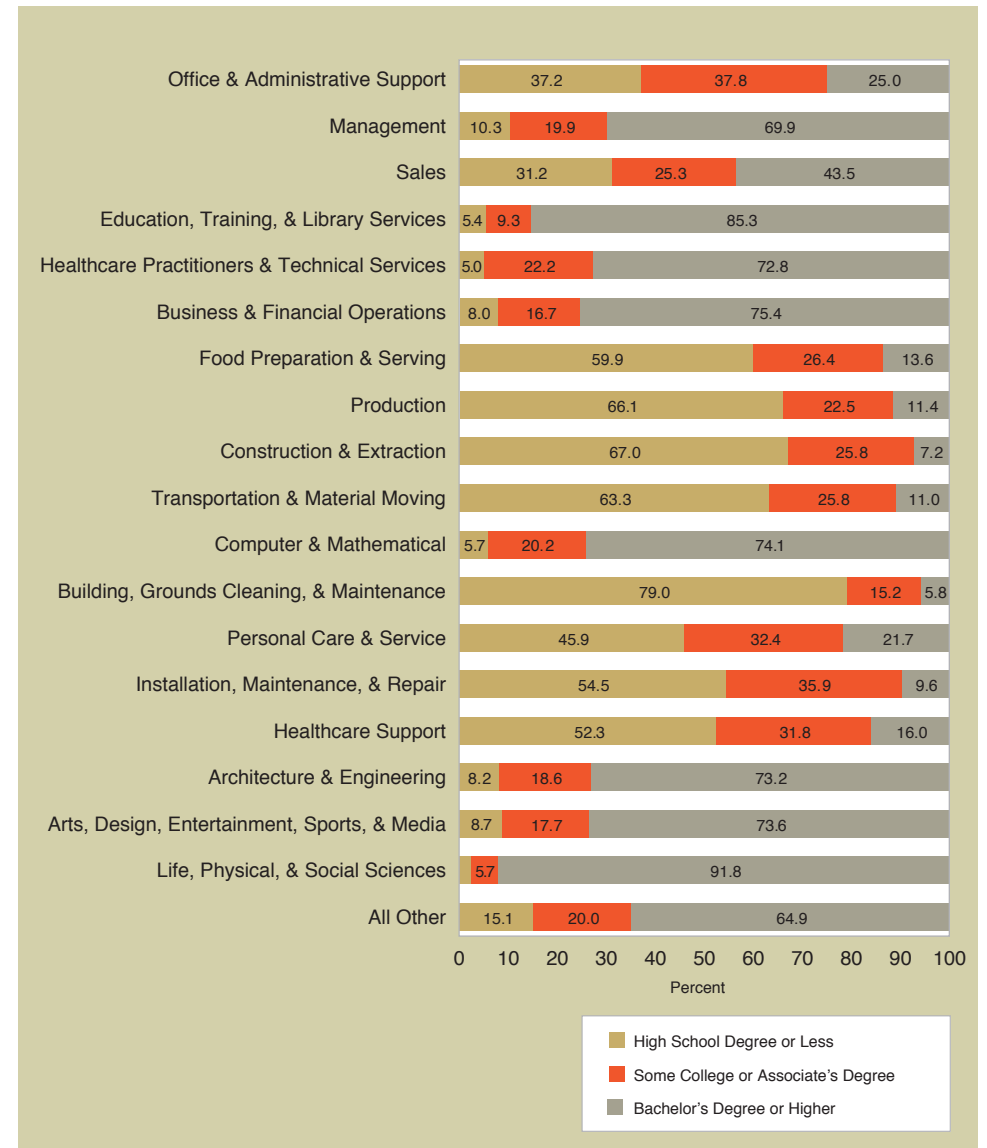
	Education & Health Services	Trade, Transportation, & Utilities	Professional & Business Services	Manufacturing	Leisure & Hospitality	Financial Activities	Construction	Other	All Industries
Office & Administrative Support	10.9	19.0	11.0	9.7	6.1	19.1	4.9	13.0	12.4
Management	9.5	5.9	15.1	19.2	11.8	21.9	15.0	13.2	12.8
Sales	0.7	38.2	3.4	6.2	6.4	18.5	0.9	4.5	9.8
Education, Training, & Library Services	24.7	0.2	0.5	0.2	1.1	0.1	0.0	1.8	6.9
Healthcare Practitioners & Technical Services	22.5	1.8	1.3	0.5	0.1	0.3	0.0	1.1	6.6
Business & Financial Operations	2.5	4.2	13.1	6.4	1.3	25.3	1.8	6.0	7.3
Food Preparation & Serving	1.7	1.1	0.1	0.5	49.0	0.1	0.0	0.6	4.2
Production	0.4	2.5	1.0	23.1	1.1	0.5	1.3	2.8	3.1
Construction & Extraction	0.3	0.9	0.5	1.0	0.3	0.6	66.7	1.0	4.0
Transportation & Material Moving	0.5	15.2	1.1	2.7	2.3	0.8	2.4	2.0	3.4
Computer & Mathematical	2.3	1.8	14.4	7.3	0.3	6.9	0.2	4.2	5.1
Building, Grounds Cleaning, & Maintenance	2.6	1.0	8.9	0.8	4.9	1.4	0.4	4.2	3.4
Personal Care & Service	4.1	1.4	0.3	0.0	6.3	0.1	0.0	9.7	3.0
Installation, Maintenance, & Repair	0.5	3.9	1.0	2.9	0.6	1.4	3.9	6.2	2.2
Healthcare Support	6.0	0.2	0.2	0.0	0.2	0.1	0.0	1.1	1.8
Architecture & Engineering	0.3	0.9	6.5	11.8	0.3	0.1	2.0	1.7	2.6
Arts, Design, Entertainment, Sports, & Media	1.1	1.1	4.3	2.0	5.9	0.6	0.2	6.3	2.6
Life, Physical, & Social Sciences	4.4	0.1	6.0	4.8	0.4	0.4	0.1	1.1	2.8
All Other	5.0	0.7	11.3	0.9	1.7	1.8	0.1	19.6	6.1
All Occupations	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

EDUCATIONAL ATTAINMENT OF EMPLOYEES BY MAJOR OCCUPATION IN BOSTON/METRO NORTH (2000)

By looking at the educational attainment of an occupational group, we better understand the education required in that field of employment. In 2000, over 37 percent of employees in Office & Administrative Support occupations in Boston/Metro North had Some College education or an Associate's Degree, and 25 percent of the workers had a Bachelor's Degree or higher. By comparison, nearly 70 percent of employees in Management had a Bachelor's Degree or higher, and only 20 percent had Some College education or an Associate's Degree as their highest educational level. Educational attainment gives some indication of skill requirements, but it is not a perfect proxy. Some occupations require significant training or other certifications. For example, in Installation, Maintenance & Repair occupations, over 50 percent of employees have a High School Degree or less, but these occupations often require apprenticeships, professional certifications, or significant on-the-job training.

Source: US Census Bureau 2000 Decennial Census PUMS data files.

Note: Occupations are sorted by size in Massachusetts in 2008-2010 American Community Survey PUMS data files.

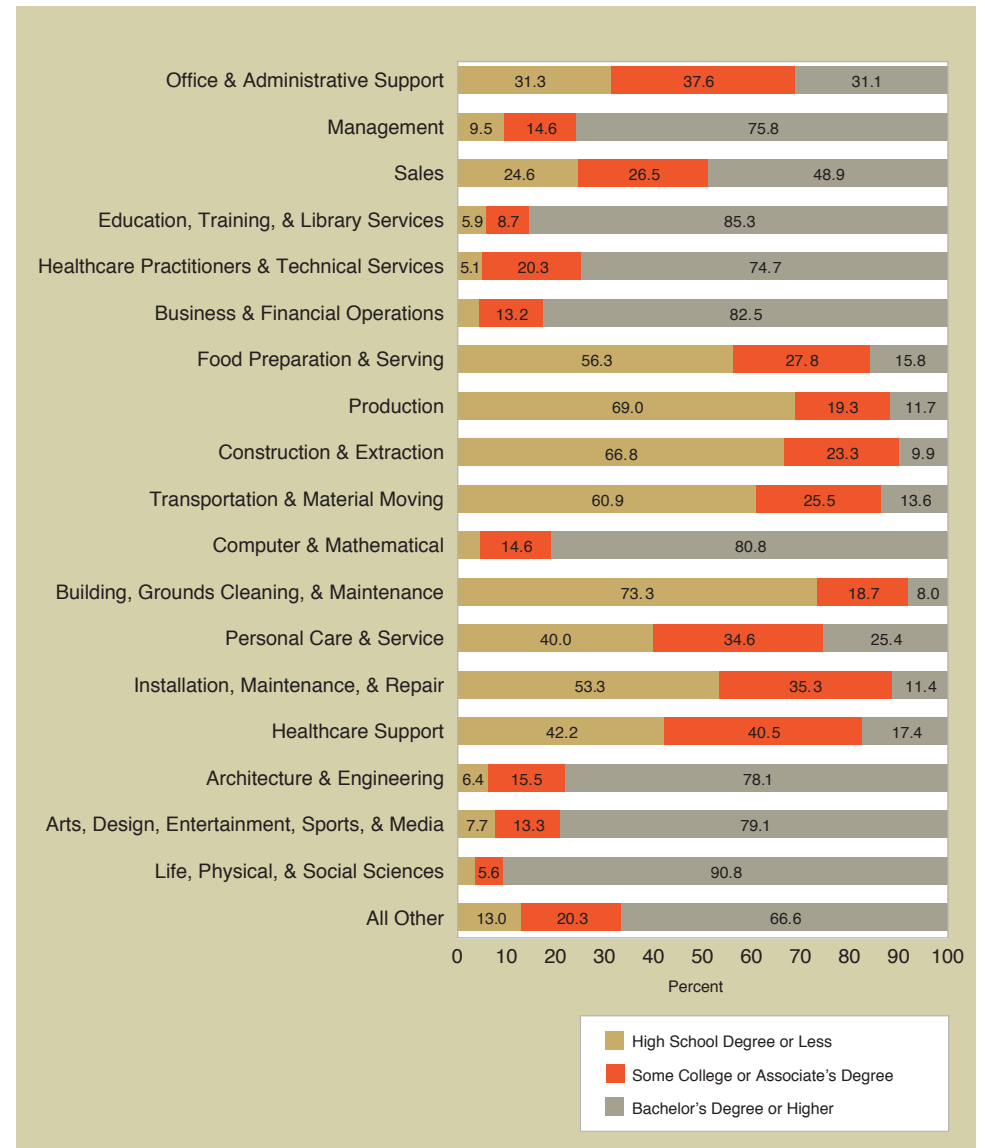


EDUCATIONAL ATTAINMENT OF EMPLOYEES BY MAJOR OCCUPATION IN BOSTON/METRO NORTH (2008-2010)

Over the past decade, the education levels of workers in nearly all occupations have increased in Boston/Metro North. For example, the share of employees working in management jobs who hold a Bachelor's Degree or higher grew by over 5 percentage points to reach 75.8 percent in 2008-2010. Even occupations with a mix of educational levels, such as Office & Administrative Support, saw declines in the share of employees with an Associate's Degree or less and growth in the share of employees with a Bachelor's Degree or higher. The educational attainment of employees even increased in occupations where workers traditionally have less education, such as Food Preparation & Serving. Nine occupations in the region had a majority of employees with a Bachelor's Degree or higher in 2008-2010; in eight of them, the figure was at least 75 percent. In comparison, only six occupations had a majority of employees with a High School Degree or less, with Building, Grounds Cleaning, & Maintenance having the highest share at 73.3 percent.

Source: US Census Bureau 2008-2010 American Community Survey PUMS data files.

Note: Occupations are sorted by size in Massachusetts in 2008-2010 American Community Survey PUMS data files.

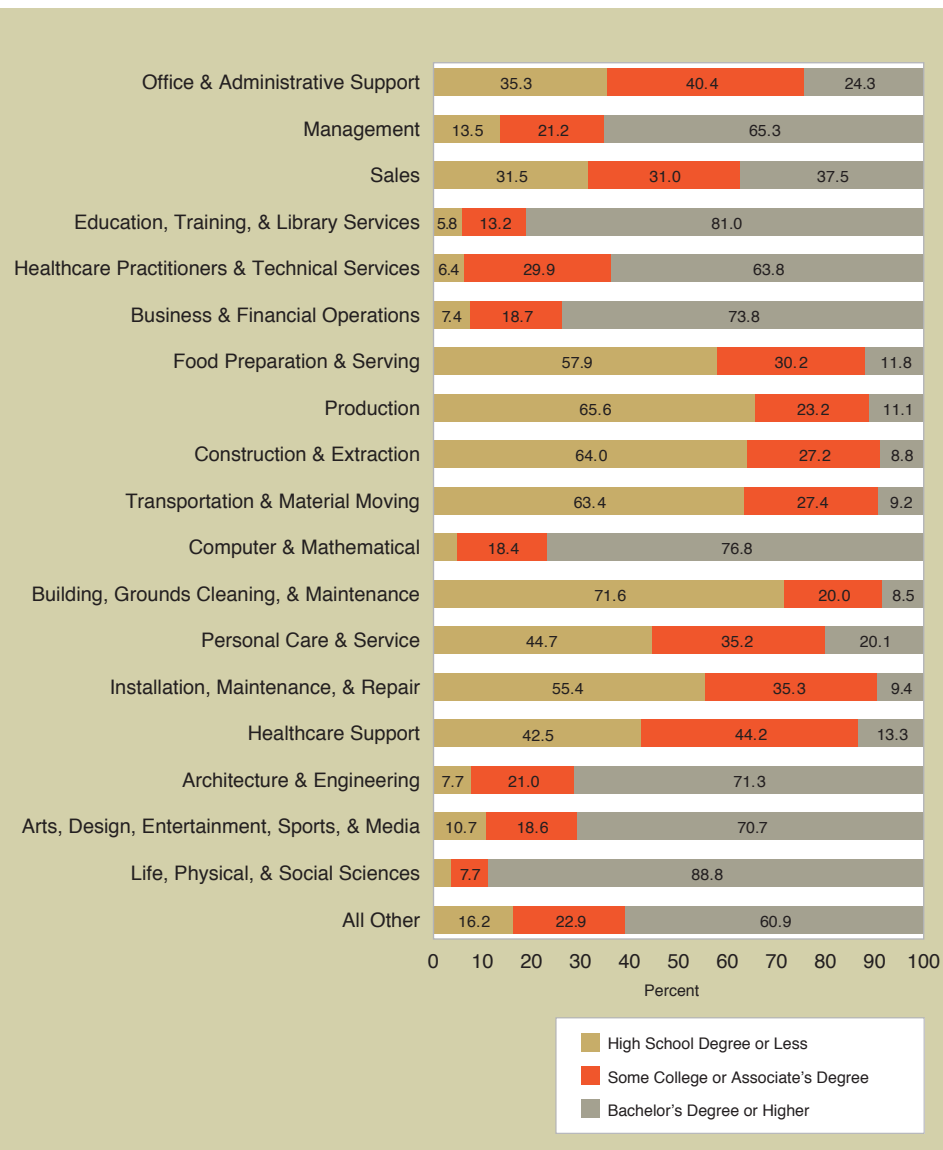


EDUCATIONAL ATTAINMENT OF EMPLOYEES BY MAJOR OCCUPATION IN MASSACHUSETTS (2008-2010)

The higher level of educational attainment of workers in different occupations in Boston/Metro North stands out in comparison with the educational levels in Massachusetts. In 2008-2010, all but one of the 19 major occupation groups in Massachusetts had a lower share of employees with a Bachelor's Degree or higher compared with those in Boston/Metro North. These included occupations that had a majority of employees with high levels of education (e.g., Management and Business), mixed educational attainment (e.g., Office & Administrative Support), and lower education levels (e.g., Production). At the same time, Massachusetts had a higher share of employees with Some College education or an Associate's Degree, when compared with Boston/Metro North, in 18 of the 19 occupations. However, the state still had a smaller share of employees that had obtained at least some post-secondary education (Some College education or higher) than Boston/Metro North in all but five occupations: Production, Construction & Extraction, Building, Grounds Cleaning, & Maintenance, Life, Physical, & Social Science, and Education, Training, & Library Services.

Source: US Census Bureau 2008-2010 American Community Survey PUMS data files.

Note: Occupations are sorted by size in Massachusetts in 2008-2010 American Community Survey PUMS data files.



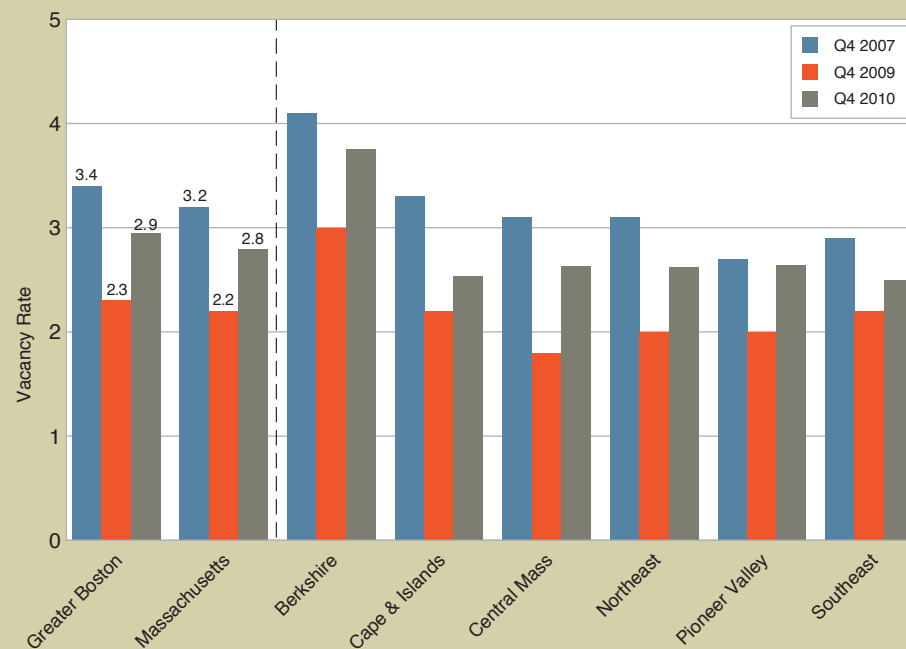
JOB VACANCIES IN THE GREAT RECESSION AND RECOVERY

Job vacancies exist even in a healthy labor market due to turnover and constant flux. As businesses expand, they need to hire individuals who meet specific skill requirements, and employees with skills that are in demand leave jobs for better positions. As the economy enters a downturn, job vacancies decline due to an overall decline in labor demand, an increase in the number of applicants available to fill positions, and lower turnover as employees stay longer in jobs. At the end of 2007, preceding the Great Recession, the job vacancy rate in Greater Boston was 3.4 percent. During the Great Recession, the vacancy rate declined by more than a full percentage point by the end of 2009, and as the economy has recovered, it has since risen to near 3 percent. As the largest labor market in the state, Greater Boston accounts for more than 45 percent of employment. However, nearly 55 percent of the job vacancies in Massachusetts are in Greater Boston.

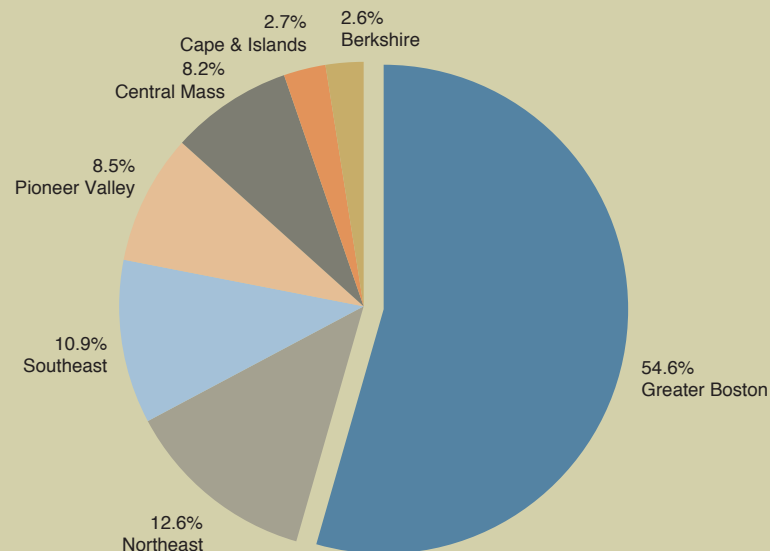
Source: Massachusetts Executive Office of Labor and Workforce Development Job Vacancy Survey.

Note: The Massachusetts Job Vacancy Survey is collected for seven regions in the state. The Greater Boston Region covers portions of Boston/Metro North, Metro South/West, Central Mass, and Southeast regions of the regional labor market profiles. The vacancy information for the Greater Boston region is used as an approximation of the vacancy trends experienced in the Metro South/West and Boston/Metro North regions. Vacancy rates are calculated by taking the total number of job vacancies and dividing by the total number employed in the region.

Job Vacancy Rates



Distribution of Job Vacancies Across Regional Labor Markets, Q4 2010



JOB VACANCIES AND VACANCY RATES BY MAJOR OCCUPATION IN GREATER BOSTON (Q4 2010)

At the end of 2010, nearly 70 percent of the vacancies in Greater Boston were concentrated in six occupations. Sales positions accounted for the largest share of vacancies (20.5 percent) and had the highest vacancy rate (5.5 percent) of all occupations in Greater Boston. Some of these positions, especially in retail, are seasonal in nature. Other occupations with a large number of vacancies and an above-average vacancy rate included Computer & Mathematical, Business & Financial Operations, and Management occupations. Some large occupational groups such as Office & Administrative Support accounted for a high number of vacancies (11.0 percent of the total for all occupations) but had a relatively low vacancy rate (1.7 percent). Not surprisingly, the number of vacancies and vacancy rates in occupations hit hard by the Great Recession, such as Production, were extremely low in the region.

Source: Massachusetts Executive Office of Labor and Workforce Development Job Vacancy Survey.

Note: Vacancy rates are calculated by taking the total number of job vacancies and dividing by the total number employed in the occupation.

	Number of Vacancies	Share of Vacancy (Percent)	Job Vacancy Rate (Percent)
Total	42,880	100.0	2.9
Sales	8,798	20.5	5.5
Office & Administrative Support	4,737	11.0	1.7
Food Preparation & Serving Related	3,916	9.1	3.2
Business & Financial Operations	4,079	9.5	3.6
Healthcare Practitioner & Technical	2,278	5.3	1.9
Computer & Mathematical	4,092	9.5	4.6
Management	3,562	8.3	3.3
Healthcare Support	1,500	3.5	3.6
Transportation & Material Moving	1,142	2.7	1.8
Education, Training & Library	1,638	3.8	1.6
Personal Care & Service	991	2.3	2.4
Production	429	1.0	0.8
Architecture & Engineering	1,061	2.5	2.4
Building, Grounds Cleaning, & Maintenance	438	1.0	0.8
Arts, Design, Entertainment, Sports & Media	1,060	2.5	3.2
Community & Social Services	650	1.5	2.1
Life, Physical, & Social Services	1,074	2.5	2.8
Installation, Maintenance & Repair	296	0.7	0.7
Protective Service	662	1.5	1.6
Construction & Extraction	265	0.6	0.6
Legal	187	0.4	1.0

JOB VACANCIES AND VACANCY RATES BY MAJOR OCCUPATION IN MASSACHUSETTS (Q4 2010)

As in Greater Boston, the largest number of job vacancies and highest vacancy rates in Massachusetts were in Sales occupations. However, in contrast to Greater Boston, vacancies were somewhat less concentrated in a few occupations. In Massachusetts, there were lower shares of vacancies in Business & Financial Operations and in Computer & Mathematical occupations, but larger shares in Transportation & Material Moving and Healthcare Support occupations, as compared with Greater Boston. While most occupations in Massachusetts have similar vacancy rates to Greater Boston, a few occupations had higher vacancy rates statewide (e.g., Production) while the vacancy rates in others, such as Management, were higher in Greater Boston.

Source: Massachusetts Executive Office of Labor and Workforce Development Job Vacancy Survey.

Note: Vacancy rates are calculated by taking the total number of job vacancies and dividing by the total number employed in the occupation.

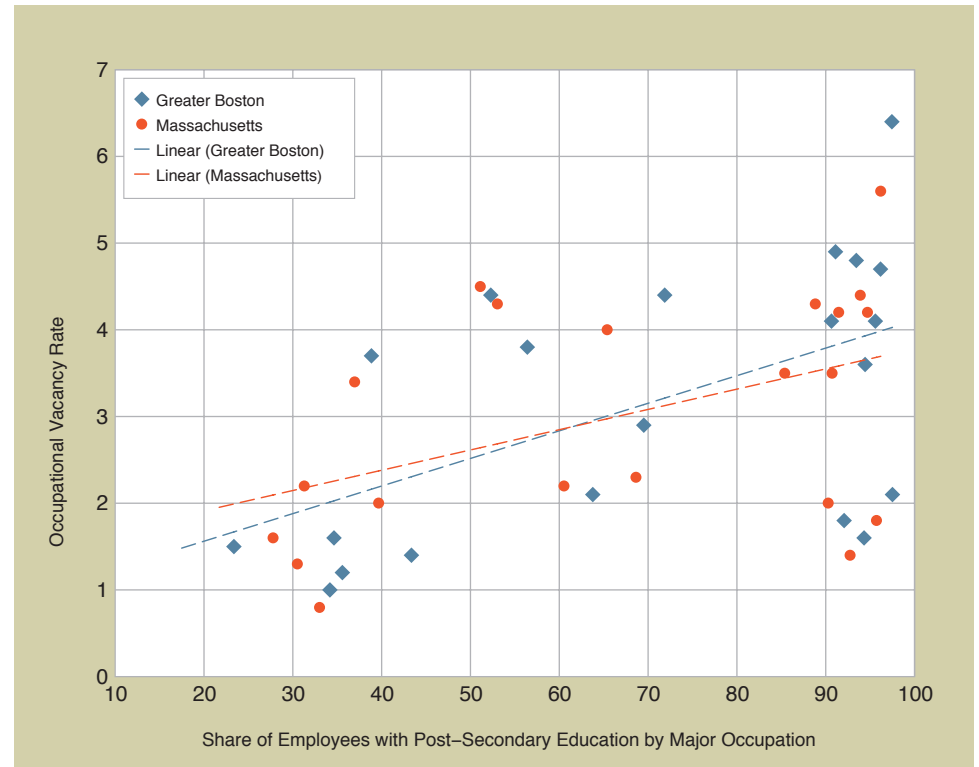
	Number of Vacancies	Share of Vacancy (Percent)	Job Vacancy Rate (Percent)
Total	78,589	100.0	2.8
Sales	16,584	21.1	5.2
Office & Administrative Support	8,650	11.0	1.6
Food Preparation & Serving Related	8,195	10.4	3.1
Business & Financial Operations	6,079	7.7	3.6
Healthcare Practitioner & Technical	5,249	6.7	2.3
Computer & Mathematical	4,950	6.3	4.0
Management	4,595	5.8	2.5
Healthcare Support	3,634	4.6	3.8
Transportation & Material Moving	3,214	4.1	2.1
Education, Training & Library	2,895	3.7	1.3
Personal Care & Service	2,055	2.6	2.4
Production	1,774	2.3	1.1
Architecture & Engineering	1,734	2.2	2.3
Building, Grounds Cleaning, & Maintenance	1,555	2.0	1.5
Arts, Design, Entertainment, Sports & Media	1,421	1.8	2.7
Community & Social Services	1,411	1.8	2.2
Life, Physical, & Social Services	1,398	1.8	2.6
Installation, Maintenance & Repair	1,160	1.5	1.2
Protective Service	1,124	1.4	1.5
Construction & Extraction	583	0.7	0.6
Legal	244	0.3	1.0

COMPARING VACANCY RATES AND EDUCATIONAL ATTAINMENT: PEAK LABOR MARKET

Before entering the Great Recession, there was a correlation between educational attainment and job vacancies in both Greater Boston and Massachusetts. That is, occupations with workers who have higher levels of educational attainment tended to have higher vacancy rates. This is not surprising, as occupations that have larger shares of employees with a High School Degree or less can sometimes be filled by a number of individuals with less training and at lower costs to employers. In contrast, jobs in highly specialized occupations that require specific educational requirements face competition both regionally and globally for the limited number of individuals who can fill such positions. Further, strong growth in industries that employ large shares of individuals with high levels of educational attainment, such as Health Care & Social Assistance and Professional & Technical Services, have led to increased vacancies and demand for employees who can fill such positions.

Source: Massachusetts Executive Office of Labor and Workforce Development Job Vacancy Survey and US Census Bureau 2005-2007 American Community Survey.

Note: Occupational vacancy rates for Greater Boston in Q4 2007 proxy vacancy rates in a peak labor market and educational attainment data by occupation in Greater Boston from the 2005-2007 American Community Survey proxy the share of employees with a post-secondary education in a peak labor market. Workers have attained a post-secondary education if they have attended Some College or obtained an Associate's Degree, Bachelor's Degree, or Master's Degree or higher.

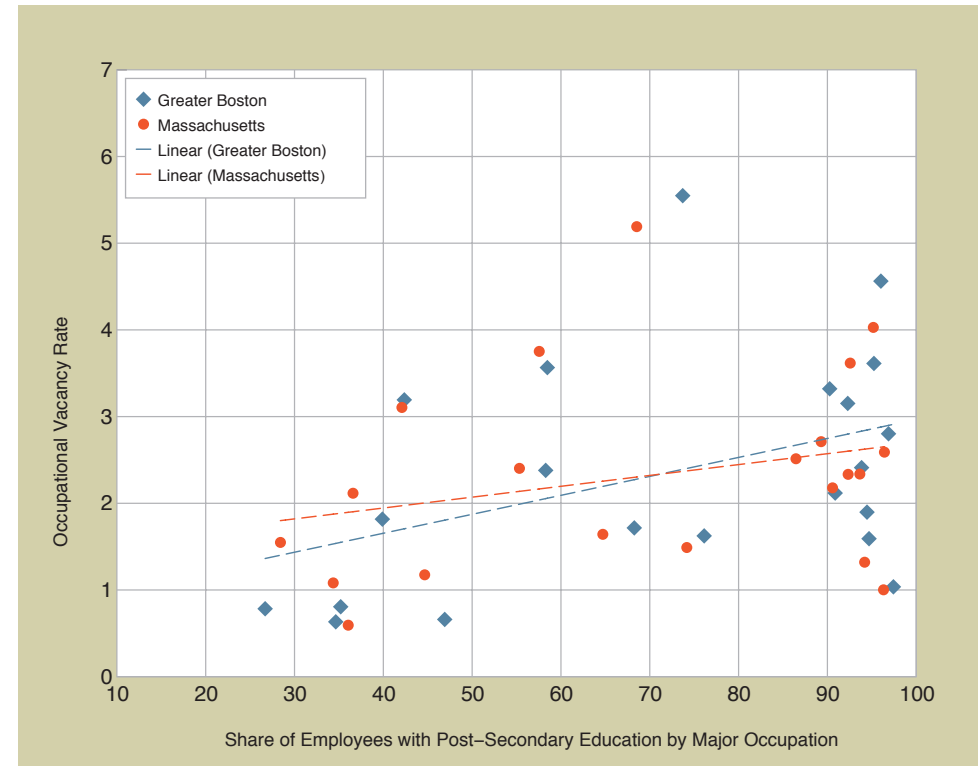


COMPARING VACANCY RATES AND EDUCATIONAL ATTAINMENT: RECOVERING LABOR MARKET

In both Greater Boston and Massachusetts, occupations with higher educational attainment have long had higher job vacancy rates. As the Great Recession hit, this relationship became weaker in both the regional and state labor markets than it had been at peak employment. However, in both peak and recovering labor markets, there has been a slightly stronger relationship between vacancies and educational attainment in Greater Boston than in Massachusetts. This slightly stronger relationship may be driven by three factors: (1) the higher educational attainment of employees in nearly all occupations in Greater Boston, (2) the higher regional vacancy rates in occupations with predominantly higher levels of education, such as Management, and lower vacancy rates in occupations that require less education, such as Production, and (3) the stronger labor market recovery in Greater Boston, driven largely by the growth of the Metro South/West region, resulting in more vacancies in occupations with higher educational attainment among employees.

Source: Massachusetts Executive Office of Labor and Workforce Development Job Vacancy Survey and US Census Bureau 2008-2010 American Community Survey.

Note: Occupational vacancy rates for Greater Boston in Q4 2010 proxy vacancy rates in a recovering labor market and educational attainment data by occupation in Greater Boston from the 2008-2010 American Community Survey proxy the share of employees with a post-secondary education in a recovering labor market.



GROWTH IN POTENTIAL SUPPLY OF EDUCATED WORKERS: FULL-TIME ENROLLMENT TRENDS IN THE PAST DECADE

Colleges and universities in Boston/Metro North account for nearly 40 percent of all students enrolled at four-year institutions in Massachusetts. Between 2000 and 2010, enrollments at Boston/Metro North institutions grew at an annual rate of 2.2 percent. While enrollments increased at similar rates for both public and private four-year institutions in the region, private institutions enrolled more than 89 percent of such students and are driving the region's growth in enrollment. In contrast, 2010 full-time enrollments in private two-year Boston/Metro North institutions were half the level of enrollment in 2000. Even with a 2.9 percent annual increase in enrollments at public two-year institutions over the same period, the region's total full-time enrollment at two-year institutions declined at an annual

rate of 1.0 percent. With a strong annual increase in enrollments at private less-than-two-year institutions (16.1 percent) and no comparable public institutions, the region more than quadrupled the number of full-time enrollees in less-than-two-year institutions over the course of the decade.

Source: National Center for Education Statistics, Integrated Post Secondary Education Data System.

Note: Enrollment data are from the fall semester of the academic year. For example, 2010 enrollment is from the fall of 2009 of the 2009-2010 academic year. Enrollment data are provided by the type of institution. Students can earn different types of degrees within an institution. For example, the enrollment at a community college would be categorized as being in a two-year institution for all students enrolled that year. However, students at community colleges complete different type of programs, such as Certificates and Associate's Degrees.

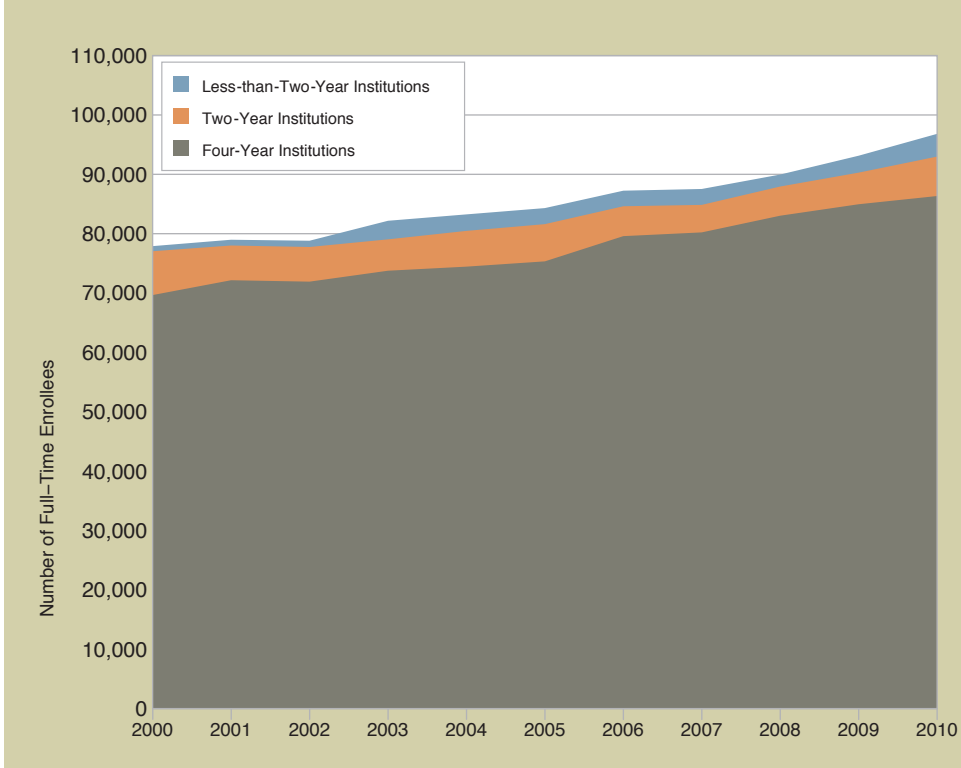
		Less-than-Two-Year Institutions			Two-Year Institutions			Four-Year Institutions		
		Boston/ Metro North	MA	US	Boston/ Metro North	MA	US	Boston/ Metro North	MA	US
Public	Enrollment 2000	0	382	43,504	3,604	31,002	2,008,336	7,595	58,489	3,733,341
	Enrollment 2010	0	316	42,117	4,810	44,278	2,922,622	9,274	73,940	4,904,272
	Absolute Change	0	-66	-1,387	1,206	13,276	914,286	1,679	15,451	1,170,931
	<i>Annual Growth Rate (Percent)</i>	<i>NA</i>	<i>-1.9</i>	<i>-0.3</i>	<i>2.9</i>	<i>3.6</i>	<i>3.8</i>	<i>2.0</i>	<i>2.4</i>	<i>2.8</i>
Private	Enrollment 2000	861	3,427	138,260	3,779	5,796	259,071	62,069	125,640	1,863,471
	Enrollment 2010	3,831	9,609	277,341	1,834	5,457	457,134	77,073	153,139	3,000,813
	Absolute Change	2,970	6,182	139,081	-1,945	-339	198,063	15,004	27,499	1,137,342
	<i>Annual Growth Rate (Percent)</i>	<i>16.1</i>	<i>10.9</i>	<i>7.2</i>	<i>-7.0</i>	<i>-0.6</i>	<i>5.8</i>	<i>2.2</i>	<i>2.0</i>	<i>4.9</i>
Total	Enrollment 2000	861	3,809	181,764	7,383	36,798	2,267,407	69,664	184,129	5,596,812
	Enrollment 2010	3,831	9,925	319,458	6,644	49,735	3,379,756	86,347	227,079	7,905,085
	Absolute Change	2,970	6,116	137,694	-739	12,937	1,112,349	16,683	42,950	2,308,273
	<i>Annual Growth Rate (Percent)</i>	<i>16.1</i>	<i>10.1</i>	<i>5.8</i>	<i>-1.0</i>	<i>3.1</i>	<i>4.1</i>	<i>2.2</i>	<i>2.1</i>	<i>3.5</i>

NUMBER OF FULL-TIME ENROLLEES BY TYPE OF DEGREE GRANTING INSTITUTION IN BOSTON/METRO NORTH (2000-2010)

Four-year institutions consistently accounted for about 89 percent of full-time post-secondary enrollees in the region throughout the decade. While enrollments at four-year institutions increased at a fairly consistent rate, it was a volatile decade for enrollments at the other post-secondary institutions in the region. For example, enrollments at two-year institutions declined at an annual rate of 6.4 percent between 2000 and 2007, before increasing at an annual rate of 12.7 percent between 2007 and 2010. Conversely, full-time enrollment at less-than-two-year institutions more than tripled from less than 900 students in 2000 to over 3,000 in 2003. Thereafter, enrollment at such institutions in the region declined through 2008 before sharply rising again in 2009 and 2010. As a result, enrollment at less-than-two-year institutions increased at an annual rate of 2.9 percent between 2003 and 2010.

Source: National Center for Education Statistics, Integrated Post Secondary Education Data System.

Note: In the above stacked-area chart, the different areas represent the number of enrollees by institution type. For example, enrollment in less-than-two-year Institutions was over 3,800 in 2010, compared to over 86,300 at four-year institutions that year. All three areas combined represent the total number of enrollees in post-secondary educational institutions in Boston/Metro North of which there were over 96,800 in 2010. The areas are stacked in order of size in 2010, with enrollment at four-year institutions, the largest enrollment group, on the bottom and enrollment at less-than-two-year institutions, the smallest group, at the top.



GROWTH IN POTENTIAL SUPPLY OF EDUCATED WORKERS: PART-TIME ENROLLMENT TRENDS IN THE PAST DECADE

While the majority of part-time students are in public two-year institutions in both Massachusetts and the United States, the majority of part-time student enrollments in Boston/Metro North are at four-year institutions. However, in 2010 there were fewer students enrolled part-time at four-year institutions in the region than in 2000; their enrollment declined at an annual rate of 2.4 percent over the past decade. In comparison, part-time enrollment at both less-than-two-year and two-year institutions in the region grew over the same time period. At two-year institutions, the increase in part-time students was the result of increasing enrollments at

public institutions, which was large enough to offset declining enrollment in private institutions. For less-than-two-year institutions, the growth came exclusively from private institutions (Boston/Metro North has no public less-than-two-year institutions).

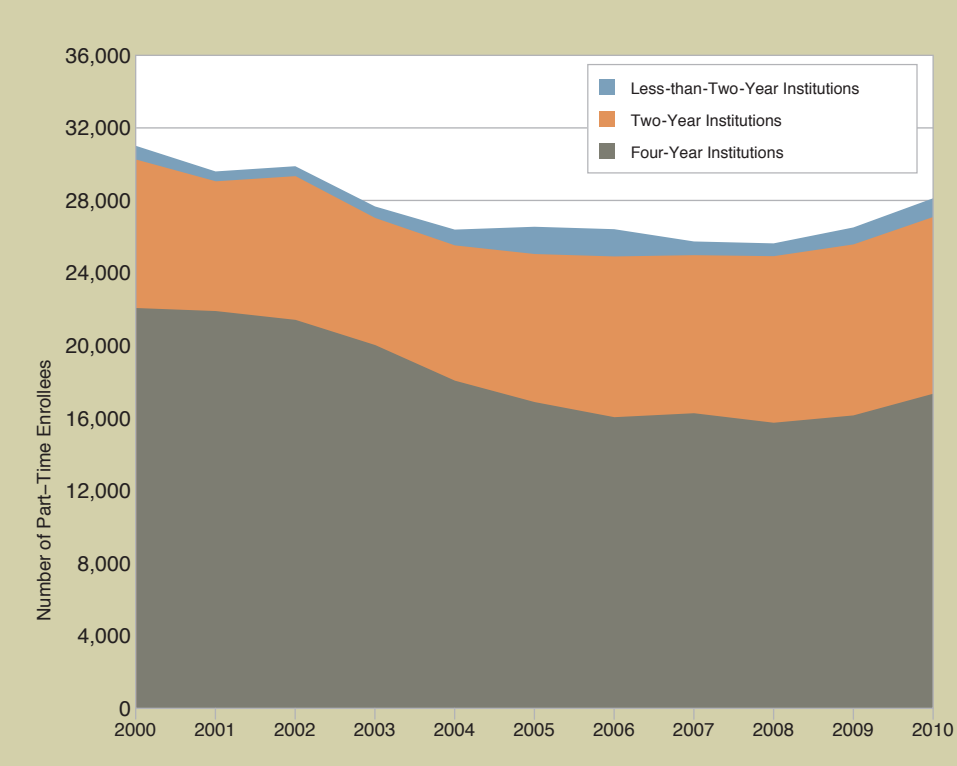
Source: National Center for Education Statistics, Integrated Post Secondary Education Data System.

		Less-than-Two-Year Institutions			Two-Year Institutions			Four-Year Institutions		
		Boston/ Metro North	MA	US	Boston/ Metro North	MA	US	Boston/ Metro North	MA	US
Public	Enrollment 2000	0	25	31,407	5,606	48,506	3,509,639	5,586	22,160	1,045,388
	Enrollment 2010	0	65	27,264	8,948	58,043	4,247,674	4,029	16,120	1,380,877
	Absolute Change	0	40	-4,143	3,342	9,537	738,035	-1,557	-6,040	335,489
	<i>Annual Growth Rate (Percent)</i>	<i>NA</i>	<i>10.0</i>	<i>-1.4</i>	<i>4.8</i>	<i>1.8</i>	<i>1.9</i>	<i>-3.2</i>	<i>-3.1</i>	<i>2.8</i>
Private	Enrollment 2000	757	1,522	31,827	2,579	3,536	66,870	16,485	27,425	476,690
	Enrollment 2010	1,033	2,633	44,382	795	1,554	61,006	13,315	19,155	775,694
	Absolute Change	276	1,111	12,555	-1,784	-1,982	-5,864	-3,170	-8,270	299,004
	<i>Annual Growth Rate (Percent)</i>	<i>3.2</i>	<i>5.6</i>	<i>3.4</i>	<i>-11.1</i>	<i>-7.9</i>	<i>-0.9</i>	<i>-2.1</i>	<i>-3.5</i>	<i>5.0</i>
Total	Enrollment 2000	757	1,547	63,234	8,185	52,042	3,576,509	22,071	49,585	1,522,078
	Enrollment 2010	1,033	2,698	71,646	9,743	59,597	4,308,680	17,344	35,275	2,156,571
	Absolute Change	276	1,151	8,412	1,558	7,555	732,171	-4,727	-14,310	634,493
	<i>Annual Growth Rate (Percent)</i>	<i>3.2</i>	<i>5.7</i>	<i>1.3</i>	<i>1.8</i>	<i>1.4</i>	<i>1.9</i>	<i>-2.4</i>	<i>-3.3</i>	<i>3.5</i>

NUMBER OF PART-TIME ENROLLEES BY TYPE OF DEGREE GRANTING INSTITUTION IN BOSTON/METRO NORTH (2000-2010)

While the majority of part-time students in post-secondary educational institutions in Boston/Metro North were at four-year institutions in 2010, the share declined over the last decade, from 71.1 percent in 2000 to 61.7 percent in 2010. In comparison, during this same time period, the share of part-time students at two-year institutions increased from 26.3 percent to 34.6 percent. However, part-time enrollment at two-year institutions in the region actually declined at an annual rate of 5.0 percent between 2000 and 2003, before growing at an annual rate of 4.8 percent between 2003 and 2010. Part-time enrollment at less-than-two-year institutions doubled between 2000 and 2005, reaching a peak of over 1,500 students in the middle of the decade. Subsequent declines in part-time enrollment at less-than-two-year institutions dropped enrollment to 2000 levels, before rising more than 1,000 enrollees at the end of the decade.

Source: National Center for Education Statistics, Integrated Post Secondary Education Data System.

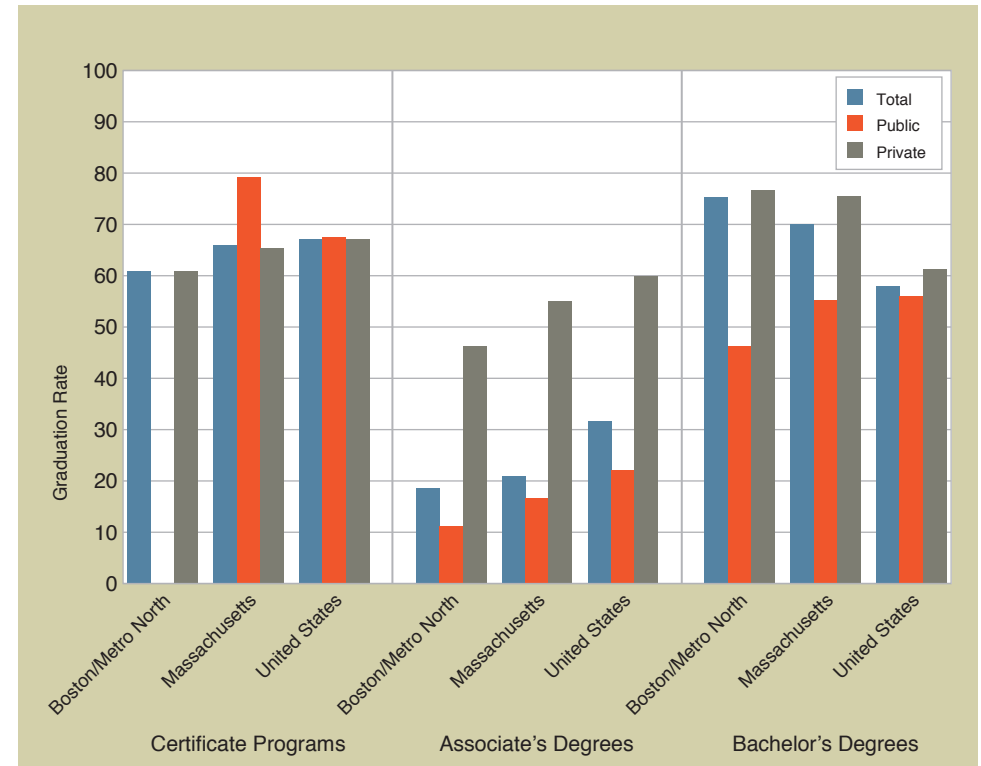


GRADUATION RATES BY TYPE OF DEGREE (2009)

Enrollment indicates a potential supply of workers with a post-secondary degree, but the actual supply depends on how many students complete their program and earn a degree or receive a Certificate. In 2009, about 75 percent of first-time full-time students in Boston/Metro North institutions earned a Bachelor's Degree within six years. This rate is higher than the statewide rate and substantially higher than the national rate, reflecting the high graduation rates of private institutions in the region. However, the six-year Bachelor's Degree graduation rate at public institutions (46.3 percent) is much lower than that in Massachusetts and in the United States. The three-year Associate's Degree graduation rate (18.6 percent) for public and private institutions is lower than the state's and nation's graduation rates. The Certificate program graduation rate is also lower in Boston/Metro North (60.8 percent) than it is statewide and nationally.

Source: National Center for Education Statistics, Integrated Post Secondary Education Data System.

Note: Graduation rates are the number of first-time full-time students who completed their degree/program within 150 percent of the time expected to complete the degree/program as a share of the number of first-time full-time students that started the degree/program (e.g., a Bachelor's Degree is considered to have been earned on time if it is completed within six years or less, or 150 percent of four years). Comparisons of graduation rates to enrollments or degree completions can be misleading as the first-time full-time students are a small subset of the student population, particularly for certain degrees/programs. Graduation rates do not include part-time students and are excluded when there is an inadequate sample size of first-time full-time entrants for the degree/program to calculate a graduation rate. See the Methodological Appendix for further details.



CROSSING THE FINISH LINE: TRENDS IN DEGREE COMPLETIONS OVER THE PAST DECADE (2000-2010)

Total annual completions show the number of students who have earned a degree or certificate in a given year. From 2000 to 2010, the total number of students earning Certificates, Associate's Degrees, or Bachelor's Degrees at Boston/Metro North institutions increased, both in private and public institutions. While the annual growth rate in Associate's and Bachelor's Degree completions were strongest at public institutions, growth in Certificates was strongest at private institutions. Despite growth in all categories and institution types, the region lagged behind both Massachusetts and the United States in the growth of total degree comple-

tions for almost every type of degree. Bachelor's Degree completions were the exception, with an annual growth rate (2.3 percent) slightly exceeding the Massachusetts growth rate (2.1 percent) but trailing that of the United States (2.9 percent).

Source: National Center for Education Statistics, Integrated Post Secondary Education Data System.

Note: Degree completions are for those students who completed degrees at institutions within the defined geography. The students may not actually live in the region. Completion totals are based on degrees completed in an academic year. For example, 2010 completions represent degrees completed in the 2009-2010 academic year.

		Certificates			Associate's Degrees			Bachelor's Degrees		
		Boston/ Metro North	MA	US	Boston/ Metro North	MA	US	Boston/ Metro North	MA	US
Public	Completions 2000	270	2,273	298,282	568	7,487	471,339	1,559	12,718	811,076
	Completions 2010	312	3,618	460,865	1,002	9,831	670,395	2,123	16,251	1,049,058
	Absolute Change	42	1,345	162,583	434	2,344	199,056	564	3,533	237,982
	<i>Annual Growth Rate (Percent)</i>	<i>1.5</i>	<i>4.8</i>	<i>4.4</i>	<i>5.8</i>	<i>2.8</i>	<i>3.6</i>	<i>3.1</i>	<i>2.5</i>	<i>2.6</i>
Private	Completions 2000	2,241	5,221	258,503	1,852	3,812	135,604	14,414	29,658	431,412
	Completions 2010	3,170	8,195	430,685	1,974	4,366	249,258	17,970	35,972	603,141
	Absolute Change	929	2,974	172,182	122	554	113,654	3,556	6,314	171,729
	<i>Annual Growth Rate (Percent)</i>	<i>3.5</i>	<i>4.6</i>	<i>5.2</i>	<i>0.6</i>	<i>1.4</i>	<i>6.3</i>	<i>2.2</i>	<i>1.9</i>	<i>3.4</i>
Total	Completions 2000	2,511	7,494	556,785	2,420	11,299	606,943	15,973	42,376	1,242,488
	Completions 2010	3,482	11,813	891,550	2,976	14,197	919,653	20,093	52,223	1,652,199
	Absolute Change	971	4,319	334,765	556	2,898	312,710	4,120	9,847	409,711
	<i>Annual Growth Rate (Percent)</i>	<i>3.3</i>	<i>4.7</i>	<i>4.8</i>	<i>2.1</i>	<i>2.3</i>	<i>4.2</i>	<i>2.3</i>	<i>2.1</i>	<i>2.9</i>

EDUCATIONAL INSTITUTIONS AWARDING THE MOST DEGREES IN BOSTON/METRO NORTH (2010)

In Boston/Metro North, private institutions account for most of the degrees. The three institutions that granted the most Certificates in 2010 were private and accounted for nearly a third of all Certificates in the region. In total, the 25 private institutions that granted Certificates in 2010 accounted for 90 percent of the degrees in the region. Roxbury and Bunker Hill community colleges, the region's two largest public community colleges, accounted for a third of all Associate's Degrees completed in 2010. However, 22 of the region's 25 institutions that grant Associate's Degrees were private institutions and accounted for 62.7 percent of degrees. The three largest institutions granting Bachelor's Degrees in Boston/Metro North were private and accounted for 46.6 percent of degrees in 2010. With only one large public institution granting Bachelor's Degrees in the region (University of Massachusetts–Boston), private institutions accounted for 90 percent of all Bachelor's Degrees.

Source: National Center for Education Statistics, Integrated Post Secondary Education Data System.

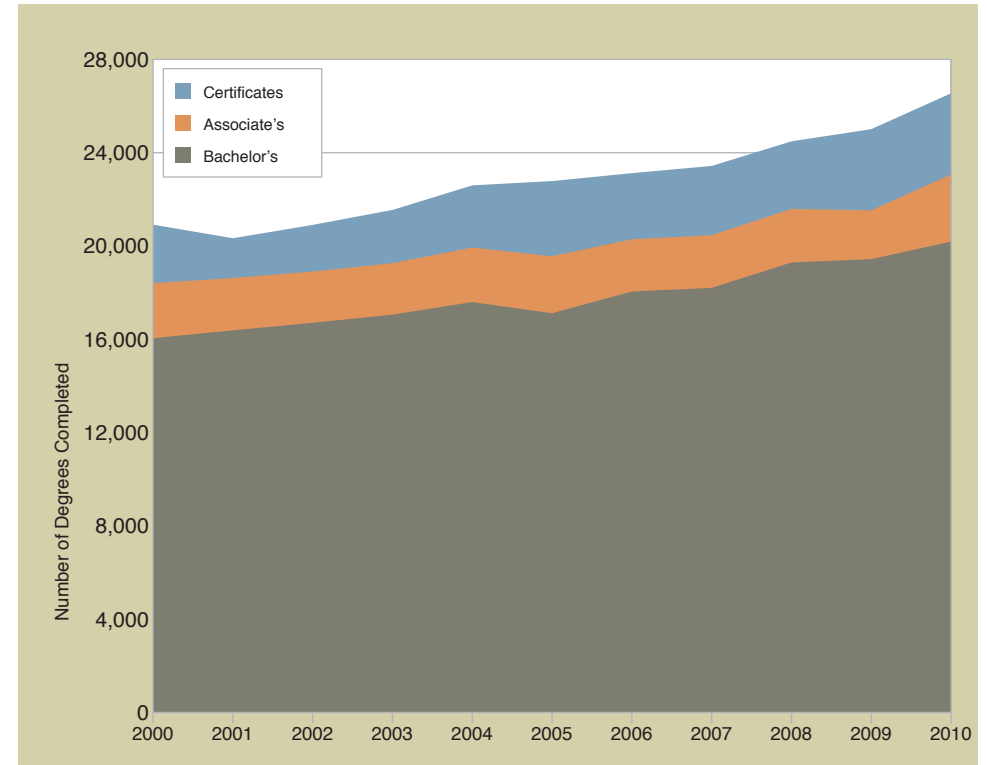
Note: See the on-line Data Appendix for a full list of degree completions by institution.

	Institution	Type	Public or Private	Degrees Awarded	Share of Degree Type Completed in Region
Certificates	Everest Institute-Brighton	< Two Years	Private	387	11.1
	The Salter School	< Two Years	Private	385	11.1
	RETS Electronic School	Two Year	Private	367	10.5
Associate's	Bunker Hill Community College	Two Year	Public	770	25.9
	Lincoln Technical Institute Somerville	< Two Years	Private	426	14.3
	Roxbury Community College	Two Year	Public	232	7.8
Bachelor's	Boston University	Four Year	Private	4,159	20.7
	Northeastern University	Four Year	Private	3,405	16.9
	Harvard University	Four Year	Private	1,801	9.0

NUMBER OF DEGREE COMPLETIONS BY DEGREE TYPE: BOSTON/METRO NORTH (2000-2010)

Adding up Bachelor's Degrees, Associate's Degrees, and Certificates, the total number of people awarded postsecondary degrees by institutions in Boston/Metro North grew at an annual rate of 2.4 percent between 2000 and 2010. This growth was similar to that in Massachusetts (2.5 percent) but trailed the growth in the United States (3.7 percent). The low growth in the supply of new graduates suggests that Boston/Metro North may need to rely on commuters from other regional labor markets and states to meet the needs of its employers who seek to create new high- and middle-skill jobs as the economy continues to recover. While the region may be able to attract highly mobile populations, such as recent college graduates with Bachelor's Degrees, the region may face challenges filling positions requiring Associate's Degrees or Certificates, which are often filled by less-mobile populations.

Source: National Center for Education Statistics, Integrated Post Secondary Education Data System.



CERTIFICATES AWARDED BY MAJOR FIELD OF STUDY (2000-2010)

In Boston/Metro North, more than 86 percent of the Certificates were in two fields of study: Health Sciences and Services. These two fields of study also account for almost all of the increase in the number of Certificates. The number of Health Science Certificates nearly tripled, growing from 26.4 percent of the region's Certificates in 2000 to 52.6 percent in 2010. This increase exceeded the growth statewide, where the number of Health Science certificates more than doubled to account for almost 50 percent of Certificates in 2010. There were only 258 more completions of Services Certificates in 2010 than in 2000, but the field accounted for 34 percent of the region's Certificates in 2010. Services Certificates

include a large range of areas of specialization, including Cosmetology, Law Enforcement, Construction Trades, Sports & Fitness Studies, Library Sciences, Social Work, Appliance Installation & Repair, Welding Technology, and Construction Equipment Operations. The largest decline came in Engineering & Computer Sciences, which fell from 502 certificates in 2000 to only 80 in 2010.

Source: National Center for Education Statistics, Integrated Post Secondary Education Data System.

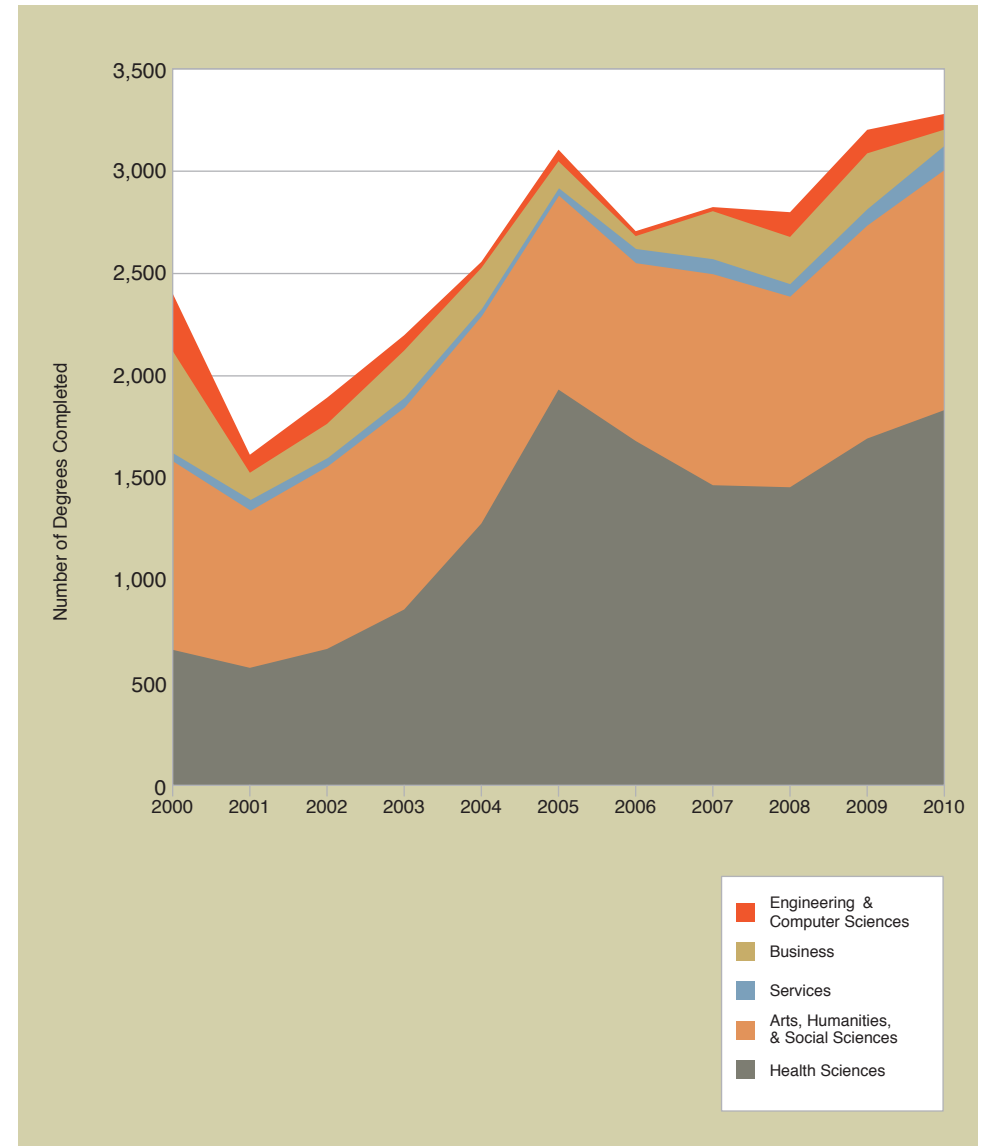
Note: For major fields of study by degree type for the United States, see the on-line Data Appendix.

Major Field of Study	Boston/Metro North				Massachusetts			
	2000		2010		2000		2010	
	Certificates Completed	Major's Share of Total (Percent)	Certificates Completed	Major's Share of Total (Percent)	Certificates Completed	Major's Share of Total (Percent)	Certificates Completed	Major's Share of Total (Percent)
Health Sciences	662	26.4	1,833	52.6	2,080	27.8	5,638	47.7
Services	914	36.4	1,172	33.7	2,479	33.1	3,984	33.7
Engineering & Computer Sciences	502	20.0	80	2.3	1,013	13.5	752	6.4
Business	281	11.2	77	2.2	709	9.5	513	4.3
Arts, Humanities, & Social Sciences	42	1.7	118	3.4	271	3.6	424	3.6
Legal	24	1.0	76	2.2	132	1.8	189	1.6
Education	37	1.5	26	0.7	129	1.7	87	0.7
Science & Mathematics	2	0.1	11	0.3	248	3.3	80	0.7
Other	47	1.9	89	2.6	81	1.1	146	1.2
Total	2,511	100.0	3,482	100.0	7,494	100.0	11,813	100.0

ANNUAL COMPLETIONS BY TOP FIVE CERTIFICATE MAJORS IN BOSTON/METRO NORTH (2000-2010)

The number and type of Certificates awarded by Boston/Metro North institutions fluctuated considerably from year to year. For example, from 2000 to 2010, Health Science Certificates in Boston/Metro North grew at an annual rate of 10.7 percent. However, most of that growth occurred in the first half of the decade, with such certificates growing at an annual rate of 23.9 percent between 2000 and 2005. Thereafter, Health Science Certificate completions remained at about 1,500 a year but never returned to the peak 2005 level. The large increase in Health Science Certificates may reflect an increasing demand for employees with such education and training from growing industries such as Health Care & Social Assistance. In comparison, the number of Engineering & Computer Science Certificates has been volatile and ranged from a high of 502 in 2000 to a low of 63 in 2006. The decline in Certificate completions in this field may indicate a shift toward demand for higher post-secondary educational attainment (such as Associate's and Bachelor's Degrees) rather than a lack of demand in industries and occupations that use such skills.

Source: National Center for Education Statistics, Integrated Post Secondary Education Data System.



ASSOCIATE'S DEGREES AWARDED BY MAJOR FIELD OF STUDY (2000-2010)

The growth in Associate's Degrees in Boston/Metro North came largely from Health Sciences and Services. Between 2000 and 2010, the number of Services degrees completed quadrupled in the region, leapfrogging it to the third largest major. This was similar to the experience of students earning Services degrees statewide, where the number of degree completions nearly doubled. However, the region lagged the state in the overall growth of Associate's Degrees, mostly due to the region's two largest fields of study at the beginning of the decade (Business and Engineering

& Computer Sciences) seeing fewer completions in 2010 than in 2000. Health Sciences was the most common major for Associate's Degrees completed in Boston/Metro North in 2010. In contrast, throughout the decade the largest major among Associate's Degrees statewide continued to be Arts, Humanities, & Social Sciences.

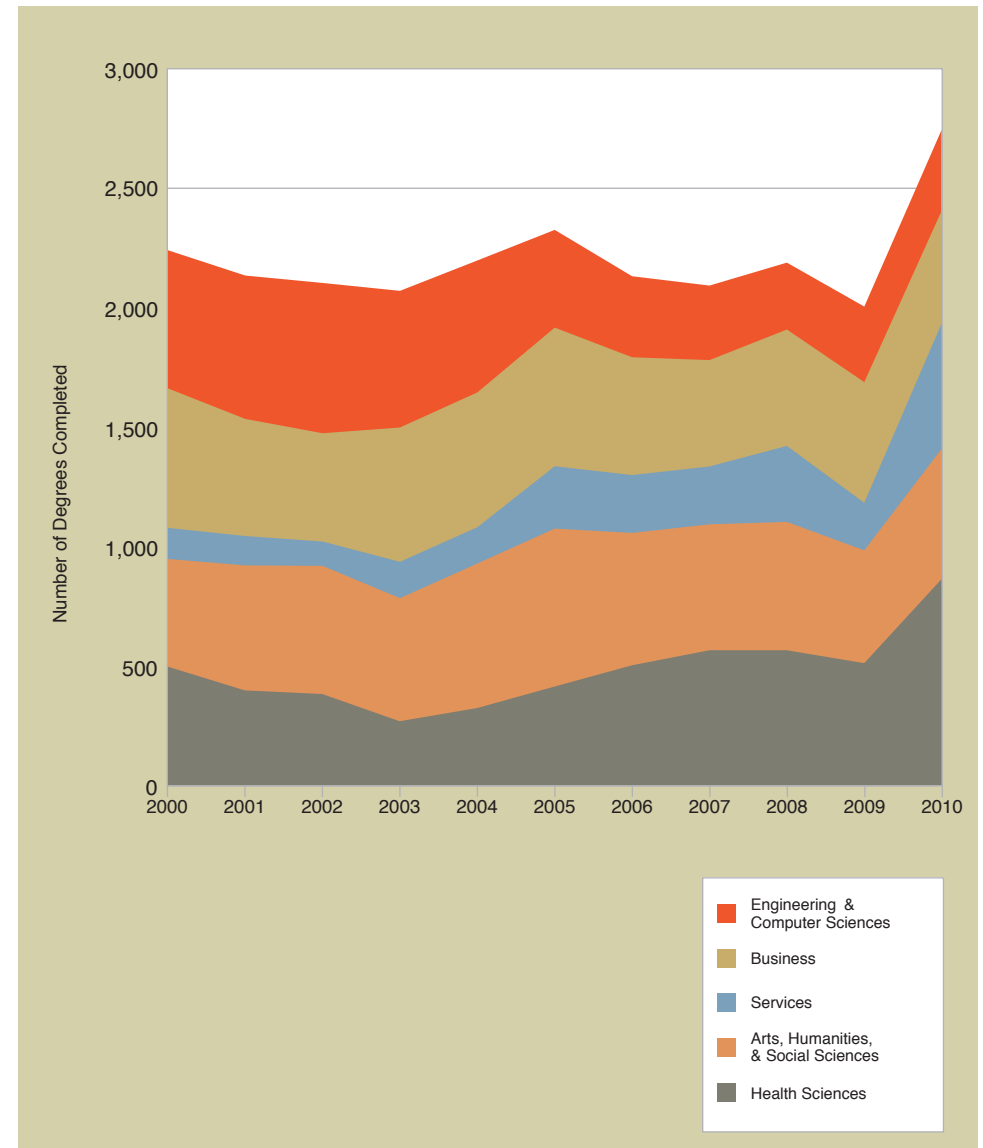
Source: National Center for Education Statistics, Integrated Post Secondary Education Data System.

Major Field of Study	Boston/Metro North				Massachusetts			
	2000		2010		2000		2010	
	Associate's Completed	Major's Share of Total (Percent)	Associate's Completed	Major's Share of Total (Percent)	Associate's Completed	Major's Share of Total (Percent)	Associate's Completed	Major's Share of Total (Percent)
Arts, Humanities, & Social Sciences	450	18.6	545	18.3	3,130	27.7	3,833	27.0
Health Sciences	499	20.6	865	29.1	2,302	20.4	3,559	25.1
Services	130	5.4	525	17.6	1,216	10.8	2,389	16.8
Business	584	24.1	471	15.8	2,198	19.5	2,250	15.8
Engineering & Computer Sciences	578	23.9	339	11.4	1,561	13.8	1,162	8.2
Education	94	3.9	130	4.4	293	2.6	442	3.1
Science & Mathematics	12	0.5	64	2.2	231	2.0	260	1.8
Legal	66	2.7	27	0.9	189	1.7	117	0.8
Other	7	0.3	10	0.3	179	1.6	185	1.3
Total	2,420	100.0	2,976	100.0	11,299	100.0	14,197	100.0

ANNUAL COMPLETIONS BY TOP FIVE ASSOCIATE'S DEGREE MAJORS IN BOSTON/METRO NORTH (2000-2010)

In large part, the growth in the number of Associate's Degrees granted in Boston/Metro North over the decade is due to the spike in Health Sciences and Services degrees granted in 2010. In fact, the total number of Associate's Degrees granted in the region declined at an annual rate of 1.2 percent from 2000 to 2009. Health Sciences Associate's Degree completions began the decade at 499 degrees and declined to reach a low of 270 in 2003. Thereafter, the number of Health Sciences Degrees increased to 567 in 2007 and 2008. After a slight drop in 2009, the number of Health Science Associate Degrees increased by over 300 to reach 865, the highest level of the decade. In comparison, Services degree completions ranged from 150 to 300 a year throughout the decade before jumping to their peak of 525 in 2010.

Source: National Center for Education Statistics, Integrated Post Secondary Education Data System.



BACHELOR'S DEGREES AWARDED BY MAJOR FIELD OF STUDY (2000-2010)

In 2010, almost two-thirds of the Bachelor's Degrees produced by institutions in Boston/Metro North were in two fields of study: Arts, Humanities, & Social Sciences (49.1 percent) and Business (16.2 percent). Arts, Humanities, & Social Sciences majors in the region grew at an annual rate of 2.8 percent (2,300 degrees) between 2000 and 2010, accounting for over 50 percent of the 4,500 increase in Bachelor's Degree completions statewide. Boston/Metro North also has a high concentration of degrees in the Science, Engineering, Technology, and Mathematics (STEM) fields (Engineering & Computer Sciences and Science & Mathe-

matics majors), though the share of STEM degrees is smaller than at the start of the decade due to almost no change in the number of completions of Engineering & Computer Science degrees in the past decade. Education and Legal were the only Bachelor's Degree majors in Boston/Metro North to decline in the past decade, while Education was the only field to see fewer completions statewide.

Source: National Center for Education Statistics, Integrated Post Secondary Education Data System.

Major Field of Study	Boston/Metro North				Massachusetts			
	2000		2010		2000		2010	
	Bachelor's Completed	Majors Share of Total (Percent)	Bachelor's Completed	Majors Share of Total (Percent)	Bachelor's Completed	Majors Share of Total (Percent)	Bachelor's Completed	Majors Share of Total (Percent)
Arts, Humanities, & Social Sciences	7,482	46.8	9,859	49.1	18,891	44.6	23,405	44.8
Business	2,359	14.8	3,246	16.2	7,596	17.9	9,990	19.1
Science & Mathematics	1,435	9.0	1,871	9.3	3,818	9.0	5,054	9.7
Engineering & Computer Sciences	2,000	12.5	2,003	10.0	3,726	8.8	3,997	7.7
Health Sciences	1,395	8.7	1,549	7.7	2,938	6.9	3,589	6.9
Services	438	2.7	574	2.9	2,495	5.9	3,170	6.1
Education	524	3.3	299	1.5	1,922	4.5	1,362	2.6
Legal	42	0.3	28	0.1	176	0.4	190	0.4
Other	291	1.8	664	3.3	797	1.9	1,466	2.8
Total	15,973	100.0	20,093	100.0	42,376	100.0	52,223	100.0

ANNUAL COMPLETIONS BY TOP FIVE BACHELOR'S DEGREE MAJORS IN BOSTON/METRO NORTH (2000-2010)

From 2000 to 2004, growth in Bachelor's Degree completions came mostly from the Arts, Humanities, & Social Sciences and Business fields. Both fields of study grew at a rate exceeding 5 percent during this time period, while fields such as Health Sciences and Science & Mathematics contracted. From 2004 to 2010, degree completions in the Arts, Humanities, & Social Sciences and Business majors slowed to grow at an annual rate of about 1 percent, while the previously contracting fields of Health Science (12.8 percent) and Science & Mathematics (5.8 percent) increased in popularity. The numbers of Engineering & Computer Science degrees, on the other hand, were more consistent, and hovered around 2,000 throughout the decade.

Source: National Center for Education Statistics, Integrated Post Secondary Education Data System.

