



# Labor Market Trends in the Central Mass Region

By Robert Clifford

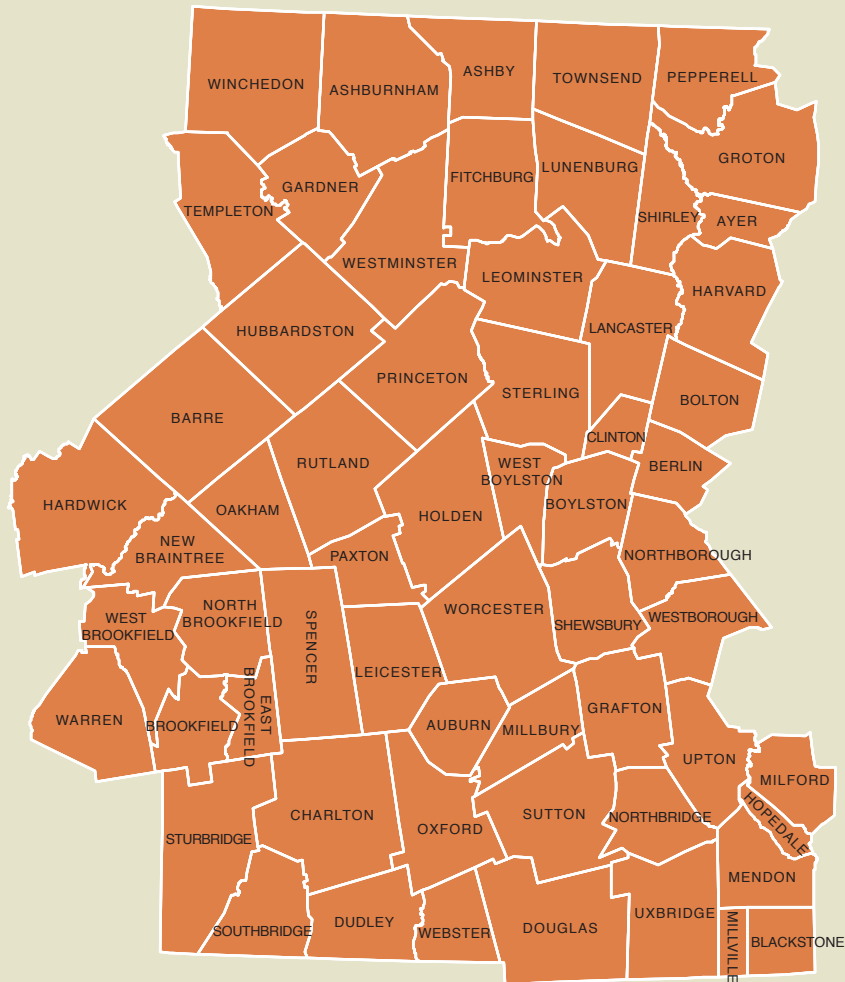
Policy Analyst  
New England Public Policy Center  
Federal Reserve Bank of Boston

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and New England Public Policy Center of the  
Federal Reserve Bank of Boston

# Motivation

- Promote better public policy by conducting objective research and analysis of regional economic/policy issues.
- Understand the long-term labor force challenges facing the regional labor markets in Massachusetts.
- Provide detailed data on labor supply and demand trends to support workforce development policy discussions at a local level.
- Build off the labor market work of Harrington and Fogg (2008) and the demographics research of Sasser Modestino (2009, 2010).

# The Central Mass Region



# Summary

- Central Mass was one of the hardest hit regional labor markets in the Great Recession, with job losses and unemployment exceeding statewide rates.
- Central Mass has the fastest growing population among all regional labor markets and has seen significant gains in educational attainment in the past decade.
- A large share of the region's labor force still has only a High School Degree or less. These individuals face significant barriers to full employment.
- Community Colleges play a sizeable role in the supply of Certificates and Associate's Degrees in Central Mass.

# Outline

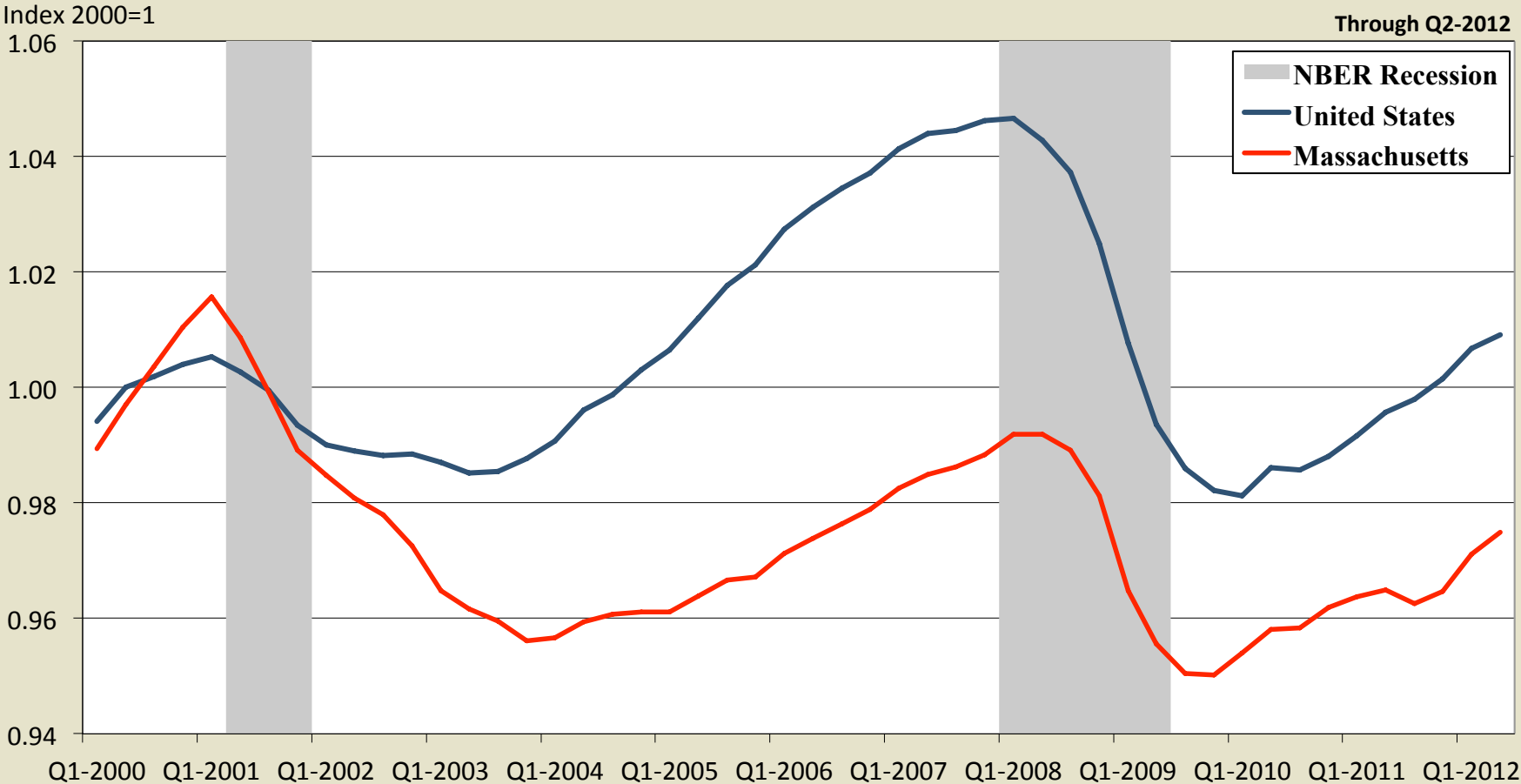
- Labor Market Performance
- Labor Supply
- Labor Demand
- The Pipeline: Educational Supply of Post-Secondary Degrees

# Labor Market Performance

- National and State Employment Trends
- Performance of Regional Labor Markets
- Employment Trends by Industry in Central Mass and Massachusetts

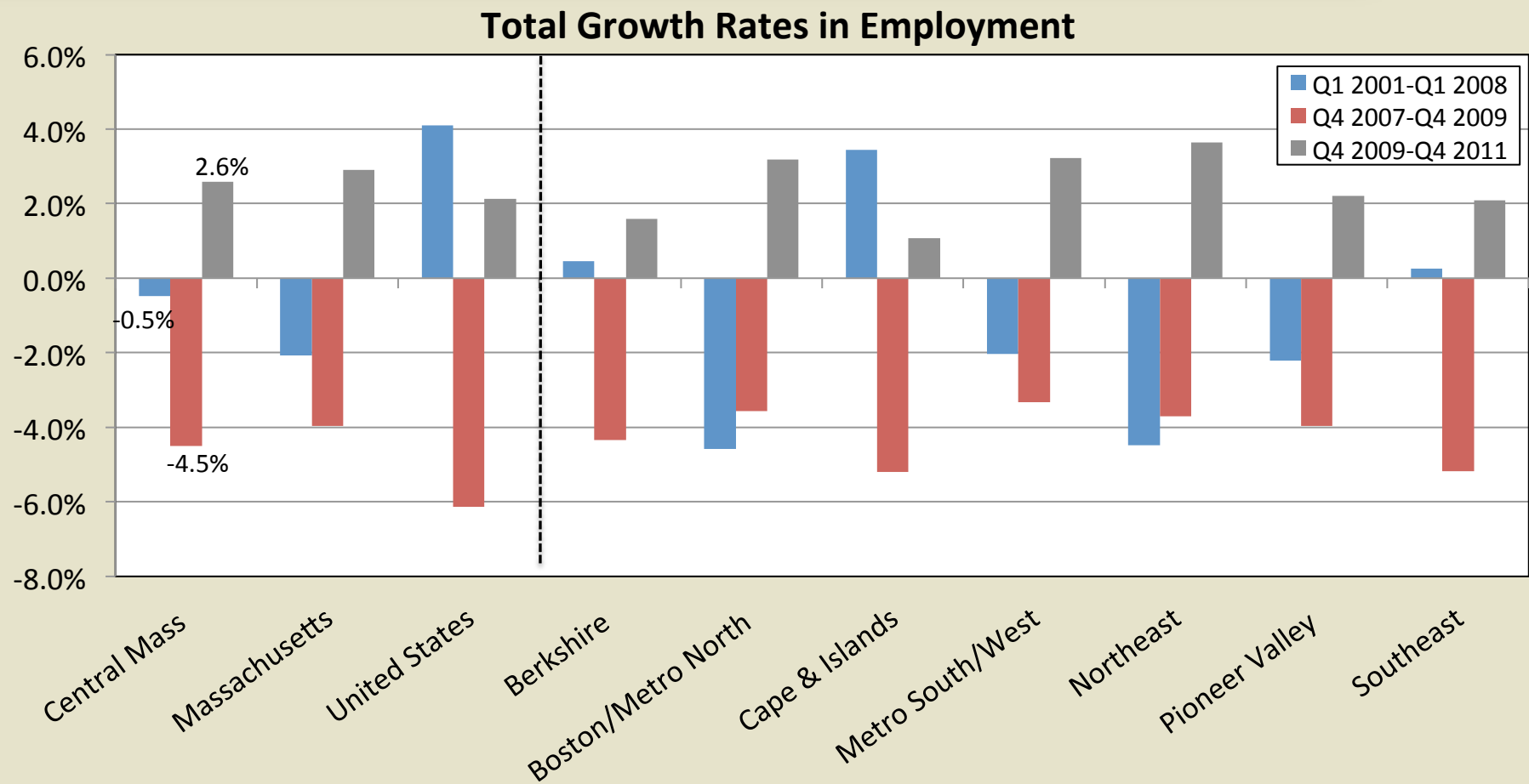
Massachusetts is still far below its peak employment levels of the early 2000's.

Total Non-Agricultural Employment, Q1-2000 to Q2-2012



Sources: U.S. Bureau of Labor Statistics, Current Employment Statistics.

Central Mass was hit harder than Massachusetts in the Great Recession and has recovered at a slightly slower pace.

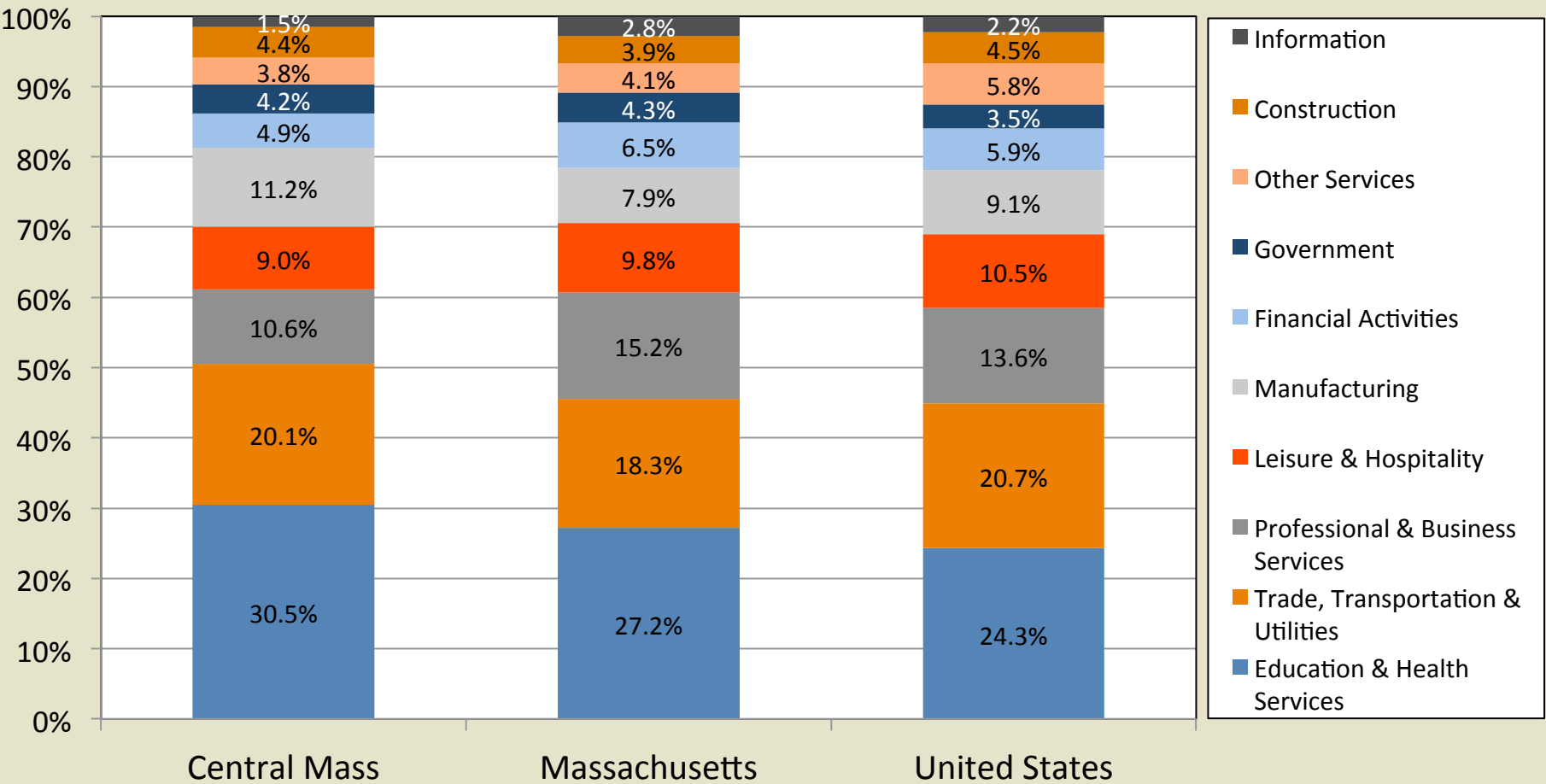


Sources: Massachusetts Executive Office of Labor and Workforce Development (EOLWD), ES-202 and U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW).



Central Mass has notably larger shares of employment than the state in Education & Health Services and Manufacturing.

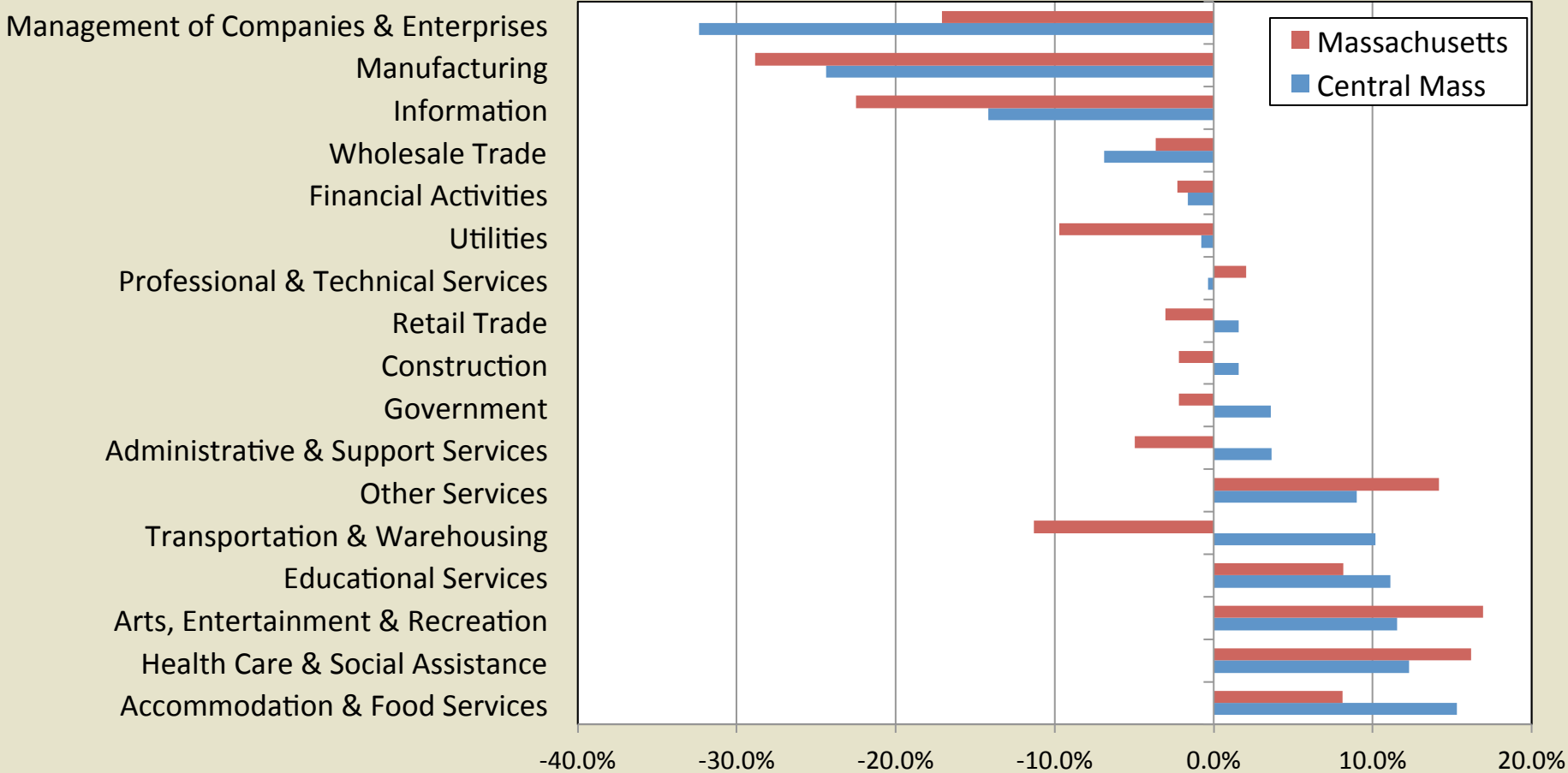
Employment Distribution by Supersector, Q4 2011



Sources: Massachusetts EOLWD, ES-202 and U.S. Bureau of Labor Statistics, QCEW.

Job losses between recessions were concentrated in fewer industries in Central Mass relative to Massachusetts.

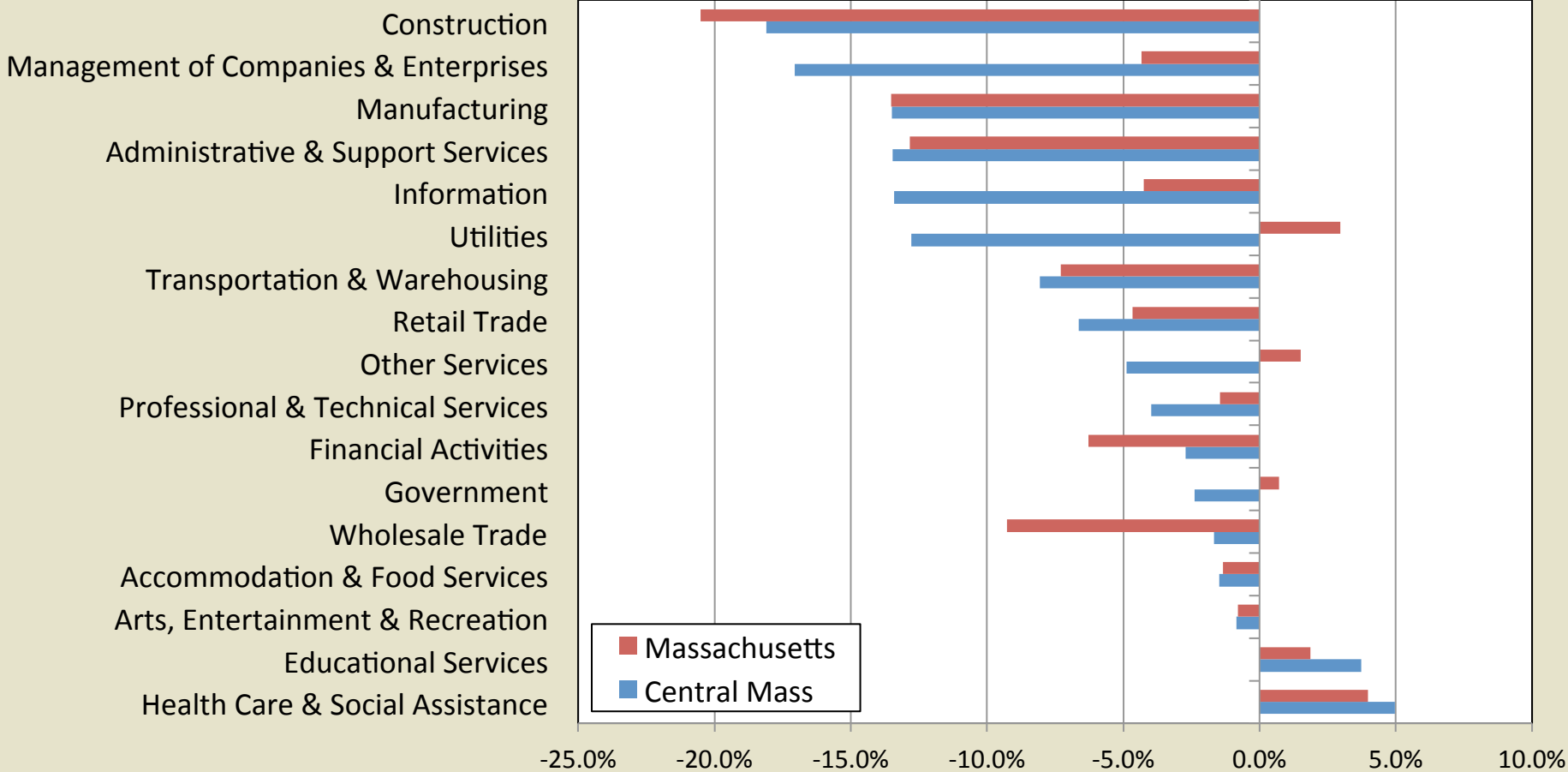
Employment Changes, Q1-2001 to Q1-2008



Sources: Massachusetts EOLWD, ES-202.

In the Great Recession job losses were larger and spread across more industries in Central Mass than statewide.

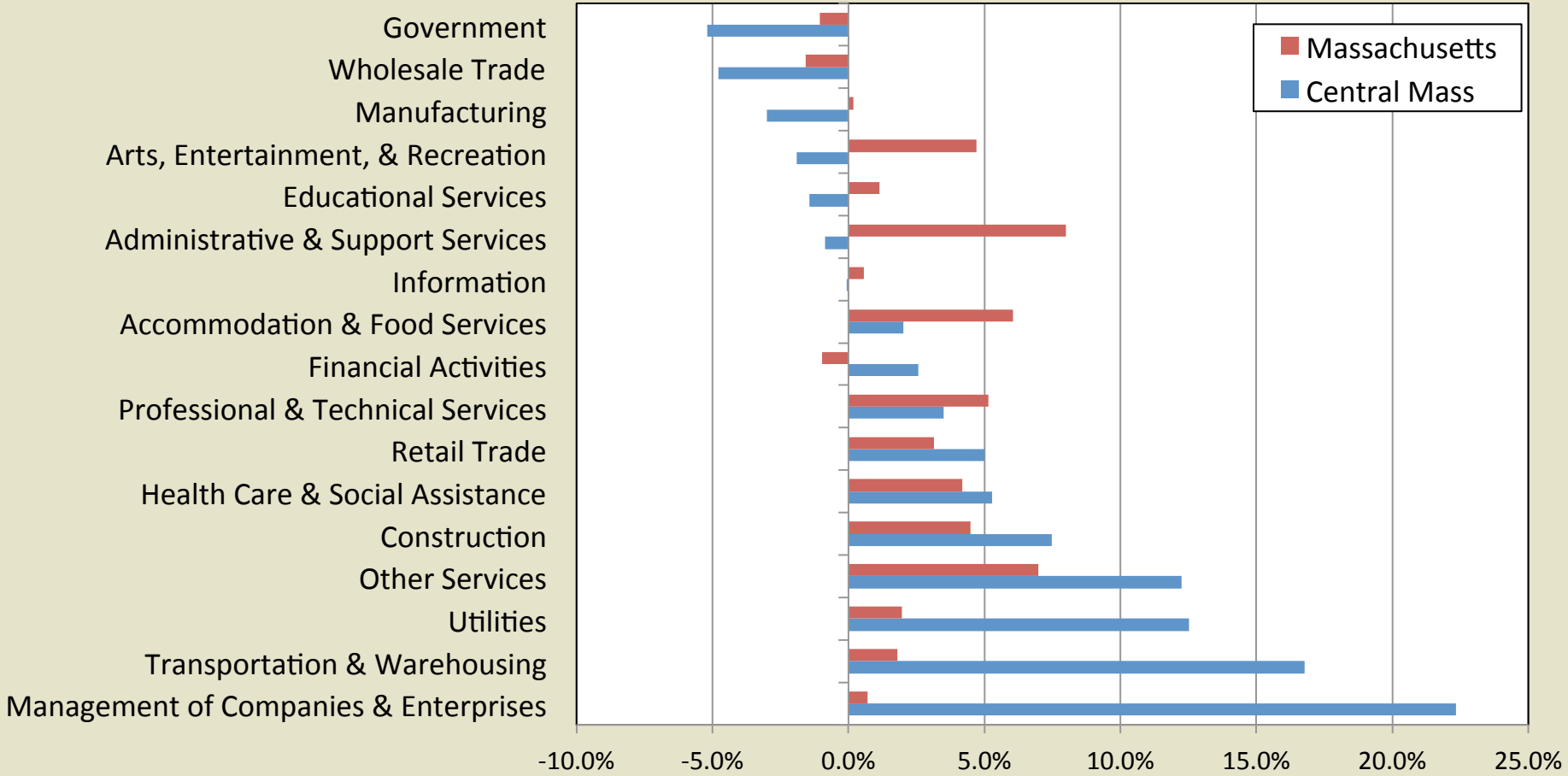
Employment Changes, Q4-2007 to Q4-2009



Sources: Massachusetts EOLWD, ES-202.

In the first two years of the recovery, strong employment gains in a few industries were mitigated by losses in others.

Employment Changes, Q4-2009 to Q4-2011

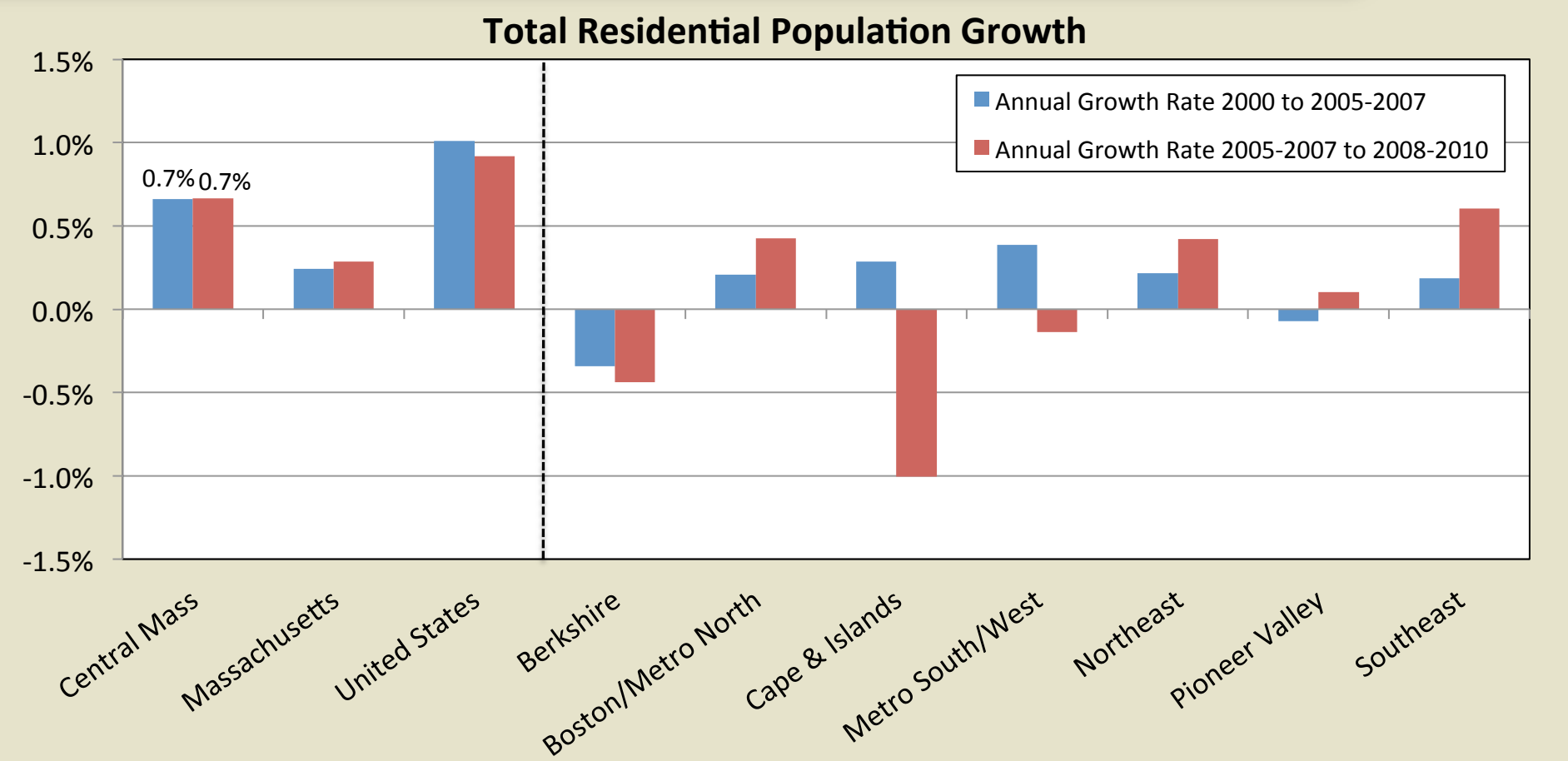


Sources: Massachusetts EOLWD, ES-202.

# Labor Supply

- Residential Population Changes and Characteristics
- Nativity Status, Age, and Education of the Civilian Labor Force
- Trends and Characteristics of the Unemployed
- Commuting Patterns

Central Mass has had the fastest growing population in the state over the past decade.



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

Growth in immigrant and minority populations accounted for a majority of the growth in the resident population.

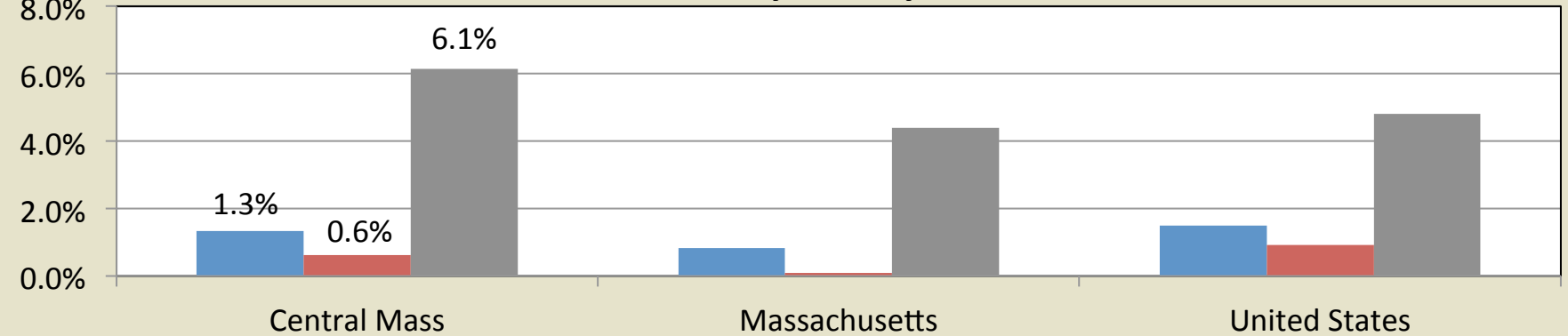
### Demographic Characteristics of Central Mass

	2000	2008-2010	Absolute Change	Annual Growth Rate
Resident Population	628,644	667,115	38,471	0.7%
<b><u>Gender</u></b>				
Male	304,428	325,996	21,568	0.8%
Female	324,216	341,119	16,903	0.6%
<b><u>Nativity</u></b>				
Native Born	557,843	568,814	10,971	0.2%
Immigrant	70,801	98,301	27,500	3.7%
<b><u>Race/Ethnicity</u></b>				
White, non-Hispanic	538,545	534,042	-4,503	-0.1%
Black, non-Hispanic	15,628	26,035	10,407	5.8%
Asian, non-Hispanic	15,701	28,658	12,957	6.9%
Hispanic	46,575	65,550	18,975	3.9%
Other race, non-Hispanic	12,195	12,830	635	0.6%

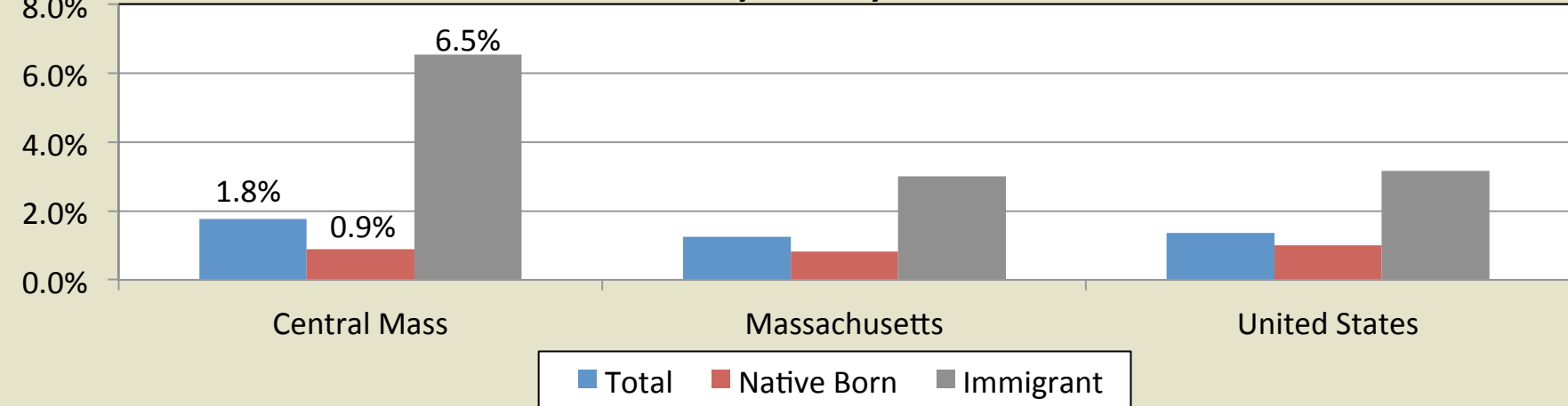
Source: U.S. Census Bureau 2000 Decennial Census PUMS data files and 2008-2010 ACS PUMS data files.

Immigrants played a major role in the region's civilian labor force growth exceeding state and national trends.

Civilian Labor Force Growth by Nativity Status, 2000 to 2005-2007



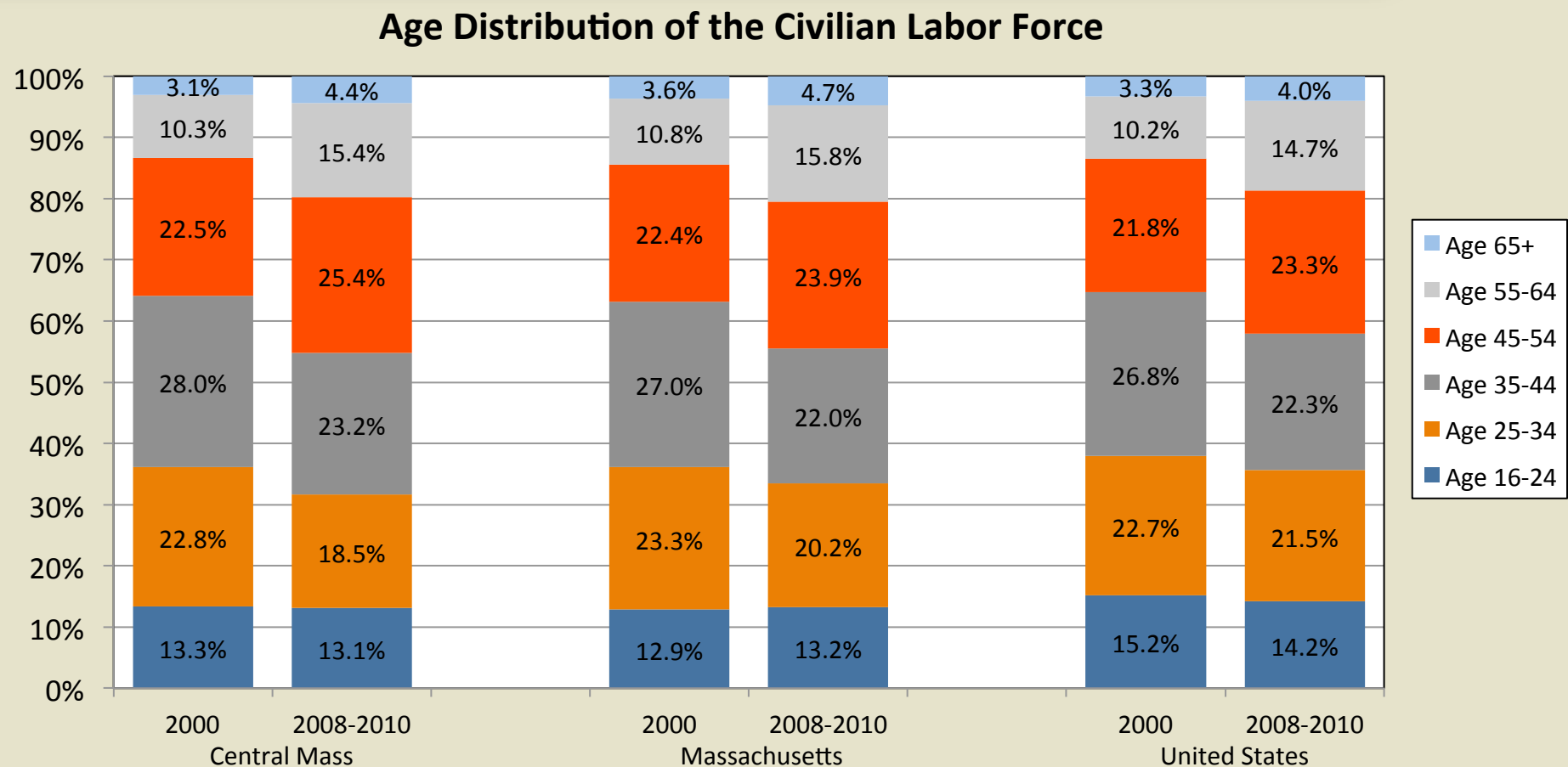
Civilian Labor Force Growth by Nativity Status, 2005-2007 to 2008-2010



Source: U.S. Census Bureau 2000 Decennial Census PUMS data files, and 2005-2007 and 2008-2010 ACS PUMS data files.



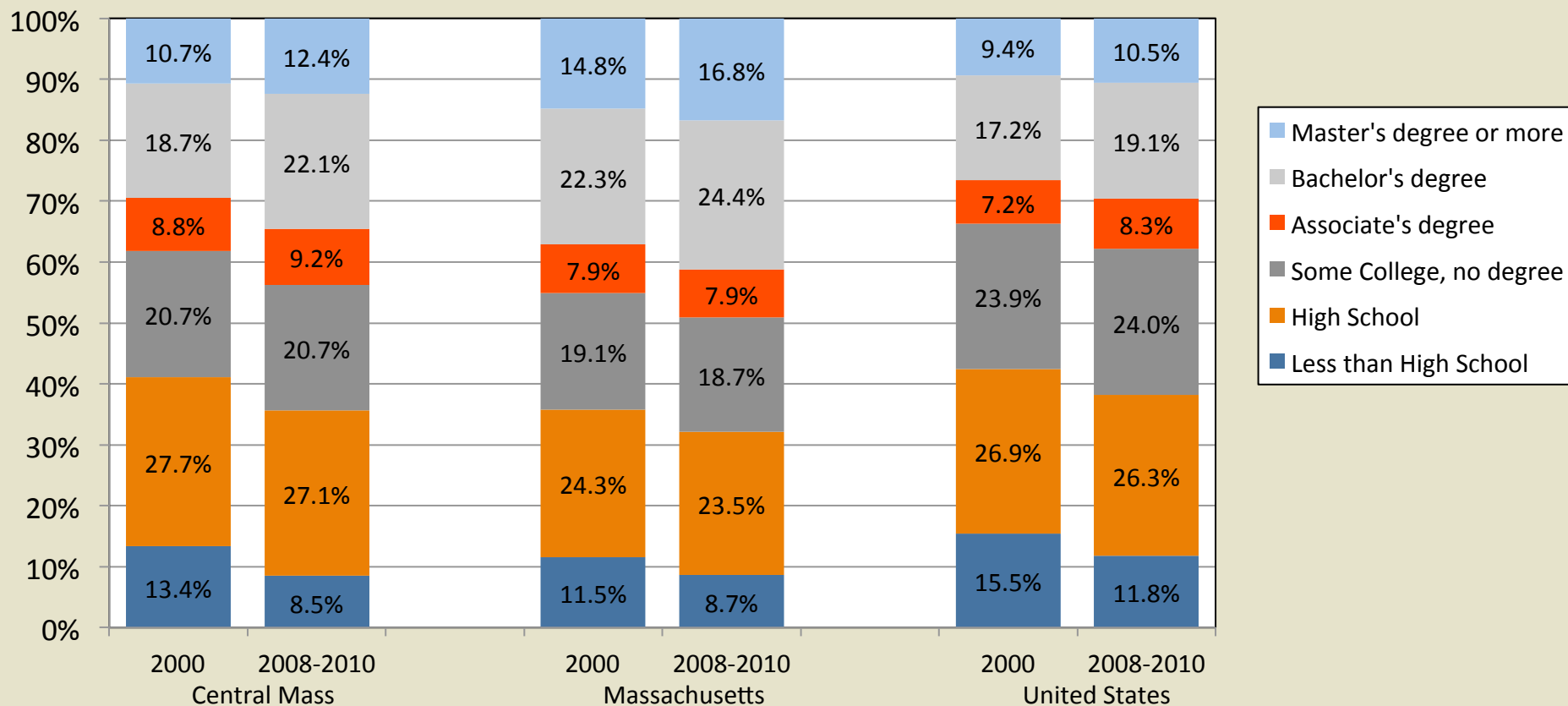
The civilian labor force in Central Mass has become slightly older than that of Massachusetts in the past decade.



Source: U.S. Census Bureau 2000 Decennial Census PUMS data files and 2008-2010 ACS PUMS data files.

The region's labor force has a larger concentration of individuals with a High School Degree relative to Massachusetts.

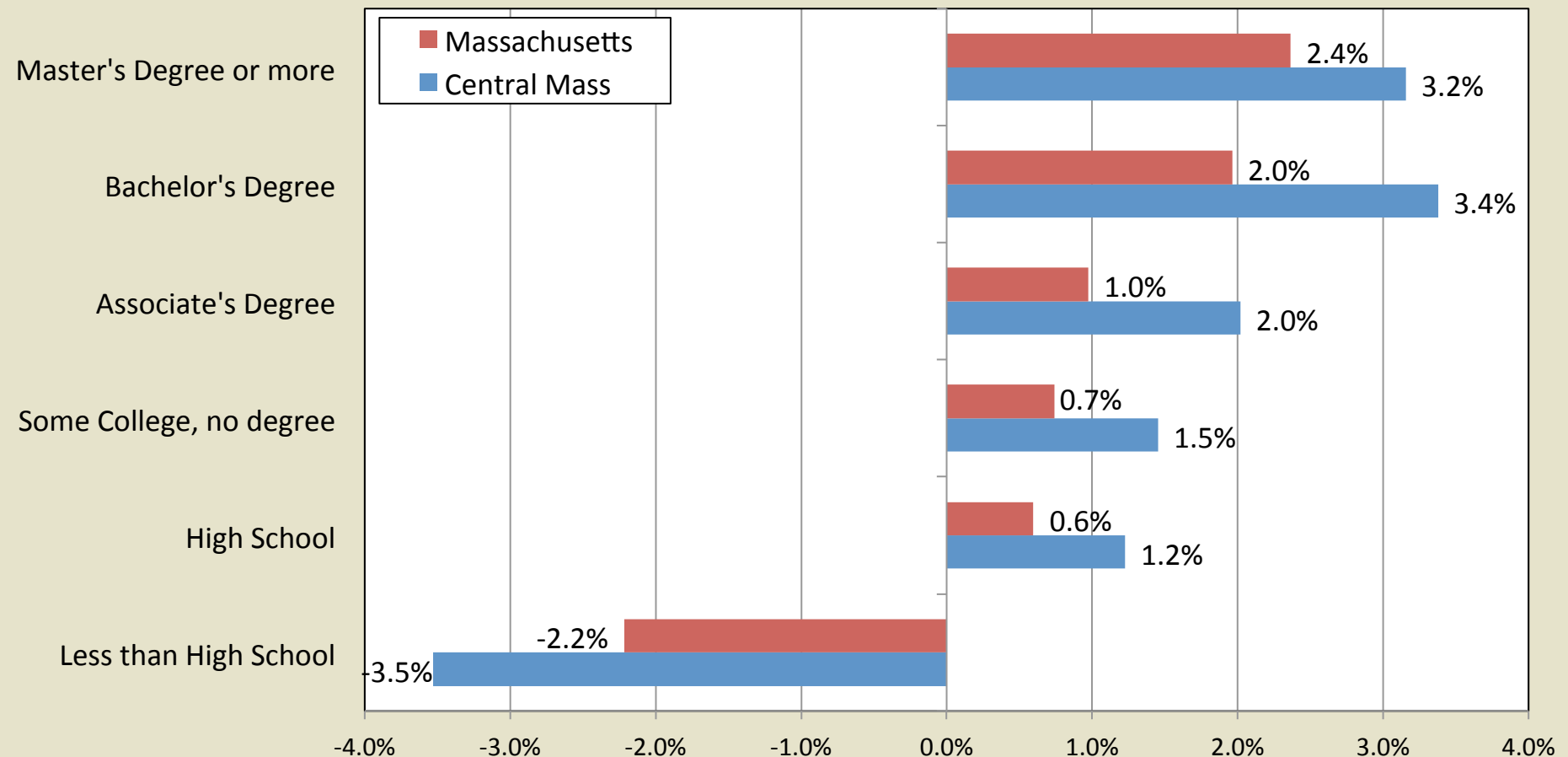
### Educational Attainment of the Civilian Labor Force



Source: U.S. Census Bureau 2000 Decennial Census PUMS data files and 2008-2010 ACS PUMS data files.

In the past decade Central Mass has seen stronger labor force growth the higher the level of educational attainment.

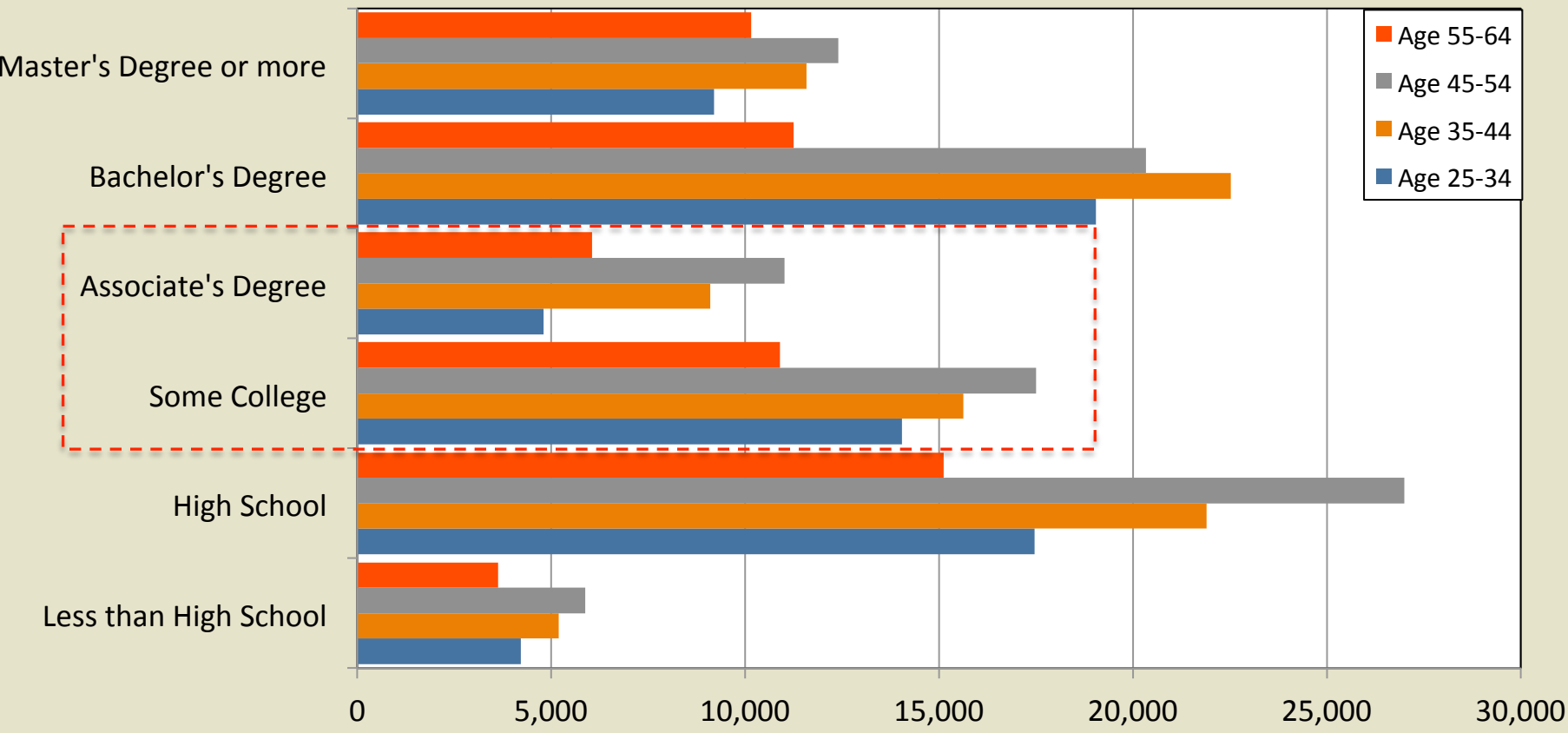
### Annual Growth in the Civilian Labor Force by Education, 2000 to 2008-2010



Source: U.S. Census Bureau 2000 Decennial Census PUMS data files and 2008-2010 ACS PUMS data files.

The trends in education and aging leave Central Mass with ***potential*** shortfalls of workers in certain education categories.

### Educational Attainment of the Civilian Labor Force in Central Mass



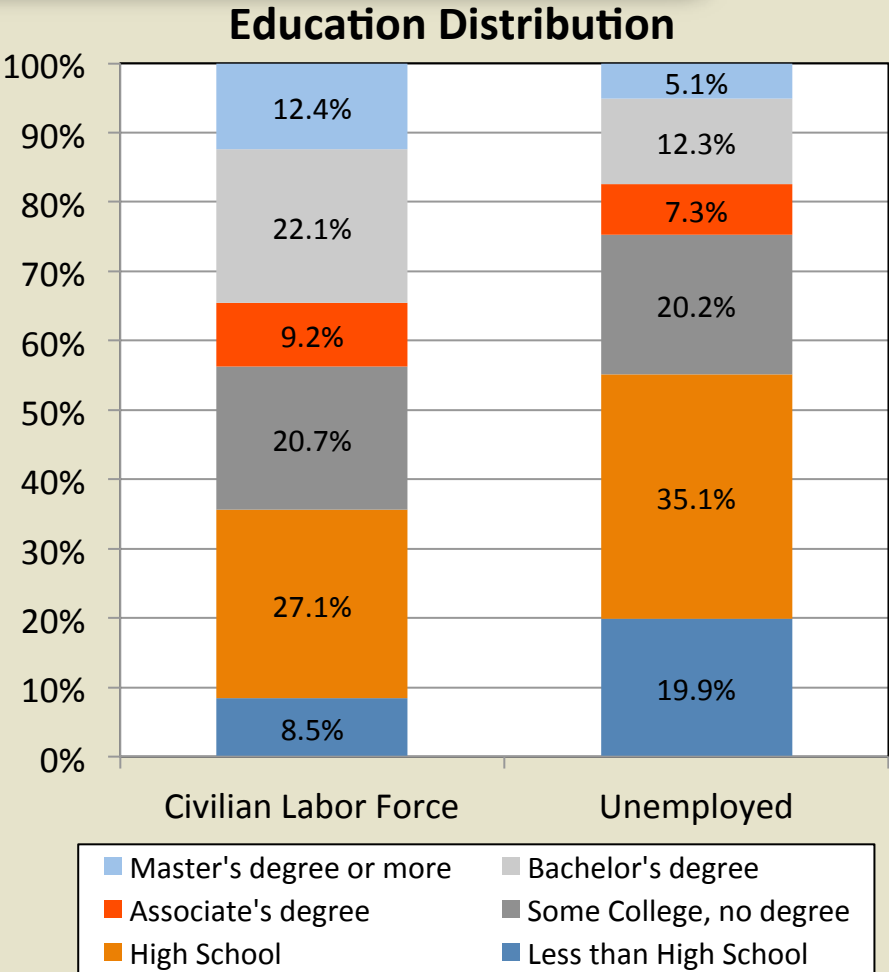
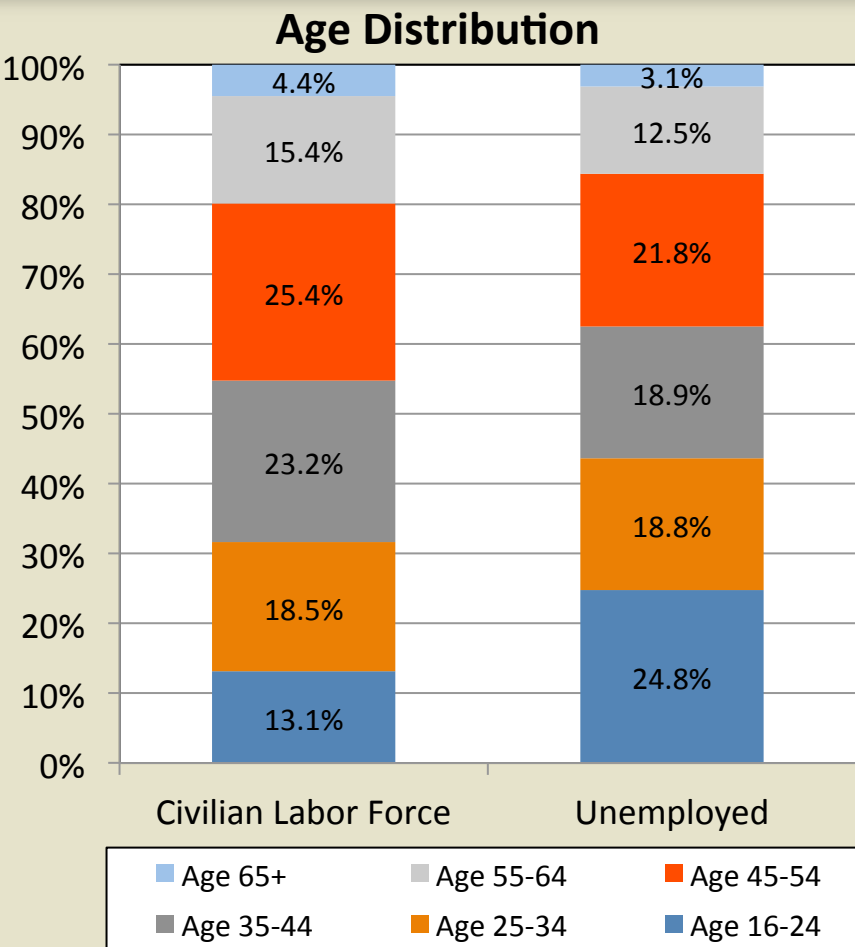
Source: U.S. Census Bureau 2008-2010 ACS PUMS data files.

In the Great Recession the unemployment rate reached 9.0 percent in Central Mass, second highest among all regions.



Source: U.S. Bureau of Labor Statistics, Current Population Survey and Massachusetts EOLWD, Labor Force and Unemployment Rates.

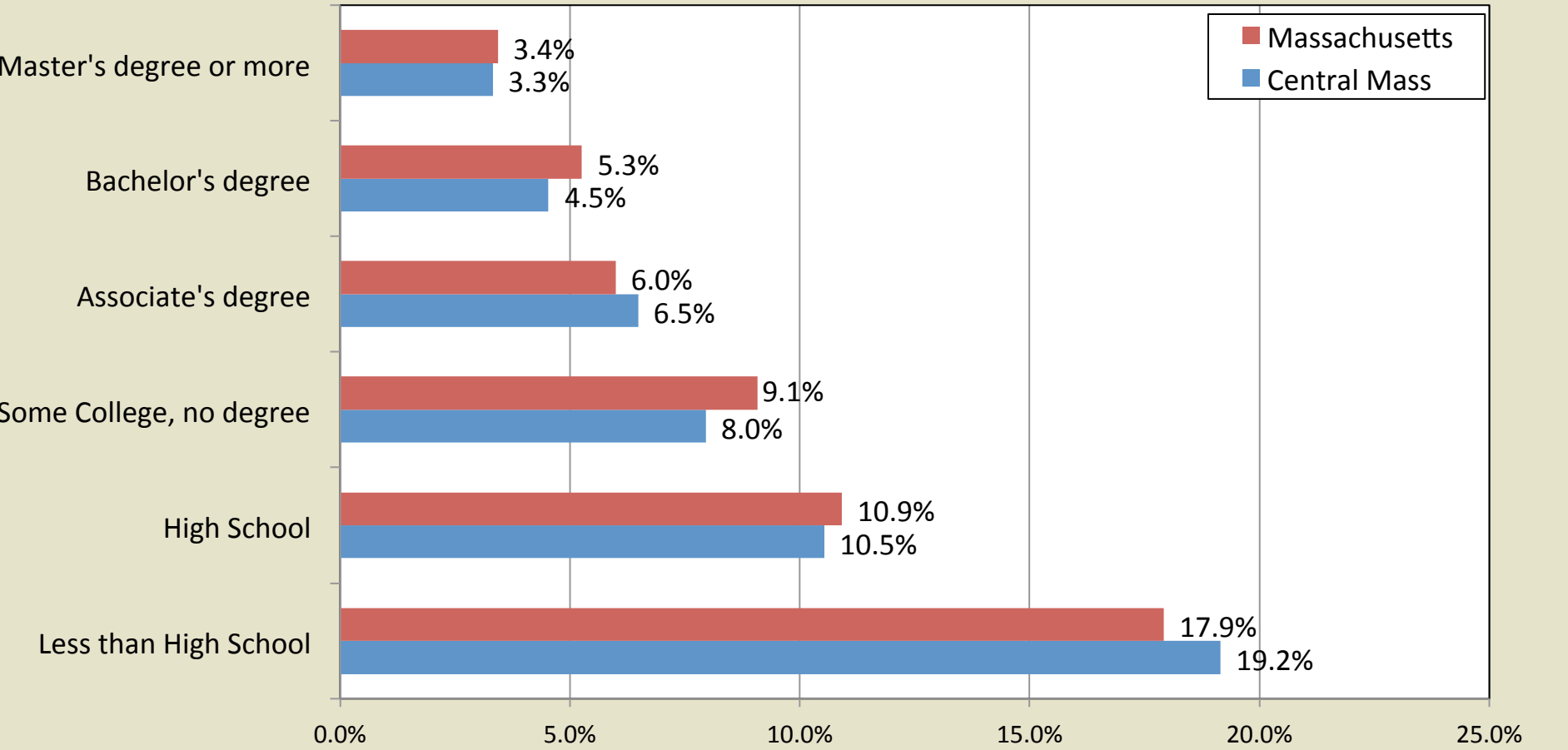
The unemployed in Central Mass are disproportionately younger and have lower levels of educational attainment.



Source: U.S. Census Bureau 2008-2010 ACS PUMS data files.

In both the region and state individuals with lower levels of educational attainment face significant barriers to employment.

Unemployment Rates by Education, 2008-2010



Source: U.S. Census Bureau 2008-2010 ACS PUMS data files.

The Central Mass region is closely tied to neighboring labor markets, with large shares of residents working elsewhere.

	Number	Percent of Total
<b>Total number of employed persons living in Central Mass...</b>	<b>332,752</b>	<b>100.00%</b>
...that work in:		
<b>Central Mass</b>	<b>238,002</b>	<b>71.5%</b>
Metro South/West	56,392	16.9%
Boston/Metro North	11,564	3.5%
Northeast	7,105	2.1%
Pioneer Valley	5,902	1.8%
Other parts of Massachusetts	3,291	1.0%
Connecticut	3,412	1.0%
Rhode Island	2,696	0.8%
Other places outside Massachusetts	4,388	1.3%
<b>Total number of persons working in Central Mass...</b>	<b>292,812</b>	<b>100.0%</b>
...that live in:		
<b>Central Mass</b>	<b>238,002</b>	<b>81.3%</b>
Metro South/West	23,306	8.0%
Boston/Metro North	2,859	1.0%
Northeast	3,942	1.3%
Pioneer Valley	8,718	3.0%
Other parts of Massachusetts	3,148	1.1%
Connecticut	5,360	1.8%
Rhode Island	3,552	1.2%
Other places outside Massachusetts	3,925	1.3%
<b>Net in-commuting</b>	<b>-39,940</b>	<b>-</b>

Source: U.S. Census Bureau 2008-2010 ACS PUMS data files.

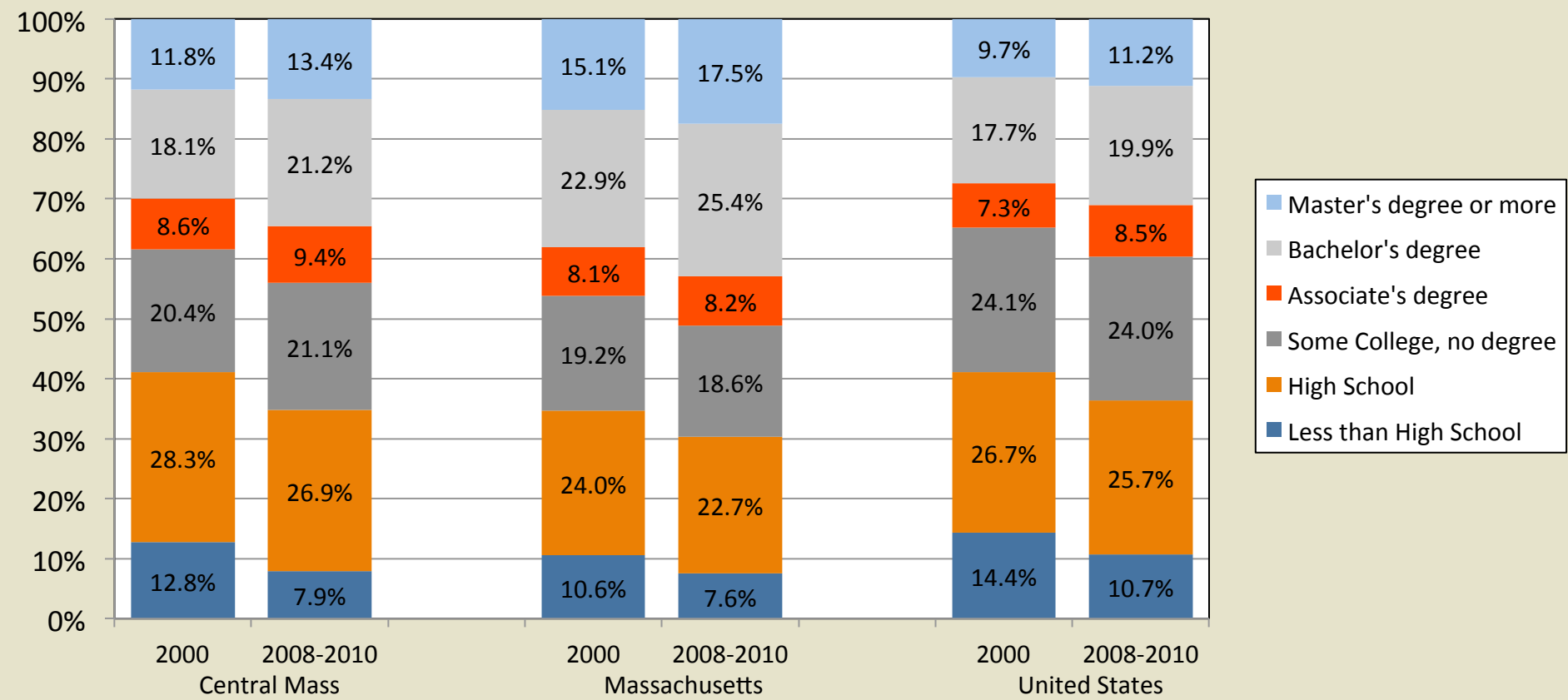


# Labor Demand

- Educational Attainment of Employed
- Educational Attainment and Composition of Industries and Occupations
- Demand for Workers with Post-Secondary Education Pre- and Post-Recession

The educational attainment of those employed in Central Mass region is closer to the average nationwide than statewide.

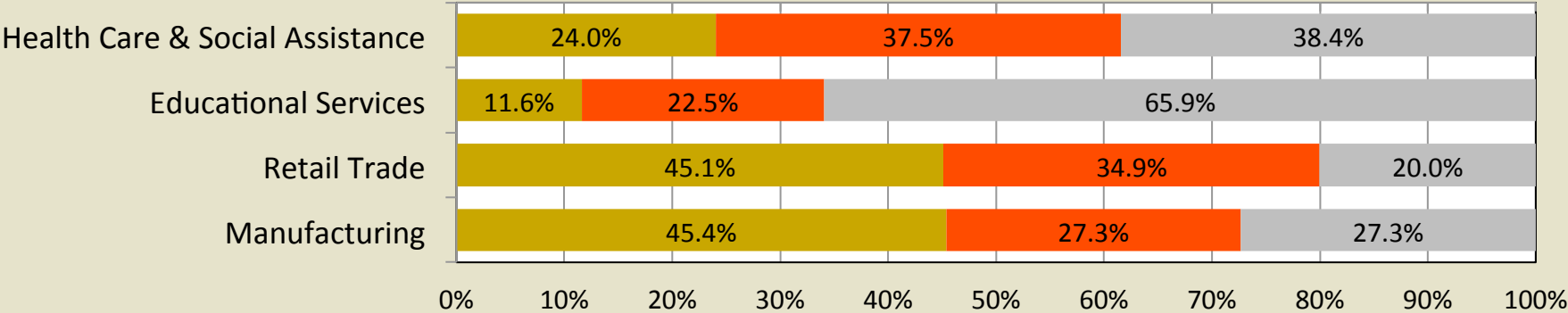
Educational Attainment of Individuals Employed in the Region



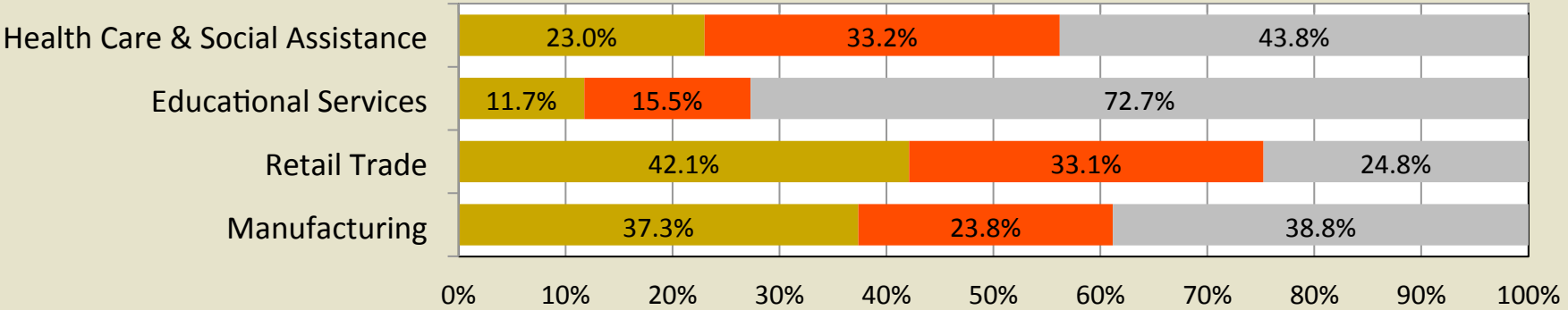
Source: U.S. Census Bureau 2000 Decennial Census PUMS data files and 2008-2010 ACS PUMS data files.

Most industries in the region have small shares of employees with a Bachelor's Degree or Higher, but large shares with “middle-skills”.

**Educational Attainment of Employees by Selected Major Industries in Central Mass**



**Educational Attainment of Employees by Selected Major Industries in Massachusetts**

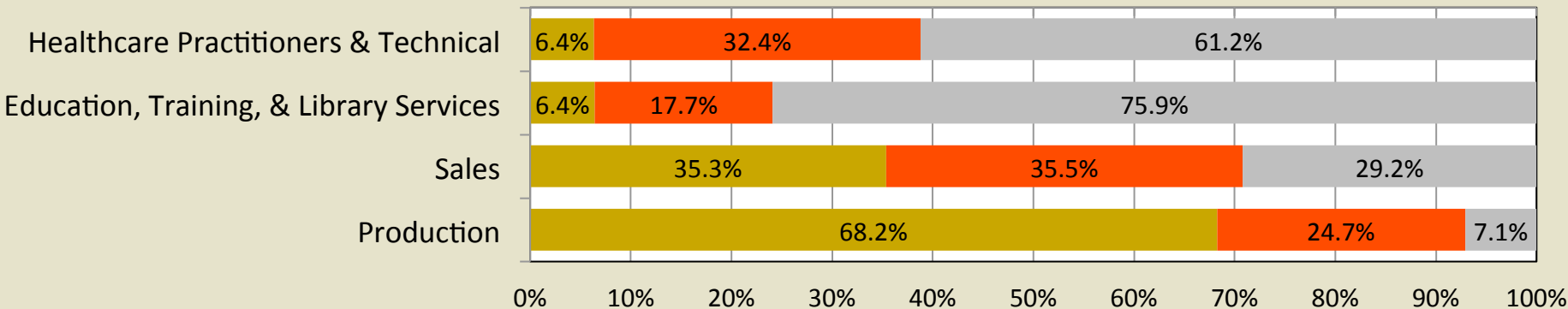


■ High School Degree or Less   ■ Some College or Associate's Degree   ■ Bachelor's Degree or Higher

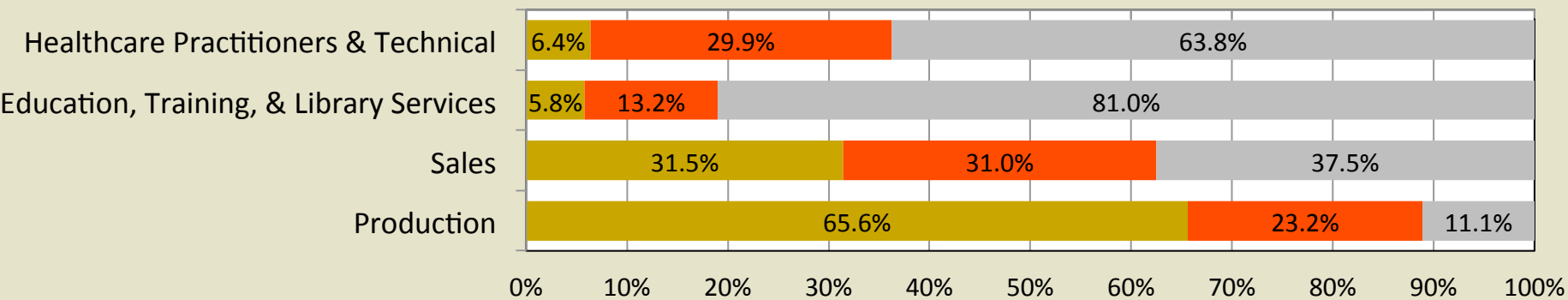
Source: U.S. Census Bureau 2008-2010 ACS PUMS data files.

The pattern persists across occupations, although the difference in post-secondary educational attainment is not as large.

**Educational Attainment of Employees by Selected Occupations in Central Mass**



**Educational Attainment of Employees by Selected Occupation in Massachusetts**

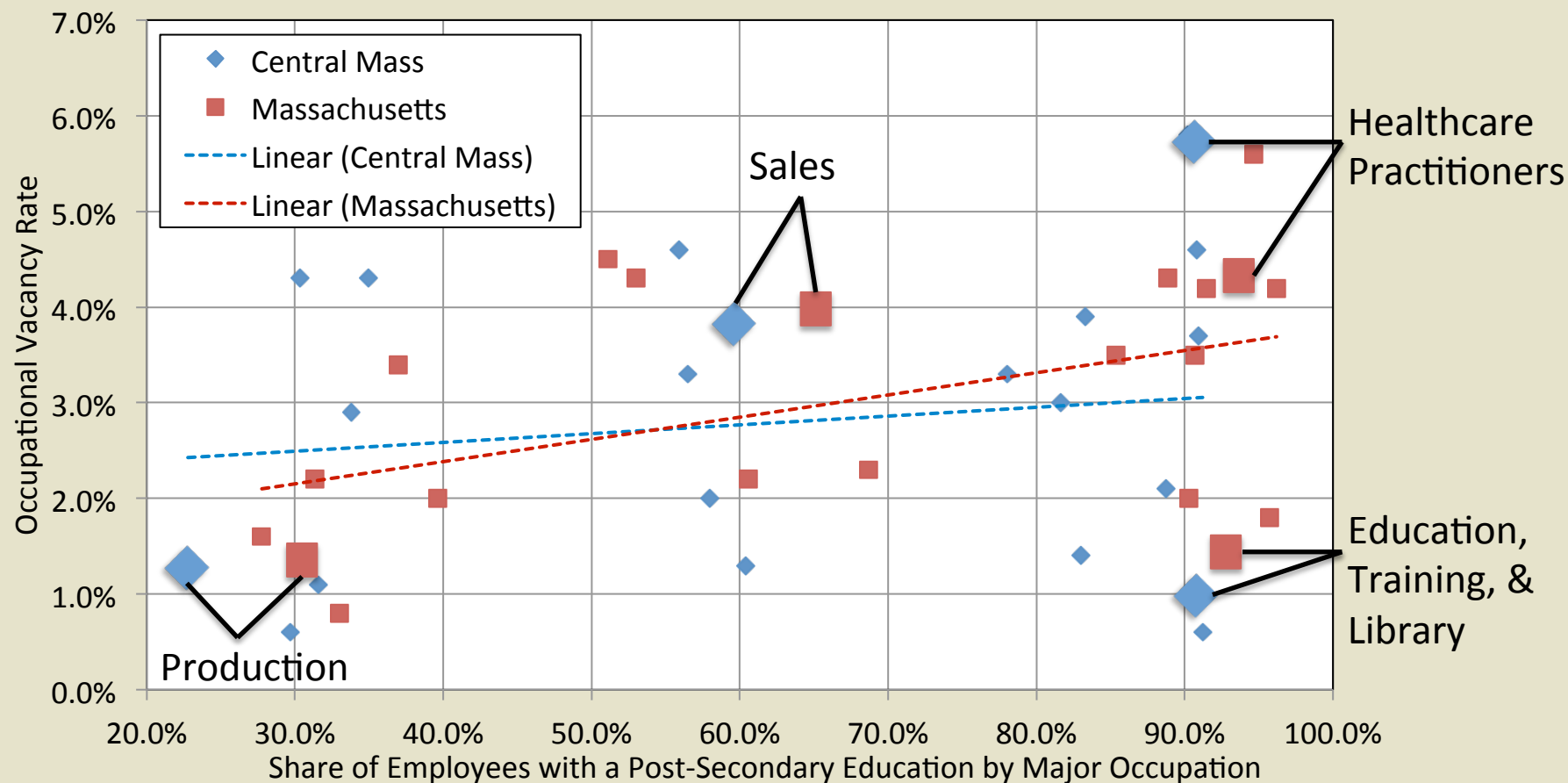


■ High School Degree or Less   ■ Some College or Associate's Degree   ■ Bachelor's Degree or Higher

Source: U.S. Census Bureau 2008-2010 ACS PUMS data files.

Prior to the recession vacancy rates were greater in most of the more highly educated occupations than in the less educated.

Job Vacancies and Educational Attainment by Occupation, Pre-Recession

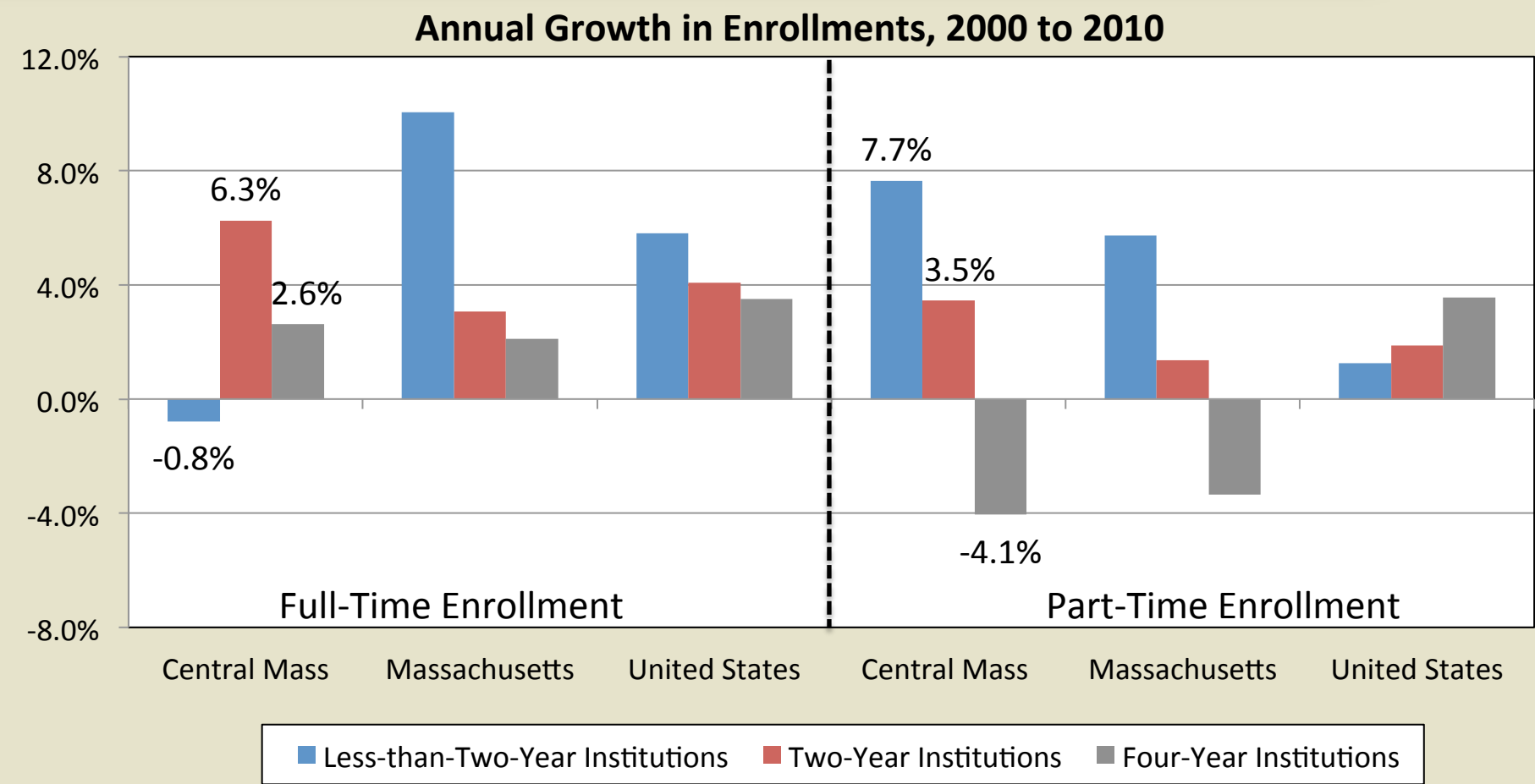


Source: Massachusetts EOLWD, Job Vacancy Survey and U.S. Census Bureau 2005-2007 ACS PUMS data files.

# The Pipeline: Educational Supply of Post-Secondary Degrees

- Enrollment Patterns
- Degree Completions
- Major Fields of Study by Degree Type

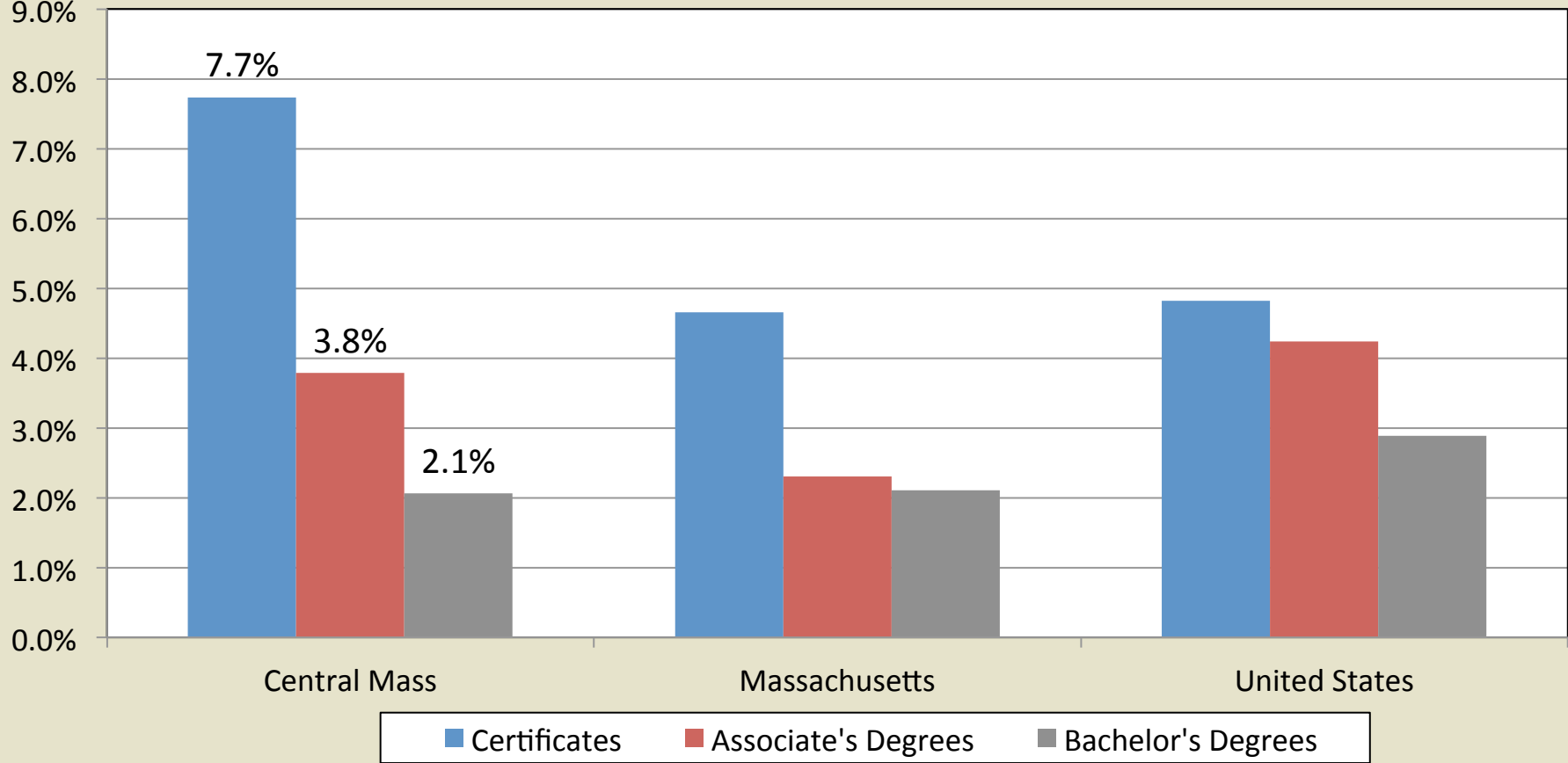
Enrollments growth at two-year higher education institutions in the region have far exceeded state and national trends.



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

Institutions in Central Mass exceeded statewide growth in completions of Certificates and Associate's Degrees.

Annual Growth in Completions, 2000 to 2010



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



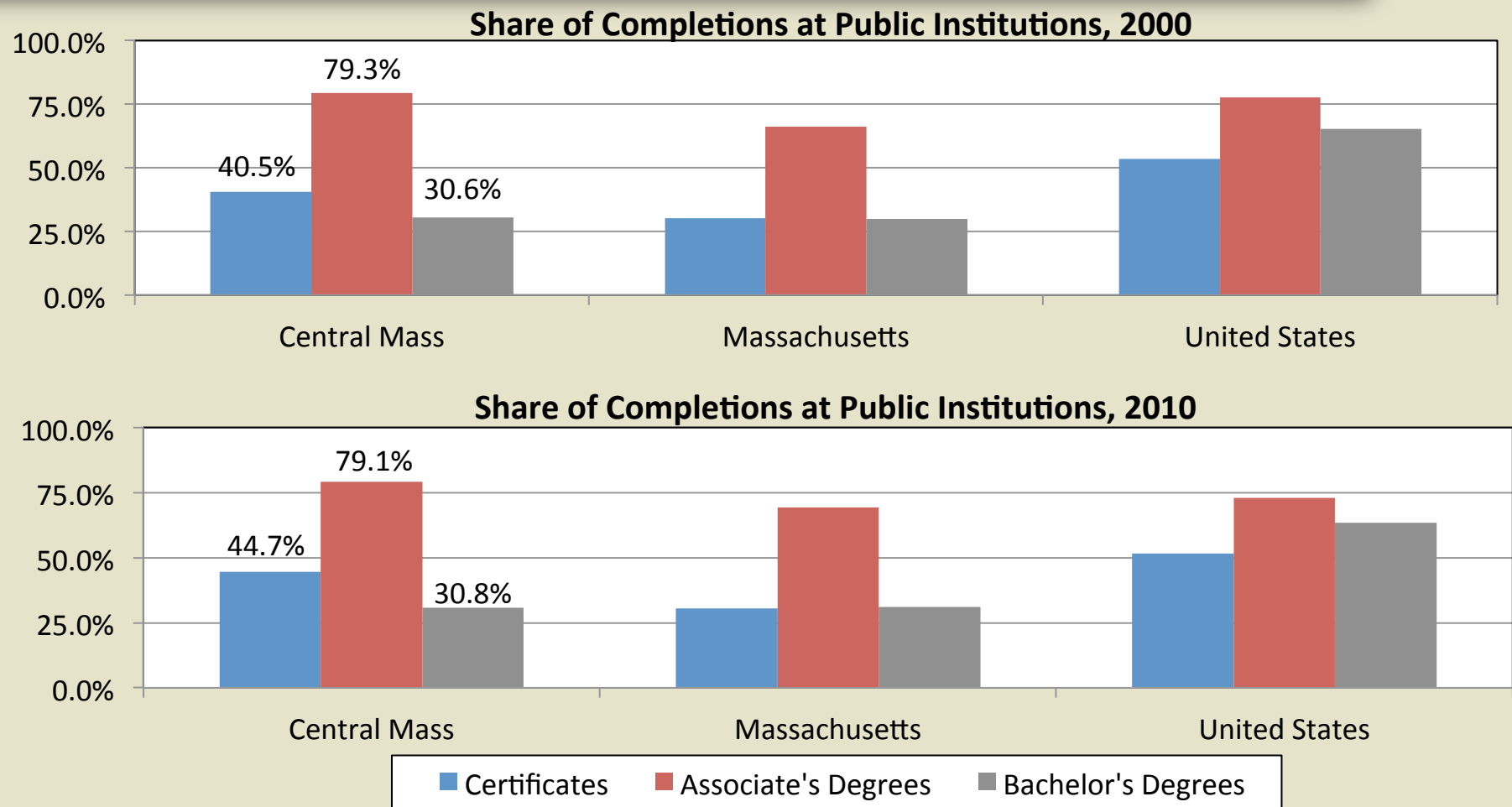
Community colleges account for a large share of Certificate and Associate's Degree completions in Central Mass.

Top Institutions Granting Degrees in Central Mass, 2010

Institution		Type	Public or Private	Degrees Awarded	Share of Degree Type Completed in Region
Certificates	The Salter School-Worcester	Less-than-Two-Years	Private	337	26.7%
	Mount Wachusett Community College	Two-Year	Public	270	21.4%
	Quinsigamond Community College	Two-Year	Public	242	19.1%
Associate's	Quinsigamond Community College	Two-Year	Public	802	48.0%
	Mount Wachusett Community College	Two-Year	Public	519	31.1%
	Salter College-West Boylston	Two-Year	Private	183	11.0%
Bachelor's	Worcester State University	Four-Year	Public	768	16.2%
	Worcester Polytechnic Institute	Four-Year	Private	720	15.2%
	College of the Holy Cross	Four-Year	Private	716	15.1%

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

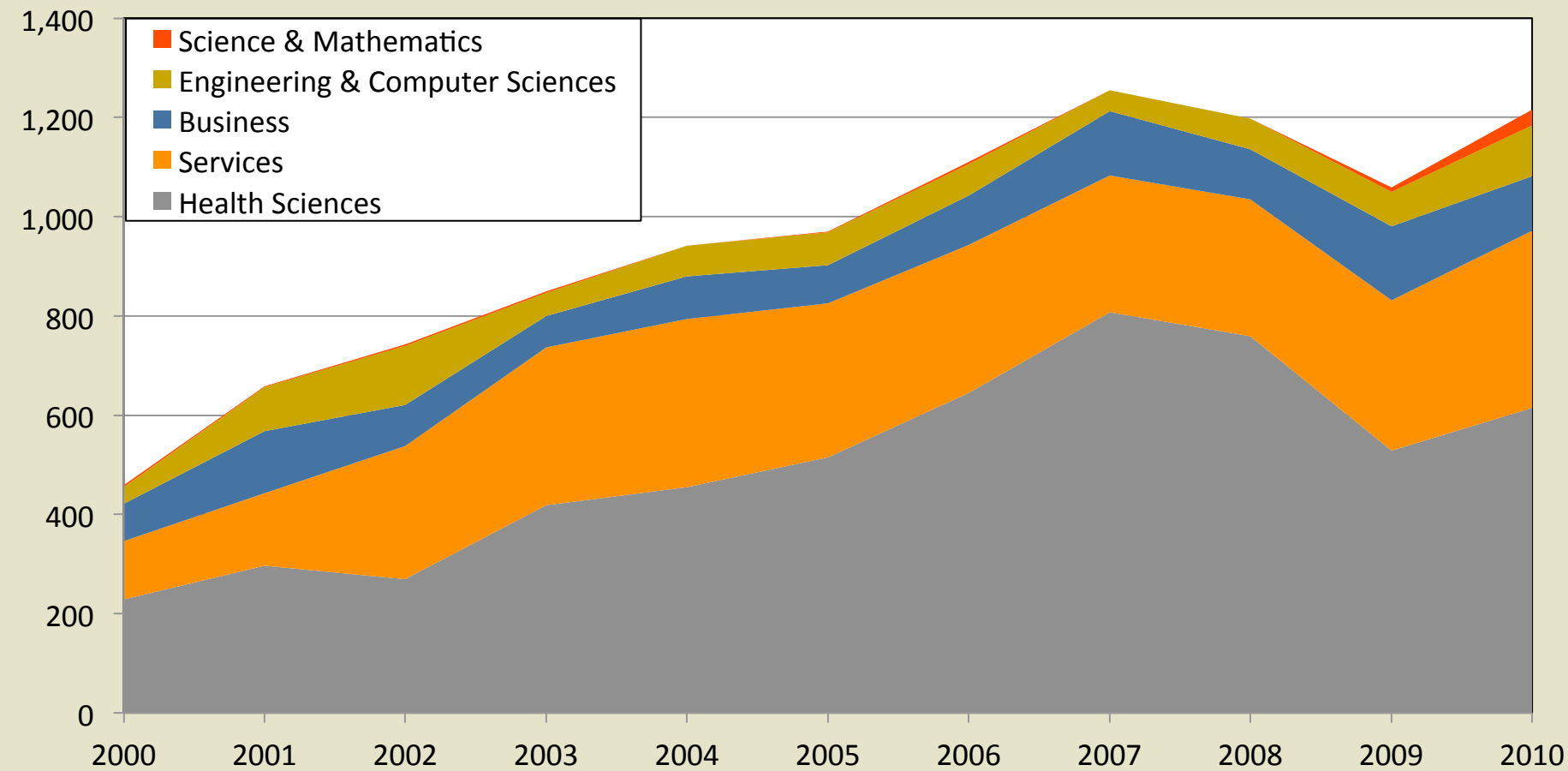
Public institutions in Central Mass play a larger role in Certificate and Associate's Degree completions than statewide.



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

Health Sciences and Services have accounted for most of the Certificates completed in Central Mass.

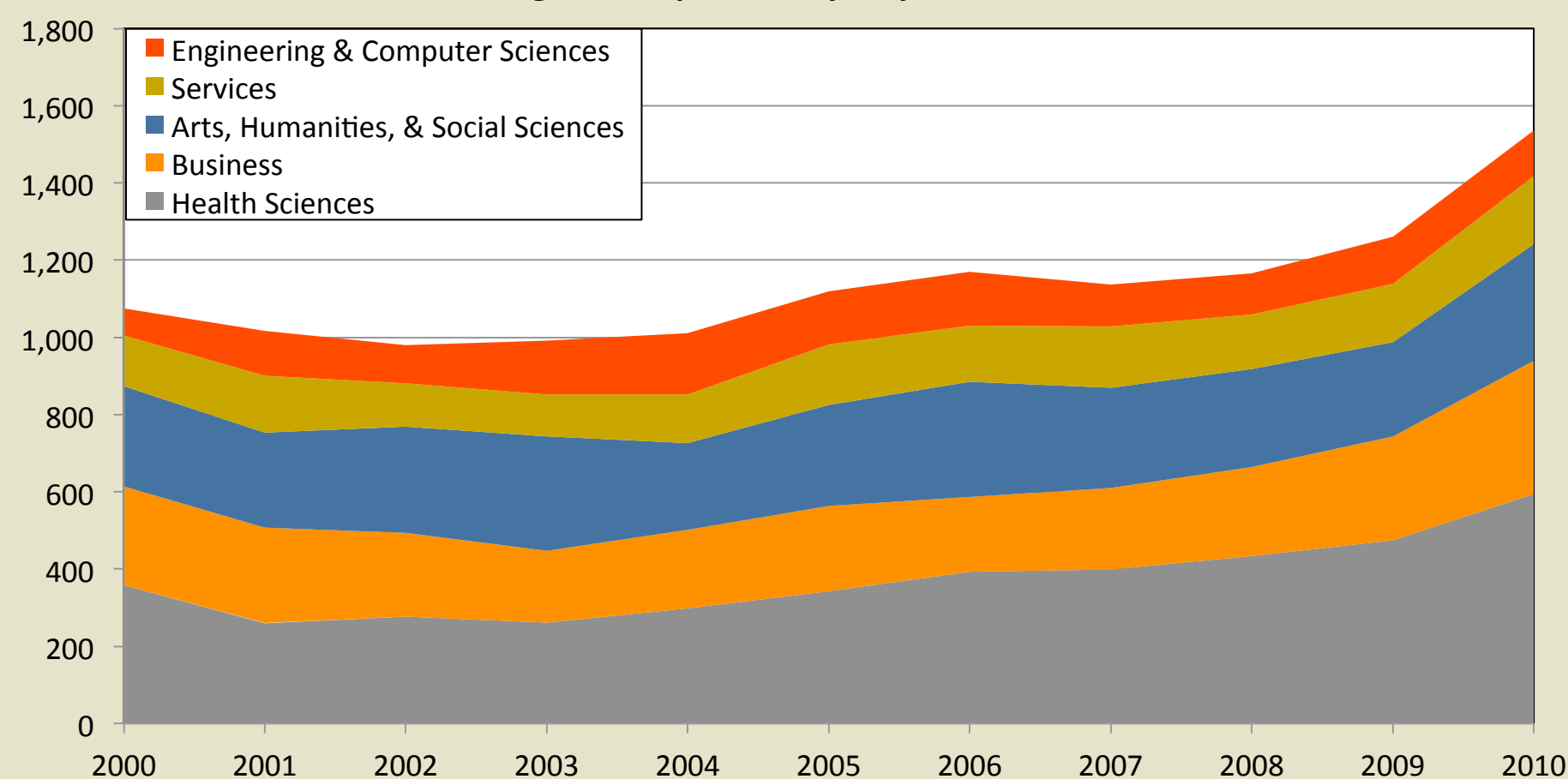
Annual Certificate Completions by Major in Central Mass, 2000 to 2010



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

Health Science degrees are the largest field of study for Associate's Degree and have increased nearly every year.

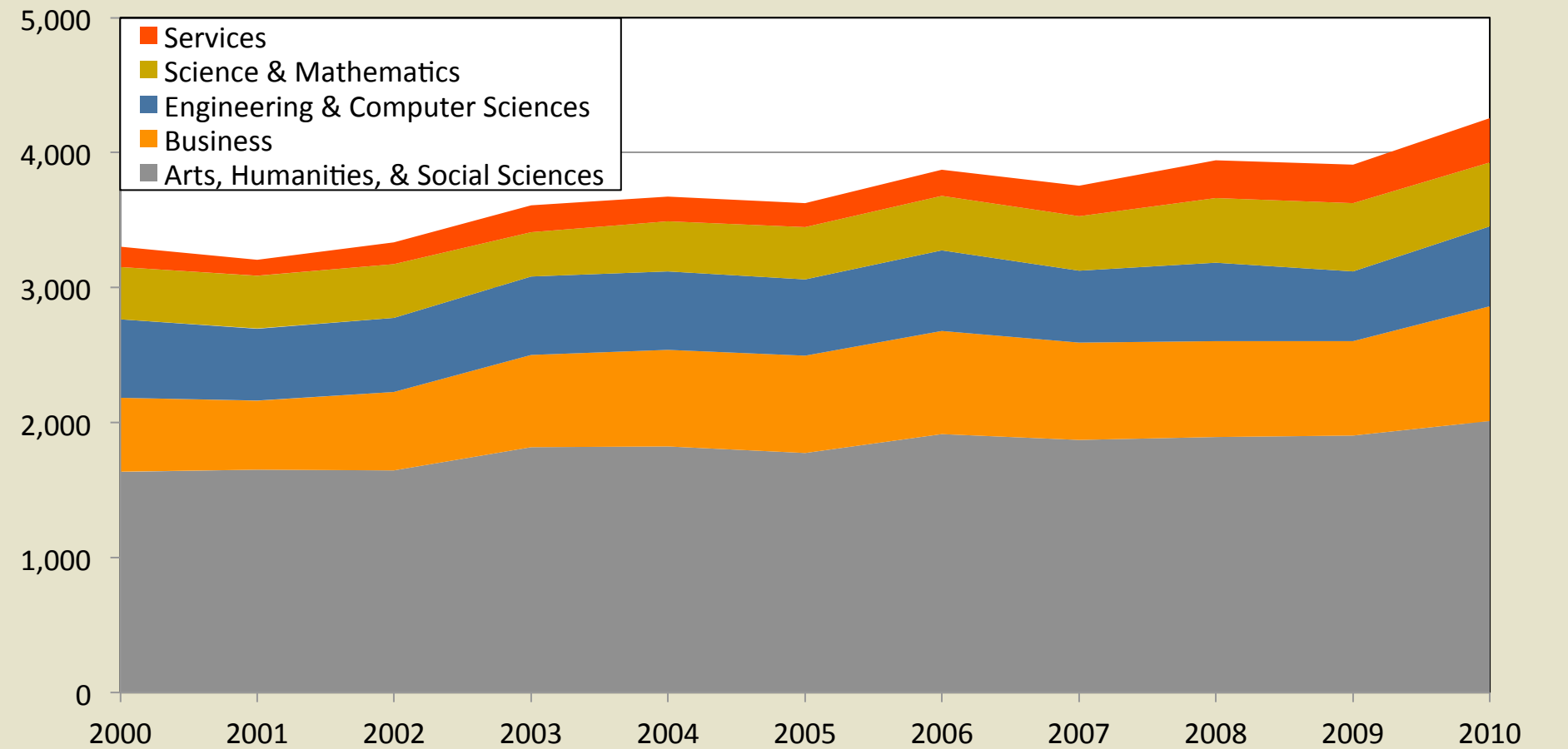
Annual Associate's Degree Completions by Major in Central Mass, 2000 to 2010



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

Central Mass has higher concentrations of Bachelor's Degree completions in STEM fields than Massachusetts.

Annual Bachelor's Degree Completions by Major in Central Mass, 2000 to 2010



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

# Summary

- The Great Recession led to steep job losses, a slow recovery, and elevated levels of unemployment in Central Mass.
- Large population growth, stronger gains in the educational attainment of the civilian labor force, and more muted demographic challenges from an aging labor force, relative to the state, are positive trends for the Central Mass region.
- A large share of the region's labor force have a High School Degree. Such individuals are more likely to be unemployed than those with a post-secondary education and face significant barriers to full employment.
- Given such trends, what should be done to ensure the future economic vitality of the Central Mass region moving forward?

# Thank You



[Robert.Clifford@bos.frb.org](mailto:Robert.Clifford@bos.frb.org)

[www.bostonfed.org/neppc](http://www.bostonfed.org/neppc)

# Facilitated Table Discussions

- How does the presentation & data resonate with you & those in your position and/or industry? What are the implications?
- What education, training, or skills gap do you witness in your position?
- For education & training providers, what trends do you see in education and/or placing recent graduates/program completers?
- What suggestions do you have for addressing ongoing needs?