UMASS DONAHUE INSTITUTE

Quarterly Report
for the Massachusetts State Treasurer's Office of Debt Management

Massachusetts Economic Due Diligence

Fourth Quarter FY 2017





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The information in this section was prepared by the Massachusetts State Data Center (MassSDC) at the University of Massachusetts Donahue Institute Economic and Public Policy Research group. It may be relevant in evaluating the economic and financial condition and prospects of the Commonwealth of Massachusetts. The State Data Center archives data about Massachusetts. The economic and demographic data, which have been obtained by the MassSDC from the sources indicated, do not necessarily present all factors that may have a bearing on the Commonwealth's fiscal and economic affairs.

All information is presented on a calendar-year basis unless otherwise indicated. **Information in the text, tables, charts, and graphs is current as of July 10th, 2017.** Sources of information are indicated in the text or immediately following the charts and tables, and also in the *Sources* on the last page of the Exhibit A section. Although the Commonwealth considers the sources to be reliable, it makes no independent verification of the information presented herein and therefore does not warrant its accuracy.

Statistical Overview

Population *(p. A-2)*	***Massachusetts***	***United States***
Estimated Percent Change in Population, July 1, 2010 - July 1, 2016	3.8%	4.5%
Personal Income, Consumer Prices, and Poverty *(p. A-8)*		
Per Capita Personal Income, 2016	$65,137	$49,571
Average Annual Pay, All Industries, 2015	$66,692	$52,942
Percent Change in CPI-U*, 2015-2016	1.5%	1.3%
Percent Change in CPI-U*, May 2016 - May 2017	2.1%	1.9%
Poverty Rate, 2015	11.5%	14.7%
Average Weekly Earnings, Manufacturing Production Workers: 2016	$945.79	$855.69
Percent Change from previous year	4.5%	1.6%
Employment *(p. A-18)*		
Percent Change in Nonfarm Payroll Employment, January 2016 - January 2017 (not seasonally adjusted)	1.7%	1.5%
Unemployment Rate, 2016	3.7%	4.9%
Unemployment Rate, May 2017 (not seasonally adjusted)	4.1%	4.1%
Education *(p. A-24)*		
Expenditure Per Pupil K-12 Public, 2014	$15,296	$11,161
Percent of Adults with a Bachelor's Degree or Higher, 2015	41.5%	30.6%
Economic Base and Performance *(p. A-30)*		
Percent Change in Gross Domestic Product, 2015-2016	2.0%	1.5%
Percent Change in International Exports, 2015-2016	1.1%	-4.7%
Percent Change in Housing Permits Authorized, 2015-2016	-6.5%	2.0%

*NOTE: Percent changes in the Consumer Price Index for All Urban Consumers (CPI-U) are for the Boston-Worcester-Lawrence, MA-NH-ME-CT CMSA & the United States.

Massachusetts is a densely populated state with a well-educated population, comparatively high income levels, and a relatively diversified economy. While the total population of Massachusetts has remained fairly stable in the last 25 years, significant changes have occurred in the age distribution of the population. Dramatic growth in residents between the ages of 20 and 44 since 1980 is expected to lead to a population distributed more heavily in the 65 and over age group in the next 25 years. Just as the working-age population has increased, income levels in Massachusetts since 1980 have grown significantly more than the national average, and a variety of measures of income show that Massachusetts residents have significantly higher amounts of annual income than the national average. These higher levels of income have been accompanied by a consistently lower poverty rate. State unemployment rates have typically remained below the national average with the exception of a slight increase during the recession of the early 1990s and a seventeen-month stretch between 2006 and 2007. More recently, Massachusetts unemployment has tracked faster than the national average and currently stands at 4.2 percent, compared to the national rate of 4.3 percent. In 2014, Massachusetts was ranked second in the U.S. according to the American Human Development Index, modeled after the United Nations Human Development Index, which compares health, income and education outcomes.

The following five sections provide detailed information on population characteristics, personal income, employment, human resources, economic base and performance, and infrastructure.

POPULATION CHARACTERISTICS

Massachusetts is a relatively slow growing but densely populated state with a comparatively large percentage of its residents living in metropolitan areas. The population density of Massachusetts was estimated as of July 1, 2016 to be 873.3 persons per square mile, as compared to 91.5 for the United States as a whole. Among the 50 states, only Rhode Island and New Jersey have a greater population density. Massachusetts also ranked just behind the same two states, as well as Delaware, in percentage of residents living in metropolitan areas. According to the current county-based definition, 98.5 percent of the state's population live in metropolitan areas.

The state's population is concentrated in its eastern portion. The city of Boston is the largest city in New England, with a July 1, 2016 population estimated at 673,184 or 9.9 percent of the total state population. Boston is the hub of the seven-county Boston-Cambridge-Newton, MA-NH Metropolitan Statistical Area (MSA), which includes the two southeastern New Hampshire counties, and had a total population as of July 1, 2016 estimated at 4,794,447, or 32.4 percent of the total New England population. The Cambridge-Newton-Framingham, MA Metropolitan Division is the largest component of that MSA, with a total population as of July 1, 2016 estimated at 2,368,792, while the Boston, MA Metropolitan division is the second largest component, with a total population estimated at 1,994,976.

The second largest MSA in the state is the Worcester, MA MSA, with a July 1, 2016 population estimated at 935,781. The city of Worcester, situated approximately 40 miles west of Boston with a July 1, 2016 estimated population of 184,508, is the second largest city, both in New England and the state. As a major medical and education center, the Worcester area is home to 18 patient care facilities and 13 colleges and universities, including the University of Massachusetts Medical School.

The third largest MSA in Massachusetts is the three-county Springfield, MA MSA, with a July 1, 2016 population estimated at 630,283. Springfield, the third largest city in the Commonwealth with a July 1, 2016 estimated population of 154,074, is located in the Connecticut River Valley in Western Massachusetts and enjoys a diverse body of corporate employers, including Baystate Health Systems, General Dynamics, and MassMutual Financial Group. In addition, Springfield is home to three independent colleges.

As the following graph and table (on the next page) indicate, the population in Massachusetts has generally grown at a rate similar to the population of New England and more slowly than the nation as a whole. From 2009 to 2016, Massachusetts' growth has more closely resembled that of the U.S. as a whole than that of New England, although growth has slowed somewhat since 2013. According to the Census Bureau's latest revised estimates released in July 2016, the Massachusetts population has grown only by 7.1 percent since Census 2000, while the U.S. has grown 14.5 percent.

Annual Percent Change in Total Population, 1983-2016



SOURCE: U.S. Census Bureau.
NOTE: Figures for all years shown are estimates as of July 1.

The following table compares the population level and percentage change in the population of Massachusetts to the six-state New England region and to the United States.

Population, 1976-2016
(in thousands)

	Massachusetts		New England		United States	
Year	Total	Percent Change	Total	Percent Change	Total	Percent Change
1976	5,744	-0.2%	12,192	0.2%	217,563	1.0%
1977	5,738	-0.1%	12,239	0.4%	219,760	1.0%
1978	5,736	0.0%	12,283	0.4%	222,095	1.1%
1979	5,738	0.0%	12,322	0.3%	224,567	1.1%
1980	5,737	0.0%	12,348	0.2%	226,546	0.9%
1981	5,769	0.6%	12,436	0.7%	229,466	1.3%
1982	5,771	0.0%	12,468	0.3%	231,664	1.0%
1983	5,799	0.5%	12,544	0.6%	233,792	0.9%
1984	5,841	0.7%	12,642	0.8%	235,825	0.9%
1985	5,881	0.7%	12,741	0.8%	237,924	0.9%
1986	5,903	0.4%	12,833	0.7%	240,133	0.9%
1987	5,935	0.5%	12,951	0.9%	242,289	0.9%
1988	5,980	0.8%	13,085	1.0%	244,499	0.9%
1989	6,015	0.6%	13,182	0.7%	246,819	0.9%
1990	6,023	0.1%	13,230	0.4%	249,623	1.1%
1991	6,018	-0.1%	13,248	0.1%	252,981	1.3%
1992	6,029	0.2%	13,271	0.2%	256,514	1.4%
1993	6,061	0.5%	13,334	0.5%	259,919	1.3%
1994	6,095	0.6%	13,396	0.5%	263,126	1.2%
1995	6,141	0.8%	13,473	0.6%	266,278	1.2%
1996	6,180	0.6%	13,555	0.6%	269,394	1.2%
1997	6,226	0.7%	13,642	0.6%	272,647	1.2%
1998	6,272	0.7%	13,734	0.7%	275,854	1.2%
1999	6,317	0.7%	13,838	0.8%	279,040	1.2%
2000	6,361	0.7%	13,950	0.8%	282,162	1.1%
2001	6,398	0.6%	14,041	0.7%	284,969	1.0%
2002	6,417	0.3%	14,122	0.6%	287,625	0.9%
2003	6,423	0.1%	14,182	0.4%	290,108	0.9%
2004	6,412	-0.2%	14,207	0.2%	292,805	0.9%
2005	6,403	-0.1%	14,217	0.1%	295,517	0.9%
2006	6,410	0.1%	14,246	0.2%	298,380	1.0%
2007	6,432	0.3%	14,279	0.2%	301,231	1.0%
2008	6,469	0.6%	14,340	0.4%	304,094	1.0%
2009	6,518	0.8%	14,404	0.4%	306,772	0.9%
2010	6,566	0.7%	14,469	0.5%	309,348	0.8%
2011	6,612	0.7%	14,528	0.4%	311,663	0.7%
2012	6,658	0.7%	14,581	0.4%	313,998	0.7%
2013	6,707	0.7%	14,635	0.4%	316,205	0.7%
2014	6,750	0.6%	14,683	0.3%	318,563	0.7%
2015	6,784	0.5%	14,710	0.2%	320,897	0.7%
2016	6,812	0.4%	14,736	0.2%	323,128	0.7%

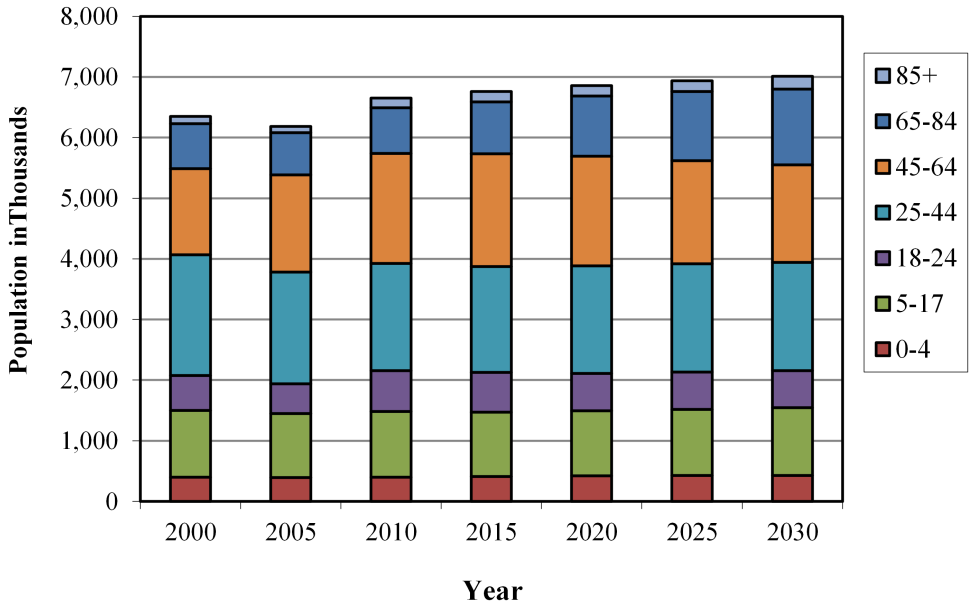
SOURCE: U.S. Department of Commerce, Census Bureau.
NOTE: The Census count in 1980 is as of April 1; estimates for all other years are as of July 1.

The next 14 years are expected to bring about a continued change in the age distribution of the Massachusetts population. As the following table and chart show, the share of the 65 and over age group and especially the 85 and over age group will continue to grow. The chart, table, and population pyramids (below, and on the following page) show the projected population by age for Massachusetts for 2000 through 2030. The Census has not updated these projections to reflect the 2010 Census.

Projected Massachusetts Population by Age Group
2000-2030 (in thousands)

Year	0-4	5-17	18-24	25-44	45-64	65-84	85+	All Ages	Median Age
2000	397.3	1,102.8	579.3	1,989.8	1,419.8	743.5	116.7	6,349.1	36.5
2005	395.1	1,055.6	488.9	1,844.0	1,602.5	693.1	103.7	6,182.9	38.2
2010	400.7	1,083.1	670.2	1,769.7	1,817.1	750.6	158.0	6,649.4	38.8
2015	409.7	1,064.2	656.0	1,746.1	1,857.1	856.5	168.9	6,758.6	39.2
2020	422.3	1,070.9	617.5	1,775.8	1,809.3	987.8	172.0	6,855.5	39.5
2025	431.0	1,087.7	616.2	1,782.5	1,703.3	1,137.8	180.1	6,938.6	39.7
2030	430.6	1,115.0	610.7	1,783.9	1,608.7	1,251.2	211.9	7,012.0	40.2

Projected Massachusetts Population by Age Group
2000-2030

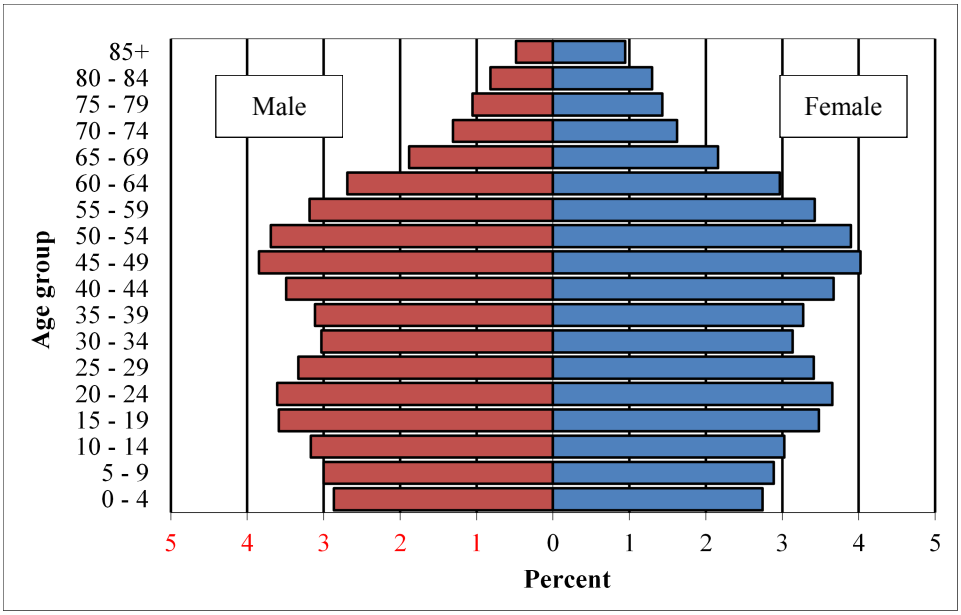


SOURCE: U.S. Census Bureau, Population Division, Interim State Population Projections, 2005.
Internet Release Date: 04/21/05.
NOTE: Actual Census 2000 counts as of April 1; Population Estimates for 2005 as of July 1; all other figures are projections as of July 1 of the indicated year.

Population Pyramids of Massachusetts

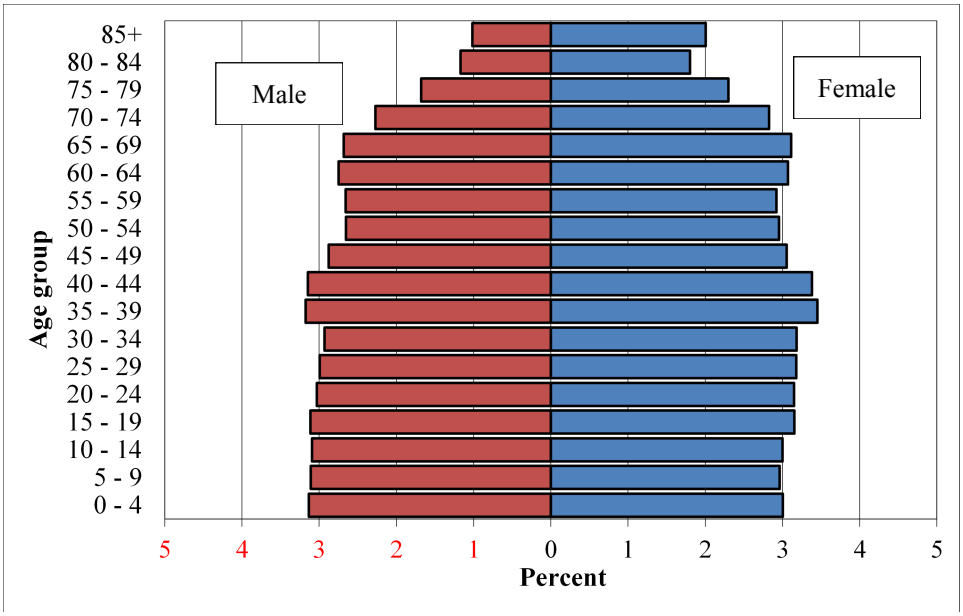
Percent of Total Population

2010



SOURCE: U.S. Census Bureau, 2010 Census.

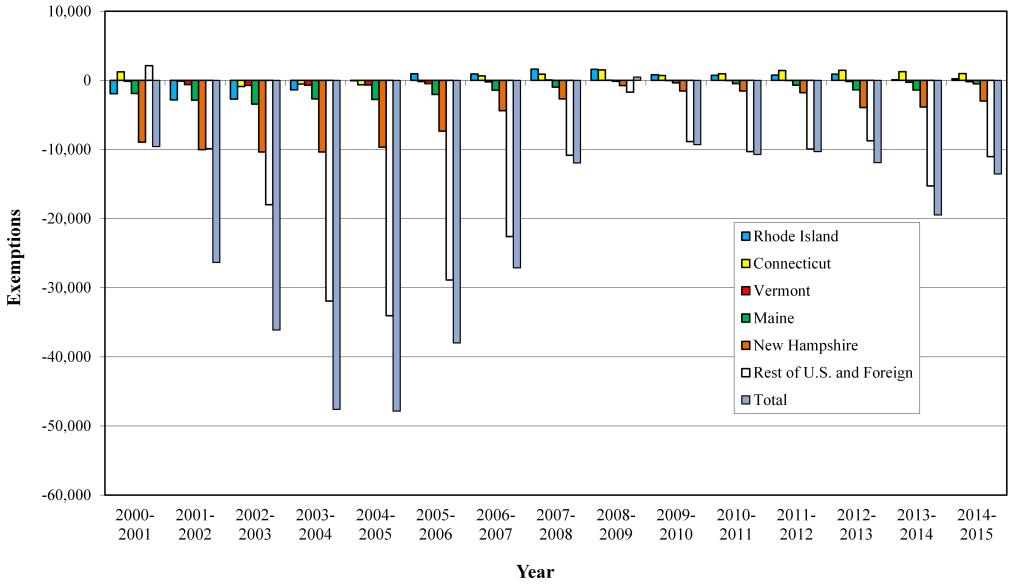
2030



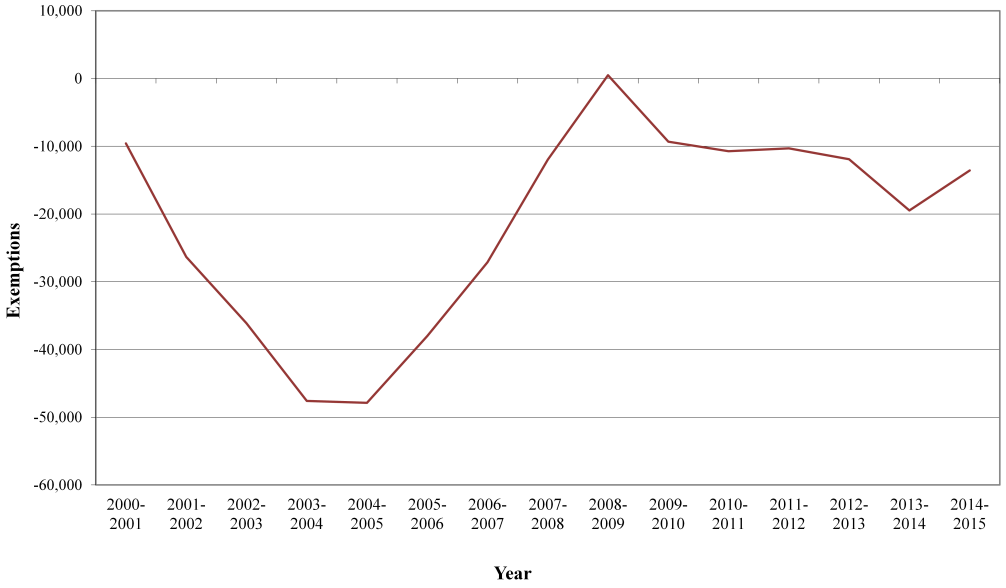
SOURCE: U.S. Census Bureau, Population Division, Interim State Population Projections, 2005.
Internet Release Date: 04/21/05.

Migration. Migration is one of several components of annual population change in Massachusetts. The movement of people from place to place is often linked to economic opportunities or downturns. These data are derived from the filing addresses and number of exemptions submitted with federal tax returns. A tax filer is considered a migrant when he/she files a tax return with an address different from the previous year's filing address. Of the New England states, New Hampshire was the largest net loss for Massachusetts and Connecticut was the largest net gain for Massachusetts from 2000 through 2015. Massachusetts also sends many more migrants to other U.S. states than it gains. Its largest net losses outside of New England are to Florida, California, Texas, and North Carolina, while its largest net gains are from New York, New Jersey and Pennsylvania. The charts below illustrate the net migration for Massachusetts to and from the New England states and the rest of the country using IRS data.

Massachusetts Net Migration from New England States Using IRS Exemption Data, 2000-2015



Massachusetts Net Migration from U.S. States, 2000-2015

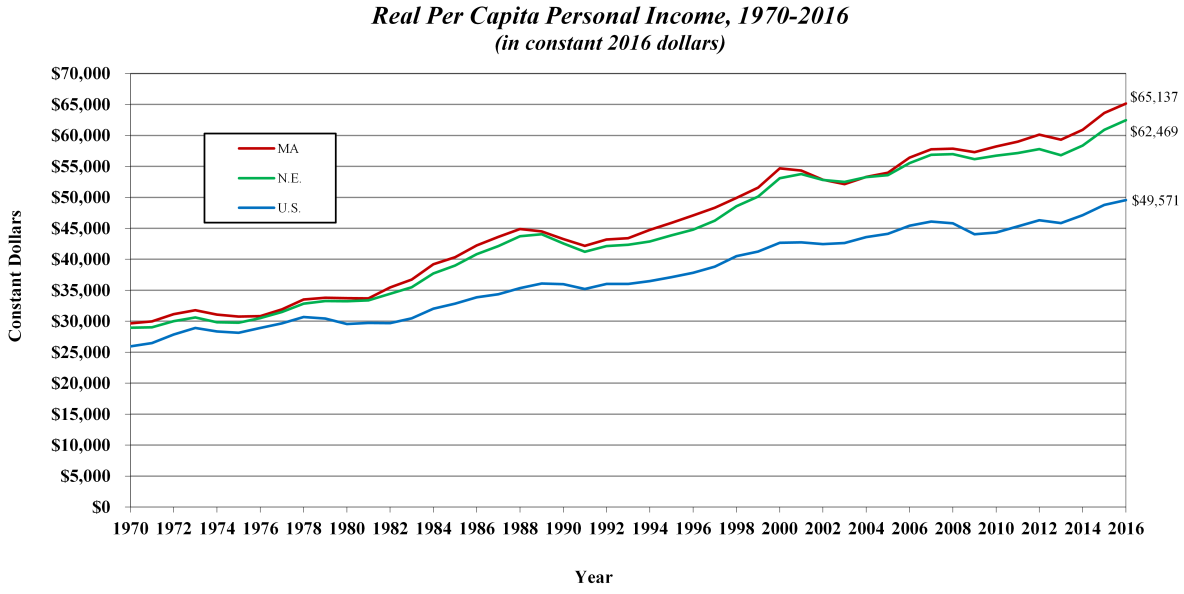


SOURCE: U.S. Internal Revenue Service, Statistics of Income.

PERSONAL INCOME, CONSUMER PRICES, AND POVERTY

Personal Income. Real per capita income levels in Massachusetts have varied over time. Between 1992 and 1997, real per capita income levels in the Commonwealth increased faster than the national average. In 2000, Massachusetts had its highest per capita income growth in 16 years, exceeding the national growth rate by 2.5 percentage points. From 2001 to 2003, real income declined in Massachusetts while staying roughly flat for the nation. However, real income levels in Massachusetts remained well above the national average. Following a significant decline in 2009, Massachusetts, New England, and the U.S. steadily increased until 2012. Overall, between 2006 and 2012, Massachusetts personal income increased considerably faster than the nation during the recession and its aftermath. In 2013, Massachusetts, New England, and the U.S. all experienced a slight decline in real income. From 2014 to 2015, real per capita income rose in the state, New England, and the nation. In recent years, Massachusetts per capita personal income rose higher than New England and continued to outpace the nation. At the state level in 2016, only the District of Columbia and Connecticut had higher levels of per capita personal income.

The following graph illustrates these changes in real per capita personal income in Massachusetts, New England, and the United States since 1971.



SOURCE: U.S. Bureau of Economic Analysis. Historical dollar values have been adjusted for inflation.

The following table compares per capita personal income in Massachusetts, New England, and the United States for the period 1971-2016.

Per Capita Personal Income, 1970-2016

Year	Nominal Income (in nominal dollars) MA	N.E.	U.S.	Real Income (in 2016 dollars) MA	N.E.	U.S.	Percent Change in Real Income MA	N.E.	U.S.
1970	$4,575	$4,547	$4,196	$29,646	$28,970	$25,955	4.3%	3.2%	4.8%
1971	$4,859	$4,795	$4,468	$29,994	$29,026	$26,478	1.2%	0.2%	2.0%
1972	$5,228	$5,156	$4,853	$31,164	$30,000	$27,865	3.9%	3.4%	5.2%
1973	$5,647	$5,589	$5,352	$31,772	$30,631	$28,931	1.9%	2.1%	3.8%
1974	$6,108	$6,056	$5,824	$31,076	$29,852	$28,353	-2.2%	-2.5%	-2.0%
1975	$6,592	$6,516	$6,312	$30,774	$29,760	$28,158	-1.0%	-0.3%	-0.7%
1976	$7,098	$7,061	$6,856	$30,817	$30,500	$28,919	0.1%	2.5%	2.7%
1977	$7,733	$7,701	$7,494	$31,924	$31,502	$29,680	3.6%	3.3%	2.6%
1978	$8,547	$8,527	$8,338	$33,531	$32,826	$30,693	5.0%	4.2%	3.4%
1979	$9,500	$9,501	$9,212	$33,808	$33,260	$30,454	0.8%	1.3%	-0.8%
1980	$10,695	$10,716	$10,153	$33,729	$33,224	$29,573	-0.2%	-0.1%	-2.9%
1981	$11,868	$11,914	$11,262	$33,677	$33,366	$29,736	-0.2%	0.4%	0.6%
1982	$13,005	$12,939	$11,947	$35,474	$34,421	$29,714	5.3%	3.2%	-0.1%
1983	$14,067	$13,896	$12,652	$36,717	$35,485	$30,488	3.5%	3.1%	2.6%
1984	$15,755	$15,472	$13,860	$39,199	$37,732	$32,016	6.8%	6.3%	5.0%
1985	$16,938	$16,591	$14,719	$40,332	$39,006	$32,831	2.9%	3.4%	2.5%
1986	$18,197	$17,795	$15,459	$42,248	$40,820	$33,853	4.8%	4.7%	3.1%
1987	$19,608	$19,182	$16,265	$43,619	$42,143	$34,364	3.2%	3.2%	1.5%
1988	$21,403	$20,900	$17,426	$44,890	$43,730	$35,354	2.9%	3.8%	2.9%
1989	$22,437	$22,218	$18,653	$44,514	$44,030	$36,104	-0.8%	0.7%	2.1%
1990	$23,080	$22,764	$19,591	$43,285	$42,564	$35,975	-2.8%	-3.3%	-0.4%
1991	$23,468	$23,056	$19,985	$42,161	$41,234	$35,217	-2.6%	-3.1%	-2.1%
1992	$24,639	$24,360	$21,060	$43,192	$42,146	$36,027	2.4%	2.2%	2.3%
1993	$25,487	$25,152	$21,698	$43,422	$42,338	$36,039	0.5%	0.5%	0.0%
1994	$26,603	$26,092	$22,538	$44,738	$42,873	$36,500	3.0%	1.3%	1.3%
1995	$27,933	$27,394	$23,568	$45,879	$43,880	$37,116	2.5%	2.4%	1.7%
1996	$29,523	$28,763	$24,728	$47,095	$44,806	$37,826	2.7%	2.1%	1.9%
1997	$31,152	$30,401	$25,950	$48,332	$46,227	$38,805	2.6%	3.2%	2.6%
1998	$32,909	$32,393	$27,510	$49,928	$48,561	$40,507	3.3%	5.0%	4.4%
1999	$34,849	$34,133	$28,627	$51,580	$50,137	$41,241	3.3%	3.2%	1.8%
2000	$38,547	$37,363	$30,602	$54,691	$53,077	$42,652	6.0%	5.9%	3.4%
2001	$39,944	$38,900	$31,540	$54,336	$53,762	$42,743	-0.7%	1.3%	0.2%
2002	$39,856	$39,000	$31,815	$52,836	$52,812	$42,445	-2.8%	-1.8%	-0.7%
2003	$40,805	$39,859	$32,692	$52,131	$52,496	$42,643	-1.3%	-0.6%	0.5%
2004	$42,856	$41,838	$34,316	$53,288	$53,259	$43,600	2.2%	1.5%	2.2%
2005	$44,842	$43,644	$35,904	$53,979	$53,603	$44,123	1.3%	0.6%	1.2%
2006	$48,307	$46,858	$38,144	$56,404	$55,543	$45,411	4.5%	3.6%	2.9%
2007	$50,417	$49,201	$39,821	$57,752	$56,863	$46,094	2.4%	2.4%	1.5%
2008	$52,283	$51,278	$41,082	$57,864	$56,990	$45,796	0.2%	0.2%	-0.6%
2009	$51,412	$50,537	$39,376	$57,288	$56,158	$44,051	-1.0%	-1.5%	-3.8%
2010	$53,054	$52,060	$40,277	$58,204	$56,731	$44,332	1.6%	1.0%	0.6%
2011	$55,232	$54,056	$42,461	$58,995	$57,163	$45,305	1.4%	0.8%	2.2%
2012	$57,192	$55,728	$44,282	$60,138	$57,804	$46,290	1.9%	1.1%	2.2%
2013	$57,182	$55,517	$44,493	$59,313	$56,813	$45,839	-1.4%	-1.7%	-1.0%
2014	$59,650	$57,806	$46,464	$60,892	$58,353	$47,106	2.7%	2.7%	2.8%
2015	$62,697	$60,271	$48,190	$63,620	$60,908	$48,798	4.5%	4.4%	3.6%
2016	$65,137	$62,469	$49,571	$65,137	$62,469	$49,571	2.4%	2.6%	1.6%

SOURCE: U.S. Bureau of Economic Analysis.
NOTE: Using midyear population estimates from the Census Bureau and two CPI-U series from the U.S. Bureau of Labor Statistics for price inflation.

Average Annual Pay. Massachusetts saw steady growth in average annual pay for most of the past fifteen years, adjusted for inflation. It lost ground in 2009, but resumed growth in 2010. Payroll data are reported to the Quarterly Census of Employment and Wages (QCEW) by all employers covered under the Unemployment Insurance programs, and summary data are released. Average annual pay is computed by dividing the total annual payroll of employees covered by Unemployment Insurance programs by the average monthly number of employees from the data in the QCEW. Since 2005, average annual wages in the state have grown at an annual rate of 0.9 percent, compared to 0.7 percent for the nation. The level of average annual pay in Massachusetts in 2015 was 26 percent higher than the national average: $66,692 compared to $52,942.

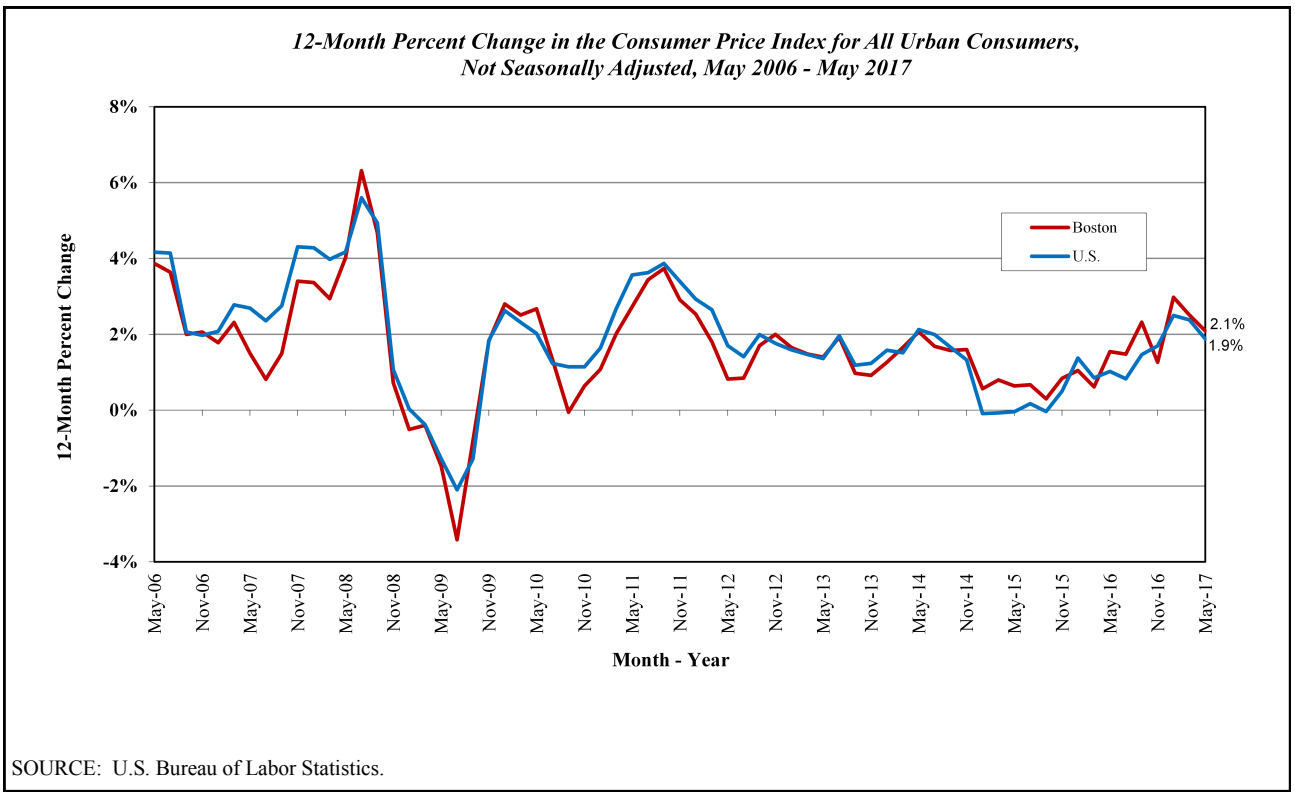
Annual Wage and Salary Disbursements. Wage and salary disbursements by place of work is a component of personal income and measures monetary disbursements to employees. This includes compensation of corporate officers, commissions, tips, bonuses, and receipts in-kind. Although the data are recorded on a place-of-work basis, they are then adjusted to a place-of-residence basis so that the personal income of the recipients whose place of residence differs from their place of work will be correctly assigned to their state of residence. The table below details Wage and Salary Disbursements since 1990. Between 1998 and 2000, the Massachusetts share of New England and overall U.S. totals increased. In subsequent years, the Massachusetts share of New England and the U.S. decreased slightly until 2006. Since then, Massachusetts' share of New England has risen steadily while its share of the U.S has stayed roughly the same. In 2016, the shares were 52.7 and 3.0 percent respectively.

Annual Wage and Salary Disbursements, 1990-2016
(in millions of 2015 dollars)

Year	U.S.	N.E.	MA	MA as a pct. of N.E.	MA as a pct. of U.S.
1990	$ 4,950	$308	$149	48.4%	3.0%
1991	$ 4,876	$294	$142	48.3%	2.9%
1992	$ 5,009	$298	$144	48.3%	2.9%
1993	$ 5,035	$298	$145	48.5%	2.9%
1994	$ 5,159	$303	$148	48.8%	2.9%
1995	$ 5,309	$312	$153	49.0%	2.9%
1996	$ 5,457	$320	$158	49.3%	2.9%
1997	$ 5,719	$337	$166	49.3%	2.9%
1998	$ 6,074	$358	$177	49.5%	2.9%
1999	$ 6,341	$376	$189	50.2%	3.0%
2000	$ 6,639	$401	$206	51.2%	3.1%
2001	$ 6,625	$400	$203	50.7%	3.1%
2002	$ 6,578	$391	$196	50.1%	3.0%
2003	$ 6,613	$391	$194	49.6%	2.9%
2004	$ 6,797	$401	$199	49.6%	2.9%
2005	$ 6,904	$401	$198	49.4%	2.9%
2006	$ 7,115	$410	$203	49.5%	2.9%
2007	$ 7,306	$422	$211	49.9%	2.9%
2008	$ 7,187	$416	$209	50.2%	2.9%
2009	$ 6,899	$400	$201	50.3%	2.9%
2010	$ 6,923	$403	$204	50.6%	2.9%
2011	$ 6,979	$406	$206	50.8%	3.0%
2012	$ 7,145	$411	$210	51.2%	2.9%
2013	$ 7,232	$415	$214	51.4%	3.0%
2014	$ 7,478	$429	$222	51.9%	3.0%
2015	$ 7,849	$449	$235	52.4%	3.0%
2016	$ 8,082	$462	$244	52.7%	3.0%

SOURCE: U.S. Bureau of Economic Analysis.

Consumer Prices. Higher income levels in Massachusetts relative to the rest of the United States are offset to some extent by the higher cost of living in Massachusetts. The following graph presents consumer price trends for the Boston metropolitan area and the United States for the period between May 2006 and May 2017. The latest available data for May 2017 show that the CPI-U for the Boston area increased at a rate of 2.1 percent over May 2016. The U.S. index increased at a rate of 1.9 percent over the same period.



SOURCE: U.S. Bureau of Labor Statistics.

In 2009, the Boston metropolitan area and U.S. experienced their first monthly year-over-year declines in the CPI-U since 1954 and 1955, respectively. The 2016 U.S. CPI-U increased 10.1 percent since 2010 while Boston's CPI-U increased 9.7 percent during that period. Between 2014 and 2016, Boston's Consumer Price Index increased by 2.1 percent while in the United States as a whole, CPI-U increased by 1.4 percent. The table on the following page shows the annual average of the Consumer Price Index for All Urban Consumers (CPI-U) and the percentage change in that average from the previous year from 1970 through the present.

Consumer Price Index for All Urban Consumers (CPI-U), 1970-2016

(not seasonally adjusted; 1982-1984 base period average=100)

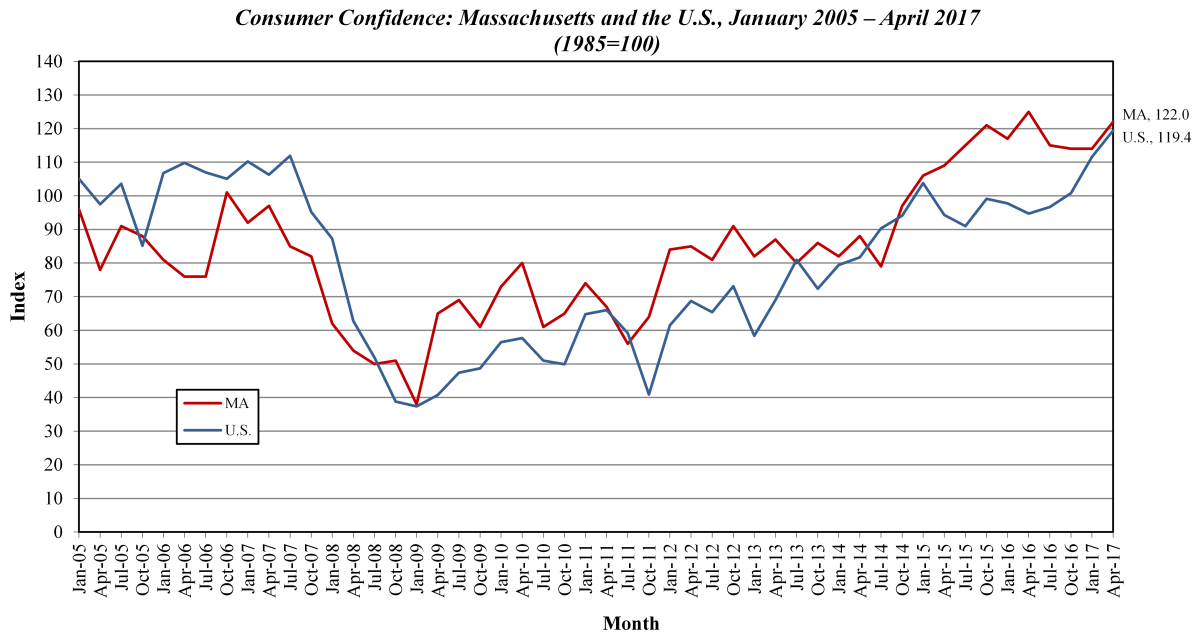
	Boston Metro Area		United States	
Year	CPI-U	Pct. Change	CPI-U	Pct. Change
1970	40.2		38.8	
1971	42.2	5.0%	40.5	4.4%
1972	43.7	3.6%	41.8	3.2%
1973	46.3	5.9%	44.4	6.2%
1974	51.2	10.6%	49.3	11.0%
1975	55.8	9.0%	53.8	9.1%
1976	60.0	7.5%	56.9	5.8%
1977	63.1	5.2%	60.6	6.5%
1978	66.4	5.2%	65.2	7.6%
1979	73.2	10.2%	72.6	11.3%
1980	82.6	12.8%	82.4	13.5%
1981	91.8	11.1%	90.9	10.3%
1982	95.5	4.0%	96.5	6.2%
1983	99.8	4.5%	99.6	3.2%
1984	104.7	4.9%	103.9	4.3%
1985	109.4	4.5%	107.6	3.6%
1986	112.2	2.6%	109.6	1.9%
1987	117.1	4.4%	113.6	3.6%
1988	124.2	6.1%	118.3	4.1%
1989	131.3	5.7%	124.0	4.8%
1990	138.9	5.8%	130.7	5.4%
1991	145.0	4.4%	136.2	4.2%
1992	148.6	2.5%	140.3	3.0%
1993	152.9	2.9%	144.5	3.0%
1994	154.9	1.3%	148.2	2.6%
1995	158.6	2.4%	152.4	2.8%
1996	163.3	3.0%	156.9	3.0%
1997	167.9	2.8%	160.5	2.3%
1998	171.7	2.3%	163.0	1.6%
1999	176.0	2.5%	166.6	2.2%
2000	183.6	4.3%	172.2	3.4%
2001	191.5	4.3%	177.1	2.8%
2002	196.5	2.6%	179.9	1.6%
2003	203.9	3.8%	184.0	2.3%
2004	209.5	2.7%	188.9	2.7%
2005	216.4	3.3%	195.3	3.4%
2006	223.1	3.1%	201.6	3.2%
2007	227.4	1.9%	207.3	2.8%
2008	235.4	3.5%	215.3	3.8%
2009	233.8	-0.7%	214.5	-0.4%
2010	237.4	1.6%	218.1	1.6%
2011	243.9	2.7%	224.9	3.2%
2012	247.7	1.6%	229.6	2.1%
2013	251.1	1.4%	233.0	1.5%
2014	255.2	1.6%	236.7	1.6%
2015	256.7	0.6%	237.0	0.1%
2016	260.5	1.5%	240.0	1.3%

SOURCE: U.S. Bureau of Labor Statistics.

Consumer Confidence, Present Situation, and Future Expectations. These three measures offer multiple insights into consumer attitudes. The U.S. measures are compiled from a national monthly survey of 5,000 households and are published by The Conference Board, Inc. The survey for Massachusetts is conducted in a similar manner and the results are published by MassInsight, based on quarterly polling of 450 adult residents of Massachusetts. The "Present Situation" index measures consumers' appraisal of business and employment conditions at the time of the survey. The "Future Expectations" index focuses on consumers' expectations for six months hence regarding business and employment conditions, as well as expected family income. The overall "Consumer Confidence" index is a weighted average of the two sub-indices. Although the U.S. measures are compiled by a different source than the Massachusetts measures, according to the Federal Reserve Bank of Boston, the numbers are generally comparable. A score of 100 is considered neutral.

According to the Conference Board, consumer confidence nationally reached a six-year high of 124.9 in March 2017. The all-time quarterly low reading was 25.3 in February 2009. The Massachusetts index has generally been higher than the U.S. index since sharing lows in January 2009, except for brief periods as they tracked closely together in 2011 and experienced slight dips in July 2013 and July 2014.

In the third quarter of 2017, Consumer Confidence for Massachusetts reached 122.0, down from 114.0 in the second quarter. The U.S. has surpassed its pre-recessionary (2007) levels and stood at 119.4 in the third quarter of 2017. The following graph and table detail the recent record of these measures.



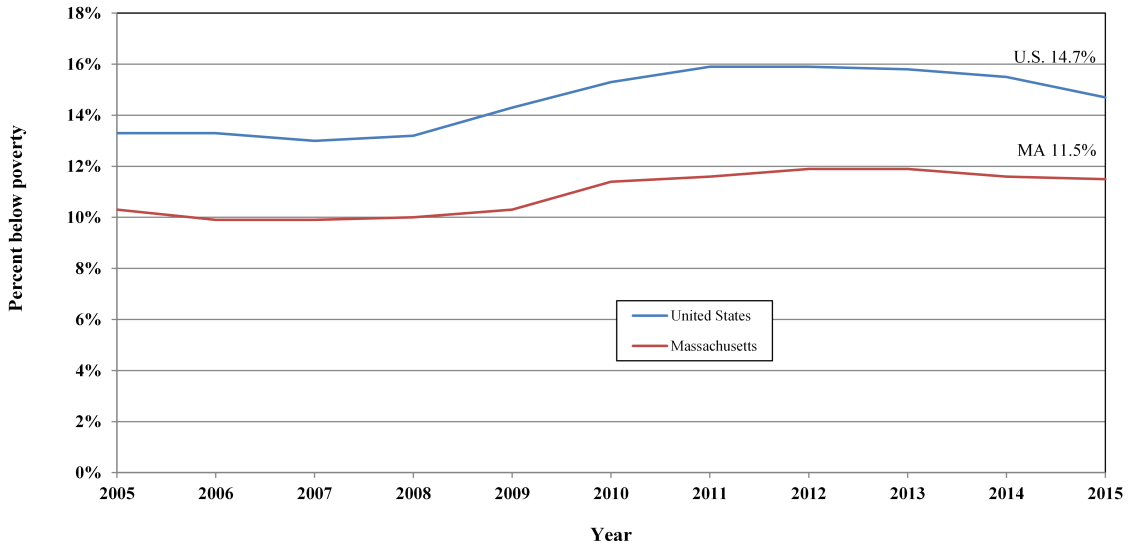
SOURCES: The Conference Board, Inc. (for U.S. measures, seasonally adjusted); MassInsight Corporation (for MA measures, not seasonally adjusted).

Consumer Confidence, Present Situation, and Future Expectations for Massachusetts and the U.S. (1985=100)						
	Consumer Confidence		Present Situation		Future Expectations	
	MA	U.S.	MA	U.S.	MA	U.S.
Oct-05	88.0	85.2	80.0	107.8	95.0	70.1
Jan-06	81.0	106.8	71.0	128.8	87.0	92.1
Apr-06	76.0	109.8	77.0	136.2	76.0	92.3
Jul-06	76.0	107.0	68.0	134.2	81.0	88.9
Oct-06	101.0	105.1	86.0	125.1	111.0	91.9
Jan-07	92.0	110.2	74.0	133.9	104.0	94.4
Apr-07	97.0	106.3	89.0	133.5	102.0	88.2
Jul-07	85.0	111.9	80.0	138.3	90.0	94.4
Oct-07	82.0	95.2	76.0	118.0	86.0	80.0
Jan-08	62.0	87.3	49.0	114.3	71.0	69.3
Apr-08	54.0	62.8	35.0	81.9	67.0	50.0
Jul-08	50.0	51.9	24.0	65.8	68.0	42.7
Oct-08	51.0	38.8	27.0	43.5	66.0	35.7
Jan-09	38.0	37.4	9.0	29.7	58.0	42.5
Apr-09	65.0	40.8	24.0	25.5	92.0	51.0
Jul-09	69.0	47.4	16.0	23.3	105.0	63.4
Oct-09	61.0	48.7	14.0	21.1	93.0	67.0
Jan-10	73.0	56.5	14.0	25.2	112.0	77.3
Apr-10	80.0	57.7	22.0	28.2	119.0	77.4
Jul-10	61.0	51.0	16.0	26.4	91.0	67.5
Oct-10	65.0	49.9	15.0	23.5	99.0	67.5
Jan-11	74.0	64.8	17.0	31.1	112.0	87.3
Apr-11	67.0	66.0	24.0	40.2	96.0	83.2
Jul-11	56.0	59.2	20.0	35.7	80.0	74.9
Oct-11	64.0	40.9	24.0	27.1	91.0	50.0
Jan-12	84.0	61.5	34.0	38.8	118.0	76.7
Apr-12	85.0	68.7	41.0	51.2	114.0	80.4
Jul-12	81.0	65.4	40.0	45.9	109.0	78.4
Oct-12	91.0	73.1	48.0	56.7	120.0	84.0
Jan-13	82.0	58.4	48.0	56.2	105.0	59.9
Apr-13	87.0	69.0	54.0	61.0	109.0	74.3
Jul-13	80.0	81.0	56.0	73.6	97.0	86.0
Oct-13	86.0	72.4	64.0	72.6	101.0	72.2
Jan-14	82.0	79.4	55.0	77.3	99.0	80.8
Apr-14	88.0	81.7	66.0	78.5	103.0	83.9
Jul-14	79.0	90.3	69.0	87.9	86.0	91.9
Oct-14	97.0	94.1	76.0	94.4	111.0	93.8
Jan-15	106.0	103.8	84.0	113.9	120.0	97.0
Apr-15	109.0	94.3	94.0	105.1	119.0	87.1
Jul-15	115.0	91.0	115.0	104.0	115.0	82.3
Oct-15	121.0	99.1	118.0	114.6	123.0	88.7
Jan-16	117.0	97.8	122.0	116.6	114.0	85.3
Apr-16	125.0	94.7	129.0	117.1	123.0	79.7
Jul-16	115.0	96.7	120.0	118.8	111.0	82.0
Oct-16	114.0	100.8	120.0	123.1	111.0	86.0
Jan-17	114.0	111.6	128.0	130.0	104.0	99.3
Apr-17	122.0	119.4	139.0	140.3	111.0	105.4

SOURCES: The Conference Board, Inc. (for U.S. measures, seasonally adjusted); MassInsight Corporation (for MA measures, not seasonally adjusted).

Poverty. Since 2005, the Massachusetts poverty rate, which was 11.5 percent in 2015, has been three to four percentage points lower than the national average, which was 14.7 percent in 2015. Massachusetts ranked 38th out of the 50 states and the District of Columbia in 2015, for percent of persons whose ratio of income to the poverty level was below 100 percent in the past 12 months. Poverty status is not determined for all people. Institutionalized people, people in military quarters, people in college dormitories, and unrelated individuals under 15 years old are excluded.

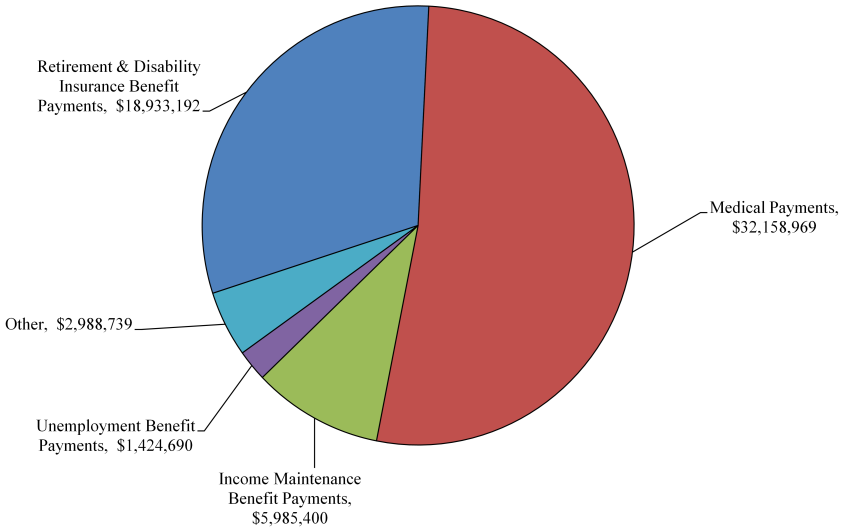
Poverty Rates in the U.S. and Massachusetts, 2005-2015



SOURCE: U.S. Census Bureau, American Community Survey, 1-Year Estimates.

Transfer Payments. Transfer payment income is payment to individuals from all levels of government and from businesses for which no current services are performed, including payments to nonprofit institutions serving individuals. These payments accounted for 14.8 percent of total personal income in Massachusetts in 2015, dropping from 14.7 percent in 2014. The chart below does not include transfer payments from businesses or payments to non-profit organizations. Total transfer payments to individuals in Massachusetts from governments and businesses totaled $63.03 billion for 2015, adjusted for inflation. Fifty-one percent of government transfer payments to individuals were medical payments, up from over 49.7 percent in 2014.

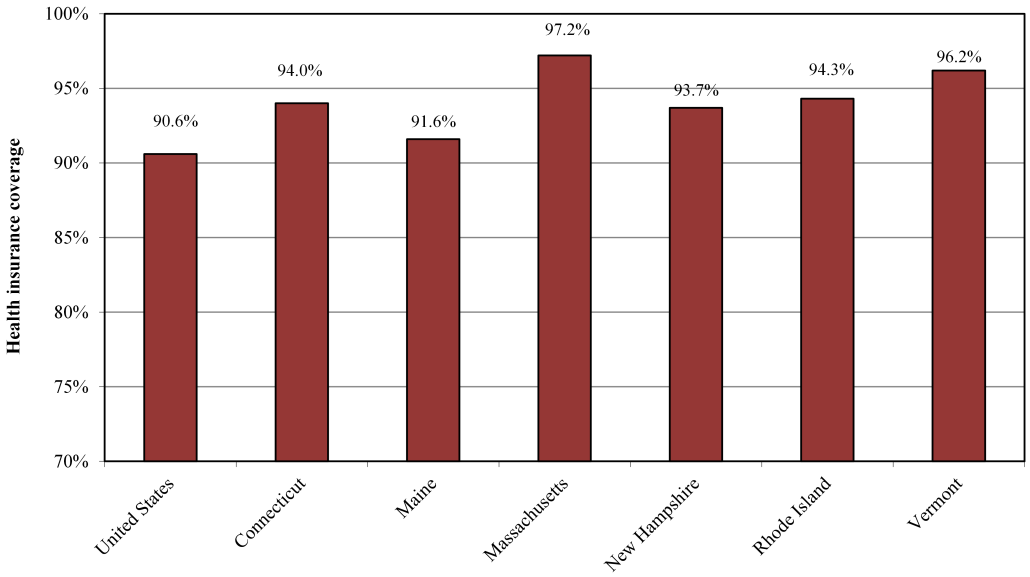
Transfer Payments from Governments to Individuals in Massachusetts in 2015
(From Annual State Personal Income Estimates)
(in thousands of dollars)



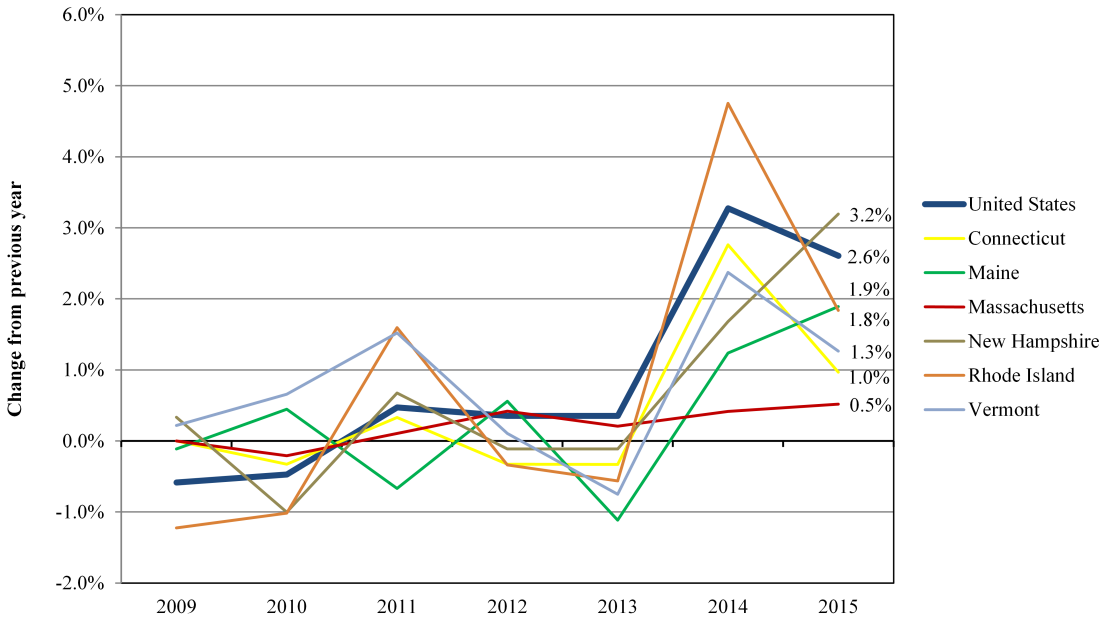
SOURCE: U.S. Bureau of Economic Analysis, Annual State Personal Income Estimates.
NOTE: The category "other" includes veterans' benefit payments, federal education and training assistance payments, and a small residual of miscellaneous other payments to individuals.

Health Insurance Coverage. Massachusetts leads the nation in the percent of individuals with health insurance coverage. Massachusetts passed legislation in 2006 mandating universal coverage in the Commonwealth. In 2015, 97.2 percent of the civilian non-institutionalized population was covered in the state by either private or public insurance, compared with 90.6 percent nationwide. Massachusetts also leads the other New England states in coverage, with Vermont as the next closest at 96.2 percent. All of the New England states have higher rates of coverage than the nation. These data do not indicate the comprehensiveness of coverage, however.

Health Insurance Coverage, U.S. and New England States 2015



Change in Health Insurance Coverage: United States and the New England States



SOURCE: U.S. Census Bureau, American Community Survey, 1-Year Estimates.

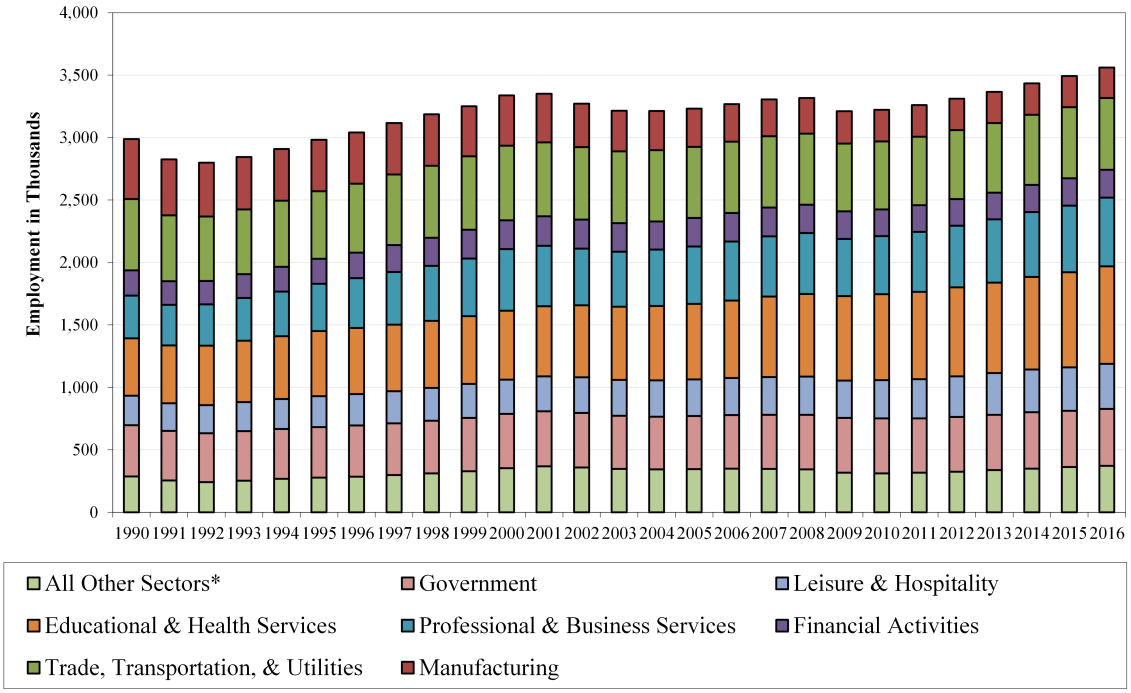
EMPLOYMENT

Employment by Industry. The chart on this page shows the annual level of non-agricultural payroll employment in Massachusetts based on the North American Industry Classification System (NAICS) for the seven largest NAICS supersectors starting with 1990, the earliest year for which NAICS data are available. The chart on the following page compares the supersector shares for 2016 with the corresponding shares for 1996. Like many industrial states, Massachusetts has seen a steady decline of its manufacturing jobs base over the last two decades, not only as a share of total employment, but in absolute numbers of jobs as well. Several NAICS service sectors, Education and Health Services, Professional and Business Services, and Leisure and Hospitality have grown to take the place of manufacturing in driving the Massachusetts economy and now account for almost half of total payroll employment, while Financial Activities, Government, Information, and Trade, Transportation & Utilities have remained relatively level or declined in share.

After significant declines in 2009, total non-agricultural employment in Massachusetts eventually increased 0.4 percent and continued to grow steadily, with nonfarm employment increasing 2.0 percent in 2016. With an annual average just under 3.6 million nonfarm employees, 2016 had the highest numbers to date.

After years of moderate but steady declines or near-zero growth in the late nineties and early 2000s, manufacturing employment in the state experienced steep annual declines in 2002 (10.2 percent) and 2003 (7.0 percent) before returning to more moderate declines in 2004 (3.5 percent). After a steep drop of 9.5 percent in 2009, the decline returned to a less dramatic 2.4 percent in 2010. February 2017 saw manufacturing employment decrease by 1.9 percent since February of 2016. The 2016 manufacturing employment total was slightly lower than 2014 (245.5 thousand compared to 250.3).

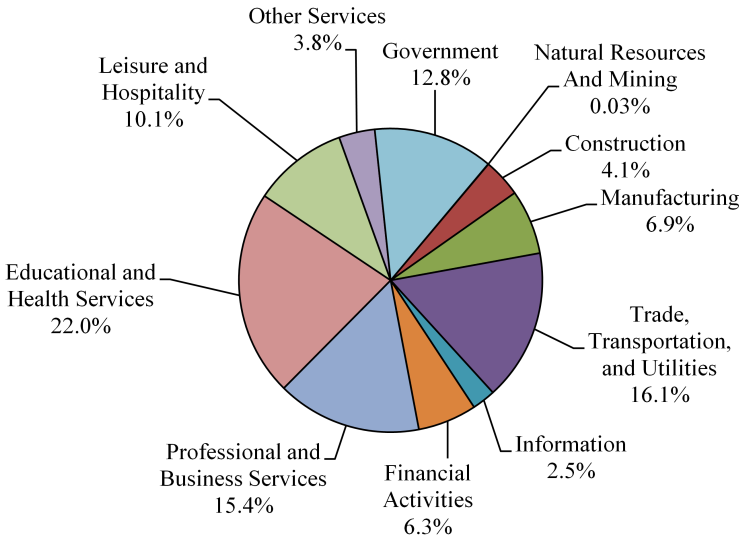
Annual Average Employment in Massachusetts, NAICS Supersectors, 1990-2016



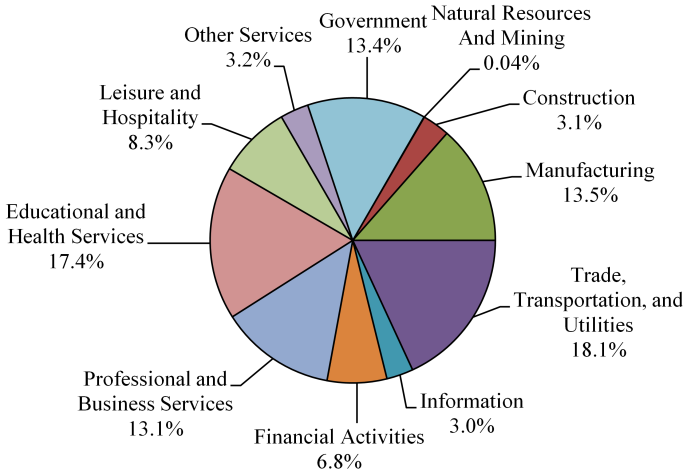
SOURCE: U.S. Bureau of Labor Statistics, Current Employment Statistics (CES).
*Includes Mining & Natural Resources, Construction, Information, and Other Services.

Massachusetts Nonfarm Payroll Employment
(NAICS Industry basis)

NAICS Supersectors: 2016 Share



NAICS Supersectors: 1996 Share



SOURCE: U.S. Bureau of Labor Statistics, Current Employment Statistics (CES).

Largest Employers in Massachusetts. The following inset lists the 19 largest private employers in Massachusetts based upon employment covered by the Unemployment Insurance system for FY 2016. The 2016 list is nearly identical to the 2015 list, except the TJX Companies is among the top 19 and Tufts University is no longer in the top listing. As noted, the list does not include employers whose headquarters are located outside of Massachusetts, and it may not include some employers who do business in the state under multiple legal names or register each facility as a separate employer.

Largest Private Employers Headquartered in Massachusetts in FY 2016
(listed alphabetically)

Bay State Medical Center, Inc	President and Fellows of Harvard College
Beth Israel Deaconess Medical Center	Raytheon Company
Boston Medical Center Corporation	The Stop & Shop Supermarkets Corporation
Boston University	Shaw's Supermarkets, Inc.
Brigham & Women's Hospital, Inc.	Southcoast Hospitals Group, Inc.
DeMoulas Supermarkets, Inc	State Street Bank & Trust Company
EMC Corporation	The Children's Hospital Corporation
General Hospital Corporation	The TJX Companies, Inc.
Massachusetts Institute of Technology	UMass Memorial Medical Center, Inc.
Partners Healthcare Systems, Inc.	

SOURCE: FY2016 Commonwealth of Massachusetts Comprehensive Annual Financial Report (CAFR), p. 197 (http://www.mass.gov/comptroller/docs/reports-audits/cafr/2016-cafr.pdf).
NOTE: This alphabetic listing includes private employers reporting large numbers of jobs covered by the MA unemployment insurance program. The information is based on the 2016 employment for employers as registered for unemployment insurance. The list may not include those employers who do business in Massachusetts under multiple legal corporations and those who register each store, facility or franchise as a separate employer. In addition, Bank of America NA, Home Depot USA, Inc., Massachusetts CVS Pharmacy LLC, Target Corp, United Parcel Service, Inc., Wal-Mart Associates, Inc., and Verizon New England are all large Massachusetts employers, but are headquartered outside of Massachusetts.

Massachusetts Companies in the Fortune 500 List. As of June 2017, Massachusetts is home to twelve Fortune 500 companies headquartered here. When comparing the 2016 Fortune 500 list to the 2015 list, nine Massachusetts companies gained and two lost rank. Biogen located in Weston, climbed 50 places on the list, the largest leap for a Massachusetts company, while Waltham-based Global Partners fell 154 places. General Electric relocated its headquarters from Fairfield, CT to Boston in May 2017 and leads the top Fortune 500 companies in the state with $126.7 billion in revenues.

Massachusetts Companies in the Fortune 500

Rank 2016	Rank 2015	Company (location)	Industry	2016 revenues (billions)
13	N/A	General Electric (Boston)	Industrial Machinery	$126.7
75	78	Liberty Mutual Ins. Group (Boston)	Insurance: Property & Casualty (Stock)	$38.3
77	94	Mass. Mutual Life Ins. (Springfield)	Insurance: Life, Health (Mutual)	$37.8
87	103	TJX (Framingham)	Specialty Retailers: Apparel	$33.2
116	129	Raytheon (Waltham)	Aerospace and Defense	$24.1
140	133	Staples (Framingham)	Specialty Retailers: Other	$20.2
154	181	Thermo Fisher Scientific (Waltham)	Scientific, Photo & Control Equipment	$18.3
248	298	Biogen (Weston)	Pharmaceuticals	$11.4
271	278	State Street Corp. (Boston)	Commercial Banks	$10.6
327	378	Boston Scientific (Natick)	Medical Products & Equipment	$8.4
334	180	Global Partners (Waltham)	Wholesalers: Diversified	$8.2
358	367	Eversource Energy (Springfield)	Utilities: Gas and Electric	$1.2

SOURCE: *Forbes*, June 2017 issue.

Unemployment Insurance Trust Fund. The unemployment insurance system is a federal-state cooperative program established by the Social Security Act and the Federal Unemployment Tax Act to provide for the payment of benefits to eligible individuals when they become unemployed through no fault of their own. Benefits are paid from the Commonwealth's Unemployment Insurance Trust Fund, financed through employer contributions. The assets and liabilities of the Commonwealth Unemployment Insurance Trust Fund are not assets and liabilities of the Commonwealth.

As of February 28, 2017, the preliminary Massachusetts Unemployment Trust Fund had a balance of $779 million. This balance is the sum of the private contributory account balance of $666 million and the government contributory account balance of $113 million. This compares to the August 31, 2016 balance of $913 million with a private contributory portion of $798 million. The March 2017 Unemployment Insurance Trust Fund report indicated that the private contributory account balance was estimated to be $621 million by the end of 2021 according to the Moody's-based outlook.

Unemployment. The unemployment rate in Massachusetts was consistently below or equal to the national average from mid-1995 through September 2005, with similar patterns of gradual improvement after the mid-2003 peak. The Massachusetts rate was greater than or equal to the U.S. rate for 19 months between January 2006 and June 2007, but has not exceeded the U.S. rate since then. The Massachusetts rate peaked at 9.6 percent in January 2010, the same month that the U.S. rate peaked at 10.6 percent. From July 2007 onward, the state rate remained equal to or below the comparable (not seasonally adjusted) U.S. unemployment rate.

Since reaching 6.8 percent in January 2014, the Massachusetts unemployment rate has gradually declined in May 2017 to 4.1 percent, which is the same as the national rate. The tables and graphs on the following two pages compare the unemployment rate in the state with those in New England and the U.S.

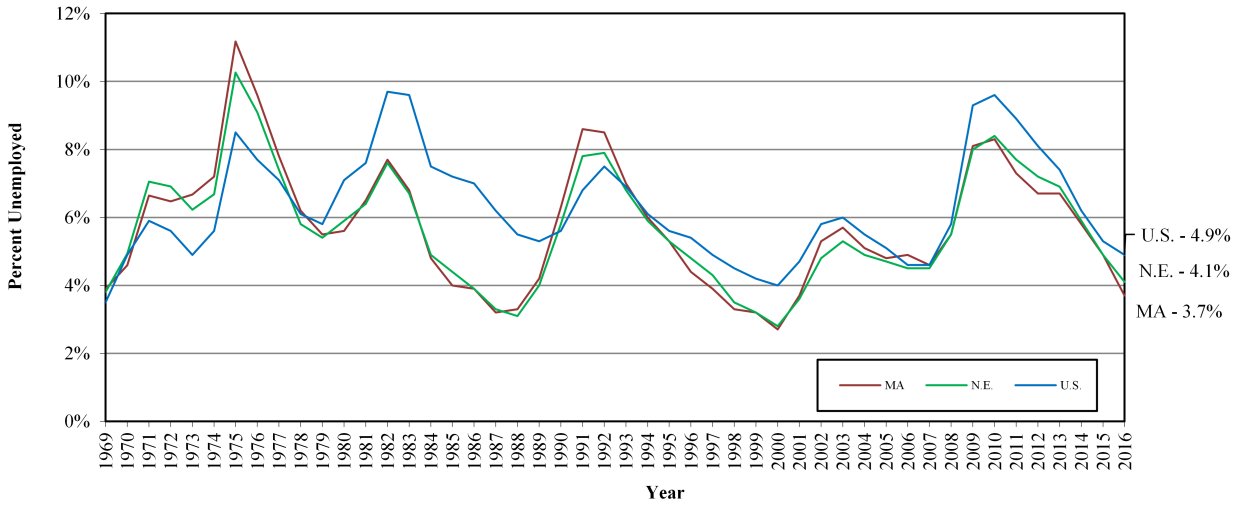
Annual Average Civilian Labor Force and Unemployment, 1969-2016

(in thousands)

	Civilian Labor Force			Unemployed			Unemployment Rate			MA Rate as
Year	MA	N.E.	U.S.	MA	N.E.	U.S.	MA	N.E.	U.S.	Pct. of U.S.
1969	2,581	5,201	80,734	100	198	2,832	3.9%	3.8%	3.5%	111.2%
1970	2,465	5,128	82,771	113	253	4,093	4.6%	4.9%	4.9%	93.7%
1971	2,459	5,157	84,382	163	364	5,016	6.6%	7.1%	5.9%	112.7%
1972	2,487	5,260	87,034	161	363	4,882	6.5%	6.9%	5.6%	115.6%
1973	2,557	5,387	89,429	171	336	4,365	6.7%	6.2%	4.9%	136.1%
1974	2,637	5,514	91,949	190	368	5,156	7.2%	6.7%	5.6%	128.5%
1975	2,725	5,633	93,775	305	578	7,929	11.2%	10.3%	8.5%	131.5%
1976	2,722	5,706	96,158	262	518	7,406	9.6%	9.1%	7.7%	124.7%
1977	2,763	5,821	99,009	215	433	6,991	7.8%	7.4%	7.1%	109.9%
1978	2,814	5,936	102,251	175	344	6,202	6.2%	5.8%	6.1%	101.6%
1979	2,853	6,071	104,962	157	328	6,137	5.5%	5.4%	5.8%	94.8%
1980	2,868	6,148	106,940	162	363	7,637	5.6%	5.9%	7.1%	78.9%
1981	2,942	6,259	108,670	190	403	8,273	6.5%	6.4%	7.6%	85.5%
1982	2,987	6,341	110,204	231	482	10,678	7.7%	7.6%	9.7%	79.4%
1983	2,997	6,392	111,550	202	428	10,717	6.8%	6.7%	9.6%	70.8%
1984	3,037	6,525	113,544	145	319	8,539	4.8%	4.9%	7.5%	64.0%
1985	3,051	6,633	115,461	121	289	8,312	4.0%	4.4%	7.2%	55.6%
1986	3,066	6,726	117,834	119	264	8,237	3.9%	3.9%	7.0%	55.7%
1987	3,094	6,825	119,865	100	227	7,425	3.2%	3.3%	6.2%	51.6%
1988	3,141	6,909	121,669	103	216	6,701	3.3%	3.1%	5.5%	60.0%
1989	3,176	7,007	123,869	132	277	6,528	4.2%	4.0%	5.3%	79.2%
1990	3,206	7,109	125,840	202	412	7,047	6.3%	5.8%	5.6%	112.5%
1991	3,195	7,117	126,346	275	554	8,628	8.6%	7.8%	6.8%	126.5%
1992	3,181	7,102	128,105	269	564	9,613	8.5%	7.9%	7.5%	113.3%
1993	3,174	7,051	129,200	222	481	8,940	7.0%	6.8%	6.9%	101.4%
1994	3,201	7,033	131,056	193	415	7,996	6.0%	5.9%	6.1%	98.4%
1995	3,215	7,049	132,304	170	374	7,404	5.3%	5.3%	5.6%	94.6%
1996	3,241	7,118	133,943	144	340	7,236	4.4%	4.8%	5.4%	81.5%
1997	3,306	7,220	136,297	130	312	6,739	3.9%	4.3%	4.9%	79.6%
1998	3,341	7,264	137,673	110	254	6,210	3.3%	3.5%	4.5%	73.3%
1999	3,354	7,327	139,368	107	234	5,880	3.2%	3.2%	4.2%	76.2%
2000	3,330	7,335	142,583	90	205	5,692	2.7%	2.8%	4.0%	67.5%
2001	3,381	7,394	143,734	126	267	6,801	3.7%	3.6%	4.7%	78.7%
2002	3,431	7,476	144,863	181	360	8,378	5.3%	4.8%	5.8%	91.4%
2003	3,422	7,504	146,510	195	401	8,774	5.7%	5.3%	6.0%	95.0%
2004	3,396	7,478	147,401	175	363	8,149	5.1%	4.9%	5.5%	92.7%
2005	3,384	7,521	149,320	164	352	7,591	4.8%	4.7%	5.1%	94.1%
2006	3,413	7,605	151,428	167	345	7,001	4.9%	4.5%	4.6%	106.5%
2007	3,426	7,648	153,124	158	344	7,078	4.6%	4.5%	4.6%	100.0%
2008	3,452	7,704	154,287	191	426	8,924	5.5%	5.5%	5.8%	94.8%
2009	3,470	7,729	154,142	281	620	14,265	8.1%	8.0%	9.3%	87.1%
2010	3,480	7,751	153,889	289	649	14,825	8.3%	8.4%	9.6%	86.5%
2011	3,469	7,738	153,617	252	597	13,747	7.3%	7.7%	8.9%	82.0%
2012	3,485	7,730	154,975	233	559	12,506	6.7%	7.2%	8.1%	82.7%
2013	3,511	7,738	155,389	236	533	11,460	6.7%	6.9%	7.4%	90.5%
2014	3,554	7,778	155,922	205	457	9,617	5.8%	5.9%	6.2%	93.5%
2015	3,580	7,795	157,130	174	383	8,296	4.9%	4.9%	5.3%	92.5%
2016	3,589	7,817	159,187	133	317	7,751	3.7%	4.1%	4.9%	75.5%

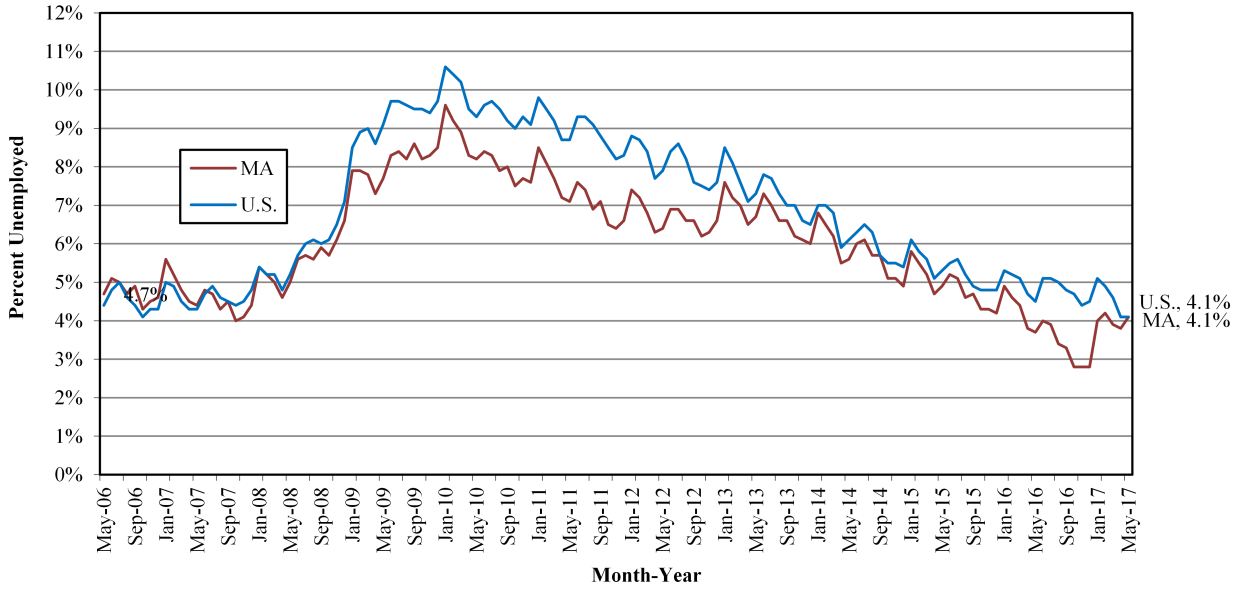
SOURCE: U.S. Bureau of Labor Statistics, Local Area Unemployment Statistics (LAUS) and Current Population Survey (CPS).

Annual Average Unemployment Rate, 1969-2016
Massachusetts, New England, and the United States



SOURCE: U.S. Bureau of Labor Statistics, Local Area Unemployment Statistics (LAUS).

Monthly Unemployment Rate, May 2006 - May 2017
Massachusetts and the United States
(not seasonally adjusted)

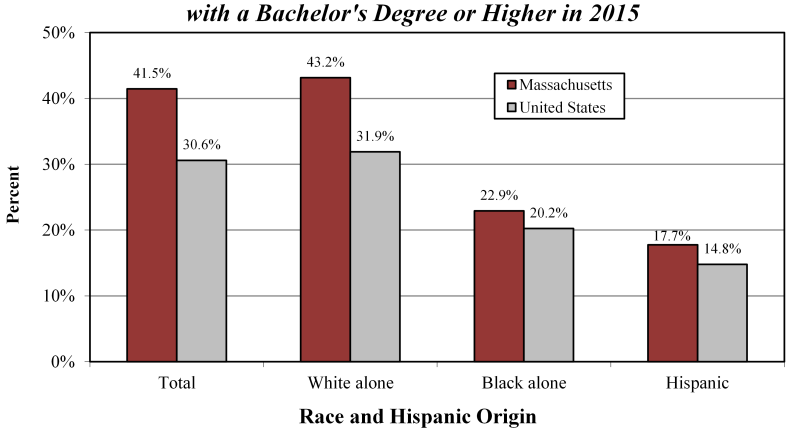


SOURCES: Massachusetts Executive Office of Labor and Workforce Development and U.S. Bureau of Labor Statistics, Local Area Unemployment Statistics (LAUS).

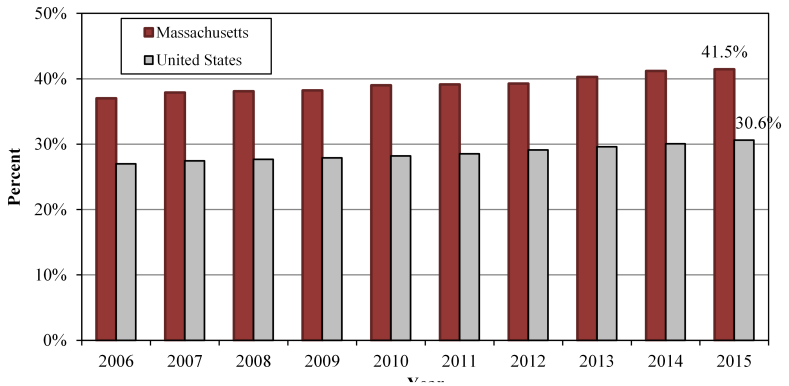
EDUCATION AND TECHNOLOGY

Educational Attainment. The availability of a skilled and well-educated population is an important resource for the Commonwealth. Only the District of Columbia had a higher percentage of adults with a bachelor's degree or higher in 2015, according to the Census Bureau's American Community Survey (ACS). The Census also reported that Massachusetts ranked 35th in persons who had not completed high school, at 9.8 percent of the population age 25 or older, less than the national average of 12.9 percent. Massachusetts' black and Hispanic populations achieved college degrees at a lower rate than its white population, but their rates were higher than their national averages. The most current ACS data are shown below.

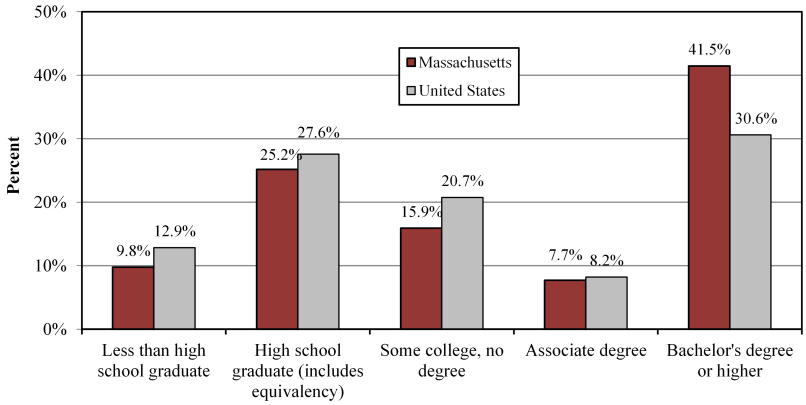
Persons in the U.S. and Massachusetts 25 Years and Older with a Bachelor's Degree or Higher in 2015



Percent of Persons 25 Years and Older in the U.S. and Massachusetts with a Bachelor's Degree or Higher, 2006-2015



Educational Attainment of Persons 25 Years and Older in the U.S. and Massachusetts in 2015



SOURCE: U.S. Census Bureau, American Community Survey.

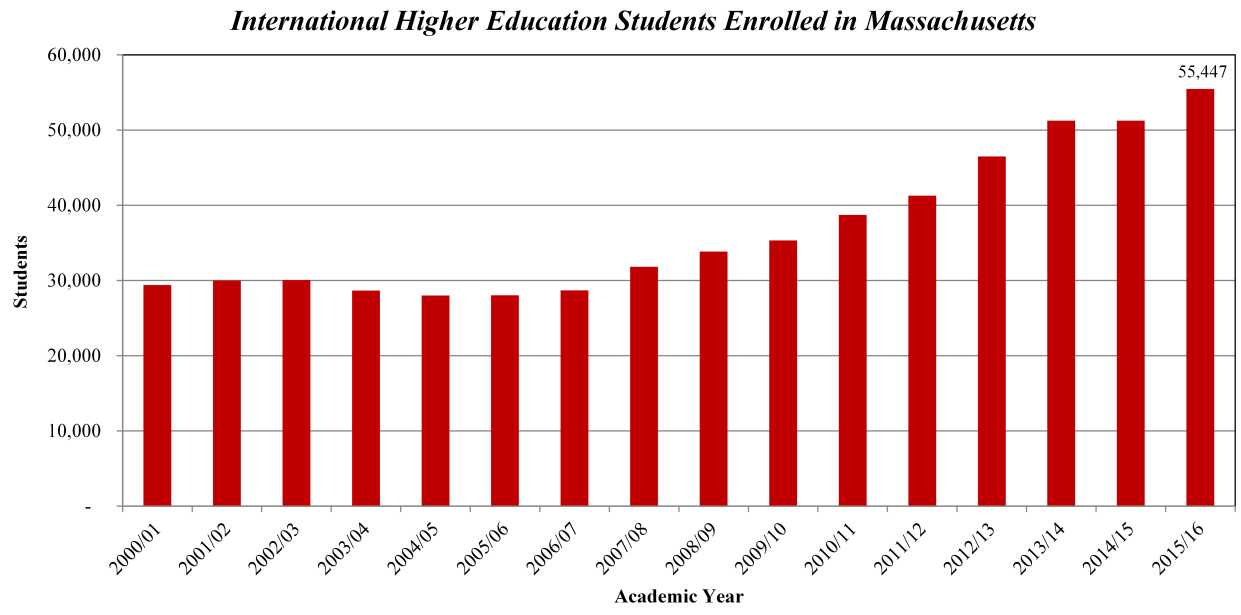
Higher Education Data. The table below compares Massachusetts residents' higher education enrollment by race and Hispanic origin to the U.S. There were 1.5 percent fewer people enrolled in college in the U.S. in 2015 compared to 2014. The proportion of total enrollment in Massachusetts remained relatively unchanged.

Higher Education Enrollment by Race and Hispanic Origin in 2015

	Total	White alone	Black alone	Asian alone	All other races	Hispanic or Latino
United States	22,656,979	67.3%	14.9%	8.5%	9.3%	17.0%
Massachusetts	586,389	71.9%	9.7%	10.8%	7.6%	10.7%

SOURCE: U.S. Census Bureau, American Community Survey, 2015 1-Year Estimates.

Survey data released by the Institute of International Education state that 55,447 foreign students were enrolled in Massachusetts colleges and universities in the 2015/2016 school year. This was an increase of 8.2 percent from the previous year. The national enrollment increased 7.1 percent. Massachusetts remains fourth ranked among states for foreign student enrollment.



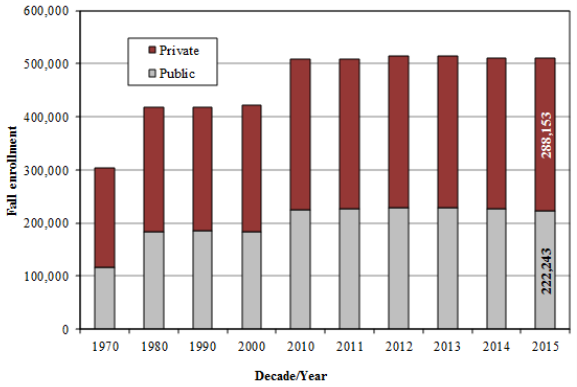
SOURCE: Institute of International Education.

The graphs and table on the following page provide information about higher education enrollment, degrees conferred, and research and development expenditures at colleges and universities.

U.S. Department of Education data show that from 2014 to 2015, higher education enrollment decreased 1.1 percent in the United States and 0.1 percent at Massachusetts institutions. During the 2000-2015 period, enrollment in public higher education increased 24 percent in the United States and 21 percent at Massachusetts institutions. Enrollment in private institutions increased 52 percent in the United States and 21 percent at Massachusetts institutions.

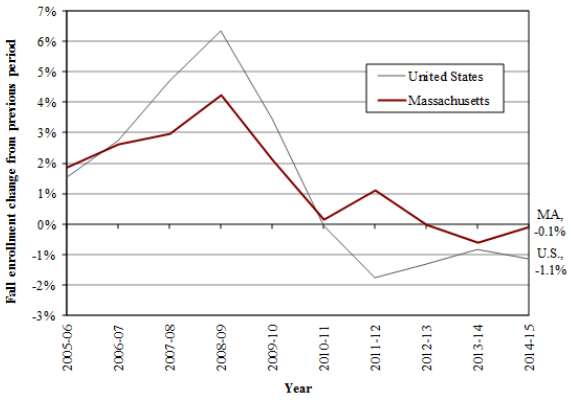
Research and development expenditures at universities and colleges increased 18 percent in the United States and 39 percent in Massachusetts between 2006 and 2015.

Massachusetts Higher Education Public/Private Enrollment



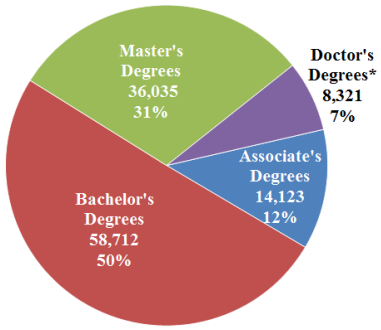
SOURCE: U.S. Department of Education, Digest of Education Statistics.

Percent Change in Total Higher Education Enrollment Massachusetts and the United States



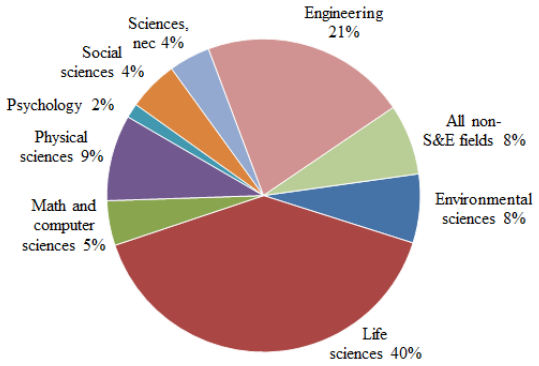
SOURCE: U.S. Department of Education, Digest of Education Statistics.

Degrees Conferred by Degree-Granting Institutions in Massachusetts, 2014-2015



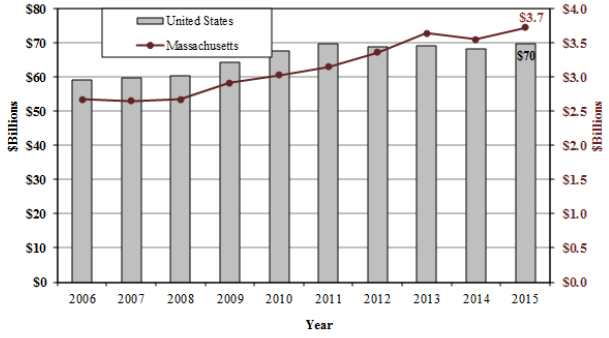
SOURCE: U.S. Department of Education, Digest of Education Statistics. *Includes Ph.D., Ed.D., and comparable degrees at the doctoral level.

R&D Expenditures at Massachusetts Universities and Colleges, by Science and Engineering Field: FY 2015



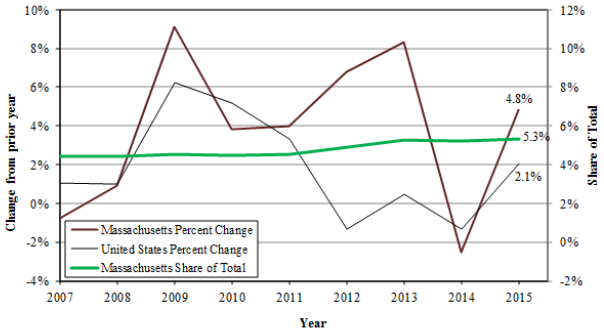
SOURCE: National Science Foundation. NOTE: $3.50 Billion in FY 2014.

Research and Development Expenditures at Universities and Colleges



SOURCE: National Science Foundation.

Research and Development Expenditures at Universities and Colleges



SOURCE: National Science Foundation.

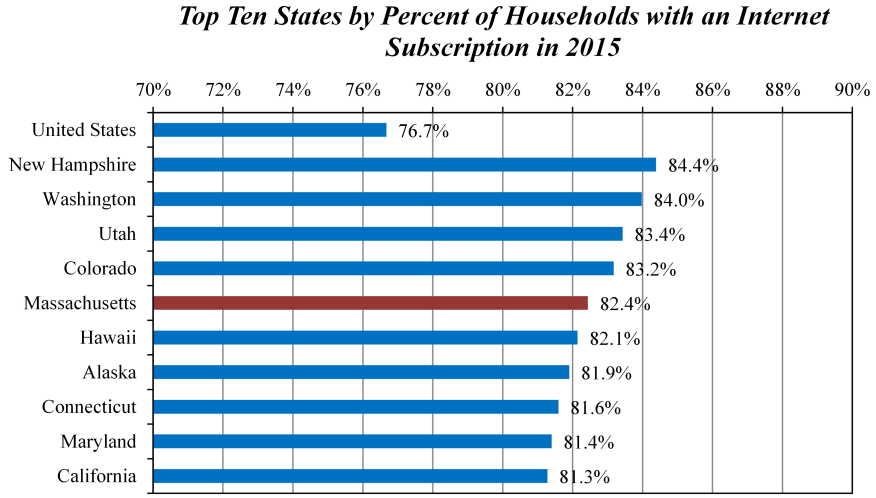
Current Massachusetts Higher Education Rank Among States and the District of Columbia

Enrollment -2015	MA Rank	Degrees Awarded - 2013	MA Rank	Research & Development$ - FY 2015	MA Rank
Total	13	Total	10	Total	5
Public	23	Associate's	21	Environmental sciences	2
Private	7	Bachelor's	9	Life sciences	7
		Master's	6	Math/computer sciences	6
		Professional/Doctorate	7	Physical sciences	3
				Psychology	8
				Social sciences	3
				Sciences, nec	2
				Engineering	5

SOURCE: U.S. DOE Digest of Education Statistics. SOURCE: National Science Foundation

EXHIBIT A-26 Quarter 4, FY 2017

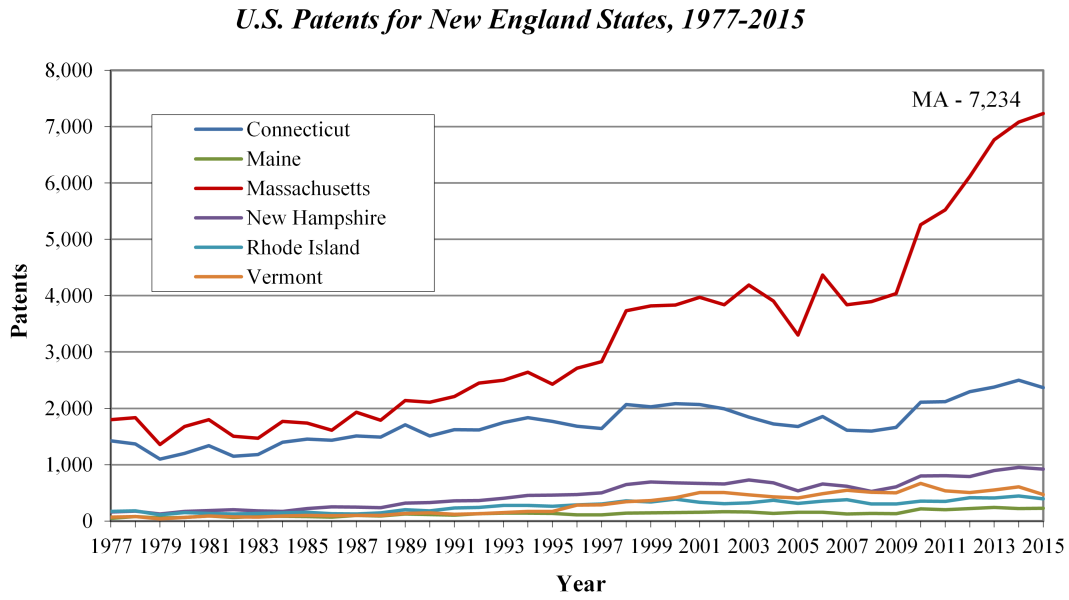
Internet Access. Massachusetts has the fifth highest household internet subscription rate in the U.S., according to the Census Bureau's 2015 American Community Survey.



SOURCE: U.S. Census Bureau, American Community Survey, 2015 1-Year Estimates.

Patents. The U.S. Patent and Trademark Office notes: "This report shows the number of U.S. patent documents (i.e., utility patents, design patents, plant patents, reissue patents, defensive publications, and statutory invention registrations) granted since 1977, broken down by the state or country of origin (patent origin is determined by the residence of the first-named inventor)."

In 2015, Massachusetts was fourth among all states for the number of new patents issued. Only six nations originated more U.S. patents than Massachusetts, putting the state on par with Canada for origination of U.S. patents. Since 1977, Massachusetts has received more new patents than any other New England state. With 6,777 new utilities patents and 7,234 total new patents in 2015, a 2.2 percent increase in total patents since 2014, Massachusetts innovators were responsible for 62 percent of the new patents in New England.

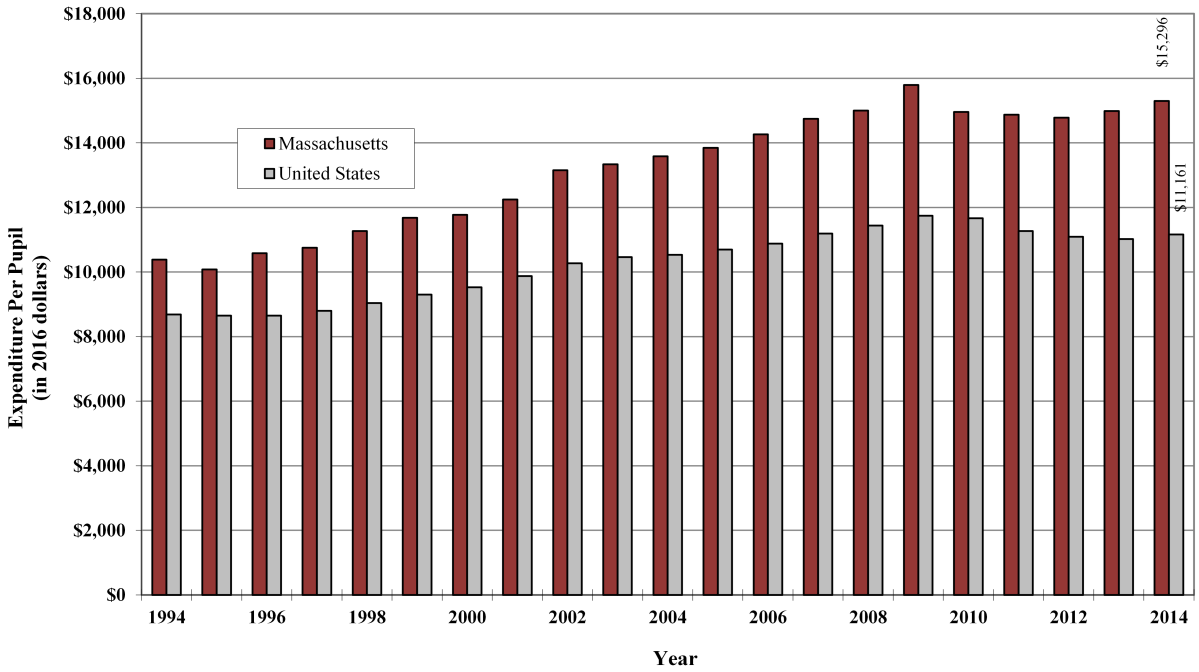


SOURCE: U.S. Patent and Trademark Office, Patent Technology Monitoring Team (PTMT).

Primary and Secondary Education Expenditures. Massachusetts has spent from 16.5 to 37.0 percent more per pupil on primary and secondary education than the national average since 1994. During the 2013-2014 school year, the average Massachusetts per student expenditures increased 2.1 percent to $15,296. Massachusetts was ranked 8th in the nation among states and the District of Columbia in 2014. The table and chart below show expenditures per pupil for Massachusetts and the U.S.

Per Pupil Expenditure in Public Elementary and Secondary Schools
(in 2016 adjusted dollars)

Fiscal Year	Massachusetts	United States	Ratio (MA/U.S.)	MA change from previous year
1994	$10,386	$8,685	1.20	
1995	$10,077	$8,652	1.16	-3.0%
1996	$10,584	$8,652	1.22	5.0%
1997	$10,752	$8,796	1.22	1.6%
1998	$11,266	$9,036	1.25	4.8%
1999	$11,678	$9,304	1.26	3.7%
2000	$11,769	$9,528	1.24	0.8%
2001	$12,248	$9,871	1.24	4.1%
2002	$13,149	$10,274	1.28	7.4%
2003	$13,335	$10,460	1.27	1.4%
2004	$13,587	$10,529	1.29	1.9%
2005	$13,846	$10,693	1.29	1.9%
2006	$14,263	$10,879	1.31	3.0%
2007	$14,745	$11,189	1.32	3.4%
2008	$14,998	$11,436	1.31	1.7%
2009	$15,795	$11,745	1.34	5.3%
2010	$14,958	$11,667	1.28	-5.3%
2011	$14,875	$11,267	1.32	-0.6%
2012	$14,783	$11,089	1.33	-0.6%
2013	$14,985	$11,024	1.36	1.4%
2014	$15,296	$11,161	1.37	2.1%

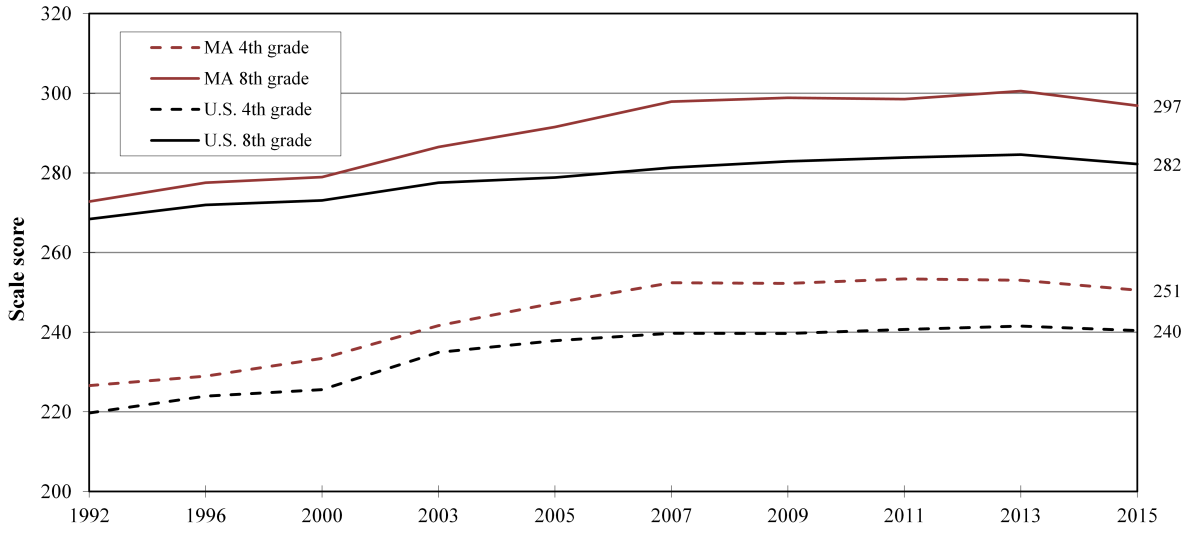


SOURCE: U.S. Census Bureau, Public Elementary–Secondary Education Finance Data.

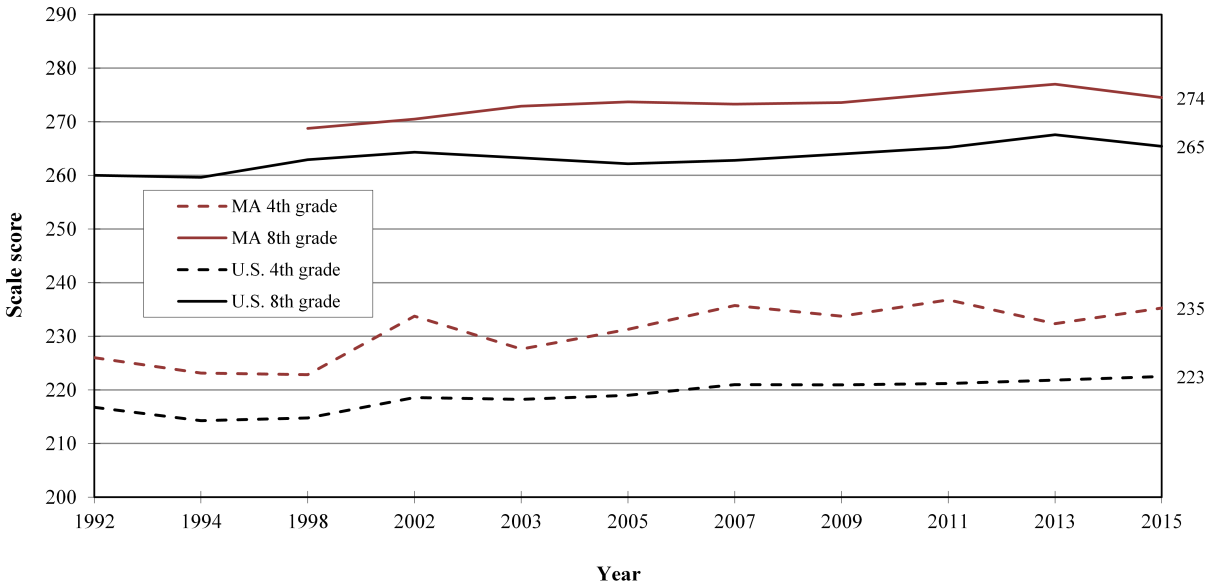
National Assessment of Educational Progress (NAEP) scores. The National Assessment of Educational Progress (NAEP), also known as "the Nation's Report Card," is the only nationally representative and continuing assessment of what America's students know and can do in various subject areas. Since 1969, assessments have been conducted periodically in reading, mathematics, science, writing, U.S. history, civics, geography, and the arts. Under the current structure, the Commissioner of Education Statistics, who heads the National Center for Education Statistics in the U.S. Department of Education, is responsible by law for administering the NAEP project.

Since 1990, NAEP assessments have also been conducted to give results for participating states. Those that choose to participate receive assessment results that report on the performance of students in that state. In its content, the state assessment is identical to the assessment conducted nationally. However, because the national NAEP samples were not and are not currently designed to support the reporting of accurate and representative state-level results, separate representative samples of students are selected for each participating jurisdiction/state. The graphs below compare the data available for Massachusetts and the national public samples.

NAEP Mathematics Scores for the U.S. and Massachusetts



NAEP Reading Scores for the U.S. and Massachusetts



SOURCE: National Center for Education Statistics.
NOTE: Between 1992 and 2003 math and reading tests were administered during different years.

Comparing BEA GDP for the U.S., the region, and Massachusetts. The U.S. Bureau of Economic Analysis (BEA) defines Gross Domestic Product by State (GDP) as "the value added in production by the labor and property located in a state. GDP for a state is derived as the sum of the gross state product originating in all industries in a state. In concept, an industry's GDP, referred to as its "value added", is equivalent to its gross output (sales or receipts and other operating income, commodity taxes, and inventory change) minus its intermediate inputs (consumption of goods and services purchased from other U.S. industries or imported)."

The BEA provides national (in January) and state (in June) annual and quarterly GDP estimates. *Mass*Benchmarks releases quarterly estimates of Massachusetts economic activity. This is reported in the following section. While we do not have access to many of the components that BEA uses to calculate state GDP in advance of its release, we provide an overview of our state's components when they are available. Additionally, we provide state economic indexes and industrial sector data that are released more frequently and in some cases, are among the components used to calculate state GDP.

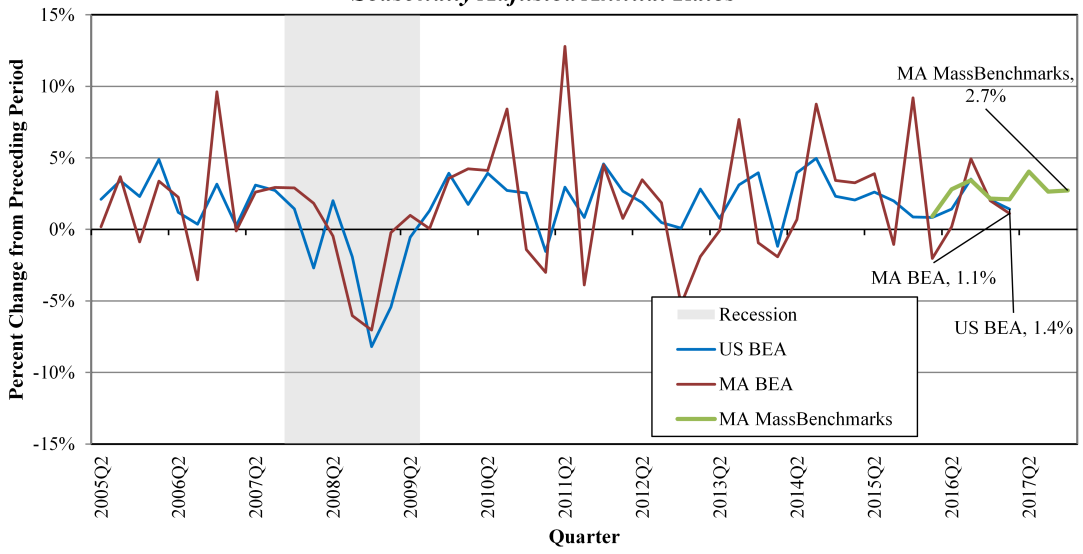
State Gross Domestic Product - Annual Change

(billions of chained 2009 dollars)

	Massachusetts		New England		United States	
Year	GDP	Annual change	GDP	Annual change	GDP	Annual change
2000	$348		$725		$12,617	
2001	$353	1.3%	$736	1.5%	$12,735	0.9%
2002	$354	0.5%	$742	0.8%	$12,963	1.8%
2003	$362	2.2%	$758	2.2%	$13,296	2.6%
2004	$370	2.2%	$785	3.6%	$13,765	3.5%
2005	$376	1.7%	$798	1.7%	$14,203	3.2%
2006	$383	1.7%	$813	1.9%	$14,585	2.7%
2007	$392	2.4%	$830	2.1%	$14,798	1.5%
2008	$393	0.2%	$825	-0.6%	$14,718	-0.5%
2009	$386	-1.8%	$805	-2.4%	$14,320	-2.7%
2010	$399	3.5%	$821	2.0%	$14,628	2.2%
2011	$408	2.3%	$826	0.6%	$14,834	1.4%
2012	$416	1.8%	$834	0.9%	$15,126	2.0%
2013	$415	-0.2%	$830	-0.5%	$15,348	1.5%
2014	$422	1.7%	$838	0.9%	$15,690	2.2%
2015	$438	3.7%	$861	2.8%	$16,095	2.6%
2016	$446	2.0%	$876	1.7%	$16,343	1.5%

Real GDP: Percent Change from Preceding Quarter

Seasonally Adjusted Annual Rates



SOURCES: U.S. Bureau of Economic Analysis, MA *Mass*Benchmarks calculations by Dr. Alan Clayton-Matthews. Seasonally adjusted annual rates are quarterly data adjusted to an annual basis.
NOTE: Shaded areas are recession periods.

State Coincident Indexes. To track more recent changes in the state and national economies, we use the Federal Reserve Bank of Philadelphia's Coincident Indexes. It:

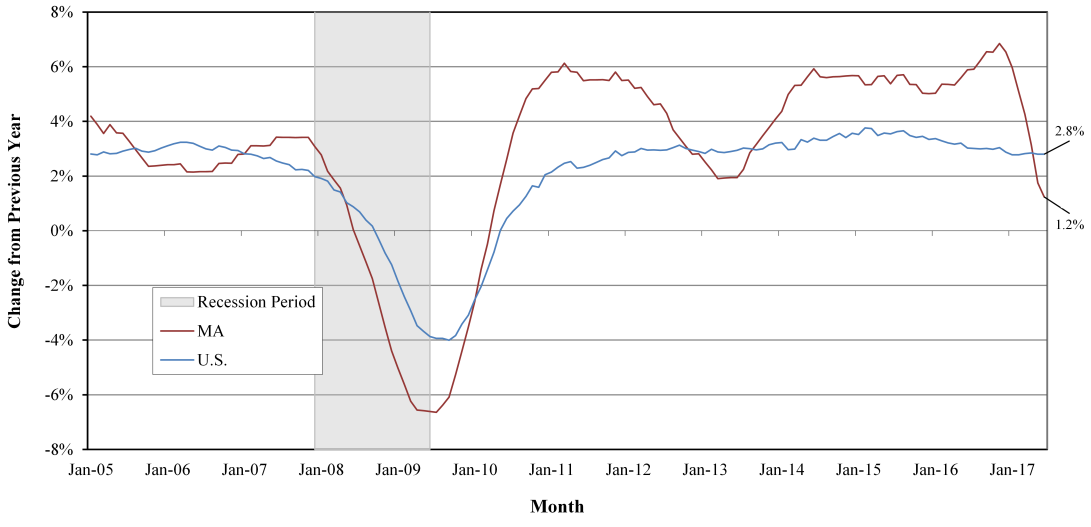
> *...produces a monthly coincident index for each of the 50 states. The indexes are released a few days after the Bureau of Labor Statistics (BLS) releases the employment data for the states.*
>
> *The coincident indexes combine four state-level indicators to summarize current economic conditions in a single statistic. The four state-level variables in each coincident index are nonfarm payroll employment, average hours worked in manufacturing, the unemployment rate, and wage and salary disbursements deflated by the consumer price index (U.S. city average). The trend for each state's index is set to the trend of its gross domestic product (GDP), so long term growth in the state's index matches long term growth in its GDP. (https://www.phil.frb.org/research-and-data/regional-economy/indexes/coincident/)*

The graph below indicates the state and national index change from 12 months prior. Recent revisions to BLS data that the Philadelphia Federal Reserve Bank uses to construct its indexes resulted in an improved trend for Massachusetts since the recession ended in 2009. The table below compares the Massachusetts index to its New England neighbors and the U.S.

Comparing the U.S. and New England States Coincident Indexes

Area	June 2017	1-Month Change	3-Month Change	12-Month Change
U.S.	181.8	0.2%	0.7%	2.8%
Massachusetts	209.3	0.0%	-1.2%	1.2%
Connecticut	180.6	0.0%	0.1%	2.8%
Maine	169.3	-0.6%	-0.7%	3.4%
New Hampshire	243.1	0.3%	0.5%	3.2%
Rhode Island	186.4	-0.1%	1.1%	6.9%
Vermont	197.6	0.1%	-0.3%	2.4%

Comparing the U.S. and Massachusetts Coincident Indexes



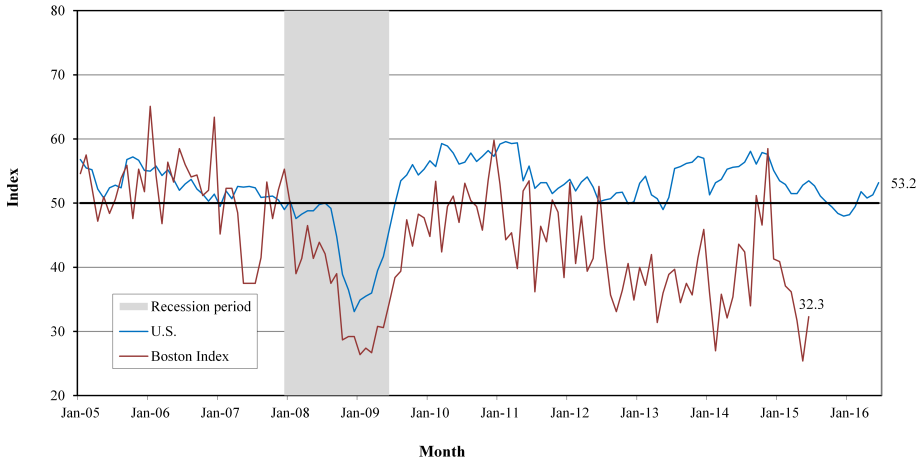
SOURCE: Federal Reserve Bank of Philadelphia. July 2017.
NOTES: Shaded areas are recession periods. Indexes are set to 100 at July 1992. Methodology changes in March 2017 resulted in revised values for historical data.

Institute for Supply Management Purchasing Manager Indexes (PMI). These indexes are compiled using survey data from purchasing and supply executives and are used as a leading business indicator. While the national index is based on a survey of manufacturers, the Boston region's is based on a survey of "companies representing industries as diverse as the banking and financial services, pharmaceuticals and biotechnology, software development and communication, medical products and equipment, computers, chemicals, consumer products, education, and the public sector." **It should be noted that the Boston survey has been suspended, and consequently, data from it are not currently being updated.**

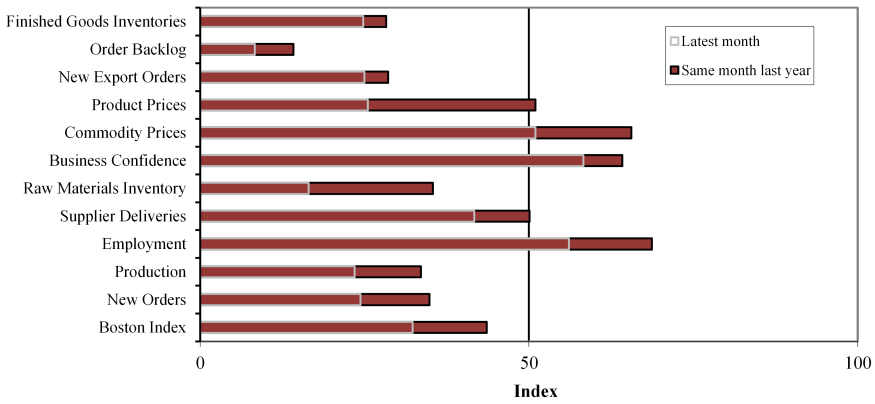
Index readings above 50 indicate the economy is generally expanding. Readings below 50 indicate the economy is generally contracting, although a reading above 42 for a period of time indicates the economy is generally expanding. Components of the national index include new orders, production, employment, supplier deliveries, inventories, customer inventories, prices, backlog of orders, exports and imports. The Boston region's components are slightly different and include new orders, production, employment, supplier deliveries, raw monthly materials inventory, business confidence, commodity prices, product prices, new export orders, order backlog and finished goods inventories. These components show which segments of the business supply chain are expanding or contracting.

The June 2016 national index indicated that the manufacturing sector has been expanding since December 2015, with the exception of a small dip in April 2016. The Boston region's June 2015 (the last date for which data were available) index of 32.3 indicated that overall business conditions were contracting after hitting a four-year high of 58.5 in November 2014.

U.S. and Boston Region Purchasing Managers Indexes



Boston Region PMI Components - June 2015



SOURCE: Institute for Supply Management and the Purchasing Management Association of Boston.
NOTE: Shaded areas are recession periods.

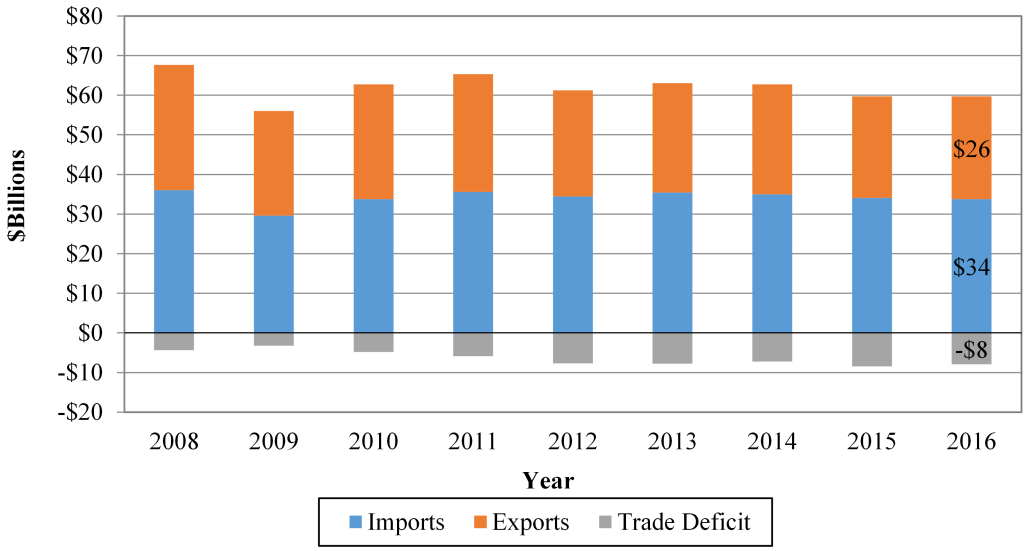
ECONOMIC BASE AND PERFORMANCE—INTERNATIONAL TRADE

Total Trade Volume. Total trade volume, exports and imports, remained flat at 0.0 percent from 2015 to $59.7 billion in 2016. Canada's trade volume was $10.8 billion and, at 18.1 percent of the total state trade, it was by far our most valuable trading partner. Massachusetts trade deficit, $7.9 billion, decreased 6.6 percent in 2016. See appendix 8 for more trade data.

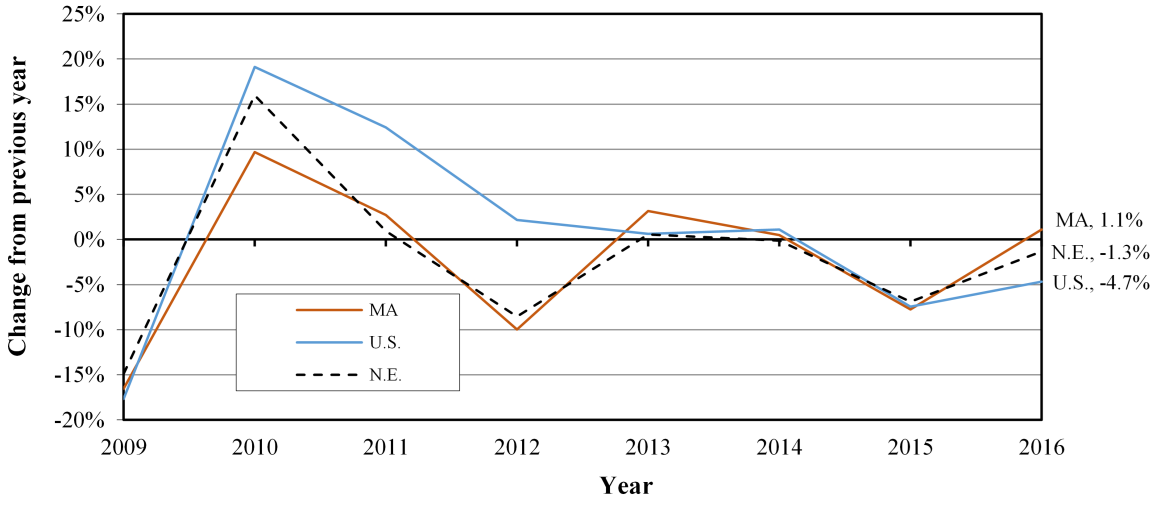
Exports. Massachusetts ranked 19th in the United States in 2016 and first in New England with $25.9 billion in exports. This was a 1.1 percent increase from the previous year's export value, while national exports decreased by 4.7 percent. Total exports from New England decreased by 1.3 percent. Canada was again our top export destination in 2016 with $3.1 billion.

Imports. Imports decreased 0.8 percent to $33.8 billion in 2016. Canada was also the largest source for Massachusetts imports in 2016, from which we imported $7.7 billion or 22.8 percent of our total.

Massachusetts Imports, Exports and Trade Deficit

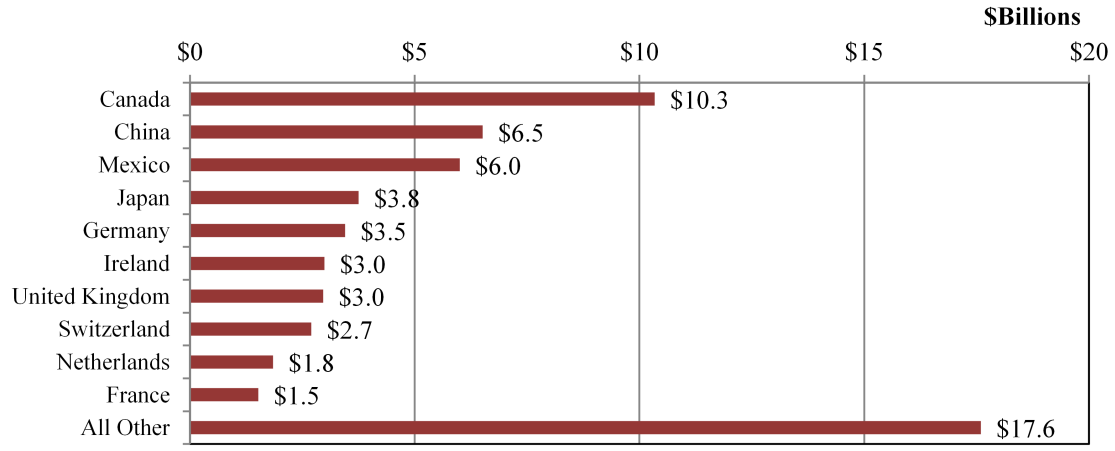


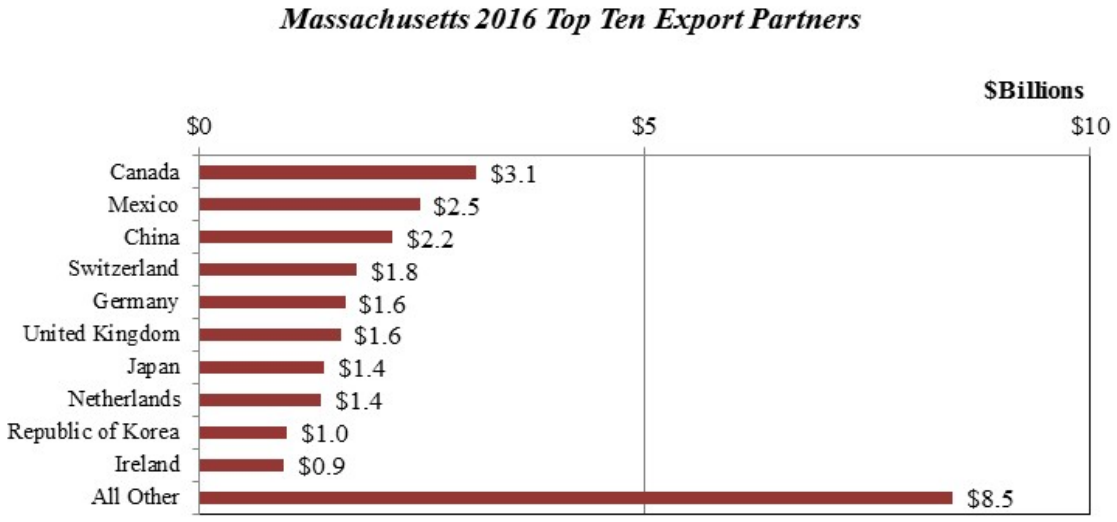
Export Growth for Massachusetts, U.S. and New England

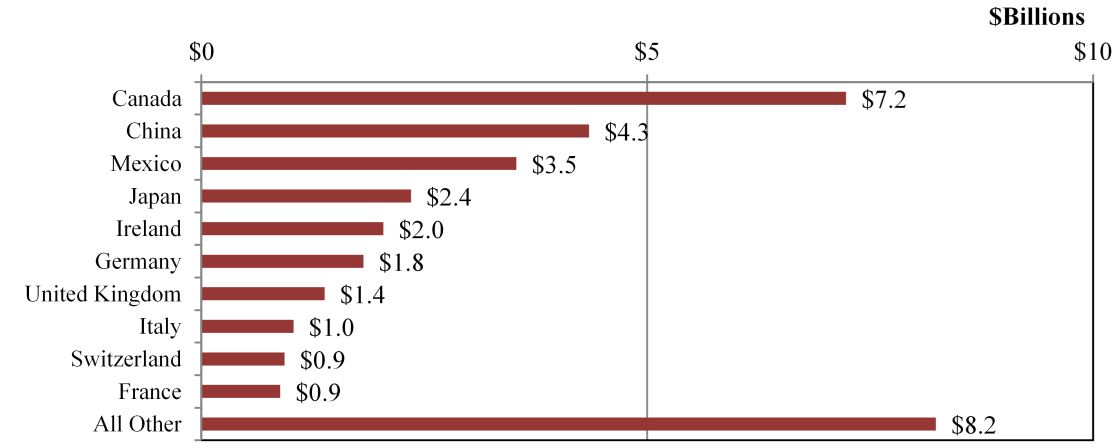


SOURCE: WISERTrade.org

Top Ten Trade Partners by Trade Type from WISERTrade.

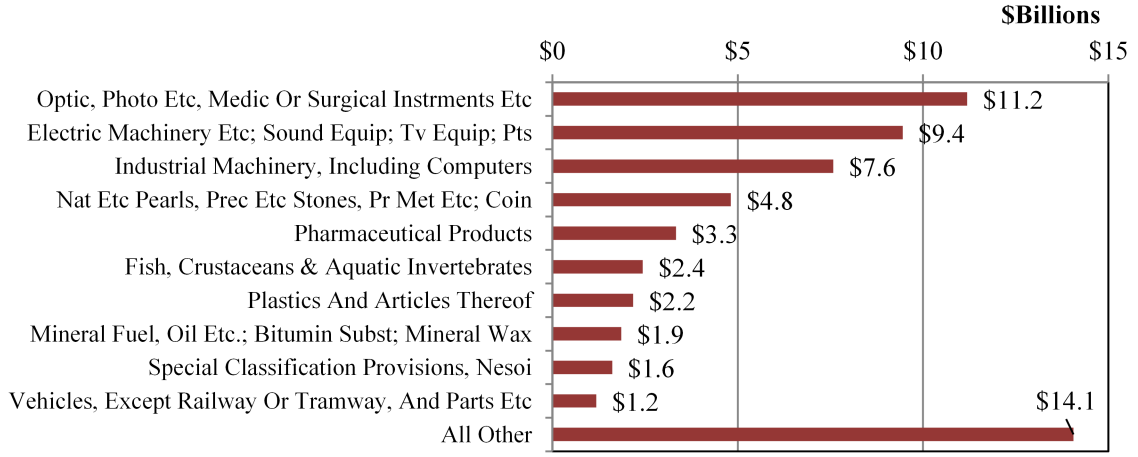




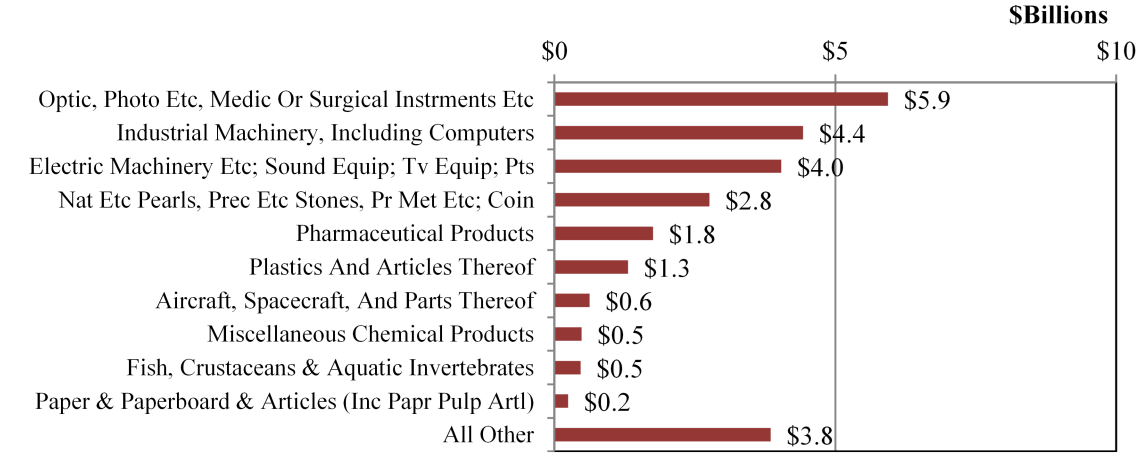


Top Ten Commodities Traded by Trade Type from WISERTrade.

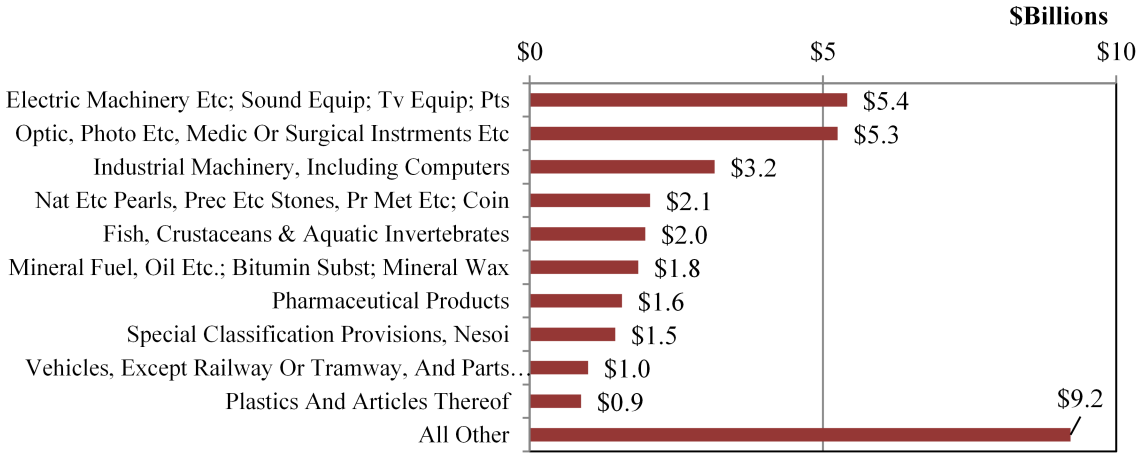
Massachusetts 2016 Top Ten Commodities Imported and Exported



Massachusetts 2016 Top Ten Commodities Exported



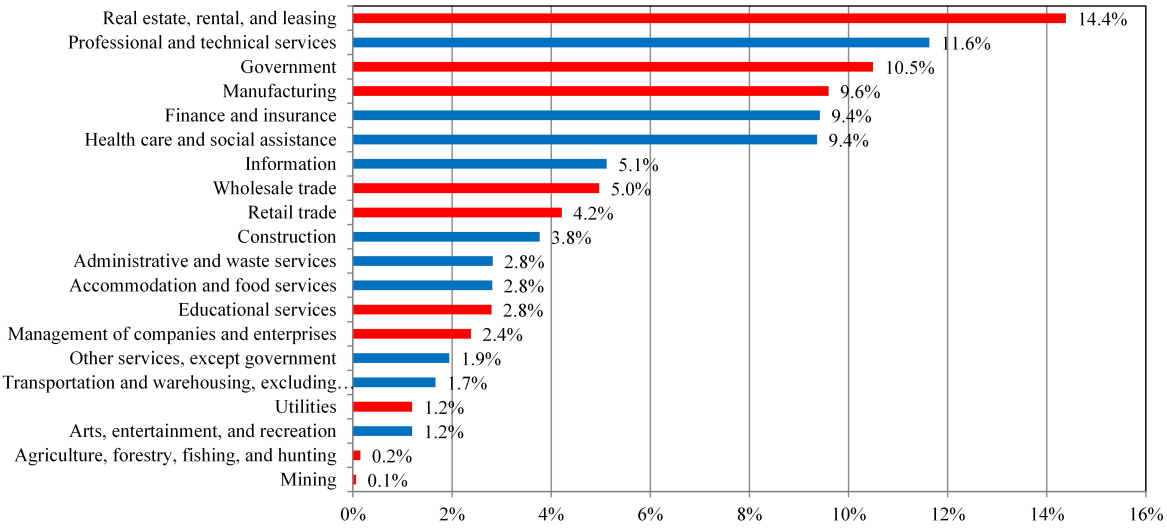
Massachusetts 2016 Top Ten Commodities Imported



ECONOMIC BASE AND PERFORMANCE—INDUSTRY SECTOR DETAIL (NAICS BASIS)

The Massachusetts economy remains diversified among several industrial and non-industrial sectors. The four largest sectors of the economy, real estate, rental and leasing; professional and technical services; government; and manufacturing, contributed 46.1 percent of the GDP in 2016. The real estate, rental and leasing sector remained the largest contributor in 2016. The following bar chart displays the latest sector contributions to the Massachusetts GDP.

NAICS* Sector Composition of Massachusetts Gross Domestic Product 2016
(as a percent of total GDP in 2016 dollars)



SOURCE: U.S. Bureau of Economic Analysis.
NOTES: Blue bar indicates positive change from previous year and red is a negative change. Transportation and warehousing excludes U.S. Post Office. *North American Industry Classification System.

GDP Subsectors. When measured in chained 2009 dollars, the change in Massachusetts total GDP grew 15.8 percent between 2006 and 2015. Between 2006 and 2015 (the latest data available for subsector data), several industries grew much faster than the state average. Industry subsectors that experienced substantial cumulative growth or reduction are listed in the following chart.

Industry Subsectors with a Substantial Growth or Reduction
(2016 dollars)

NAICS* Industry Subsector	Percent Change 2006-2015
Oil and gas extraction	300.0%
Support activities for mining	275.0%
Funds, trusts, and other financial vehicles	184.6%
Performing arts, spectator sports, museums, and related activities	109.5%
Chemical products manufacturing	94.5%
Air transportation	92.3%
Social assistance	88.2%
Amusements, gambling, and recreation industries	85.5%

SOURCE: U.S. Bureau of Economic Analysis.
NOTES: Updated January 2016. Subsector represents at least a half percent of Massachusetts GDP in the latest year.
*North American Industry Classification System.

Gross Domestic Product by Industry in Massachusetts

(millions of 2016 dollars)

NAICS* Industry Sector	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
All industry total	$438,551	$429,671	$431,488	$443,186	$445,236	$453,786	$455,469	$465,462	$494,257	$507,913
Private industries	$388,961	$379,478	$380,121	$391,681	$392,011	$403,138	$404,614	$413,532	$440,685	$454,604
Agriculture, forestry, fishing, and hunting	$1,221	$1,194	$1,321	$1,397	$1,177	$1,190	$1,016	$803	$795	$766
Mining	$288	$166	$202	$184	$185	$198	$210	$268	$306	$312
Utilities	$5,662	$6,097	$5,251	$5,709	$5,591	$5,410	$5,525	$5,867	$5,993	$6,084
Construction	$17,431	$15,794	$14,505	$13,654	$13,925	$15,082	$15,946	$16,425	$18,055	$19,137
Manufacturing	$50,604	$45,277	$44,772	$47,832	$45,768	$47,191	$46,501	$47,640	$48,483	$48,749
Wholesale trade	$23,955	$24,032	$23,555	$23,847	$23,537	$22,892	$23,432	$24,055	$24,932	$25,247
Retail trade	$20,311	$19,192	$19,386	$19,862	$19,350	$19,273	$19,504	$19,794	$20,836	$21,406
Transportation and warehousing, excluding Postal Service	$7,164	$6,863	$6,672	$6,989	$7,267	$7,167	$7,338	$7,591	$8,133	$8,453
Information	$23,713	$25,025	$23,688	$25,436	$24,756	$24,269	$23,799	$23,203	$24,966	$26,012
Finance and insurance	$38,935	$33,670	$36,903	$37,037	$36,760	$41,395	$40,105	$41,215	$45,908	$47,845
Real estate, rental, and leasing	$61,659	$59,848	$61,448	$62,996	$64,878	$66,078	$66,315	$67,737	$71,182	$73,071
Professional and technical services	$45,175	$48,651	$46,522	$47,963	$48,665	$50,629	$50,715	$52,071	$56,161	$59,068
Management of companies and enterprises	$9,999	$9,599	$9,365	$9,459	$10,608	$10,556	$10,900	$10,989	$12,463	$12,113
Administrative and waste services	$12,623	$12,333	$11,471	$11,932	$12,107	$12,194	$12,458	$12,752	$13,749	$14,336
Educational services	$11,028	$11,307	$12,139	$12,510	$12,600	$12,834	$12,937	$13,410	$13,904	$14,216
Health care and social assistance	$35,886	$37,559	$39,560	$40,675	$40,711	$42,083	$42,490	$43,226	$45,906	$47,567
Arts, entertainment, and recreation	$3,482	$3,471	$3,728	$4,170	$4,103	$4,046	$4,431	$4,952	$5,780	$6,061
Accommodation and food services	$10,729	$10,601	$10,852	$11,323	$11,416	$11,930	$12,269	$12,518	$13,603	$14,283
Other services, except government	$9,092	$8,798	$8,779	$8,706	$8,608	$8,722	$8,719	$9,020	$9,531	$9,875
Government	$49,590	$50,193	$51,368	$51,506	$53,225	$50,648	$50,855	$51,930	$53,572	$53,309

Rank of Industry Contribution to GDP in Massachusetts

(millions of 2016 dollars)

NAICS* Industry Sector	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
All industry total										
Private industries										
Agriculture, forestry, fishing, and hunting	19	19	19	19	19	19	19	19	19	19
Mining	20	20	20	20	20	20	20	20	20	20
Utilities	17	17	17	17	17	17	17	17	17	17
Construction	10	10	10	10	10	10	10	10	10	10
Manufacturing	2	4	4	4	4	4	4	4	4	4
Wholesale trade	7	8	8	8	8	8	8	7	8	8
Retail trade	9	9	9	9	9	9	9	9	9	9
Transportation and warehousing, excluding Postal Service	16	16	16	16	16	16	16	16	16	16
Information	8	7	7	7	7	7	7	8	7	7
Finance and insurance	5	6	6	6	6	6	6	6	5	5
Real estate, rental, and leasing	1	1	1	1	1	1	1	1	1	1
Professional and technical services	4	3	3	3	3	3	3	2	2	2
Management of companies and enterprises	14	14	14	14	14	14	14	14	14	14
Administrative and waste services	11	11	12	12	12	12	12	12	12	11
Educational services	12	12	11	11	11	11	11	11	11	13
Health care and social assistance	6	5	5	5	5	5	5	5	6	6
Arts, entertainment, and recreation	18	18	18	18	18	18	18	18	18	18
Accommodation and food services	13	13	13	13	13	13	13	13	13	12
Other services, except government	15	15	15	15	15	15	15	15	15	15
Government	3	2	2	2	2	2	2	3	3	3

SOURCE: U.S. Bureau of Economic Analysis.
*North American Industry Classification System.

Industry Sector Analysis. The following section contains a summary for each of the twenty major NAICS* sectors. The data series show a ten-year time span. Graphs include data value labels for the latest annual points.

Not all datasets are reported for all of the major NAICS sectors. The Massachusetts Department of Workforce and Labor Development's Employment and Wages (ES-202) data series are available for every sector and contain the number of establishments, average monthly employment, total annual wages and average weekly wages for establishments with employees. The data are reported quarterly and annually for employees in the private, federal government, state government, and local government sectors. **NOTE:** Beginning with the first quarter 2013, a code change for employees from private households (NAICS 814110) into services for the elderly and persons with disabilities (NAICS 624120) moved 33,960 employees in Massachusetts in January 2013.

The nonemployer businesses and receipts graph uses the U.S. Census Nonemployer Statistics series and is available for every sector except 55 - Management of Companies and Enterprises and 92 - Public Administration. Some sectors also lack subsector (at the four-digit NAICS level) detail. Nonemployer annual data have a two-year reporting lag for businesses that do not have paid employees and are subject to federal income tax. The Census reports that "Nonemployers account for a majority of all business establishments, but average less than four percent of all sales or receipts." These can be second or part-time businesses and not the owner's primary source of income.

State Gross Domestic Product is an annual series from the U.S. Bureau of Economic Analysis's Regional Economic Accounts. For more information, please visit:

http://www.bea.gov/newsreleases/regional/gdp_state/qgsp_newsrelease.htm

Foreign exports from the U.S. Census Bureau's Foreign Trade Division and WISERTrade, are available for four industries on a monthly basis. Total state exports are available on a monthly basis. Sector exports and the top ten export destinations for this industry sector are by dollar value.

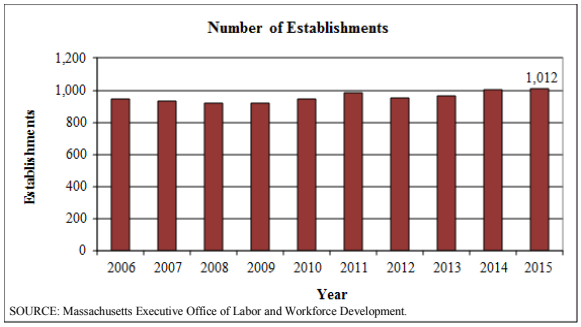
Each sector analysis has a summary at the bottom of each page. The summary provides (when available):

1. GDP contribution to state total: this sector's GDP divided by the state's total GDP. A green figure in the text at the bottom of the page indicates it is larger than the previous year's GDP contribution. Red indicates it is smaller than the previous year's and black indicates no change from the previous year's GDP contribution.
2. GDP rank: this sector's GDP rank versus all state sectors. A green figure in the text at the bottom of the page indicates that it is higher than the previous year's rank. Red indicates that it is lower than the previous year's and black indicates that there was no change from the previous year's GDP rank.
3. Nonemployer to employer establishment ratio: the number of nonemployer establishments divided by the number of establishments with employers. In general, a ratio greater than one means there are more small businesses. A number less than one means there are more large businesses.
4. Establishments with employees: the subsector with the largest number of establishments who have employees.
5. Nonemployer establishments: the subsector with the largest number of establishments that do not have employees.
6. Employees: the subsector with the largest number of employees, at establishments with employees.
7. Annual wages: the subsector with the largest total annual wages, at establishments with employees.
8. Average weekly wage: the subsector with the largest average weekly wage, at establishments with employees.
9. Annual receipts at nonemployer establishments: the subsector with the most receipts, at establishments that do not have employees.
10. Most valuable export: the subsector export with the highest dollar value.

*North American Industry Classification System.

Note: Total Wage, Average Weekly Wage, Nonemployer Receipts, and Sector Exports are all inflation-adjusted to 2015. State Gross Domestic Product is also adjusted for inflation, but chained to 2009.

NAICS 11 - Agriculture, Forestry, Fishing & Hunting. The Agriculture, Forestry, Fishing and Hunting sector comprises establishments primarily engaged in growing crops, raising animals, harvesting timber, and harvesting fish and other animals from a farm, ranch, or their natural habitats.



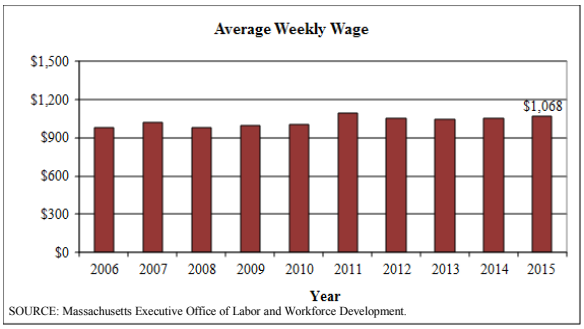
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



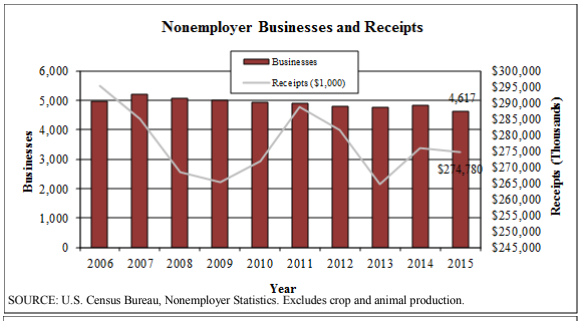
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



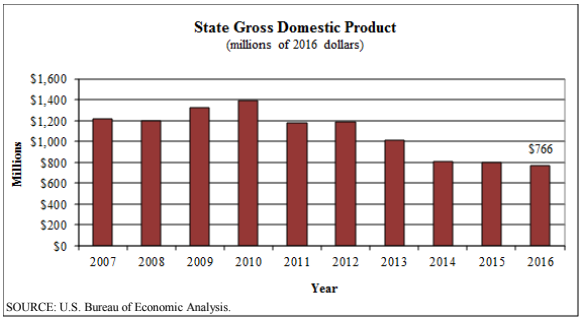
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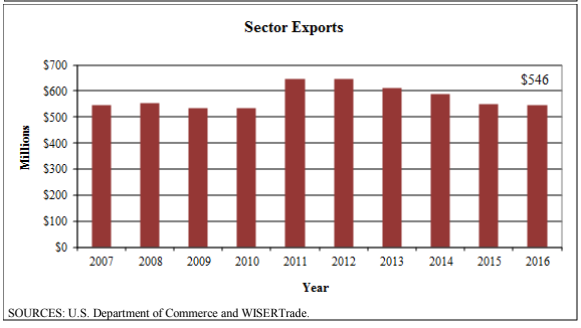
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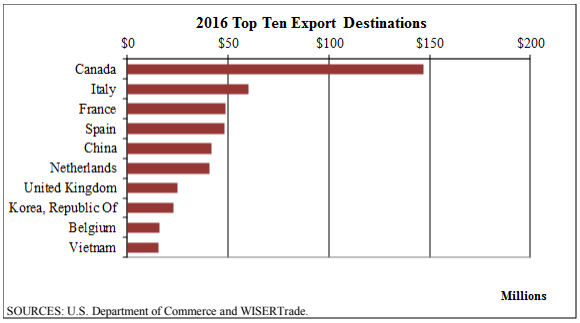
SOURCE: U.S. Census Bureau, Nonemployer Statistics. Excludes crop and animal production.



SOURCE: U.S. Bureau of Economic Analysis.



SOURCES: U.S. Department of Commerce and WISERTrade.



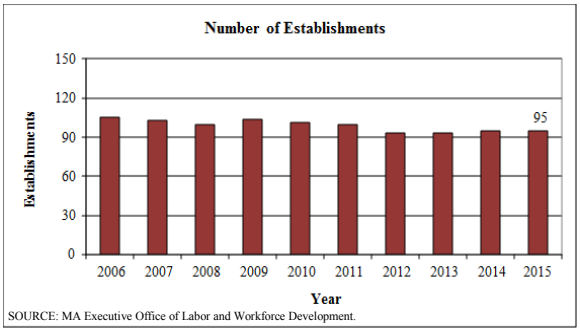
SOURCES: U.S. Department of Commerce and WISERTrade.

Summary.
GDP contribution to state total: **0.2%**
GDP rank: **19 of 20**
Nonemployer to employer establishment ratio: **4.6 to 1**

Sector leaders. Industry subsectors with the majority of establishments, employees, payroll and receipts.
Establishments with employees: **Fishing**
Nonemployer establishments: **Fishing**
Employees: **Greenhouse and nursery production**
Annual wages: **Fishing**
Average weekly wage: **Fishing**
Annual receipts at nonemployer establishments: **Fishing**
Most valuable export: **Fish, fresh, chilled or other frozen marine products**

*For this 2-digit industry, Nonemployer data are available only for 113-115 (Forestry, fishing & hunting & agricultural support services).

NAICS 21 – Mining. The Mining, Quarrying, and Oil and Gas Extraction sector comprises establishments that extract naturally occurring mineral solids, such as coal and ores; liquid minerals, such as crude petroleum; and gases, such as natural gas. The term mining is used in the broad sense to include quarrying, well operations, beneficiating (e.g., crushing, screening, washing, and flotation), and other preparation customarily performed at the mine site, or as a part of mining activity.



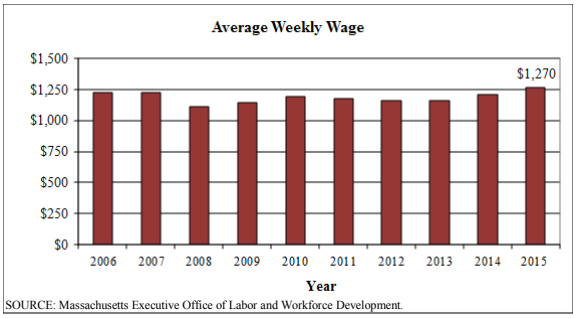
SOURCE: MA Executive Office of Labor and Workforce Development.



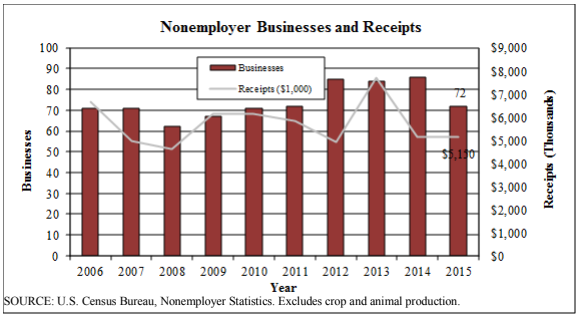
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



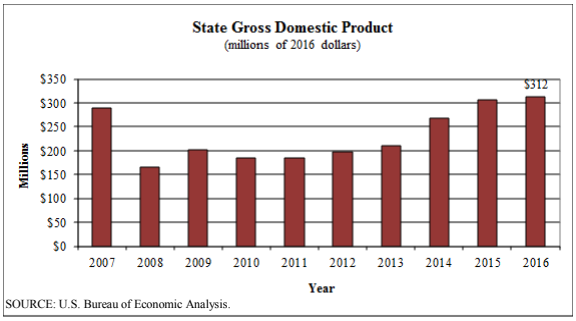
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



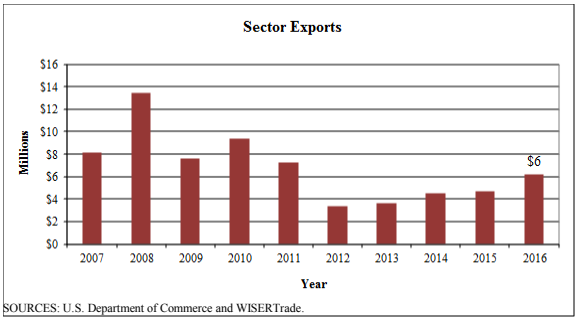
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



SOURCE: U.S. Census Bureau, Nonemployer Statistics. Excludes crop and animal production.



SOURCE: U.S. Bureau of Economic Analysis.



SOURCES: U.S. Department of Commerce and WISERTrade.



SOURCES: U.S. Department of Commerce and WISERTrade.

Summary.
GDP contribution to state total: **0.1%**
GDP rank: **20 of 20**
Nonemployer to employer establishment ratio: **0.8 to 1**

Sector leaders. Industry subsectors with the majority of establishments, employees, payroll and receipts.
Establishments with employees: **Nonmetallic mineral mining and quarrying**
Nonemployer establishments: **Nonmetallic mineral mining and quarrying**
Employees: **Nonmetallic mineral mining and quarrying**
Annual wages: **Nonmetallic mineral mining and quarrying**
Average weekly wage: **Oil and gas extraction**
Annual receipts at nonemployer establishments: **Nonmetallic mineral mining and quarrying**
Most valuable export: **Minerals and ores**

NAICS 22 – Utilities. The Utilities sector comprises establishments engaged in the provision of the following utility services: electric power, natural gas, steam supply, water supply, and sewage removal. See the appendix, pages five and six for supplemental tables regarding electricity generation, supply and capacity.



SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



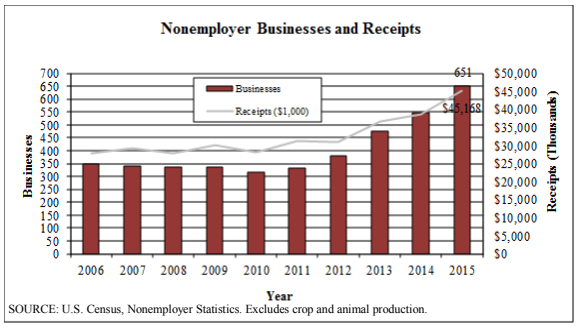
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



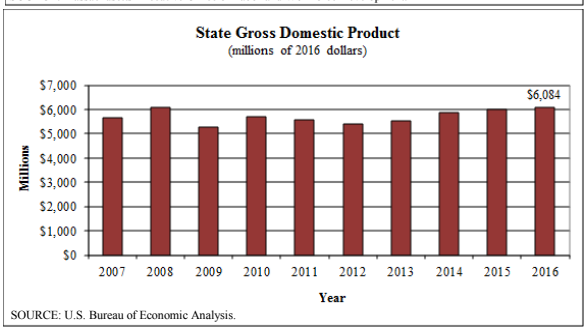
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



SOURCE: U.S. Census, Nonemployer Statistics. Excludes crop and animal production.



SOURCE: U.S. Bureau of Economic Analysis.

State export data are not available for this sector.

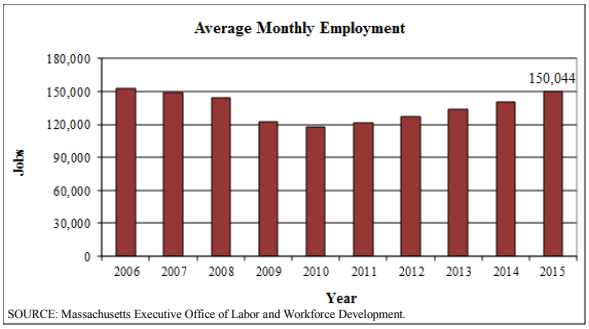
Summary.
GDP contribution to state total: **1.2%**
GDP rank: **17 of 20**
Nonemployer to employer establishment ratio: **1.4 to 1**

Sector leaders. Industry subsectors with the majority of establishments, employees, payroll and receipts.
Establishments with employees: **Power generation and supply**
Nonemployer establishments: Subsector detail N/A
Employees: **Power generation and supply**
Annual wages: **Power generation and supply**
Average weekly wage: **Power generation and supply**
Annual receipts at nonemployer establishments: Subsector detail N/A

NAICS 23 – Construction. The Construction sector comprises establishments primarily engaged in the construction of buildings or engineering projects (e.g., highways and utility systems). Establishments primarily engaged in the preparation of sites for new construction and establishments primarily engaged in subdividing land for sale as building sites also are included in this sector. See the appendix pages two through four for housing permits, housing sales, and housing sale prices.



SOURCE: Massachustts Executive Office of Labor and Workforce Development.



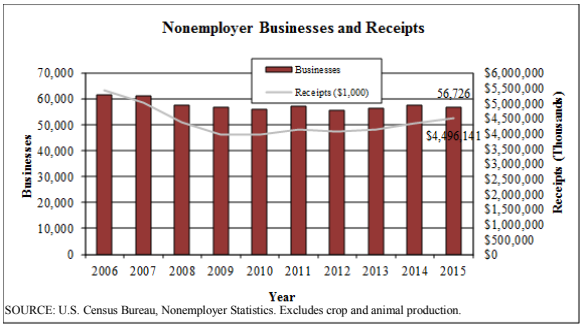
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



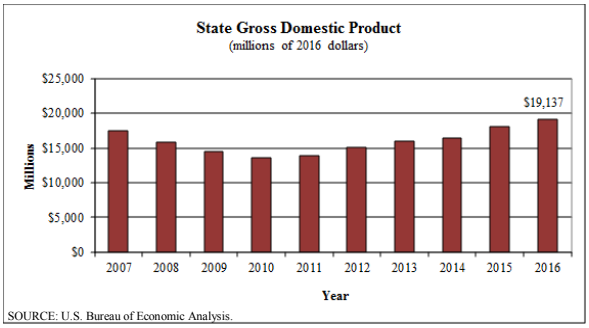
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



SOURCE: U.S. Census Bureau, Nonemployer Statistics. Excludes crop and animal production.



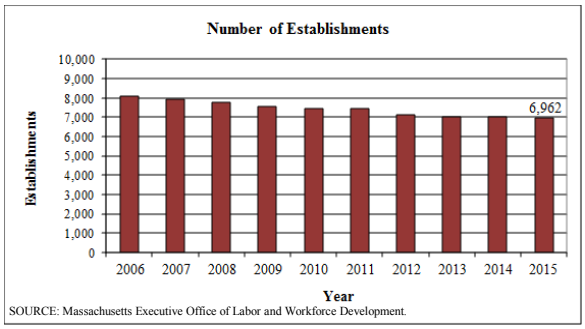
SOURCE: U.S. Bureau of Economic Analysis.

State export data are not available for this sector.

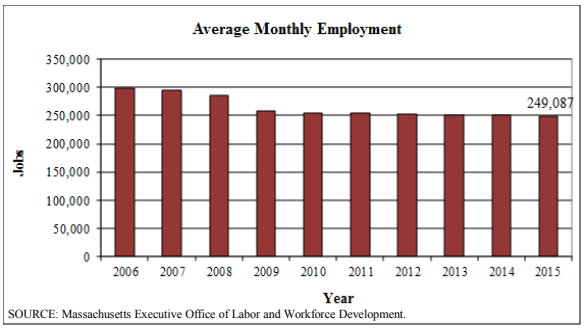
Summary.
GDP contribution to state total: **3.8%**
GDP rank: **10 of 20**
Nonemployer to employer establishment ratio: **2.9 to 1**

Sector leaders. Industry subsectors with the majority of establishments, employees, payroll and receipts.
Establishments with employees: **Building equipment contractors**
Nonemployer establishments: **Building finishing contractors**
Employees: **Building equipment contractors**
Annual wages: **Building equipment contractors**
Average weekly wage: **Land subdivision**
Annual receipts at nonemployer establishments: **Residential building construction**

NAICS 31-33 – Manufacturing. The Manufacturing sector comprises establishments engaged in the mechanical, physical, or chemical transformation of materials, substances, or components into new products. The assembling of component parts of manufactured products is considered manufacturing, except in cases where the activity is appropriately classified in Sector 23, Construction.



SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



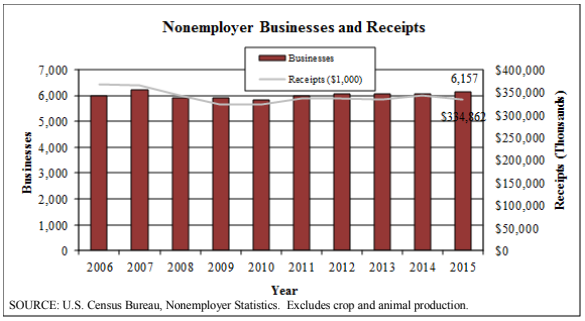
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



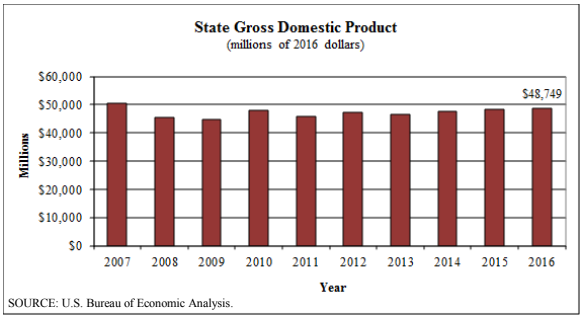
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



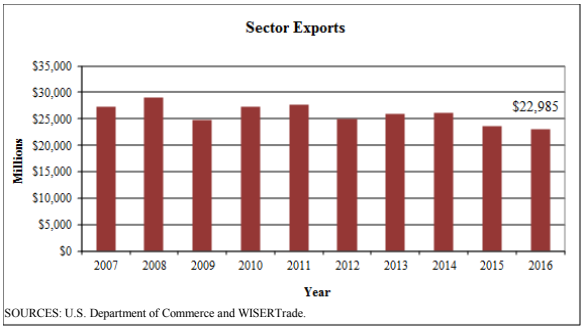
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



SOURCE: U.S. Census Bureau, Nonemployer Statistics. Excludes crop and animal production.



SOURCE: U.S. Bureau of Economic Analysis.



SOURCES: U.S. Department of Commerce and WISERTrade.

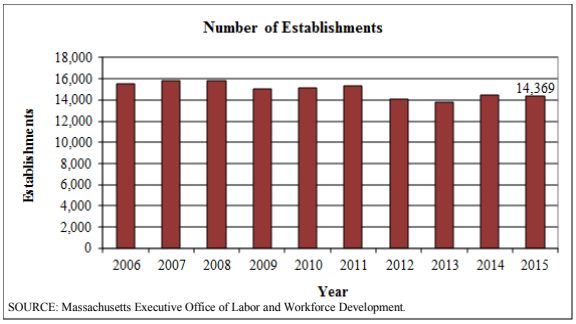


SOURCES: U.S. Department of Commerce and WISERTrade.

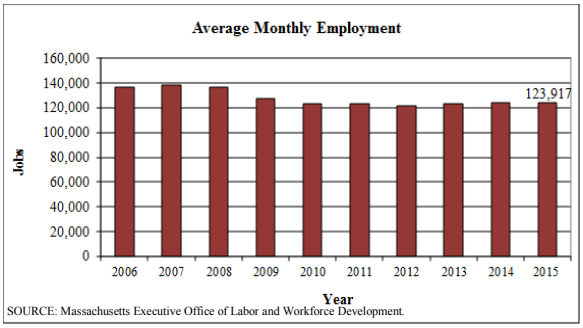
Summary.
GDP contribution to state total: **9.6%**
GDP rank: **4 of 20**
Nonemployer to employer establishment ratio: **0.9 to 1**

Sector leaders. Industry subsectors with the majority of establishments, employees, payroll and receipts.
Establishments with employees: **Machine shops and threaded products**
Nonemployer establishments: **Other miscellaneous manufacturing**
Employees: **Electronic instrument manufacturing**
Annual wages: **Electronic instrument manufacturing**
Average weekly wage: **Pharmaceutical and medicine manufacturing**
Annual receipts at nonemployer establishments: **Other miscellaneous manufacturing**
Most valuable export: **Computers and electronic products**

NAICS 42 - Wholesale Trade. The Wholesale Trade sector comprises establishments engaged in wholesaling merchandise, generally without transformation, and rendering services incidental to the sale of merchandise. The merchandise described in this sector includes the outputs of agriculture, mining, manufacturing, and certain information industries, such as publishing. The wholesaling process is an intermediate step in the distribution of merchandise.



SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



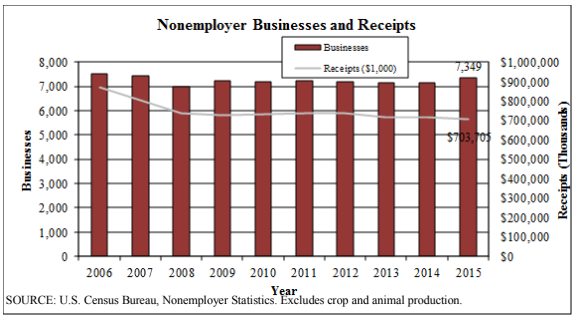
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



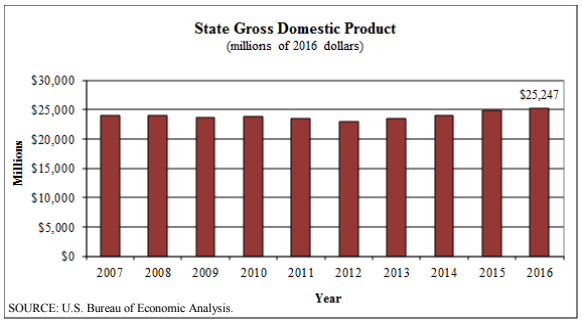
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



SOURCE: U.S. Census Bureau, Nonemployer Statistics. Excludes crop and animal production.



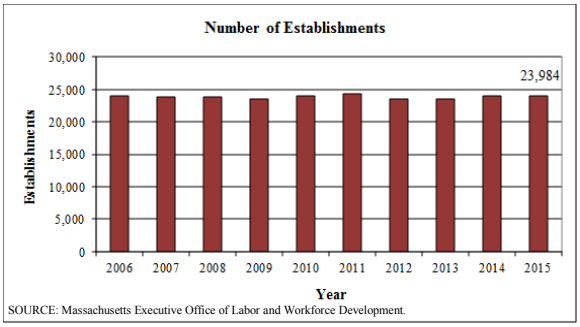
SOURCE: U.S. Bureau of Economic Analysis.

State export data are not available for this sector.

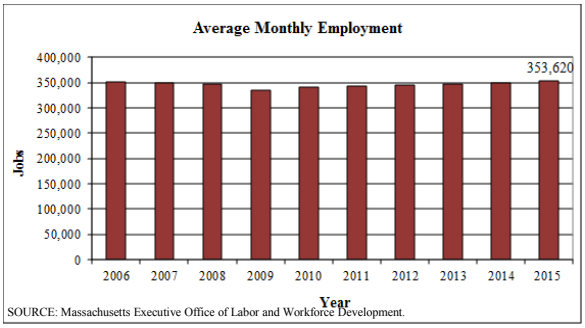
Summary.
GDP contribution to state total: **5.0%**
GDP rank: **8 of 20**
Nonemployer to employer establishment ratio: **0.5 to 1**

Sector leaders. Industry subsectors with the majority of establishments, employees, payroll and receipts.
Establishments with employees: **Electronic markets and agents/brokers**
Nonemployer establishments: **Miscellaneous durable goods merchant wholesalers**
Employees: **Electronic markets and agents/brokers**
Annual wages: **Electronic markets and agents/brokers**
Average weekly wage: **Druggists' goods merchant wholesalers**
Annual receipts at nonemployer establishments: **Miscellaneous durable goods merchant wholesalers**

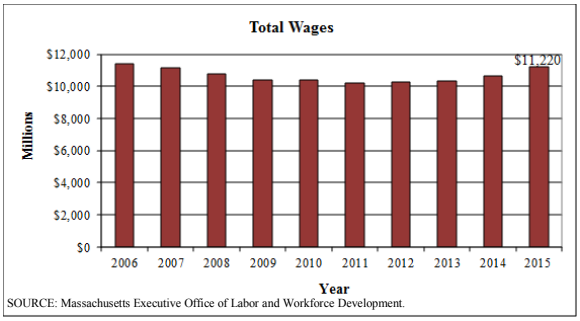
NAICS 44-45 - Retail Trade. The Retail Trade sector comprises establishments engaged in retailing merchandise, generally without transformation, and rendering services incidental to the sale of merchandise. The retailing process is the final step in the distribution of merchandise; retailers are therefore organized to sell merchandise in small quantities to the general public. This sector comprises two main types of retailers: store and nonstore retailers.



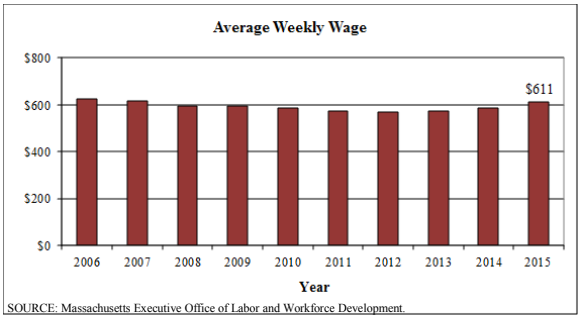
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



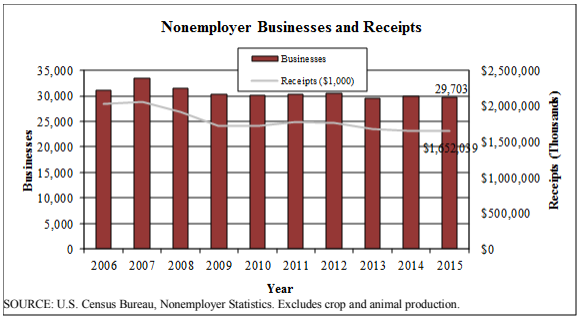
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



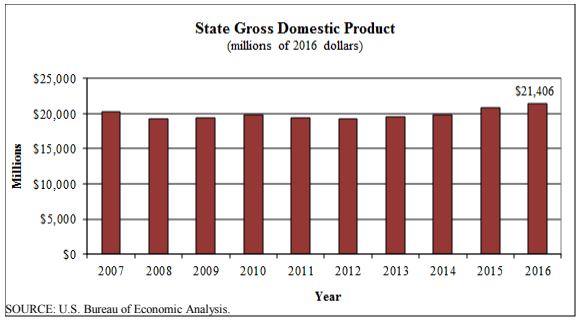
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



SOURCE: U.S. Census Bureau, Nonemployer Statistics. Excludes crop and animal production.



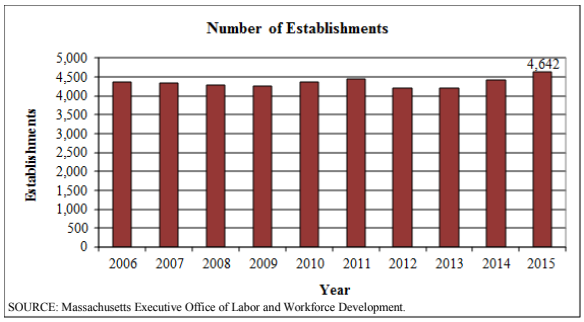
SOURCE: U.S. Bureau of Economic Analysis.

State export data are not available for this sector.

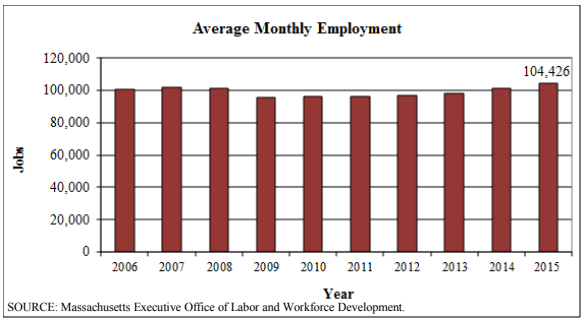
Summary.
GDP contribution to state total: **4.2%**
GDP rank: **9 of 20**
Nonemployer to employer establishment ratio: **1.2 to 1**

Sector leaders. Industry subsectors with the majority of establishments, employees, payroll and receipts.
Establishments with employees: **Grocery stores**
Nonemployer establishments: **Direct selling establishments**
Employees: **Grocery stores**
Annual wages: **Grocery stores**
Average weekly wage: **Electronic shopping and mail-order houses**
Annual receipts at nonemployer establishments: **Direct selling establishments**

NAICS 48-49 - Transportation and Warehousing. The Transportation and Warehousing sector includes industries providing transportation of passengers and cargo, warehousing and storage for goods, scenic and sightseeing transportation, and support activities related to modes of transportation. Establishments in these industries use transportation equipment or transportation related facilities as a productive asset. The type of equipment depends on the mode of transportation. The modes of transportation are air, rail, water, road, and pipeline. See pages six and seven of the appendix for more information regarding transportation and warehousing.



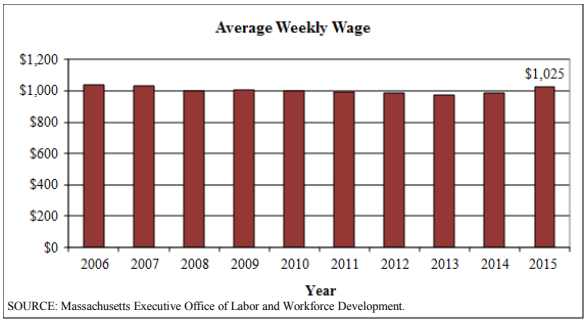
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



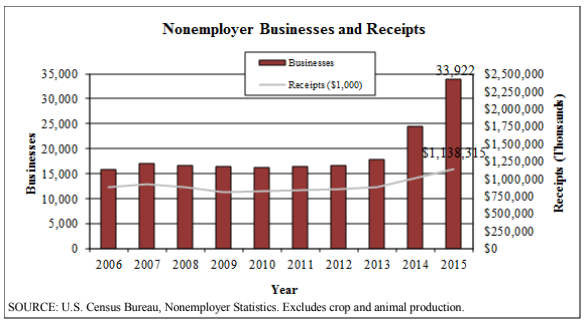
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



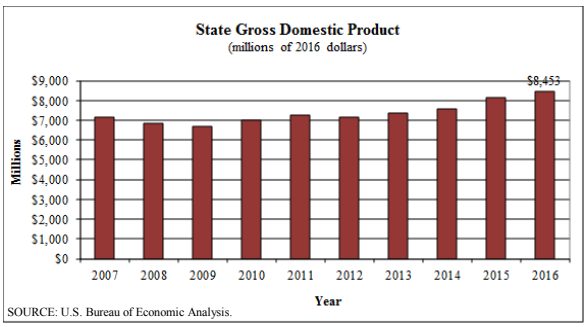
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



SOURCE: U.S. Census Bureau, Nonemployer Statistics. Excludes crop and animal production.



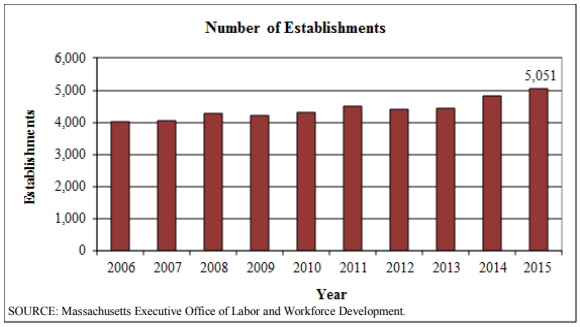
SOURCE: U.S. Bureau of Economic Analysis.

State export data are not available for this sector.

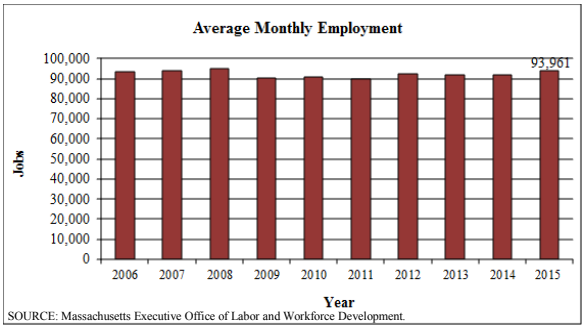
Summary.
GDP contribution to state total: **1.7%**
GDP rank: **16 of 20**
Nonemployer to employer establishment ratio: **7.7 to 1**

Sector leaders. Industry subsectors with the majority of establishments, employees, payroll and receipts.
Establishments with employees: **General freight trucking**
Nonemployer establishments: **Taxi and limousine service**
Employees: **School and employee bus transportation**
Annual wages: **Warehousing and storage**
Average weekly wage: **Pipeline transportation of natural gas**
Annual receipts at nonemployer establishments: **Taxi and limousine service**

NAICS 51 – Information. The Information sector comprises establishments engaged in the following processes: producing and distributing information and cultural products, providing the means to transmit or distribute these products as well as data or communications, and processing data. In 2014, Information exports of prepackaged software, NAICS code 511, were recoded to the Manufacturing NAICS code 334.



SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



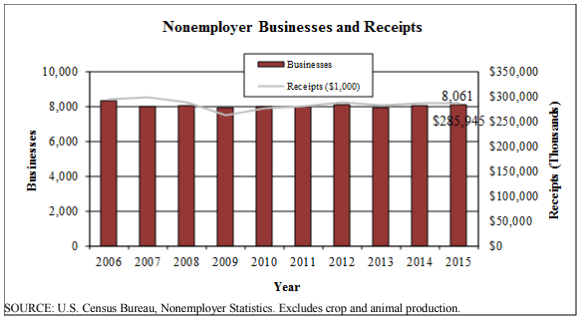
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



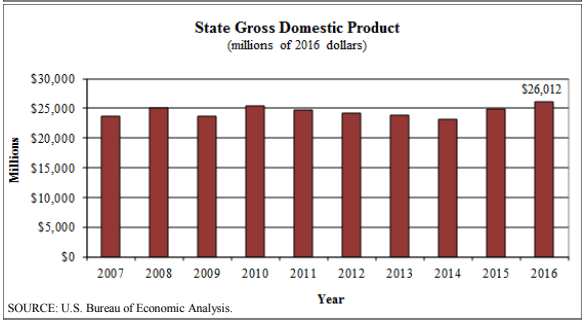
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



SOURCE: U.S. Census Bureau, Nonemployer Statistics. Excludes crop and animal production.



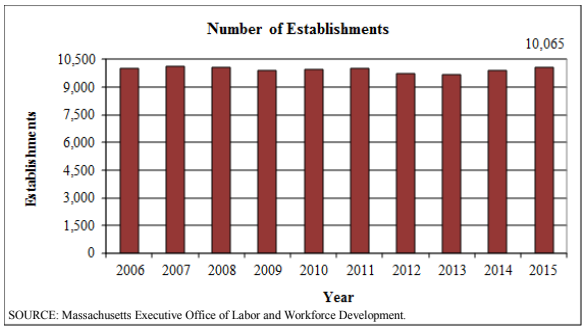
SOURCE: U.S. Bureau of Economic Analysis.

State export data are not available for this sector.

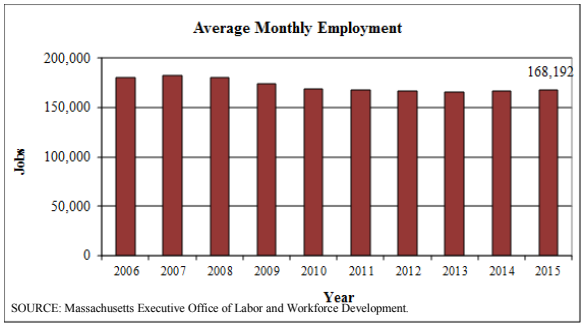
Summary.
GDP contribution to state total: **5.1%**
GDP rank: **7 of 20**
Nonemployer to employer establishment ratio: **1.7 to 1**

Sector leaders. Industry subsectors with the majority of establishments, employees, payroll and receipts.
Establishments with employees: **Other information services**
Nonemployer establishments: **Other information services**
Employees: **Software publishers**
Annual wages: **Software publishers**
Average weekly wage: **Software publishers**
Annual receipts at nonemployer establishments: **Other information services**

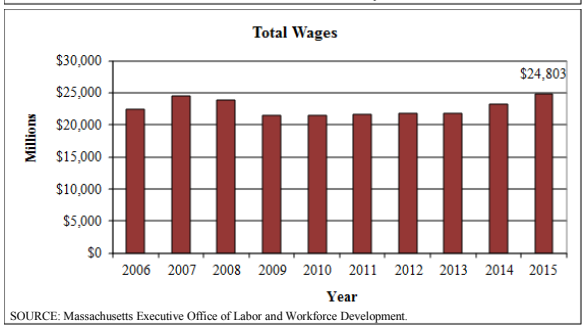
NAICS 52 - Finance and Insurance. The Finance and Insurance sector comprises establishments primarily engaged in financial transactions (transactions involving the creation, liquidation, or change in ownership of financial assets) and/or in facilitating financial transactions.



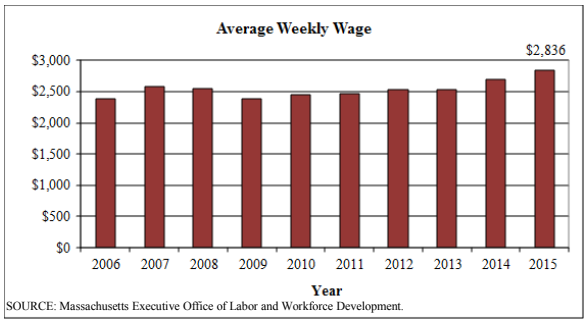
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



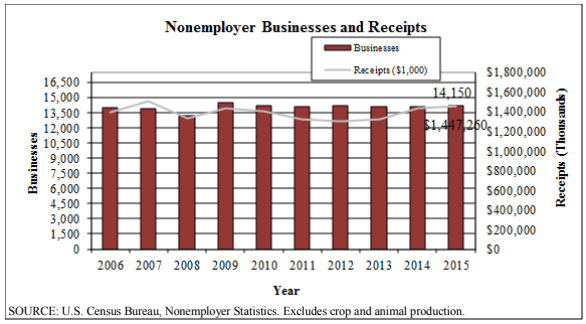
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



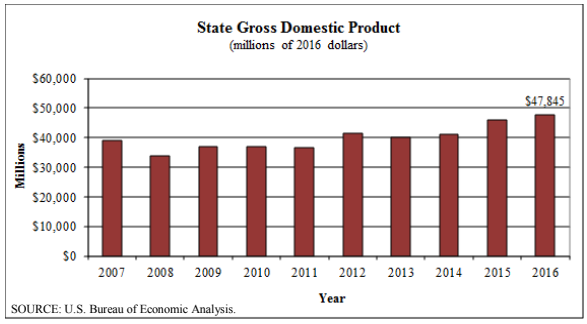
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



SOURCE: U.S. Census Bureau, Nonemployer Statistics. Excludes crop and animal production.



SOURCE: U.S. Bureau of Economic Analysis.

State export data are not available for this sector.

Summary.
GDP contribution to state total: **9.4%**
GDP rank: **5 of 20**
Nonemployer to employer establishment ratio: **1.4 to 1**

Sector leaders. Industry subsectors with the majority of establishments, employees, payroll and receipts.
Establishments with employees: **Insurance agencies, brokerages & support**
Nonemployer establishments: **Other financial investment activities**
Employees: **Depository credit intermediation**
Annual wages: **Other financial investment activities**
Average weekly wage: **Other investment pools and funds**
Annual receipts at nonemployer establishments: **Other financial investment activities**

NAICS 53 - Real Estate and Rental and Leasing. The Real Estate and Rental and Leasing sector comprises establishments primarily engaged in renting, leasing, or otherwise allowing the use of tangible or intangible assets, and establishments providing related services. The major portion of this sector comprises establishments that rent, lease, or otherwise allow the use of their own assets by others. The assets may be tangible, as is the case of real estate and equipment, or intangible, as is the case with patents and trademarks.



SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



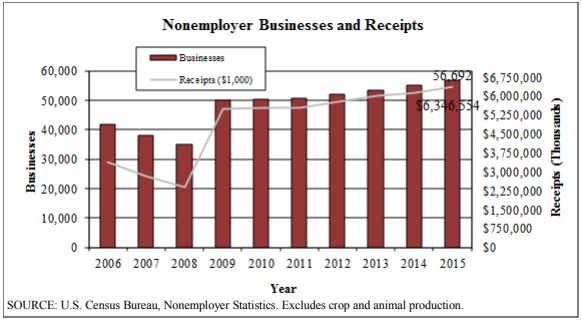
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



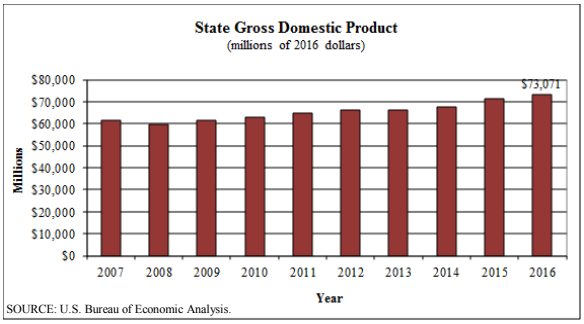
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



SOURCE: U.S. Census Bureau, Nonemployer Statistics. Excludes crop and animal production.



SOURCE: U.S. Bureau of Economic Analysis.

State export data are not available for this sector.

Summary.
GDP contribution to state total: **14.4%**
GDP rank: **1 of 20**
Nonemployer to employer establishment ratio: **8.6 to 1**

Sector leaders. Industry subsectors with the majority of establishments, employees, payroll and receipts.
Establishments with employees: **Activities related to real estate**
Nonemployer establishments: **Lessors of real estate**
Employees: **Activities related to real estate**
Annual wages: **Activities related to real estate**
Average weekly wage: **Lessors, nonfinancial intangible assets**
Annual receipts at nonemployer establishments: **Lessors of real estate**

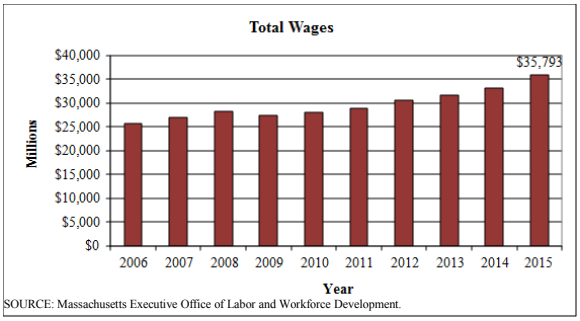
NAICS 54 - Professional and Technical Services. The Professional and Technical Services sector comprises establishments that specialize in performing professional, scientific, and technical activities for others. These activities require a high degree of expertise and training. The establishments in this sector specialize according to expertise and provide these services to clients in a variety of industries - in some cases, to households. Activities performed include: legal advice and representation, accounting, bookkeeping, and payroll services, architectural, engineering, and specialized design services, computer services, consulting services, research services, advertising services, photographic services, translation and interpretation services, veterinary services, and other professional, scientific, and technical services.



SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



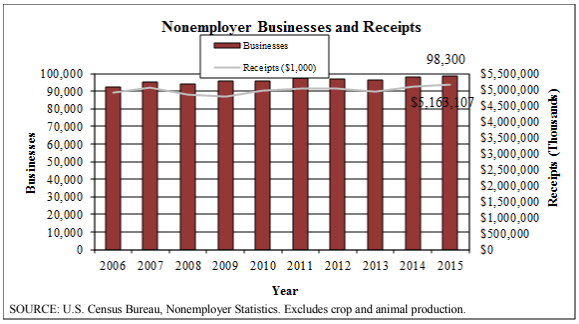
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



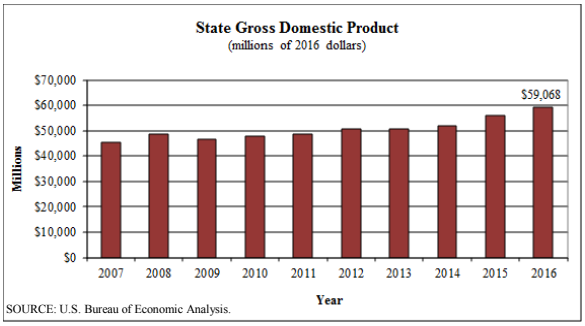
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



SOURCE: U.S. Census Bureau, Nonemployer Statistics. Excludes crop and animal production.



SOURCE: U.S. Bureau of Economic Analysis.

State export data are not available for this sector.

Summary.
GDP contribution to state total: **11.6%**
GDP rank: **2 of 20**
Nonemployer to employer establishment ratio: **3.1 to 1**

Sector leaders. Industry subsectors with the majority of establishments, employees, payroll and receipts.
Establishments with employees: **Computer systems design and related services**
Nonemployer establishments: **Other professional, scientific, and technical services**
Employees: **Computer systems design and related services**
Annual wages: **Computer systems design and related services**
Average weekly wage: **Scientific research and development services**
Annual receipts at nonemployer establishments: **Other professional, scientific, and technical services**

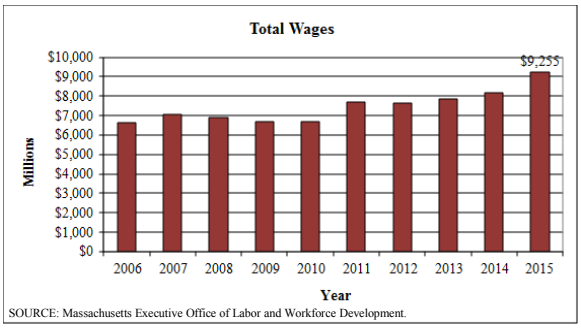
NAICS 55 - Management of Companies and Enterprises. The Management of Companies and Enterprises sector comprises establishments that hold the securities of (or other equity interests in) companies and enterprises for the purpose of owning a controlling interest or influencing management decisions or establishments (except government establishments) that administer, oversee, and manage establishments of the company or enterprise and that normally undertake the strategic or organizational planning and decision making role of the company or enterprise. Establishments that administer, oversee, and manage may hold the securities of the company or enterprise.



SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



SOURCE: Massachusetts Executive Office of Labor and Workforce Development.

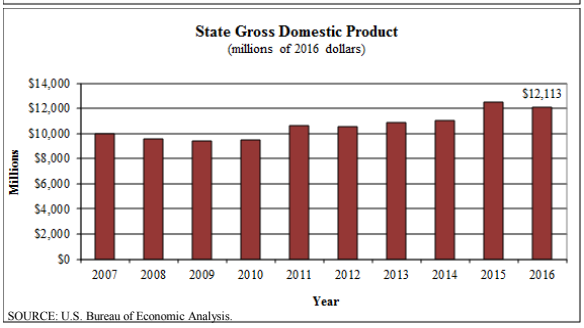


SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



SOURCE: Massachusetts Executive Office of Labor and Workforce Development.

State nonemployer and export data are not available for this sector.



SOURCE: U.S. Bureau of Economic Analysis.

Summary.
GDP contribution to state total: **2.4%**
GDP rank: **14 of 20**
Nonemployer to employer establishment ratio: **N/A**

Sector leaders. Industry subsectors with the majority of establishments, employees, payroll, and receipts.
Establishments with employees: Subsector detail N/A
Nonemployer establishments: N/A
Employees: Subsector detail N/A
Annual wages: Subsector detail N/A
Average weekly wage: Subsector detail N/A
Annual receipts at nonemployer establishments: N/A

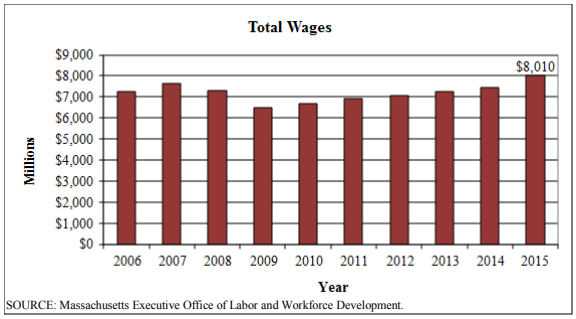
NAICS 56 - Administrative and Waste Services. The Administrative and Waste Services sector comprises establishments performing routine support activities for the day-to-day operations of other organizations. The establishments in this sector specialize in one or more of these support activities and provide these services to clients in a variety of industries and in some cases, to households. Activities performed include: office administration, hiring and placing of personnel, document preparation and similar clerical services, solicitation, collection, security and surveillance services, cleaning, and waste disposal services.



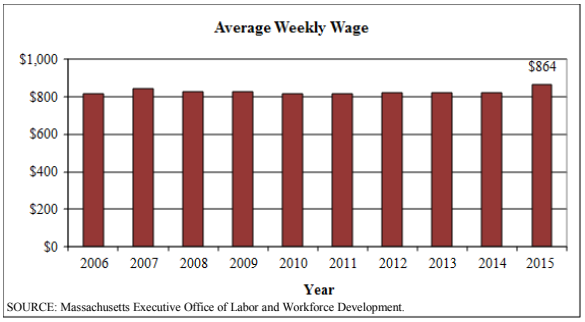
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



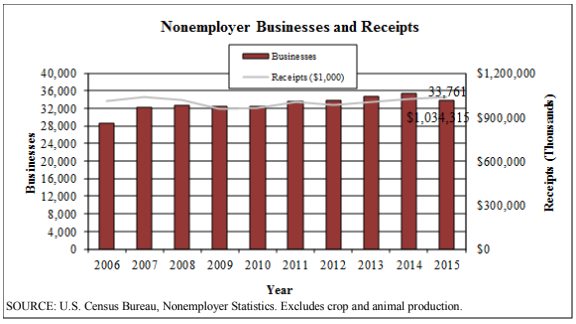
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



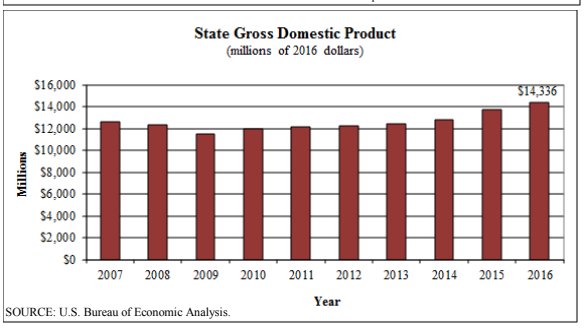
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



SOURCE: U.S. Census Bureau, Nonemployer Statistics. Excludes crop and animal production.



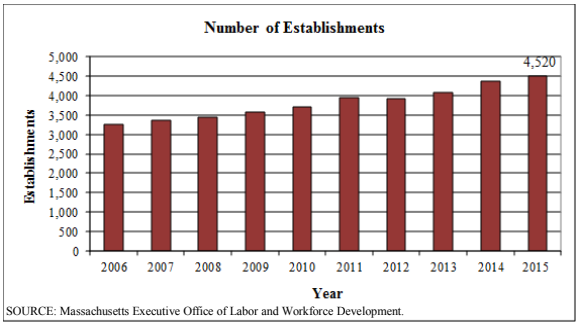
SOURCE: U.S. Bureau of Economic Analysis.

State export data are not available for this sector.

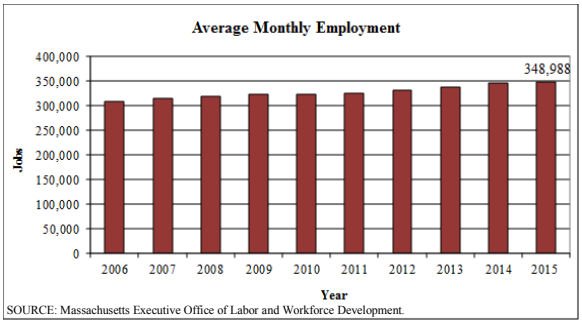
Summary.
GDP contribution to state total: **2.8%**
GDP rank: **11 of 20**
Nonemployer to employer establishment ratio: **2.7 to 1**

Sector leaders. Industry subsectors with the majority of establishments, employees, payroll and receipts.
Establishments with employees: **Services to buildings and dwellings**
Nonemployer establishments: **Services to buildings and dwellings**
Employees: **Employment services**
Annual wages: **Employment services**
Average weekly wage: **Office administrative services**
Annual receipts at nonemployer establishments: **Services to buildings and dwellings**

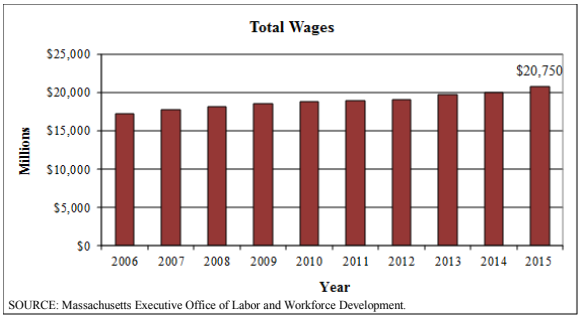
NAICS 61 - Educational Services. The Educational Services sector comprises establishments that provide instruction and training in a wide variety of subjects. This instruction and training is provided by specialized establishments, such as schools, colleges, universities, and training centers. These establishments may be privately owned and operated for profit or not for profit, or they may be publicly owned and operated. They may also offer food and/or accommodation services to their students.



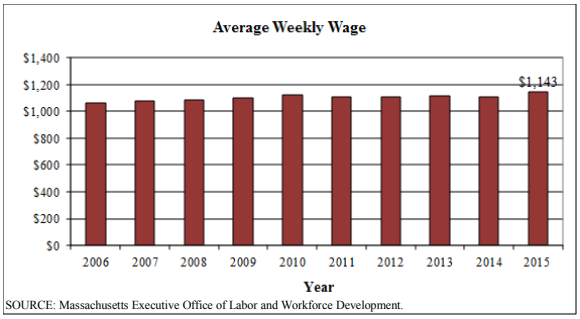
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



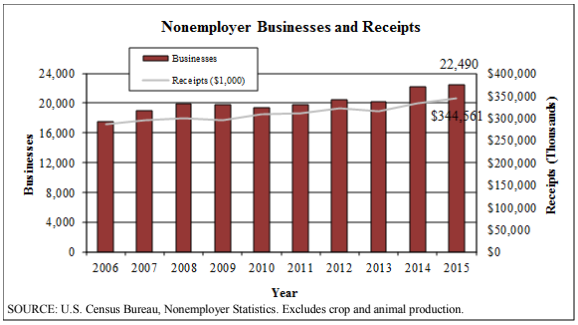
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



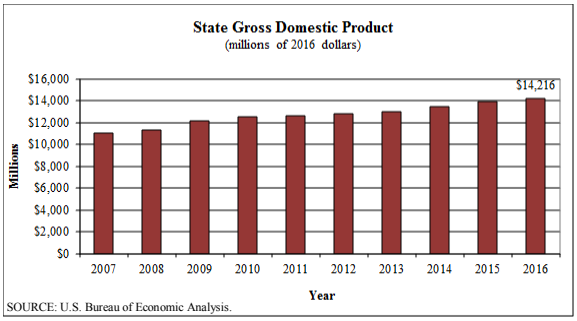
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



SOURCE: U.S. Census Bureau, Nonemployer Statistics. Excludes crop and animal production.



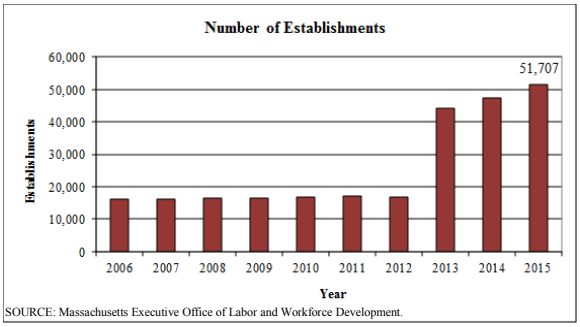
SOURCE: U.S. Bureau of Economic Analysis.

State export data are not available for this sector.

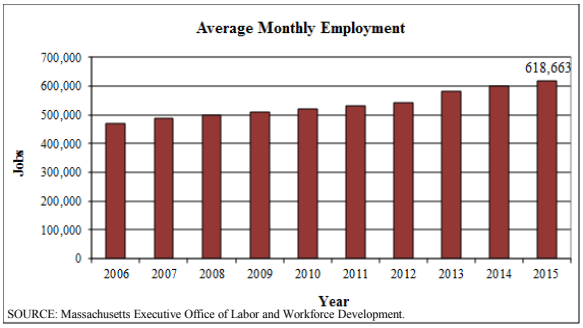
Summary.
GDP contribution to state total: **2.8%**
GDP rank: **13 of 20**
Nonemployer to employer establishment ratio: **5.2 to 1**

Sector leaders. Industry subsectors with the majority of establishments, employees, payroll and receipts.
Establishments with employees: **Other schools and instruction**
Nonemployer establishments: Subsector detail N/A
Employees: **Elementary and secondary schools**
Annual wages: **Elementary and secondary schools**
Average weekly wage: **Colleges and universities**
Annual receipts at nonemployer establishments: Subsector detail N/A

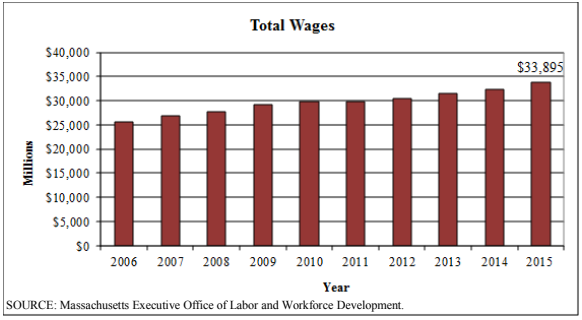
NAICS 62 - Health Care and Social Assistance. The Health Care and Social Assistance sector comprises establishments providing health care and social assistance for individuals. The sector includes both health care and social assistance because it is sometimes difficult to distinguish between the boundaries of these two activities. **Note:** Beginning with the first quarter 2013, a code change for employees from private households (NAICS 814110) into services for the elderly and persons with disabilities (NAICS 624120) moved 33,960 employees in Massachusetts in January 2013.



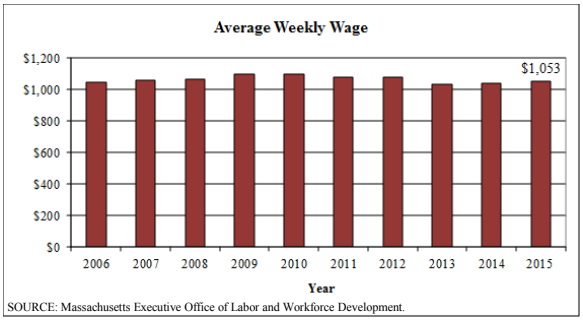
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



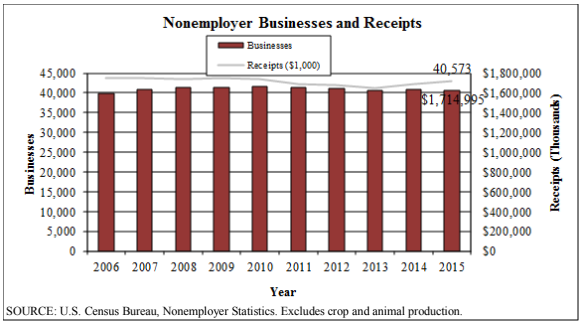
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



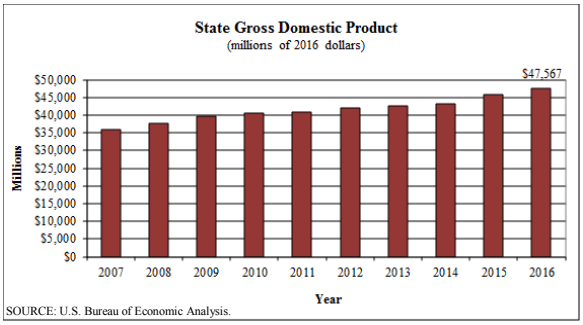
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



SOURCE: U.S. Census Bureau, Nonemployer Statistics. Excludes crop and animal production.



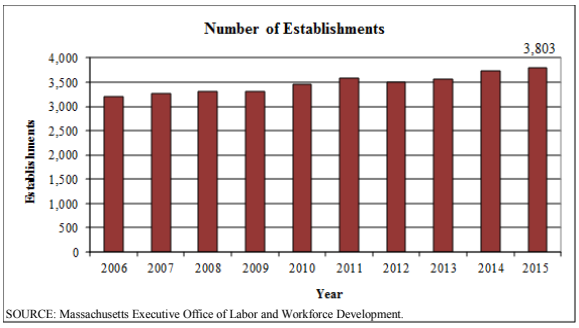
SOURCE: U.S. Bureau of Economic Analysis.

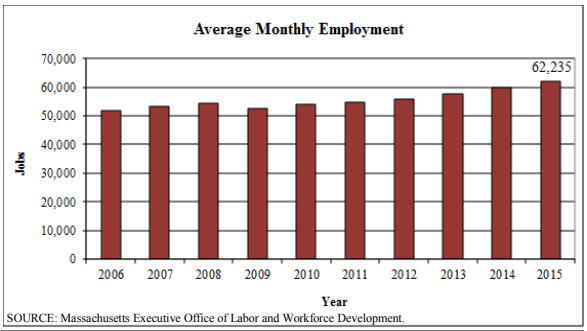
State export data are not available for this sector.

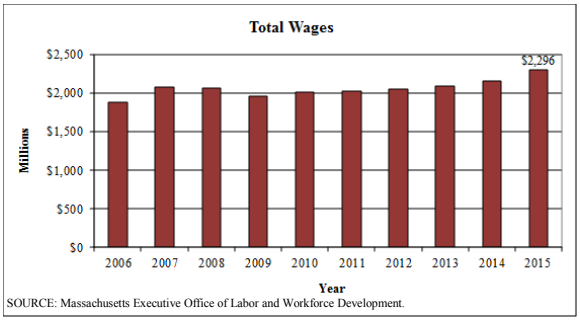
Summary.
GDP contribution to state total: **9.4%**
GDP rank: **6 of 20**
Nonemployer to employer establishment ratio: **0.9 to 1**

Sector leaders. Industry subsectors with the majority of establishments, employees, payroll and receipts.
Establishments with employees: **Individual and family services**
Nonemployer establishments: **Offices of other health practitioners**
Employees: **General medical and surgical hospitals**
Annual wages: **General medical and surgical hospitals**
Average weekly wage: **Offices of physicians**
Annual receipts at nonemployer establishments: **Offices of other health practitioners**

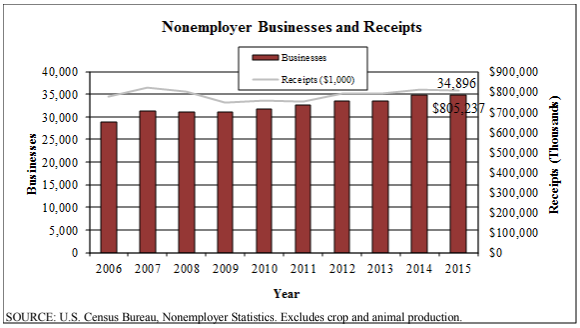
NAICS 71 - Arts, Entertainment, and Recreation. The Arts, Entertainment, and Recreation sector includes a wide range of establishments that: operate facilities or provide services to meet varied cultural, entertainment, and recreational interests of their patrons, are involved in producing, promoting, or participating in live performances, events, or exhibits intended for public viewing, preserve and exhibit objects and sites of historical, cultural, or educational interest and operate facilities or provide services that enable patrons to participate in recreational activities or pursue amusement, hobby, and leisure-time interests. See the appendix page six for travel and tourism information.

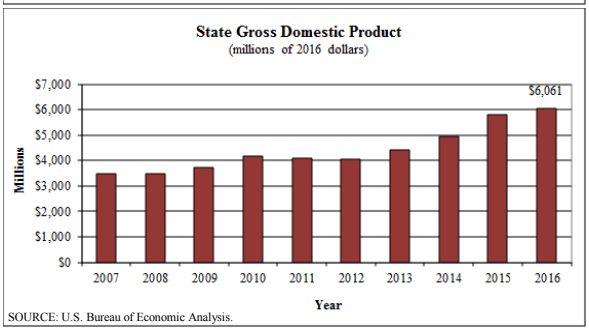










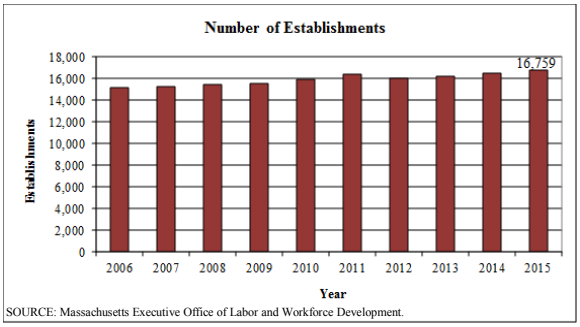


State export data are not available for this sector.

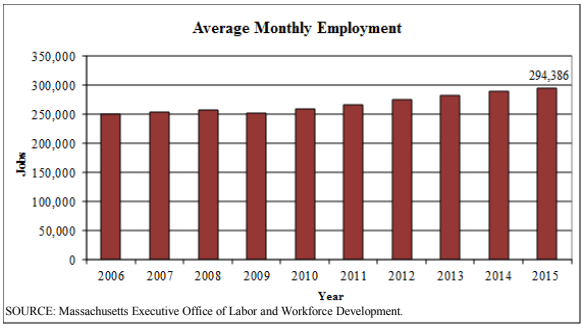
Summary.
GDP contribution to state total: **1.2%**
GDP rank: **18 of 20**
Nonemployer to employer establishment ratio: **9.3 to 1**

Sector leaders. Industry subsectors with the majority of establishments, employees, payroll and receipts.
Establishments with employees: **Other amusement & recreation industries**
Nonemployer establishments: **Independent artists, writers, and performers**
Employees: **Other amusement & recreation industries**
Annual wages: **Other amusement & recreation industries**
Average weekly wage: **Spectator sports**
Annual receipts at nonemployer establishments: **Independent artists, writers, and performers**

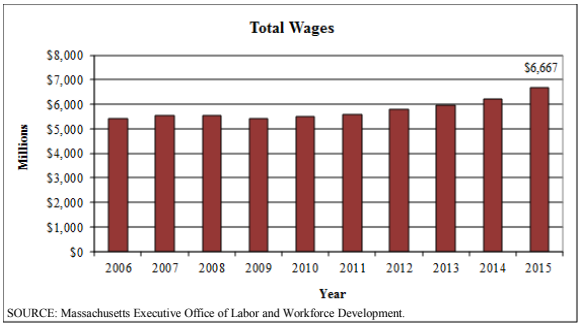
NAICS 72 - Accommodation and Food Services. The Accommodation and Food Services sector comprises establishments providing customers with lodging and/or preparing meals, snacks, and beverages for immediate consumption. The sector includes both accommodation and food services establishments because the two activities are often combined at the same establishment.



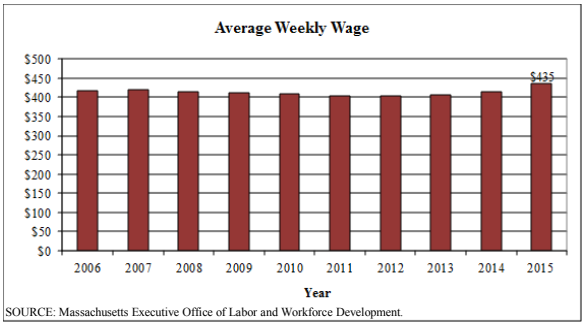
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



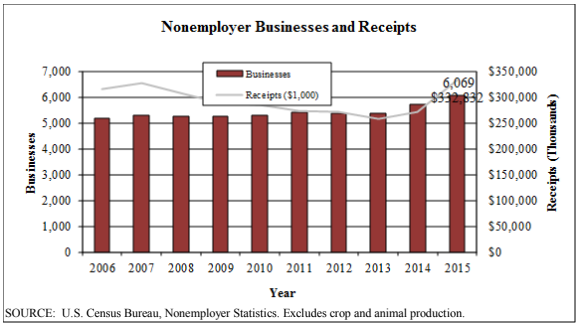
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



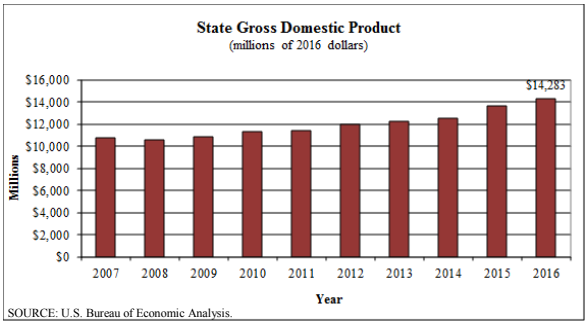
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



SOURCE: U.S. Census Bureau, Nonemployer Statistics. Excludes crop and animal production.



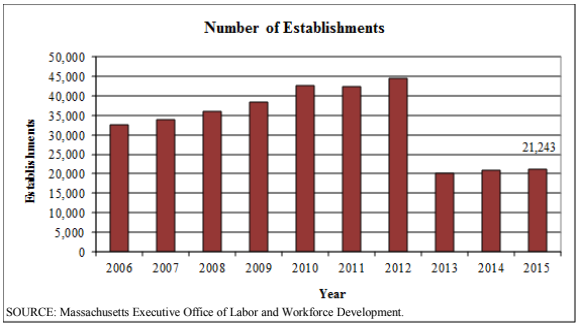
SOURCE: U.S. Bureau of Economic Analysis.

State export data are not available for this sector.

Summary.
GDP contribution to state total: **2.8%**
GDP rank: **12 of 20**
Nonemployer to employer establishment ratio: **0.4 to 1**

Sector leaders. Industry subsectors with the majority of establishments, employees, payroll and receipts.
Establishments with employees: **Restaurants and other eating places**
Nonemployer establishments: **Special food services**
Employees: **Restaurants and other eating places**
Annual wages: **Restaurants and other eating places**
Average weekly wage: **Traveler accommodation**
Annual receipts at nonemployer establishments: **Restaurants and other eating places**

NAICS 81 - Other Services, Except Public Administration. The Other Services (except Public Administration) sector comprises establishments engaged in providing services not specifically provided for elsewhere in the classification system. Establishments in this sector are primarily engaged in activities such as equipment and machinery repairing, promoting or administering religious activities, grant-making, advocacy, providing dry cleaning and laundry services, personal care services, death care services, pet care services, photofinishing services, temporary parking services, and dating services. **Note:** Beginning with the first quarter 2013, a code change for employees from private households (NAICS 814110) into services for the elderly and persons with disabilities (NAICS 624120) moved 33,960 employees in Massachusetts in January 2013.



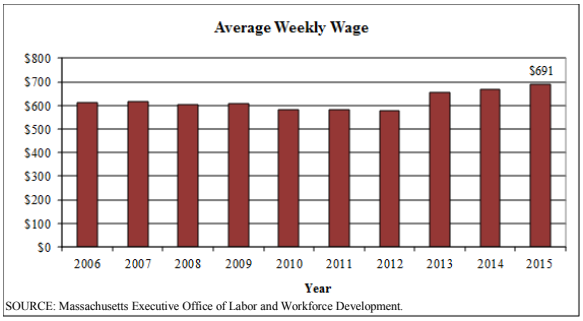
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



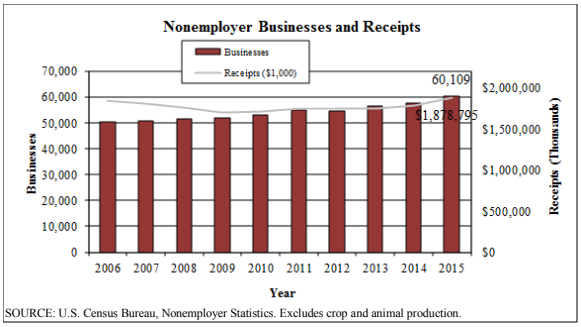
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



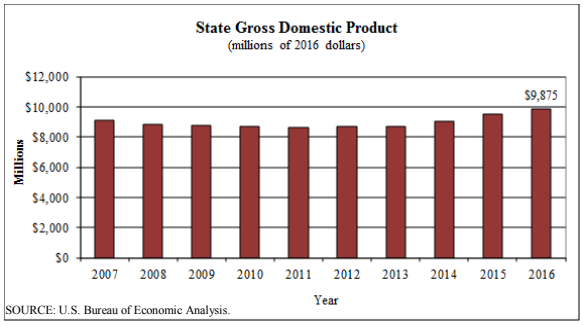
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



SOURCE: U.S. Census Bureau, Nonemployer Statistics. Excludes crop and animal production.



SOURCE: U.S. Bureau of Economic Analysis.

State export data are not available for this sector.

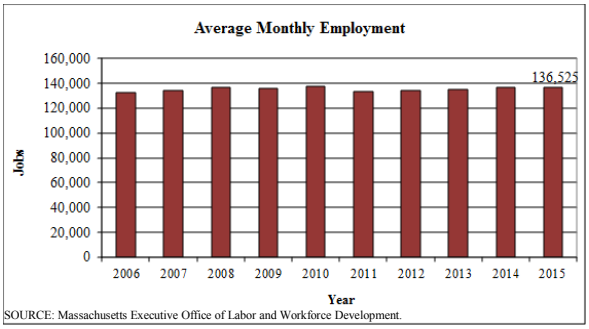
Summary.
GDP contribution to state total: **1.9%**
GDP rank: **15 of 20**
Nonemployer to employer establishment ratio: **2.9 to 1**

Sector leaders. Industry subsectors with the majority of establishments, employees, payroll and receipts.
Establishments with employees: **Private households**
Nonemployer establishments: **Other personal services**
Employees: **Personal Care Services**
Annual wages: **Automotive repair and maintenance**
Average weekly wage: **Electronic equipment repair/maintenance**
Annual receipts at nonemployer establishments: **Other personal services**

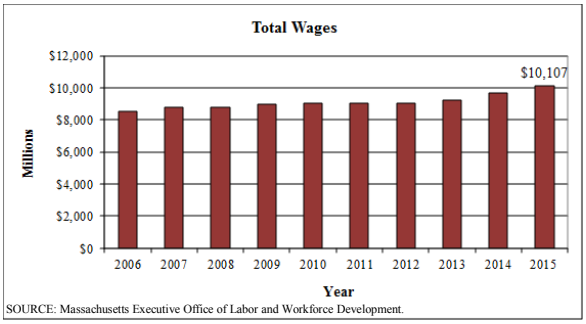
NAICS 92 - Public Administration. The Public Administration sector consists of establishments of federal, state, and local government agencies that administer, oversee, and manage public programs and have executive, legislative, or judicial authority over other institutions within a given area. These agencies also set policy, create laws, adjudicate civil and criminal legal cases and provide for public safety and national defense.



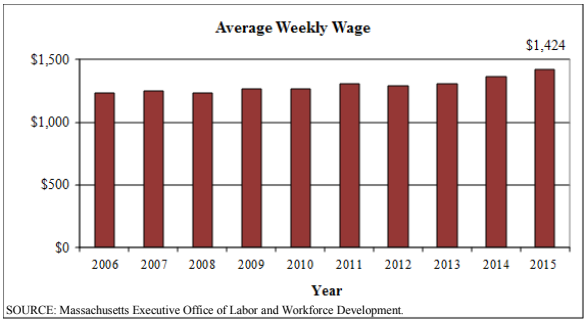
SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



SOURCE: Massachusetts Executive Office of Labor and Workforce Development.

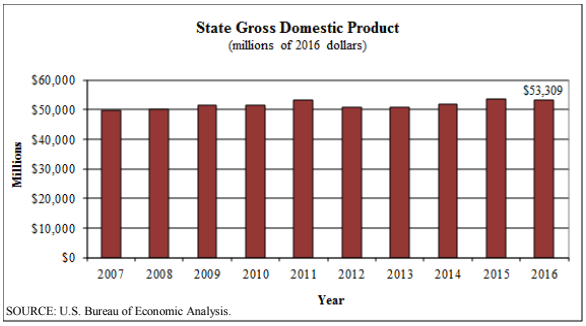


SOURCE: Massachusetts Executive Office of Labor and Workforce Development.



SOURCE: Massachusetts Executive Office of Labor and Workforce Development.

State nonemployer and export data are not available for this sector.

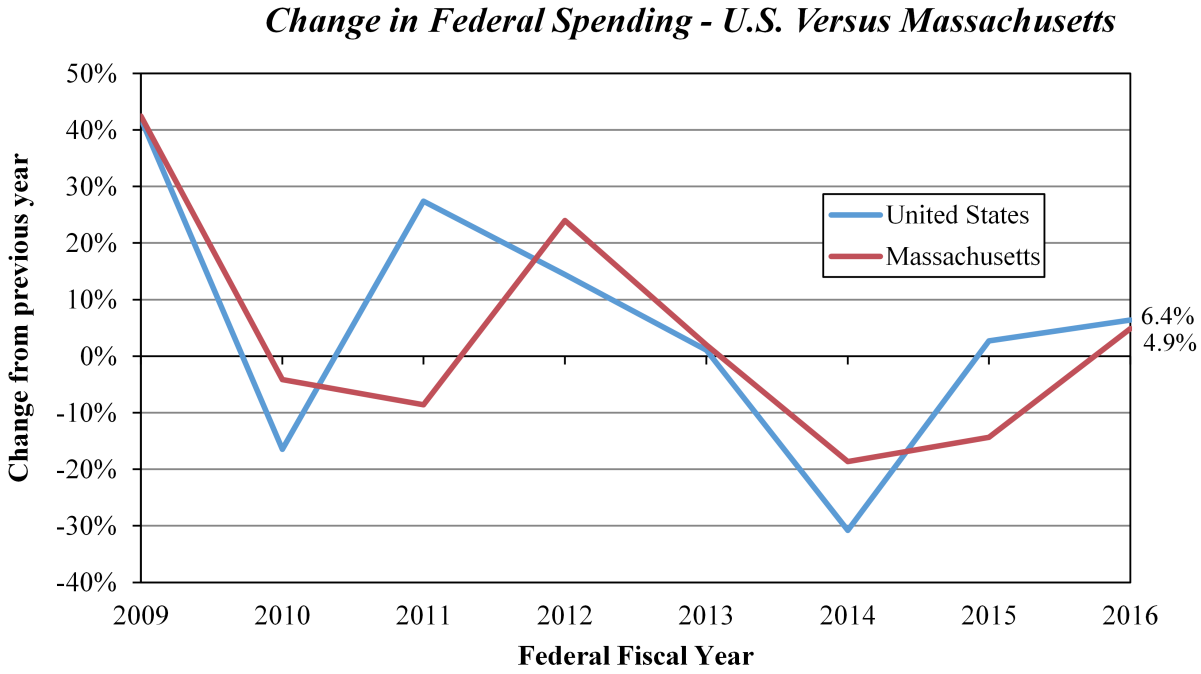


SOURCE: U.S. Bureau of Economic Analysis.

Summary.
GDP contribution to state total: **10.5%**
GDP rank: **3 of 20**
Nonemployer to employer establishment ratio: **N/A**

Sector leaders. Industry subsectors with the majority of establishments, employees, payroll and receipts.
Establishments with employees: **Justice, public order, and safety activities**
Nonemployer establishments: N/A
Employees: **Justice, public order, and safety activities**
Annual wages: **Justice, public order, and safety activities**
Average weekly wage: **Justice, public order, and safety activities**
Annual receipts at nonemployer establishments: N/A

Federal Spending in Massachusetts. Massachusetts received approximately $62.3 billion in contracts, grants, direct payments, insurance, loans and guarantees, and other spending from the federal government in federal fiscal year (FFY) 2016. Massachusetts received 2.0 percent of all federal spending in FFY 2016 versus 2.1 percent in FFY 2015. Federal dollars to Massachusetts have dropped since FFY 2012. Massachusetts federal contracts declined from FFY 2012 to FFY 2014, increased 5.2 percent in FFY 2015, and declined 3.8 percent in FFY 2016. The proportion of all Massachusetts federal contracts has averaged 2.9 percent over the last nine years.



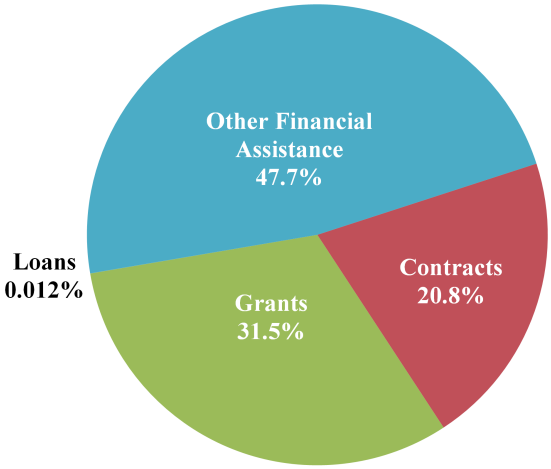
Federal Spending in the United States and Massachusetts (in $Billions of 2016 adjusted dollars)

Federal Fiscal Year	Massachusetts	YOY change	United States	YOY change
2008	$54.0		$2,322.5	
2009	$76.9	42.4%	$3,296.9	42.0%
2010	$73.7	-4.2%	$2,755.0	-16.4%
2011	$67.4	-8.6%	$3,510.5	27.4%
2012	$83.5	24.0%	$4,016.4	14.4%
2013	$85.2	2.0%	$4,058.7	1.1%
2014	$69.3	-18.6%	$2,808.4	-30.8%
2015	$59.4	-14.3%	$2,883.9	2.7%
2016	$62.3	4.9%	$3,068.8	6.4%

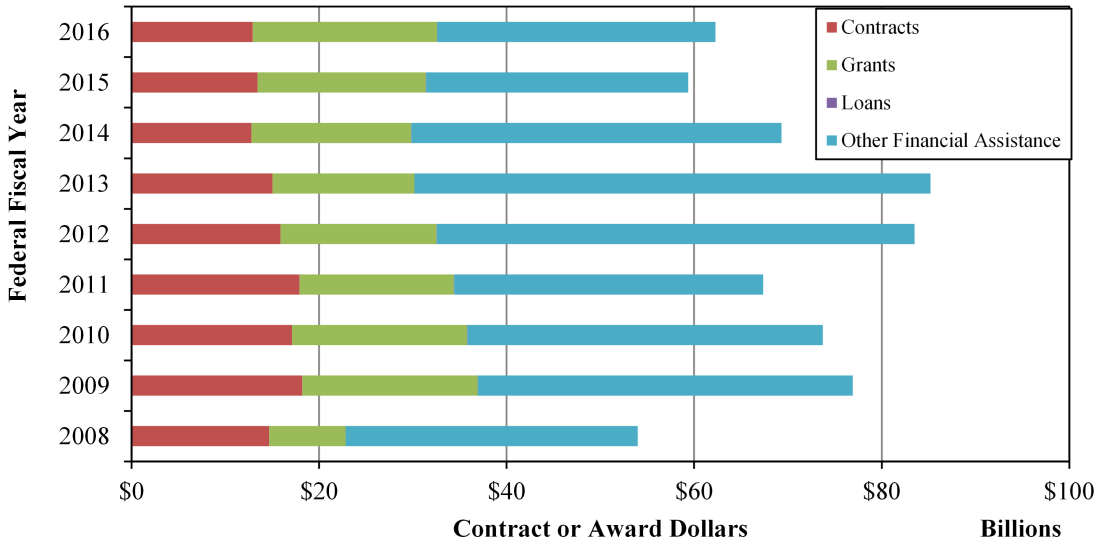
SOURCE: http://www.usaspending.gov as of 07/10/17.
NOTE: Federal fiscal data reporting is not complete until January of the following year due to the three month lag in DOD reporting. Dollar values and change in dollar values reflect inflation-adjusted ($2016) dollars.

In FFY 2016, the largest portion of federal spending in Massachusetts, 47.7 percent, was for Other Financial Assistance which includes direct payments to individuals (such as Medicare and food stamps), insurance payments (such as unemployment benefits, flood insurance), and other types of assistance payments (such as reimbursements for prescriptions for veterans). Other Financial Assistance increased 6.1 percent, Contracts decreased 3.8 percent, and Grants increased 9.4 percent from FFY 2015. The graphs below describe the most recent complete fiscal year and the last nine years of federal spending in Massachusetts, including the most recent data for the current fiscal year as reported by USASpending.gov.

Federal Spending in Massachusetts - Federal Fiscal Year 2016



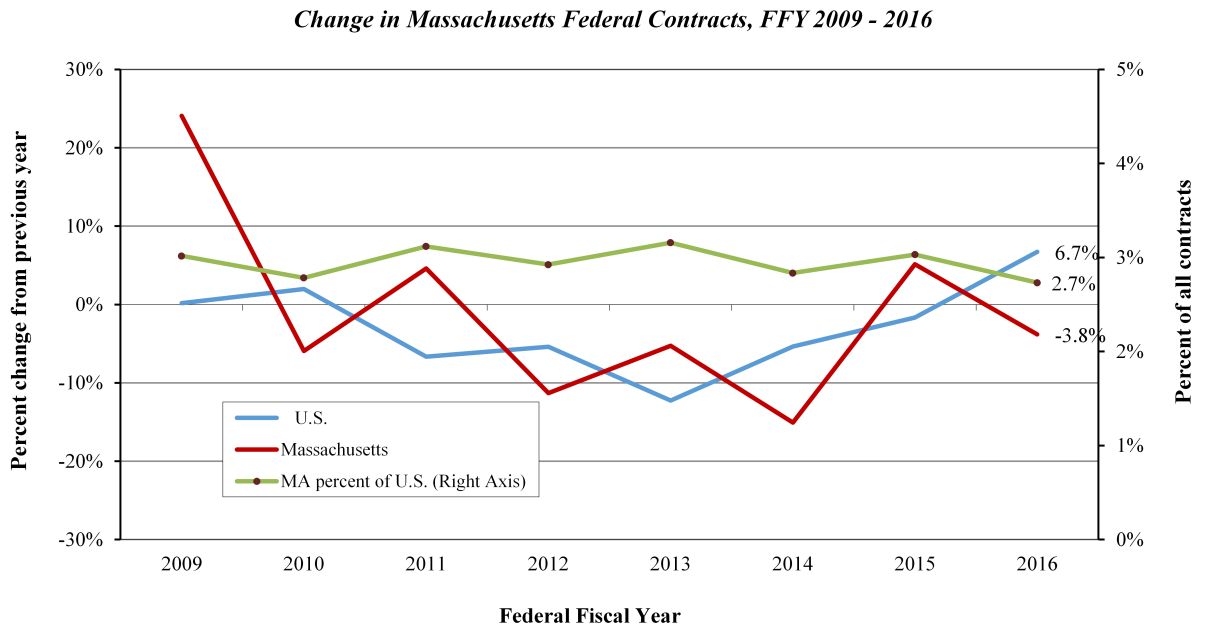
Composition of Federal Spending Awards to Massachusetts FFY2008 - 2016



SOURCE: http://www.usaspending.gov as of 07/10/17. Federal fiscal data reporting is not complete until January of the following year due to the three month lag in DOD reporting. Dollar values and change in dollar values reflect inflation-adjusted ($2016) dollars.

Federal Contracts. The table and graph below compare the annual summary of federal contracts performed in Massachusetts to the total contracts awarded by the federal government. In FFY 2016, the latest full year available, 2.7 percent of all federal contract work was performed in Massachusetts. This is slightly less than the 2.9 percent average it has been receiving over the last nine years.

The following two pages summarize the federal contracts by top products or services, funding agencies and sub agencies, contractors and sub-awardees, over the long-term and the latest complete federal fiscal year. The work was primarily performed in Massachusetts and the vendors who were awarded the contracts may or may not have been located in Massachusetts.



Federal Contracts Performed in Massachusetts as a Percent of all Federal Contracts

(in millions of 2016 adjusted dollars)

Federal Fiscal Year	Massachusetts	MA percent increase from previous year	MA portion of all federal contracts	U.S.	U.S. percent increase from previous year
2008	$14,667		2.4%	$602,093	
2009	$18,199	24.1%	3.0%	$603,145	0.2%
2010	$17,118	-5.9%	2.8%	$614,985	2.0%
2011	$17,908	4.6%	3.1%	$574,113	-6.6%
2012	$15,887	-11.3%	2.9%	$543,101	-5.4%
2013	$15,052	-5.3%	3.2%	$476,545	-12.3%
2014	$12,785	-15.1%	2.8%	$450,961	-5.4%
2015	$13,443	5.2%	3.0%	$443,464	-1.7%
2016	$12,933	-3.8%	2.7%	$473,228	6.7%
Total	$137,991			$4,781,636	

SOURCE: http://www.usaspending.gov as of 07/10/17. Federal fiscal data reporting is not complete until January of the following year due to the three month lag in DOD reporting. Dollar values and change in dollar values reflect inflation-adjusted ($2016) dollars.

Summary of Federal Contracts Performed in Massachusetts

FFY 2008 to FFY 2016	
Total Dollars:	$136,600,406,587
Number of Transactions:	712,803

Top 5 Prime Award Contractors	
Raytheon Company	$3,330,206,694
Massachusetts Institute Of Technology	$1,032,243,089
General Electric Company	$946,289,749
Coins 'N Things, Inc.	$860,924,025
General Dynamics C4 Systems, Inc.	$735,417,656

Top 5 Contract Sub-Awardees	
Cobham Plc	$2,485,955,649
Bae Systems Information And Electronic Systems Integration Inc.	$906,481,811
General Dynamics Advanced Information Systems, Inc.	$449,083,136
Raytheon Company	$323,945,495
Mercury Systems, Inc.	$209,109,147

SOURCE: http://www.usaspending.gov as of 07/19/17. Annual federal fiscal data reporting is not complete until January of the following year due to the three month lag in DOD reporting. Dollar values reflect inflation-adjusted ($2016) dollars.

Federal Contracts Performed in Massachusetts

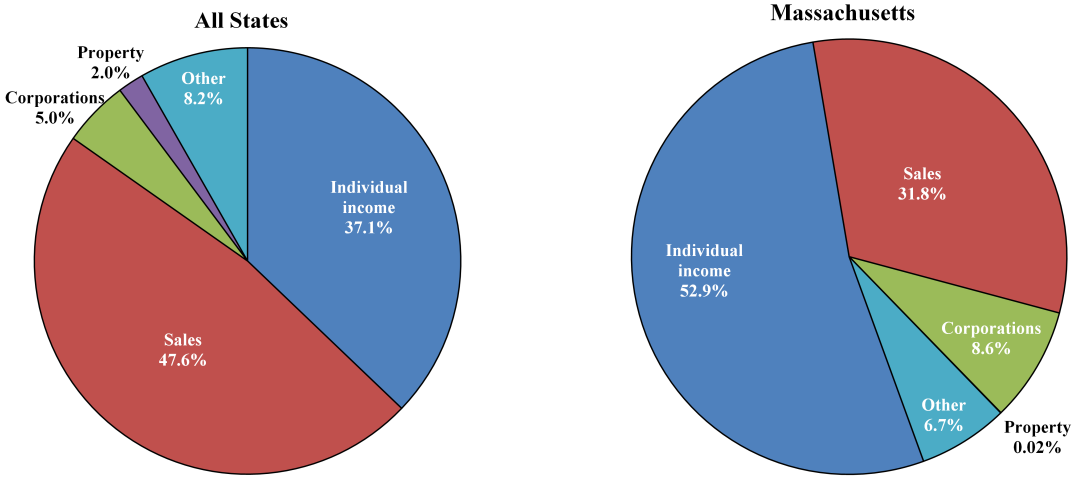
Federal Fiscal Year: 2016	
Total Contract Funds Awarded:	$12,932,585,584
Total Contract Funds to Sub-Awardees:	$585,464,783
This amount is 2.7% percent of all dollars awarded nationally for the federal fiscal year.	
Number of Transactions:	60,184
Top 5 Prime Award Contractors	
Raytheon Company	$3,330,206,694
Massachusetts Institute Of Technology	$1,032,243,089
General Electric Company	$946,289,749
Coins 'N Things, Inc.	$860,924,025
General Dynamics C4 Systems, Inc.	$735,417,656
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State Revenues. Taxes collected by all states in FY 2015 totaled $916.5 billion, 5.7 percent more than FY 2014. Massachusetts collected $27.0 billion in FY 2015, 6.9 percent more than in FY 2014. Massachusetts ranked tenth in the nation in total taxes collected in 2015, down from ninth in 2014.

In FY 2015, the national average of tax collection from individual income tax and sales and gross receipts tax was 83.9 percent of total revenue. Massachusetts collected most of its revenue, 48.7 percent, from sales and gross receipts tax while overall states collected 47.1 percent of their revenue from sales and gross receipts tax. Seven states do not have an individual income tax.

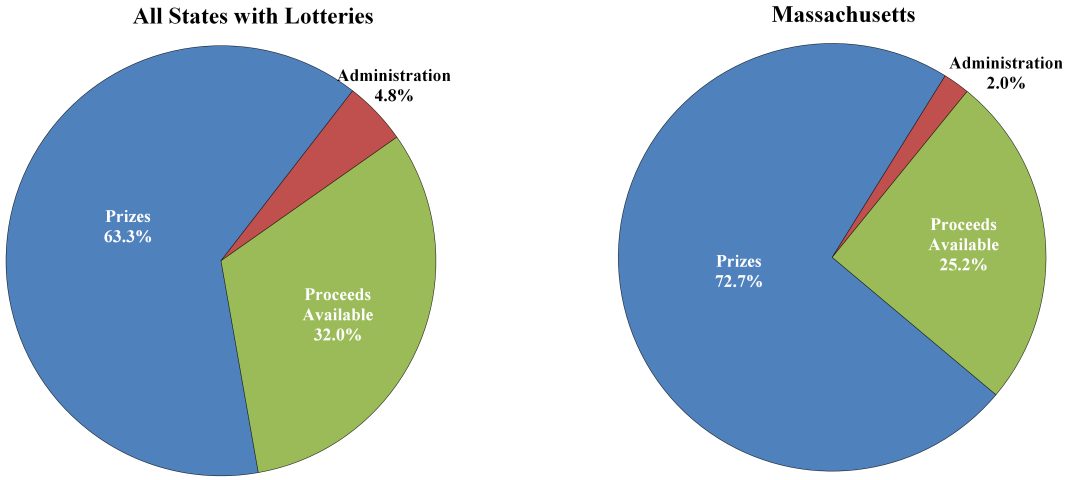
FY 2015 State Revenues by Type



SOURCE: U.S. Census Bureau, Governments Division.
NOTES: Other: Licenses, death and gift, severance, documentary and stock transfer and other NEC. Shares of total based on inflation-adjusted dollars ($2015).

State Lottery Proceeds. Massachusetts ranked third in revenue, $4.64 billion, and third in prize money awarded, $3.52 billion, among the 43 states with lotteries in FY 2015. Massachusetts lottery revenue held flat compared to the previous year.

FY 2015 Apportionment of Lottery Funds



SOURCE: U.S. Census Bureau, Governments Division.
NOTE: Shares of total based on inflation-adjusted dollars ($2015).

State Expenditures. The following table and graph depict FY 2014 per capita state government general expenditures in inflation-adjusted dollars by category for the six New England states and the U.S. average state expenditures. Massachusetts ranked eighth in the nation in per capita expenditures, $8,648 in 2014, while it ranked sixth and spent $8,775 in 2012. This represents a 1.4 percent decrease in per capita expenditures from 2012 levels, with the largest per capita dollar increase in the Natural Resource, Parks and Recreation function.

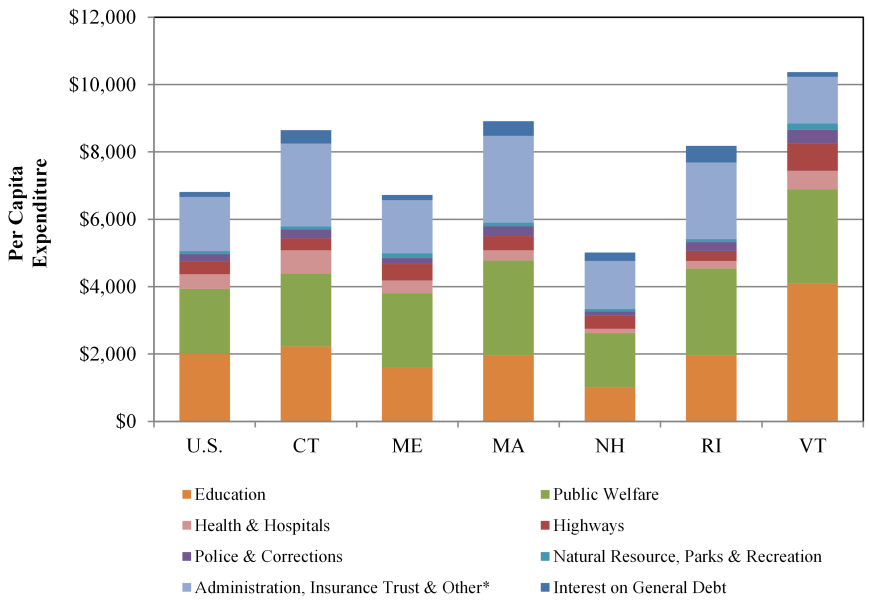
Massachusetts Per Capita State Government General Expenditures, by Type

General expenditures, by function	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Education	$1,654	$1,668	$1,898	$1,838	$1,941	$1,997	$1,992	$2,036	$1,998	$2,024	$1,969
Public Welfare	$2,112	$2,194	$2,172	$2,176	$2,271	$2,315	$2,376	$2,389	$2,390	$2,502	$2,805
Health & Hospitals	$218	$223	$262	$263	$265	$259	$263	$252	$252	$246	$304
Highways	$339	$311	$309	$385	$329	$328	$308	$324	$308	$335	$422
Police & Corrections	$273	$295	$317	$326	$329	$307	$292	$289	$296	$307	$299
Natural Resource, Parks & Recreation	$94	$96	$101	$99	$108	$100	$95	$85	$96	$94	$100
Administration, Insurance Trust & Other*	$2,040	$2,012	$2,187	$2,119	$2,378	$2,815	$2,655	$3,025	$2,934	$2,847	$2,580
Interest on General Debt	$535	$579	$599	$622	$628	$575	$506	$485	$445	$403	$434
Total	$7,264	$7,379	$7,847	$7,829	$8,249	$8,696	$8,487	$8,886	$8,719	$8,757	$9,436

Fiscal Year 2015 Per Capita State Government General Expenditures, by Type
(for the U.S. and the New England States)

General expenditures, by function	U.S.	CT	ME	MA	NH	RI	VT
Education	$2,012	$2,224	$1,586	$1,969	$1,014	$1,969	$4,099
Public Welfare	$1,922	$2,169	$2,222	$2,805	$1,608	$2,564	$2,796
Health & Hospitals	$438	$686	$375	$304	$130	$227	$545
Highways	$382	$352	$490	$422	$385	$305	$811
Police & Corrections	$214	$269	$179	$299	$130	$262	$403
Natural Resource, Parks & Recreation	$90	$90	$137	$100	$78	$88	$195
Administration, Insurance Trust & Other*	$1,608	$2,454	$1,574	$2,580	$1,418	$2,268	$1,382
Interest on General Debt	$142	$401	$155	$434	$254	$497	$140
Total	$6,918	$8,850	$6,735	$9,436	$5,400	$8,323	$10,463
State's rank of total per capita expenditures		9	30	8	44	12	4

Fiscal Year 2015 Per Capita State Government General Expenditures, by Type
(U.S. and the New England States)



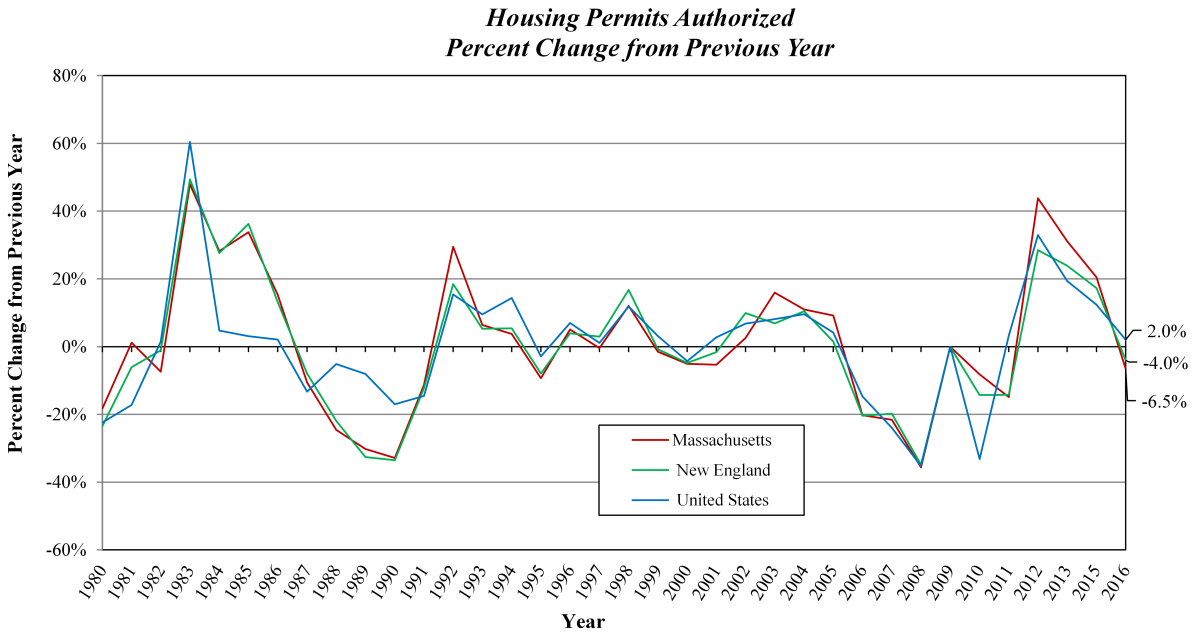
SOURCE: U.S. Census Bureau, Governments Division.
*Other includes utility, liquor store, other and unallocable expenditures. Updated 06/07/15.
NOTE: Per capita dollars are adjusted for inflation ($2015).

Supplementary Data Section. The following appendix contains more detailed data for industry sectors or subsectors.

Building Permits. The Census Bureau's Residential Construction Branch Building Permits Survey is a leading economic indicator used to track the housing industry.

Housing Permits Authorized

Year	Massachusetts Total Units	Massachusetts Percent Change Previous Year	New England Total Units	New England Percent Change Previous Year	United States Total Units	United States Percent Change Previous Year
1970	38,330	14.2%	74,068	5.0%	1,354,746	1.8%
1975	17,697	-27.5%	41,645	-21.0%	934,511	-12.4%
1980	16,480	-18.3%	41,079	-23.4%	1,190,600	-22.4%
1985	39,196	33.8%	99,192	36.3%	1,733,266	3.1%
1990	14,290	-32.9%	36,169	-33.5%	1,110,766	-17.0%
1996	17,261	5.1%	39,941	4.0%	1,425,616	7.0%
1997	17,186	-0.4%	41,110	2.9%	1,441,136	1.1%
1998	19,254	12.0%	48,008	16.8%	1,612,260	11.9%
1999	18,967	-1.5%	47,632	-0.8%	1,663,533	3.2%
2000	18,000	-5.1%	45,335	-4.8%	1,592,267	-4.3%
2001	17,034	-5.4%	44,594	-1.6%	1,636,676	2.8%
2002	17,465	2.5%	49,031	9.9%	1,747,678	6.8%
2003	20,257	16.0%	52,395	6.9%	1,889,214	8.1%
2004	22,477	11.0%	57,858	10.4%	2,070,077	9.6%
2005	24,549	9.2%	58,742	1.5%	2,155,316	4.1%
2006	19,580	-20.2%	46,782	-20.4%	1,838,903	-14.7%
2007	15,358	-21.6%	37,532	-19.8%	1,398,415	-24.0%
2008	9,883	-35.6%	24,454	-34.8%	905,359	-35.3%
2009	9,883	0.0%	24,454	0.0%	905,359	0.0%
2010	9,075	-8.2%	20,964	-14.3%	604,610	-33.2%
2011	7,725	-14.9%	17,987	-14.2%	624,061	3.2%
2012	11,111	43.8%	23,109	28.5%	829,658	32.9%
2013	14,569	31.1%	28,635	23.9%	990,822	19.4%
2014	14,467	-0.7%	28,949	1.1%	1,052,124	6.2%
2015	17,424	20.4%	33,959	17.3%	1,182,582	12.4%
2016	16,288	-6.5%	32,595	-4.0%	1,206,642	2.0%

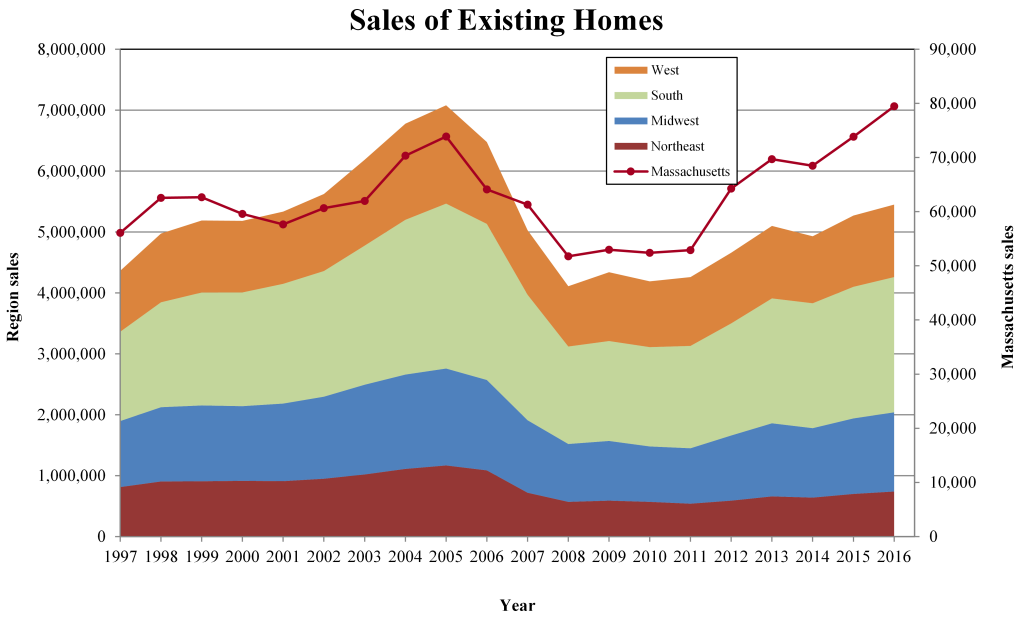


SOURCE: U.S. Census Bureau. Reported data plus data imputed for non-reporters & partial reporters.

Home Sales. Sales of existing single-family homes for Massachusetts and the U.S. are presented in the following table and graph. The state existing-home sales report includes single-family houses, condos and co-ops.

Sales of Existing Homes
United States, National Regions and Massachusetts

Year	U.S.	Northeast	Midwest	South	West	Massachusetts
1991	3,146,000	596,000	867,000	1,070,000	633,000	31,379
1992	3,431,000	667,000	967,000	1,127,000	680,000	38,847
1993	3,737,000	714,000	1,031,000	1,257,000	745,000	43,588
1994	3,884,000	728,000	1,031,000	1,313,000	822,000	45,238
1995	3,849,000	725,000	1,010,000	1,312,000	812,000	43,509
1996	4,167,000	776,000	1,056,000	1,393,000	942,000	51,857
1997	4,374,000	813,000	1,084,000	1,466,000	1,001,000	56,107
1998	4,965,000	905,000	1,219,000	1,722,000	1,129,000	62,549
1999	5,179,000	908,000	1,245,000	1,854,000	1,182,000	62,662
2000	5,173,000	915,000	1,226,000	1,867,000	1,175,000	59,602
2001	5,335,000	910,000	1,274,000	1,965,000	1,186,000	57,665
2002	5,634,000	950,000	1,347,000	2,062,000	1,265,000	60,661
2003	6,176,000	1,020,000	1,473,000	2,283,000	1,410,000	61,979
2004	6,778,000	1,111,000	1,549,000	2,540,000	1,578,000	70,342
2005	7,080,000	1,168,000	1,591,000	2,707,000	1,614,000	73,887
2006	6,477,000	1,087,000	1,484,000	2,562,000	1,344,000	64,126
2007	5,030,000	720,000	1,190,000	2,060,000	1,060,000	61,299
2008	4,110,000	570,000	950,000	1,600,000	990,000	51,766
2009	4,340,000	590,000	980,000	1,640,000	1,130,000	52,992
2010	4,190,000	570,000	910,000	1,630,000	1,080,000	52,413
2011	4,260,000	540,000	910,000	1,680,000	1,130,000	52,902
2012	4,660,000	590,000	1,070,000	1,840,000	1,160,000	64,254
2013	5,090,000	660,000	1,200,000	2,050,000	1,190,000	69,697
2014	4,940,000	640,000	1,140,000	2,050,000	1,100,000	68,503
2015	5,250,000	700,000	1,240,000	2,160,000	1,170,000	73,858
2016	5,450,000	740,000	1,300,000	2,220,000	1,190,000	79,459

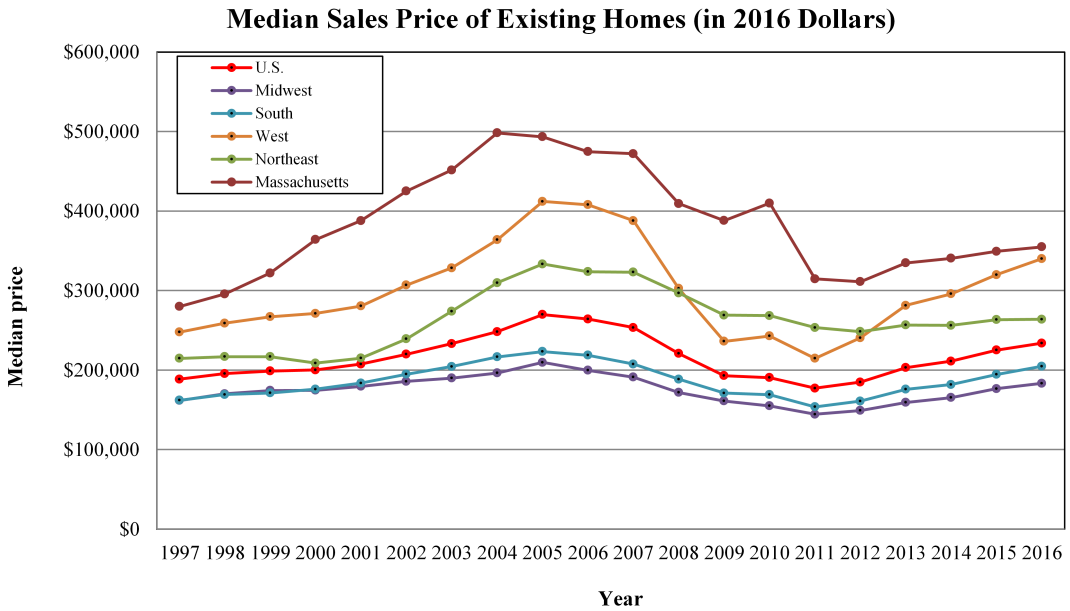


SOURCES: National Association of Realtors and Massachusetts Association of Realtors. Massachusetts sales price reflects only that of single-family homes. Sales prices of the other regions represent the average of both single-and multi-family homes.

Home prices. Massachusetts sales prices are much higher than the national median but they are 29.9 percent less than the 2004 peak.

Median Sales Price of Existing Homes (in 2016 Dollars)
United States, National Regions and Massachusetts

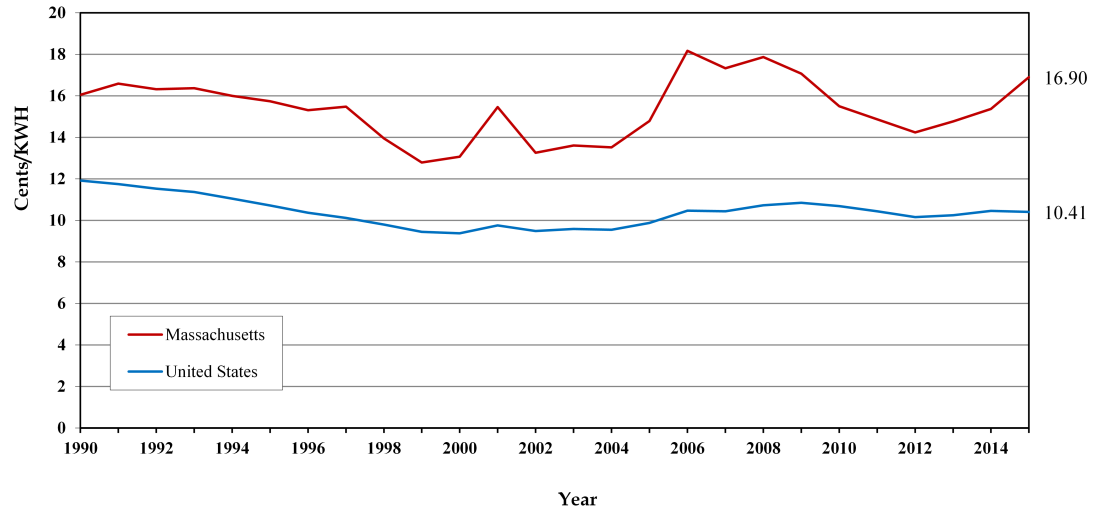
Year	U.S.	Northeast	Midwest	South	West	Massachusetts
1990	$177,021	$259,656	$140,111	$155,536	$254,514	$332,787
1991	$178,684	$253,047	$141,854	$155,247	$254,633	$297,621
1992	$177,910	$243,942	$144,038	$155,842	$241,547	$279,337
1993	$178,054	$236,021	$144,502	$155,631	$235,522	$270,492
1994	$180,248	$229,156	$146,725	$153,689	$241,626	$271,222
1995	$180,478	$218,117	$151,343	$152,603	$237,172	$270,405
1996	$183,409	$213,544	$156,486	$156,639	$240,313	$273,103
1997	$188,566	$214,735	$161,799	$162,098	$247,783	$279,953
1998	$195,539	$216,890	$170,214	$169,330	$259,001	$295,768
1999	$198,805	$216,813	$174,315	$171,290	$267,091	$322,112
2000	$200,145	$208,787	$174,639	$176,033	$271,227	$364,182
2001	$207,482	$215,071	$179,565	$183,630	$280,528	$387,964
2002	$219,995	$239,207	$185,842	$194,781	$306,846	$425,114
2003	$233,224	$273,921	$189,919	$204,397	$328,444	$451,591
2004	$248,266	$309,760	$196,427	$216,502	$363,886	$498,362
2005	$269,870	$333,405	$209,653	$223,294	$412,055	$493,468
2006	$264,174	$323,700	$199,768	$218,697	$407,988	$474,720
2007	$253,502	$323,070	$191,110	$207,547	$387,892	$472,076
2008	$220,830	$296,967	$171,782	$188,614	$302,652	$409,313
2009	$192,979	$269,052	$161,208	$171,164	$236,162	$388,108
2010	$190,525	$268,453	$154,974	$169,172	$242,917	$409,931
2011	$177,227	$253,409	$144,470	$153,860	$214,784	$314,761
2012	$184,819	$248,481	$149,172	$160,985	$240,536	$311,254
2013	$203,065	$256,639	$159,279	$175,866	$281,365	$334,836
2014	$211,178	$256,192	$165,455	$181,777	$295,832	$340,643
2015	$225,206	$263,482	$176,600	$194,523	$319,986	$349,352
2016	$233,800	$263,900	$183,300	$204,800	$340,200	$355,000



SOURCE: National Association of Realtors and Massachusetts Association of Realtors. The Massachusetts sales price reflects only that of single-family homes. Sales prices of the other regions represent the average of both single- and multi-family homes.

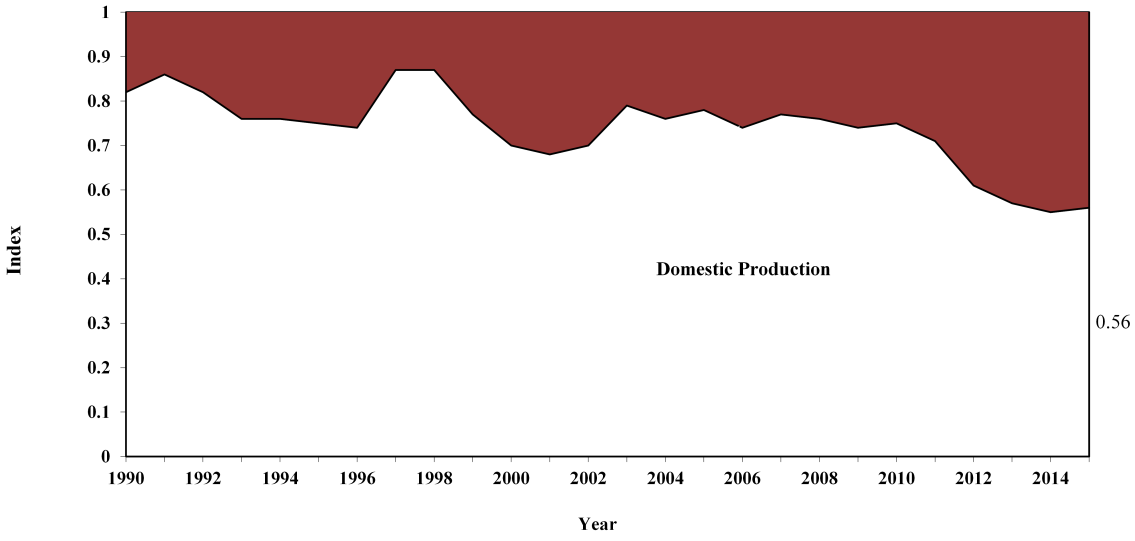
Electricity Prices, Supply and Capacity by Source. Massachusetts had the fifth highest electric rate in the country in 2015, 16.90 cents per kilowatt hour in 2016 dollars, while the U.S. average was 10.14. Adjusted for inflation, this was an increase of 10.0 percent for Massachusetts and an increase of 0.4 percent for the U.S. from the previous year. Massachusetts electric utilities generated $9.3 billion in revenue in 2015. This was 10.3 percent more than in 2014, while they sold 0.3 percent more electricity. The Massachusetts Net Electricity Trade Index, which represents the state's electricity self-sufficiency, was 0.56 in 2015, the latest data available. In 2015, 65.5 percent of Massachusetts electricity was generated by burning natural gas, our top fuel source for power generation.

Electricity - Average Retail Price in 2015 Cents/KWH



SOURCE: U.S. Department of Energy, http://www.eia.doe.gov/cneaf/electricity/st_profiles/massachusetts.html.
NOTE: Massachusetts restructured the electric utility industry to establish consumer electricity rate savings by 03/01/98. https://malegislature.gov/Laws/SessionLaws/Acts/1997/Chapter164

The Massachusetts Electricity Supply - Net Trade Index
(Massachusetts currently imports 45 percent of its electricity)

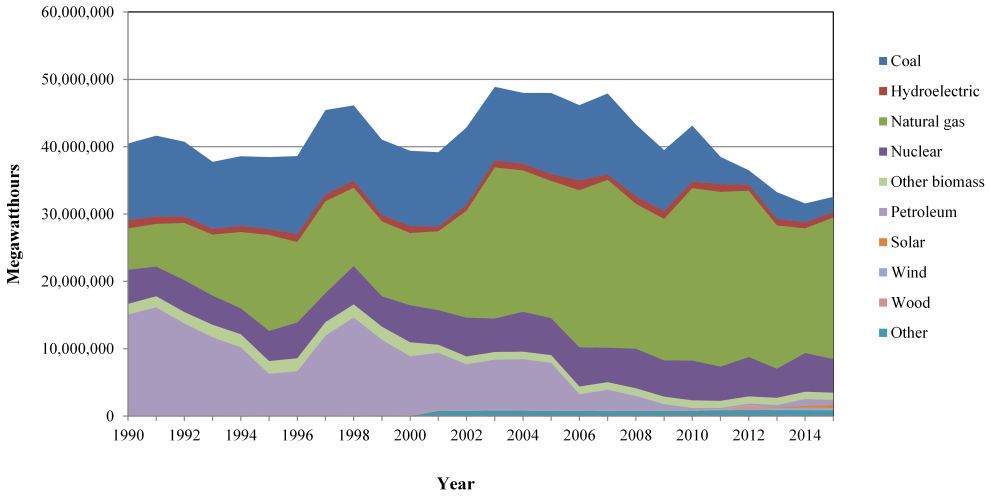


SOURCE: U.S. Department of Energy, http://www.eia.doe.gov/cneaf/electricity/st_profiles/massachusetts.html.

Electric Power Industry Generation by Primary Energy Source
2006 to 2015 (in Megawatt-hours)

Energy Source	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total electric industry	45,597,775	47,075,975	42,505,478	38,966,651	42,804,824	38,054,821	36,198,121	32,885,021	31,118,591	32,085,969
Coal	11,138,341	12,024,347	10,628,688	9,028,110	8,305,890	4,058,807	2,136,922	3,959,229	2,794,889	2,252,664
Hydroelectric	1,512,645	797,482	1,155,811	1,201,076	996,339	1,148,762	912,482	991,504	902,077	827,184
Natural gas	23,306,676	24,925,043	21,514,434	20,987,836	25,581,752	25,939,672	24,672,381	21,256,887	18,497,715	21,007,411
Nuclear	5,829,658	5,119,789	5,868,639	5,396,021	5,917,813	5,085,220	5,859,540	4,330,643	5,769,154	4,994,806
Other biomass	1,153,571	1,121,067	1,129,046	1,107,875	1,125,326	1,039,130	1,065,140	1,060,541	1,073,422	1,047,103
Petroleum	2,328,246	3,051,604	2,107,999	897,078	295,736	196,503	174,494	390,311	1,004,834	777,075
Solar	0	0	80	43	928	4,765	29,614	106,457	306,321	451,366
Wind	0	0	3,672	5,956	22,068	61,385	89,673	204,898	224,971	214,666
Wood	125,258	119,157	122,580	115,384	125,412	101,295	658,991	76,531	125,237	119,769
Other	782,278	748,033	772,928	760,909	770,629	859,514	906,429	875,926	878,130	867,806
Pumped storage	-578,898	-830,547	-798,400	-533,636	-337,069	-440,231	-307,545	-367,906	-458,158	-473,881

Electric Power Generation by Primary Energy Source, 1990 to 2015



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

Travel and Tourism. The Massachusetts Office of Travel and Tourism (MOTT) reported a 5.7 percent increase in 2016 museum and attraction attendance compared to 2015, with 12.2 million visitors. Museum attendance was up 2.7 percent in March 2017 for the calendar year compared to March 2016. For March FY 2017 year-to-date, net room occupancy tax collections totaled $189.4 million, a 2.5 percent increase from the same period in FY 2016.

Transportation and Warehousing. Massachusetts's major air and seaports are managed by the Massachusetts Port Authority (Massport), an independent public authority. Based on total passenger volume data for calendar year 2015, Logan Airport was the most active airport in New England and the 17th most active in the U.S. according to the Federal Aviation Authority. Massport reported that as of July 2017 year-to-date, total airport flight operations were up 4.7 percent and total airport passengers were up 9.5 percent from the same period in 2016. According to the FAA, in calendar year 2015, Logan Airport ranked 27th in the nation in total air cargo volume. As of July 2017 year-to-date, Massport reported the airport handled 209.8 million pounds of cargo; a 10.5 percent increase from the same period in 2016. Massport reported that total express mail was down 0.7 percent from the same period in 2016. Please refer to the Aviation Activity charts on the following page.

Massport's Port of Boston properties processed 208,118 full TEUs (twenty-foot equivalent units) of containerized cargo in 2016, an increase of 5.8 percent from calendar year 2015. It also processed 53,854 automobiles, a decrease of 10.2 percent, and 309,027 cruise passengers, a 5.9 percent decrease, compared to 2015.

The Army Corps of Engineers reported Massachusetts total waterborne cargo shipped or received in 2015 decreased by 1.4 percent to 18.5 million short tons from 2014. Waterborne cargo in New England decreased 2.3 percent while the U.S. increased 2.8 percent. Please refer to the Waterborne Tonnage by State charts on the following page.

Aviation Activity for Massachusetts Primary Airports

Passenger Boardings	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Logan International	13,544,552	13,783,297	12,820,489	12,566,797	13,561,814	14,180,730	14,293,695	14,810,153	15,507,561	16,290,362
Nantucket Memorial	276,866	282,197	258,214	204,981	201,390	169,352	179,128	183,557	170,361	155,952
Barnstable Municipal	206,980	204,152	191,906	138,858	124,560	100,596	95,717	87,648	85,184	65,790
Worcester Regional	14,823	460	3,182	17,241	35,833	53,541	10,750	8,007	57,818	59,624
Martha's Vineyard	45,881	49,205	45,002	42,248	43,904	49,095	50,484	56,313	52,362	49,853
Provincetown Municipal	11,375	12,459	11,468	10,747	11,450	10,967	11,580	11,288	10,410	10,841
New Bedford Regional	15,211	14,567	13,908	11,680	12,363	11,152	12,256	10,604	8,159	7,271
Hanscom Field	14,560	16,568	8,385	7,350	7,952	10,893	11,097	12,621	11,116	15,313
Total	14,130,248	14,362,905	13,352,554	12,999,902	13,999,266	14,586,326	14,664,707	15,180,191	15,902,971	16,655,006

Cargo - Gross Landed Wei	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Logan International	1,100,485,850	1,059,947,900	1,100,485,850	835,954,035	817,235,460	806,845,332	780,913,850	866,698,830	910,283,225	893,960,700

Change in Aviation Activity at Massachusetts Primary Airports

Passenger Boardings	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
Logan International	2.5%	1.8%	-7.0%	-2.0%	7.9%	4.6%	0.8%	3.6%	4.7%	5.0%
Nantucket Memorial	9.5%	1.9%	-8.5%	-20.6%	-1.8%	-15.9%	5.8%	2.5%	-7.2%	-8.5%
Barnstable Municipal	16.4%	-1.4%	-6.0%	-27.6%	-10.3%	-19.2%	-4.9%	-8.4%	-2.8%	-22.8%
Worcester Regional	628.0%	-96.9%	591.7%	441.8%	107.8%	49.4%	-79.9%	-25.5%	622.1%	3.1%
Martha's Vineyard	-6.3%	7.2%	-8.5%	-6.1%	3.9%	11.8%	2.8%	11.5%	-7.0%	-4.8%
Provincetown Municipal	11.1%	9.5%	-8.0%	-6.3%	6.5%	-4.2%	5.6%	-2.5%	-7.8%	4.1%
New Bedford Regional	-15.3%	-4.2%	-4.5%	-16.0%	5.8%	-9.8%	9.9%	-13.5%	-23.1%	-10.9%
Hanscom Field	4.8%	13.8%	-49.4%	-12.3%	8.2%	37.0%	1.9%	13.7%	-11.9%	37.8%
Total	2.9%	1.6%	-7.0%	-2.6%	7.7%	4.2%	0.5%	3.5%	4.8%	4.7%

Cargo	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
Logan International	-4.2%	-3.7%	3.8%	-24.0%	-2.2%	-1.3%	-3.2%	11.0%	5.0%	-1.8%

SOURCE: Federal Aviation Administration. http://www.faa.gov/airports/planning_capacity/passenger_allcargo_stats/passenger/.

Waterborne Tonnage by State - Percent Change from Previous Year

State	2004-2005	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2013-2015
U.S. total	-1.0%	-0.9%	-3.4%	-10.8%	5.6%	1.4%	-2.6%	-1.4%	3.1%	-2.8%
Massachusetts	-9.4%	2.3%	-7.3%	-3.8%	-9.4%	-8.9%	-16.2%	9.1%	-0.7%	-1.4%
Maine	-0.3%	-4.5%	-7.8%	-7.1%	-9.1%	-26.3%	-1.8%	-6.9%	-15.0%	-13.0%
Connecticut	-2.3%	4.2%	-9.7%	-7.9%	-3.2%	-20.0%	-18.0%	6.8%	17.1%	2.6%
Rhode Island	12.4%	1.5%	-6.0%	-20.1%	-1.1%	0.8%	-9.7%	19.9%	-3.5%	2.5%
New Hampshire	9.6%	-16.5%	-4.8%	-6.5%	-17.3%	12.9%	-27.7%	10.7%	4.6%	-1.1%
Vermont	-	-	-	-	-	-	-	-	-	-
New England	-1.9%	-0.5%	-7.7%	-7.8%	-7.4%	-14.5%	-12.7%	5.7%	-0.9%	-2.3%

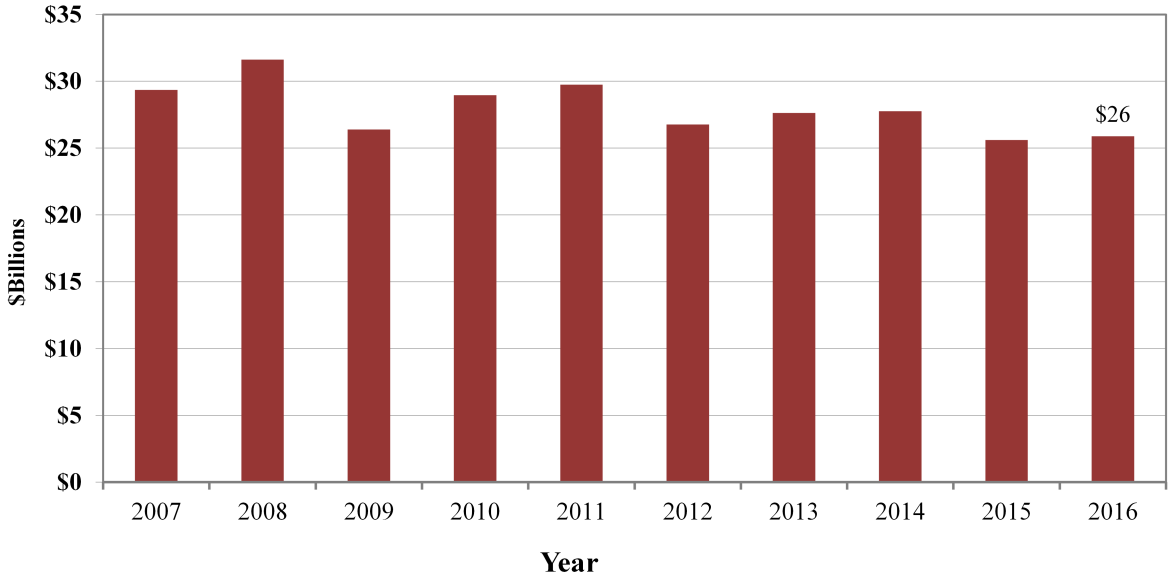
Waterborne Tonnage by State (In Units of 1,000 Tons)

State	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
U.S. total	2,340,292	2,394,199	2,551,939	2,527,622	2,588,440	2,563,972	2,477,094	2,210,752	2,334,399	2,367,484	2,306,770	2,274,778	2,345,439	2,278,974
Massachusetts	26,117	30,655	31,787	28,812	27,411	28,043	25,993	25,018	22,661	20,646	17,298	18,866	18,733	18,464
Maine	29,140	31,698	32,447	32,353	28,103	26,839	24,747	22,996	20,907	15,411	15,127	14,078	11,964	10,414
Connecticut	17,610	18,579	20,075	19,617	19,340	20,148	18,196	16,767	16,229	12,977	10,645	11,368	13,313	13,664
Rhode Island	8,437	9,417	9,764	10,972	11,016	11,184	10,517	8,404	8,315	8,378	7,567	9,072	8,754	8,976
New Hampshire	4,108	4,971	4,795	5,254	4,823	4,026	3,833	3,583	2,964	3,347	2,419	2,679	2,803	2,771
Vermont	-	-	-	-	-	-	-	-	-	-	-	-	-	-
New England	85,412	95,320	98,868	97,008	90,693	90,240	83,286	76,768	71,076	60,759	53,056	56,063	55,567	54,289

SOURCE: Army Corps of Engineers, Waterborne Commerce Statistics Center (WCSC), http://www.navigationdatacenter.us/wcsc/wcsc.htm.

Massachusetts Annual Exports

(in billions of 2016 dollars)



Massachusetts Top Export Partners

(top ten export destinations ranked by value of 2016 exports, in millions of 2016 dollars)

Country	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Canada	$4,028	$4,355	$3,452	$3,570	$4,051	$3,631	$3,847	$3,752	$3,205	$3,107
Mexico	$1,152	$1,296	$1,010	$1,401	$1,534	$1,682	$1,918	$2,350	$2,655	$2,471
China	$1,592	$1,743	$1,535	$2,416	$2,228	$1,962	$2,040	$2,326	$2,081	$2,167
Switzerland	$244	$498	$405	$518	$601	$454	$1,320	$815	$1,038	$1,769
Germany	$2,743	$2,775	$1,958	$2,061	$2,184	$1,885	$1,892	$1,875	$1,935	$1,635
United Kingdom	$2,670	$3,906	$4,530	$3,537	$3,505	$2,706	$1,451	$2,381	$1,194	$1,585
Japan	$2,507	$2,706	$1,920	$2,251	$2,181	$2,084	$1,815	$1,875	$1,495	$1,400
Netherlands	$2,564	$2,982	$2,217	$1,865	$1,181	$1,125	$1,329	$1,347	$1,417	$1,370
Korea, Republic Of	$951	$742	$698	$982	$1,099	$1,076	$930	$1,001	$1,018	$979
Ireland	$828	$612	$379	$531	$553	$533	$658	$805	$854	$949
Total Exports, Top Destinations	$19,279	$21,615	$18,103	$19,134	$19,115	$17,138	$17,198	$18,527	$16,891	$17,432
All other countries	$10,067	$10,009	$8,291	$9,819	$10,623	$9,638	$10,425	$9,235	$8,718	$8,460
Total Exports	$29,345	$31,624	$26,394	$28,953	$29,738	$26,776	$27,623	$27,763	$25,609	$25,892

Value of International Shipments from Massachusetts

(top ten industry groups ranked by value of latest exports, in millions of 2016 dollars)

Major Industry Group (4-Digit NAICS)	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Navigational, Measuring, Electromedical, And Control Instruments	$3,906	$3,659	$3,047	$3,180	$3,680	$3,622	$3,361	$3,439	$3,055	$3,056
Medical Equipment And Supplies	$2,048	$2,832	$2,484	$2,688	$2,459	$2,359	$2,373	$2,273	$2,281	$2,323
Semiconductors And Other Electronic Components	$2,803	$2,816	$2,476	$2,985	$2,484	$1,846	$1,824	$2,418	$2,392	$2,144
Pharmaceuticals And Medicines	$4,560	$4,833	$3,226	$2,579	$1,880	$1,944	$2,129	$2,017	$2,083	$2,118
Waste And Scrap	$982	$1,530	$745	$720	$1,175	$819	$769	$776	$1,272	$2,066
Industrial Machinery	$1,153	$1,104	$707	$1,880	$1,853	$1,693	$1,317	$1,297	$1,513	$1,472
Other General Purpose Machinery	$1,298	$1,067	$952	$1,223	$1,329	$973	$950	$987	$938	$1,081
Aerospace Products And Parts	$713	$896	$934	$789	$805	$890	$957	$1,096	$1,074	$877
Nonferrous Metal (Except Aluminum) And Processing	$971	$2,107	$2,969	$2,497	$2,829	$1,843	$2,756	$2,244	$379	$830
Computer Equipment	$1,345	$1,222	$1,058	$1,176	$1,176	$1,098	$1,052	$1,072	$783	$819
Total Exports, Top Massachusetts Industries	$19,780	$22,067	$18,598	$19,717	$19,669	$17,088	$17,488	$17,618	$15,769	$16,784
All other exports	$9,565	$9,557	$7,796	$9,236	$10,069	$9,688	$10,135	$10,144	$9,840	$9,108
Total Exports	$29,345	$31,624	$26,394	$28,953	$29,738	$26,776	$27,623	$27,763	$25,609	$25,892

SOURCE: WISERTrade.org.

Sources

Listed below are the websites of the original data sources used to compile Exhibit A. For more information, contact the UMass Donahue Institute Economic and Public Policy Research unit.
Web: http://www.donahue.umassp.edu/business-groups/economic-public-policy-research, Tel: 413-577-2415

Introduction
American Human Development Project
http://www.measureofamerica.org/

Population Characteristics
U.S. Department of Commerce, Bureau of the Census
http://www.census.gov
U.S. Internal Revenue Service
http://www.irs.gov

Personal Income, Consumer Prices, and Poverty
U.S. Department of Commerce, Bureau of Economic Analysis
http://www.bea.gov/regional/index.htm
U.S. Department of Labor, Bureau of Labor Statistics
http://www.bls.gov
The Conference Board, Inc.
http://www.conference-board.org
MassInsight Corporation
http://www.massinsight.com/index.asp
U.S. Department of Commerce, Bureau of the Census
http://www.census.gov

Employment
Mass. Executive Office of Labor and Workforce Development, Division of Unemployment Assistance
http://lmi2.detma.org/Lmi/LMIDataProg.asp
U.S. Department of Labor, Bureau of Labor Statistics
http://www.bls.gov/data/home.htm

Economic Base and Performance
U.S. Department of Commerce, Bureau of Economic Analysis
http://www.bea.gov/national/index.htm#gdp
Fortune Magazine
http://www.fortune.com/fortune/

Economic Base and Performance - Sector Detail (NAICS Basis)
U.S. Department of Commerce, Bureau of Economic Analysis
http://www.bea.gov/regional/index.htm
U.S. Census Bureau, Foreign Trade Division. Prepared by the World Institute for Strategic Economic Research (WISER)
http://www.WISERTrade
U.S. Census Bureau, Nonemployer Statistics
https://www.census.gov/econ/nonemployer/index.html

Statistics
http://www.bls.gov/data/home.htm

Massport
http://www.massport.com
Airports Council International
http://www.aci.aero
Federal Aviation Administration
http://www.faa.gov/airports_airtraffic/airports/planning_capacity/passenger_allcargo_stats/
Army Corps of Engineers
http://www.navigationdatacenter.us/wcsc/wcsc.htm
Federal Reserve Bank of Philadelphia
https://www.phil.frb.org/
U.S. Department of Commerce
http://www/census.gov
National Association of Realtors
http://www.realtor.org/
http://www.marealtor.com/content/
Massachusetts Office of Travel and Tourism
http://www.massvacation.com
U.S. Census Bureau, Governments Division
http://www.census.gov/govs/www/statetax.html
http://www.census.gov/govs/www state.html
U.S. Department of Commerce, Bureau of the Census, Consolidated Federal Funds Report
http://www.census.gov/govs/www/cffr.html
Federal Spending award data
http://www.usaspending.gov
Large employers by sector
http://www.mass.gov/comptroller/docs/reports-audits/cafr/2016-cafr.pdf

Human Resources and Infrastructure
U.S. Census Bureau
http://www.census.gov/acs/www/
New England Board of Higher Education
http://www.nebhe.org.connection.html
National Science Foundation
http://www.nsf.gov/statistics
U.S. Department of Education, National Center for Education Statistics
http://nces.ed.gov
Institute of International Education
http://www.iee.org
U.S. Patent Office
http://www.uspto.gov