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Occupational Employment and Wages in Boston-Cambridge-Newton — May 2016

Workers in the Boston-Cambridge-Newton New England City and Town Area Division had an average (mean) hourly wage of $32.66 in May 2016, about 37 percent above the nationwide average of $23.86, according to the U.S. Bureau of Labor Statistics. Regional Commissioner Deborah A. Brown noted that, after testing for statistical significance, wages in the local area were higher than their respective national averages in 21 of the 22 major occupational groups, including legal; management; and healthcare practitioners and technical. No group had an hourly wage significantly lower than its respective national average.

When compared to the nationwide distribution, local employment was more highly concentrated in 9 of the 22 occupational groups, including management; computer and mathematical; and business and financial operations. Conversely, eight groups had employment shares significantly below their national representation, including production; transportation and material moving; and sales and related. (See table A and box note at end of release.)

Table A. Occupational employment and wages by major occupational group, United States and the Boston-Cambridge-Newton New England City and Town Area Division, and measures of statistical significance, May 2016

Major occupational group	Percent of total employment		Mean hourly wage		
	United States	Boston	United States	Boston	Percent difference (1)
Total, all occupations	100.0	100.0	$23.86	$32.66*	37
Management	5.1	9.0*	56.74	67.32*	19
Business and financial operations	5.2	7.3*	36.09	42.04*	16
Computer and mathematical	3.0	5.4*	42.25	46.95*	11
Architecture and engineering	1.8	2.5*	40.53	44.66*	10
Life, physical, and social science	0.8	1.9*	35.06	38.38*	9
Community and social service	1.4	1.9*	22.69	23.96	6
Legal	0.8	1.2*	50.95	63.16*	24
Education, training, and library	6.2	6.4	26.21	33.74*	29
Arts, design, entertainment, sports, and media	1.4	1.8*	28.07	33.03*	18
Healthcare practitioners and technical	5.9	6.9*	38.06	47.34*	24
Healthcare support	2.9	2.8	14.65	17.34*	18
Protective service	2.4	2.4	22.03	26.67*	21
Food preparation and serving related	9.2	7.9*	11.47	14.09*	23
Building and grounds cleaning and maintenance	3.2	3.1	13.47	17.59*	31
Personal care and service	3.2	3.3	12.74	16.15*	27
Sales and related	10.4	8.8*	19.50	25.92*	33
Office and administrative support	15.7	14.4*	17.91	22.05*	23
Farming, fishing, and forestry	0.3	(2)*	13.37	16.75*	25
Construction and extraction	4.0	3.0*	23.51	32.25*	37
Installation, maintenance, and repair	3.9	2.5*	22.45	27.32*	22

Note: See footnotes at end of table.

Table A. Occupational employment and wages by major occupational group, United States and the Boston-Cambridge-Newton New England City and Town Area Division, and measures of statistical significance, May 2016 - Continued

Major occupational group	Percent of total employment		Mean hourly wage		
	United States	Boston	United States	Boston	Percent difference (1)
Production	6.5	3.0*	17.88	19.93*	11
Transportation and material moving	6.9	4.6*	17.34	19.41*	12

Footnotes:
(1) A positive percent difference measures how much the mean wage in the Boston-Cambridge-Newton New England City and Town Area Division is above the national mean wage, while a negative difference reflects a lower wage.
(2) Indicates a value of less than 0.05 percent
* The percent share of employment or mean hourly wage for this area is significantly different from the national average of all areas at the 90-percent confidence level.

One occupational group—computer and mathematical—was chosen to illustrate the diversity of data available for any of the 22 major occupational categories. Boston-Cambridge-Newton had 98,150 jobs in computer and mathematical, accounting for 5.4 percent of local area employment, significantly higher than the 3.0-percent share nationally. The average hourly wage for this occupational group locally was $46.95, significantly above the national wage of $42.25.

Some of the larger detailed occupations within the computer and mathematical group included software developers, applications (21,920), software developers, systems software (18,450), and computer user support specialists (12,470). Among the higher paying jobs were computer and information research scientists and computer network architects, with mean hourly wages of $60.59 and $58.05, respectively. At the lower end of the wage scale were computer user support specialists ($31.58) and operations research analysts ($37.43). (Detailed occupational data for computer and mathematical are presented in table 1; for a complete listing of detailed occupations available go to www.bls.gov/oes/2016/may/oes_71654.htm .)

Location quotients allow us to explore the occupational make-up of a metropolitan area by comparing the composition of jobs in an area relative to the national average. (See table 1.) For example, a location quotient of 2.0 indicates that an occupation accounts for twice the share of employment in the area than it does nationally. In the Boston-Cambridge-Newton New England City and Town Area Division, above-average concentrations of employment were found in many of the occupations within the computer and mathematical group. For instance, software developers, systems software were employed at 3.5 times the national rate in Boston, and operations research analysts, at 2.5 times the U.S. average. On the other hand, computer systems analysts had a location quotient of 1.3 in Boston, indicating that this particular occupation's local and national employment shares were similar.

These statistics are from the Occupational Employment Statistics (OES) survey, a federal-state cooperative program between BLS and State Workforce Agencies, in this case, the Massachusetts Division of Unemployment Assistance.

Note

A value that is statistically different from another does not necessarily mean that the difference has economic or practical significance. Statistical significance is concerned with the ability to make confident statements about a universe based on a sample. It is entirely possible that a large difference between two values is not significantly different statistically, while a small difference is, since both the size and heterogeneity of the sample affect the relative error of the data being tested.

Technical Note

The Occupational Employment Statistics (OES) survey is a semiannual mail survey measuring occupational employment and wage rates for wage and salary workers in nonfarm establishments in the United States. The OES data available from BLS include cross-industry occupational employment and wage estimates for the nation; over 650 areas, including states and the District of Columbia, metropolitan statistical areas (MSAs), metropolitan divisions, nonmetropolitan areas, and territories; national industry-specific estimates at the NAICS sector, 3-, 4-, and selected 5- and 6-digit industry levels, and national estimates by ownership across all industries and for schools and hospitals. OES data are available at www.bls.gov/oes/tables.htm.

OES estimates are constructed from a sample of about 1.2 million establishments. Each year, two semiannual panels of approximately 200,000 sampled establishments are contacted, one panel in May and the other in November. Responses are obtained by mail, Internet or other electronic means, email, telephone, or personal visit. The May 2016 estimates are based on responses from six semiannual panels collected over a 3-year period: May 2016, November 2015, May 2015, November 2014, May 2014, and November 2013. The overall national response rate for the six panels, based on the 50 states and the District of Columbia, is 73 percent based on establishments and 69 percent based on weighted sampled employment. The unweighted employment of sampled establishments across all six semiannual panels represents approximately 58 percent of total national employment. The sample in the Boston-Cambridge-Newton Metropolitan Statistical Area included 7,421 establishments with a response rate of 68 percent. For more information about OES concepts and methodology, go to www.bls.gov/news.release/ocwage.tn.htm.

The May 2016 OES estimates are based on the 2010 Standard Occupational Classification (SOC) system and the 2012 North American Industry Classification System (NAICS). Information about the 2010 SOC is available on the BLS website at www.bls.gov/soc and information about the 2012 NAICS is available at www.bls.gov/bls/naics.htm.

Metropolitan area definitions

The substate area data published in this release reflect the standards and definitions established by the U.S. Office of Management and Budget.

The **Boston-Cambridge-Newton, Mass. New England City and Town Area Division** includes Mansfield town, Andover town, Boxford town, Essex town, Gloucester city, Hamilton town, Ipswich town, Lynnfield town, Manchester-by-the-sea town, Middleton town, Newbury town, Rockport town, Rowley town, Topsfield town, Wenham town, Acton town, Arlington town, Bedford town, Belmont town, Boxborough town, Burlington town, Cambridge city, Carlisle town, Concord town, Everett City, Lexington town, Lincoln town, Malden city, Maynard town, Medford city, Melrose city, Newton city, North Reading town, Reading town,

Sherborn town, Somerville city, Stoneham town, Stow town, Wakefield town, Waltham city, Watertown city, Wayland town, Weston town, Wilmington town, Winchester town, Woburn city, Braintree town , Brookline town, Canton town, Cohasset town, Dedham town, Dover town, Foxborough town, Franklin city, Holbrook town, Medfield town, Medway town, Millis town, Milton town, Needham town, Norfolk town, Norwood town, Quincy city, Randolph town, Sharon town, Stoughton town, Walpole town, Wellesley town, Westwood town, Weymouth Town, Wrentham town, Abington town, Carver town, Duxbury town, Hailfax town, Hanover town, Hingham town, Hull town, Kingston town, Marshfield town, Norwell town, Pembroke town, Plymouth town, Plympton town, Rockland town, Scituate town, Boston city, Chelsea city, Revere city, Winthrop Town, Berlin town, and Bolton town.

Additional information

OES data are available on our regional web page at www.bls.gov/regions/new-england. Answers to frequently asked questions about the OES data are available at www.bls.gov/oes/oes_ques.htm. Detailed technical information about the OES survey is available in our Survey Methods and Reliability Statement on the BLS website at www.bls.gov/oes/current/methods_statement.pdf.

Information in this release will be made available to sensory impaired individuals upon request . Voice phone: (202) 691-5200; Federal Relay Service: (800) 877-8339.

Table 1. Employment and wage data from the Occupational Employment Statistics survey, by occupation, Boston-Cambridge-Newton New England City and Town Area Division, May 2016

Occupation [1]	Employment		Mean wages	
	Level [2]	Location quotient [3]	Hourly	Annual [4]
Computer and mathematical occupations	98,150	1.8	$46.95	$97,660
Computer and information research scientists	930	2.7	60.59	126,040
Computer systems analysts	9,730	1.3	45.25	94,120
Information security analysts	2,650	2.1	47.40	98,580
Computer programmers	4,650	1.3	47.73	99,270
Software developers, applications	21,920	2.2	51.87	107,900
Software developers, systems software	18,450	3.5	55.23	114,870
Web developers	2,820	1.7	39.24	81,610
Database administrators	2,030	1.4	43.17	89,780
Network and computer systems administrators	6,600	1.4	44.92	93,430
Computer network architects	3,080	1.5	58.05	120,740
Computer user support specialists	12,470	1.6	31.58	65,690
Computer network support specialists	1,550	0.6	40.19	83,590
Computer occupations, all other	4,860	1.5	45.41	94,460
Actuaries	820	3.2	51.35	106,800
Mathematicians	60	1.7	[5]	[5]
Operations research analysts	3,450	2.5	37.43	77,850
Statisticians	2,090	4.9	40.28	83,780

Footnotes:
(1) For a complete listing of all detailed occupations in the Boston-Cambridge-Newton, MA NECTA Division, see www.bls.gov/oes/current/oes_71654.htm
(2) Estimates for detailed occupations do not sum to the totals because the totals include occupations not shown separately. Estimates do not include self-employed workers.
(3) The location quotient is the ratio of the area concentration of occupational employment to the national average concentration. A location quotient greater than one indicates the occupation has a higher share of employment than average, and a location quotient less than one indicates the occupation is less prevalent in the area than average.
(4) Annual wages have been calculated by multiplying the hourly mean wage by a "year-round, full-time" hours figure of 2,080 hours; for those occupations where there is not an hourly mean wage published, the annual wage has been directly calculated from the reported survey data.
(5) Estimate not released.