

# News

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**(This news release was reissued on Wednesday, May 26, 2010, to remove table asterisks that have incorrectly indicated statistically significant differences between some estimates. News release text references to statistical significance have also been removed. Pay relative estimates have not changed. For more information, see <http://www.bls.gov/ncs/>.)**

## OCCUPATIONAL PAY RELATIVES, 2005

The Bureau of Labor Statistics (BLS) of the U.S. Department of Labor produces relative occupational pay comparisons between metropolitan areas and the United States as a whole. Using data from the National Compensation Survey (NCS), pay relatives—a means of assessing relative pay differences—have been prepared for 2005 for each of the 9 major occupational groups within 78 Metropolitan Statistical Areas (MSAs), as well as averaged across all occupations for each area. (See table 1.) In addition, for the first time, similar area-to-area comparisons have been calculated for all 78 areas and soon will be available on the BLS website at <http://www.bls.gov/ncs/ocs/payrel.htm>.

The pay relative in 2005 for workers in construction and extraction occupations in the San Francisco MSA was 123, meaning the pay in San Francisco in that occupational group averaged 23 percent more than the national average pay for that occupational group. The pay relative averaged across all occupations in the San Francisco MSA was 117, meaning that pay on average was 17 percent above the national average. By contrast, the pay relative for workers in construction and extraction occupations in the Brownsville, Texas MSA was 72, meaning pay for workers in those occupations averaged 28 percent less than the national average. Pay averaged across all occupations in the Brownsville area was 19 percent below the national average.

The National Compensation Survey (NCS), introduced in 1997, collects earnings and other data on employee compensation covering over 820 detailed occupations in 152 metropolitan and non-metropolitan areas. Average occupational earnings from the NCS are published annually for more than 80 metropolitan areas and for the United States as a whole.

### What is a pay relative?

A pay relative is a calculation of pay—wages, salaries, commissions, and production bonuses—for a given metropolitan area relative to the nation as a whole. The calculation controls for differences among areas

in occupational composition, establishment and occupational characteristics, and the fact that data are collected for areas at different times during the year.

Metropolitan areas differ greatly in the types of occupations that are available to the local workforce. For example, in Brownsville, Texas, the ratio of workers in the high-paying management, business, and financial occupational group to the number of workers in all occupations is approximately 5 percent, whereas nationally this ratio is nearly 9 percent.<sup>1</sup> Similarly, the composition of establishment and occupational characteristics varies by area. In addition to these factors, the NCS collects compensation data for metropolitan areas at different times during the year. Payroll reference dates differ between areas which makes direct comparisons between areas difficult.

The pay relative approach controls for these differences to isolate the geographic effect on wage determination. To illustrate the importance of controlling for these effects, consider the following example. The average pay for professional workers in San Francisco is \$39.41 and the average pay for professional workers in the entire United States is \$30.24.<sup>2</sup> A simple pay comparison can be calculated from the ratio of the two average pay levels, multiplied by 100 to express the comparison as a percentage. The pay comparison in the example is calculated as:

$$(\$39.41 \div \$30.24) \times 100 \cong 130$$

However, this comparison does not control for the interarea difference in occupational composition. Some of the 30 percent pay premium in San Francisco relative to the nation as a whole is due to the higher concentration of highly compensated professional workers in San Francisco. A more accurate estimate of the geographic effect on wage determination in San Francisco can be obtained by taking into account this and other differences. Controlling for the differences in occupational composition, establishment and occupational characteristics, and the payroll reference date in San Francisco relative to the nation as the whole, the pay relative for professional and related occupations in San Francisco is equal to 117.

Due to sample variation from year to year, data users are cautioned about inferring that there have been actual changes in underlying economic conditions from changes in the estimated pay relatives between 2004 and 2005. This caution applies even more strongly to estimates by occupational group.

<sup>1</sup> Data for this example are based on the May 2005 Occupational Employment and Wage Estimates, <http://www.bls.gov/oes/current/oesrcma.htm>.

<sup>2</sup> Average pay for professional workers in San Francisco and for the United States are based on wage estimates published in the San Francisco–Oakland–San Jose, CA National Compensation Survey, March 2005 and the National Compensation Survey: Occupational Wages in the United States, June 2005, <http://www.bls.gov/ncs/ocs/compub.htm>.

**Table 1. Pay relatives for major occupational groups in metropolitan areas, National Compensation Survey, 2005**

(Average pay nationally for all occupations and for each occupational group shown = 100.)

Metropolitan Area <sup>1</sup>	All occupations	Management, business, and financial	Professional and related	Service	Sales and related	Office and administrative support	Construction and extraction	Installation, maintenance, and repair	Production	Transportation and material moving
United States .....	100	100	100	100	100	100	100	100	100	100
Amarillo, TX .....	89	78	87	86	91	89	85	84	94	94
Anchorage, AK .....	110	112	103	121	106	107	123	108	116	114
Atlanta, GA .....	103	105	101	97	101	106	103	105	99	112
Augusta-Aiken, GA-SC .....	97	90	101	91	84	99	83	100	102	93
Austin-San Marcos, TX .....	96	91	93	94	101	98	95	98	98	93
Birmingham, AL .....	95	91	92	100	97	97	84	90	92	96
Bloomington, IN .....	94	97	90	93	94	90	83	98	98	108
Boston-Worcester-Lawrence, MA-NH-ME-CT ..	112	110	107	113	113	116	118	112	109	114
Brownsville-Harlingen-San Benito, TX .....	81	82	97	77	86	78	72	80	73	79
Buffalo-Niagara Falls, NY .....	103	87	93	109	104	99	108	98	110	106
Charleston-North Charleston, SC .....	92	89	94	85	100	96	82	87	93	108
Charlotte-Gastonia-Rock Hill, NC-SC .....	97	93	93	98	85	99	96	98	100	104
Chicago-Gary-Kenosha, IL-IN-WI .....	108	107	107	106	108	111	124	111	107	105
Cincinnati-Hamilton, OH-KY-IN .....	100	97	99	101	108	102	87	99	102	101
Cleveland-Akron, OH .....	100	91	99	98	98	102	102	108	108	104
Columbus, OH .....	101	107	96	98	117	100	102	98	98	99
Corpus Christi, TX .....	87	87	92	83	92	86	78	80	88	88
Dallas-Fort Worth, TX .....	98	101	102	95	107	99	89	95	89	102
Dayton-Springfield, OH .....	99	100	95	96	99	92	107	106	97	102
Denver-Boulder-Greeley, CO .....	101	94	103	98	103	104	95	110	99	105
Detroit-Ann Arbor-Flint, MI .....	106	101	107	103	102	104	112	103	118	105
Elkhart-Goshen, IN .....	98	101	100	93	97	92	100	87	98	113
Fort Collins-Loveland, CO .....	96	90	94	91	99	96	98	102	101	104
Grand Rapids-Muskegon-Holland, MI .....	103	98	97	105	112	101	122	96	107	103
Great Falls, MT .....	90	90	84	93	90	82	125	103	100	86
Greensboro-Winston Salem-High Point, NC ..	99	102	93	98	104	100	96	98	101	105
Greenville-Spartanburg-Anderson, SC .....	97	99	92	95	91	98	81	87	104	101
Hartford, CT .....	112	106	109	121	113	112	118	107	108	112
Hickory-Morganton-Lenoir, NC .....	97	90	96	92	97	100	83	90	100	107
Honolulu, HI .....	103	99	108	106	100	99	107	110	96	101
Houston-Galveston-Brazoria, TX .....	97	98	101	87	98	98	91	97	99	94
Huntsville, AL .....	95	98	96	92	95	96	97	90	97	94
Indianapolis, IN .....	99	92	98	101	96	98	96	102	106	100
Iowa City, IA .....	101	94	100	106	95	103	104	91	95	103
Johnstown, PA .....	89	90	89	91	89	84	91	98	88	83
Kansas City, MO-KS .....	97	94	92	95	96	100	96	100	104	98
Knoxville, TN .....	92	96	91	90	100	92	84	89	89	102
Lincoln, NE .....	89	91	87	90	81	88	85	100	89	91
Los Angeles-Riverside-Orange County, CA .....	105	104	109	108	108	107	113	107	99	97
Louisville, KY-IN .....	99	101	99	101	94	97	106	99	98	94
Melbourne-Titusville-Palm Bay, FL .....	91	95	83	93	94	87	93	100	94	101

See footnotes at end of table.

**Table 1. Pay relatives for major occupational groups in metropolitan areas, National Compensation Survey, 2005 — Continued**

(Average pay nationally for all occupations and for each occupational group shown = 100.)

Metropolitan Area <sup>1</sup>	All occupations	Management, business, and financial	Professional and related	Service	Sales and related	Office and administrative support	Construction and extraction	Installation, maintenance, and repair	Production	Transportation and material moving
Memphis, TN-AR-MS .....	94	92	88	88	97	96	89	106	97	95
Miami-Fort Lauderdale, FL .....	95	97	94	92	94	97	84	101	97	96
Milwaukee-Racine, WI .....	101	102	94	104	110	102	110	101	103	104
Minneapolis-St. Paul, MN-WI .....	108	106	103	120	109	106	110	109	113	110
Mobile, AL .....	94	103	92	86	103	94	98	93	94	95
New Orleans, LA .....	93	100	97	86	106	92	84	92	91	91
New York-Northern New Jersey- Long Island, NY-NJ-CT-PA .....	112	113	114	114	108	113	128	112	103	113
Norfolk-VA Beach-Newport News, VA-NC .....	93	92	94	92	94	95	87	95	88	94
Ocala, FL .....	90	91	86	91	93	92	79	88	88	100
Oklahoma City, OK .....	91	97	86	90	87	87	91	99	94	98
Orlando, FL .....	93	93	91	88	100	93	87	97	91	100
Philadelphia-Wilmington-Atlantic City, PA-NJ-DE-MD .....	106	109	109	107	99	108	107	106	105	108
Phoenix-Mesa, AZ .....	100	95	102	97	107	103	89	99	95	103
Pittsburgh, PA .....	96	94	95	97	93	98	97	94	95	99
Portland-Salem, OR-WA .....	101	101	94	112	106	100	119	104	95	98
Providence-Fall River-Warwick, RI-MA .....	108	115	110	116	104	108	103	95	104	107
Reading, PA .....	103	122	98	100	102	99	108	101	103	105
Reno, NV .....	97	93	95	99	101	94	92	106	95	100
Richland-Kennewick-Pasco, WA .....	102	100	96	112	107	98	106	91	94	97
Richmond-Petersburg, VA .....	98	99	97	98	97	99	87	101	96	106
Rochester, NY .....	98	97	98	105	93	97	90	85	98	102
Rockford, IL .....	101	88	99	101	100	93	112	103	106	104
Sacramento-Yolo, CA .....	107	107	106	116	108	105	100	114	104	113
Salinas, CA .....	113	115	122	117	119	105	119	117	103	96
San Antonio, TX .....	90	92	93	84	98	90	89	89	98	90
San Diego, CA .....	105	100	110	114	107	103	102	103	102	97
San Francisco-Oakland-San Jose, CA .....	117	112	117	123	113	121	123	112	109	112
Seattle-Tacoma-Bremerton, WA .....	107	96	100	121	108	108	113	105	112	106
Springfield, MA .....	97	105	112	108	108	112	110	108	116	73
Springfield, MO .....	90	86	92	87	89	87	85	96	95	92
St. Louis, MO-IL .....	100	99	96	96	98	100	117	101	102	112
Tallahassee, FL .....	87	76	88	89	92	88	90	85	90	105
Tampa-St. Petersburg-Clearwater, FL .....	93	93	90	91	89	98	96	94	92	98
Visalia-Tulare-Porterville, CA .....	95	86	98	100	90	95	92	94	99	95
Washington-Baltimore, DC-MD-VA-WV .....	106	101	109	107	100	112	102	111	113	99
York, PA .....	97	104	99	99	94	95	93	99	92	99
Youngstown-Warren, OH .....	95	86	94	87	97	87	96	96	103	110

<sup>1</sup> A metropolitan area can be a Metropolitan Statistical Area (MSA) or Consolidated Metropolitan Statistical Area (CMSA) as defined by the Office of Management and Budget, 1994.

## Technical Note

The pay relatives in this release, as with estimates from any sample survey, are subject to sampling and non-sampling errors. Sampling errors are differences that occur between the pay relatives estimated from the sample and the true pay relatives derived from the population. Pay relatives are also subject to a variety of non-sampling errors that can influence the estimates. The NCS may be unable to obtain information for some establishments; there may be difficulties with survey definitions; respondents may be unable to provide correct information, or mistakes in recording or coding the data may occur. Non-sampling errors of these kinds were not specifically measured. However, they are expected to be minimal due to the extensive training of the field economists who gathered the survey data, computer edits of the data, and detailed data review.

Historical pay relative data are available for 1992-1996, 1998, 2002, and 2004. There are several differences between the recent pay relatives and the pay relatives for earlier years, including different industry and occupation classification systems, varying methodology, and different survey designs. These differences limit comparability. The pay relatives for 2004 and 2005 were calculated using the same industry and occupation classification systems, methodology, and survey design. Nonetheless, comparisons between the estimates for the two years should be made only with a high degree of caution.

Pay relatives were estimated using a multivariate regression technique methodology to control for interarea differences. This technique controls for the following ten characteristics:

- Occupational type
- Industry type
- Work level
- Full-time / part-time status
- Time / incentive status
- Union / nonunion status
- Ownership type
- Profit / non-profit status
- Establishment employment
- Payroll reference date

Even accounting for the characteristics used in the current regression analysis, there is still wage variation across the areas. The variation is due to differences in wage determinants that were not included in the model. Examples of these determinants include price levels, environmental amenities such as a pleasant climate, and cultural amenities.

For more details, see Maury B. Gittleman, "Pay Relatives for Metropolitan Areas in the NCS" *Monthly Labor Review*, March 2005, pp. 46-53, and Parastou Karen Shahpoori, "Pay Relatives for Major Metropolitan Areas," *Compensation and Working Conditions Online*, April 28, 2003.