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OCCUPATIONAL PAY RELATIVES FOR METROPOLITAN AREAS IN NEW YORK, 2006

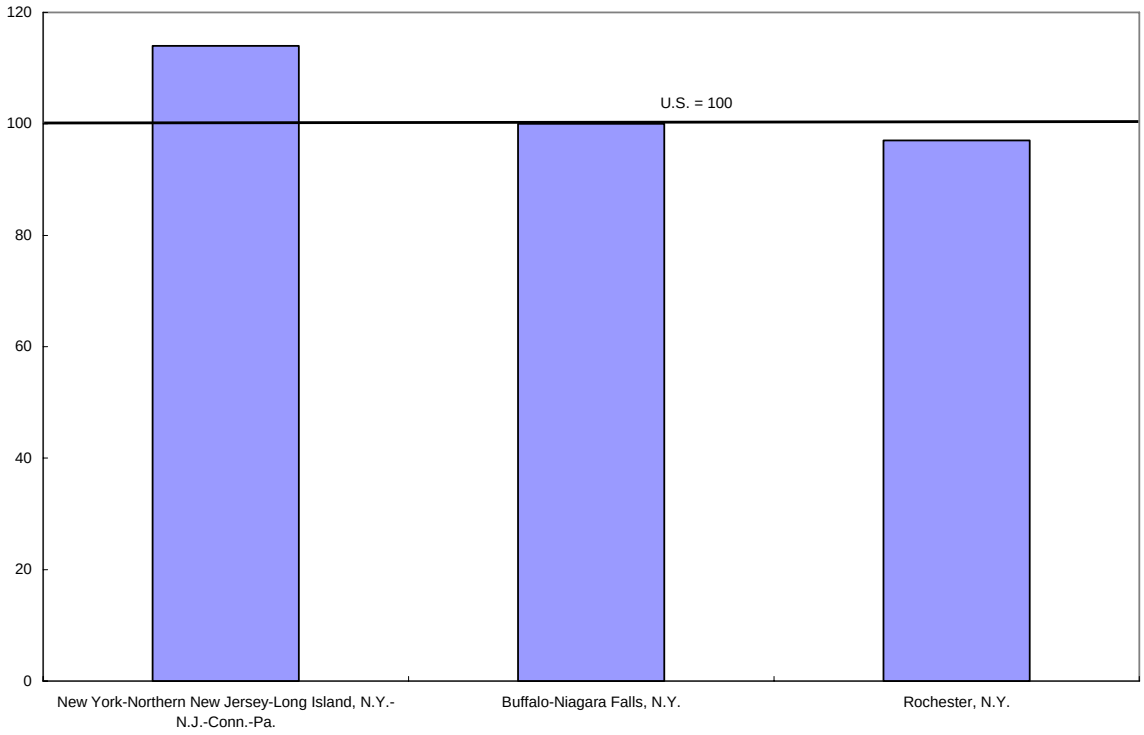
The pay relative in 2006 averaged across all occupations in the New York-Northern New Jersey-Long Island Consolidated Metropolitan Statistical Area[1] was 114, meaning that pay on average was 14 percent above the national average, according to the U.S. Department of Labor's Bureau of Labor Statistics. Regional Commissioner Michael L. Dolfman noted that the New York metropolitan area had the second highest pay relative in the nation among the 78 metropolitan areas in the National Compensation Survey (NCS), the source for these data. Only the pay relative for the San Francisco metropolitan area was higher at 119.

Elsewhere in New York, the pay relative for all occupations in the Rochester Metropolitan Statistical Area was 97, meaning that workers earned 3 percent less than the national average. For the Buffalo-Niagara Falls metropolitan area, the pay relative was 100, meaning that average pay was not significantly different from that for the nation. (See charts A and 1.)

BLS produces occupational pay relatives, a calculation of pay which includes wages, salaries, commissions, and production bonuses, to facilitate comparisons of occupational pay between metropolitan areas and the United States as a whole, and between one metropolitan area and another. Pay relatives have also been prepared for each of the 9 major occupational groups within 78 Metropolitan Statistical Areas for 2006. 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.

[1] The New York-Northern New Jersey-Long Island, NY-NJ-CT-PA Consolidated Metropolitan Statistical Area (CMSA) consists of New York City, Dutchess, Nassau, Orange, Putman, Rockland, Suffolk, and Westchester Counties in New York; Bergen, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, and Warren Counties in New Jersey; Fairfield County, eight towns in Litchfield County, two towns in Middlesex County, and New Haven County in Connecticut; and Pike County in Pennsylvania. For convenience, this area is referred to as the greater New York area in this release.

Chart A. Pay relatives for all occupations in metropolitan areas in New York, area-to-nation comparisons, National Compensation Survey, June 2006



Area-to-Nation Comparisons

Workers in the greater New York area had pay relatives that were significantly above the national average in all nine occupational groups for which pay relatives were prepared. (See table A.) Construction and extraction workers in New York earned 28 percent more than their national counterparts with a pay relative of 128. For management, business, and financial, and professional and related occupational groups, pay relatives were 114 and 116, respectively.

Workers in the Rochester area were paid significantly less than the U.S. average in six occupational groups. Two of these groups had pay relatives of 89—management, business, and financial; and installation, maintenance, and repair—meaning Rochester area workers earned 11 percent below their national counterparts in these occupational groups. Service workers, with a pay relative of 104, was the only occupational group to have a pay relative that was significantly above the national average.

In the Buffalo-Niagara Falls area, workers posted pay relatives significantly higher than those for the nation in four occupational groups (construction and extraction, production, service, and sales and related), and significantly lower pay in three (management, business, and financial; professional and related; and office and administrative support). Pay relatives for both the construction and extraction and production occupational groups were 111. Workers in the management, business, and financial, and the professional and related occupation groups had pay relatives of 91.

Table A. Pay relatives for major occupational groups in metropolitan areas in New York, area-to-nation comparisons, National Compensation Survey, June 2006

Metropolitan area[1]	All occupations	Management, business, and financial	Professional and related	Service	Sales and related
United States	100	100	100	100	100
Buffalo-Niagara Falls, N.Y.	100	91*	91*	106*	105*
New York-Northern New Jersey- Long Island, N.Y.-N.J.-Con.-Pa.	114*	114*	116*	114*	112*
Rochester, N.Y.	97*	89*	97*	104*	96*

Metropolitan area[1]	Office and administrative support	Construction and extraction	Installation, maintenance, and repair	Production	Transportation and material moving
United States	100	100	100	100	100
Buffalo-Niagara Falls, N.Y.	99*	111*	100	111*	101
New York-Northern New Jersey- Long Island, N.Y.-N.J.-Con.-Pa.	114*	128*	114*	105*	110*
Rochester, N.Y.	98*	94*	89*	100	100

*The pay relative for this area is significantly different from the national average of all areas at the 10 percent level of significance. For additional details, see the Technical Note.

[1]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.

Area-to-Area Comparisons

Area-to-area pay comparisons are useful in determining the differences in pay levels between two metropolitan areas. This type of comparison requires that the base area be changed from the nation to a specific metropolitan area. For example, when the greater New York area was the base area (pay relative = 100), average pay for all occupational groups in Rochester was lower than in greater New York by 14 percent, and in Buffalo-Niagara Falls, it was lower by 12 percent. (See table 1.) Pay relatives for all 78 metropolitan areas are available on the BLS website at http://www.bls.gov/ncs/ocs/payrel.htm. Using greater New York as a base for area-to-area comparison allows us to state that the San Francisco-Oakland-San Jose, Calif., area exceeded greater New York by 4 percent on average. In contrast, the average pay in the Dallas-Fort Worth, Texas area was 14 percent less than the greater New York area.

Using Pay Relative Data

To assist data users with the use of these data, tests have been conducted to determine whether differences between each pay relative and the pay relative for the nation as a whole are statistically significant (that is, the pay for the given occupation in that area is too different from the national average to be accounted for by the randomness of the survey's sample). Similar tests are conducted for the area-to-area comparisons. In all tables, statistically significant pay relatives are denoted with an asterisk (*). Data users are cautioned not to use yearly differences in area and occupational pay group differences in pay relatives to infer changes in underlying economic conditions. More information on significance testing is available in the Technical Note.

Beginning in 2006, the NCS implemented a number of significant survey changes including imputing for temporary non-response situations and benchmarking estimated employment. For more details on these changes, see the article at http://www.bls.gov/opub/cwc/cm20070122ar01p1.htm.

Technical Note

Pay relative controls and calculations

Pay relatives control for differences among areas in occupational composition, as well as establishment and occupational characteristic. Metropolitan areas often differ greatly in the composition of establishments and 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 numbers of workers in all occupations is under 6 percent, whereas nationally this ratio is over 8 percent.[2] 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 and related workers in San Francisco is $37.57 and the average pay for professional and related workers in the entire United States is $29.76.[3] 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:

$$(\$37.57 \div \$29.76) * 100 \cong 126$$

This comparison does not control for differences between San Francisco and the nation in the mix of occupations, industries, and other factors. A more accurate estimate of the geographic effect of wages in San Francisco can be obtained by taking these differences into account. Controlling for 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.

Sampling errors and statistical significance

Because the NCS is a sample survey, data are subject to sampling error. For the data presented here, sampling errors are differences that occur between the pay relatives estimated from the sample and the true pay relatives derived from the population. It is important to assess whether differences between each pay relative and the pay relative for the nation as a whole is likely to be a result of sampling error or of true differences in pay levels. To perform this assessment, a test of statistical significance is conducted.

The test constructs a 90-percent confidence interval that assumes the given area's true pay relative is equal to the national average. The confidence interval is constructed so that there is a 90-percent probability the pay relative calculated from any one sample is contained within the confidence interval. If from a single sample a calculated pay relative falls within the confidence interval, then the pay relative is not statistically significant and the hypothesis that the true pay relative is equal to the national average is accepted. However, if the pay relative falls outside of the constructed confidence interval then the pay relative is statistically significant at the 10-percent

[2] Data for this example are based on the May 2006 Occupational Employment and Wage Estimates, http://www.bls.gov/oes/current/oessrcma.htm.

[3] 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 2006 and the National Compensation Survey: Occupational Wages in the United States, June 2006, http://www.bls.gov/ncs/ocs/compub.htm.

level. The hypothesis that the given area's pay relative is equal to the pay relative for the nation is rejected and one can conclude with reasonable confidence that the true pay relative is different from the national average.

In addition to sampling error, pay relatives are subject to a variety of sources that can adversely 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, 2004, and 2005. 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, 2005, and 2006 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 significant 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.

The pay relative regression methodology introduces another type of error. Regression models are subject to specification error. The significance test does not specifically measure specification error. However, care was taken to minimize this form of error by an extensive search across specifications for the model that performs best in terms of predictive accuracy.

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

Table 1. Pay relatives for major occupational groups in metropolitan areas in New York, area-to-area comparisons, National Compensation Survey, June 2006

Base area (Pay relative = 100)	Metropolitan area	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
Buffalo-Niagara Falls, NY	New York-Northern New Jersey- Long Island NY-NJ-CT-PA	114*	125*	127*	108*	107*	115*	115*	114*	94*	108*
	Rochester, NY	97*	98*	107*	98*	91*	99*	85*	89*	90*	99*
New York-Northern New Jersey-Long Island, NY-NJ-CT-PA	Buffalo-Niagara Falls, NY	88*	80*	79*	93*	94*	87*	87	88	106*	92*
	Rochester, NY	86*	78*	84*	91*	86*.	86*	73*	78*	95*	91*
Rochester, NY	Buffalo-Niagara Falls, NY	103*	102*	93*	102*	110*	101*	118*	112*	112*	101
	New York-Northern New Jersey- Long Island NY-NJ-CT-PA	117*	128*	119*	110*	117	117*	136*	128*	105*	110*

* A pay relative for this area is significantly different from the average in the base metropolitan area at the 10 percent level of significance. For additional details, see the technical note.

Chart 1. Pay relatives for all occupations in metropolitan areas in New York, area-to-nation comparisons, National Compensation Survey, June 2006