Variations in holidays, vacations, and area pay levels

Higher paying localities often report more liberal leave provisions, but factors other than pay also are important

JOHN E. BUCKLEY

Workers with above-average holiday and vacation benefits are likely to be in areas that have above-average pay levels and that are located outside the South. For blue-collar workers, leave time also is likely to be greater in areas with larger establishments and a relatively high incidence of unionization and manufacturing activity. Detroit, for example, has these characteristics, and combined holiday and vacation time for production workers in the area is about 20 percent (nearly 4 days) above the national average. San Antonio, in contrast, is an area with below-average pay, unionization, and manufacturing activity levels, and with smaller than average establishment employments. Leave levels in the area also are considerably below the national norms.

The data used in this analysis come largely from surveys conducted in 68 localities included in the Bureau's Area Wage Survey (AWS) program. This program provides information on occupational pay and employee benefits derived from a statistical sample of the Nation's metropolitan areas.[1] The program provides wage data (straight-time earnings) for workers in selected narrowly defined occupations, such as maintenance mechanic, janitor, secretary, and computer programmer, reflecting the typical practice of setting wage and salary rates by job performed. Information on benefit plans is obtained only for two broad employment categories—production and office workers—because employers generally provide uniform benefits within each of these groups.[2]

The occupational wage data collected in the AWS program are used to produce indexes (labeled "relative pay levels") of interarea differences in average straight-time weekly or hourly earnings for four employee groups: office clerical, electronic data processing (EDP), skilled maintenance, and unskilled plant workers.[3] These four sets of pay relatives, together with area vacation and holiday practice data for the production and office groups, provide the compensation inputs for the analysis presented in this article.

Basic assumptions

To permit comparison of area pay and leave standings, within each metropolitan area studied the two blue-collar groups are assumed to receive holiday and vacation benefits equal to the average for the area's production and related workers. Also, the white-collar groups are assumed to receive the average benefits of office workers.

Furthermore, because the AWS program does not provide sufficient detail on most employee benefits, it was possible to include only paid holiday and vacation data in this study.[4] The holiday data are comparable to those published in individual AWS reports, except that workers receiving no paid holidays are included in the calculation of area averages. In contrast, vacation data differ from those published in AWS reports, which describe area vacation schedules—that is, lengths of vacation granted after specified periods of service (such as 5 days' pay after 1 year of service, 10 days' after 3 years, and so forth). Accordingly, to facilitate comparisons of leave time among areas, and to relate leave to area pay levels, the vacation schedules in the AWS reports were converted into estimates of the average number of vacation days granted by

John E. Buckley is an economist in the Division of Occupational Pay and Employee Benefit Levels, Bureau of Labor Statistics.

applying national tenure data from the January 1983 Current Population Survey.

Finally, national tenure data were used because area data are not available. While these data do not reflect area-related differences in workers' seniority, their use still provides the benefits of standardization in comparisons across areas: Area-related differences in vacation time for workers with uniform lengths of service are revealed. This use of national tenure data for standardization is similar to the use of national occupational weights for computing area relative pay levels.

Holidays and vacation days

Table 1 contains information on paid holiday and vacation provisions in all metropolitan areas combined and in four broad regions.[5] The data span the period 1983–86, when information on benefits was collected at least once in each area.[6] While more than 90 percent of the workers received paid holidays, the number of days off varied considerably among regions and occupational groups. For example, about 8 percent of the Southern workers received 12 or more holidays a year, compared with 17 percent nationwide. Among the occupational groups, office workers averaged one more holiday nationwide than production and related workers (9.7 versus 8.7 holidays).

Vacation provisions also differed considerably between office and production workers and among regions, especially for workers with a short duration of service. Eighty-five percent of the office workers, for example, had plans giving at least 2 weeks of vacation after 1 year of service, while only 39 percent of the production workers had the same provision. If, in each area studied, workers' seniority with their current employer had followed the national pattern revealed by the January 1983 Current Population Survey, office workers would have averaged one more day of vacation than production workers. As with holidays, vacation benefits were not as liberal in the South as they were in other regions.

When estimates of holidays and vacation days in individual metropolitan areas were compared, it was found that localities with liberal holiday practices generally had liberal vacation policies as well. (See tables 2 and 3.) Correlation coefficients measuring the degree of this association were 0.81 for production workers and 0.62 for office workers. (Perfect correlation = 1.00.) Despite these degrees of correlation, some atypical observations emerged. For example, production workers in Paterson–Clifton–Passaic received 10.7 holidays compared with a national average of 8.7, but had only average vacation provisions. Conversely, office workers in San Antonio received only 7.6 holidays but had near-average vacation provisions.

Interarea comparisons

When holidays and vacation days were combined (called total leave here), the highest averages for production workers were reported in two Michigan metropolitan areas: Saginaw, with 23.8 days, and Detroit, with 22.4 days. The national average was 18.6 days, while the lowest average, 14.4 days, was found in Gainesville, FL. Six of the ten areas with the highest totals were located in the Northeast; the other four were in the Midwest, although San Jose tied Milwaukee for 10th place. The 10 areas with

Table 1. Selected paid holiday and vacation provisions, all metropolitan areas and four broad regions, 1983–86

Provision	Production and related workers					Office workers				
	All metropolitan areas	Northeast	South	Midwest	West	All metropolitan areas	Northeast	South	Midwest	West
Paid holidays										
Percent of workers in establishments providing paid holidays	94	97	92	97	92	99	99	99	99	99
5 days or more	91	96	86	95	88	99	99	98	99	99
10 days or more	48	63	31	60	43	58	76	40	57	55
12 days or more	17	25	8	26	13	17	25	7	19	15
Average number of holidays	8.7	9.7	7.4	9.6	8.4	9.7	10.5	8.8	9.8	9.7
Paid vacations										
Percent of workers in establishments providing paid vacations	98	98	97	99	98	99	99	99	99	99
2 weeks or more after 1 year of service	39	45	35	38	42	85	88	81	83	86
3 weeks or more after 5 years of service	33	35	27	35	41	52	58	42	46	62
4 weeks or more after 20 years of service	67	71	54	79	65	84	86	77	88	84
Average number of vacation days	9.9	10.3	9.2	10.4	10.0	10.9	11.2	10.6	11.0	11.0
Total paid leave[1]										
Average number of days	18.6	20.0	16.6	20.0	18.4	20.6	21.7	19.4	20.8	20.7

[1]Limited to paid holidays and paid vacations.

Table 2. Number of leave days for production and related workers and relative pay levels for skilled maintenance and unskilled plant workers, 68 metropolitan areas, 1983–86

Metropolitan area	Average leave days,[1] production and related workers			Relative pay levels	
	Total[2]	Holidays	Vacation	Skilled maintenance	Unskilled plant
Saginaw, MI	23.8	12.1	11.7	—	—
Detroit, MI	22.4	11.1	11.3	111	131
Buffalo, NY	21.4	10.5	10.9	102	97
Trenton, NJ	21.4	10.6	10.8	92	—
Toledo, OH–MI	21.1	10.6	10.5	105	128
Boston, MA	20.9	10.1	10.8	94	97
New York, NY–NJ	20.8	10.0	10.8	94	128
Newark, NJ	20.8	10.2	10.5	94	89
Paterson–Clifton–Passaic, NJ	20.6	10.7	9.9	89	96
Milwaukee, WI	20.4	9.9	10.5	105	98
San Jose, CA	20.4	9.3	11.2	115	112
Nassau–Suffolk, NY	20.3	10.0	10.2	94	98
Indianapolis, IN	20.2	9.9	10.3	106	103
St. Louis, MO–IL	20.2	9.9	10.3	103	99
San Francisco–Oakland, CA	20.1	9.3	10.8	117	143
Chicago, IL	19.9	9.4	10.5	107	120
South Bend, IN	19.9	9.6	10.3	90	128
York, PA	19.8	9.7	10.1	89	110
Dayton, OH	19.7	9.3	10.3	103	114
Green Bay, WI	19.7	8.8	10.9	97	97
Davenport–Rock Island–Moline, IA–IL	19.6	9.7	9.8	110	130
Albany–Schenectady–Troy, NY	19.5	9.2	10.2	89	107
Cleveland, OH	19.4	9.3	10.1	102	107
Huntsville, AL	19.4	9.4	10.0	99	90
Kansas City, MO–KS	19.4	9.3	10.1	101	105
Portland, ME	19.3	9.2	10.2	—	95
Seattle–Everett, WA	19.3	8.9	10.4	—	116
Worcester, MA	19.3	9.4	9.9	87	94
Cincinnati, OH–KY–IN	19.2	9.1	10.1	95	99
Hartford, CT	19.1	9.3	9.8	90	87
Philadelphia, PA–NJ	19.1	9.4	9.7	99	113
Providence–Warwick–Pawtucket, RI–MA	19.1	9.7	9.5	80	82
Minneapolis–St. Paul, MN–WI	19.0	8.9	10.1	105	110
Richmond, VA	19.0	8.8	10.2	109	85
Gary–Hammond–East Chicago, IN	18.8	9.5	9.4	106	102
Sacramento, CA	18.8	8.4	10.4	107	—
All metropolitan areas	**18.6**	**8.7**	**9.9**	**100**	**100**
Columbus, OH	18.6	8.6	10.0	98	92
Louisville, KY–IN	18.6	8.6	10.0	103	100
Pittsburgh, PA	18.5	8.7	9.8	101	97
Los Angeles–Long Beach, CA	18.4	8.6	9.7	109	97
Northeast Pennsylvania	18.4	8.8	9.6	80	94
Witchita, KS	18.4	8.8	9.7	94	—
Portland, OR–WA	18.3	8.1	10.2	106	114
Salt Lake City–Ogden, UT	18.3	8.3	10.0	94	89
Fresno, CA	18.1	8.2	9.9	93	94
Dallas–Fort Worth, TX	17.9	8.1	9.8	95	88
Atlanta, GA	17.7	7.9	9.7	95	80
Baltimore, MD	17.7	8.3	9.3	100	82
Omaha, NE–IA	17.5	7.8	9.7	91	84
Billings, MT	17.3	7.3	10.0	—	—
San Diego, CA	17.3	7.8	9.5	106	—
Anaheim–Santa Ana–Garden Grove, CA	17.2	7.6	9.6	96	96
Denver–Boulder, CO	17.2	7.4	9.7	100	88
Memphis, TN–AR–MS	17.0	7.7	9.3	93	76
Washington, DC–MD–VA	16.9	7.4	9.5	—	77
Oklahoma City, OK	16.7	7.3	9.4	97	84
Greenville–Spartanburg, SC	16.5	7.4	9.1	73	74
Houston, TX	16.2	7.2	9.1	100	72
Chattanooga, TN–GA	16.1	7.5	8.7	81	78
Jacksonville, FL	15.9	7.0	8.9	94	74
New Orleans, LA	15.8	7.0	8.9	99	68
Jackson, MS	15.7	7.1	8.6	94	76
Norfolk–Virginia Beach–Portsmouth, VA–NC	15.7	6.7	9.0	89	78
Miami, FL	15.6	6.5	9.1	83	71
Greensboro–Winston-Salem–High Point, NC	15.4	6.8	8.6	94	77
San Antonio, TX	15.4	6.5	8.9	79	71
Corpus Christi, TX	15.2	6.3	8.9	101	69
Gainesville, FL	14.4	5.4	9.0	—	76

[1]Limited to paid holidays and paid vacations.

[2]Because of rounding, the sum of the average number of holidays and the average number of vacation days for a given metropolitan area may not equal the total number of leave days for that area.

NOTE: Dashes indicate that data do not meet publication criteria.

the lowest averages were in the South.

Average leave days for office workers were highest in Trenton (23 days) and Davenport–Rock Island–Moline (22.9 days). Jackson, MS, had the lowest average leave (17.7 days). As with production workers, the 10 highest paid leave areas were mostly in the Northeast and Midwest, and the 10 lowest in the South.

Comparisons of the total leave and pay levels in tables 2 and 3 uncover the extent to which high leave levels are found in areas with high pay levels. The results are summarized as follows:

	Observations of pay levels above the national average	
	Total	*Corresponding leave levels above the average*
All groups	75	53
Skilled maintenance	23	17
Unskilled plant	19	18
Office clerical	20	12
Electronic data processing	13	6

A parallel set of comparisons relating below-average pay to leave levels showed that slightly more than half (57 percent) of all pay observations below the national average were matched with below-average leave provisions. Areas in the Northeast, however, deviated sharply from this pattern, with most localities in the region having below-average pay but above-average total leave.

Pay levels differed more by area than did leave days. Among office clerical jobs, for example, the highest pay relative (Davenport) was 43 percent greater than the lowest (Norfolk and Northeast Pennsylvania). By contrast, the spread between areas with the highest and lowest leave levels for office workers (Trenton and Jackson) was 30 percent. For both pay and leave, the percentage spreads were considerably greater for blue-collar than for white-collar groups.

Because area leave levels often are above average in areas with above-average pay, there was a greater spread in employers' costs for paid leave than in either leave days or pay. In Newark, for example, the average office clerical worker received about 9 percent more leave time than similar workers nationwide and 2 percent more pay. Consequently, the Newark worker was paid 11 percent above the national average for vacation and holiday benefits.[7] The broadest range in leave pay was for the unskilled plant group, with costs in Detroit, at 158 percent of the national average, nearly three times those in Corpus Christi, at 56 percent of the national average.

Other influences on leave levels

Area leave levels appear to be influenced by many of the forces that influence pay levels. Bureau studies of area pay differences generally report higher pay levels in the Midwest and West and in areas with larger average establishment employments and greater degrees of unionization. These studies have also found that industrial composition heavily influences a locality's pay level.[8]

Similar patterns appeared when average numbers of leave days were examined. Table 4 shows that areas with a high leave level for production workers commonly were located in the Northeast or Midwest and had above-average degrees of unionization, sizes of establishment employment, and proportions of manufacturing activity.[9]

The table also shows that of the 36 areas whose production workers' leave levels were above average, 27 had collective bargaining agreement coverage that was above average, 19 had high average establishment employment size, 30 were located in the Northeast or Midwest, and 24 had high proportions of manufacturing employment.

The type of manufacturing within an area also is an important determinant of leave levels. For example, two areas with approximately the same percentage of workers in manufacturing industries, Gary–Hammond–East Chicago and Greenville–Spartanburg, had quite different leave levels. Gary, with a high concentration of workers in the primary metals industries, had a considerably higher leave level than did Greenville, where textile mills dominate among manufacturing activities.

There may be interactions among the variables in these simple cross tabulations. For example, large establishments are more likely to have collective bargaining agreements, and, for blue-collar workers, manufacturing establishments are more likely to have collective bargaining agreements than nonmanufacturing establishments. The appendix to this article offers the results of a multiple regression analysis designed to isolate the effect of each variable from others in the study. It thus provides a more precise indication than is given here of how the various forces under consideration influence area leave levels.

Data limitations

The analysis undertaken compared pay only to vacation and holiday provisions; one should not assume that similar findings would result if total benefit packages had been used. Nationally, vacations and holidays account for only about one-third of all employer costs for benefits, excluding legally required items.[10] The remaining two-thirds are for sick leave, supplemental pay, insurance, pension and savings plans, and other benefits.

Another note of caution concerns the length of paid vacations. While Area Wage Surveys report paid vacation *provisions* that apply after specified lengths of service, area-wide distributions of workers by length of service are not provided. These distributions, however, are needed to estimate averages of the number of vacation days available to employees. As a substitute, national job tenure data for occupational groups similar to the production and office groups considered here were taken from the January 1983 Current Population Survey[11] and were used

Table 3. Number of leave days for office workers and relative pay levels for office clerical and electronic data processing workers, 68 metropolitan areas, 1983–86

Metropolitan area	Average leave days,[1] office workers			Relative pay levels	
	Total[2]	Holidays	Vacation	Office clerical	Electronic data processing
Trenton, NJ	23.0	11.0	12.1	96	93
Davenport–Rock Island–Moline, IA–IL	22.9	10.4	12.5	119	—
Newark, NJ	22.4	11.1	11.3	102	104
Detroit, MI	22.0	10.7	11.3	114	109
New York, NY–NJ	22.0	10.6	11.4	102	105
Saginaw, MI	22.0	10.9	11.1	115	—
Boston, MA	21.9	10.5	11.3	96	96
Hartford, CT	21.8	10.4	11.4	91	95
Nassau–Suffolk, NY	21.8	10.8	11.0	93	98
San Jose, CA	21.6	10.2	11.4	115	115
Milwaukee, WI	21.5	10.4	11.1	99	97
Paterson–Clifton–Passaic, NJ	21.5	10.7	10.7	93	98
San Francisco–Oakland, CA	21.5	9.9	11.6	114	114
Toledo, OH–MI	21.3	10.3	11.0	108	96
Albany–Schenectady–Troy, NY	21.2	10.0	11.3	98	97
Buffalo, NY	21.2	10.2	10.9	89	89
Portland, ME	21.2	10.1	11.0	85	88
Seattle–Everett, WA	21.2	10.1	11.1	108	95
South Bend, IN	21.2	10.3	10.9	94	88
Worcester, MA	21.2	10.4	10.8	94	94
Philadelphia, PA–NJ	21.0	10.2	10.8	98	94
Providence–Warwick–Pawtucket, RI–MA	20.9	10.2	10.6	86	90
Washington, DC–MD–VA	20.9	9.1	11.7	101	99
Chicago, IL	20.7	9.6	11.1	101	102
Dayton, OH	20.7	10.0	10.7	94	89
Fresno, CA	20.7	9.8	10.9	92	—
Sacramento, CA	20.7	9.5	11.2	103	—
St. Louis, MO–IL	20.7	9.9	10.8	97	98
All metropolitan areas	**20.6**	**9.7**	**10.9**	**100**	**100**
Cleveland, OH	20.6	9.8	10.8	96	97
Los Angeles–Long Beach, CA	20.6	9.8	10.8	114	109
Minneapolis–St. Paul, MN–WI	20.6	9.5	11.1	97	95
Gary–Hammond–East Chicago, IN	20.5	9.4	11.1	118	—
Indianapolis, IN	20.5	9.9	10.7	96	92
Pittsburgh, PA	20.5	9.8	10.7	101	96
York, PA	20.5	10.0	10.5	92	86
Anaheim–Santa Ana–Garden Grove, CA	20.4	9.8	10.6	105	102
Denver–Boulder, CO	20.3	9.3	11.0	99	103
Cincinnati, OH–KY–IN	20.2	9.5	10.7	98	94
Columbus, OH	20.2	9.4	10.8	91	95
Huntsville, AL	20.2	9.4	10.8	93	—
San Diego, CA	20.2	9.5	10.7	100	104
Kansas City, MO–KS	20.1	9.5	10.6	99	97
Northeast Pennsylvania	20.1	9.8	10.3	83	85
Jacksonville, FL	20.0	9.3	10.7	92	95
Portland, OR–WA	20.0	9.0	11.0	102	98
Salt Lake City–Ogden, UT	20.0	9.4	10.6	94	101
Richmond, VA	19.9	9.2	10.8	92	95
Wichita, KS	19.9	9.7	10.2	104	93
Baltimore, MD	19.8	9.3	10.4	98	95
Green Bay, WI	19.7	9.0	10.7	92	85
Houston, TX	19.7	8.9	10.8	109	115
Atlanta, GA	19.6	9.0	10.7	102	103
Miami, FL	19.6	8.8	10.8	95	100
Dallas–Fort Worth, TX	19.5	9.0	10.5	100	97
Omaha, NE–IA	19.5	8.7	10.7	93	97
Chattanooga, TN–GA	19.2	9.0	10.2	93	—
Billings, MT	19.1	8.8	10.3	90	—
New Orleans, LA	19.1	9.1	10.0	96	97
Louisville, KY–IN	19.0	8.6	10.4	95	100
Oklahoma City, OK	19.0	8.8	10.2	98	95
Memphis, TN–AR–MS	18.7	8.4	10.3	92	90
Norfolk–Virginia Beach–Portsmouth, VA–NC	18.7	8.5	10.2	83	88
Gainesville, FL	18.5	8.0	10.5	—	—
Greensboro–Winston-Salem–High Point, NC	18.4	8.1	10.3	93	97
San Antonio, TX	18.4	7.6	10.8	89	97
Greenville–Spartanburg, SC	18.3	8.0	10.3	87	90
Corpus Christi, TX	17.9	8.2	9.7	92	—
Jackson, MS	17.7	7.8	9.8	94	96

[1]Limited to paid holidays and paid vacations.

[2]Because of rounding, the sum of the average number of holidays and the average number of vacation days for a given metropolitan area may not equal the total number of leave days for that area.

NOTE: Dashes indicate that data do not meet publication criteria.

in each area. However, because tenure data relate to a worker's length of time with the current employer, an area with a vibrant economy and a mobile (and possibly younger) work force is likely to experience a lower average tenure than the national average or the average for an area in economic decline. As a result, the actual vacation time available in a given area may be higher or lower than is estimated using national tenure data.

Yet another limitation is that establishment vacation plans may not reflect the tenure profile of covered employees. For example, a plan's provisions may allow for additional vacation pay after 20 or 25 years of service, but it may be that none of the company's employees has as yet attained that length of service.

Finally, the analysis dealt with relative pay and leave provisions that were in effect sometime between 1983 and 1986, depending on the particular area in question. These provisions, however, are not static. For example, benefits provided in a period of economic growth and prosperity may not survive during a period of retrenchment. In the late 1970's and early 1980's, for instance, workers in the automobile manufacturing industry received 7 to 9 paid personal leave days, but this benefit was dropped when the industry experienced financial difficulties. In recent years, workers in other industries have accepted cutbacks in wages or nonwage benefits or both, in exchange for greater job security. Nevertheless, the basic finding of this study—that area wage and leave levels, whether high or low, often operate in tandem—is likely to stand for some time to come. □

Table 4. Distribution of 68 metropolitan areas by production worker leave levels and selected area characteristics, 1983–86

Selected characteristics	Number of areas with leave levels—	
	Above average	At or below average
All areas	36	32
With collective bargaining agreement coverage:		
Above average	27	9
At or below average	9	23
With average establishment employment size:		
Above average	19	9
At or below average	17	23
Region:		
Northeast	14	2
South	2	19
Midwest	16	3
West	4	8
With manufacturing employment as percent of all-industry employment:		
Above average	24	8
At or below average	12	24

FOOTNOTES

[1]Two relatively small Area Wage Survey (AWS) areas were excluded from the analysis that follows because the number of occupations reported was insufficient for interarea calculations. Also, in a few other areas, pay calculations could not be made for one or more of the four occupational groups studied.

Prior to 1987, the AWS program consisted of annual surveys conducted in 70 metropolitan areas selected to represent all 262 Standard Metropolitan Statistical Areas (SMSA's), excluding those in Alaska and Hawaii, as defined by the U.S. Office of Management and Budget through February 1974. In 1987, this program was replaced by a program of 32 areas studied annually and 58 areas biennially (half one year and half the next). Thus, 61 areas are surveyed each year. The 90 areas now in the program comprise a sample of the 326 metropolitan areas recognized as of October 1984. For additional information on the program, see Laura Scofea, "BLS area wage surveys will cover more areas," *Monthly Labor Review*, June 1986, pp. 19–23.

[2]In the AWS program, benefit provisions that apply to a majority of the production (or office) workers in an establishment are considered to apply to all such workers in the establishment. Conversely, a provision is considered nonexistent if it applies to fewer than a majority of the production (or office) workers.

[3]Occupations included are as follows: *Office clerical*—secretary; stenographer I and II; typist I and II; file clerk I, II, and III; messenger; switchboard operator; order clerk I and II; accounting clerk I, II, III, and IV; payroll clerk; and key entry operator I and II. *Electronic data processing*—computer systems analyst; computer programmer; and computer operator. *Skilled maintenance*—carpenter; electrician; painter; machinist; mechanic (machinery); pipefitter; motor vehicle mechanic; and tool and die maker. *Unskilled plant*—janitor, porter, or cleaner; and material handling laborer.

Descriptions of the surveyed jobs are included in individual area bulletins. Roman numerals are used to identify skill levels studied separately in many of the occupations; the higher the numeral, the higher is the degree of difficulty and responsibility associated with the job.

[4]The incidence of health and retirement plans is developed in the AWS program, but the detailed provisions of these plans are not. The provisions of paid personal leave plans are collected, but not in sufficient detail to calculate the average number of days available to employees.

[5]Regions are defined as follows: *Northeast*—Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont; *South*—Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia; *Midwest*—Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin; *West*—Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming.

[6]Until 1987, information on employee benefits was generally collected in an area once every 3 years. Beginning in 1988, this information will be collected every fourth year.

[7]Relative leave costs can be computed for each area/occupational group for which relative pay levels are shown by converting the area's leave days into a percentage of the national average and multiplying that percentage by the area's pay relative. In Newark again, for example, leave time for office workers (22.4 days) was 109 percent of the national average (20.6 days). Multiplying this percentage by the Newark office clerical pay relative (102) and then dividing by 100 yields a leave cost relative of 111.

[8]See, for example, Stephen E. Baldwin and Robert S. Daski, "Occupational pay differences among metropolitan areas," *Monthly Labor Review*, May 1976, pp. 29–35; and *Wage Differences among Metropolitan Areas, 1986*, Summary 87–4 (Bureau of Labor Statistics, June 1987). See also George E. Johnson, "Intermetropolitan Wage Differentials in the United States," in Jack E. Triplett, ed., *The Measurement of Labor Cost* (Chicago, University of Chicago Press, 1983), pp. 309–32.

[9]Data on collective bargaining agreement coverage, average establishment employment size, manufacturing activity, and regional leave level are from the Bureau's Area Wage Survey program.

[10]See Felicia Nathan, "Analyzing employers' costs for wages, salaries, and benefits," *Monthly Labor Review*, October 1987, pp. 3–11.

[11]For a discussion of job tenure, see Ellen Sehgal, "Occupational mobility and job tenure, 1983," *Monthly Labor Review*, October 1984, pp. 18–23.

APPENDIX: Regression analysis

A regression model was developed to identify forces influencing area leave days (the dependent variable). The six independent (explanatory) variables in the model were area pay level, manufacturing employment as a percent of total area employment, percent of workers covered by collective bargaining agreements, area population size, average employment within area establishments, and geographic region. Pay relatives for skilled maintenance workers were used in the reported analysis of production and related workers, and pay relatives for office clerical workers in the office worker regression. Results were similar when both skilled maintenance and unskilled plant worker relatives were included in the blue-collar regression and when office clerical and electronic data processing worker relatives were included in the white-collar study.

The results of the regression analysis are shown in table A–1. As indicated by the $\bar{R}^2$ values, the model had much success in explaining area differences in leave days, accounting for more than four-fifths of the interarea variation for production workers and three-fourths for office workers. For each of the two groups, a statistically significant[1] positive relationship at the 5-percent level or lower emerged between area leave and area pay levels. Areas with relatively high pay levels tend to be more liberal in leave provisions as well. Consequently, one cannot explain interarea differentials in pay rates by claiming offsetting differences in leave provisions. For production workers, other independent variables being held constant, an increase of 1 percentage point in an area's average pay level was associated with an increase of 0.041 day in the area's leave time.

Table A–1. Regression analysis of area differences in leave days, 1983–86

Item	Production and related workers	Office workers
Constant	9.649** (5.97)	13.478** (9.08)
Pay level	.041* (2.11)	.056** (3.16)
Manufacturing employment	.024* (2.45)	–.005 (–.72)
Unionization	.031** (3.16)	.002 (.10)
Area population	–.001 (–.79)	–.001 (–.74)
Average establishment employment	.007* (2.52)	.003 (1.22)
Northeast	2.035** (5.10)	2.252** (9.51)
Midwest	1.356** (3.64)	1.339** (6.05)
West	.875* (2.26)	.885** (3.00)
$\bar{R}^2$	.82	.75
F Value	31.00**	19.94**
Number of areas studied	62	67

NOTE: Numbers in parentheses below coefficients are *t*-statistics.
$\bar{R}^2$ is the coefficient of determination adjusted for degrees of freedom. It shows the percentage of total variation in area leave days that is explained by regression analysis.
F statistics are measures of the overall significance of the regressions.
** = Significant at the 0.01 level.
* = Significant at the 0.05 level.

Several other significant relationships emerge from the model. For example, the coefficients show interesting regional differences, with all regional coefficients significantly above the South—the region against which the other three regions were compared.[2] For office workers, other things being equal, area leave time in the Northeast was 2.252 days higher than in the South. Two establishment characteristics—unionization and average employment size—also provided significant explanations of area leave differences, but only for production workers.

Furthermore, a significant positive relationship is shown between area leave days and the degree of manufacturing activity, but again only for production workers. Note, however, that the regression model did not take account of area differences in type of manufacturing, and, as mentioned earlier, type of manufacturing is an important determinant of leave and pay levels.

The remaining variable tested in the model, area population size, was not statistically related to leave levels for either of the two occupational groups.

FOOTNOTES

[1]All estimated regression coefficients were evaluated at the 5- and 1-percent significance level. An estimated regression coefficient is said to be significant at the 5-percent level if the null hypothesis that a coefficient is zero would be rejected only 5 percent of the time in repeated sampling. Similarly, the coefficient is significant at the 1-percent level if the null hypothesis would be rejected only 1 percent of the time.

[2]Coefficients of the regional variables shown in table A–1 indicate the difference in leave relatives resulting from being located outside the South, whose value is embodied in the equation's constant term. A regression equation's constant term shows the estimated value of the dependent variable when all the independent variables are zero, including, in this instance, when an area is in the South.