

Clerical pay differentials in metropolitan areas, 1961–80

*Salaries of office workers generally
are higher in large urban areas
and in the North Central and Western regions;
interarea differences narrowed
in the 1960's and widened in the 1970's*

MARK S. SIELING

In 1980, salaries of office clerical workers varied widely among 52 areas included in the Bureau of Labor Statistics' area wage survey program. For example, in Davenport-Rock Island-Moline—the highest paying area—clerical pay rates averaged about 50 percent more than those in Norfolk-Virginia Beach-Portsmouth—the lowest paying area. Generally, salaries were higher in larger areas. The highest salaries were in North Central and Western areas, followed by Northeastern areas, and were lowest in Southern areas. Industry mix was an important determinant of an area's relative pay level.

The pay structure in 1980 resembled the pattern in 1961, although significant developments took place within this period. During the 1960's, area differentials gradually diminished. However, in the 1970's, the pattern reversed, and much of the growing uniformity disappeared. These contrasting developments can be attributed, in part, to the differing economic environments in the two decades. The 1960's was a period of almost uninterrupted prosperity, with only moderate rates of price increases during much of the decade; in contrast, the 1970's were characterized by both economic instability and inflationary pressures.

When the areas were ranked by the size of their pay

relatives, the order of ranking in 1980 was similar to that of 1961. However, pay relatives in some areas changed substantially over the 20 years, but the changes generally reflected a cumulation of small year-to-year adjustments.

Pay levels among areas mirror the interplay of a variety of forces, ranging from nationwide economic developments to factors unique to specific locations. Moreover, the intensity of these forces may vary over time, leading to changes in interarea wage relationships. This article examines salary levels of office clerical workers in 52 metropolitan areas, highlighting current pay differences and changes in them over the past two decades.¹ In this analysis, a pay relative is defined as each area's average straight-time hourly earnings expressed as a percent of the average for all metropolitan areas combined. For example, a pay relative of 110 indicates that clerical salaries in an area are 10 percent above the national average. Pay relatives were computed by averaging earnings of selected white-collar clerical occupations in an area, using national employments as weights for each job, then dividing the resulting area average by the corresponding national average. Use of national occupational employments for weighting purposes isolates the pay relatives from the influence of area differences in occupational composition. In addition, adjustments are made to eliminate the effect of differences in the timing of individual area surveys.²

Mark S. Sieling is an economist in the Office of Wages and Industrial Relations, Bureau of Labor Statistics.

Patterns in 1980

Area salary levels are determined by a combination of factors. Some, such as supply and demand conditions in the labor market and occupational employment composition, are unique to an area; others, such as the general pay level of an industry or the effect of nationwide collective bargaining, are determined in a broader context. Although salary levels are unique to an area, some grouping of areas according to common characteristics can be made.

Seven of the eight areas with pay relatives of 106 or more in 1980 were located in the North Central and Western regions. (See table 1.) These areas typically had large concentrations of workers in relatively high-wage manufacturing industries, such as motor vehicles and equipment (Detroit and Toledo), aircraft and parts (Los Angeles, Seattle, and Wichita), and farm machinery (Davenport). This does not imply that the nonmanufacturing sector is unimportant in contributing to overall wage levels. Each of the five areas with overall pay levels 11 percent or more above the national average also had nonmanufacturing pay levels at least 11 percent above the national nonmanufacturing average.

Of the nine areas with pay relatives of 90 or less, seven were in the South and two were in the Northeast.

The type of manufacturing industries in the area was a factor for several of these areas. For example, the textile industries are important in Chattanooga and Greenville, while leather footwear is important in Portland (Maine) and jewelry in Providence.

A relationship is also apparent between salary levels and the number of employees within a labor market. In 1980, only 11 of the 52 areas had nonagricultural employment of a million or more. Yet, four of them were among the eight areas with salaries 6 percent or more above the national average. All of the areas with salaries 10 percent or more below the national average had employment of less than a half million. A summary of this relationship was developed by calculating a Spearman rank correlation coefficient, comparing the ranking of areas by employment and salary levels.³ The coefficient, .58, shows a positive relationship, but one that is far from a perfect correlation of 1. To illustrate that high employment does not necessarily mean higher salaries, Davenport had less than a quarter million workers in 1980, but had the highest average pay level of all the areas studied, while Boston and Minneapolis, with more than a million workers each, had average salaries 4 percent below the national average.

Salaries in Boston were also low compared to area living costs. Living costs, as measured by the BLS au-

Table 1 Office clerical pay relatives, 52 Standard Metropolitan Statistical Areas, 1961-80

[All metropolitan areas = 100]

Area	Pay relative			Area	Pay relative		
	1961	1970	1980		1961	1970	1980
Northeast				North Central			
Albany-Schenectady-Troy, N.Y.	99	99	101	Chicago, Ill.	107	105	104
Boston, Mass.	93	97	96	Cincinnati, Ohio-Ky.-Ind.	98	96	96
Buffalo, N.Y.	101	100	97	Cleveland, Ohio	107	101	101
New York, N.Y.	102	105	100	Columbus, Ohio	96	95	93
Newark, N.J.	101	101	103	Davenport-Rock Island-Moline, Iowa-Ill.	103	105	127
Paterson-Clifton-Passaic, N.J.	100	99	93	Dayton, Ohio	106	103	93
Philadelphia, Pa.-N.J.	95	97	98	Detroit, Mich.	115	116	122
Pittsburgh, Pa.	107	101	104	Indianapolis, Ind.	100	98	97
Portland, Maine	84	86	90	Kansas City, Mo.-Kans.	98	96	99
Providence-Warwick-Pawtucket, R.I.-Mass.	83	88	86	Milwaukee, Wis.	100	99	99
Trenton, N.J.	99	97	96	Minneapolis-St. Paul, Minn.-Wis.	94	93	96
Worcester, Mass.	91	93	95	Omaha, Nebr.-Iowa	96	91	94
York, Pa.	92	91	91	St. Louis, Mo.-Ill.	99	98	98
South				South Bend, Ind.	99	92	96
Atlanta, Ga.	95	99	102	Toledo, Ohio-Mich.	106	106	108
Baltimore, Md.	94	97	105	Wichita, Kans.	102	101	106
Chattanooga, Tenn.-Ga.	87	86	86	West			
Dallas-Fort Worth, Tex.	93	94	98	Denver-Boulder, Colo.	97	97	100
Greenville-Spartanburg, S.C.	80	85	85	Los Angeles-Long Beach, Calif.	109	110	111
Houston, Tex.	100	100	106	Portland, Oreg.-Wash.	100	98	104
Jackson, Miss.	83	85	87	Salt Lake City-Ogden, Utah	91	91	95
Jacksonville, Fla.	87	90	90	San Francisco-Oakland, Calif.	109	109	114
Louisville, Ky.-Ind.	94	94	98	Seattle-Everett, Wash.	104	105	111
Memphis, Tenn.-Ark.-Miss.	85	89	94				
Miami, Fla.	90	93	97				
New Orleans, La.	89	93	93				
Norfolk-Virginia Beach-Portsmouth, Va.-N.C.	93	89	83				
Oklahoma City, Okla.	88	90	94				
Richmond, Va.	94	91	89				
San Antonio, Tex.	82	83	84				
Washington, D.C.-Md.-Va.	99	104	102				

tumn 1980 lower budget for a 4-person family,⁴ are available for 22 of the areas studied. In 13 of the areas, living cost relatives (expressed as a percent of the national average for all metropolitan areas) were within 3 percentage points of the area pay relatives. Seven of the nine areas with differences greater than 3 points—Pittsburgh, Atlanta, Baltimore, Dallas, Houston, Detroit, and Los Angeles—had pay relatives that exceeded their living cost relatives; only Boston and Washington showed substantial pay disadvantages. A Spearman rank correlation coefficient of .27 confirms the lack of significant relation in the ranking of relative salary levels and local living costs in the 22 areas.⁵

Long-term trends, 1961–80

The 1980 pattern of office clerical pay relatives among areas resembled the 1961 pattern.⁶ For example, in both years, Southern areas tended to be lower paying while Western areas generally were higher paying. Nevertheless, in each of the 52 areas, the pay relative changed over the 1961–80 period. Most often, the change was small, but some areas did have substantial changes. Among the larger differences, Dayton’s pay relative of 106 in 1961 tied with Toledo’s for seventh place; by 1980, however, Dayton’s relative had decreased to 93, among the bottom third of all pay relatives. At the same time, Davenport’s office pay relative rose from 103 to 122, moving from ninth to first place.

Changes in pay relatives varied by region. The pay position of all Western areas and 14 of 17 Southern areas improved by at least 1 percentage point from 1961 to 1980. By comparison, only 7 of 13 Northeastern and 6 of 16 North Central areas experienced such gains. Similarly, gains of at least 3 percentage points were proportionately more frequent in the West and South. The following tabulation shows gains and losses in pay relatives during the 1961–80 period, by area:

Percentage point change	Northeast	South	North Central	West
Gains:				
1 or 2	2	1	3	1
3 or 4	4	5	1	3
5 or 6	1	4	—	1
7 or 8	—	2	1	1
9 or more	—	2	1	—
Losses:				
9 or more	—	1	1	—
7 or 8	1	—	—	—
5 or 6	—	1	1	—
3 or 4	3	—	4	—
1 or 2	2	1	4	—

Major changes in area pay relatives can generally be traced to local developments. For example, changes in an area’s industrial composition may have a marked im-

pact on its salary levels. To illustrate, the decline of Dayton’s office clerical pay relative (from 105 in 1973 to 93 in 1980) paralleled a decline in its manufacturing employment, especially in the rubber goods, household appliance, and office machinery sectors. These declines were offset to some extent by an expansion of service employment; however, the expanding service industries tended to be lower paying. In contrast, Houston’s office clerical pay relative rose from 100 in 1970 to 106 in 1980. This gain can be attributed to general economic expansion, particularly in the energy field and as a site for corporate headquarters. Nonagricultural employment in Houston nearly doubled over the period.

The increase in Davenport’s office clerical pay relative (from 103 in 1961 to 127 in 1980) can be traced, in part, to the combined effects of industrial composition, unionization, and inflation. A major component of Davenport’s economy is farm equipment manufacturing, traditionally one of the higher paying industry groups. Most of Davenport’s nonsupervisory plant and office workers in this industry are unionized; since the early 1970’s, their contracts have included an uncapped cost-of-living adjustment provision. During the 1970’s, the inflation rate was relatively high and, hence, these workers received relatively large wage gains through cost-of-living adjustment provisions. Although not all of Davenport’s clerical work force obtained cost-of-living increases, the gains were sufficiently widespread to influence the area-wide data.

Short-term trends

Concentration on changes in area pay relatives over the 1961–80 period overlooks the contrasting patterns of change found in the 1960’s and 1970’s. In the 1960’s, wages in the relatively low-wage Southern areas slowly approached the national average, while movement in other areas was mixed. In the 1970’s, the Southern wage advances continued. In addition, pay levels in Davenport, Detroit, and most Western areas rose much faster than the average for all metropolitan areas combined. The average percent difference in pay relatives among the 52 areas narrowed from 10.0 percent in 1961 to 8.1 percent by 1969; then the pattern reversed, and the difference expanded to 10.4 percent by 1980.⁷ The following tabulation shows the average percent difference among area pay relatives, from 1961 to 1980:

1961	10.0	1971	9.0
1962	9.9	1972	9.6
1963	9.3	1973	9.3
1964	9.0	1974	9.3
1965	9.0	1975	9.4
1966	8.6	1976	9.4
1967	8.8	1977	9.6
1968	8.4	1978	9.7
1969	8.1	1979	9.8
1970	8.7	1980	10.4

Table 2. Distribution of year-to-year percentage point changes in office clerical pay relatives, 52 Standard Metropolitan Statistical Areas, by population size and region, 1961-80

Size of change	All areas	By population			By region			
		250,000 to 500,000	500,000 to 1,000,000	1,000,000 or more	Northeast	South	North Central	West
Total observations	988	180	247	551	247	323	304	114
1961-80:								
No change	390	61	94	235	101	130	115	44
1 point	433	88	105	240	113	143	131	46
2 points	120	28	33	59	24	35	43	18
3 points	26	7	7	12	7	10	5	4
4 points or more	19	6	8	5	2	5	10	2
Average annual percentage point change	.9	1.0	.9	.8	.8	.8	.9	.9
1961-70:								
No change	204	32	50	122	48	70	60	26
1 point	208	45	51	112	61	62	67	18
2 points	46	12	10	24	8	14	14	10
3 points	9	1	5	3	—	6	3	—
4 points or more	1	—	1	—	—	1	—	—
Average annual percentage point change	.7	.8	.8	.7	.7	.7	.7	.7
1970-80:								
No change	186	29	44	113	53	60	55	18
1 point	225	43	54	128	52	81	64	28
2 points	74	16	23	35	16	21	29	8
3 points	17	6	2	9	8	4	2	4
4 points or more	18	6	7	5	1	4	10	2
Average annual percentage point change	1.0	1.2	1.1	.9	.9	.9	1.1	1.1

NOTE: Changes are computed from pay relatives rounded to the nearest percent. Signs of changes are ignored.

The contrasting behavior of geographic wage differentials in the 1960's and 1970's is related to the markedly different economic conditions in those decades. The 1960's were essentially a period of economic growth. The uninterrupted economic expansion from February 1961 to December 1969, was the longest in the Nation's history. The unemployment rate—an indicator of slack in the labor market—turned downward, from 6.7 percent in 1961 to 3.5 percent in 1969. However, inflationary pressures did not surface until the latter half of the decade: annual increases in the Consumer Price Index were below 2 percent through 1965, when they began to rise, reaching 4.7 percent in 1968 and 6.1 percent in 1969. Amendments to the Fair Labor Standards Act in 1961 and 1966 raised the Federal minimum wage from \$1 to \$1.60 an hour; these adjustments had their greatest impact in relatively low-paying industries, and they tended to reduce wage dispersion within and among labor markets.

On the other hand, the decade of the 1970's was characterized by growing economic instability and actual or suppressed inflation. Economic recessions began in December 1969, November 1973, and January 1980. The unemployment rate rose to 8.5 percent in 1975, dropped to 5.8 percent in 1979, and then rose again to 7.1 percent in 1980. The inflation rate varied substantially: annual increases in the CPI ranged from 3.4 per-

cent in 1971 and 1972—a period of wage and price controls—to 12.2 percent in 1974, and 13.3 percent in 1979. As in the prior decade, amendments to the Fair Labor Standards Act raised the Federal minimum wage—to \$3.10 an hour in January 1980.

Year-to-year changes. For each area studied, the total change over the 1961-80 period typically reflects the cumulation of relatively small year-to-year changes. About 40 percent of the 988 annual comparisons possible over the 19 years studied showed no year-to-year change in area pay relatives. (See table 2.) A slightly larger proportion had changes of 1 percentage point. Less than 2 percent had changes of 4 percentage points or more. The average year-to-year change in pay relatives for all 52 areas was .9 percentage point.

Significantly, the tendency for small average annual changes in pay relatives appeared in each of the population size groups examined separately and in each region. Not surprisingly, the greatest stability of pay relatives was in areas with 1 million inhabitants or more—the areas which tend to have the more varied labor markets.

Annual changes in area pay relatives were small in each decade, but both the size of the average change and the frequency of relatively large change were distinctly greater in the 1970's. This finding is consistent

with the tendency, already noted, for a widening of wage differences among areas in the 1970's, after a period of contraction during the 1960's.

THE WIDELY DIFFERING salary levels examined here and their behavior between 1961 and 1980 emphasize the difficulty of generalizing about the structure and trends in geographic wage differentials. Area pay rates respond to many forces that apply unequally across areas and over time. The findings of this study suggest

areas of future investigation. For example, the year-to-year stability in pay relationships among areas raises the possibility of using a national survey—over short time periods—to update local pay data, thereby eliminating the need for frequent pay studies in individual localities. In addition, it would be interesting to determine if the patterns for manual jobs parallel those for white-collar jobs. Also, a study could focus on average earnings of specific occupations, rather than on average pay levels for broad employment groups within areas. □

— FOOTNOTES —

¹ This study is based on salary data from the Bureau of Labor Statistics' area wage survey program. All 52 areas surveyed annually from 1961 through 1980 are included in the analysis. (Currently, about 70 areas are surveyed.) The program provides pay estimates for office clerical; professional and technical; maintenance, toolroom, and powerplant; and material movement and custodial occupations. However, only office clerical workers are included in this analysis. The surveys of Standard Metropolitan Statistical Areas include establishments employing 50 workers or more in manufacturing; transportation, communication, and other public utilities; wholesale trade; retail trade; finance, insurance, and real estate; and selected services. In the 13 largest areas, the minimum is 100 workers in manufacturing; transportation, communication, and other public utilities; and retail trade.

² Pay relatives are computed annually for the metropolitan areas currently included in the area wage survey program. They are produced for four occupational groups—office clerical, electronic data processing, skilled maintenance, and unskilled plant workers. For a description of the method, as well as data for 1980, see *Wage Differences Among Metropolitan Areas, 1980*, BLS Summary 81-15, September 1981. A companion report, *Wage Differences Among Selected Areas, 1980*, BLS Summary 81-16, October 1981, provides wage comparisons for three occupational groups among 102 areas surveyed under contract to the Employment Standards Administration for use in administering the Service Contract Act.

³ The Spearman coefficient measures the degree of association between two variables based on the ranks (or order) of the observations, rather than their actual values. A coefficient of +1 indicates complete agreement in the order of the ranks while -1 indicates completely opposite order of the ranks. A coefficient of 0 indicates the absence of any association between the variables.

⁴ The lower budget was used in the comparison, because it most closely approximates expenditure levels consistent with the earnings of an office clerical worker. If the intermediate budget had been used, there would have been considerably more variation between relative wages and living costs, generally with areas in the West doing better and areas in the Northeast not doing as well. In some cases, the geographic definitions used in the budget studies did not completely correspond to those used in the salary level studies. These differences did not appreciably affect the comparison and, therefore, were ignored in the analysis. These living cost measurements reflect different consumption patterns among areas. For example, in the South a higher proportion of the meat consumed is pork than in Northern areas. The Bureau has conducted research on measuring price variations among areas assuming standard consumption patterns in all areas. The standardized consumption patterns, however, had little effect on interarea differences. See Mark K. Sherwood, "Family budgets and geographic differences in price levels," *Monthly Labor Review*, April 1975, pp. 8-15.

⁵ An earlier BLS study found a relationship between area wage levels and living costs only after pay data were adjusted for differences in industry mix. See John E. Buckley, "Do area wages reflect area living costs?" *Monthly Labor Review*, November 1979, pp. 24-29.

⁶ The Spearman coefficient comparing 1961 and 1980 rankings of the 52 areas is .79.

⁷ Average pay differences were computed by subtracting an area's pay relative from each higher pay relative; dividing by the lower relative; totaling these differences (expressed in percent), and dividing by the number of comparisons made. For a further discussion of this technique, see Mark S. Sieling, "Interpreting pay structures through matrix application," *Monthly Labor Review*, November 1979, pp. 41-45.