Regional Wage Patterns: How Does New York Compare with the Rest of the Country?

Over the past several years, the regional patterns of wages in the large urban areas of the country have undergone a major shift. This article attempts to evaluate how wages in the New York area have behaved relative to wages elsewhere in the country. It does so by contrasting the wages of workers in the New York region with those of comparable workers having like qualifications and characteristics in other regions of the country, rather than by contrasting wage rates for specific jobs.[1] The coverage spans the bulk of the working population, although it may not provide a totally accurate representation of those at the high end of the income distribution. The results of this study suggest that, after allowing for regional disparities in the cost of living, New Yorkers are now on average among the lowest paid workers in urban America. As recently as 1973, however, both male and female workers in the New York area earned substantially higher money wages than comparable workers anywhere else in urban America. By 1978, the situation had changed dramatically. Money wages in the New York area had not increased as much as they had in every other region of the country In fact, the money wages of male workers in the New York area were evidently lower than those of comparable individuals in all but one other region

Why do wages differ across geographic areas?

The national labor market is really a composite of overlapping regional labor markets, each with its own specific wage structure. What matters to workers is their real wage, not the dollar amount. As long as each local labor market succeeds in disseminating information about economic conditions in neighboring markets as well as in itself, and as long as workers and companies are free to move wherever they choose, the real wage will tend to be the same for *comparable workers* —*i.e.*, comparable in terms of their qualifications and characteristics—throughout the country. Even if the real wages of comparable workers were the same everywhere, their money wages would still have to vary insofar as the cost of living differs across the country. In fact, the cost of living does differ substantially throughout the nation, not only between regions but also within each region.

How much an individual earns depends vitally on his or her qualifications. The more educated or experienced the worker is, the more productive and thus the greater his or her real wages tend to be. Accordingly, disparities in the average amounts of education or experience in the regional work forces will be reflected in corresponding differentials in average wages between regions.

[1] Measuring regional wage differentials in terms of the wage rates for specific *jobs* is rather difficult At a point in time, the qualifications of workers doing a specific job are likely to vary considerably in different parts of the country Also, out of all the many different kinds of jobs there are, comparatively few can be defined *precisely* enough that they can validly be used in making meaningful wage comparisons across regions

Other characteristics also affect an individual's wages. For example, wages vary across occupations and industries, reflecting the differences in such things as the nonpecuniary aspects of work. Similarly, workers differ in terms of such personal characteristics as race, sex, marital status, or ethnic background; and each of these traits affects a worker's wages.[2] Consequently, differences in the composition of the regional work forces with respect to these characteristics will be reflected in corresponding differentials in the average regional wages.

Regional wage differentials are not solely due to differences in workers' qualifications and characteristics. Indeed, any economic development that affects the demand or supply of labor differently in one geographic locale than in another will result in transitory regional wage differentials. For example, the demand for a certain product manufactured exclusively in one region may boom or fade; a technological innovation may occur which affects only certain industries clustered in one particular region; or there may be a larger immigration from abroad of low-skilled workers into one area than into another.

Although local labor markets do interact, they are not perfectly synchronized. Thus, a change in conditions in one local labor market will not be immediately transmitted to the others, and comparable workers may *temporarily* earn different real wages across the country. In that event, however, workers will have an incentive to move to those areas where real wages are high. As workers relocate to take advantage of temporary differentials in real wages, the differentials will tend to be reduced, even as new wage differentials appear elsewhere.

At issue here are several interrelated matters: Do wages vary among comparable workers in different regions of the country? If wages do vary across regions, are the differentials only in money terms, or are they in real terms as well? If there are regional patterns in money and real wages, have they persisted over time in the same direction and at the same level of magnitude?

Whose wages are to be compared?

In this study, regional wage differentials are measured by comparing how much workers in the New York metropolitan area earn with what workers having similar qualifications and characteristics earn in other parts of the country. In addition to the "true" regional wage differentials, however, there is also a systematic tendency for wages to vary with city size. In fact, money wages tend to be higher, the larger the city, as measured by the population of the associated standard metropolitan statistical area (SMSA).[3] Thus, wages will vary between regions in part because of regional differences in city concentrations. To distinguish the "true" regional effect from the one involving city size, the focus of this study has been narrowed to those workers residing in twenty-nine of the fifty largest SMSAs, according to the 1970 rankings.[4]

By focusing on these twenty-nine SMSAs, the coverage of this analysis is restricted to those workers who live in the larger cities with populations of one million or more Consequently, the area wage differentials that we estimate should then be attributable primarily to differences among regions and not to differences in city concentrations within those regions. The country is divided into five separate tracts.

- The New York metropolitan area, which consists of New York City, certain neighboring New York State suburban areas, as well as certain major urban areas in northeastern New Jersey.

[2] Such characteristics are generally unrelated to one's productivity in the work place, yet individuals possessing them may still earn different wages than other comparably qualified workers This phenomenon is difficult to rationalize in strictly economic terms It could be that employers prefer not to hire "minority" workers or that other workers prefer not to work with these "minority" people In either event, if the work forces in different regions differ with respect to the incidence of personal characteristics, the average wage will vary across the country.

[3] This relationship is partly a consequence of differences by city size in the concentration of job opportunities In addition, the relationship also reflects both the advantages and the disadvantages associated with cities of a specific size Examples include such items as the level of public services provided, air pollution, water pollution, climate, incidence of environmental disease, and the incidence of crime All these factors contribute in varying degrees to the "quality of life" of a particular area In turn, the wages in different areas will reflect the varying qualities of life At the same time, the cost of living also tends to vary with city size For additional discussion of these matters, see the articles by Irving Hoch, "City Size Effects, Trends, and Policies", *Science*, 193 (September 1976), and Robert S Goldfarb and Anthony M J Yezer, "Evaluating Alternative Theories of Intercity and Interregional Wage Differentials", *Journal of Regional Science*, 16 (December 1976)

[4] These twenty-nine SMSAs were chosen because they were the only ones of the fifty largest for which cost-of-living information was available Arranged by size, these twenty-nine SMSAs are New York, N Y , Los Angeles-Long Beach, Ca , Chicago, Ill , Philadelphia, Pa ; Detroit, Mich , San Francisco-Oakland, Ca , Washington, D C -Md -Va , Boston, Mass , Nassau-Suffolk, N Y , Pittsburgh, Pa , St Louis, Mo -Ill , Baltimore, Md , Cleveland, Oh , Houston, Tex , Newark, N J , Minneapolis-St Paul, Minn , Dallas, Tex , Seattle-Everett, Wash , Milwaukee, Wis , Atlanta, Ga , Cincinnati, Oh , Patterson-Clifton-Passaic, N J , San Diego, Ca , Buffalo, N Y , Kansas City, Mo -Kan , Denver, Col , Indianapolis, Ind , Fort Worth, Tex , and Gary-Hammond-East Chicago, Ind

In assigning cost-of-living indexes to certain areas, several SMSAs were sometimes combined Thus, one cost-of-living index was available for the whole group of New York, Nassau-Suffolk, Newark, and Patterson-Clifton-Passaic (*i e* , the New York region), one for Chicago and Gary-Hammond-East Chicago, and one for Dallas and Fort Worth

- The rest of the census Northeast, which consists of New England and the heavily urbanized areas of "upstate" New York, Pennsylvania, and southern New Jersey.
- The North Central, which encompasses the most urbanized areas of the Midwest.
- The South, which runs from the heavily urbanized areas of the South Atlantic states to as far west as Texas.
- The West, which includes the urbanized areas in both the Mountain and Pacific divisions.

The data used in this study cover 13,000 employed workers in May 1973 and another 13,000 in May 1978.[5] These workers represent a full range of occupations and industries in each of the five regions. Detailed information is given about each of these workers—for example, education, age, sex, race, place of residence, and marital status. With this information, comparable workers can be identified in the different regions and matched with respect to qualifications and characteristics. Because the data record where an individual lives but not where he or she works, it is assumed that each person both lives and works in the same SMSA.

In analyzing regional wage patterns, two different measures of wages are used. One is the actual amount of before-tax money wages of each worker While it would have been preferable to have included fringe benefits along with wages, the survey data used in this study do not include information about nonwage benefits. The other measure is an estimate of the corresponding real wage which takes into account differences in the cost of living across the country. An index of the cost of living was obtained for each of the SMSAs; the price data on which they are based refer to autumn 1972 and autumn 1977. (Note that these cost-of-living indexes are only compiled once a year.) For example, as shown in Table 1, the cost of living in the New York metropolitan area in 1977 was 11.9 percent higher than the national urban average, and 20.6 percent higher than in Atlanta. As defined here, the cost-of-living index indicates how much it costs an urban family of four in a particular area to enjoy an "intermediate standard of living", exclusive of personal income taxes, compared with a national

Table 1

Regional Indexes of the Cost of Living*

Region	Autumn 1972	Autumn 1977
Urban United States	100 0	100 0
Northeast		
Boston, Mass	115 2	115.9
Buffalo, N Y	104 1	104 6
New York-Northeastern N J	113 1	111 9
Philadelphia, Pa -N J	100 5	101 7
Pittsburgh, Pa	96.1	96 6
North Central:		
Chicago, Ill -Northwestern Ind	104 7	102 4
Cincinnati, Ohio-Ky -Ind	96 1	97 8
Cleveland, Ohio	104 0	103 1
Detroit, Mich	99 9	101 2
Indianapolis, Ind	100 6	99 3
Kansas City, Mo -Kans.	99 4	97 6
Milwaukee, Wis	101 2	101 6
Minneapolis-St Paul, Minn	98 2	98 0
St Louis, Mo -Ill	98 5	97 2
South·		
Atlanta, Ga	93 0	92 8
Baltimore, Md	96 6	97 7
Dallas, Tex	93 9	94 0
Houston, Tex	92 5	94 8
Washington, D C -Md -Va	101 0	102 6
West·		
Denver, Colo	96 7	97 9
Los Angeles-Long Beach, Calif	102 1	101 2
San Diego, Calif	100 9	99 2
San Francisco-Oakland, Calif	108 4	108 0
Seattle-Everett, Wash	102 0	104 0

* Estimated as the annual cost of an "intermediate" budget for a four-person family, excluding total personal income taxes

Source Bureau of Labor Statistics

[5] These data are from the Current Population Surveys (CPS) taken at these two times Omitted from consideration were those workers who were unemployed or who worked less than ten hours per week Also omitted were those individuals who were classified as farmers or as private household workers, since some of their wages accrues as income-in-kind that is usually unreported Thus, these two groups of workers were excluded on the ground that their wages could not legitimately be compared with those of other workers

The sample size of all paid workers covered in the CPS for the nation as a whole (except farmers and private household workers) amounted to about 40,000 people The subsamples of 13,000 individuals used in this study refer to those workers who live in large urban areas Just as the larger random samples for the CPS are representative of workers in the nation, so the subsamples used in this study are representative of those workers who live in the large urban centers of the country

There is one unavoidable problem associated with the use of data from the CPS in analyzing wage differentials Each worker's earnings are reported in such a way that his or her weekly earnings cannot exceed $999, workers who earned more than this are included in the survey, but with a reported income of $999 per week The number of observations that fall into this category in the sample for either 1973 or 1978 is so small, however, that it is not anticipated that this problem will have much of an effect on the estimates presented here

average for all urban areas.[6] For a given year, the real wage is derived by dividing each worker's before-tax money wage by the cost-of-living index appropriate to the specific SMSA in which he or she lives.

Does the average wage vary across regions?

Regional wage differentials can be calculated on a gross basis as the ratio of the average wage in one region to the average wage in another region—"gross" in the sense that these ratios do not take into account the systematic differences in the qualifications, characteristics, and industrial and occupational compositions of the regional work forces. The gross regional wage differentials for 1973 and 1978 are presented in Table 2 in both money and real terms. In computing these ratios, the mean wage for the New York area was always used as the numerator. Accordingly, the ratio is greater than one when wages are higher in New York than in another region, and less than one when wages are lower in New York.

Average wages were rather widely dispersed in 1973 (Table 2) For males, the average wage varied as much as 10 percent in money terms between regions. In fact, in 1973 the average money wage for males was *higher* in the New York area than in every other region; and, while money wages were lowest in the South, they were only slightly lower there than they were in the Northeast outside the New York area. However, in real terms, the average wage for males was actually lower in New York than elsewhere in the country. For females, the average wage varied as much as 18 percent in money terms between regions, and money wages were sharply higher in the New York area than in other regions.

The gross regional wage differentials for 1978 are much different from those for 1973. For both males and females, relative money wages in New York had declined noticeably in comparison with *every* other region of the country. That is, from 1973 to 1978, average money wages did not increase as much in New York as they did in other regions. Notice, too, that real wages declined less in New York relative to other regions than did money wages. This reflects the fact that, over this period, the cost of living rose less in the New York area than in other regions.

It is important to recognize, however, that the gross regional wage differentials in Table 2 are averages which do not accurately describe the relative wages of workers in particular occupations or industries. For instance, although wages were low on average for males in New York in 1978, those who were either service workers or salesmen fared better there than in other regions. Similarly, whereas wages for women were on average highest in New York, females employed in the manufacturing sector were the lowest paid in New York.

Do wages of comparable workers differ regionally?

The gross regional wage differentials are not so easy to interpret, as some of the disparities in average wages across regions simply reflect dissimilarities in the work forces. Does the relatively low average wage of men in 1978 in the New York area, for instance, mean that these men have less education and experience or that they are more concentrated in low-paying occupations and industries than men in other regions? Or do the wage differentials instead reflect disparities in the "market values" of comparable workers across the country?

Answers to these questions can be obtained by comparing the wages of workers who are alike in all respects except region of residence—that is, by comparing the regional wage differentials which are *net* of the effects of differences in the workers' characteristics.[7] Estimates are given in Table 3 for 1973 and 1978. As before, wages in the New York area always appear in the numerator of these ratios. Clearly, even after adjusting for the systematic dissimilarities in the characteristics of the regional work forces, substantial "net" wage differentials remain in both money and real terms in both years. These estimates, it should be emphasized, measure the wage differentials between comparable *workers*, rather than between comparable *jobs*.

Judging by these net wage differentials, there was indeed a shift in the regional wage patterns for urban Americans between 1973 and 1978. Over that period, the money and real wages of both males and females in New York slipped by varying degrees in relation to what comparable workers earned in every other part of

[6] Federal, state, and local personal income taxes were excluded because of the difficulties involved in measuring the quantities of public goods that consumers "buy" with these tax revenues as well as in measuring the specific amounts of the taxes paid by each individual in the data samples

[7] The method used to calculate these net differentials is a multistep statistical exercise that is explained in detail in the appendix at the end of the text Essentially, what it does is to determine how much each worker in region A would hypothetically earn in region B, given the prevailing wages in region B, and then to compute the ratio between these hypothetical wages and those that the workers actually earn in region A Then, after calculating the corresponding ratio for the workers in region B, the two ratios are averaged to form one estimate of the *net* wage differential between these two regions This measures the average wage differential between workers who are alike in all respects except region of residence

Table 2

Estimated Gross Regional Wage Differentials 1973 and 1978

Worker Year	Rest of Northeast	North Central	South	West
	Ratio of the average money wage in New York to the average money wage in each of the above regions			
Males:				
1973	1 09	1 03	1 10	1 04
1978	1 01	0 96	0 99	0 95
Females:				
1973	1 18	1 13	1 12	1 07
1978	1 16	1 10	1 05	1 04
	Ratio of the average real wage in New York to the average real wage in each of the above regions			
Males:				
1973	0 99	0 93	0 93	0 94
1978	0 94	0 87	0 86	0 87
Females:				
1973	1 09	1 01	0 96	0 97
1978	1 09	0 98	0 91	0 95

Table 3

Estimated Net Regional Wage Differentials 1973 and 1978

Worker Year	Rest of Northeast	North Central	South	West
	Ratio of money wages in New York to wages of comparable workers in each of the above regions			
Males.				
1973	1 11	1 02	1 09	1.05
1978	1 03	0 96	0 98	0 94
Females:				
1973	1 15	1.10	1 15	1.07
1978	1 10	1 03	1 02	0.99
	Ratio of real wages in New York to wages of comparable workers in each of the above reigons			
Males:				
1973	1 01	0 92	0 92	0 95
1978	0 96	0 86	0 85	0 86
Females:				
1973	1 06	0 98	0 97	0 97
1978	1 03	0 93	0 89	0 90

the country.[8] These declines in New York's "net" relative wages, it may be noted, are generally larger than those observed in the gross regional wage differentials.

The changes that occurred between 1973 and 1978 in the regional differentials in money wages are the most startling of all, however. In 1973, New Yorkers on average earned substantially higher money wages than comparable workers in all other regions. By 1978, the situation was strikingly different. For women, average money wages were still higher in the New York area in 1978, but by much less than they had been five years earlier. The relative wages of women in 1978 were in fact higher in the West than anywhere else in the country including New York. At the same time, the average money wages of men in New York had fallen sharply in relation to the wages of comparable workers in all other regions—slipping to the point where, in 1978, men actually earned less in New York than in every other region except the rest of the Northeast.

It should be remembered, however, that the estimated regional wage differentials reported in this study are *averages*. There will be certain classes of workers, of course, whose wages are exceptions to these generalizations. For example, in the finance, insurance, and real estate (FIRE) industries, the money wages of men in New York are about equal to those of comparable workers in these industries elsewhere in urban America. For women employed in these FIRE industries, money wages are on average from 9 to 19 percent higher in the New York area than in the other regions of the country.

[8] Similar declines in the relative wages of workers in New York in comparison with those in the rest of the country show up in other wage measures, too For instance, there are the area-wage surveys, prepared by the Bureau of Labor Statistics, which contrast wages for comparable *jobs* in different cities From 1973 to1978, the wage rates in New York relative to those for comparable jobs in twenty-seven other large cities declined from 4 to 9 percent for three of the four major groupings of jobs (It may be noted, however, that the average wage levels of three of the four major groupings remained higher in 1978 in New York than in the other large cities) Similarly, according to the payroll data regularly collected by the Bureau of Labor Statistics, the average wage of nonsupervisory workers in the manufacturing sector fell 9 percent from 1973 to 1978 for the New York area in relation to twenty-four other large cities across the country

Summary and conclusions

The regional wage patterns for urban Americans are remarkably flexible. From 1973 to 1978, the money wages of male workers in New York slipped on average between 6 and 11 percent in relation to the wages of comparable workers in other parts of the country, while the relative money wages of female workers in New York declined between 7 and 13 percent. By 1978, then, males actually earned lower money wages in New York than comparable workers in the rest of the country

outside the Northeast. Hence, these results indicate that, contrary to popular opinion, workers in the New York area on average no longer invariably earn higher wages than comparable workers in the rest of the country.

What accounts for such sweeping changes in relative wages? From 1969 to 1977, the New York area experienced sharp losses in employment. Indeed, in New York City, almost 600,000 private jobs were lost. To some extent, the changes in the relative wages between New York and the rest of the country reflected these massive movements of jobs. Thus, the recent declines in relative wages between New York and the other regions show that labor markets are operating efficiently in allocating workers to wherever they are in greatest demand. At the same time, these changes in relative wages suggest that the New York area is becoming a more attractive location for businesses

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Appendix: Estimating Net Regional Wage Differentials

The net regional wage differential measures the average disparity between the "market values" or returns to the qualifications and characteristics of workers who are alike in all respects except for the region in which they live. Thus, if a worker were to move from one region to another, his or her wage would on average change by a proportionate amount equal to the net regional wage differential.

The procedure used to measure these wage differentials involves two steps. First, estimates are developed for each region of the returns in wages (money and real) that an individual would receive on average based on his or her years of schooling and of work experience and socioeconomic characteristics such as marital status, race, Spanish origin, veteran status, union membership, part-time status, and dual jobholding status.[1] The estimation also controls for broad occupational and industrial categories. Prior study has shown that each of these attributes affects the wages an individual may expect to receive. For example, belonging to a union may increase an individual's anticipated wage (relative to a comparable nonunion member) because of the ability of unions to induce employers to grant higher wages than they would have chosen to pay otherwise.

The second part of the analysis involves making pairwise comparisons of regions Estimates are calculated of the wages that workers would receive in each of the two regions if the market returns to their qualifications were the same in both regions. For example, one of the estimates measures the hypothetical real wages that New Yorkers would receive if the returns to

their qualifications were the same as in the South. Using this information, an estimate can be formed of the portion of the gross wage differential that reflects differences in the characteristics of the work forces in the two locations. The rest of the gross wage differential is assumed to be due entirely to differences in the market returns to these characteristics. The latter, then, is the estimate of the net wage differential—*i.e.*, the differential in wages between workers who are alike in all respects except for their region of residence [2]

By its very nature, however, this estimate of the net regional wage differential is a *residual*: It is the portion of the gross wage differential remaining after accounting for differences in the average characteristics of the regional work forces. If, in the statistical analysis of individual wage differences, any important characteristics have been overlooked, these net differentials will include their effects as well Nevertheless, having taken into account those economic factors which have been found to have the most important impacts on individuals' wages, this estimate appears to be a reasonably accurate measure of the advantage or disadvantage attributable to the individual worker's geographic location.

[1] This is done by estimating for each sex and for each wage type (money and real) a wage structure which is a regression equation of the form $\ln W = XB + U$ fitted to detailed data on individuals, where $\ln W$ is the natural logarithm of the individual's estimated hourly money (or real) wage, X is a matrix of explanatory variables, B is a vector of estimated coefficients, and U is a vector of random disturbances In an equation of this form, each individual element of the B vector may be interpreted as the proportionate effect of the associated explanatory variable on wages—that is, the market value or return to the characteristic It should be noted that by estimating separate equations for each region we allow both the characteristics of the work force and the returns to any specific characteristic to vary across regions

The econometric results are described in detail in a technical paper available on written request from the authors

[2] Each of the pairwise regional wage comparisons is made under two alternative assumptions For example, in comparing real wages in the New York region and in the South, these assumptions are (1) that the estimated New York real wage structure would apply to all workers, or (2) that the estimated Southern real wage structure would apply to all workers Under assumption (1), the wages Southerners would receive are estimated by multiplying the mean values of the explanatory variables for Southern workers by the estimated coefficients for New Yorkers The difference between this estimate and the observed mean wage for the New Yorkers measures the wage differential attributable to differences in the characteristics of the workers in the two regions The difference between the estimated Southern wage and the observed mean wage for Southerners—that is, the remainder of the gross differential—measures the net differential that persists between comparable workers This, then, reflects regional differences in the returns to workers' characteristics Similar estimates can be made under assumption (2) The net differentials reported in Table 3 are the midpoints of estimates under assumptions (1) and (2) They are proportional differentials because they are antilogarithms of differences between wage variables expressed in logarithms For details on this estimation technique, see Ronald Oaxaca, "Male-Female Wage Differentials in Urban Labor Markets", *International Economic Review*, 14 (October 1973)