

The Changing Nature of Regional Wage Differentials From 1975 to 1983

by Lorie D. Jackson

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Introduction

Over the past 30 years, a great deal of research has been done on regional wage differentials. The subject has received considerable attention for a variety of reasons, notably because of its implications for understanding the degree to which competitive market forces lead to the equilibration of returns to labor, and also because of the possible effects of labor cost differentials on regional economic growth.

For the most part, the work on regional wage differentials has had three goals: (1) to estimate the size of regional wage differentials at a particular date or over time, (2) to identify their sources, and (3) to provide a theoretical explanation for their existence.

Estimates of regional wage differentials vary considerably as a result of variations in data sources, in measures of regional wage differentials, in measures of payments to workers, in geographic divisions, in time periods considered, and in methodologies used. Despite these inconsistencies across studies, most of the empirical work done confirms the view that, while some intermittent convergence has occurred over time, money wages in the northern United States have tended to be significantly greater than those in the South, at least since the beginning of this century.¹

Most of the recent work on regional wage differentials defines the regional wage differential as the difference in wages that exists after controlling for differences in worker characteristics. This is because what is of interest to most researchers of regional wage differentials is not why workers with different characteristics are paid differently, but rather why workers with similar characteristics are paid differently across regions. Evidence of regional wage differentials is consistently found in the literature even after adjusting for the compositional mix of the work force. These differences reflect differences in the way particular worker characteristics are remunerated across regions due to variations in culture, tradition, degrees of discrimination, the bargaining strength of local unions, amenities, and public goods, as well as to temporal variations in supply and demand pressures. The differences in the way worker characteristics are remunerated across regions are referred to as differences in wage structures.

Several studies have separated the overall regional wage differential into the portion that can be explained by the compositional mix of the work force and into the portion that cannot. This separation makes it possible to isolate the regionally-specific source of the wage differential, and to determine which work force characteristics account for most of the difference in wage structures across regions.

Studies by Sahling and Smith (1983) and by Kiefer and Smith (1977) discuss the importance of differences in race and sex discrimination, and the effects of unionization in the

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1 A different conclusion is reached in the study of real regional wage differentials. Recent studies that have adjusted for regional cost-of-living differences (Sahling and Smith [1983]) have found the real wage differential between the North and the South has not only been converging over time, but has been reversed in recent years.

wage structure component of the regional wage differential. To the author's knowledge, however, no study has been done on the changing importance of differences in the compositional mix of the work force and differences in regional wage structures on the overall size of regional wage differentials over time.

The purpose of this article is to estimate wage differentials between the East North Central region and two Southern regions in 1975 and 1983, and to discuss the changing nature of the differential over this period. The Southern regions considered are the East South Central and the South Atlantic. They were chosen to examine the widely held view that wages in the East North Central region are far out of line with wages in the Southern regions, and that this has been a major reason for the relative decline in manufacturing employment in the East North Central region over the past 20 years.

The East North Central area includes Ohio, Indiana, Illinois, Michigan, and Wisconsin. The South Atlantic region includes Delaware, Florida, Georgia, Virginia, West Virginia, North Carolina, and South Carolina. The East South Central area includes Kentucky, Tennessee, Mississippi, and Alabama.

I. The Magnitude of Regional Wage Differentials

In the two periods considered, 1975 and 1983, the East North Central region had the third-highest average wage level of the nine census regions, while the South Atlantic and East South Central areas had the two lowest. The average hourly wage of a nonfarm worker between the ages of 25 and 64 in 1975 was \$5.49 in the East North Central, compared to \$4.47 in the East South Central, and to \$4.49 in the South Atlantic. In 1983 the average hourly wage had risen to \$9.11 in the East North Central, to \$7.69 in the East South Central, and to \$7.76 in the South Atlantic (see *table I*). While money wages in the Southern regions were well below those in the East North Central region in both 1975 and 1983, the absolute percentage differentials declined by 3 percentage points over this period. The absolute wage differential between the East North Central and the South Atlantic regions went from about 18 percent in 1975 to 15 percent in 1983, while the differential between the East North Central and the East South Central regions went from 19 percent to 16 percent.

II. Theoretical Framework

Two basic theories of wage determination are posited to explain the existence of regional wage differentials: the neoclassical theory and the institutional theory. (Unless otherwise stated, the term "wage" will be used throughout this article to represent total labor compensation—wages plus supplemental benefits.)

The simple neoclassical model predicts that wages will be equalized across regions. This prediction rests on the assumption that labor and capital will move to where they can maximize their respective rates of return. Differences in wage levels across regions are expected to exist only in the short run when regional labor markets are out of equilibrium: both capital and labor take time to adjust to changing market signals. Since it is the purchasing power of the wage that is important to individuals, it is generally understood that it is the real, rather than the nominal, wage that neoclassical theory predicts would be equalized across regions (Sahling and Smith [1983]).

Elaborations have been made upon this simple model to bring into the fold nonwage factors affecting the location decision of labor and capital. Workers attempt to maximize their overall utility rather than simply their real wage. Similarly, firms attempt to maximize profits that are affected by more than just labor costs. Examples of nonwage factors affecting an individual's location decision are family considerations, such as employment opportunities for the spouse

Weighted Mean of Hourly Wage by Division, 1983 (in dollars)

	1983	1975
New England	8.92	4.80
Mid-Atlantic	9.39	5.63
East North Central	9.11	5.49
West North Central	8.56	4.87
South Atlantic	7.76	4.49
East South Central	7.69	4.47
West South Central	8.64	4.85
Mountain	9.02	5.36
Pacific	9.98	5.80

SOURCE: Data from 1983 and 1975 *Current Population Surveys*, Department of Commerce, Bureau of the Census.

TABLE 1

Two different regions of the South are considered in order to investigate the differences in the nature of the wage differentials between each of the two Southern regions and the East North Central region. In order to analyze their changing size and character over time, the differentials in two time periods are considered. The year 1983 was chosen because it was the most recent year for which the data were available. The year 1975 was chosen because the national economy was then at a point in the business cycle fairly similar to where it was in 1983, a fact that eliminates some of the differences in the magnitude of the differential over time due to cyclic variation in the demand for and supply of labor.

in a two-income household, amenity levels, and the quality of publicly provided services. Workers may require higher-than-average wages to locate in areas generally considered to have negative characteristics, such as air pollution, high population density, severe climate, and poor public services. Individuals may find that they can maximize their utility in a relatively low-wage region because of compensating nonwage considerations such as mild climate and good schools.

Similarly, firms take many factors into account when making location decisions. Among these factors are differences in the quality of the labor force, access to raw materials and markets, and proximity to the center of industry innovation. A firm may find that it can maximize profits by locating in a high-wage area because of cost and market advantages.

Since individuals and firms take into account nonwage factors when making location decisions, even if wages were driven by competitive forces, the movement of labor and capital would not necessarily equalize wages across regions. Rather, neoclassical theory would predict an equalization of utility and profits, which are composed of some mixture of wages, cost-of-living, amenities, etc. across regions. Because of the importance of nonwage factors, some difference in wages across regions would be expected to exist even in the long run and even after taking into account differences in worker and industry characteristics across regions.²

Many economists and industrial relations specialists believe that a satisfactory explanation for large and persistent regional wage differentials must go beyond the neoclassical model discussed above. Over the past 10 years, there has been a growing body of work on the importance of institutional forces on the wage adjustment process. Institutional factors include unions, racial and sexual discrimination, market concentration, and other noncompetitive forces that have a strong bearing on wages.

One common view within this literature is that wage changes, to a certain extent, are transmitted across regions as workers, and in some cases employers, attempt to maintain the wage standing of one group of workers relative to another across regions. These forces occur, both formally through collective bargaining, and informally through custom and convention.

Some researchers argue that one outcome of the existence of institutional factors is that regional wage differentials are decreased through comparisons and parity-bargaining between different groups of workers across regions (Martin [1981]). In some cases, workers adjust their wage expectations to maintain pay positions relative to other worker groups. This process is facilitated by the fact that unions and other labor groups are often organized on an industry-wide basis, or are represented in several industries or firms. While there is currently disagreement among labor economists about whether institutional factors have a long-term or merely a short-term effect on wages, their importance in the short run is widely recognized.

One often-cited institutional factor affecting wage differentials is unionization. Unionization affects an area's wage level to the extent that union workers, and perhaps some share of nonunion workers, can earn a wage that is different from what it would be without unionization. The actual effect of unionization on a region's wage level is the difference between a region's wage level, given the existence of unionization, and the wage level that would exist if there were no unionization. Thus a complete measure of the effect of unionization on regional wage levels should consider not only the difference between the wages of unionized and nonunionized workers, but also the amount of spillover from union wages on the determination of nonunion wages.³ Capturing the spillover effect of unionization on nonunion wages, however, is a difficult and slippery process that is avoided in most studies of regional wage differentials.⁴ Instead, many studies measure the effects of unionization on regional wage differentials as the proportionate union/nonunion wage advantage multiplied by the proportion of the work force that is unionized (Johnson [1983]; and Kiefer and Smith [1977]).

2 Within a competitive model, in order for industries to be competitive over time in regions where workers require wage premiums, there must be compensating cost factors associated with locating in those regions, such as nearness to raw materials, markets, and suppliers.

3 Most of the literature emphasizes the positive spillover effects of unions on nonunion workers when nonunion firms must compete with unionized firms or workers. Positive spillovers are assumed to be most acute for skilled nonunion workers who are costly to locate, hire, and train. Some researchers have also argued that a high degree of unionization in an area may lower the nonunion wage if workers are willing to accept a lower wage (a reservation wage) in a nonunion job in anticipation of future union employment and higher lifetime earnings (Johnson [1983]). Another possibility is that the existence of unions may have little or no effect on the nonunion wage. This may be the case if there is little competition between union and nonunion workers resulting from a low degree of local unionization, from a slack local labor market, or from workers waiting in the queue for union employment choosing unemployment over nonunion employment.

4 For further discussion of measuring the union-nonunion wage differential, see Moore, Newman, and Cunningham (1985).

III. Methods of Approach

As stated earlier, the regional wage differential can be separated into a portion that can be explained by differences in work force characteristics across regions, and a portion that cannot be so explained. The latter portion may reflect more regionally-specific differences, notably differences in the remuneration of particular characteristics. While both portions of the differential are potentially interesting subjects for investigation, the latter portion of the differential particularly concerns those who expect wages for similar workers in different regions to become equalized over time. The methodology used in this study permits a breakdown in the overall differential. It is the same methodology popularized by Oaxaca's 1973 study of the male/female pay differential and has become a standard decompositional approach.

The percentage wage differential between two regions (call them Region 1 and Region 2) can be decomposed into its compositional and wage structure components.⁵ In order to decompose the differential, one must determine each region's wage structure. This is done by estimating separate wage equations using multiple regression analysis with the log of the wage as the dependent variable. Worker characteristics are included as the independent variables. The resulting regression coefficients indicate how particular characteristics are rewarded in that region. In order to determine the portion of the differential due to compositional differences, the average wage of Region 1 workers can be compared with

the estimated wage of Region 2 workers in the absence of wage structure differences. To determine what portion of the overall differential can be explained by differences in the wage structure, the estimated wage of Region 2 workers, in the absence of wage structure differences can be compared with the actual average wage of workers in Region 2.

Since the actual earnings structure in the absence of regional differentials is not known, it is necessary to make some assumptions about what wage structure would exist if all regional wage structures were alike. There are two extreme possibilities: one is that the structure would be that estimated for Region 1, and the other is that the structure would be that estimated for Region 2. The fact that there is more than one possible estimate of the regional wage differential results in an index number problem. To deal with this problem, some researchers, such as Sahling and Smith (1983), averaged the estimated differentials resulting from using the bases of the two regions being compared. The exact meaning of the average, however, is difficult to interpret. Since the primary concern of this study is the effect of the East North Central's wage structure on regional wage differentials, the results using the East North Central as the base region are emphasized. This avoids the difficulties of interpreting the averages of the two extreme results. The results using the Southern bases will be discussed briefly to provide the reader with an idea of the range in the measures of the regional wage differentials.⁶ The procedure is illustrated below:

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If the East South Central (ESC) had the same wage structure as the East North Central (ENC), workers in the East South Central would receive:

$$\ln \hat{W}_{ESC} = f_{ENC} (\bar{X}_{ESC}),$$

\hat{W}_{ESC} = the estimated wage for ESC workers given the ENC wage structure,

f_{ENC} = the wage structure coefficients estimated for the ENC,

\bar{X}_{ESC} = vector of the mean values of the independent variables for ESC workers.

The portion of the percentage wage differential attributable to differences in worker characteristics is measured by:

5 Many studies of regional wage differentials estimate a national wage equation that includes regional dummy variables. The coefficients on the locational variables are interpreted as the estimated proportionate difference between the wage rate in the region and its value in the nation for comparable workers. One major presumption behind the use of this approach is that regional wage structures are similar to the national wage structure, in other words, that the earnings of persons with the same attributes do not differ among the regions in any systematic way. This view is based on the premise that the United States is, geographically speaking, a single economy, operating within a single set of institutions, consisting of people of different ages, sexes, races, skills, and attachments to the labor market and engaged in a variety of occupations and industries. Regional divisions are presumed to have no significance in and of themselves, but merely to represent different groupings of human and material resources (Hanna [1951]). Hence, regional differences in the composition of these groupings are presumed to be the primary reason for differences in earnings across regions.

The assumption of similar wage equations across regions was questioned by Denison as far back as 1951. Hanushek (1973) performed Chow tests for the equality of coefficients for regions, and homogeneity within broad regions was consistently rejected at the one percent level of significance. In other words, Hanushek found that worker characteristics were compensated differently across regions. With a nationally estimated equation, differences in the way worker characteristics are remunerated are lost in the intercept term.

For further discussion of the appropriate approach for measuring regional wage differentials, see Kiefer and Smith (1977).

6 Decomposition results using the Southern regions wage structures as the base are available on request from the author.

$$\ln \bar{W}_{ENC} - \ln \hat{W}_{ESC}$$

where: \bar{W}_{ENC} = the average wage of ENC workers, and

\hat{W}_{ESC} = the estimated wage of ESC workers, given the ENC wage structure,

while that portion attributable to differences in the wage structure is measured by:

$$\ln \hat{W}_{ESC} - \ln \bar{W}_{ESC}$$

where: \hat{W}_{ESC} = The estimated wage for ESC workers, given the ENC wage structure, and,

\bar{W}_{ESC} = the average wage of ESC workers.

IV. Model

In keeping with most studies on wage differentials, a standard human capital earnings model developed by Becker (1975) and Mincer (1970) is estimated. According to this model, individuals attempt to maximize their income through investment in schooling and on-the-job training. This standard human capital earnings model is specified as follows:

$$\ln W = B_0 + B_1S + B_2S^2 + B_3E + u$$

where:

- W = average hourly wage,
- S = years of schooling completed,
- E = potential years of work experience, and
- u = random error term.

The model is also specified to include a squared term for years of schooling to take into account diminishing returns to additional years of schooling.

Other work force characteristics associated with different wage levels are also included in the wage equation. They include a worker's sex, race, facility with the English language, marital status, union status, public or private employment status, full-time or part-time status, and occupation and industry affiliation? Including these variables in the earnings model provides some adjustment for productivity and skill differences, for the existence of discrimination in the labor market, and for the wage effect of unions.

Some studies have attempted to adjust for compensating nonwage factors in individual location decisions, such as cost of living and amenities. Data limitations, however, make it difficult to construct measures of many of these

compensating factors, particularly amenity levels. Studies have been done that estimate the wage differential across regions after adjusting for regional differences in the cost of living. Up until 1981, the Bureau of Labor Statistics published family budget indexes by three income categories for about 20 large metropolitan areas in the United States. Because no such data have been published on a census region basis, the data restrict analysis to a limited group of major SMSAs. Studies that have looked at real regional wage differentials have grouped the metropolitan areas for which data is available into broad regional groups (Sahling and Smith [1983]). These studies have thus considered only the real wage differential between regional groupings of large metropolitan areas. Cost-of-living data are not used in this study because they are not available on the desired geographical basis.

V. Data

The data sources used for this study are the 1975 and 1983 *Current Population Surveys* that contain information on worker characteristics and earnings from wages, salaries, commissions, and tips. Subsamples from each year were created to consist only of civilian, non-agricultural, private sector, and government workers between the ages of 25 and 65 years who worked either full time or part time (10 hours a week or more). The subsamples are limited to so-called prime age workers, in order to avoid addressing the unique characteristics of teen-age and elderly worker employment. Only workers who were recorded as working 10 hours or more per week were included because studies have found a large

7 The dummy variables are defined as follows:

- Sex: Dummy variable = 1 if the individual is male, and 0 if female;
- Race: Dummy variables for white, black, and other, with white individuals as the reference group; Spanish origin: Dummy variable = 1 if the individual is of Hispanic origin, and 0 otherwise. Serves as a proxy for not having English as a first language;
- Marital status: Dummy variable = 1 if the individual is married with spouse present, and 0 otherwise;
- Full time: Dummy variable = 1 if the individual is a full-time employee, and 0 otherwise;
- Class of worker: Dummy variables for individuals working in the private sector, the federal government, the state government, and the local government, with private sector workers as the reference group;
- Union coverage: Dummy variable = 1 if the individual is either a union member or covered under a union contract, and 0 otherwise;
- Occupation: Dummy variables for U.S. Census one-digit occupations, with operators as the reference group;
- Industry: Dummy variables for U.S. Census one-digit industries, with durable manufacturing as the reference group.

chance of response errors for those registering fewer hours (Sahling and Smith [1983]). The hourly wage rate is estimated using information on usual weekly earnings and usual hours worked per week. The data series does not include information on years of work experience, so the conventional proxy (age, minus years of schooling, minus six) is used instead. Also, because data are not available on a worker's facility with the English language, Hispanic origin is used as a very rough proxy for English language difficulties. While the type of information contained in the 1975 and 1983 surveys is not identical, some general comparisons of the results for the two years can be made.

VI. Decomposition of Wage Differentials for the 1983 Sample
 In 1983, the overall logarithmic wage differential between the East North Central and the South Atlantic was 20 percent, while that between the East North Central and East South Central was 18 percent (see *table 2*). Using the East North Central as the base wage structure, we find that differences in compositional mix made up only 30 percent of the wage differential between the East North Central and the South Atlantic, and only about 20 percent between the East North Central and East South Central.

The decomposition indicated that 70 percent of the wage differential between the

Decomposition of Regional Wage Differentials
 (East North Central base)

	1983		1975	
	East North Central/ East South Central (S = ESC)	East North Central/ South Atlantic (S = SA)	East North Central/ East South Central (S = ESC)	East North Central/ South Atlantic (S = SA)
Absolute differential ($\overline{W}_{ENC} - \overline{W}_S$)	\$1.36	\$1.50	\$0.89	\$0.98
Logarithmic differential ($\ln \overline{W}_{ENC} - \ln \overline{W}_S$)	0.18	0.20	0.20	0.23
Portion explained by different characteristics ($\ln \widehat{\overline{W}}_{ENC} - \ln \widehat{\overline{W}}_S$)	0.04	0.06	0.06	0.09
Percent contribution to total logarithmic differential	23%	29%	29%	39%
Portion explained by different wage structures ($\ln \widehat{\overline{W}}_S - \ln \overline{W}_S$)	0.14	0.14	0.14	0.14
Percent contribution to total logarithmic differential	77%	71%	71%	61%

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where in 1983:

$$\begin{aligned} \overline{W}_{ENC} &= \$8.27 \\ \overline{W}_{ESC} &= \$6.91 \\ \overline{W}_{SA} &= \$6.77 \end{aligned}$$

$$\begin{aligned} \ln \overline{W}_{ENC} &= 2.11 \\ \ln \overline{W}_{ESC} &= 1.93 \\ \ln \overline{W}_{SA} &= 1.91 \end{aligned}$$

$$\begin{aligned} \ln \widehat{\overline{W}}_{ESC} &= 2.07 \\ \ln \widehat{\overline{W}}_{ESA} &= 2.05 \end{aligned}$$

where in 1975:

$$\begin{aligned} \overline{W}_{ENC} &= \$4.91 \\ \overline{W}_{ESC} &= \$4.02 \\ \overline{W}_{SA} &= \$3.93 \end{aligned}$$

$$\begin{aligned} \ln \overline{W}_{ENC} &= 1.60 \\ \ln \overline{W}_{ESC} &= 1.39 \\ \ln \overline{W}_{SA} &= 1.37 \end{aligned}$$

$$\begin{aligned} \ln \widehat{\overline{W}}_{ESC} &= 1.53 \\ \ln \widehat{\overline{W}}_{ESA} &= 1.51 \end{aligned}$$

TABLE 2

An important limitation of the wage information reported is that it does not include supplemental benefits. Studies have found that supplemental benefits tend to be positively correlated with wages, so the estimated regional differential using wage data alone probably understates the actual differential in total labor compensation across regions.

East North Central and South Atlantic and close to 80 percent of the differential between the East North Central and East South Central are attributable to differences in wage structures. A Chow test verified that the wage structures of the Southern regions are significantly different from that of the East North Central region.

After taking into account differences in work force characteristics, the wage differential between the East North Central and both the Southern regions is the same, namely, about 14 percent. If the Southern regions are used as the base, the remaining differential between the East North Central and the two Southern regions after adjusting for compositional mix both fell slightly from 14 percent to 13 percent. Regardless of the base used, differences in regional wage structures appear to ac-

count for the lion's share of the wage differential.

While this is an interesting result in and of itself, it would also be useful to know the variables responsible for differences in wage structure. Most of the differences in wage structure, however, appear to be buried in the intercept term. This result may be partly explained by the omission of controls for regional differences in the cost of living, in amenities, and in supplemental benefits.

Wage Rate Equations, 1983
 (estimated standard errors in parentheses)

Dependent variable: <i>ln W</i>	East North Central	East South Central	South Atlantic
Constant	0.9883 (0.0245)	0.8019 (0.0377)	0.8513 (0.0255)
Education	0.0397 (0.0015)	0.0458 (0.0022)	0.0413 (0.0015)
Experience	0.0153 (0.0010)	0.0149 (0.0017)	0.0128 (0.0011)
18 Experience squared	-0.0002 (0.0000)	-0.0002 (0.0000)	-0.0002 (0.0000)
Sex	0.2588 (0.0068)	0.2780 (0.0109)	0.2443 (0.0073)
Race:			
White	---	---	---
Black	0.0003 (0.0098)	-0.0900 (0.0125)	-0.0997 (0.0083)
Other	-0.0314 (0.0256)	-0.0603 (0.0695)	-0.0391 (0.0346)
Spanish origin	-0.0309 (0.0217)	-0.0467 (0.0802)	-0.0859 (0.0165)
Marital status	0.0413 (0.0065)	0.0552 (0.0109)	0.0494 (0.0070)
Full time	0.1837 (0.0195)	0.1105 (0.0151)	0.1372 (0.0099)
Class of worker:			
Private sector	---	---	---
Federal government	0.0311 (0.0195)	0.1195 (0.0239)	0.0688 (0.0177)
State government	-0.0616 (0.0110)	-0.0707 (0.0174)	-0.0123 (0.0118)
Union coverage	0.1487 (0.0068)	0.1755 (0.0118)	0.1691 (0.0088)
R ²	0.4373	0.4551	0.4389
N	18,880	7,009	15,702

SOURCE: Data from 1983 and 1975 Current population Surveys, Department of Commerce, Bureau of the Census.

TABLE 3A

Even though the major sources of the differential appear to be buried in the intercept term, differences in returns to a few variables do stand out as important contributors to the wage differential due to structural differences (see *table 3a*).⁸ For example, higher returns for full-time employment in the East North Central account for 30 percent of the structural differential between it and the South Atlantic, and 35 percent of the structural differential between the East

workers, or why returns to experience would be greater for East North Central workers than for South Atlantic workers. It could be that the industries that are concentrated in the East North Central require more experienced, stable, full-time employees than industries concentrated in the Southern regions.

Differences in the degrees of racial discrimination between the North and South also appear to be a fairly important contributor to the

Wage Rate Equations, 1975
 (estimated standard errors in parentheses)

Dependent variable: <i>ln W</i>	East North Central	East South Central	South Atlantic
Constant	0.4564 (0.0657)	0.0914 (0.1163)	0.1866 (0.0769)
Education	0.0452 (0.0037)	0.0507 (0.0065)	0.0447 (0.0045)
Experience	0.0137 (0.0027)	0.0169 (0.0050)	0.0214 (0.0033)
Experience squared	-0.0002 (0.0001)	-0.0002 (0.0001)	-0.0004 (0.0001)
Sex	0.3319 (0.0196)	0.3424 (0.0381)	0.2626 (0.0241)
Race	-0.0283 (0.0290)	0.0919 (0.0463)	0.1197 (0.0279)
Marital status	0.0049 (0.0206)	0.0388 (0.0400)	-0.0390 (0.0275)
Full time	0.1052 (0.0245)	0.0526 (0.0491)	0.0901 (0.0305)
Union member	0.1148 (0.0173)	0.2205 (0.0372)	0.2045 (0.0279)
R ²	0.5206	0.5425	0.5069
N	2,069	594	1,299

SOURCE: Data from 1983 and 1975 Current Population Surveys, Department of Commerce, Bureau of the Census.

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TABLE 3B

North Central and the East South Central. Differences in returns for each additional year of experience account for 40 percent of the structural differential between the East North Central and the South Atlantic, while accounting for only 5 percent of the structural differential between the East North Central and East South Central.

There is no simple explanation for why returns to full-time workers would be higher for East North Central workers than for Southern

structural differentials. The differences in returns between black and white workers account for 14 percent of the structural differential between the East North Central and South Atlantic, and for 8 percent of the differential between the East North Central and East South Central. While differences in the degrees of racial discrimination between the North and the South have long been recognized, it appears that relative to other variables and to the unknown portion of the differential, the contribution of differences in racial discrimination played a small role in the wage structure component of the differential in 1983.

Another interesting result is that the wage premium of unionized workers is very simi-

8 Full regression results are available on request from the author.

lar across the three regions observed. In fact, differences in the returns to unionized workers show that in the East North Central, unionized workers have a slightly smaller wage advantage over non-unionized workers than is true in the two Southern regions. The wage premium of unionized workers is about 15 percent in the East North Central, compared to about 18 percent in the East

South Central and 17 percent in the South Atlantic. The slightly smaller union premium in the East North Central may result partly from the spillover effects of unions on nonunion wages. This seems probable, given the high degree of unionization and its associated threat effect in the region. But, as stated before, this spillover effect is difficult to measure. The similarities in wage pre-

Mean Values for Independent Variables, 1983
 (standard deviations from the mean in parentheses)

Dependent variable: <i>ln W</i>	East North Central	East South Central	South Atlantic
Constant	---	---	---
Education	12.9880 (2.6067)	12.3549 (2.9317)	12.5144 (2.894)
Experience	21.2579 (11.6783)	21.2350 (11.6274)	21.3799 (11.6998)
Experience squared	588.2824 (567.2277)	586.1243 (578.9908)	593.9879 (582.5812)
Sex	0.5570 (0.4967)	0.5476 (0.4977)	0.5346 (0.4988)
Race:			
White	0.8967 (0.3044)	0.8247 (0.3802)	0.8047 (0.3964)
Black	0.0916 (0.2885)	0.1711 (0.3766)	0.1875 (0.3903)
Other	0.0117 (0.1075)	0.0042 (0.0648)	0.0078 (0.0878)
Spanish origin	0.0165 (0.1274)	0.0032 (0.0562)	0.0355 (0.1850)
Marital status	0.7343 (0.4417)	0.7553 (0.4299)	0.7175 (0.4502)
Full time	0.8635 (0.3433)	0.8899 (0.3131)	0.8814 (0.3233)
Class of worker:			
Private sector	0.8231 (0.3816)	0.7871 (0.4131)	0.7916 (0.4061)
Federal government	0.0255 (0.1577)	0.0532 (0.2245)	0.0422 (0.2010)
State government	0.0398 (0.1955)	0.0594 (0.2363)	0.0544 (0.2269)
Local government	0.1116 (0.3145)	0.1057 (0.3074)	0.1118 (0.3151)
Union coverage	0.3426 (0.4746)	0.2217 (0.4154)	0.1700 (0.3756)

SOURCE: Data from 1983 and 1975 Current Population Surveys, Department of Commerce, Bureau of the Census.

TABLE 4A

miums to unionized workers across regions may reflect the relative pay-setting practices of unionized workers within industries across regions.

As stated earlier, a popular, although incomplete, measure of unionization's effect on the regional wage level is the proportionate union/nonunion wage advantage, multiplied by the proportion of the work force that is

in 1983 between the East North Central and the South Atlantic (see *table 2*). In contrast to the decline in the overall differential in both regional wage comparisons, the share of the differential due to wage structural differences was higher in 1983 than in 1975. The portion of the wage differential between the East North Central and the East South Central due to wage structure differen-

Mean Values for Independent Variables, 1975
 (standard deviations from the mean in parentheses)

Dependent variable: <i>ln W</i>	East North Central	East South Central	South Atlantic
Constant	---	---	---
Education	12.3245 (2.7458)	11.4895 (3.2228)	11.6821 (3.1300)
Experience	22.8545 (11.7477)	24.6004 (12.8308)	23.0627 (12.0892)
Experience squared	660.3341 (583.2343)	769.8099 (672.9978)	678.0376 (621.6552)
Sex	0.6247 (0.4342)	0.5735 (0.4946)	0.5613 (0.4962)
Race	0.9304 (0.2544)	0.8804 (0.3690)	0.8406 (0.3885)
Marital status	0.8392 (0.3673)	0.8374 (0.3690)	0.8147 (0.3885)
Full time	0.88334 (0.3210)	0.8924 (0.3099)	0.8767 (0.3288)
Union member	0.3524 (0.4777)	0.2432 (0.4290)	0.1620 (0.3684)

SOURCE: Data from 1983 and 1975 Current Population Surveys, Department of Commerce, Bureau of the Census.

TABLE 4B

unionized (see *table 4a*). Based on this procedure, the unionization effect in 1983 was 0.05 in the East North Central, 0.04 in the East South Central, and 0.03 in the South Atlantic. Hence, while the wage premium to unionized workers is slightly less in the East North Central than in the Southern regions, the union effect is greater because of the large concentration of unionized workers in this region.

VII. Changes in the Decomposition Over Time

The overall wage differential between the East North Central and each of the two Southern regions appears to have decreased between 1975 and 1983. The overall wage differential between the East North Central and the East South Central went from 20 percent in 1975 to 18 percent in 1983, and from 23 percent in 1975 to 20 percent

in 1983. Over the same period, the portion of the wage differential between the East North Central and the South Atlantic due to differences in wage structures differences rose from about 60 percent to 70 percent.

When the Southern regions are used as the base, differences in wage structures showed similar increases in their contribution to the overall wage differential. One interesting difference in the results using the Southern bases was that, in 1975, differences in compositional mix accounted for almost 50 percent of the wage differential between the East North Central and the Southern regions. Regardless of the base used, differences in compositional mix have become less important in the overall regional wage differentials over time.

In 1975, as in 1983, the major portion of the structural component of the differen-

tial is not identified in the wage equation. Again, the intercept terms raise the wage structure in the East North Central above that of the Southern regions. There were also similarities in the variables identified in the wage equation that are important contributors to the structural differential in 1975, as was the case in 1983. Differences in returns to full-time workers explain 35 percent of the structural component between the East North Central and the East South Central in 1975, compared to 30 percent in 1983. Differences in returns to full-time workers explain less than 10 percent of the structural component between the East North Central and South Atlantic in 1975, compared to 35 percent in 1983. This result suggests that, between 1975 and 1983, differences in returns to full-time employment became a more important source of the regional wage differential between the East North Central and South Atlantic.

Differences in degrees of racial discrimination were, as one might expect, even more pronounced in 1975 than in 1983. The decline in the role of racial discrimination in explaining wage structure differences may reflect a decline in discriminatory practices in the Southern regions between the two years considered.

Between 1975 and 1983, differences in the degree of unionization across regions persisted, but returns to unionization became more similar. In 1975, the difference in the wage advantage to unionization across regions was considerably greater than it was in 1983 (see *tables 3a* and *3b*). But, in 1975, as in 1983, unionized workers in the South received a greater wage premium than their East North Central counterparts.

The total union effect in 1975 was smaller in the East North Central (0.04), than it was in 1983. It was larger in the East South Central (0.05), and was little changed in the South Atlantic (0.03). The union effect in the East South Central was greater than in the East North Central in 1975 despite the larger share of unionized workers in the latter region. This is because of much higher wage premiums to unionized workers in the East South Central at the time.

Market pressures probably contributed to the convergence in regional wage differentials over the period observed. Between 1975 and 1983, total non-agricultural employment rose by only 3 percent in the East North Central, compared to 27 percent in the South Atlantic and to 13 percent in the East South Central. While both of these Southern regions experienced stronger employment growth than the East North Central, it appears that labor market conditions were even tighter in the South Atlantic. This is suggested not only by the exceptionally strong employment growth in the region, but also by the region's relatively low unemployment rates over the periods considered. For example, in

1983, the unemployment rate in the South Atlantic was 8.5 percent, compared to 12.3 percent in the East South Central. Because of tighter labor market conditions in the South Atlantic, one might expect the regional wage differential to show greater convergence between the East North Central and the South Atlantic than that which exists between the East North Central and the East South Central. Indeed, this appears to be the case. The percentage wage differential between the East North Central and South Atlantic declined by 13 percent between 1975 and 1983, while the differential between the East North Central and the East South Central fell 10 percent. The portion attributable to wage structure differences, however, rose for both sets of regions, as was discussed above. The major reason for convergence appears to be the growing similarities in work force composition between the East North Central and Southern regions.

VIII. Conclusion

This study finds great similarity in the nature of wage differentials between the East North Central and the East South Central and South Atlantic regions. In both 1975 and 1983, structural differences account for most of the wage differential between the East North Central and the Southern regions. There are also similarities in the way that the differential changed between 1975 and 1983. For both regional comparisons, the importance of wage structure differences in the overall regional wage differentials grew over the time period considered. This wage convergence appears to result more from growing similarities in the composition of the work force than from returns to worker characteristics. The characteristics of the populations in the Southern regions have become more similar to those of the East North Central population, causing the importance of compositional differences in the overall wage differential to decline (see *tables 4a* and *4b*). The rise in the importance of the structural component appears to be solely attributable to the declining importance of compositional differences across regions.

While major sources of the differential remain unknown, it is clear that wage differentials continue to exist between the broad regional groupings observed in this study. Furthermore, adjustments for the standard productivity and skill-related variables, degrees of unionization, and the existence of race and sex discrimination, only eliminate about one-quarter of the overall regional wage differentials.

One encouraging result is that the wage differential between the regions considered declined between 1975 and 1983. Even if the decline continues at a rate similar to that expe-

rienced over the period (although there is no reason to expect this), nominal regional wage differentials can be expected to persist for some time. This suggests that considerable attention should be given to improving productivity in the East North Central and in other high-wage regions, in order to compensate for the region's higher, although converging, wages. Greater attention should also be given to the importance of nonwage factors that can be affected by regional policies, such as differences in the provision of public goods and services, in the unexplained portion of regional wage differentials.

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