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Spatial Routes to Gender Wage (In)equality: Regional Restructuring and Wage Differentials by Gender and Education*

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Abstract: I examine how different dimensions of restructuring are related to gender wage inequality. The analysis extends research on regional wage differentials to include differentials between men and women in two educational groups at opposite ends of the educational hierarchy. Relative wages across regional labor markets in the United States are modeled in a multilevel framework as outcomes of variation in economic conditions associated with restructuring. Using microdata from the 1990 PUMS-A 5 percent census files, as well as independent sources of macrodata on counties, I show that the direction of wage changes associated with each dimension of restructuring generally does not differ by gender or education. Wages are either higher or lower than the average labor market for all groups. However, there are significant differences in relative wages by gender and many important differences between the two educational groups in the spatial distribution of gender wage inequality. Several "spatial routes" to gender wage equality emerge that differ from the dominant temporal explanations of the declining gender wage gap and differ according to the educational background of workers.

Key words: economic restructuring, regional wage differentials, gender wage gap, class and educational difference.

Several studies have explored the spatial effects of labor market restructuring on gender differences in occupational shifts, the concentration of women's employment in specific occupations and industries, women's labor force participation, and poverty among female-headed households (Bagchi-Sen 1995; Scott 1992; Jones and Rosenfeld 1989; Lorence 1992; Kodras and Padavic 1993; England 1993; Ward and Dale 1992; Jones and Kodras 1990). This literature begins to fill the gap in our understanding of the relationship between gender inequality and economic restructuring, but several important aspects remain underdeveloped. In particular, most empirical research has focused on occupational outcomes, although the underlying concern is usually with the effects of occupational shifts on wages. As far as I know, there are no studies that offer a more direct investigation of the relationship between gender wage inequality and regional economic restructuring during the 1980s.

I combine an interest in gender inequality with geographic investigations of wage differentials across labor markets. Although previous research has found regional pay differentials to be substantial, we do not know whether the pattern of wage variation is different for men and women (Angel and Mitchell 1991). I measure economic restructuring as directly as possible in regional labor markets, compare the effects of economic restructuring

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on the wages of men and women, and estimate the spatial association between the gender wage gap and several key dimensions of restructuring.

Because recent research on economic restructuring points to the importance of skills in determining relative positions in the new economy, I focus on labor market variation in the gender wage gap for groups of workers with different educational backgrounds. Linda McDowell (1991) highlights the fact that class divisions among women are widening at the same time that gender divisions are narrowing. In fact, by some measures wage inequality is actually higher among women than among men in the United States (McCall 1998). To address the issue of skill and class differences, I compare the spatial relationship between restructuring and the gender wage gap for two groups of workers, those with a college degree and those with less than 12 years of formal schooling.

After reviewing studies of the gender wage gap, I provide an overview of two positions on the relationship between gender inequality and economic restructuring. Although my interest is primarily with wage inequality, I incorporate insights from studies of occupational gender segregation that are also concerned with broad economic change. The second section focuses more directly on the dynamics of regional wage variation and draws out the implications for gender differences in wage levels and gender wage inequality. The third section discusses the application of multilevel models to this and related research questions. With the exception of Ward and Dale (1992), regional studies of gender inequality do not use rigorous controls for individual human capital characteristics or intralabor market correlation bias. Among other things, failing to control for these factors decreases standard errors and may result in misleading findings (Jones 1991; Bryk and Raudenbush 1992).

I use a relatively straightforward multilevel model to analyze regional variation in the macro relationship between restructuring and a "micro-adjusted" gender wage gap. Despite strict statistical controls, I find that the pattern of regional variation in wage levels associated with key dimensions of economic restructuring differs for men and women and that these differences form the basis for spatial variation in the gender wage gap. Moreover, there are significant differences in the results for the two educational groups. I conclude that the dynamics associated with spatial variation in the gender wage gap, or what I term "spatial routes" to gender wage (in)equality, are not only mediated by class but are more complex than those discussed in the literature on temporal change. This allows an expanded conceptualization of the structure of gender wage inequality that is rooted in, and contingent on, the social dynamics of economic restructuring.

Restructuring and Gender Wage Inequality

Over the past 25 years, gender wage inequality in the United States has fallen at the same time that economic restructuring has led to increased inequality of every other kind (Karoly 1993). Despite the obvious coincidence of these temporal trends, conceptualizing the relationship between gender inequality and economic restructuring has proven difficult. On the one hand, changes in gender wage differentials over time are typically modeled as a function of individual, human capital characteristics and are therefore unlikely to be linked to macro explanations. On the other hand, the connection between restructuring and inequality has been formulated mainly in terms of the mechanisms leading to *rising* wage inequality, overshadowing the anomalous case of gender inequality. To begin to bridge this divide, I first discuss the temporal decline in the gender wage gap and highlight differences by educational background. I then turn to two different perspectives on how gender inequality is associated with key dimensions of economic restructuring.

The gender wage gap declined during the 1980s more than it did at any other time in this century (Goldin 1990). Using the most detailed data available to measure gender differences in qualifications related to pay, such as experience and job tenure, Allison Wellington (1993) found that at least half of the decline in gender wage inequality could not be explained by these factors. Blau and Kahn (1994) also found that most of the decline in the average gender wage gap went "unexplained" in their wage determination models, while the rest was due to improvements in women's human capital characteristics relative to men (see also Macpherson and Hirsch 1995). In terms of the unexplained portion of the gap, Blau and Kahn are unusual in their attention to the greater declines in the gender wage gap at the bottom of the wage distribution than at the top, arguing that the demand for women's unmeasured skills (part of the unexplained component) favored women "at lower levels of labor-market skills but favored men relative to women at higher levels" (1994, 28).

The need to look more closely at how gender wage inequality varies across groups, over time and space, is further evident in the descriptive statistics for four educational groups presented in Table 1. Three patterns are clear. First, in Table 1a, the percentage decline from 1979 to 1989 in gender wage inequality was lowest for college-educated workers (7.2 percent) and highest for the non-college educated (13.9 and 15.0 percent). Second, a simple breakdown of the portion of the decline attributed to changes in men's wages and women's wages reveals that the majority of the decline in the college wage gap was due to changes in women's wages, not men's, as is true for the three other educational groups. This stems from the fact that real average wages rose more among college-educated women than among college-educated men, while they fell more among less-educated men than among less-educated women, as shown in the last columns of Table 1b. Third, the level of gender wage inequality is lowest among the college educated in both 1979 and 1989. All three patterns, along with Blau and Kahn's findings, strongly suggest that the dynamics associated with the closing of the gender wage gap are mediated by class.

In terms of spatial trends, Table 1c shows that in a sample of 554 local labor markets (described in greater detail below), regional variation in the gender wage gap is not only substantial for each educational group, but the profile of gender inequality by education may vary across labor markets as well. Other researchers have demonstrated that occupational segregation varies more across labor markets than over long periods of time (Abrahamson and Sigelman 1987). Similarly, regional variation in gender wage inequality presented in Table 1c is greater than in time series data provided by Macpherson and Hirsch (1995), in which the gender wage gap ranged from 64.8 percent to 76.4 percent over the 1973–93 time period.

In contrast to previous micro-oriented research, I look to economic restructuring to help explain these changes in the gender wage gap. At the risk of oversimplification, I have derived two basic positions from the diverse literature on post-Fordism, postindustrialism, deindustrialization, and feminist investigations of all three (Glass, Tienda, and Smith 1988; Lorence 1991). The first follows from temporal trends and considers economic restructuring to have been a major factor in the reduction of the gender wage gap. To begin with, most of the literature on economic restructuring has been concerned with the fall in men's real wages, which has been associated with (1) broad industrial shifts from manufacturing to services and (2) deunionization and casualization within goods- and service-producing industries alike (Harrison and Bluestone 1988). By reducing men's wages, these factors have emerged as key explanations of the falling gender wage gap, especially among non-college-educated workers. In the Canadian context, Pat Armstrong (1996) refers to this process as "harmonizing downward," and it

Table 1a

Gender Wage Ratio by Education, 1979–1989

	1979	1989	Δ 1979–1989 (%)		Δ Due to	
	F/M Ratio[a] (%)	F/M Ratio (%)	(Absolute Δ)[b]		Men (%)	Women (%)
Less than high school	56.0	63.8	13.9	(7.8)	72.4	27.6
High school	56.0	64.4	15.0	(8.4)	81.8	18.2
Some college	63.1	69.1	9.5	(6.0)	77.8	22.2
College or more	70.5	75.6	7.2	(5.1)	23.1	76.9
Average	58.8	67.7	15.1	(8.9)	64.3	35.7

Table 1b

Median Hourly Wages by Education and Gender, 1979–1989 (1995 Dollars)

	1979		1989		Δ 1979–1989 (%)	
	Men	Women	Men	Women	Men	Women
Less than high school	13.87	7.77	11.24	7.17	–19.0	–7.7
High school	16.44	9.21	13.74	8.85	–16.4	–3.9
Some college	16.78	10.59	15.64	10.80	–6.8	2.0
College or more	20.49	14.44	21.12	15.96	3.1	10.5
Average	16.78	9.87	15.33	10.38	–8.6	5.2

Table 1c

Regional Variation in the Gender Wage Ratio by Education, 1989

	Mean F/M Ratio[c] (%)	Range (%'s)
Less than high school	68.4	43.9–91.9
High school	67.3	48.9–85.8
Some college	70.2	52.0–93.2
College	74.5	60.5–99.6
Average	69.5	57.7–85.6

Source: Census of the Population Public Use Microdata Samples (5 percent) for 1980 and 1990.
Note: The samples for Tables 1a and 1b include U.S. nonfarm and non-self-employed adults, 25–64, at work, with hourly wages between \$1 and \$250 (N = 3,488,859 in 1979 and N = 4,377,738 in 1989). The sample for Table 1c includes 554 regional labor markets. See data section for labor market sample restrictions (N = 3,226,870).
[a] F/M ratio is the ratio of raw median female to male hourly wages multiplied by 100.
[b] The absolute change in percentage points is given in parentheses.
[c] Mean F/M ratio is the unweighted mean of the ratio of raw mean female to male hourly wages multiplied by 100 for each of the sample's 554 labor markets.

has led to the conclusion that inequality on the basis of gender is giving way to deeper divisions by class and race. From a different perspective, many studies of occupational and educational shifts document an overall upgrading of women's experience and skills relative to men's, resulting in upward mobility, increased representation of women in the professions and management, and greater employment opportunities in the burgeoning service sector (Gittleman and Howell 1995; DiPrete and Forrestal 1995). Many of these studies document slow but steady progress.

The alternative view holds that gender-based inequality has become more extreme as a result of economic restructuring. First, many feminists criticize proscriptive post-Fordist and postindustrial theories for their focus on male-dominated occupations in high-technology, technology-intensive, and advanced postindustrial industries (Jenson 1989; McDowell 1991). They argue that women are excluded from the best technical jobs at all skill levels and are only admitted to those male-dominated jobs deskilled by technological transformations (Reskin and Roos 1990). Second, scholars have seized on the image of immigrant women working in sweatshops or in low-wage personal and retail services and have collapsed gender together with race and national origin to argue that segmentation is intensifying (Harvey 1989; Leborgne and Lipietz 1992; Harrison 1994). Third, the more general trend toward casualization, including part-time work, temporary service, homework, and informal self-employment, also encompasses work that has traditionally and overwhelmingly been done by women (Cobble 1993). Finally, scholars point to the fact that women are disproportionately employed in low-wage services (Christopherson 1989; Clement and Myles 1994).

According to this second view, women, especially those without a college education, are among the most vulnerable members of the new economy. In fact, one could argue that gender inequality has risen over time if we compare the wages of non-college-educated women, which have fallen, to those of college-educated men, which have risen slightly (see Table 1b). At a minimum, these positions consider the decline in gender inequality to be less than what it should have been given gains in women's relative qualifications (Albelda 1986; Tienda, Smith, and Ortiz 1987). The focus is unambiguously on levels of gender inequality that are still unacceptably high.

Restructuring and Regional Wage Differentials

The notion that women may be worse off as a result of restructuring flies in the face of temporal trends showing widespread declines in gender wage inequality. But it is not inconsistent with variation in the relative economic position of women, and different groups of women, across space. In fact, the puzzling trend toward rising inequality within demographic groups is undoubtedly due at least in part to spatial variation in wage levels. I examine spatial variation in gender wage inequality in terms of gender and educational differences in local wage levels. This approach takes into consideration the economic conditions associated with gender wage inequality.

More formally, previous analyses have examined the question of whether the processes shaping changes in wage levels are the same for different groups of workers in different regional and local labor markets (Massey 1984; Peck 1989, 1996). The basic elements of this approach have been employed by geographers, economists, and sociologists, but there has been considerable diversity in the groups of workers studied, aspects of local economic conditions measured, and geographic units selected. This latter issue has been a particularly contentious one among geographers, who have been at the forefront of conceptualizing what is meant by a local labor market. Minimally, it refers to the institutional conditions governing supply and demand, in which workers and jobs are matched in concrete local settings, which is "the scale at which labor markets are lived" (Peck 1996, 112; Hanson and Pratt 1992).

In practice, wage variation has been investigated across a wide range of geographic units, including broad census regions, states, metropolitan areas, and counties. The most common of these is the metropolitan area, termed the regional labor market by Morrison (1990). Although the metropolitan area has arguably become the preferred unit of analysis, it has drawbacks, the principal one being its inclusion of many smaller, more local, labor markets. A more obvious drawback is its exclusion of nonmetropolitan areas. As discussed in more detail below, the scale of labor market I chose was constrained by available data sources and my interest in investigating wage variation across metropolitan as well as nonmetropolitan areas. I use the term regional labor market to refer to labor markets that in some cases may be smaller than metropolitan statistical areas, but not as small as what Morrison considers a "local" labor market, which is organized around one or more related establishments.

I organize the economic factors that should affect regional wage levels into three groups: insecure employment conditions, industrial composition and shifts, and technology and trade. Perhaps the most common measure of overall employment conditions is the local unemployment rate. Joblessness has been shown to result in lower wages, especially among less-educated male workers, whose wages tend to be more sensitive to regional variation than those of other workers (Blanchflower and Oswald 1994). The immigrant share of the work force is another measure of local employment conditions that has been linked to lower wages among less-skilled workers (Topel 1994). Each measure is hypothesized to result in lower wages among non-college-educated workers because they have traditionally been less mobile and therefore less likely to exit labor markets with an oversupply of labor, though in recent years these groups have become more mobile in response to declining economic opportunities (Borjas, Freeman, and Katz 1996; Frey 1995). The consequence is an increase in competition that weakens the bargaining contract between workers and employers throughout the labor market (Blanchflower and Oswald 1994). I hypothesize that this form of wage competition is also likely to develop in labor markets with a disproportionate share of casualized workers—involuntary part timers, the informally self-employed, and temporary service workers —although it has not been included in any regional labor market studies that I know of.

The first two measures, unemployment and immigration, have been associated with growing income inequality and declining wages at the bottom of the wage distribution, especially among men. The question for a regional analysis is whether, like trends at the national level, the consequences are more severe for men than for women in labor markets with these three forms of what I term *insecure employment conditions*. If the second, more pessimistic view outlined above is correct, and low-income women are the most vulnerable group in the economy, these aspects of regional labor markets may actually be associated with greater gender wage inequality at the bottom of the educational hierarchy. College-educated workers are less likely to be affected, but they are also frequently employed in jobs that do not require a college degree. College-educated women may substitute for college-educated men in this environment, driving down wages among the college educated overall but resulting in lower levels of gender wage inequality.

Another key aspect of labor markets that affects wage levels is the *industrial composition of demand*, and especially an export base of manufacturing. High union density in the north central region was one of the main factors contributing to broad regional wage differentials during the 1950s and 1960s. These differentials have since diminished with the decline of unions and manufacturing, though intermetropolitan variation may have increased in some regions (Angel and Mitchell 1991). Although higher wages for non-college-educated workers in locally dominant and unionized industries may have spilled over into non-unionized sectors of a local private economy, contributing to lower overall levels of income inequality, gender inequality was one form of inequality that was probably higher all along. I expect measures of deindustrialization to identify regions that were centers of manufacturing in the Fordist era and as such should be associated with higher levels of gender inequality. Whether service industry growth and service sector dominance, the flip side of deindustrialization, is associated with greater gender inequality, as the view of the service sector as a low-wage female ghetto would have it, or with less gender inequality, as the harmonizing downward position would have it, is an open question.

A third group of causal factors are those related to *technology and trade*. These factors have been analyzed mainly at the national and regional levels, with a plethora of case studies of areas specializing in high-technology manufacturing and services and with the most developed ties to the global economy (Soja 1989; Sassen 1991; Saxenian 1994). There is no reason, however, why these factors should not be counted among the standard set of local economic indicators in studies using smaller-scale units. Indeed, they may even come to replace manufacturing as the post-Fordist and postindustrial transformations unfold.

Although it is a matter of considerable debate whether, and if so how, technology and international trade are responsible for increasing income inequality, high-technology industries tend to be concentrated in regions with high average wages. This is mainly due to proximity to major urban areas, which have higher costs of living, and to an occupational structure that is top-heavy with professionals, managers, and highly skilled technicians. Although women's as well as men's wages are likely to be higher than average, especially among the college educated, the top echelon of leading sector industries (in both manufacturing and services) is dominated by white, well-educated men (Brint 1991; Sokoloff 1992; Clement and Myles 1994; Larner 1996). As feminist and other critics of the rosy scenario of technological advancement suggest, this would lead to greater inequality at the top. At the bottom, the profile of gender inequality depends on whether the predominant industries are (1) low-waged and non-unionized, such as garments and electronics; (2) high-waged and unionized, such as aerospace; or (3) mid-range white-collar jobs in the producer services and low-wage, non-unionized jobs in the consumer services that accompany them (Sassen 1991; Bagchi-Sen 1995). Only in the second case are high-waged jobs expected to be available (primarily) to non-college-educated men, leading to greater gender inequality at the bottom.

Methods

To examine the effects of economic restructuring on regional wage levels and wage inequality by gender, I use a two-level model with detailed data on individuals and regional labor markets. The two-level approach has two main advantages. First, the estimation of regional effects accounts for heterogeneity among individuals within regions by distinguishing individual characteristics from their ecological aggregates. This amounts to a statistical correction for aggregation bias, which can lead to inflated variance components when regions are the only unit of analysis. Second, the estimation of individual effects accounts for the degree of homogeneity shared among individuals within the same region and the variation in the degree of homogeneity across regions. This is achieved statistically by correcting for common-group correlation in the error term, which can lead to underestimated standard errors when individuals are the only unit of analysis.

Since the ordinary least squares (OLS) assumption that random errors are independent and have constant variance is violated, I use iterative maximum likelihood procedures to obtain unbiased and efficient estimates of the two-level model parameters (Jones 1991; Bryk and Raudenbush 1992; Xie and Hannum 1996). The model consists of an individual-level and a macro-level equation with error terms specified at each level and uncorrelated across levels. The equations are run separately for men and women in order to investigate whether there are gender differences in regional wage variation, and if so, how such differences contribute to variation in gender wage inequality. For simplicity, however, I discuss the equations in gender-neutral terms until I define how the gender wage gap is estimated.

The individual-level equation specifies Y_{ij} as the log hourly wage of an individual i in labor market j, $\mathbf{X}_{ij}$ as a vector of binary education variables for individual i in labor market j, and $\mathbf{b}_j$ as a vector of corresponding coefficients for each of the J labor markets:

$$\ln Y_{ij} = b_{0j} + \mathbf{X}_{ij}\mathbf{b}_j + \mathbf{R}_{ij}\mathbf{r}_j + e_{ij}. \quad (1)$$

The education variable is constructed to consist of four categories based on completed years of schooling: less than 12 years, 12 years, between 13 and 15 years, and 16 and more years. The error term e_{ij} is assumed to have a mean of zero and constant variance. I include a standard vector of $\mathbf{R}_{ij}$ individual human capital variables that are assumed fixed across j. These are marital status (married = 1), number of own children, immigrant status (foreign born = 1), potential experience (age-education-5) and its square, hours worked, three binary variables for race-ethnicity (black, Asian, Latino), and nine binary variables for ten broad industries of employment.

Variation in wage levels left unexplained by Equation (1) is estimated in macro Equation (2):

$$b_{0j} = g_{00} + \mathbf{Z}_j\mathbf{g}_0 + m_{0j}. \quad (2)$$

The micro-adjusted estimate of the intercept b_{0j} is a function of the grand mean across j (g_{00}) and an error term (m_{0j}) representing the random deviation of each labor market from the grand mean. This random variation is partially explained by a matrix of $\mathbf{Z}_j$ variables describing the economic conditions of each labor market j. The variables of substantive interest will be discussed in the next section, but I note here that included in $\mathbf{Z}_j$ is a set of controls for unmeasured price differences across j. Population size and urban area control for the tendency of wages to be higher in large cities; binary variables for the Northeast, West, and Midwest control for differences in broad regional wage levels; and the share of manufacturing plants that employ more than 500 workers is added as a control for the effect of large manufacturing plants on area wage levels. Unfortunately, unionization rates at the county level are not available. The vector of coefficients ($\mathbf{g}_0$) for these controls and all other macro variables represents the effect of labor market characteristics on wage levels after controlling for individual human capital characteristics and intralabor market correlation bias.

The primary outcome variable is the intercept coefficient (b_{0j}). The intercept (b_{0j}) in Equations (1) and (2) represents average wages for the omitted educational category in labor market j when all $\mathbf{R}_{ij}$ are centered around their gender-specific group (j) means. The models are first run with college-educated workers as the omitted category and a second time with high school dropouts as the omitted category. My analysis centers on the systematic variation between average wages for these educational groups and indicators of labor market restructuring, represented by the macro parameters ($\mathbf{g}_0$) in Equation (2). The macro parameters estimate whether the $\mathbf{Z}_j$ characteristics are associated with wages that are significantly above or below the average labor market. Since the wage equations are run separately for men and women, the estimate of the gender wage gap (G) is described in Equation (3) as simply the difference between the average female wage and the average male wage, represented by the female and male semilog intercepts where f = female and m = male:[1]

$$G = b_{0j}^{f} - b_{0j}^{m}. \quad (3)$$

The effect of $\mathbf{Z}_j$ on G is determined by the combined (net) effect of the macro coefficients ($\mathbf{g}_0$) in the male and female equations. Substituting (2) into (3) results in Equation (4), the micro- and macro-adjusted gender wage gap for the group of

[1] The gender wage gap is often expressed as the female/male wage ratio in nonlog form. This is easily derived from Equation (3) as exp(G).

workers in the omitted educational category when the **Z** variables are evaluated at their means:

$$G = \Sigma \mathbf{Z}\mathbf{g}^f - \Sigma \mathbf{Z}\mathbf{g}^m. \quad (4)$$

In addition, the contribution of any one (male and female) macro coefficient to the net increase or decrease in the gender wage gap is simply derived from Equation (4) by substituting a unit or standard deviation change from the mean in the specified **Z** variable. This yields an estimate of the gender wage gap in regional labor markets with an above or below average level of the **Z** variable, net of all other macro variables.

Data

Individual-level data come from the 1990 5 percent Census of Population Public Use Microdata Samples (PUMS-A). I restricted the sample to adults, aged 25–64, who work either part time or full time, are not self-employed or farm industry workers, have hourly wages between $1.00 and $250.00, and reported a place-of-work code. The hourly wages are derived from 1989 annual earnings, weeks worked, and number of hours worked in a usual week. Hourly wages therefore refer to 1989 data, and the descriptive statistics from the 1980 PUMS-A refer to 1979 data. The reported place-of-work code allows grouping of individuals according to their area of employment rather than the more usual area of residence. This facilitates matching with the macro-level data, which is derived from county employer reports of the work force.

My operationalization of the macro unit of analysis, the regional labor market, is also derived from the PUMS-A. The smallest geographic units in the PUMS-A are Public Use Microdata Areas (PUMAs), which are state planning districts composed of county groups with a population of 100,000 or more. I use PUMAs rather than Metropolitan Statistical Areas (MSAs) because they encompass urban/rural differences in economic development (e.g., suburbanization and ruralization of manufacturing plants) and because of the availability of a much larger sample of labor markets. In terms of scale, PUMAs fall somewhere between MSAs and counties, both of which have been used in other studies. The sample of 554 PUMAs is displayed in Figure 1.[2]

I use the PUMS-A as well as several independent sources of macro data disaggregated to the county level to directly measure the three sources of regional economic variation discussed above. The measures of insecure employment conditions are derived from the entire weighted PUMS-A samples within each PUMA. I have created a composite measure of casualized employment that includes the percentage of (three-digit) temporary service industry workers, part-time and part-year workers, and the self-employed in unincorporated businesses, which I include as a measure of informal self-employment. Other aspects of casualization measured by researchers using the Current Population

[2] There are a total of 1,142 PUMAs in the original 1990 PUMS-A data set. Because some counties straddle more than one PUMA, I aggregated the PUMAs to create the largest possible sample of PUMAs for which each county was encompassed by only one PUMA. This resulted in a total of 904 units. A small number of PUMAs were far larger in geographic coverage than a local labor market would be. These PUMAs, mostly in Massachusetts, Nevada, and Montana, were deleted from the sample. In order to maximize the number of occupational categories for constructing an occupational segregation measure used in a companion article, I further reduced the number of PUMAs by excluding those with observations of less than 2,000 men and women. The resulting sample of 554 PUMAs includes 83 percent of the original sample. I have also run these analyses with all 904 PUMAs as well as the largest 200 PUMAs (all urban areas) and found few substantive differences in findings. The main states omitted from the present analysis of 554 PUMAs are the Great Plains states (due to their small sizes) (Fig. 1).

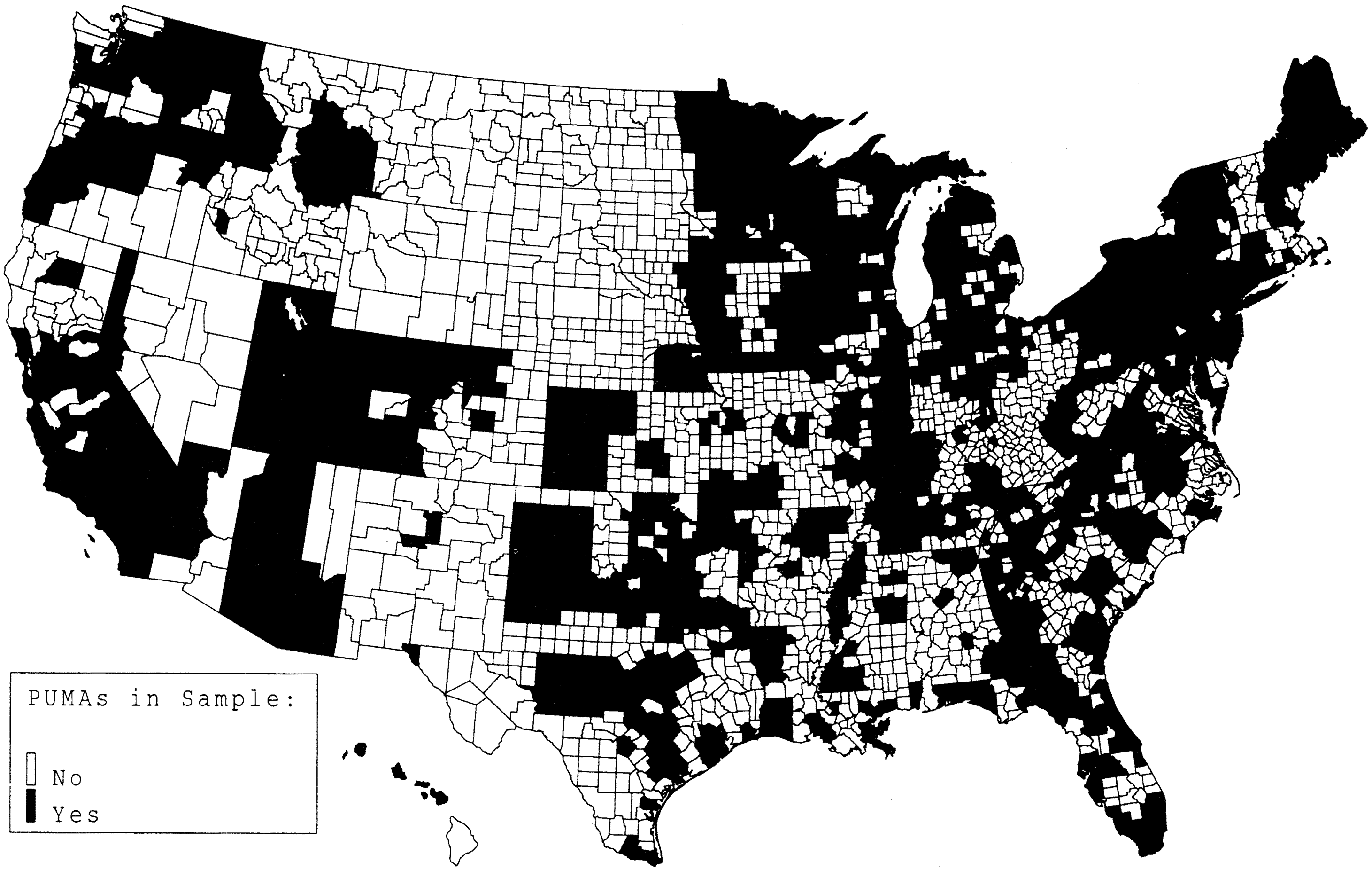

Figure 1. Sample of 554 PUMAs (composed of U.S. counties and county groups). *Source*: Census of the Population Public Use Microdata Samples (5 percent) for 1990.

Survey (CPS) were not available in these data, such as involuntary part-time labor and independent contracting. Two further measures of employment conditions are the unemployment rate and the percentage of immigrants in the local work force.

For measures of industrial composition and shifts, the Regional Economic Information System (REIS) provides employment data for broad industrial categories for each county and in each year from 1969 to 1992 (U.S. Bureau of Economic Analysis 1994). I use REIS to create population measures of broad industry growth and decline over the decade of the 1980s, measured as the average annual rate of growth between 1979 and 1989. These are explicit measures of structural change. Of particular interest is the process of deindustrialization, as indicated by decline in local manufacturing employment over the 1980s, as well as service growth. Because manufacturing decline is not necessarily accompanied by service growth in the same spatial location, each should be conceptualized as distinct dimensions of restructuring. I also include a measure of employment in manufacturing industries as a share of employment in service industries in 1989 to (1) control for the relative size of each industry in regional labor markets and (2) identify labor markets where manufacturing is still significant.

I rely on several different sources for detailed measures of trade and technology. The 1987 Economic Censuses provide information on the location of manufacturing plants and the employment size of manufacturing establishments by four-digit SIC groups (U.S. Bureau of the Census 1994). These data measure the population of high-technology and trade-sensitive manufacturing establishments as a share of total manufacturing establishments within each county group. The typologies of high-technology and trade-sensitive industries were developed at the U.S. Department of Labor and the Bureau of Economic Analysis (Hallock, Hecker, and Gannon 1991; Bednarzik 1993). High-technology and import-sensitive industries were selected based on the levels of research and development (gathered by National Science Foundation) and import/export ratios in four-digit SIC industries. Strober and Arnold (1987), Castells (1989), and Colcough and Tolbert (1992), among others, use Riche, Hecker, and Burgan's (1983) typology of high-technology industries, which also includes service industries. Employment share in high-technology service industries was calculated from the full weighted PUMS-A sample and, together with finance, insurance, and real estate industry growth over the 1980s from REIS, should be considered a measure of those advanced producer services that are most likely to be linked to the global economy.[3]

Although strictly speaking the REIS measures of industry growth and decline are the only explicit measures of change over time, there is some justification for cautiously interpreting static measures as indirectly of interest to processes of

[3] Location of manufacturing plant data from the 1987 Economic Censuses does not provide employment information but only the number of establishments in employment range categories. Although employment can be estimated from these categories, the last category is open-ended and therefore much less accurate than the establishment data. Twenty-five three-digit SIC industries were classified as high-tech or technology intensive. Most fell under the two-digit categories of chemicals, refining, machinery, electronics, transportation equipment, and instruments. Seventy-six four-digit SIC industries were classified as import sensitive and were found across the full range of two-digit industries, but especially in food, textiles, apparel, and miscellaneous products (see Hallock, Hecker, and Gannon 1991; Bednarzik 1993). Since the PUMS-A industrial classification system is of comparable detail to the SIC for service industries, I use employment instead of establishment shares in high-technology service industries. The high-technology service industries include computer processing, engineering and architectural, research and testing, management and public relations, and miscellaneous professional and related services.

change. The two-level model estimates the net degree of inequality associated with key aspects of the local economy, all else being equal. Since we know that different aspects of the economy are becoming more or less prevalent, spatial analysis of static measures may offer insights into the temporal structure of inequality. At a minimum, spatial analyses uncover the relationship between existing characteristics of regional economies and the structure of gender inequality, which can then be used in the assessment and evaluation of different economic development strategies. For purposes of clarity and validity, however, the discussion of results in the following section is limited to comparisons with the average labor market in 1990 and should not be extrapolated to trends over time. It is also important to remember that although the gender wage gap has been declining throughout the country, we are concerned with spatial variation in the level of gender wage inequality. Although some areas exhibit significantly greater wage inequality than the average labor market, wage inequality has been declining in that area nevertheless.

Results

The coefficients from the macro equations of the full multilevel model are presented in Table 2 for workers without a high school degree (hereafter designated LHS) and in Table 3 for workers with a college degree (hereafter designated COL). These tables display the coefficients from the male and female samples separately. They also include a column with the estimated logarithmic gender wage gap (G), displayed in antilog form as the female/male wage ratio. The values of G are derived from Equation (4), where the range indicates changes from the sample minimum to maximum value of the specified macro variable after evaluating the other macro variables at their means. Higher values indicate an above average female/male wage ratio and thus a smaller gender wage gap and less gender wage inequality.

Regional Variation in Wage Levels

Beginning with the question of whether regional wage differentials follow the same pattern for women as they do for men, the results show that the determinants of regional wage variation generally have similar effects on male and female wage levels. In the first two columns of Tables 2 and 3, the coefficients associated with each of the ten main macro variables have the same sign for men and women. With the exception of a few coefficients that are insignificant, a similar pattern is found among the five control variables. These findings indicate that regional characteristics associated with above (below) average wages for men also tend to be associated with above (below) average wages for women. Moreover, only one of the ten main macro variables produces effects that vary by educational background.

Although I stress the unusual level of consistency in the overall direction of relative wage differentials, I also want to highlight the case in which there are substantive differences by education, because it illustrates well the need to disaggregate analyses by gender and class. The exceptional case occurs in labor markets with high joblessness. Compared to the average labor market, areas with high joblessness offer significantly higher average wages to female COL workers and significantly lower wages to LHS women. These results only partly follow the pattern found by Blanchflower and Oswald (1994) in their extensive study of the inverse relationship between joblessness and wage levels across MSAs and states. Using a larger sample of labor markets and workers and differentiating between educational groups, I find that this pattern does not apply to college-educated workers. In addition, the wage premium is evident only among COL women and the wage penalty only among LHS women, indicating that women's wages are more sensitive than men's wages

Table 2

Macro Parameter Estimates for 1989 Log Hourly Wages and the Gender Wage Ratio for LHS Workers (Micro-Adjusted)

Macro Variable	Female Wages[a]	Standard Error	Male Wages[a]	Standard Error	F/M Ratio[b] (%)
Intercept	1.6302***	.0976	2.0456***	.1184	70.2
Employment conditions					
Immigrant workers (%)	.0406***	.0067	.0141*	.0083	69.2–79.5[c]
Casualized workers (%)	–.0677***	.0111	–.0534***	.0132	71.4–68.6
Unemployment (%)	–.0748***	.0210	–.0035	.0253	72.2–66.4
High-tech and trade					
High-tech manufacturing (%)	.0225***	.0087	.0305***	.0105	70.7–68.9
Import manufacturing (%)	–.0041	.0075	–.0324***	.0091	68.5–86.5
High-tech services (%)	.1241***	.0277	.1325***	.0332	70.3–69.5
FIRE Δ	.0947***	.0243	.0840***	.0290	69.8–71.2
Industrial shifts and composition					
Manufacturing/services	.0022	.0997	.2179*	.1200	71.2–65.9
Manufacturing Δ	–.0260	.0190	–.1160***	.0226	64.8–78.2
Services Δ	.0209	.0304	.0324	.0365	70.7–69.4
Controls					
Large manufacturing	.0039	.0347	–.0096	.0415	
Ln population	.1937***	.0678	.0667	.0825	
Urban	.3447***	.0944	.5294***	.1123	
Northeast	1.3085***	.1114	1.5741***	.1339	
West	1.1920***	.1294	1.6623***	.1561	
Midwest	1.1297***	.0993	1.6381***	.1190	

Note: Coefficients and standard errors are multiplied by 10, except for the Intercept (to simplify presentation).
[a] Unstandardized parameter coefficients taken from the full model as expressed in Equation (2).
[b] F/M ratio is an estimate of the exponentiated female/male wage ratio as expressed in Equation (4).
[c] Ranges indicate changes from the sample minimum to maximum value of the specified macro variable after evaluating the other macro variables at their means.
* Two tailed significance tests indicated by: $p \leq .10$.
** $p \leq .05$.
*** $p \leq .01$.

to local unemployment levels. Exploring gender differences only in average wages, Blanchflower and Oswald came to the opposite conclusion.

Before elaborating further on the importance of gender and class differences in the magnitude of the macro effects, I note two general points about the relationship between economic restructuring and regional variation in wage levels. First, in each of the four equations (LHS women, LHS men, COL women, COL men), the majority of significant effects are in the direction of raising wages. It bears emphasis that this does not necessarily warrant the conclusion that restructuring has a net positive effect on the wages of the majority of U.S. workers. Some factors that result in significantly lower wages, such as casualization, may have wide geographic reach and in reality affect a far larger number of workers than the combination of two or three other factors with positive effects. Moreover, my methodological approach gauges the independent or main effects of each factor after controlling for other factors that may distort outcomes associated with it. This does not address the fact that there are likely to be interactions among variables within regional labor markets. Interaction effects are best explored, however, through a careful combination of

Table 3

Macro Parameter Estimates For 1989 Log Hourly Wages and the Gender Wage Ratio for COL Workers (Micro-Adjusted)

Macro Variable	Female Wages[a]	Standard Error	Male Wages[a]	Standard Error	F/M Ratio[b] (%)
Intercept	2.1174***	.0826	2.4027***	.0823	72.2
Employment conditions					
Immigrant workers (%)	.0563***	.0057	.0185***	.0057	70.8–86.3[c]
Casualized workers (%)	–.0436***	.0093	–.0604***	.0092	70.8–74.2
Unemployment (%)	.0727***	.0180	.0285	.0179	70.9–74.8
High-tech and trade					
High-tech manufacturing (%)	.0135*	.0074	.0404***	.0073	74.2–67.6
Import manufacturing (%)	–.0084	.0068	–.0059	.0067	72.4–71.0
High-tech services (%)	.1027***	.0228	.1930***	.0226	73.4–64.8
FIRE Δ	.0677***	.0203	.0696***	.0202	72.3–72.1
Industrial shifts and composition					
Manufacturing/services	.4942***	.0878	.3267***	.0869	71.4–75.9
Manufacturing Δ	–.0316**	.0159	–.0926***	.0158	68.4–77.7
Services Δ	.0134	.0259	.0383	.0257	73.3–70.3
Controls					
Large manufacturing (%)	–.0220	.0300	.0430	.0297	
Ln population	.2324***	.0574	.2573***	.0572	
Urban	.2551***	.0799	.3884***	.0791	
Northeast	.9202***	.0947	1.0507***	.0944	
West	–.0292	.1089	.3921***	.1082	
Midwest	.3277***	.0847	.7498***	.0841	

Note: Coefficients and standard errors are multiplied by 10, except for the Intercept (to simplify presentation).
[a] Unstandardized parameter coefficients taken from the full model as expressed in Equation (2).
[b] F/M ratio is an estimate of the exponentiated female/male wage ratio as expressed in Equation (4).
[c] Ranges indicate changes from the sample minimum to maximum value of the specified macro variable after evaluating the other macro variables at their means.
* Two tailed significance tests indicated by: $p \leq .10$.
** $p \leq .05$.
*** $p \leq .01$.

cluster and comparative case study analysis that builds on the reliability of multivariate analyses such as this one.

The second point about variation in regional wage levels concerns unmeasured price and cost-of-living differences across regions. Stringent controls for price differences across labor markets have been met by correcting for unobserved fixed effects within labor markets, including broad industry dummies in the micro-level equation and broad regional dummies in the macro-level equation. Indeed, the macro coefficients on the broad regional variables are all highly significant, as are controls for population size and urban area (see the bottom of Tables 2 and 3). Yet it is still possible that price effects associated with differences in unmeasured labor market characteristics are driving the similarities in the association between wage levels and restructuring for all four groups. Therefore, assessments of regional variation in wage levels are best undertaken in relative terms. As noted above, although the direction of change is similar for men and women in high-unemployment areas, the magnitude of those changes is quite different. Hence, the following discussion focuses on the change in wages across regions for women *relative* to those for men.

Low Wages and the Gender Wage Gap

The absence of gender differences in the direction of regional wage variation greatly facilitates assessment of the contribution of male and female wage changes to the gender wage gap. A higher gender wage gap can result from only one of two sources: higher wages among men in high-wage regions or lower wages among women in low-wage regions. The former is represented by a higher positive coefficient among men as compared to women and the latter by a lower negative coefficient among women as compared to men. For example, as noted above, women's wages are more sensitive than men's to changes in unemployment rates. The significant negative value of the female LHS coefficient on unemployment (–0.00748) indicates that the wage penalty in high unemployment areas is greater for LHS women than for LHS men, whose coefficient is also negative but insignificant (–0.00035). As a result, the gender wage gap is greater.

This example reveals that in the spatial dynamics of gender wage inequality, women's wage levels are not only affected by factors more typically associated with lower wages among men, but that the penalties on women's wages can exceed those on men's wages. Although less pronounced than in the case of unemployment, this same process underlies a tendency toward greater wage inequality between LHS men and women in regions with highly casualized labor forces. The difference is that the female and male coefficients are both significant but of roughly the same magnitude (the female coefficient is slightly more negative: –0.00677 vs. –0.00534). In contrast, among COL workers, both male and female coefficients are negative and significant but the penalty is greater for COL men. Only one case reveals a sharper penalty in female wages among the college educated, but neither the male nor female coefficient is significantly different from zero (areas with a disproportionate share of import-sensitive manufacturing plants). Thus the scenario in which negative wage penalties relative to the average labor market are as great or greater for women than for men is evident only among less-educated workers, and then only in areas with insecure employment conditions. This finding buttresses the claim that low-skilled women in particular are among the most vulnerable to new and deepening forms of flexibility and insecurity.

The logic of temporal change becomes more relevant when we turn to the other factors associated with low regional wages. In areas exhibiting growth in manufacturing employment over the 1980s, the gender wage gap is lower for both LHS and COL workers as a result of greater estimated wage penalties for men relative to their wages in the average labor market. The estimated decrease in wages is particularly strong for LHS men (–0.01160) but COL men are by no means immune (–0.00926). The decline among COL women is much smaller (–0.00316) while the female LHS coefficient is insignificant. As the estimated female/male wage ratios in Tables 2 and 3 demonstrate, areas experiencing the highest manufacturing employment growth have one of the lowest levels of gender wage inequality for LHS workers (78.2 percent) and COL workers (77.7 percent). A similar pattern for LHS workers appears in areas with a disproportionate share of import manufacturing plants (relative to the overall number of manufacturing plants in the regional labor market), where the estimated female/male wage ratio reaches a high of 86.5 percent.

These main indicators of manufacturing restructuring show that 1980s-style growth in manufacturing and a specialization in import-sensitive industries exacts a price on male wages, especially among LHS men, and consequently contributes to lower gender wage inequality. In the case of manufacturing growth, deindustrialization theory might predict the opposite: manufacturing decline should lower male wages, thereby increasing gender wage equality. However, I constructed manufacturing decline as a possible indicator of areas that were centers of manufacturing employment in the Fordist era and were therefore likely to have experienced negative manufacturing growth over the decade of the 1980s. From this perspective, it is hardly surprising, though rarely remarked upon, that these areas still (in 1989) exhibit high absolute wage levels and high levels of gender wage inequality, especially among the less educated. On the other hand, if we think of areas specializing in import-sensitive manufacturing industries and areas with manufacturing growth as regions that are either the hardest hit by wage concessions or the least likely to be unionized in the first place—both features of deindustrialization—there is certainly support for the greater sensitivity of men's wages to these aspects of recent economic restructuring.

To summarize, some important consequences of restructuring are clearly shared among COL and LHS women relative to men, while others lay the basis for divergent economic experiences. In terms of similarities, wages are lower for COL and LHS women as a result of several important and widespread features of contemporary labor markets. These same labor markets lower male wages more than women's and as a consequence produce the conditions for lower levels of gender wage inequality. Among the college educated, this occurs in regions with high rates of casualization and manufacturing growth. Among the non-college educated, this occurs in areas with import-sensitive manufacturing, manufacturing growth, and relative service industry dominance—as measured by the inverse of the manufacturing share of service employment variable, which is discussed in the next section. As has been argued elsewhere, by McDowell (1991) in the case of England, Armstrong (1996) in Canada, and Larner (1996) in Australia, this route to lower gender wage inequality cannot be understood in any clearly positive way. But this argument is made less often for COL women, who are understood to be doing well as a result of their absolute gains rather than absolute losses among COL men. As we see here and again below, this is clearly not the case.

Yet, significant differences between COL and LHS women remain quantitatively and qualitatively important. In areas with highly insecure employment conditions, as measured by unemployment and casualization rates, LHS women face a harsher labor market environment than either COL women or LHS men. The negative wage gap relative to the average labor market is as great or greater for LHS women than it is for LHS men. As a result, the LHS gender wage gap is significantly greater or average in these cases, whereas in no case is the gender gap greater in low-wage areas among COL workers. LHS women are worse off than the other three groups in areas where jobless rates are above average, which covers a significant share of labor markets in 1990 (see Fig. 2). The greater LHS wage gap should not hide the fact, however, that these labor markets are associated with lower wages among both LHS men and women, signaling the growing distance and inequality between workers with more and less college education, regardless of gender.

High Wages and the Gender Wage Gap

Six of the ten main macro indicators of restructuring are associated with higher wages for all four educational groups. Yet in only one case is gender wage inequality substantially lower for both LHS and COL workers. In a second case, gender wage inequality is substantially lower only for COL workers (and is greater among LHS workers). In a third case, wage premiums are significant for all four groups but in equivalent measure, limiting the effect on the gender wage gap. Two conclusions can be drawn rather quickly from these summary results. First, higher-waged labor markets in 1990 as a general rule do not foster greater opportunities for women relative to men. Second, the relative advantages reaped in high-wage labor markets are only slightly more favorable to COL

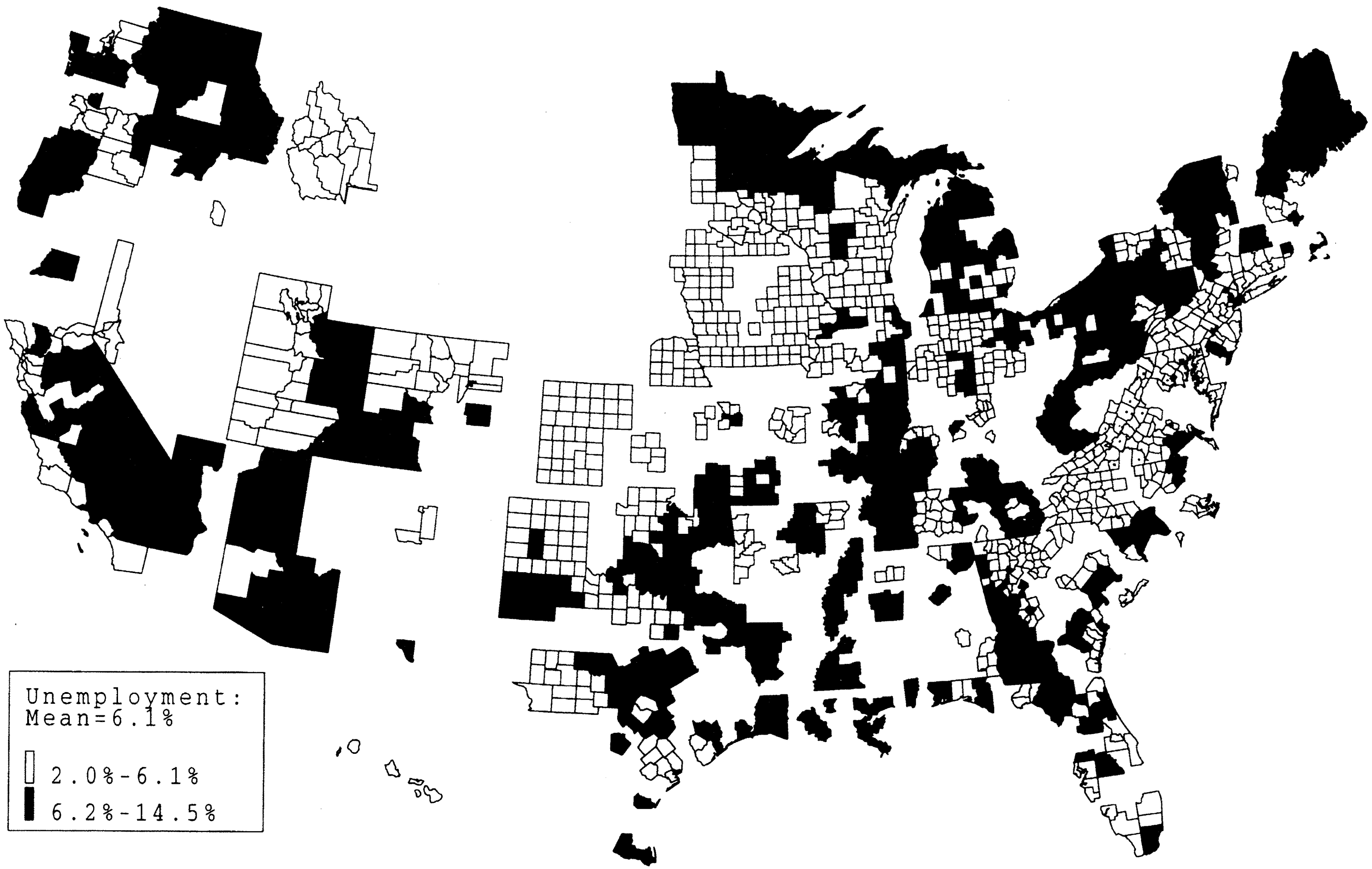

Figure 2. Unemployment rates in U.S. counties. *Source*: Census of the Population Public Use Microdata Samples (5 percent) for 1990.

women. Despite this seeming advantage, the areas in which gender wage inequality is substantially greater for the college educated are extremely important, namely, regions specializing in high-technology manufacturing and high-technology services. Based on these findings, I order the discussion according to whether regions are more or less likely to foster greater equality between men and women.

The single case in which wages are significantly higher and gender wage inequality substantially lower for COL and LHS workers is represented by areas with a disproportionate share of immigrant workers.[4] Wage premiums among women exceed those among men in these labor markets (0.00563 vs. 0.00185 for COL and 0.00406 vs. 0.00141 for LHS). The gender wage gap drops to its lowest estimated value among COL workers, yielding a female/male wage ratio of 86.3 percent, and to its second lowest value among LHS workers (79.5 percent). Whether these results are driven by greater equality among immigrants, which is the likely explanation, or between immigrants and natives, or among natives, is unclear from this analysis but is an interesting question for further research. At least part of the explanation lies in the industrial complexity and dynamism of many labor markets drawing on both low-waged and high-skilled immigrant workers, as detailed in case studies of Los Angeles, Silicon Valley, Miami, and New York City (Waldinger 1996). But, controlling for high-technology manufacturing and services, these findings also pertain to smaller, less balanced local economies. Few areas are rich in immigrant labor, with the result that few areas have the twin characteristics of high wages and low "across the board" gender wage inequality (Fig. 3).

In comparison to immigrant-rich regions, areas with substantial growth in the advanced producer services of finance, insurance, and real estate (FIRE) significantly raise wage levels compared to the average labor market but have little effect on gender wage inequality. These advanced producer industries, especially finance industries, along with the high-technology service industries discussed below, are the most specialized measures of postindustrial service employment used in this and other studies. These high-end services are expected to produce a bipolar structure of primary and secondary jobs overlaid by gender differentiation (Baran and Teegarden 1987; Bagchi-Sen 1995).[5] However, using a more restrictive model than other studies, I find that the effects on

[4] Most research on immigration is motivated by the expectation that declining real wages and increasing wage inequality is at least partially attributable to an influx of less-skilled immigrant workers in the labor force. However, previous research shows almost no effect of immigrant residential concentration on wage levels of natives in the same labor market (Borjas, Freeman, and Katz 1996). It should be noted that I use more stringent controls for unmeasured price differentials between regions and find that wages among the less skilled are higher in areas with a disproportionate share of immigrant workers. This is not inconsistent with the fact that immigrants, for other reasons, concentrate in high-wage regions. The differences between my study and previous studies may be due to my use of rural and urban labor markets, the inclusion of high- and low-skilled immigrants in the measure, and the inclusion of all workers in the outcome.

[5] Bagchi-Sen finds that states with FIRE growth over the 1980s are associated with growth in "high-order white collar jobs, but only for males. For females, however, producer services such as FIRE determine growth in low-order white and pink collar positions" (1995, 277). Bagchi-Sen controls for growth in other major industries but does not control for individual characteristics or other important macro factors, such as employment conditions and presence of more specialized industries. Her analysis is also restricted to occupational differences. Although I cannot comment on occupational differentiation, it is important to distinguish between occupational and wage differentiation and not to assume that one necessarily prefigures the other.

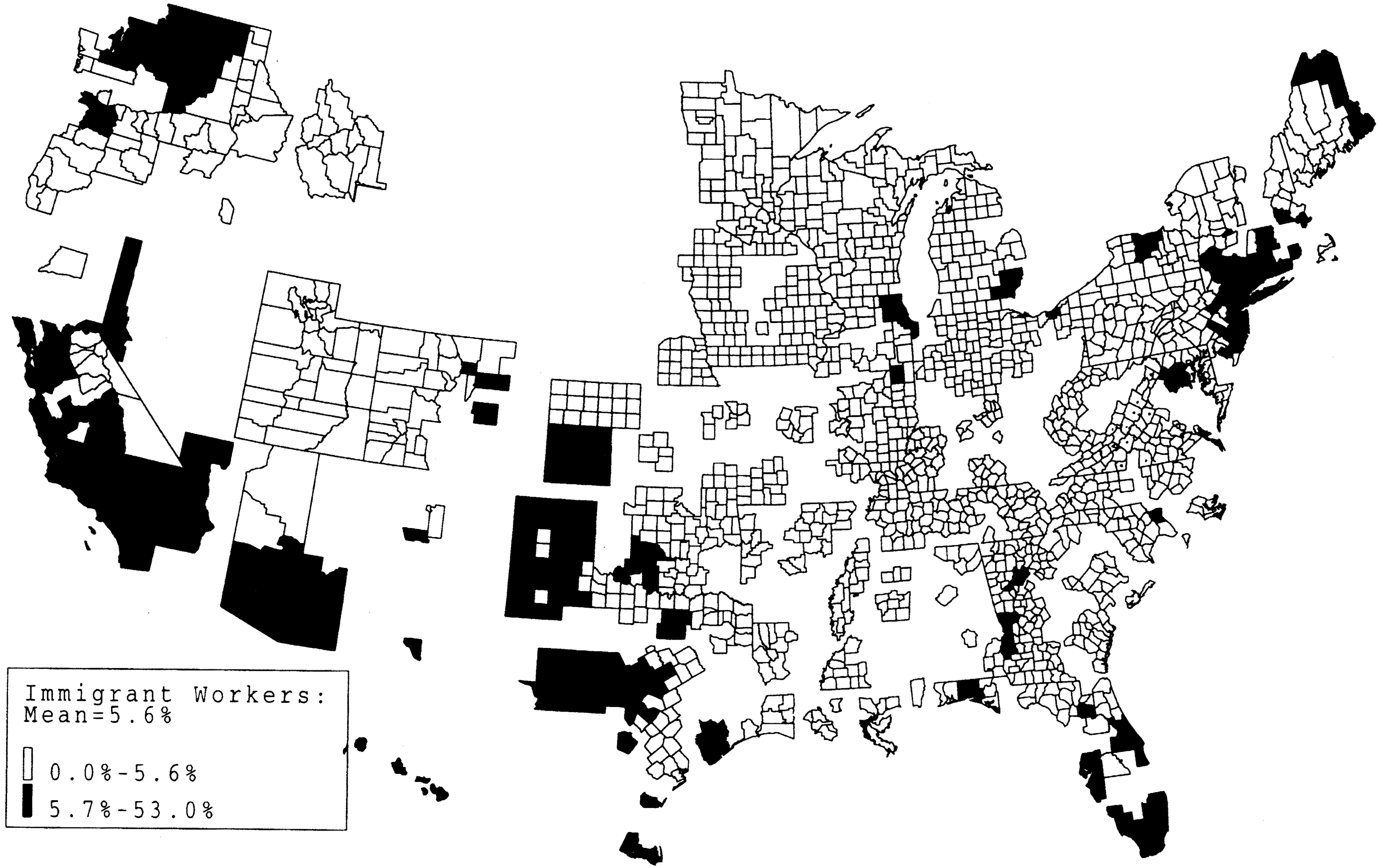

Figure 3. Immigrant workers in U.S. counties. *Source*: Census of the Population Public Use Microdata Samples (5 percent) for 1990.

wages of FIRE growth are positive and do not appear to favor men relative to similarly educated women. This is the only variable in the technology group that does not have net negative effects on gender wage equality.

Nestled between those factors associated with lower gender wage inequality and those associated with greater inequality for both LHS and COL workers is one that has opposite effects for the two educational groups. The variable that measures manufacturing as a share of service employment has a significant positive effect on male COL wages (0.03267), but has a stronger positive effect on female COL wages (0.04942), which results in lower gender wage inequality among the college educated. In contrast, the female LHS coefficient is insignificant, while the male LHS is significant at the $p = .07$ level, which results in greater gender wage inequality among LHS workers. Thus the expectation of greater gender inequality holds up among less-educated workers. Both groups of men benefit significantly from economies oriented toward manufacturing, as do COL women. LHS women are alone in not experiencing these wage increases. Because manufacturing growth is controlled, this variable captures older as well as newer industrial sites. Newer sites, therefore, reproduce the old pattern of gender wage inequality among less-educated workers.

Along with the advanced producer services of FIRE, three other variables are included to measure key dimensions of post-Fordism and postindustrialism: high-technology manufacturing, high-technology services, and service industry growth. Not one of the three was shown to foster an environment of greater equality between men and women, though significantly higher wages are associated with the two high-technology variables. Since the effects of service industry growth were insignificant for all four groups, I focus my comments on the impact of high-tech industries. A local specialization in either high-tech manufacturing or services has a greater effect on gender wage inequality among the college educated than among the non-college educated. The estimated female/male wage ratio reaches its lowest (64.8 percent) and second lowest (67.6 percent) levels among COL workers, due to the larger wage premiums garnered by COL men in labor markets with these characteristics. However, among LHS workers, the small difference in the female and male coefficients produces little change in the gender wage gap.

These results are interesting for a number of reasons. On the one hand, as predicted by the more pessimistic readings of post-Fordism and postindustrialism and certainly by temporal trends, the highest wage premiums in high-tech economies are absorbed by the most well educated men, whether because of the greater tendency for men to be trained in technical fields, or because of the inside networks that favor men in cutting-edge sectors—a sort of glass ceiling effect—or a combination of both. These premiums contribute to higher levels of inequality between COL men and the three other groups. For the present, however, relatively few areas concentrate in high-technology manufacturing or services, though it is by no means a trivial number (see Fig. 4 on high-tech manufacturing—high-technology services cover even less territory). On the other hand, a more optimistic reading would emphasize that wages are significantly higher for all four groups and in comparable measure for LHS men and LHS women. In fact the wage premiums are larger for these groups (0.01325, 0.01241) than for COL women (0.01027). There is reason to conclude, therefore, that upgrading is taking place at the bottom of the skill hierarchy in regional labor markets with these characteristics. It should be kept in mind, however, that less-skilled women are not better placed than similarly skilled men, so the gender wage gap is still no better than average.

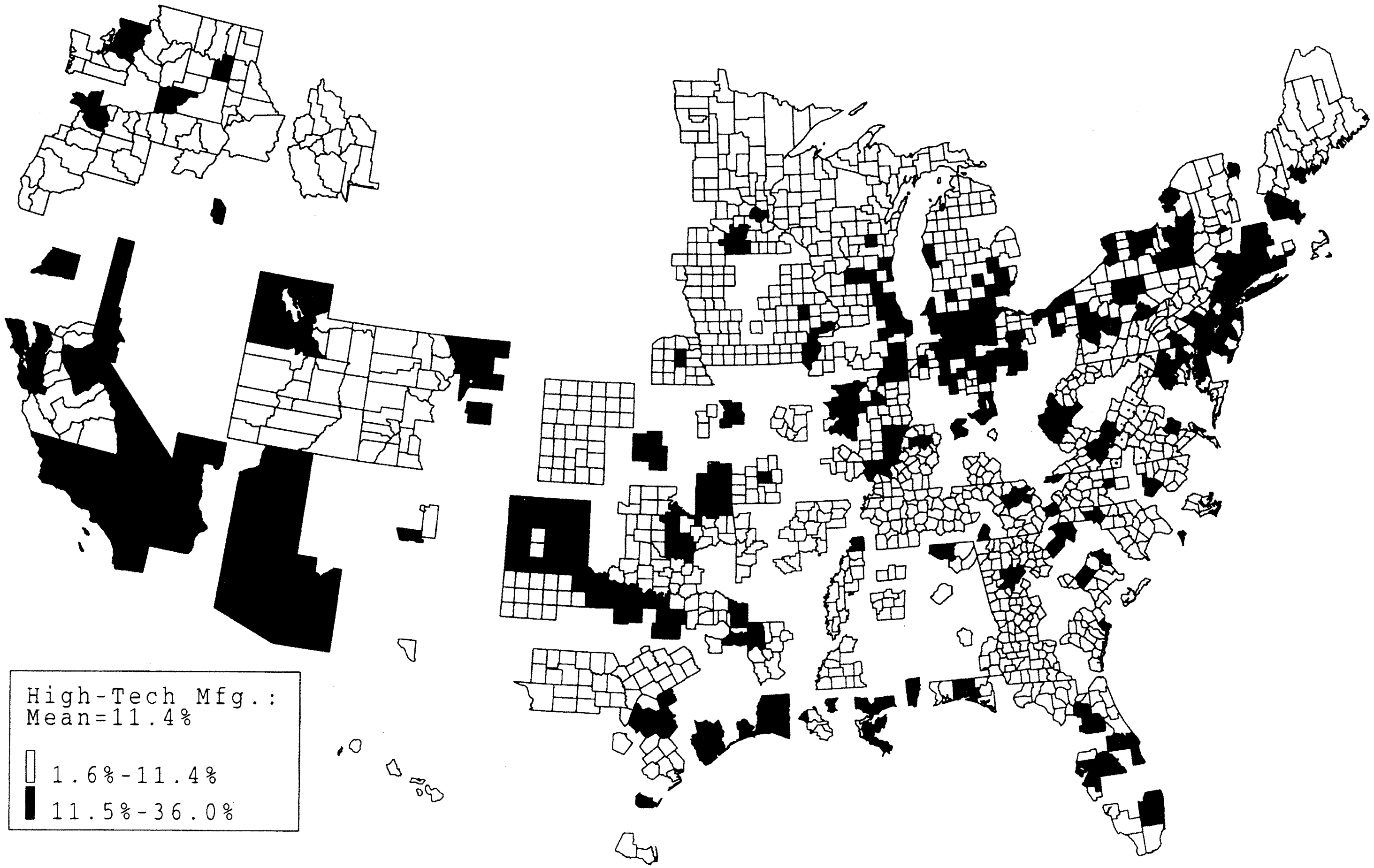

Figure 4. High-technology manufacturing plants in U.S. counties (as a share of total manufacturing plants). *Source*: U.S. Bureau of the Census (1994).

Conclusion

This study arose from an interest in several basic questions about recent changes in the nature of gender wage inequality. Are women's wages below (above) average in labor markets where men's wages are below (above) average? How are regional wage differentials associated with economic restructuring and mediated by both gender and class? These questions focus more directly than previous studies on how changes in the structure of the economy are changing the structure of gender wage inequality. I argued that empirical examination of these issues was facilitated by the wide variation in economic conditions and levels of gender inequality in regional labor markets. Examining "spatial routes" to gender wage (in)equality expands our conceptualization of gender inequality beyond the limited scope of temporal studies and empirically tests contradictory assessments of the consequences of economic restructuring for divisions based on gender and class.

Few differences between men and women in the direction of regional wage differentials cleared the way for a focused discussion of the relative contribution of male and female wage patterns to the level of gender wage inequality in labor markets defined by key dimensions of economic restructuring. Whether a macro indicator of restructuring is associated with high or low wages does not reveal, generally speaking, the trend in gender wage inequality. Labor markets with high joblessness depress wage levels for LHS women more than for LHS men, while casualized labor markets result in significantly lower wage levels for both LHS women and men. Labor markets with clusterings of high-technology manufacturing and service industries result in wage premiums for men and women but more so for men, especially among the college educated. In each of these cases, gender wage inequality exceeds the average, despite differences in overall wage levels and the relative contribution of men's wage increases or decreases. Factors associated with below average gender wage inequality are also evident in both low- and high-wage labor markets. These spatial routes to changing gender wage inequality suggest processes much more varied and complex than the singular emphasis on men's declining real wages in many temporal analyses (Mishel and Bernstein 1994; Gordon 1996).

The results also clearly show that spatial routes to gender wage inequality are mediated by class. The scenario in which women's wages suffer a greater penalty than men's wages in low-wage labor markets is only evident among LHS workers and points to the fact that, under insecure employment conditions in particular, LHS women face a harsher labor market relative to COL women and LHS men (not to mention COL men). More generally, less than half of the factors benefited LHS women relative to LHS men, while more than half benefited COL women relative to COL men. The estimated level of gender wage inequality also tends to be lower among COL workers. Although not analyzed directly in this paper, these results clearly point to the temporal trend toward increasing inequality among women and the role of restructuring in that process. These differences must be central to any discussion of gender wage inequality and restructuring policies, given that some forms of economic development may favor some groups of women over others, and moreover, may not be worthy of support regardless of their effects on reducing gender wage inequality. Areas with high local casualization and unemployment rates that reduce gender wage inequality among the college educated are perhaps the best example of that.

Finally, there were several important substantive findings that support some previous research and challenge others. First, as theoretically oriented feminist critiques of post-Fordism and postindustrialism suggest, existing transformations of the economy based on technological advances in manufacturing and services are biased toward well-educated male workers, even though women as well as men receive wage premiums relative to the average labor market. Regions specializing in high-tech manufacturing and services are associated with higher absolute levels of gender wage inequality, especially among the college educated, a finding consistent with temporal trends that show smaller declines over time in the gender wage gap for college-educated workers (Blau and Kahn 1994). Also consistent with educational differences in the rate of decline in the gender wage gap, I found virtually no effect from any of these (technology) variables on the gender wage gap among the least educated workers. Thus there is some degree of upgrading at the bottom of the labor market for both men and women, directing attention to the joint gender and class inequality generated from relatively higher wage premiums accruing to the most educated men.

Second, broad industrial composition and shift effects offered some support for both "optimistic" and "pessimistic" views on whether restructuring reduces gender inequality, and here I focus on LHS workers. On the one hand, two measures of Fordist regions, those with manufacturing decline and a disproportionate share of manufacturing to service employment, resulted in wage premiums for LHS men and substantially higher levels of gender wage inequality among LHS workers. At a minimum, these results should temper nostalgia about the beneficial effects of manufacturing on wages and equality. It is, however, a mixed blessing that service dominance, the inverse of manufacturing's share of service employment, offers lower gender wage inequality at the cost of lower male LHS wages, and that the same dynamics are at work in those low-wage regions that experienced manufacturing growth over the 1980s and had a disproportionate share of import-sensitive manufacturing plants.

On the other hand, and in seeming contradiction, areas with above average service and FIRE industry growth did not disadvantage men relative to women at the bottom and did not result in lower levels of wage inequality between LHS men and women. Moreover, FIRE growth positively affected both male and female LHS wage levels. Thus, in the context of growth, services do not necessarily equalize wages between men and women through lower male wages and may even offer a wage advantage to men (as in the case of FIRE). In the spatial context, then, relative service dominance must be distinguished from service growth in its effect on wage levels as well as gender inequality. In particular, it can no longer be assumed that, among the less educated, men are necessarily suffering from greater wage penalties than women.

Lastly, and somewhat surprisingly, the only factor associated with high wages to substantially decrease COL and LHS gender wage inequality was the high share of immigrant workers. Though relatively minor in territorial coverage, these areas clearly promote wage equality between men and women across the educational hierarchy, even though they are often cited as partially responsible for the recent temporal (i.e., national) trend in increasing inequality. What these and other divergent findings point out is that summary measures of "income" inequality—referring typically to a combined sample of men or women, or only men, or family units—conceal important differences among components of inequality associated with gender, class, and racial divisions. For example, even though I have shown that levels of gender wage inequality are lower across educational groups in immigrant-rich regions, this does not imply anything about the structure of racial and class inequality within gender groups or about family income inequality. Despite relative equality between men and women, other forms of inequality may be more extreme and therefore of greater concern. It is therefore important in this and other cases that we conceptualize gender, as well as race and class, as a contingent phenomenon in any analysis of the dynamics of social inequality (McCall 1998).

This analysis has provided only a bird's eye view into the spatial relationship between labor market restructuring and gender wage inequality. Its aim was to measure restructuring as directly and as comprehensively as possible, but the broad scope of this inquiry has raised as many questions as were answered. In particular, many of these findings beg for further inquiry into the detailed mechanisms and dynamic processes that spatially structure inequality between different groups of workers. Most quantitative research focuses on inequality between only two groups at a time, while most qualitative research is concerned with in-depth analysis of a single dimension of restructuring and not with inequality per se. We need more research, both qualitative and quantitative, to examine and explain the full network of inequalities that intersect and overlap in spatially distinct configurations of inequality.

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