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Within Cities and Suburbs: Racial Residential Concentration and the Spatial Distribution of Employment Opportunities across Submetropolitan Areas

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Abstract

In this paper, we examine and compare the spatial distributions of jobs and people across submetropolitan areas using data on firms from the Multi-City Study of Urban Inequality and data on people from the U.S. Bureau of the Census. The results indicate that less-educated people and those on public assistance mostly reside in areas with high minority populations. Low-skill jobs are quite scarce in these areas, while the availability of such jobs relative to less-educated people in heavily white suburban areas is high. Large fractions of the low-skill jobs in these metropolitan areas are not accessible by public transit. Furthermore, there is significant variation within both central cities and suburbs in the ethnic composition of residents and in the availability of low-skill jobs. The ability of various minority groups to gain employment in each area depends heavily on the ethnic composition of the particular area.

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INTRODUCTION

A consistent pattern observed across metropolitan areas is the spatial concentration of disadvantage. Joblessness, poverty, welfare receipt, and other indicators of disadvantage are not evenly spread throughout metropolitan areas, but instead are spatially concentrated in particular parts of central cities (Jargowsky, 1997, 1994; Galster and Mikelsons, 1995; Abramson and Tobin 1995; Wilson, 1987). Moreover, this spatial concentration of disadvantage is highly correlated with racial residential patterns that are themselves distinct and noticeable in metropolitan areas (Massey, Gross, and Eggers, 1991). That is, much of this spatial concentration of disadvantage is found in black and, to a lesser extent, Latino central-city ghettos and barrios, respectively. It is not surprising then that comparisons of indicators of disadvantage by race invariably show that blacks and, to a lesser extent, Latinos have worse outcomes than whites. For example, although the unemployment rate of white adults in metropolitan areas was 4.6 percent in 1996, the rates for blacks and Latinos stood at 10.4 percent and 8.8 percent, respectively.[1]

At the same time, there is consistent evidence that employment opportunities, as measured by added new jobs, continue to locate in suburbs. Indeed, the Census Bureau has shown that employment growth from 1990 to 1993 in U.S. metropolitan areas was much greater in suburbs than in central cities. Moreover, an overwhelming percentage of the newly created low-skill jobs over this same period located in the suburbs as well (HUD, 1997). The growing spatial division between the location of employment opportunities and disadvantage has led some scholars to argue that spatial location itself has an independent effect on individuals' employment outcomes (see, for example, O'Regan and Quigley, 1996; Rosenbaum, 1995). This argument, first articulated by John Kain (1968), has come to be known as the spatial mismatch hypothesis (SMH). According to the SMH, blacks' employment problems are in part due to the conjunction of job suburbanization and housing market discrimination practices in suburbs that

restrict blacks' residential choices to the central city. These spatial patterns of employment and residences result in the creation of an oversupply of low-skilled workers relative to the number of jobs for which they are qualified in the central city, thereby raising blacks' unemployment levels both absolutely and relative to those of whites. The SMH, though conceptually a relatively simple idea, has proven notoriously difficult to test reliably, however. As a result, considerable controversy surrounding the hypothesis remains, despite the fact that studies done more recently are not as mixed in their support of the SMH as earlier studies were.[2]

Based in part in a belief in the SMH, the Department of Housing and Urban Development (HUD) has developed two initiatives to assist mainly minority workers in overcoming spatial disadvantages in the labor market. Although each of these programs takes a different approach to reducing spatial frictions in labor markets, they both assume that central-city, mainly minority residents' employment and earnings would improve if they had greater physical access to suburban jobs. The Moving to Opportunity program is intended to provide incentives to persons—mostly blacks and Latinos—in central-city areas to move to low-poverty suburbs in part to improve their employment opportunities.[3] The Bridges to Work initiative is designed to improve central-city workers' access to suburban jobs by emphasizing job placement and transportation assistance (i.e., "reverse commute") programs.

The general methodological approach for testing the SMH is to examine the effects of space on labor market outcomes. This involves creating measures of physical accessibility to jobs and then examining whether job access affects individual- or geographic-level labor market outcomes. The SMH is supported if job access is found to affect these outcomes and if blacks are found to have worse job access than whites. However, this standard approach can easily result in biased estimates because it is difficult to accurately measure job access and because labor market outcomes may affect job access, thus resulting in spurious correlations (Ihlanfeldt, forthcoming).

We take a different approach to examining spatial cleavages between the location of jobs and particular racial groups in metropolitan areas. We directly examine and compare the spatial distribution of new jobs and people of different racial backgrounds across submetropolitan areas. Moreover, unlike most studies that investigate the role of geography in labor markets, we define submetropolitan areas at a lower level of geography than the simple central-city/suburban dichotomy in order to uncover spatial dynamics within these commonly used, broad geographic categories. The degree of divergence in the spatial variation of jobs and various people in large metropolitan areas provides an indication of the degree to which spatial frictions in the labor market might matter. Moreover, the degree of spatial disjuncture between the location of jobs and blacks' and Latinos' residences has direct implications on the location of their employment.

In the remainder of this paper, we first discuss the data and define the key variables used in the analysis. We then examine the spatial distributions of job opportunities and people within four large metropolitan areas, paying particular attention to low-skill jobs and minorities' residential patterns. Finally, we analyze the implications of these spatial frictions on the spatial distribution of job applications and employment locations of blacks and Latinos in metropolitan areas.

DATA AND DEFINITION OF KEY VARIABLES

To compare the spatial distributions of jobs and people within metropolitan areas, we use data from the Multi-City Study of Urban Inequality (MCSUI) and the 1990 census, respectively, for the Atlanta, Boston, Detroit, and Los Angeles metropolitan areas (MSAs for short). These MSAs are generally representative of the different regional urban forms and dynamics found in the United States. Atlanta represents a New South metropolitan area with tremendous growth from 1980 to 1990, while Boston represents the Northeastern city rebounding from deindustrialization and emerging as a high-skill, high-technology center. Detroit represents the Midwestern city characterized by extreme

deindustrialization and racial polarization in residential patterns, while Los Angeles characterizes the sprawling metropolitan areas (sun cities) of the West, where central-city/suburban dichotomies are difficult to impose.

Data on people come from the 1990 U.S. Census Summary Tape Files and are aggregated at the census-tract level. Data on jobs come from MCSUI telephone surveys with 3,220 employers in the four MSAs (approximately 800 per metropolitan area) conducted between 1992 and 1994. Our primary focus is on those survey questions that described the most recently filled job and the worker hired into that job at each establishment. Information was obtained on the hiring requirements, job tasks, and starting wage and benefits associated with this position and on the race and sex of the hiree. Also obtained was the racial background of those who applied for the position. In a follow-up telephone survey, firms were queried about their proximity to public transit.

The sampling frame was stratified by establishment size categories so as to reproduce the distribution of employment across these categories in the workforce.[4] The sample of firms therefore approximates employer-weighted samples of firms for each metropolitan area. Moreover, the sample was restricted to employers that had hired in the past 3 years. Thus, the sample of recently filled jobs at these firms reasonably represents the universe of new jobs that are currently available to job-seekers.

The focus of the analysis is on low-skill jobs. Because MCSUI asked employers the hiring requirements (education, experience, and training) of and tasks involved in the last-filled job in the firm, we are able to construct measures of low-skill jobs that may be more accurate than other, more universally used measures based on occupation or industry, and that may better represent the jobs for which new low-skilled labor market entrants are qualified. Use of occupation or industry indicators to measure the skill requirements of jobs does not recognize the extreme heterogeneity of tasks and skill requirements within these categories. Alternatively, we define three categories of low-skill jobs based on the tasks performed and the experience, training, and educational levels required by employers. We

consecutively place more strict definitions on the categories of low-skill jobs. In the first category, we define low-skill jobs broadly as those that require no college degree, training (general or specific), or experience (recent or specific). The second category of low-skill jobs includes those that require no high school degree, experience, or training. Finally, in the third category, we define low-skill jobs narrowly as those that involve no reading, writing, or math tasks and require no experience, training, or high school diploma.[5]

To examine the spatial distributions of low-skill jobs and people across submetropolitan areas of different racial composition, we first geocoded the address of each firm in MCSUI to a census tract. Next, we used Geographic Information Systems (GIS) and census data to examine the racial/ethnic residential composition of census tracts and defined seven submetropolitan areas within each of the four MSAs. We then assigned each firm in MCSUI to one of these seven areas. These areas are the central business district (CBD), black central city, Latino central city, white central city, black suburbs, integrated suburbs, and white suburbs.[6]

Except for the CBD, the submetropolitan areas are defined by racial/ethnic composition and central-city/suburban boundaries. The CBD is defined by the Census Bureau and is that area within the central city commonly referred to as downtown. We define the black (Latino) central city as that area within the central city with contiguous census tracts of blacks (Latinos) representing 50 percent or more of the population. Los Angeles and Boston are the only MSAs here that have a Latino central city. Except for Los Angeles, the white central city is defined as that area within the central city with contiguous census tracts of whites representing 50 percent or more of the population. Because of the diversity of its population, Los Angeles has a white central-city area that is alternatively defined as those contiguous census tracts where whites represent the plurality of the population.[7] Because of the lower levels of racial residential diversity in the suburbs, the sub-suburban areas are defined somewhat differently. The black suburban area is defined as that area within the suburbs with contiguous census

tracts of blacks representing at least 30 percent of the population.[8] We define the white suburban area as that area within the suburbs with contiguous census tracts of whites representing 80 percent of the population. In Atlanta, Boston, and Detroit, this area represents the vast majority of suburban census tracts. Finally, the remaining suburban census tracts are defined as integrated suburban areas. In these areas, whites represent less than 80 percent of the population, with the remaining residents being black or Latino. Integrated suburban areas are most different in Los Angeles, where they are racially mixed (Asians, Latinos, whites, and blacks) and represented by census tracts where no one group is the majority.

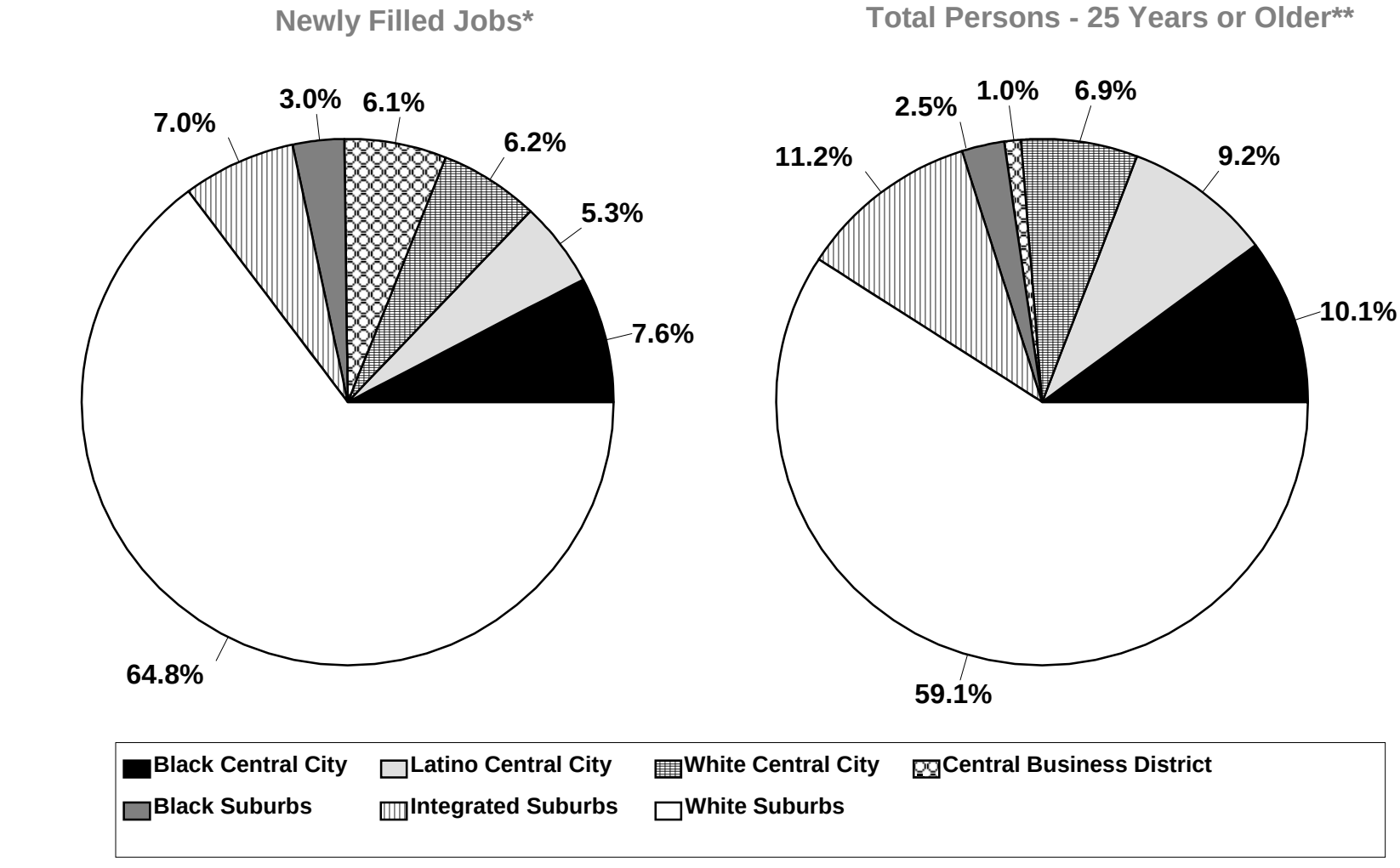
We make two important assumptions in the analysis. Our analysis focuses only on the *relative* availability of jobs to different groups of people by geographic location in MSAs. To the extent that the *absolute* number of jobs available to low-skilled workers may be insufficient for all to become employed (e.g., Holzer and Danziger, 1997), our results may understate their employment problems. Furthermore, we assume that job accessibility is more heterogeneous across submetropolitan areas than within them. This assumption may not always hold; in particular, due to the geographic expanse of the white suburban area, job accessibility may display important variability within this area. Nevertheless, by dividing each MSA into seven geographic areas that are distinguished by their location and/or racial composition, we are improving on the simple central city versus suburban ring dichotomy adopted in previous analyses (Harrison, 1972; Price and Mills, 1985; Cooke, 1996; Cohn and Fossett, 1996).

SPATIAL DISTRIBUTIONS OF JOBS AND PEOPLE

Before turning our attention to low-skill jobs, it is of interest to map the distribution of all new jobs of all skill levels and of people aged 25–65 years across the seven submetropolitan areas for the pooled sample of four MSAs.[9] Figure 1 shows that job opportunities are greatest in white suburbs, where nearly 65 percent of total new hires are located. Though Figure 1 represents a cross-sectional snapshot of

Figure 1

Distributions of All Newly Filled Jobs and Persons by Submetropolitan Area: Pooled Sample of Atlanta, Boston, Detroit, and Los Angeles



Source: * 1994 MCSUI

** 1990 US Census

the job opportunities in metropolitan areas, it is consistent with findings of the continuing decentralization of jobs in metropolitan areas (Stoll, 1998; Kasarda, 1995). The development of large-scale, interconnected freeway systems and advances in communication technologies have made suburban areas attractive places for firms to locate, in part because of their cheaper land prices and greater land availability. Figure 1 also shows that people and recently filled jobs are not evenly distributed in these MSAs. The shares of people residing in black and Latino central cities and integrated suburbs (over 30 percent) are significantly greater than the shares of jobs located in these submetropolitan areas (about 20 percent). On the other hand, the share of jobs is greater than the share of people in white suburbs, white central cities, and CBDs.

The particular spatial distributions shown in Figure 1 suggest that residents of white areas, in comparison to minority areas, have an employment advantage because of their greater physical access to jobs. Furthermore, though there are many jobs in the CBD that are spatially accessible to blacks and Latinos, many of these may be inaccessible to them for other reasons. Data from MCSUI show that requirements of college degrees for jobs is greatest in the CBD, while the percentage of residents who are high school dropouts is greatest in the black and Latino central city (see Table 3).Though shown at lower levels of geography, this finding is consistent with previous research (Kasarda, 1985, 1995), which documents a growing skills mismatch between the educational requirements of jobs and the educational attainment of residents in central cities.

Low-Skill Jobs and People

We now turn our attention to low-skill workers, the group for whom job accessibility is of greatest concern. Table 1 shows the spatial distribution of recently filled low-skill jobs and of people by race, education, and public assistance receipt across the seven submetropolitan areas. The spatial distribution of low-skill jobs across submetropolitan areas is very similar regardless of how these jobs are defined. In addition, the distribution of low-skill jobs, regardless of definition, is similar to that of all

TABLE 1
Distribution of Jobs and People across Submetropolitan Areas: Pooled Sample of MSAs

	Total Central City	Black Central City	Latino Central City	White Central City	Central Business District	**Total Suburbs**	Black Suburbs	Integrated Suburbs	White Suburbs	Total
All jobs	25.2	7.6	5.3	6.2	6.1	74.8	3.0	7.0	64.8	3,386
Low-skill jobs[a]										
Noncollege job, no experience or training	20.7	6.5	3.9	5.8	4.5	79.3	3.2	8.0	68.2	537
No H.S. diploma, no experience or training	22.0	7.2	7.2	4.0	3.3	78.0	3.2	6.5	68.5	473
No H.S. diploma, no experience or training, no reading, writing, math	20.4	10.2	5.4	2.7	2.0	79.6	2.7	7.5	69.4	155
People[b] (25 years or older)										
All people	27.2	10.1	9.2	6.9	1.0	72.8	2.5	11.2	59.1	15,371,260
Race										
White	13.1	2.5	4.0	6.3	0.3	86.9	1.8	8.7	76.4	10,295,686
Black	65.3	57.1	2.2	5.3	0.7	34.8	10.4	6.6	17.8	1,711,678
Latino	53.7	10.2	31.6	8.9	3.0	46.2	0.7	21.3	24.2	1,711,661
High school dropouts										
White	22.2	4.4	7.0	10.0	0.8	77.9	2.1	10.2	65.6	2,092,488
Black	76.3	67.5	2.9	5.0	0.9	23.6	7.1	4.2	12.3	517,289
Latino	62.7	13.1	36.4	9.1	4.1	37.2	0.5	18.3	18.4	997,742
Total	44.8	15.6	19.3	7.7	2.2	55.2	2.1	12.5	40.6	4,336,150
Public assistance	50.2	29.0	12.7	7.4	1.1	49.8	2.5	11.1	36.2	2,180,683

Sources: [a]1994 MCSUI; [b]1990 census.

jobs, except that there is a greater share of low-skill jobs than jobs in general in white suburbs. This implies that low-skill jobs are much more decentralized than high-skill jobs.

The extreme decentralization of low-skill jobs has important implications when viewed in relation to the spatial distribution of less-educated people. At the broadest geographic comparison (i.e., central city versus total suburbs), 79.6 percent of the metropolitan areas' lowest-skilled jobs, but only 55.2 percent of the least-educated people (i.e., those with no high school degree), are located in the suburbs. The spatial disparity between jobs and people becomes worse at the more disaggregated level represented by the seven submetropolitan areas. Consider two extreme areas—white suburbs and black central cities. The former contain 69.4 percent of the lowest-skilled jobs but only 40.6 percent of the least-educated people, while the latter hold 10.2 percent of these jobs and 15.6 percent of the least-educated people. These comparisons suggest that job accessibility, as measured by the number of nearby jobs available per resident, is markedly higher in the areas where most whites reside (76.4 percent of whites reside in white suburbs) in comparison to the areas where most blacks reside (57.1 percent of blacks reside in black central-city areas). However, as noted above, low-skill jobs in the CBD may be physically accessible to residents of the black central city, but not functionally accessible. The CBD is the most searched submetropolitan area in Los Angeles by low-skilled workers, suggesting that competition for jobs there may limit job access (Stoll, forthcoming a). When the latter two areas are combined, the percentages of low-skill jobs and poorly educated people are 12.2 and 17.8, respectively, so expanding the black central city to include the CBD has little effect on the job access advantage enjoyed by whites.

As bad as job access is for less-educated people living within the black central city, it is even worse in the Latino central city. The latter contains 19.3 percent of the high school dropouts in the pooled sample but only 5.4 percent of the lowest-skill jobs. Nearly 32 percent of the metropolitan areas' Latinos are located in this area.

An important advantage of our study is that unlike previous analyses, ours does not treat the suburbs as a monolithic whole. The results show that suburbs are highly heterogeneous in the job accessibility they offer. While white suburbs contain huge shares of jobs relative to people, this is not the case in the black suburbs or the integrated suburbs. Black suburbs contain 2.7 percent of the lowest-skill jobs and 2.1 percent of the least-educated people. These percentages are much closer to each other than those within the black central city, but they are much less favorable than those within the white suburbs (69.4 percent of the lowest-skill jobs and 40.6 percent of the least-educated people). The shares of lowest-skill jobs and least-educated people located in integrated suburbs are 7.5 percent and 12.5 percent, respectively, suggesting that suburban job accessibility is particularly inferior within these areas. This may have a disproportionate effect on Latinos because they are relatively concentrated within the integrated suburban areas.

With the introduction of time limits on welfare eligibility, recent legislative changes in the rules and regulations of welfare receipt have intensified concerns over low-skill workers' access to jobs. Though some have argued that there are numerous low-skill jobs available for low-skill workers and welfare recipients in metropolitan areas (Mead, 1989), others have shown potentially major job shortages for such workers (Holzer and Danziger, 1998; Newman and Lennon, 1995). Moreover, lack of nearby jobs has been found to positively affect welfare usage (Blumenberg and Ong, 1998). Table 1 shows that these job shortages are likely exacerbated by very unequal spatial distributions of low-skill jobs and people on public assistance.[10] The spatial divergence in these distributions is most stark in black central cities, where the share of public assistance recipients is about three times greater than the share of low-skill jobs. Conversely, the share of low-skill jobs in the white suburbs is large relative to the share of those on public assistance. Thus, the results indicate that spatial differences between the locations of low-skill jobs and the residences of those on public assistance in black and Latino central cities are likely to negatively impact the ability of such residents to move from welfare to work.

Table 2 shows the spatial distributions of jobs and people for each MSA separately.[11] In this table, low-skill jobs are defined as the union of the three sets of low-skill jobs defined previously. Although there is variation in the degree of job decentralization across these MSAs, what is true for all of them is that the majority of job opportunities are located in white suburbs. We find that the decentralization of jobs is greatest in Boston and, not surprisingly, least in Los Angeles. This latter finding is expected given the sprawling suburban character of much of the land area within the city of Los Angeles.

Figures 2–5 provide, for each metropolitan area, a geographic view of the spatial distribution of recent hires by the firms in our sample that fell into the low-skill category. These maps also include the geographic outlines of the seven submetropolitan areas in the analysis. CBDs are identified by name in the maps and shown by the straight lines. The patterns that emerge across all four MSAs are qualitatively similar and reflect the general low-skill job distributions shown in Table 2. The vast majority of new low-skill jobs are located in white suburbs, but there are also fairly strong concentrations of these jobs in and near the CBDs. The latter concentrations are particularly high in Boston and Atlanta. However, Los Angeles diverges from these general patterns in that low-skill jobs there are also located in integrated suburbs and the Latino central city. What is similar for all MSAs is the lack of low-skill jobs in black central-city areas.

The divergence in the spatial distributions of jobs and people shown in Table 1 for all MSAs combined is confirmed in Table 2 for each MSA separately, although there is variation in their magnitude. The share of a metropolitan area's low-skill jobs located in the central city is less than the share of less-educated people located there for all four MSAs. Job shares are less than people shares also for all four black central-city areas and both Latino central-city areas. In all cases, spatial disparities between jobs and people are especially large if people include only those receiving public assistance. In contrast, all white suburbs have larger shares of jobs than people, regardless of how these variables are

TABLE 2
Distribution of People and Jobs across Submetropolitan Areas: Separately for Each MSA

	Total Central City	Black Central City	Latino Central City	White Central City	Central Business District	**Total Suburbs**	Black Suburbs	Integrated Suburbs	White Suburbs	Total
Atlanta										
All jobs	24.9	13.1	--	6.4	5.4	75.1	7.8	1.6	65.7	893
All low-skill jobs	23.1	14.8	--	3.9	4.4	76.9	8.7	3.1	65.1	229
Total population	15.6	12.6	--	2.8	0.2	84.3	16.3	3.0	65.0	1,628,474
Black	40.3	39.0	--	0.6	0.7	60.6	36.0	3.4	21.2	385,803
High school dropouts	26.0	24.4	--	1.0	0.6	73.9	20.4	3.0	50.5	294,627
Public assistance	44.4	42.3	--	0.8	1.3	55.6	21.0	2.5	32.1	151,002
Boston										
All jobs	18.2	1.3	0.1	11.6	5.2	81.9	--	0.8	81.1	871
All low-skill jobs	10.4	0.5	0.1	8.4	1.4	89.8	--	0.1	89.7	214
Total population	15.0	3.6	1.0	10.2	0.2	85.0	--	0.5	84.5	3,957,661
Black	66.8	45.0	1.2	20.4	0.1	33.2	--	2.8	30.4	168,593
Latino	50.2	14.6	10.6	24.8	0.2	49.9	--	1.4	48.5	107,515
High school dropouts	20.8	6.4	2.5	11.6	0.3	79.3	--	0.6	78.7	834,689
Public assistance	27.8	11.2	3.3	13.1	0.2	72.2	--	0.9	71.3	446,567
Detroit										
All jobs	18.2	11.4	--	2.3	4.5	10.9	3.4	0.3	78.2	792
All low-skill jobs	13.7	6.4	--	2.3	5.0	86.5	4.1	0.1	82.3	220
Total population	22.1	19.5	--	2.4	0.2	77.9	2.8	0.6	74.5	2,907,812
Black	81.0	75.0	--	5.5	0.5	19.5	5.8	1.1	12.6	592,535
High school dropouts	34.5	28.9	--	5.3	0.3	63.0	2.8	0.7	59.5	732,245
Public assistance	59.9	54.5	--	5.2	0.2	40.9	4.2	0.6	36.1	582,722
Los Angeles										
All jobs	39.6	5.1	19.2	6.3	9.0	60.5	0.6	25.4	34.5	830
All low-skill jobs	43.4	6.9	21.2	5.9	8.4	57.7	0.1	25.1	32.5	203
Total population	38.6	9.3	19.3	8.1	1.9	61.5	0.7	24.0	36.8	6,820,312
Black	66.4	54.7	4.8	5.8	1.1	33.8	1.0	15.6	17.2	564,747
Latino	55.1	9.8	34.0	8.0	3.3	44.9	0.5	23.7	20.7	1,529,751
High school dropouts	57.4	13.7	31.6	8.4	3.7	42.6	0.5	21.2	20.9	2,474,589
Public assistance	54.1	21.3	23.2	7.6	2.0	45.9	0.5	23.1	22.3	1,000,392

Note: The low-skill jobs category refers to the union of all low-skill job categories defined in Table 1.
Sources: [a]1994 MCSUI; [b]1990 census.

Figure 2

The Sub-Metropolitan Area Location of Low-Skill Jobs

Atlanta

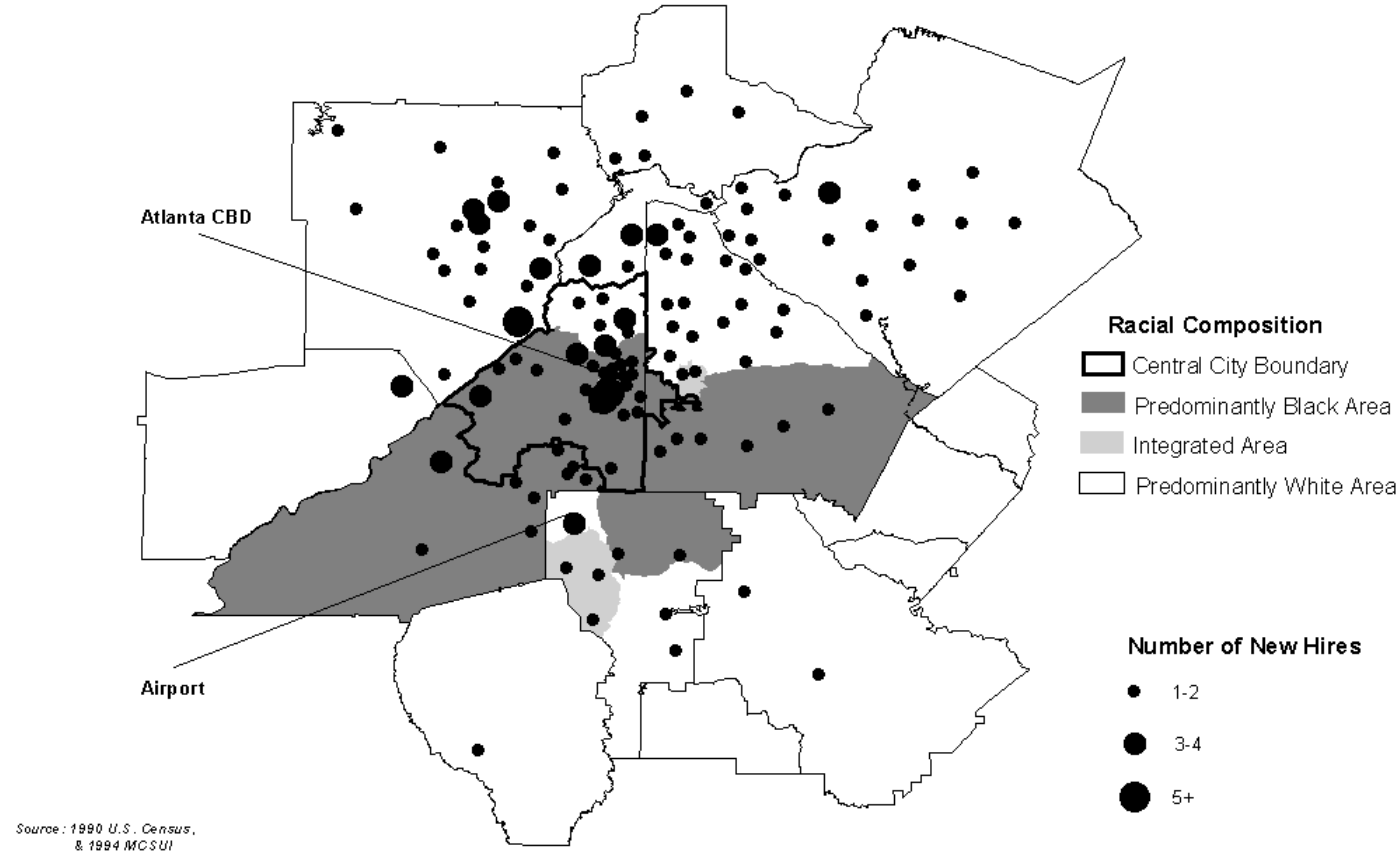


Figure 3

The Sub-Metropolitan Area Location of Low-Skill Jobs

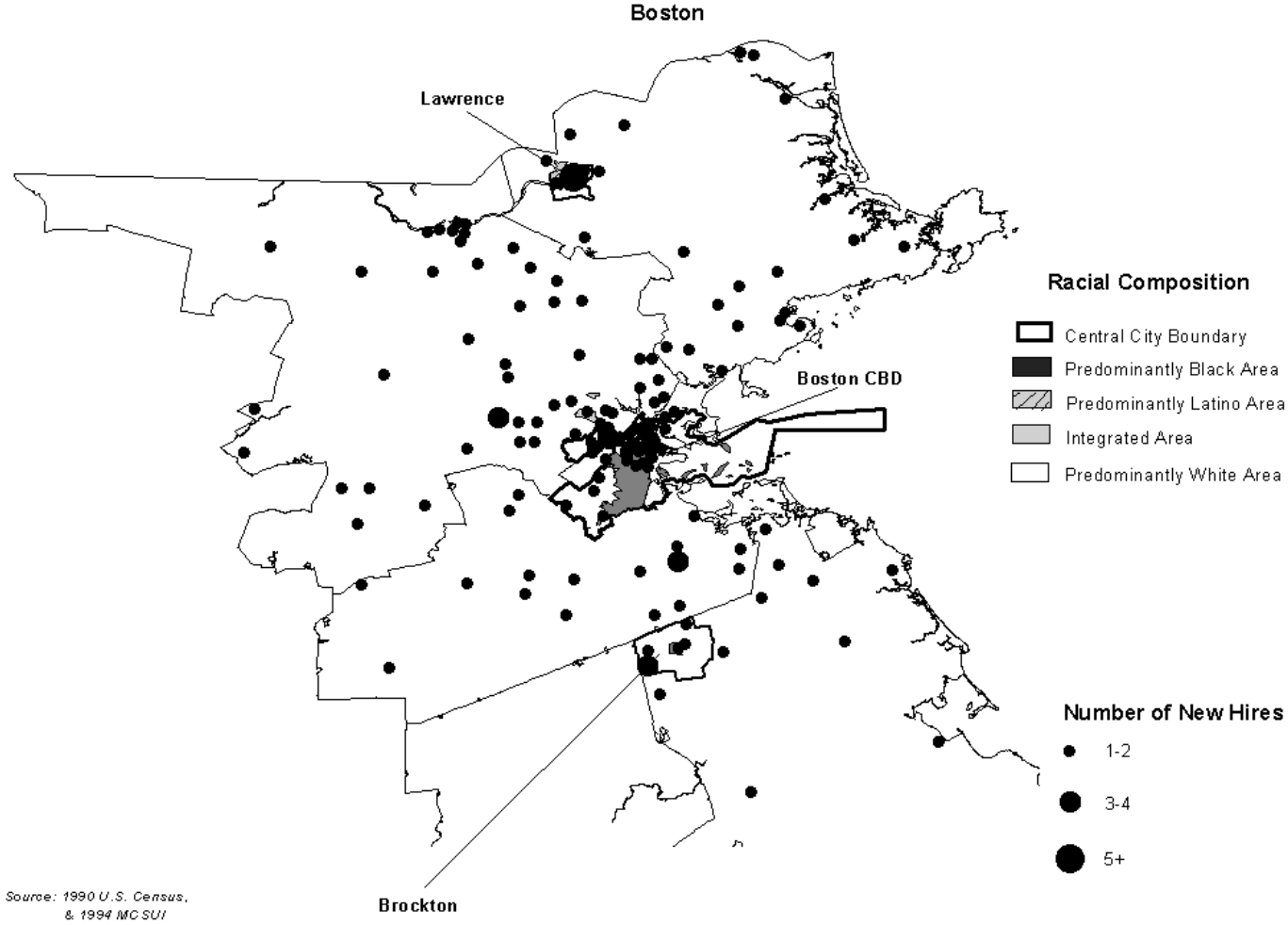


Figure 4

The Sub-Metropolitan Area Location of Low-Skill Jobs

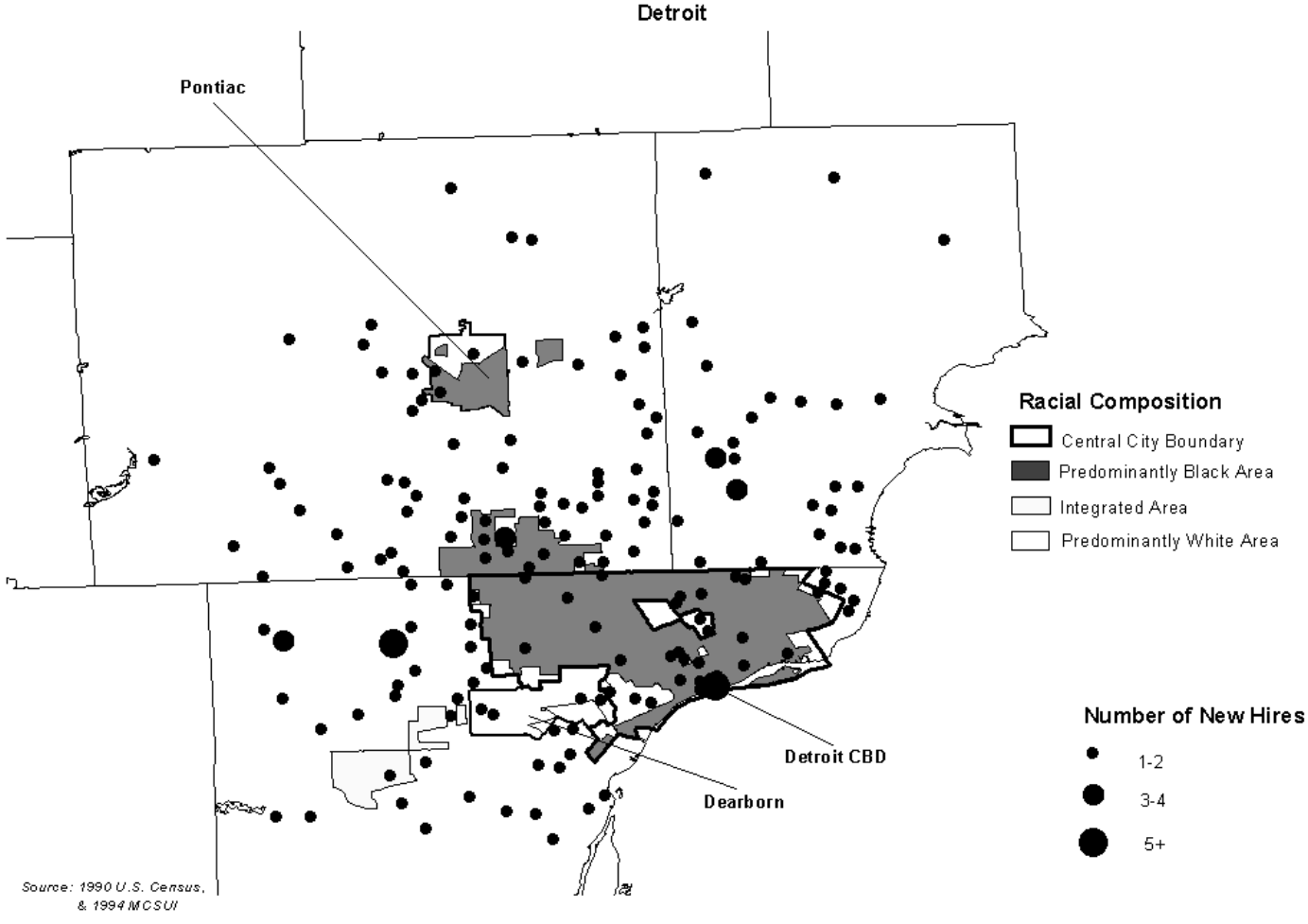
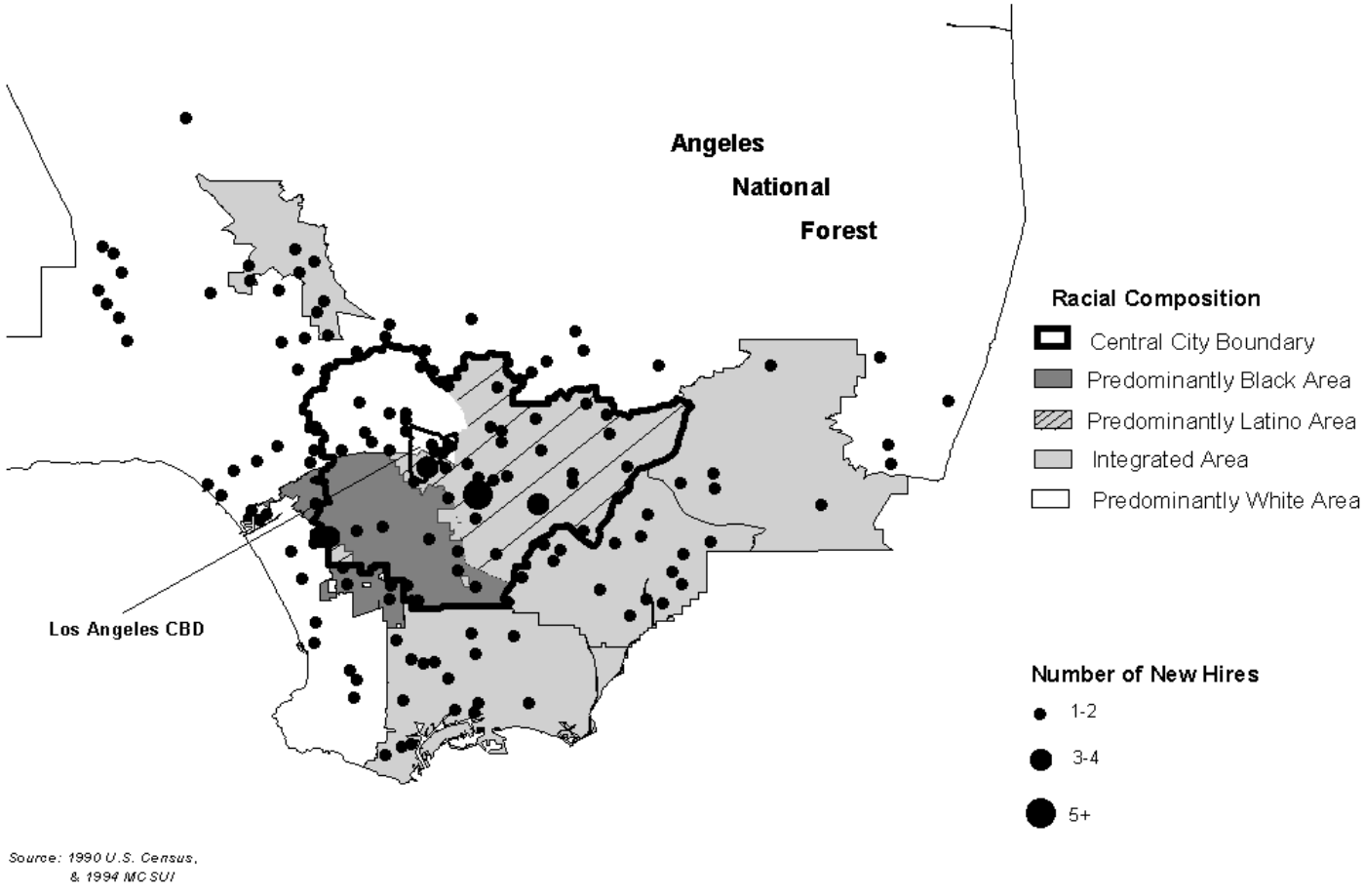


Figure 5

The Sub-Metropolitan Area Location of Low-Skill Jobs

Los Angeles



Source: 1990 U.S. Census, & 1994 MCSUI

defined. In white central-city areas, integrated suburbs, and black suburbs, the results are more mixed across MSAs, with no clear pattern emerging, except of course that all of these areas offer relatively poor access to jobs in comparison to the white suburbs.

Among the four metropolitan areas, Atlanta is distinguished by the large percentage of blacks that reside in the suburbs (61 percent). Moreover, the divergence between the shares of the region's low-skill jobs and less-educated people located in the central city is smaller for Atlanta than for the other MSAs. These facts suggest that job accessibility for blacks may be less of a problem in Atlanta than elsewhere. However, other facts belie this conclusion. First, within Atlanta's black suburbs job access is relatively poor, with the share of jobs less than half as large as the share of people. Second, Atlanta's black suburbs, located on the south side of the region, are far removed from the white suburbs on the north side where job growth rates at the entry level have been among the highest in the nation (Hartshorn and Ihlanfeldt, 1993). Third, the north side of Atlanta is not served by Atlanta's rapid rail or bus system, which makes it difficult for blacks, whether they live in the central city or the southern suburbs, to reach available jobs.

Looking at the other metropolitan areas, we find the black population most heavily concentrated in the central city of Detroit, while the shares of low-skill jobs to high school dropouts or public assistance recipients there is the lowest. Boston has the lowest concentration of both jobs and people in its central city, though minorities are quite heavily concentrated there. Finally, we find that substantial percentages of low-skill jobs in Los Angeles are located in the Latino central city and the integrated suburbs, but in the former case the concentration of less-educated people is markedly higher than the regional share of low-skill jobs.

Low-Skill Jobs and People within Submetropolitan Areas

Another perspective on spatial imbalances between the locations of job opportunities and residences of less-educated workers is obtained by comparing the percentage of all jobs that are low-skill

to the percentage of residents who are less-educated *within* each submetropolitan area (as opposed to the distribution of each category *across* these areas). These percentages are shown in Table 3.

The black and Latino central city and the CBD are characterized by a small share of low-skill jobs relative to the share of the population who are high school dropouts. In contrast, these two shares are much closer in magnitude in the other areas. Consider, for example, the areas where most blacks (black central city) and whites (white suburbs) reside. In the former, 15.8 percent of all jobs are low-skill (using the broadest definition), while a remarkable 43.5 percent of the adult population are high school dropouts. In sharp contrast, these two percentages converge in the white suburbs, standing at 17.7 percent and 19.4 percent, respectively. What the numbers in Table 3 clearly suggest is that if the residents of minority central-city areas limit their search for jobs to their immediate residential areas because of the high monetary and time costs required to seek jobs in suburbs, such groups are likely to experience severe employment problems. Increasing the number of areas searched in metropolitan areas is found to increase the employment of blacks (Stoll, forthcoming b). However, the results here also indicate that high school dropouts in white central cities and integrated suburbs appear to be at a disadvantage as well.

WAGES AND BENEFITS OF LOW-SKILL JOBS IN SUBMETROPOLITAN AREAS

Imbalances in the spatial distributions of jobs and people are likely to be reflected in the spatial variation of wages in low-skill jobs. Assuming that there is little rigidity in low-wage labor markets in the short run, wages are expected to be higher in areas with tighter labor markets. Thus, given the comparative abundance of low-skill jobs relative to less-educated people in the white suburbs (i.e., tighter labor market) and the relative dearth of jobs in minority central-city areas, we expect wages of low-skill jobs to be higher in the former than the latter areas. Recent evidence using MCSUI, but with

TABLE 3
Percentages of Jobs and People That Are Low-Skill/Minority within Submetropolitan Areas: Pooled Sample of MSAs

	Total Central City	Black Central City	Latino Central City	White Central City	Central Business District	**Total Suburbs**	Black Suburbs	Integrated Suburbs	White Suburbs	Total
Low-skill jobs[a]										
Noncollege job, no experience or training	14.7	15.8	23.0	14.8	11.7	17.5	17.6	18.4	17.7	16.8
No H.S. diploma, no experience or training	13.0	13.5	11.8	11.0	9.3	16.8	16.8	15.7	16.7	15.9
No H.S. diploma, no experience or training, no reading, writing, math	3.5	5.8	4.5	1.9	1.5	4.6	4.0	4.7	4.6	4.3
People[b] (25 years or older)										
Race										
White	32.4	16.2	27.4	58.4	21.6	79.9	41.7	48.2	86.6	67.0
Black	26.7	62.8	3.6	10.5	8.2	5.3	48.6	8.5	3.4	11.2
Latino	22.0	11.3	51.3	14.2	34.8	7.1	5.2	23.2	4.6	11.1
High school dropouts										
Total	46.5	43.5	59.1	31.4	64.8	21.4	23.4	31.6	19.4	28.2
Public assistance	16.7	22.2	15.0	9.5	13.7	5.4	7.5	9.0	4.7	8.2

Sources: [a]1994 MCSUI; [b]1990 census.

less-refined definitions than employed here of submetropolitan areas and of low-skill jobs, indicated that wages were higher in predominantly white than in minority areas (Ihlanfeldt, forthcoming).

Table 4 shows the wages and benefits of low-skill jobs in the submetropolitan areas. As expected, mean and median weekly wages of low-skill jobs are higher in the white suburbs than in the black or Latino central cities. Moreover, firms in white suburban areas are less likely than those in minority areas to pay hourly wages below $6.00.

Two other findings are important to note. First, low-skill wages are highest on average in the CBD, which may at first appear to be anomalous in light of our other findings. However, in addition to the degree of labor market tightness, nonwork attributes of work locations generate "compensating differences" in wage rates across geographic location (Rees and Shultz, 1970). These may include parking costs, housing costs, and environmental disamenities—all of which may be higher within the CBD. Second, firms in black suburbs pay the lowest low-skill wages on average. This may reflect the fact that most firms in black suburbs are located in Atlanta and Detroit, where the black suburbs are mostly geographic extensions of the black central city.[12]

In contrast to the geographic patterns of wages for low-skill jobs, Table 4 shows that central-city (particularly CBD) firms, even in the black and Latino parts of the central city, are more likely than suburban firms to provide fringe benefits in these jobs. Though not shown here, regression analysis indicates that the geographic difference in the provision of fringe benefits across the submetropolitan areas is entirely explained by geographic differences in the size of firms, where larger firms are more likely to provide such benefits.[13] An important implication of these findings is that there may be trade-offs between the wages and benefits received by working in low-skilled jobs in the central city and suburbs. For welfare-to-work programs, these results suggest that welfare recipients who gain employment in white or integrated suburban areas are likely to require more cash assistance for child care than those who find work elsewhere in the metropolitan area.

TABLE 4
Wages and Benefits of Low-Skill Jobs in Submetropolitan Areas: Pooled Sample of MSAs

	Total Central City	Black Central City	Latino Central City	White Central City	Central Business District	**Total Suburbs**	Black Suburbs	Integrated Suburbs	White Suburbs	Total
Low-skill jobs										
Weekly wages										
Mean	301.99	289.71	291.58	289.64	322.18	302.43	268.26	293.71	304.97	299.01
	(163.87)	(182.98)	(289.08)	(158.28)	(137.92)	(305.32)	(169.37)	(154.37)	(338.25)	(303.01)
Median	289.60	279.46	281.62	281.53	328.00	292.00	250.00	285.00	295.00	295.00
Hourly wage $6.00 or less	39.5	43.8	43.8	37.5	22.0	38.9	51.7	39.7	38.2	38.6
Benefits										
Own health insurance	77.7	76.2	77.6	72.5	85.4	70.4	75.9	62.1	70.9	72.0
Family health insurance	69.3	66.7	69.4	70.0	78.0	62.1	65.5	55.2	62.6	63.9
Day care	8.5	7.4	7.2	10.0	9.8	4.3	6.7	3.4	3.9	4.9
Flexible work hours	56.8	43.8	68.8	80.0	39.0	59.9	51.7	53.4	61.0	59.2

Notes: The low-skill jobs category refers to the union of all low-skill job categories defined in Table 1. Standard deviation in parentheses.
Source: 1994 MCSUI.

DISTANCE OF LOW-SKILL JOBS TO NEAREST PUBLIC TRANSIT STOP

The need to use public transportation as a mode of travel to work might make the attainment of distant jobs even more difficult for some workers. This problem is of particular concern for blacks and Latinos, who are more likely than whites to travel to work by public transit (U.S. Bureau of the Census, 1994) and for welfare recipients, who are more likely not to own cars (Ong, 1996). Commuting times by public transit are longer than by private modes of travel (Taylor and Ong, 1995), suggesting that real wages net of travel time costs would be significantly reduced if workers living in black or Latino central-city areas traveled to low-skill jobs in white suburbs by public transit.

Use of public transportation to get to work not only increases the burden of the commute as a result of increased commuting time but also renders some jobs completely inaccessible because of the spatial variation in firms' distance to public transportation stops. Historical land use patterns, with development more dense in the central city than in suburbs, have left public transportation systems more integrated within central cities than between central-city and suburban areas. In addition, recent investments in new public transit routes have most often involved light and heavy rail routes, and express buses from residential suburbs to downtowns (Wachs and Taylor, 1998). Generally, frequent service is offered from suburbs to downtowns in the morning, with reverse commutes to suburbs in the late afternoon. Such services improve transit links between middle-class, suburban residential areas and white-collar CBDs but are not designed to serve central-city workers seeking suburban employment. Central-city commuters on public transit systems must often make two or three time-consuming transfers to reach outlying suburban employment centers (Hughes, 1995). Furthermore, suburban firms are more distant from public transit stops than are central-city firms, making low-skill job opportunities in such firms even that much less accessible to inner-city workers (Holzer and Ihlanfeldt, 1996).

Table 5 shows the distances of low-skill jobs from the nearest public transportation stop across the submetropolitan areas. Transportation planners commonly define distances that are less than a quarter

TABLE 5
Distances of Low-Skill Jobs from Nearest Public Transportation Stop across Submetropolitan Areas: Pooled Sample of MSAs

	Total Central City	Black Central City	Latino Central City	White Central City	Central Business District	**Total Suburbs**	Black Suburbs	Integrated Suburbs	White Suburbs	Total
Low-skill jobs										
Noncollege job, no experience or training										
0–0.25 mile	84.3	84.8	81.0	79.3	95.8	56.2	71.4	72.9	52.6	62.3
0.26–1.00 mile	8.3	6.1	14.3	10.3	4.2	13.8	14.3	10.7	14.7	12.5
> 1.00 mile	7.4	9.1	4.8	10.3	0.0	30.0	14.3	16.4	32.6	25.2
No H.S. diploma, no experience or training										
0–0.25 mile	82.9	82.5	75.6	81.8	100.0	54.4	81.3	69.8	52.6	68.1
0.26–1.00 mile	9.2	7.5	20.0	13.6	0.0	14.6	12.5	12.1	14.5	12.0
> 1.00 mile	7.9	10.0	4.4	4.5	0.0	31.1	6.3	18.1	32.9	19.9
No H.S. diploma, no experience or training, no reading, writing, math										
0–0.25 mile	76.7	80.0	50.0	95.0	100.0	58.3	75.5	71.9	51.0	64.7
0.26–1.00 mile	13.3	6.7	37.5	5.0	0.0	8.5	10.5	11.1	8.6	9.6
> 1.00 mile	10.0	13.3	12.5	0.0	0.0	33.2	14.0	17.0	40.4	25.7

Note: The low-skill jobs category refers to the union of all low-skill job categories defined in Table 1.
Source: 1994 MCSUI.

of a mile away from a public transit stop as accessible and those farther away as inaccessible (Bernick and Cervero, 1994). Based on this definition, what is immediately striking is that nearly half of all low-skill jobs in white suburbs are inaccessible by public transportation. Since 65 to 70 percent of all low-skill jobs are located in the white suburbs, this alone suggests that a large fraction of low-skill jobs in metropolitan areas, about 30 to 35 percent, are not accessible by public transportation. On the other hand, virtually all low-skill jobs in the CBD are accessible by public transit, as are over 80 percent of low-skill jobs in most other parts of the central city. Overall, these results suggest that about 40 percent of low-skill jobs in these metropolitan areas are not easily accessible by public transportation.

THE SPATIAL DISTRIBUTION OF MINORITY WORKERS

The spatial arrangements of people and jobs and distances of jobs from public transit stops are likely to have an impact on the workplace locations of minority groups. As far back as the 1960s, it was argued that the growing separation between black residential communities and the location of jobs as a result of housing-market discrimination and job decentralization would likely affect blacks' employment locations. Evidence from Chicago and Detroit showed that the percentage of workers who are black in a given workplace area declined with physical distance from the edge of major black neighborhoods (Kain, 1968), while more recent evidence from Chicago and Los Angeles showed that an establishment's black male share of blue-collar employment declined with distance from black residential areas (Leonard, 1987). We extend this literature by analyzing not only the location of minority employment but also the spatial variation in the racial composition of applicants and recent hires.

Table 6 shows the percentages of minority employees, applicants, and recent hires within each submetropolitan area.[14] These data are calculated for firms whose most recent hire was in a low-skill job. Table 6 shows that, on average, although the percentage of low-skill workers who are black is higher in the central city than in suburbs, there is considerable variation within these areas in this percentage

TABLE 6
Percentage of Minority Employees, Recent Hires, and Applicants and Hire Rates within Submetropolitan Areas: Pooled Sample of MSAs

	Total Central City	Black Central City	Latino Central City	White Central City	Central Business District	**Total Suburbs**	Black Suburbs	Integrated Suburbs	White Suburbs	Total
Low-skill jobs										
Percentage of employees:										
Black	.191	.292	.020	.191	.285	.146	.420	.074	.138	.156
Latino	.233	.120	.464	.184	.129	.098	.070	.454	.064	.127
Percentage of applicants:										
Black	.428	.521	.226	.372	.647	.319	.650	.225	.310	.346
Latino	.233	.121	.463	.241	.109	.116	.013	.382	.091	.144
Percentage of recent hires:										
Black	.243	.419	.033	.207	.253	.195	.613	.078	.186	.205
Latino	.192	.101	.384	.253	.049	.145	.043	.542	.111	.155
Ratio of recent hires to applicants										
Black	.608	1.018	.102	.514	.602	.919	1.165	.423	.953	.849
Latino	1.468	1.469	3.121	.652	.085	1.491	5.169	1.156	1.347	1.485

Note: The low-skill jobs category refers to the union of all low-skill job categories defined in Table 1.
Source: 1994 MCSUI.

across submetropolitan areas. For example, blacks' employment share is very low in Latino central cities (2 percent) and relatively low in white central cities (19 percent), but relatively high in black suburbs (42 percent). Similar patterns appear for Latinos except that they hold a larger share of low-skill jobs in integrated suburbs (45 percent). This phenomenon is likely driven by Los Angles, where Latinos make up a large share of the integrated suburban population. Since there are few Latinos in Atlanta and Detroit and since the larger black suburban areas are found in these two MSAs, the share of low-skill jobs held by Latinos is expected to be low in black suburbs.

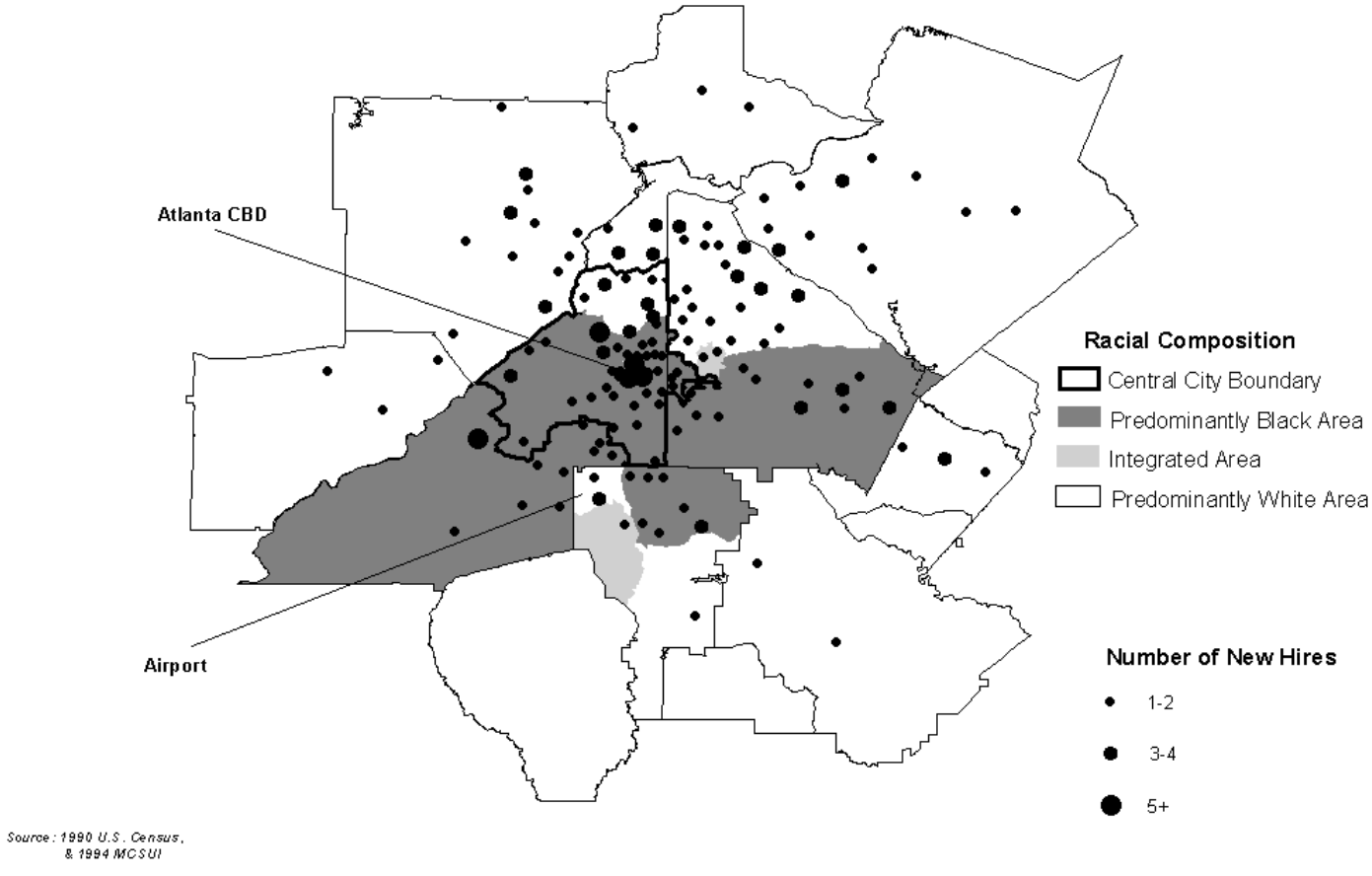
Table 6 also shows these data for applicants. The applicant data represent the potential quantity of labor supply from black and Latino workers across space. Although these percentages can be affected by numerous other factors, such as the intensity of firms' recruitment of minority workers and job information flows from firms' employees to potential minority workers, the results show that physical distance of firms from minority neighborhoods clearly plays a role as well. The percentages of applications coming from blacks and Latinos are greater at firms in the central city than the white suburbs, suggesting that firm distance from minority residential areas affects the degree of low-skill job accessibility for these groups. Whether the access of inner-city blacks and Latinos to employment in white suburban areas is limited because of poor job information, transportation difficulties, perceptions of hostility, or employer discrimination is not clear from the data presented here, though there is evidence to support each of these claims (Holzer, 1998; Ihlanfeldt, 1997; Holzer and Ihlanfeldt, 1996; Sjoquist, 1997; Turner, Fix, and Struyk, 1991).

Because employers hire out of applicant pools, the spatial flow of minority applications is related to and determines in large part the percentage of recent hires that are minority within submetropolitan areas. Figures 6–9 show physical maps of the locations of all recent black hires (regardless of educational, skill, or experience requirements of the job) in Atlanta, Boston, Detroit, and Los Angeles, respectively, and Figure 10 shows the same for Latinos in Los Angeles. The maps reveal interesting

Figure 6

The Sub-Metropolitan Area Location of Black Hires

Atlanta



Source : 1990 U.S. Census, & 1994 MCSUI

Figure 7

The Sub-Metropolitan Area Location of Black Hires

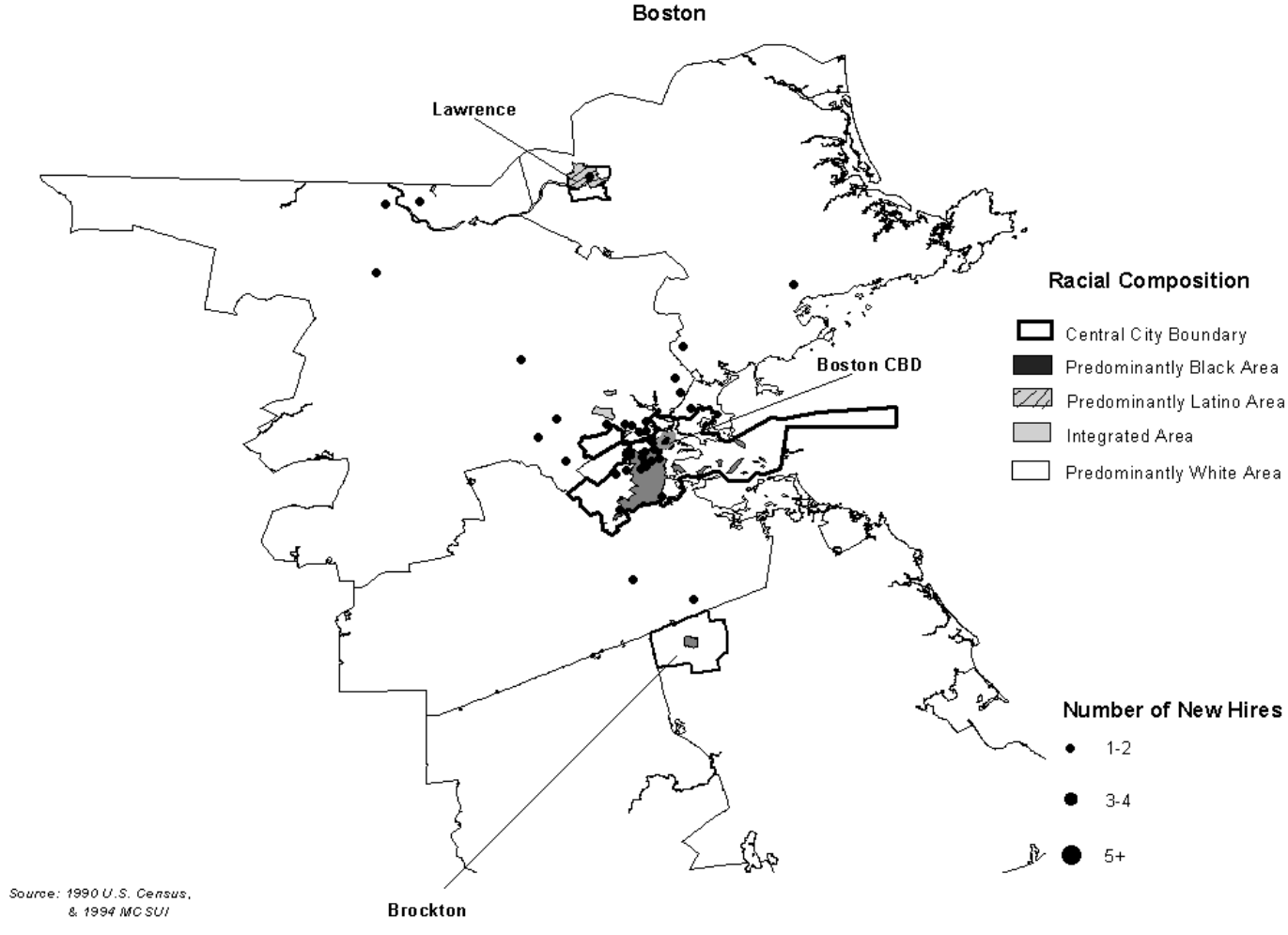


Figure 8

The Sub-Metropolitan Area Location of Black Hires

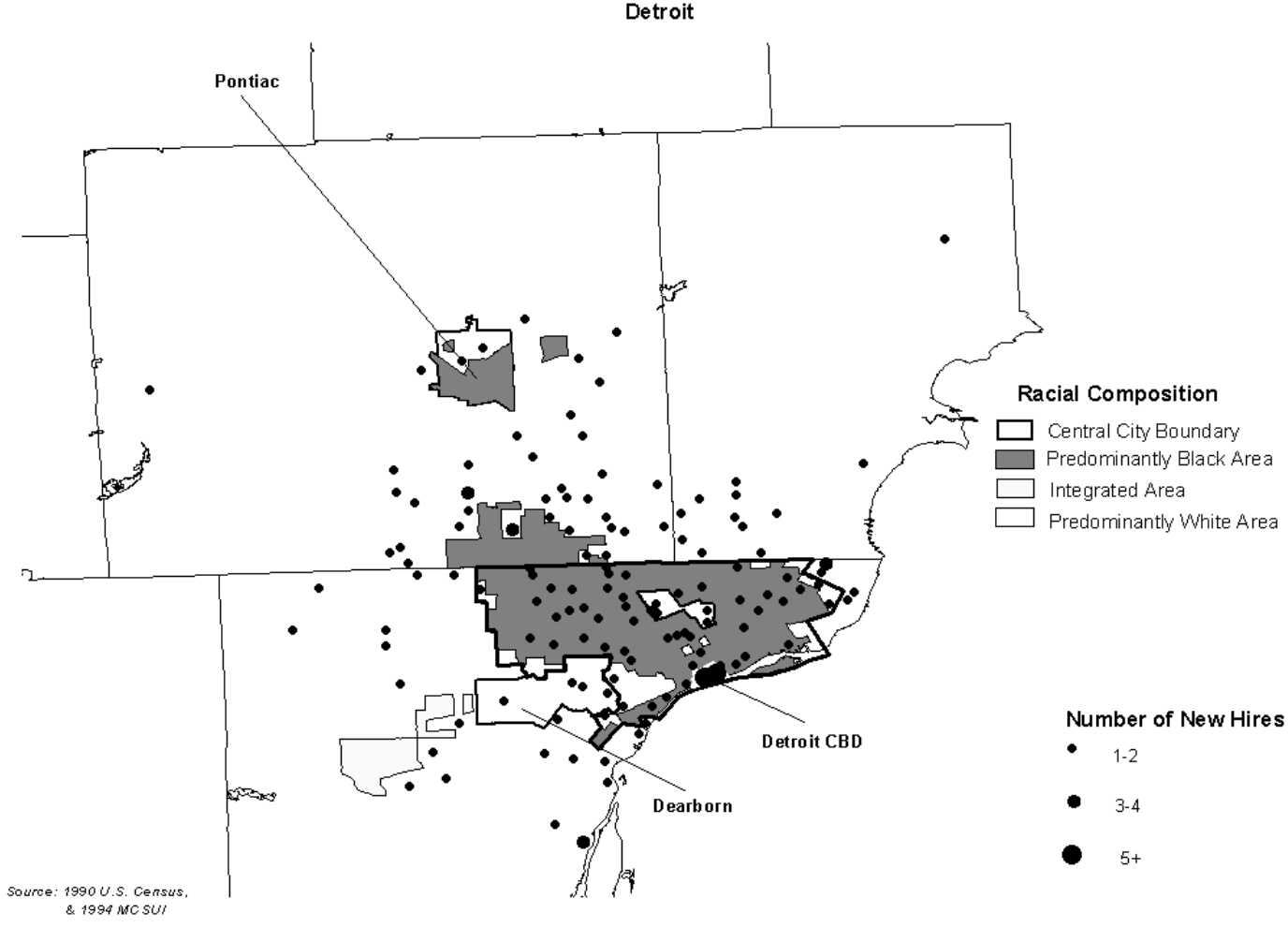
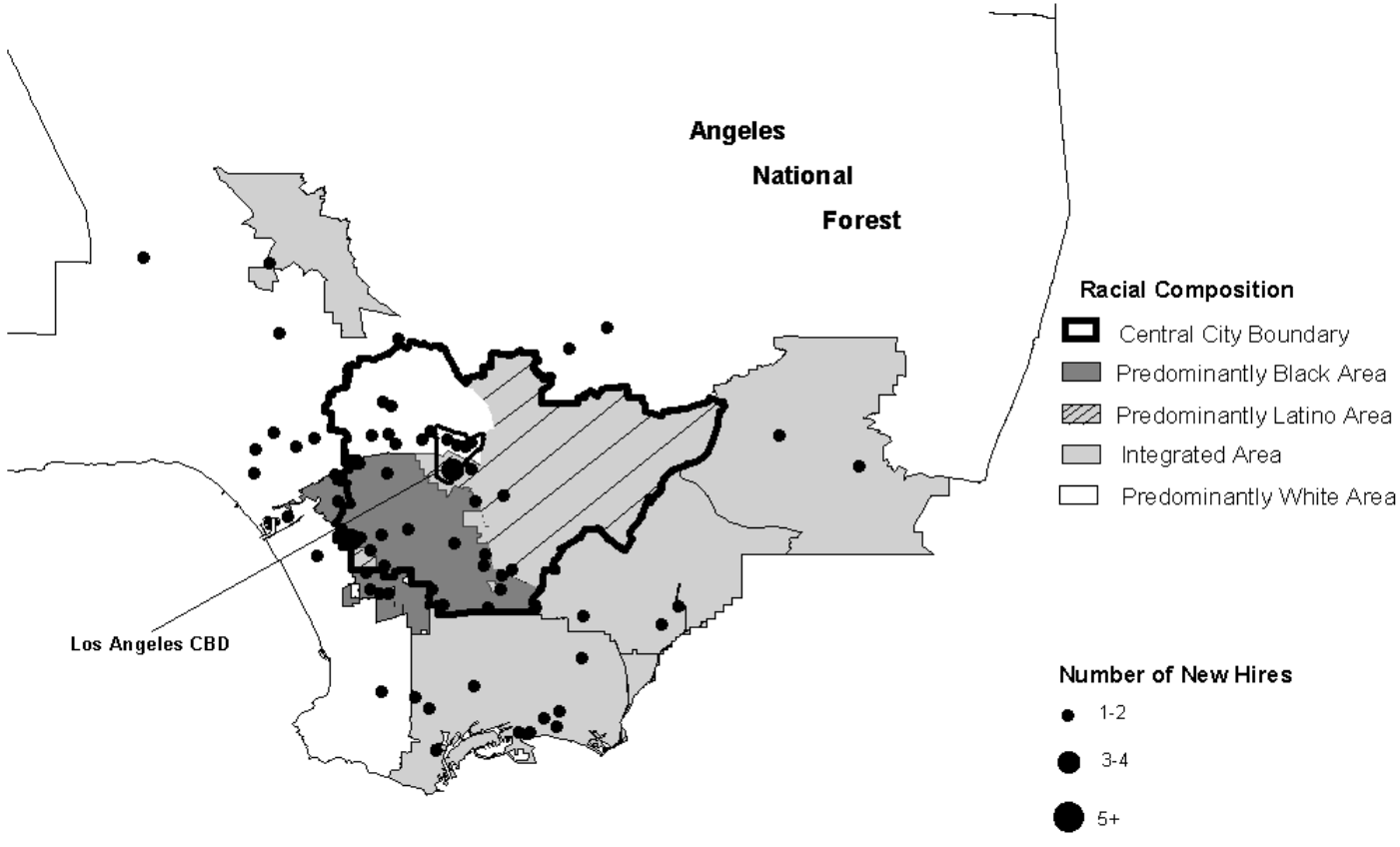


Figure 9

The Sub-Metropolitan Area Location of Black Hires

Los Angeles

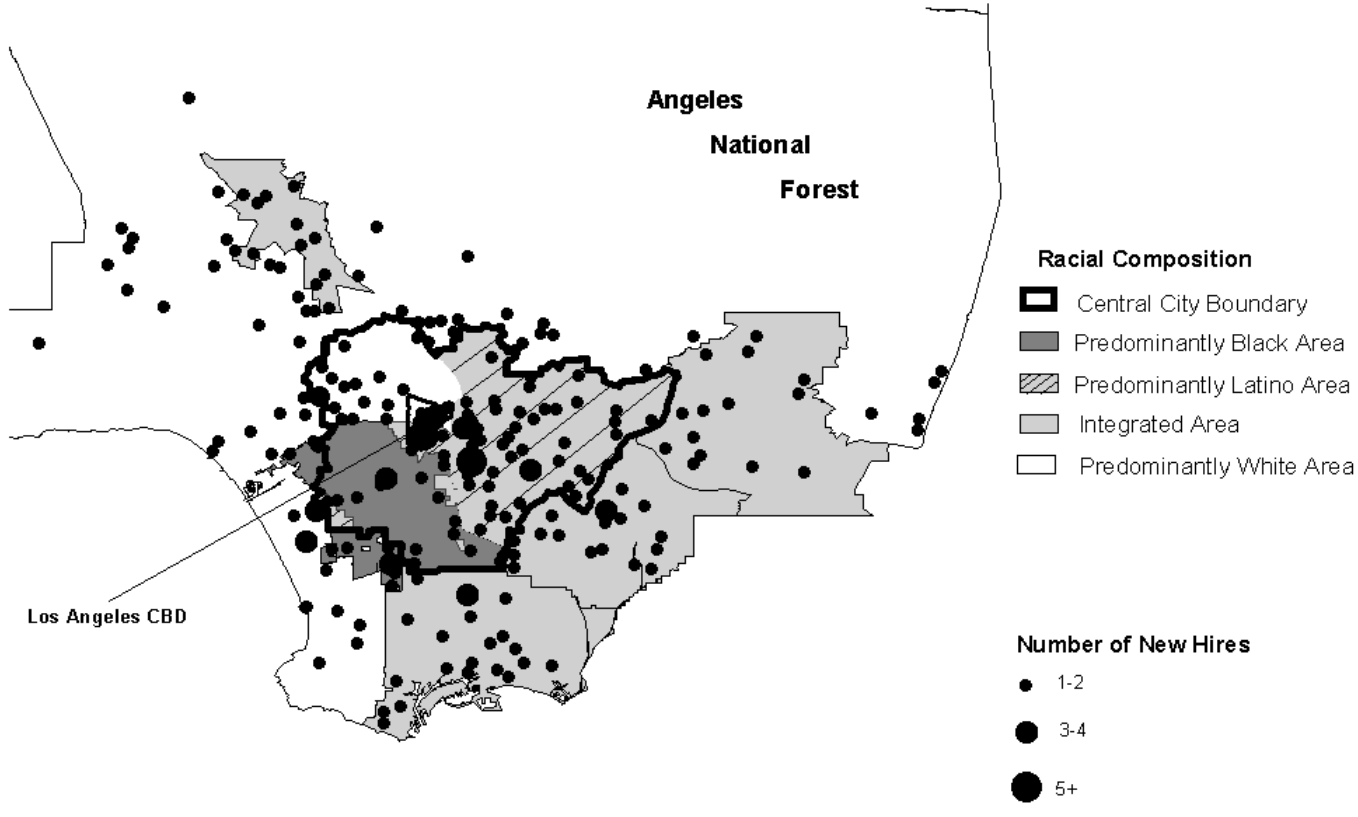


Source: 1990 U.S. Census, & 1994 MCSUI

Figure 10

The Sub-Metropolitan Location of Latino Hires

Los Angeles



Source: 1990 U.S. Census, & 1994 MCSUI

patterns and generally reflect the aggregate data shown in Table 6. First, in all MSAs, blacks are much more likely to be hired in or near the black central city than elsewhere, regardless of the educational, skill, or experience requirements of the job.[15] Second, the concentration of black hires in or near the black central city is greatest in Boston and Detroit, and to a lesser extent in Los Angeles. In Atlanta, the presence of large black suburbs reduces the concentration of blacks' employment in the central city. However, in both Atlanta and Detroit, a large share of black new hires are also located in the white suburbs. The spatial distribution of recent Latino hires in Los Angeles is more even than that of blacks (in part due to greater residential dispersion among Latinos than blacks) but is quite heavily concentrated in and near the CBD and the Latino central city.

Though the applicant pools from minority groups reflect the potential supply of these workers to employers, the extent to which employers hire minority workers out of their respective applicant pools reflects their relative demand for such workers. The ratio of recent hires to applicants for each submetropolitan area shows the relative demand for applicants of a particular group across space. Ratios above 1 for any group indicate, on average, a relative preference for applicants from a particular group, while ratios below 1 indicate a relative disinclination to hire applicants from that group. Of course, the differences in hiring ratios across racial groups and location are conditional on many factors, such as the relative skills of the applicants, the skill needs of jobs, and employer preferences across groups.[16]

The ratios of recent hires to applicants shown in Table 6 suggest a relative preference for blacks in black central-city and black suburban areas and a relative disinclination to hire blacks in white suburbs. However, the lowest ratios for blacks are found in the Latino central-city area, integrated suburbs, and the white section of central cities. This suggests that blacks' access to jobs is restricted in these areas, even though they may be more physically accessible than jobs in white suburbs. Whether this is due to discrimination against blacks or other factors (e.g., lower relative reservation wages among other groups) cannot be distinguished from these data. On the other hand, the results clearly suggest a

relative employer preference for Latinos over blacks in all areas except the white section of central cities. This latter result suggests that both blacks and Latinos appear to have less access to low-skill jobs in white central cities even though they may be more physically accessible than such jobs in white suburbs. Again, the extent to which the greater hire rates of Latinos in other locations are due to their lower reservation wages, more effective social networks in particular industries (Waldinger, 1993), or the perception that members of many immigrant groups are harder workers (Wilson, 1996; Kirschenman and Neckerman, 1991) is not clear from these data. What is clear is that if Latino workers overcome the barrier of physical access to jobs, their opportunities for employment are superior to those of blacks.

ACCESS TO PUBIC TRANSPORTATION AND THE SPATIAL DISTRIBUTION OF MINORITY HIRES

As noted above, the accessibility of low-skill jobs may be limited not only by physical distance from jobs but also by the distance of such jobs to public transportation stops. Given the greater reliance of blacks and Latinos than of other groups on public transportation, we might expect blacks and Latinos to have greater accessibility to jobs that are closer to, rather than farther from, public transportation stops. Table 7 shows the percentages of recent hires that are black (Latino) for all jobs and low-skill jobs that are accessible and inaccessible to public transportation stops within submetropolitan areas.

At the central-city and suburban level, the data generally meet our expectations. That is, in both places, blacks and Latinos are a higher percentage of new hires among jobs that are accessible to public transit. However, there is variation in these patterns within submetropolitan areas. Three interesting findings emerge. First, even in the black central city, blacks are much less likely to be hired into jobs inaccessible by public transportation relative to those that are accessible. Second, this pattern is also true for Latinos for jobs located in white parts of central cities. These results suggest that even within central

TABLE 7
Percentage of Recent Hires Who Are Black/Latino by Accessibility of Job to Public Transportation Stops within Submetropolitan Areas: Pooled MSAs

	Total Central City	Black Central City	Latino Central City	White Central City	Central Business District	**Total Suburbs**	Black Suburbs	Integrated Suburbs	White Suburbs	Total
All jobs										
Black										
0–0.25 mile	.223	.426	.048	.144	.220	.168	.571	.133	.152	.186
> 0.25 mile	.190	.286	.065	.167	.158	.128	.297	.209	.116	.134
Latino										
0–0.25 mile	.216	.066	.579	.161	.137	.142	.048	.372	.111	.166
> 0.25 mile	.175	.054	.516	.033	.158	.074	.000	.419	.061	.085
Low-skill jobs										
Black										
0–0.25 mile	.271	.500	.056	.200	.250	.206	.609	.106	.191	.224
> 0.25 mile	.152	.231	.010	.286	.050	.195	.667	.045	.191	.190
Latino										
0–0.25 mile	.168	.063	.333	.300	.050	.188	.043	.553	.146	.183
> 0.25 mile	.303	.231	.501	.143	.010	.086	.010	.500	.071	.110

Note: The low-skill jobs category refers to the union of all low-skill job categories defined in Table 1.
Source: 1994 MCSUI.

cities, accessibility to public transit affects minority employment. Third, accessibility through public transit appears to have little or no effect on the hiring of blacks in low-skill jobs in white suburbs. A possible explanation for this finding is that, because of the long travel times and multiple transfers frequently involved, public transit access does little to enhance the attractiveness of low-wage, low-skill jobs in white suburbs to inner-city blacks, who are more spatially concentrated in inner-cities than other groups and thus may need to travel father than other groups to white suburbs. A protracted commute may also reduce the willingness of employers in white suburbs to hire black workers because of concerns over scheduling and possible tardiness.

CONCLUSION

In this paper, we examine and compare the spatial distributions of jobs and people across submetropolitan areas. The results indicate a general unevenness between the locations of jobs and people in metropolitan areas. Black and Latino residents tend to be concentrated in respective central-city areas where the availability of jobs is low, while whites tend to live in white suburban areas where the availability of jobs is high. Moreover, local job availability is fairly high for residents in white parts of central cities. These results are consistent with previous research on spatial mismatch and suggest that blacks, and to a lesser extent Latinos, are spatially disadvantaged in the labor market.

These uneven spatial distributions are particularly striking for low-skill jobs and less-educated people. White suburban areas contain 69.4 percent of the lowest-skill jobs but only 40.6 percent of the least-educated people, while the black central city holds 10.2 percent of these jobs and 15.6 percent of the least-educated people. The uneven distributions of low-skill jobs and less-educated people is even more pronounced for those receiving public assistance, particularly for those who live in black and Latino central-city areas. Moreover, the results also indicate that suburban residences for minority workers do not necessarily improve their access to jobs.

The research also indicates that wages for low-skill jobs are higher in the CBDs and white suburbs compared to other parts of metropolitan areas. Moreover, for those central-city residents who travel to work by public transportation, suburban jobs are even less physically accessible than distances alone would suggest. Nearly half of all low-skill jobs in white suburbs are inaccessible by public transportation.

The particular distributions of jobs and people noted above have important implications for the employment locations of minority workers. The shares of employees, applicants, and new hires who are black and Latino are generally smaller in white suburbs (and in integrated suburbs for blacks) than in minority central-city areas, suggesting that space does indeed play a role in limiting minorities' access to suburban jobs. However, the percentage of employees who are black in Latino central-city areas is also low, as is the hire rate for black and Latino applicants in the white section of central cities (and in the CBD for Latinos). These results strongly suggest that blacks' and Latinos' access to jobs is not always higher in central cities, even though jobs in these areas may be more physically accessible than those in white suburbs; much depends on the exact ethnic composition of the particular central-city area.

Taken together, the results suggest that policy interventions to make low-skill jobs throughout the metropolitan area more accessible to central-city minorities are likely to have a positive impact on their employment outcomes. Furthermore, the success of such efforts also depends on the extent to which employers in the different areas are willing to hire minority applicants. While employers in black suburbs are clearly willing to hire black workers, employers in integrated and white suburbs seem to favor hiring Latinos over blacks. On the other hand, employers in white suburbs are more willing to hire black applicants than are employers in white, Latino, or CBD parts of central cities, which is somewhat more encouraging for these policy approaches.

As we noted above, two general approaches are available to increase central-city minority residents' access to jobs in white suburbs, although the results shown here offer limited information

about which approach might be most effective. The first is to increase minority access to suburban housing. Policies that eliminate or mitigate suburban housing-market discrimination and mortgage lending discrimination, such as enforcement of the 1988 Fair Housing Act, may help accomplish this goal (Yinger, 1995). Residential mobility policies, such as the Moving to Opportunity program, are also likely to be effective (Katz, Kling, and Liebman, 1997; Rosenbaum, 1995). However, such programs can be expected to be politically controversial and costly (Briggs, 1997; Haar, 1996). In addition, they are likely to be limited in scale and therefore would affect few people relative to the number who are spatially disadvantaged in the labor market.

The second approach—such as subsidizing commutes, providing van pools to suburbs, or improving public transportation and its connection between central-city and suburban routes—takes residence as given and attempts to improve physical access to suburban jobs. These policies are generally less costly per participant and are less politically controversial. However, these programs do not address other potentially negative effects of residing in concentrated minority and/or poor neighborhoods. Furthermore, such programs may also have limited success if the wage benefits gained as a result of having a suburban job are not sufficient to compensate for the additional travel costs. These policies should therefore target employers that are relatively nearer to minority communities, and where applicants are likely to be hired. Moreover, making more low-skill jobs in central cities accessible to public transportation may also have a positive impact on minorities' employment. Finally, the results suggest that stricter enforcement of antidiscrimination laws in employment may be an important complement to policies designed to improve the physical access of minorities to jobs.

Endnotes

[1]Authors' calculations using the March 1996 Current Population Survey.

[2]For literature reviews of the spatial mismatch hypothesis, see Ihlanfeldt and Sjoquist (1998), Kain (1992), and Holzer (1991). For recent evidence in favor of the spatial mismatch hypothesis, see Raphael (1998), Holzer and Ihlanfeldt (1996), Holzer, Ihlanfeldt, and Sjoquist (1994), and Stoll (1999). For evidence against the spatial mismatch hypothesis, see Ellwood (1986) and Holloway (1996).

[3]The Moving to Opportunity program is also partly motivated by the notion of neighborhood effects, where the concentration of low-income minorities in poor neighborhoods leads to their social isolation from other groups and compounds the various disadvantages they face (see, for instance, Wilson, 1987; Jargowsky, 1997).

[4]The MCSUI sample of firms was drawn from two sources: (1) a random sample stratified by establishment size and (2) the employers of respondents in the MCSUI household survey. The random samples were drawn across establishment-size categories to reproduce the distribution of employment across these categories in the workforce; the household-generated sample implicitly weights firms in the same way. The overall response rate for MCSUI survey was roughly 67 percent. This compares favorably with other recent telephone surveys of employers (Kling, 1995). There were few differences in response rates across observable categories—such as establishment size, industry, location—suggesting little if any sample selection bias. For a more detailed description of the MCSUI employer survey, see Holzer (1996).

[5]Although these categories are derived somewhat arbitrarily, the use of alternative definitions of low-skill jobs produced results similar to those reported here. In addition, although the summary statistics presented here differ by definition of low-skill jobs, the qualitative story that emerges remains the same.

[6]For the Atlanta, Boston, and Detroit metropolitan areas, we use political jurisdictional boundaries to define central-city versus suburban areas. In addition, we follow Census Bureau designations and include Brockton and Lawrence as central cities in Boston and Pontiac and Dearborn as central cities in Detroit. However, due to the unique spatial character of the Los Angeles region, we deviated somewhat from official central-city/suburban boundaries. There, boundaries define areas that are atypical central-city and suburban places. The low population and employment densities of some central-city areas, in particular the San Fernando Valley, are more analogous to those in the suburbs, while some close-in areas, in particular East Los Angeles, have densities that match or exceed those in the central city. Thus, in Los Angeles, we include the San Fernando Valley, a central-city area that looks more like a suburban area, as part of the suburbs, and East Los Angeles, a suburban area that looks like a central-city area, as part of the central city in the analysis.

[7]Restriction of the white central city in Los Angeles to that central-city area with contiguous census tracts of whites representing 50 percent or more of the population did not change the basic results shown here.

[8]Consistent with the "tipping' hypothesis, there were relatively few suburban census tracts with blacks representing 20–40 percent of the population. With a cut-off level of 30 percent black for black suburbs, most census tracts that met this criterion are majority black suburban tracts. Moreover,

alternative definitions of black suburbs did not change the basic results shown here.

[9]We alternatively used people in the labor force instead of people aged 25–65 in our mapping. People in the labor force may more accurately represent individuals more likely to be impacted by the spatial distribution of jobs than individuals both in and out of the labor force. However, the results of this exercise did not alter our basic findings. Moreover, to the extent that the spatial distribution of jobs affects decisions of individuals to enter or exit the labor force, restricting the analysis to individuals in the labor force is likely to introduce bias into the results.

[10]Census data on public assistance identifies people who receive some sort of aid from federal, state, or local programs and not only those who receive AFDC. Thus, it is difficult for us to generalize the spatial mismatch observed for those on public assistance to those on "welfare." However, to the extent that those on public assistance are more likely to go on welfare or use welfare, the results shown here are instructive.

[11]In this table (and subsequent tables where low-skill jobs are treated as a single category), low-skill jobs are defined as the union of the three sets of low-skill jobs defined previously.

[12]We used regression analysis to examine factors that might explain why firms within CBDs pay higher wages for low-skill jobs than firms in the other submetropolitan areas. Using weekly wages as the dependent variable, the analysis showed that the higher wages paid in CBDs relative to other submetropolitan areas is not explained by systematic geographic differences in the size of firms, the firm's collective bargaining status, or the metropolitan area (e.g., Atlanta) in which the firm is located.

[13]In these models, we regressed a fringe benefit dummy variable on the set of submetropolitan and metropolitan area dummies (with white suburbs and Atlanta as the reference variables, respectively). Next, we systematically added a union dummy variable and then a set of firm-size dummies to the analysis. The addition of the firm-size dummies reduced the coefficient on the CBD dummy variable by 50 percent and caused it to become statistically insignificant.

[14]In the MCSUI employer survey, questions were asked of employers about the percentages of their applicants and employees who were black, Latino, and Asian. We then calculated the percentages of employees and applicants for firms where the last person was hired into a low-skill job.

[15]Physical maps of the location of all recent black hires in Atlanta, Boston, Detroit, and Los Angeles (and Latinos in Los Angeles) for the low-skill jobs defined in the analysis demonstrated a similar pattern to that shown here. However, the extremely small number of blacks hired into low-skill jobs in Los Angeles and Boston produced very few spatial identifiers in these MSAs. Thus, we show black hire identifiers for those hired in all jobs for the four MSAs. The qualitative story that emerges remains the same, however.

[16]See Holzer (1996) for a more detailed discussion of the possible problems in interpretation of this ratio. The average quality of applicants and the self-selection of applicants across space make any single explanation of hire rate differences across space or between groups difficult.

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