METRO ECONOMY SERIES FROM THE METROPOLITAN POLICY PROGRAM AT BROOKINGS

Where Workers Go, Do Jobs Follow?

Metropolitan Labor Markets in the US, 1990–2000

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"Local labor market policy should maximize the access to good jobs and skill-building opportunities for all workers throughout metropolitan areas."

Findings

Using data from the 1990 and 2000 Census of Population, an analysis of workers and jobs in the central cities and lower- and higher-income suburbs of the largest 150 metropolitan areas indicates that:

- **Roughly 65 percent of all residents and nearly 60 percent of all jobs are now located in the suburbs, with over a third of each in the higher-income suburbs.** More individuals now live in the higher-income suburbs than in the central cities, and nearly as many jobs are in the higher-income suburbs as well.

- **Population grew strongly during the 1990s in the lower-income suburbs, while job growth was particularly strong in the higher-income suburbs.** Residential populations grew by 36 percent in lower-income suburbs, compared to just 24 percent in the central cities and 16 percent in the higher-income suburbs; while employment growth was more rapid (at 26 percent) in the higher-income suburbs, than in the central cities and lower-income suburbs (18 percent each).

- **Population growth in the lower-income suburbs for blacks and Latinos has been especially dramatic, while their employment growth in these areas lags behind.** Population growth in the lower-income suburbs is also especially pronounced for less-educated groups. But job growth lags behind population growth in the lower-income suburbs and exceeds it in the higher-income suburbs for all educational groups.

- **Most groups of residents in the lower-income suburbs must now commute out for work, especially to the higher-income suburbs.** Major changes in commute patterns over the 1990s were observed among Latinos (and, to a lesser extent, high school dropouts), with the sharpest increases in commutes towards the higher-income suburbs occurring among members of these groups who live in the central cities and lower-income suburbs.

- **The accessibility of residents of lower-income suburbs to jobs in higher-income areas appears to vary greatly across metropolitan areas.** Lower-income suburbs are largely contiguous to higher-income suburbs in some metropolitan areas (such as Baltimore and Boston) while they are mostly concentrated on different sides of the central cities in other areas (such as Atlanta, Chicago, and Denver).

These findings suggest that local labor market policy should better maximize access to good jobs and skill-building opportunities for all workers throughout the metropolitan area. Employer access to potential workers should be enhanced as well, regardless of where the workers and the jobs are located.

Introduction

For the past four decades, scholarly and policy-oriented work on urban labor markets has focused mostly on employment differences between the residents of and the jobs in cities and suburbs. The idea of "spatial mismatch," in which minority residents of segregated urban neighborhoods have limited access to increasingly suburban jobs, has been studied exhaustively.[2]

Over the past decade, however, it has become clear that the suburbs of major metropolitan areas in the U.S. have become quite heterogeneous in population characteristics. The growing racial diversity of suburban areas has been widely noted. But the representation of different racial groups and levels of economic affluence is not growing evenly within suburban areas. Myron Orfield was one of the first scholars to focus extensively on the "inner suburbs," and especially on the possibility of creating political coalitions between city residents and those of less affluent suburban communities with similar economic and social needs. Other recent studies have documented the demographic characteristics of residents in "older" versus "newer" suburbs.[3]

But some older suburbs located close to central cities (like Chevy Chase, MD, in the Washington, DC, metropolitan area) hardly fit the pattern of less affluent areas described in these studies. Instead, it seems that the most important distinction among suburban areas would involve average income levels of the population, which are also likely to be highly correlated with their racial and educational compositions. The rise of poverty in some suburban areas also implies that it is important to further our understanding of lower-income suburbs and how they compare with those having higher average incomes.[4]

Also, relatively little of this work has focused specifically on the structure of labor markets in these areas and on the characteristics of workers as well as jobs located in each. One exception is some work by Michael Stoll and his colleagues, which focused on both workers and jobs in predominantly white versus minority neighborhoods of cities and suburbs. However, that paper mostly used population data from 1990, and was limited to just four large metropolitan areas.[5]

In this report we document the characteristics of jobs and workers in different parts of the largest metropolitan areas in the United States and show how these characteristics have evolved in recent years. We distinguish between three kinds of geographic regions within metropolitan areas: 1) central cities, 2) lower-income suburbs, and 3) higher-income suburbs. We define the latter two categories on the basis of average incomes of residents in "PUMAs," which are generally sub-county geographic units. We consider the distribution of residents and jobs across the three types of areas in the 150 largest metropolitan areas in the United States. We also examine how the numbers of residents and jobs grew in each type of area between 1990 and 2000. We make these comparisons for residents of different racial and educational groups. We also analyze commute patterns of individuals across these three geographic units in both 1990 and 2000.

Below we describe the data and research method in greater detail and then present our results on workers and jobs as well as on commute patterns. We close with some implications for public policy.

Methodology

A major question in analyzing issues at the sub-metropolitan level is how to define these areas, especially those within the suburbs. For instance, at least one study uses a county-based definition, in which "first" suburbs are defined as central counties (excluding the central cities in those counties) and any county adjacent to the central city.[6] But such a definition is problematic, in that adjacent counties (e.g., Montgomery County, MD, which is adjacent to Washington, DC) can often have quite heterogeneous populations. They can also have quite high average incomes. On the other hand, defining sub-metropolitan areas on the basis of municipalities is also problematic, as municipalities can vary enormously in size and jurisdiction. Another option, aggregating up from the level of the census tract, would not enable us to consider the locations of jobs, which are often in different census tracts (and even municipalities) from where workers live but are within reasonable commutes.

To deal with these problems, we have defined our lower- and higher-income suburbs on the basis of PUMAs, which are sub-county geographic units defined by the U.S. Census Bureau. The Census of Population provides PUMAs for residential and work locations in its 5 percent Public Use Micro Sample (PUMS) data.[7] Using data from Census 2000, we define lower-income suburbs as suburban PUMAs whose median household income falls below the average for the respective metropolitan area as a whole, while higher-income suburbs are those PUMAs whose average household income is above this level.[8]

In the PUMS data, the borders of PUMAs generally follow the boundaries of whole central cities, Metropolitan Statistical Areas (MSAs), and Primary Metropolitan Statistical Areas (PMSAs), but not always. When PUMAs cross these boundaries, we allocate them to these areas according to whether 50 percent or more of the population is in one municipality (such as the central city) or metropolitan area domain using GIS techniques. We also use GIS techniques to align those PUMAs that do not retain the same boundaries in 1990 and 2000.[9]

In some metropolitan areas, workplace PUMAs are not identical to residential PUMAs; in these cases, the workplace PUMAs are larger geographic areas than the residential PUMAs. We deal with these cases by aggregating residential PUMAs to match the workplace PUMAs. In addition, we impose the 2000 PUMA boundaries on the 1990 PUMS data to hold the geographic boundaries of our sub-metropolitan areas constant over the period of study.

To ensure that we have at least two PUMAs in each metropolitan area we limit the study to the largest 150 metropolitan areas for the year 2000,. We have eliminated Los Angeles and Phoenix from the study because workplace PUMAs there are geographically defined so broadly as to eliminate meaningful variation across suburban area types.

We present maps below for five of these metropolitan areas: Atlanta, Baltimore, Boston, Chicago, and Denver. These maps provide some indication of the diversity in the geographic layouts of the central cities, lower- and higher-income suburbs across metro areas. We discuss these maps in greater detail below.

The analysis uses the micro data from the 1990 and 2000 PUMS. The sample includes all those aged 25 to 64.

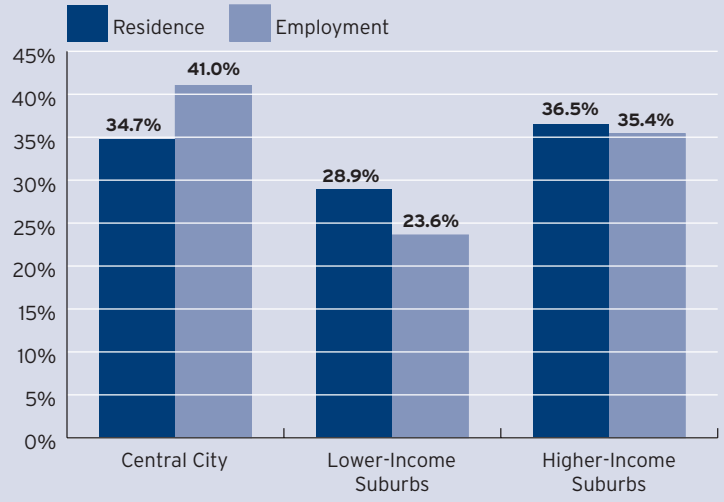
Findings

A. Roughly 65 percent of all residents and nearly 60 percent of all jobs are now located in the suburbs, with over a third of each in the higher-income suburbs.

The basic facts on the distribution of population residences and employment across central cities, lower-income suburbs, and higher-income suburbs can be seen in Figure 1, which shows the distribution of residences and jobs in 2000 across these areas. Details on population and employment locations in each of the 20 largest metropolitan areas can also be found in Appendix Table 1.

The data in Figure 1 show that more individuals now live in the higher-income suburbs than in the central cities and there are nearly as many jobs in the higher-income suburbs as well. The lower-income suburbs lag behind both other types of areas a bit in population but considerably more in employment. There also remains some modest net movement of workers into central cities and out of lower-income suburbs for employment. (This can be seen by comparing the percentage of people

Figure 1. Places of Residence and Employment: 2000 Distribution



Source: Authors' analysis of U.S. Census data

who live in each type of area with its percentage of employment.) Population and employment in higher-income suburbs are about comparable to each other in magnitude.

As we will later show, many residents of higher-income suburbs commute into the central cities and lower-income suburbs for their jobs, while others from the lower-income suburbs commute into the higher-income suburbs. But it is noteworthy that the stock of jobs in higher-income areas is just as large (in relative terms) as is the stock of people residing there.

B. Population grew strongly during the 1990s in the lower-income suburbs, while job growth was particularly strong in the higher-income suburbs.

Figure 2 shows the growth rates of population and jobs during the 1990s in each type of area. Both population and employment grew by over 20 percent in large metropolitan areas during the 1990s, with substantial growth in all three types of sub-metropolitan areas.

However, residential populations grew by 36 percent in the lower-income suburbs, compared to just 24 percent in the central cities and 16 percent in the higher-income suburbs. In contrast, employment growth was more rapid (at 26 percent) in the higher-income suburbs than in the central cities and lower-income suburbs (18 percent each).

Figure 2. Place of Residence and Employment: 1990–2000 Growth Rates

Source: Authors' analysis of U.S. Census data

Overall, while the residential population is booming in the lower-income suburbs, job growth there lags far behind. The shift of job growth to the higher-income suburbs is striking as well. Although this particular pattern of contrasting areas of population and job growth may or may not have any impacts on labor market outcomes for residents of each area, the basic pattern itself is quite noteworthy.

Appendix Table 2 presents the underlying data for these figures, separately for the four major geographic regions of the United States: the Northeast, Midwest, South and West. The overall patterns noted above can generally be seen within most of the four major regions, though with some variation across areas as well. For instance, net commuting to work into the central cities and out of the lower-income suburbs can be found in all regions in 2000 except for the West. The shares of employment located in higher-income suburbs now exceed those of population in the Northeast and Midwest but not in the South or West.

The growth rates of population and employment also vary across regions. In general, growth in the metropolitan areas of the South and West clearly outpaced that in the older Northeast and Midwestern regions during the 1990s. Although residential population and employment growth were fairly comparable to one another in most regions, employment growth lagged behind population growth the most in the Midwest. Indeed, the decline in employment in Midwestern central cities is striking; it likely reflects the economic decline of these older industrial centers and of the region more broadly.[10] The growth rate of the population in the lower-income suburbs was highest in the South, followed by the Northeast. In all regions, though, employment growth was fastest in the higher-income suburbs and lagged behind population growth in the lower-income suburbs.

C. Population growth in the lower-income suburbs for blacks and Latinos has been especially dramatic, while their employment growth in these areas lags behind.

Figures 3 and 4 present data on population growth rates in the three types of areas over the period 1990-2000 by race and educational attainment, respectively. Appendix Tables 3 and 4 present these data on population and also employment growth more completely. They also present the distributions

of people and jobs across geographic areas in 2000.[11]

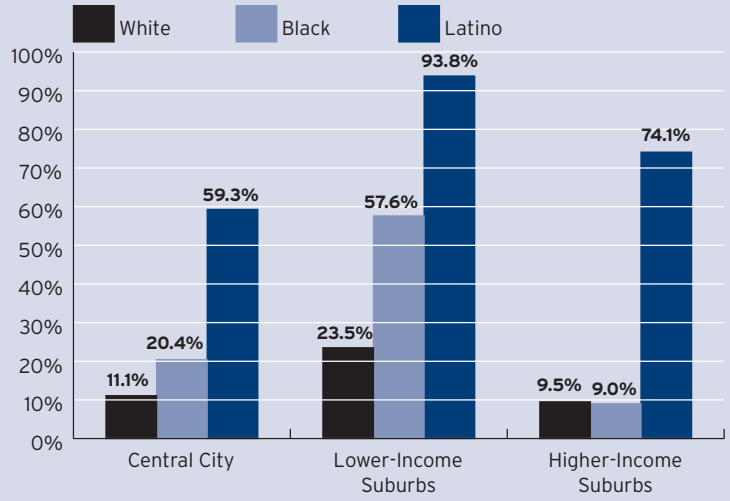
The data in Appendix Table 3 indicate a number of interesting patterns in the locations of populations and jobs by race. As is well-known, whites are less likely to live in the central cities than any minority group, with just under three-fourths of them living in the suburbs. Blacks are still the most likely to live in the central cities, with well over half residing there.

The growth of suburbanization for all groups is striking, however, as are the various patterns of suburbanization between lower- and higher-income areas. Specifically, over 40 percent of blacks and majorities of Hispanics and Asians in large metropolitan areas now live in suburban areas. Black and Latino suburbanites are heavily concentrated in the lower-income suburbs, while roughly 60 percent of white and Asian suburbanites can be found in higher-income suburbs.

Figure 3 shows that population growth in the lower-income suburbs for blacks (58 percent) and Latinos (94 percent) was dramatic during the 1990s. Even for whites (24 percent), population growth was more rapid in the lower-income suburbs than in the higher-income suburbs. However, employment growth lagged behind population growth in the lower-income suburbs for all groups, especially for blacks (25 percent employment growth) and Latinos (7 percent) (Appendix Table 3). In contrast, employment growth exceeded population growth in the higher-income suburbs for all groups and especially Latinos (170 percent employment growth).

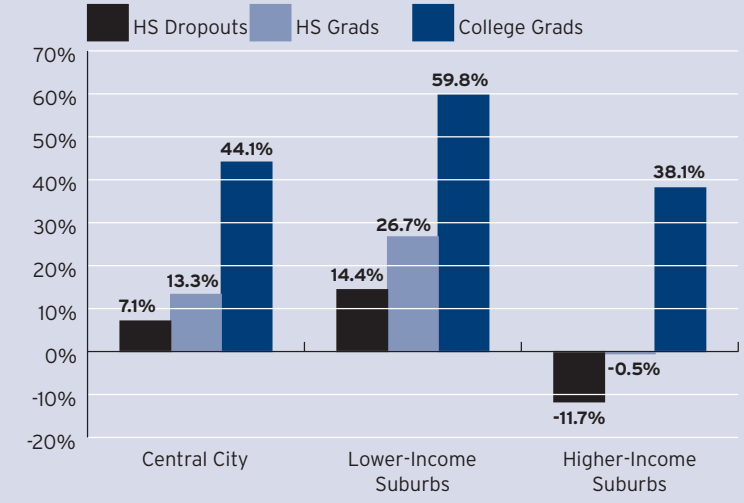
Regarding net movements of workers into and out of areas for jobs, we find that whites and Asians flow into the central cities for employment and out of the higher-income suburbs, while blacks and Latinos flow in the opposite directions. Virtually all groups (except for Asians) are net travelers from the lower-income suburbs to employment elsewhere in metropolitan areas. In sum, all populations, especially those of minorities. are booming in the lower-income suburbs, while jobs are flowing into the higher-income areas for all groups.

Figure 3. Population Growth Rates by Race, 1990–2000



Source: Authors' analysis of U.S. Census data

Figure 4. Population Growth Rates by Educational Attainment, 1990–2000



Source: Authors' analysis of U.S. Census data

Appendix Table 4 and Figure 4 present a comparable set of results for workers by educational attainment. The results indicate, not unexpectedly, that residence in the central city is highest among high school dropouts, while college graduates are most likely to reside in higher-income suburbs. Also, at higher levels of education, both population and employment growth rates were dramatically higher than at lower levels of education in all geographic areas during the 1990s. This no doubt reflected the growing educational attainment of the population.

Other results show that high school graduates are the most likely of any educational group to reside in lower-income suburbs. Figure 4 shows that population growth during the 1990s was greatest in the lower-income suburbs (relative to the other sub-metropolitan categories) at all levels of education.

However, it was especially pronounced for the less-educated groups. The table shows that job growth lagged behind population growth in the lower-income suburbs and exceeded it in the higher-income suburbs for all educational groups.

Those with at least some college are net travelers out of higher-income suburbs for work and into the central cities, while high school dropouts and high school graduates move in the opposite directions. All education groups, on average, travel out of the lower-income suburbs for jobs.

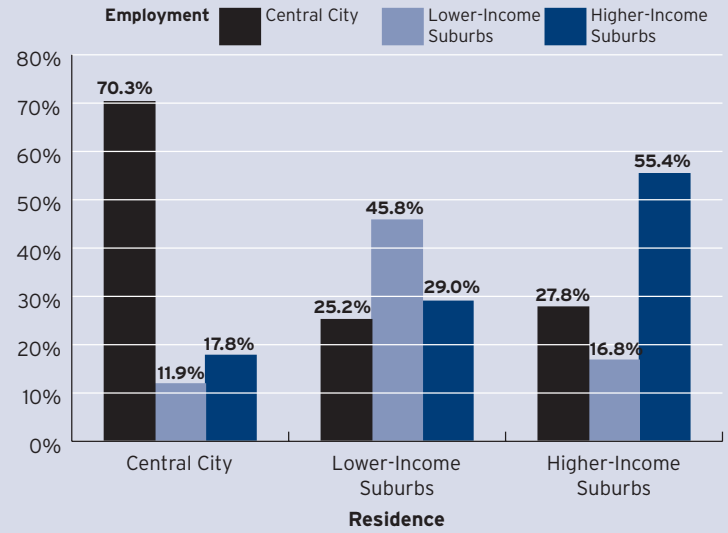
Overall, the lower-income suburbs are becoming more racially and educationally diverse in their residential populations, while the higher-income suburbs are becoming educationally more exclusive (as population growth there is highest among the college graduates). However, job growth in the latter is also becoming more mixed in racial and educational terms. Perhaps the growth of housing prices in the higher-income suburbs relative to other areas is contributing to the population growth in lower-income suburban areas and to the growing exclusivity of the wealthier suburbs. ,This explanation makes more sense for metropolitan areas on the East and West coasts than for those in the nation's interior, though.

D. Most groups of residents in the lower-income suburbs must now commute out for work, increasingly to the higher-income suburbs.

The data in Figures 1-4 and in Appendix Tables 2-4 on the locations of residences and jobs in metropolitan areas imply net movements of workers to and these areas, but do not indicate directly how many are actually commuting to and from each sub-metropolitan area. In this section we examine the actual commute patterns of individuals.

Figure 5 presents shows where individuals work, given their residential locations. For residents of each type of sub-metropolitan area, the table presents the percentages that work in central cities, lower-income suburbs, and higher-income suburbs, respectively. It presents these data for the year 2000.

Figure 5. Individual Commute Patterns Across Submetropolitan Areas: 2000 Distribution



Source: Authors' analysis of U.S. Census data

Figure 5 shows a number of general facts about residential and work locations and the commutes that workers undertake between these areas. Of all three types of sub-metropolitan areas, residents of central cities are the most likely to work in the same sub-metropolitan area where they live, while residents of the lower-income suburbs are the least likely. In fact, over half of the latter commute to other areas; they are more likely to travel for work to the higher-income suburbs (29 percent) than to the central cities (25 percent). In contrast, under half of the residents of higher-income suburbs commute to other sub-metropolitan areas. When doing so, they are more likely to travel to the central city (28 percent) than to the lower-income suburbs (17 percent).

To what extent to these patterns vary across demographic groups of workers, of different race or educational categories? For both 1990 and 2000, Appendix Table 5 presents the commute data separately by race and Appendix Table 6 presents them by educational attainment.. These tables indicate that the employment of minorities in the higher-income suburbs rose dramatically over the 1990s among commuters from the central cities and lower-income suburbs as well as those already residing in the higher-income suburbs. Commuting into the higher-income suburbs rose strongly among Latinos and, to a lesser extent, high school dropouts. The sharpest increases in commutes toward the higher-income suburbs occurred among Latinos and high school dropouts who lived in the central cities and lower-income suburbs.

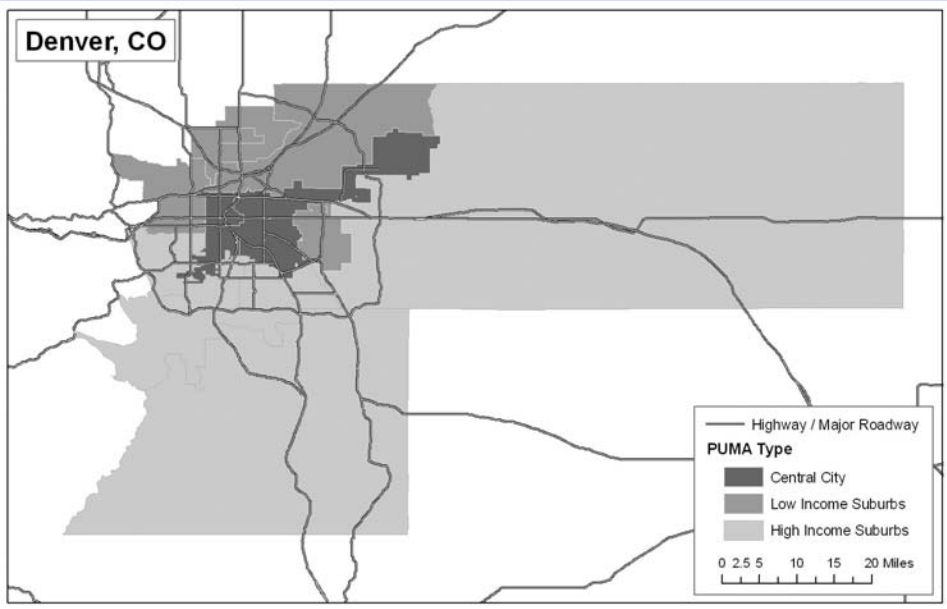
These data indicate that less-educated and minority workers are adapting their job search and commute behavior to match the growth of job opportunities in higher-income suburbs, though their residences are growing elsewhere. Whether these adaptations are large enough to offset the geographic relocation of employment completely without limiting employment and earnings options for the residents of central cities and lower-income suburbs is not clear from these data, though.

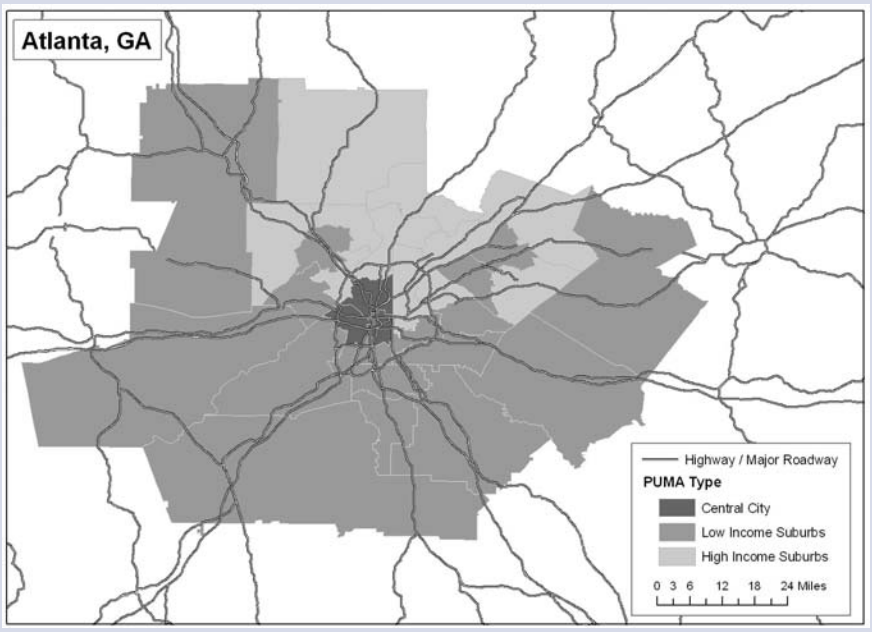
Of course, it is difficult to draw strong conclusions about the importance of spatial mismatch on the basis of the data presented. This is partly true because we do not provide information on geographic distances between the central cities and the lower- and higher-income suburbs. Instead, to gain insight into this question, we consider the maps for the five metropolitan areas that appear below, which suggest a variety of geographic patterns.

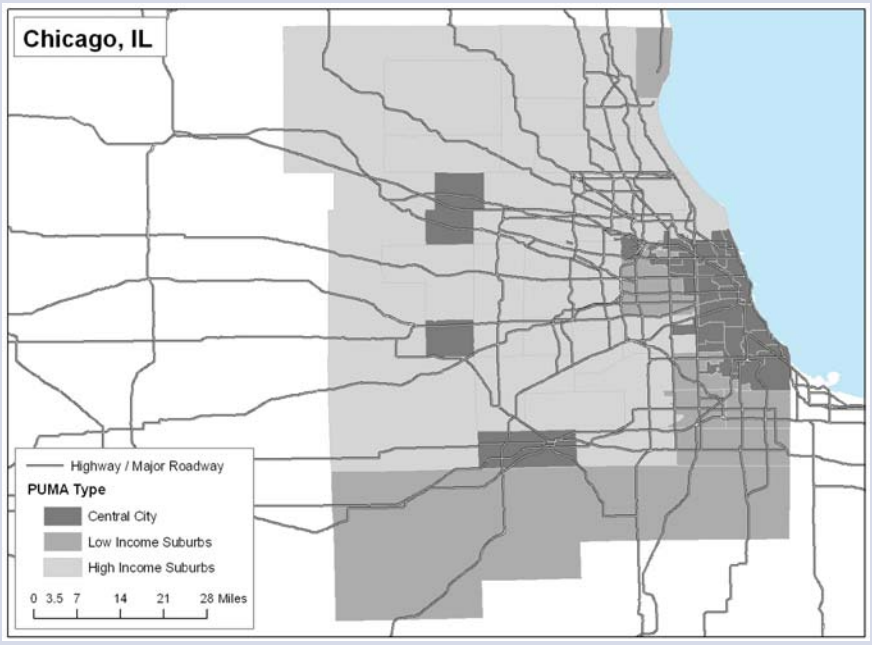
E. The accessibility of residents of lower-income suburbs to jobs in higher-income areas appears to vary greatly across metropolitan areas.

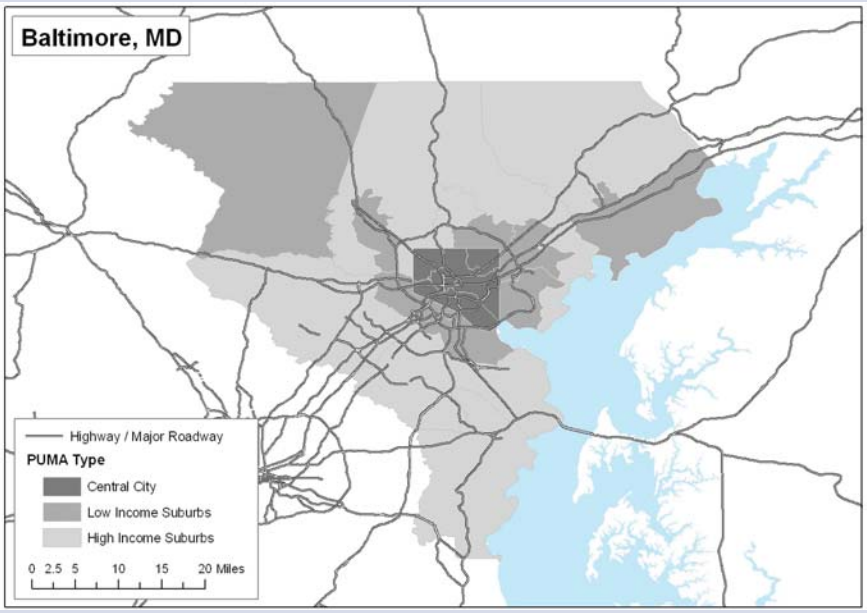
In some cases, the lower-income suburbs are directly contiguous to the central-city boundary. This pattern characterizes the spatial location of many older or "first" suburbs. In the Baltimore and Boston metropolitan areas, however, the lower-income suburbs are also directly contiguous to the higher-income suburbs. In other cases, the lower-income and higher-income suburbs mostly lie on opposite sides of the central cities. This latter pattern is largely characteristic of the Atlanta, Denver, and Chicago metropolitan areas.

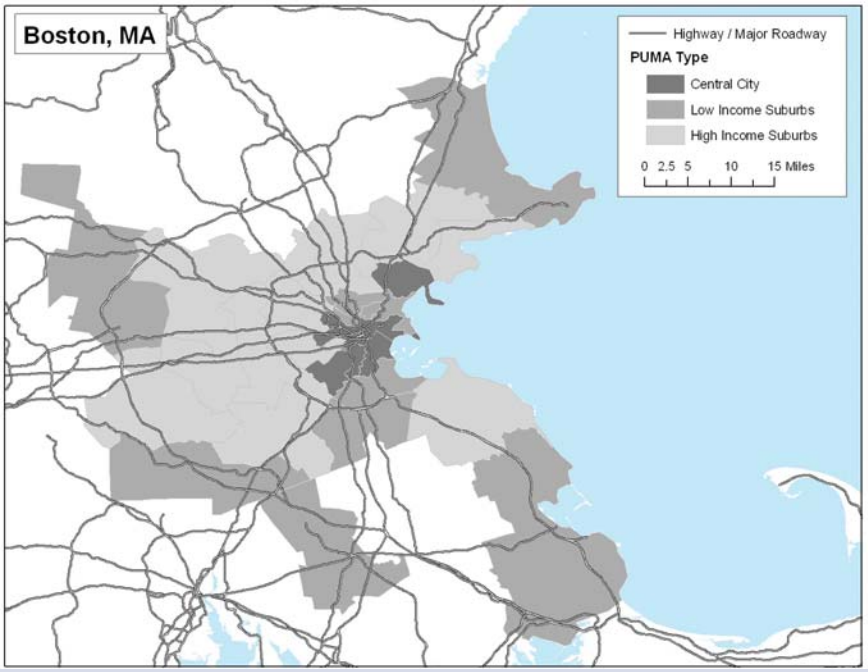
The key implication of these patterns is that individual residential locations within suburban areas might greatly affect residents' physical access to jobs in higher-income areas. In Atlanta, for example, those who reside in the lower-income suburbs that are further north have greater geographic job access to jobs in higher-income areas than do those living in the lower-income suburbs located further south. Residents of central cities with boundaries directly contiguous to the higher-income suburbs, such as those in Denver, might have greater physical access to jobs in the higher-income suburbs than do many residents of the lower-income suburbs. In fact, in metropolitan areas such as Chicago and Denver, the vast majority of the lower-income suburbs are far from higher-income suburbs, implying that most residents of lower-income suburbs will have fairly limited access to jobs in higher-income suburbs. Of course, the physical layout of roads, highways, and transit lines will also greatly affect access to jobs in the higher-income suburbs, as will overall patterns of car ownership across various population groups.




Atlanta, GA
Highway / Major Roadway
PUMA Type
Central City
Low Income Suburbs
High Income Suburbs
0 3 6 12 18 24 Miles


Chicago, IL
Highway / Major Roadway
PUMA Type
Central City
Low Income Suburbs
High Income Suburbs
0 3.5 7 14 21 28 Miles


Baltimore, MD
Highway / Major Roadway
PUMA Type
Central City
Low Income Suburbs
High Income Suburbs
0 2.5 5 10 15 20 Miles


Boston, MA
Highway / Major Roadway
PUMA Type
Central City
Low Income Suburbs
High Income Suburbs
0 2.5 5 10 15 Miles

Conclusion

The data presented in this report clearly indicate a shift in residences toward lower-income suburbs, especially among minorities. They also show a shift in job locations toward the higher-income suburbs, where few such minorities live and to which many more are now commuting for jobs, particularly in the burgeoning service industries.

Does this apparent "mismatch" between population and employment growth generate any hardships for less-educated or minority workers? Are their employment outcomes adversely impacted? The evidence to date that "spatial mismatch" inhibits the earnings and employment of minorities has focused mostly on African-Americans in segregated central-city neighborhoods. Residential segregation rates remain much higher for blacks than for Latinos in major metropolitan areas. Low car ownership rates and weak informal networks through which to seek jobs limit blacks' access to jobs outside their neighborhoods. On the other hand, recent evidence from Oakland, CA, shows that geographic shifts of jobs and residences and new transit opportunities that improve job access can also affect Latinos.[12]

Of course, not all jobs pay equally well, even to workers of the same skill level. Getting jobs that pay high wage premia (i.e., wages higher than those that would be expected on the basis of worker skills) can substantially boost the abilities of less-educated and minority workers to advance in the labor market. Such jobs are often in higher-wage sectors of the economy (such as construction, transportation, utilities, and the like), in larger firms, and in firms with human resource policies that provide advancement opportunities and rewards for skill development. Furthermore, at least in some states (such as California), firms paying high wage premiums are much more likely to locate near the more highly-educated population (in higher-income suburbs) than near the less-educated populations (in central cities and lower-income suburbs).[13]

> "Employer access to potential workers should be enhanced as well, regardless of where the workers and the jobs are located."

These employer location decisions no doubt reduce less-educated workers' limited access to good jobs, compounding the effects of their weaker skills, hiring discrimination, and weak informal networks. As higher-wage employers generally offer workers better training and advancement opportunities on the job, having limited access to these employers likely limits workers' opportunities to develop human capital as well. Moreover, in tight labor markets such as those the United States experienced during the late 1990s, these same geographic factors might well inhibit employers' abilities to recruit and retain suitable applicants.

Are workers who live in the lower-income suburbs definitely hurt by this reduced access to good-paying jobs, as are those in the central cities? The direct evidence is not yet available to answer that question. These workers no doubt have higher car ownership rates, and perhaps greater knowledge of local metropolitan geography (by virtue of their decisions to locate there from the central-city areas), than their counterparts who choose to remain in the cities. However, some combination of high housing costs, limited familiarity, and few social contacts in the higher-income areas of job growth might constrain their access to residences in those higher-income areas.[14] In addition, their lack of proximity to jobs in higher-income suburbs might reduce information and raise commuting costs that could reduce their ability to obtain jobs in these areas, especially where informal networks are not strong. The fact that the lower-income suburbs are geographically located closer to the inner-cities than are the higher-income suburbs might further make the latter inaccessible by public transit and unfamiliar to former residents of the central cities.

What does all of this imply for public policy? It seems that local labor market policy should seek to maximize access to good jobs and skill-building opportunities for all workers throughout the metropolitan area. Employer access to potential workers should be enhanced as well, regardless of where the workers and the jobs are located.

Current labor market policies seem to fall well short of these goals. Local Workforce Investment Boards (WIBs) in major metropolitan areas are frequently fragmented across city/suburban lines and even across county lines within suburban areas. Community colleges and other training providers are similarly fragmented. It seems unlikely that many employers in one county would reach out to gener-

ate apprenticeships, internships, and other links to training providers and populations in a different jurisdiction. Although some private labor market intermediaries, such as for-profit temporary help agencies or those run by nonprofit community-based groups, might have the incentives to cross these lines, their capacities and resources for doing so are likely limited in most cases.

How can this fragmentation be reduced? For one thing, local WIBs and other intermediaries could be increasingly structured to cross county lines, or at least encouraged to reach across these jurisdictional lines in providing services to workers. Efforts to build broader geographic capacity at one-stop shops could be encouraged. More resources could be provided for efforts (particularly "sectoral" ones) that link city or lower-income suburban workers and community colleges with employers located in higher-income suburbs.[15] Employer apprenticeships or internships and other career-oriented education programs would similarly need to link employers from higher-income suburbs to young people living in lower-income areas, so that the latter could fully develop their workplace skills and access to jobs. Resources provided through the Workforce Investment Act would need to be directed to regional or state authorities or to local WIBs that undertake regional activities to further these efforts.

Regardless of exactly how this is done, efforts to improve metropolitan-wide access and mobility of workers to training and jobs are critical now. In the coming years, as baby boomer employees retire and their employers seek to fill these positions with reasonably skilled employees, these issues will become even more critical than they are today.

"Although some private labor market intermediaries, such as for-profit temporary help agencies or those run by nonprofit community-based groups, might have the incentives to cross these lines, their capacities and resources for doing so are likely limited in most cases."

Appendix Table 1. Percent of Metropolitan Population (Ages 25-64) and Employment in Each Type of Sub-Metropolitan Area, 20 Largest Metropolitan Areas, 2000

			Percent of Population in:			Percent of Employment in:		
Metropolitan Area	Total Population	Total Employment	Central City	Low Income Suburbs	High Income Suburbs	Central City	Low Income Suburbs	High Income Suburbs
Atlanta, GA	1,952,840	1,424,520	7.5%	52.6%	40.0%	12.8%	31.7%	55.5%
Baltimore, MD	1,255,680	929,160	24.4	35.4	40.3	31.4	30.3	38.4
Boston, MA	2,069,340	1,540,360	22.5	32.6	44.9	35.8	21.5	42.7
Chicago, IL	3,924,240	2,908,360	37.5	21.1	41.4	39.9	17.9	42.2
Dallas-Ft. Worth, TX	2,509,720	1,828,140	39.7	28.1	32.2	36.8	23.8	39.4
Denver-Boulder, CO	1,083,280	832,400	36.1	32.9	31.0	34.7	30.1	35.2
Detroit, MI	1,875,940	1,310,020	19.5	41.6	39.0	17.9	36.7	45.4
Houston, TX	2,061,400	1,412,460	40.5	25.1	34.4	36.2	23.8	40.0
Miami, FL	1,101,600	685,820	22.7	41.6	35.8	19.3	36.7	44.0
Minneapolis-St. Paul, MN	1,115,000	886,040	22.6	33.9	43.5	31.3	20.7	48.0
New York, NY	8,520,620	5,743,281	49.8	17.3	32.9	53.3	15.8	30.9
Philadelphia, PA	2,222,760	1,620,640	30.4	25.7	43.9	31.7	23.1	45.2
Pittsburgh, PA	1,072,560	741,520	13.4	54.5	32.1	27.5	31.2	41.3
Riverside-San Bernardino, CA	1,428,460	864,280	14.4	44.5	46.2	19.3	48.7	32.1
San Diego, CA	1,380,540	964,880	50.5	31.1	18.4	48.5	29.9	21.6
San Francisco-Oakland, CA	2,549,980	1,847,160	37.8	33.5	28.7	40.4	32.9	26.7
Seattle-Tacoma, WA	1,177,920	885,900	30.4	40.2	30.4	33.7	37.1	29.2
St. Louis, MO	1,127,560	763,980	12.7	44.7	42.6	24.2	34.7	41.2
Tampa-St. Petersburg, FL	1,196,740	843,020	27.9	31.3	40.7	29.5	27.2	43.4
Washington, DC	2,619,460	2,007,940	16.1	48.9	35.0	33.7	24.8	41.5

Source: Authors' analysis of Census 2000 data.

Appendix Table 2. Places of Residence and Employment within Metropolitan Areas, by Geographic Region

	Percent of Residents and Jobs in Percent Change in Number of Area, 2000				Each Type of Sub-metropolitan Residents and Jobs, 1990-2000			
	CC	LISub	HISub	Total	CC	LISub	HISub	Total
REGION								
Northeast								
Residents	33.5%	26.6%	39.9%	100.0%	11.9%	33.3%	12.6%	17.2%
Employment	37.5	21.9	40.6	100.0	10.0	17.4	20.5	15.6
Midwest								
Residents	32.5	27.4	40.1	100.0	18.3	17.2	8.9	14.0
Employment	35.4	22.2	42.4	100.0	-1.8	05.6	12.9	5.8
South								
Residents	33.3	32.8	38.9	100.0	26.7	58.6	16.1	31.3
Employment	46.6	22.6	30.8	100.0	23.4	36.0	57.8	31.7
West								
Residents	40.8	26.2	33.0	100.0	40.8	22.9	33.9	33.3
Employment	37.2	31.4	31.5	100.0	26.0	17.9	57.7	31.7

Note: "CC," "LISub," and "HISub" refer to central cities, lower-income suburbs and higher-income suburbs respectively, as defined in the text. Samples are limited to those aged 16-64 who are not enrolled in school.
Source: Authors' analysis of 1990 and 2000 Census data.

Appendix Table 3. Places of Residence and Employment within Metropolitan Areas, by Race

	Percent of Residents and Jobs in Percent Change in Number of Area, 2000				Each Type of Sub-metropolitan Residents and Jobs, 1990-2000			
	CC	LISub	HISub	Total	CC	LISub	HISub	Total
RACE								
Whites								
Residents	27.2%	29.9%	43.0%	100.0%	11.1%	23.5%	9.5%	3.8%
Employment	37.9	24.5	37.6	100.0	12.2	14.1	13.9	13.4
Blacks								
Residents	57.1	26.5	16.4	100.0	20.4	57.6	9.0	26.1
Employment	52.6	18.6	28.8	100.0	9.1	25.2	32.9	17.9
Latinos								
Residents	47.9	28.9	23.2	100.0	59.3	93.8	74.1	71.0
Employment	45.5	22.8	31.8	100.0	41.8	68. 1	69.8	53.6
Asians								
Residents	44.9	21.5	33.7	100.0	60.4	68.6	79.7	68.2
Employment	49.3	22.7	28.1	100.0	43.4	45.4	94.1	55.4

Note: "CC," "LISub," and "HISub" refer to central cities, lower-income suburbs and higher-income suburbs respectively, as defined in the text. Samples are limited to those aged 16-64 who are not enrolled in school.
Source: Authors' analysis of 1990 and 2000 Census data.

Appendix Table 4. Places of Residence and Employment within Metropolitan Areas, by Educational Attainment

	Percent of Residents and Jobs in Percent Change in Number of Area, 2000				Each Type of Sub-metropolitan Residents and Jobs, 1990-2000			
	CC	LISub	HISub	Total	CC	LISub	HISub	Total
EDUCATIONAL ATTAINMENT								
High School Dropouts								
Residents	44.6%	31.8%	23.6%	100.0%	7.1%	14.4%	-11.7%	3.9%
Employment	40.9	26.3	32.8	100.0	-6.2	-6.5	4.7	-3.2
High School Graduates								
Residents	32.3	34.6	33.1	100.0	13.3	26.7	-0.5	12.2
Employment	37.0	27.0	36.1	100.0	3.7	12.1	7.4	7.3
Some College								
Residents	32.9	30.1	37.0	100.0	30.7	47.5	21.4	31.4
Employment	40.6	24.0	35.3	100.0	22.8	24.5	29.9	25.5
College Graduates								
Residents	33.7	21.2	45.2	100.0	44.1	59.8	38.1	44.3
Employment	44.3	19.9	35.8	100.0	35.2	28.3	47.1	37.9

Note: "CC," "LISub," and "HISub" refer to central cities, lower-income suburbs and higher-income suburbs respectively, as defined in the text. Samples are limited to those aged 16-64 who are not enrolled in school.
Source: Authors' analysis of 1990 and 2000 Census data.

Appendix Table 5. Individual Commute Patterns Across Sub-metropolitan Areas, by Race

		2000				1990			
Employment:		**CC**	**LISub**	**HISub**	**Total**	**CC**	**LISub**	**HISub**	**Total**
Whites									
Residence:	**CC**	69.1%	12.0%	18.9%	100.0%	67.8%	13.8%	18.4%	100.0%
	LISub	24.5	47.7	27.8	100.0	23.7	47.4	29.0	100.0
	HISub	27.7	16.5	55.8	100.0	29.0	17.0	54.1	100.0
Blacks .									
Residence:	**CC**	74.2	9.2	16.6	100.0	75.0	9.1	15.9	100.0
	LISub	26.4	38.6	35.0	100.0	31.7	40.3	28.0	100.0
	HISub	31.1	14.6	54.3	100.0	35.3	15.3	49.4	100.0
Latinos									
Residence:	**CC**	69.6	13.2	17.2	100.0	70.0	21.6	8.5	100.0
	LISub	26.4	41.6	32.0	100.0	26.7	55.4	17.9	100.0
	HISub	24.1	18.5	57.4	100.0	31.9	30.8	37.3	100.0
Asians									
Residence:	**CC**	72.7	14.4	12.9	100.0	72.3	18.2	9.5	100.0
	LISub	32.1	41.0	27.0	100.0	37.7	40.1	22.2	100.0
	HISub	31.4	21.4	47.5	100.0	37.4	21.8	40.9	100.0

Note: "CC," "LISub," and "HISub" refer to central cities, lower-income suburbs and higher-income suburbs respectively, as defined in the text. Samples are limited to those aged 16-64 who are not enrolled in school.
Source: Authors' analysis of 1990 and 2000 Census data.

Appendix Table 6. Individual Commute Patterns Across Sub-Metropolitan Areas, by Educational Attainment

		2000				1990			
Employment:		**CC**	**LISub**	**HISub**	**Total**	**CC**	**LISub**	**HISub**	**Total**
High School Dropouts									
Residence:	**CC**	68.4%	12.7%	18.9%	100.0%	70.2%	14.6%	15.2%	100.0%
	LISub	21.7	50.0	28.3	100.0	21.1	53.7	25.2	100.0
	HISub	21.7	17.6	60.8	100.0	25.5	18.0	56.6	100.0
High School Graduates									
Residence:	**CC**	69.8	11.7	18.5	100.0	69.2	13.2	17.6	100.0
	LISub	22.3	49.6	28.2	100.0	22.4	49.3	28.4	100.0
	HISub	23.2	17.1	59.7	100.0	26.2	16.8	57.0	100.0
Some College									
Residence:	**CC**	69.5	12.6	17.9	100.0	68.2	15.0	16.8	100.0
	LISub	26.8	44.1	29.2	100.0	27.1	44.7	28.2	100.0
	HISub	27.7	17.3	55.1	100.0	30.0	17.9	52.2	100.0
College Graduates									
Residence:	**CC**	72.2	10.9	16.9	100.0	71.2	13.5	15.3	100.0
	LISub	28.2	41.6	30.2	100.0	29.2	42.8	28.0	100.0
	HISub	31.5	16.2	52.4	100.0	33.3	18.1	48.6	100.0

Note: "CC," "LISub," and "HISub" refer to central cities, lower-income suburbs and higher-income suburbs respectively, as defined in the text. Samples are limited to those aged 16-64 who are not enrolled in school.
Source: Authors' analysis of 1990 and 2000 Census data.

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Endnotes

1. Harry J. Holzer is Professor of Public Policy at Georgetown University and Visiting Fellow at the Urban Institute. Michael A. Stoll is Professor of Public Policy at the University of California, Los Angeles. Both are Nonresident Senior Fellows in the Metropolitan Policy Program at Brookings.
2. The "spatial mismatch" literature is reviewed in Harry Holzer, "The Spatial Mismatch Hypothesis: What Does the Evidence Show?" *Urban Studies* 28 (1) (1989): 105-122. See also Keith Ihlanfeldt and David Sjoquist, "The Spatial Mismatch Hypothesis: A Review of Recent Studies and their Implications for Welfare Reform," *Housing Policy Debate* 9 (4) (1998): 849–892. For recent evidence on trends in spatial mismatch during the 1990's see Steven Raphael and Michael Stoll, "Modest Progress: The Narrowing of Spatial Mismatch Between Blacks and Jobs Over the 1990s" (Washington: Brookings Institution, 2002).
3. Evidence of growing racial diversity in suburban areas can be found in William Frey, "Melting Pot Suburbs: A Census 2000 Study of Suburban Diversity," (Washington: Brookings Institution, 2001). Data on the "inner" and "outer" suburbs can be found in Myron Orfield, *Metropolitics* (Washington: Brookings Institution, 1997). For evidence on "older" and "newer" suburbs see Robert Puentes and David Warren, "One Fifth of the Nation: America's First Suburbs" (Washington: Brookings Institution, 2006).
4. See Alan Berube and Elizabeth Kneebone, "Two Steps Back: City and Suburban Poverty Trends, 1999-2005" (Washington: Brookings Institution, 2006).
5. See Michael Stoll, Harry J. Holzer, and Keith Ihlanfeldt. "Within Cities and Suburbs: Racial Residential Concentration and the Spatial Distribution of Employment Opportunities Across Sub-Metropolitan Areas," *Journal of Policy Analysis and Management* 19 (2) (2000): 207-232. The four areas studied were Atlanta, Boston, Detroit and Los Angeles. The data on jobs in these areas were obtained from the Multi-City Telephone Employer Survey, which the authors have analyzed extensively. See also Harry J. Holzer, *What Employers Want: Job Prospects for Less-Educated Workers* (New York: Russell Sage Foundation, 1996).
6. See Puentes and Warren, "One Fifth of the Nation."
7. A potential problem in using PUMAs is that their boundaries do not always perfectly overlap with the external boundaries of metropolitan areas, thus potentially leading to discrepancies between the true population of a metropolitan area and the population of the PUMA-equivalent in that area. A careful examination of PUMAs on the external boundaries of a variety of metropolitan areas has led us to believe that this is not a significant problem in our analysis.
8. We use data from the 2000 Census to classify suburbs into higher- and lower -income areas to be more current in our understanding of these areas. However, by using data from 2000, we might have built into the analysis some bias towards finding more rapid population growth in lower-income suburbs as a result of the growing skewness of the income distribution towards the upper end. The majority of households living in metropolitan areas are now likely to have incomes below the metropolitan area mean, generating somewhat greater population growth in the lower-income suburbs. However,, by using median rather than mean incomes to define areas as lower-income or higher-income, we have eliminated this potential problem. In fact, our results were not at all sensitive to our decision to use medians or means to define these areas.
9. This entails using GIS to physically overlay the 1990 to the 2000 PUMA boundaries. For those boundaries that changed over this period, we used the population-based proportional split method to align the 1990 to the 2000 boundaries. Thus, although the boundaries that changed over the 1990s are not aligned perfectly in the geographic sense, they are proportionately matched based on population density. More information on these allocation decisions is available from Michael Stoll.
10. See also William Frey, "Metropolitan America in the New Century: Metropolitan and Central City Demographic Shifts Since 2000" (Washington: Brookings Institution, 2005).
11. We also examined these patterns by gender. The residential/employment patterns are generally quite similar for men and women. However, commute patterns differ in the expected direction, with women more likely to work in their sub-metropolitan area than men. This is consistent with the stylized fact that women commute shorter distances than men, mostly because of child care and housework concerns.
12. For evidence on residential segregation rates by race see William Frey and Reynolds Farley, "Latino, Asian and Black Segregation in U.S. Metropolitan Areas: Are Multi-Ethnic Metros Different?" *Demography* 33 (1) (1996): 33-50. Evidence on how transportation and information affect job access across geographic areas can be found in Harry Holzer, Keith Ihlanfeldt, and David Sjoquist, "Work, Search and Travel among White and Minority Youth," *Journal of Urban Economics* 35 (2) (1994): 320-345. See also Steven Raphael and Michael Stoll "Can Boosting Car Ownership Rates Narrow Inter-racial Employment Gaps?" in William G. Gale and Janet Rothenberg Pack (eds.), *Brookings-Wharton Papers on Urban Affairs 2001* (Washington: Brookings Institution, 2001).
13. The evidence on firms that pay high wage premia, and their geographic locations, can be found in Fredrik Andersson, Harry Holzer, and Julia Lane, *Moving Up or Moving On: Who Advances in Low-Wage Labor Markets?* (New York: Russell Sage Foundation, 2005).
14. See Reynolds Farley and Maria Krysan, "The Preferences of Blacks: Do They Account for Persistent Segregation?" *Social Forces* 80 (3) (2002): 937-980. See also Franklin Wilson and Roger Hammer, "Ethnic Residential Segregation and its Consequences," in A. O'Connor, L. Bobo and C. Tilly eds., *Urban Inequality: Evidence from Four Cities* (New York: Russell Sage Foundation, 2001).
15. "Sectoral" training efforts use intermediaries that target growing sectors of the economy in local labor markets, and work with employers, training providers as well as potential employees to generate skilled workers for these sectors from the disadvantaged population. The relevant labor markets for these efforts are usually metropolitan-wide. See Robert Giloth, *Workforce Intermediaries for the Twenty-First Century* (Philadelphia: Temple University Press, 2003).

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Acknowledgments

The authors thank John Douglas Houston and Joelle Wolstein for excellent research assistance, and Alan Berube, Howard Wial, and three anonymous reviewers for helpful comments.

The Brookings Institution Metropolitan Policy Program thanks the John D. and Catherine T. MacArthur Foundation and the Annie E. Casey Foundation for their support of this report. The Program also thanks the John D. and Catherine T. MacArthur Foundation for its support of the Metropolitan Economy Initiative and the Annie E. Casey Foundation for its support of our research on lower-income working families.

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