

RACIAL SEGREGATION AND GAPS IN METROPOLITAN JOB ISOLATION

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ABSTRACT

Despite declines in racial segregation across most U.S. metropolitan areas in recent years, racial and ethnic minorities still display uneven geographic access to jobs. Job isolation especially for African Americans and to a lesser extent Latinos, still remains a common characteristic of metropolitan areas. In this article, we provide a detailed analysis of the racial and ethnic gaps in job isolation across U.S. metropolitan areas, paying particular attention to the role of racial segregation. Using data gathered from a variety of sources including the 2000 U.S. Census, and the 1999 Economic Census and the Zip Code Business Pattern files we generate descriptive and multivariate evidence to address why blacks and to a lesser extent Latinos display greater degrees of job isolation than whites, identifying the specific metropolitan area factors that help account for these differences. The results indicate the racial gaps in job isolation still remain in 2000 and that racial segregation, region of residence, and to a lesser extent job sprawl are the biggest factors contributing to these gaps in job isolation for all families and for the poor.

Keywords: job isolation, racial segregation, metropolitan, decentralization

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The authors would like to thank the Center for the Study of Urban Poverty at UCLA for generous support of this research project.

I. Introduction

The spatial mismatch literature provides strong evidence that access to employment clusters is important to understanding racial differences in job attachment and wages in the U.S. (Kain, 1968; Ihlanfeldt and Sjoquist, 1998; Pugh, 1998; Raphael, 1998). Despite decades of empirical analysis supporting the theory, there is a lack of literature that identifies the factors that explain racial gaps in job access. Recent research indicates that the distance between blacks and jobs on average has improved relative to non-blacks (Raphael and Stoll, 2002) and it has improved for the poor relative to the non-poor (Covington, 2009), however, black job access remains persistently inferior³ to most racial groups, especially whites, and it is not well understood what metropolitan features are responsible.

Dynamic shifts have taken place within and between metropolitan regions over the last few decades and have been driven by natural and migration changes in population, as well as by changes in employment, business, and development (Martin, 2001; Lee and Leigh, 2007:147). Metropolitan areas have become much more dynamic depending on the age of the city and its outer suburbs. Glaeser and Kahn (2001:1) have outlined the dynamism that is evident in the change that metropolitan areas are exhibiting; they argue that “America is in the midst of an urban transformation so profound that it is changing completely the spatial

organization of economic activity.” In many cases city populations are decentralizing, spreading out in less dense residential patterns. Nevertheless, there is also evidence that the location of commercial activity, in some cases, has adjusted back to cities (Lee and Leigh, 2007:148) particularly where gentrification is occurring (Freeman and Braconi, 2004). Thus, understanding the metropolitan features responsible for persistent gaps in job access among and between racial groups more generally over this period is the main goal of this paper.

To gain a deeper sense about what is driving racial gaps in job isolation, well after the decentralization of the manufacturing sector began accelerating over thirty years ago, this research explores metropolitan wide features that explain job isolation. At this juncture in the growth and expansion of metropolitan regions, this research is particularly important because we do not quite understand how recent dynamic shifts, for example, in segregation, urban job sprawl patterns, and economic fluctuations inclusive of dramatic upturns and downturns in prosperity has influenced access to jobs and the persistence of racial gaps in access to jobs.

This paper augments the extant literature on race and place by providing evidence about the magnitude of the gap in job isolation between black and non-black families. Specifically we set out to empirically test why blacks and to a lesser extent Latinos display greater degrees of job isolation than whites,

³ See Raphael and Stoll (2002) for an empirical analysis of the narrowing spatial mismatch between blacks and jobs

identifying the specific factors that help account for these differences.

Understanding the factors that continue to drive access to jobs and economic wellbeing more generally will illuminate more directly the pressure points within metropolitan areas to focus urban policy, economic development and workforce development efforts.

II. Literature

Originating with Kain's seminal (1968) work on the decentralization of inner city employment centers, the spatial mismatch hypothesis sparked a series of research efforts over three decades that has attempted to understand how spatial location of employment opportunities has affected the economic conditions of African Americans who more frequently reside in the central city (Kain, 1992; Ihlanfeldt and Sjoquist, 1998; Reingold, 2001; Weinberg, 2000). Early work on spatial mismatch conceptually linked inferior job access and therefore employment for blacks to systematic and accelerating decentralization of the manufacturing industry within metropolitan areas in the late 1960s. Recent research continues to support the conventional understanding that proximity to employment centers determines employability (Ihlanfeldt and Sjoquist, 1998; Pugh, 1998). However, factors that explain racial differences in access to job centers and why disparity in

job access persist between white and black families has not been thoroughly explored.

A contemporary understanding of job access requires that one consider issues that characterize recent changes in the metropolitan landscape, particularly those changes that have surfaced over the last decade (Covington, 2009). Chief among the shifting metropolitan dynamics that likely shape job access today are shifts in employment centers or urban job sprawl trends, changes in segregation, and mutations in metropolitan economic structure.

Overview of Metropolitan Dynamism

Numerous scholars acknowledge that the prosperity of the 1990s benefited poor and minority workers in ways that had not been observed during previous decades (Cherry and Rodgers, 2000; Hines et al., 2002; Mishel et al., 2002; Kruegar and Solow, 2001; Holzer et al. 2003). During this period, unemployment rates dropped considerably⁴ especially for blacks and other disadvantaged groups, perhaps as a result of central-city job growth that raised the incomes of the poor and minority households, possibly spurring their residential mobility to the suburbs. Metropolitan areas were characterized by expanded access to jobs and

⁴ As a result of the economic boom black unemployment by 2000 was at an all time low. In 1999, the black unemployment rate was 8 percent. While this was nearly double the national unemployment rate, the annual rate of 8 percent is the lowest recorded value for black unemployment rates since the Bureau of Labor Statistics began to collect separate data for African Americans in 1972. See Table B-42 in the Economic Report of the President, U.S. Government Printing Office, 2001.

steep declines in concentrated poverty for blacks and Latinos (Raphael and Stoll, 2002; Jargowsky, 2003).

The changes in the economic conditions facing families in metropolitan areas arguably contributed to a narrowing in job isolation between blacks and whites over the 1990s, and possibly between the poor and non-poor. According to Raphael and Stoll (2002), during this period, the gap in job access between blacks and whites narrowed by 13 percent and narrowed 20 percent between Latinos and whites regardless of poverty status. At the same time, concentrated poverty for blacks declined by nearly 12 percentage points and by 7.4 percentage points for Latinos (Jargowsky, 2003). Because a disproportionate number of the poor are black and Latino, together these trends suggest that greater physical access to employment should have accrued to the poor more generally over this period. In many ways, the poor's access to this opportunity is partly structured by their proximity to jobs. And their proximity to jobs is influenced by a number of factors including relative level of mobility of residents and firms within and between metropolitan areas.

Despite the laudable changes, job access remains more inferior among blacks than any other group,⁵ and more black families reside in neighborhoods

⁵ See Raphael and Stoll (2002) for an empirical analysis of the narrowing spatial mismatch between blacks and jobs in the 1990's.

with concentrated poverty.⁶ Thus, the extent of progress blacks and perhaps the poor were able to make towards improving their access to jobs and economic wellbeing more generally over this period still remains unclear. This understanding remains even more uncertain given urban job sprawl patterns that continue to define metropolitan growth (Stoll, 2006).

Jobs continue to disproportionately locate on the suburban fringe, far from where blacks and the poor are residentially concentrated. Given the evidence that job sprawl significantly exacerbates access to jobs (Stoll, 2006), even if the residential mobility of blacks and the poor to the suburbs accelerated over the 1990s in response to improved economic conditions, their access to jobs may not have improved thus having little impact on the tenacity of the racial gaps. As Martin's (2001) work suggests, as job sprawl unfolds it is generally a pattern of jobs following white workers and not minority workers, hence dynamic shifts in residential segregation may have detrimental effects on blacks' access to jobs if jobs are always moving away from them.

Legal discrimination in housing policy ended with the civil rights era but the residential patterns that surfaced created a persistent hyper segregation by race and class. "The consequences of racial residential segregation extend far beyond segregated housing to shape many other aspects of life, including access to quality

⁶ See Jargowsky (2003) for a descriptive analysis of the dramatic declines of concentrated poverty over the 1990's.

education, employment opportunities, and other tangible resources (Gotham, 2002:13).” Although the effects of blatant racist federal and local real estate policy remain visible within enclaves of many major cities throughout the U.S., predominantly those in the Northeast and Midwest, the intensity of segregation in many metropolitan areas has generally decreased across the country (Glaeser and Vigdor, 2001:1). To gain a deeper sense about whether conventional wisdom holds that segregation is a driving force in job access, this study examines how important segregation is towards understanding current measures of job access and how recent declines in racial segregation explain the black-white gap in job access. In the following section, the data, variable definitions and the empirical strategy are discussed.

III. Data and Definitions of Main Variables

The data are drawn from two primary data sources: the 2000 U.S. Census and the 1999 U.S. Department of Commerce’s ZIP Code Business Patterns files. The latter provide information on total employment counts by ZIP code in the U.S. ZIP code business patterns data are extracted from the Standard Statistical Establishments List, a file maintained and updated by the Census Bureau of all

known single and multi establishment companies. These employment data are used to measure job isolation across the roughly 267 metropolitan areas.⁷

We measure the spatial imbalance between jobs and residential locations (or job isolation) using an index of dissimilarity. The dissimilarity index has mostly been used in the past to measure the extent of housing segregation between members of different racial and ethnic groups within a given metropolitan area. We adopt this measure to describe the imbalance between residential and employment distributions for different racial/ethnic groups across metropolitan areas in the U.S. The job isolation index is calculated using data on jobs from the same 1999 U.S. Department of Commerce's ZIP Code Business Patterns files and data on people from the 2000 U.S. Census. This job isolation index of dissimilarity measures the degree of segregation between blacks and jobs and has been used elsewhere to measure mismatch (Martin, 2004; Raphael and Stoll, 2002; Martin 2001).

The equation for the dissimilarity index is quite straightforward. For example, define $Black_i$ as the black population residing in zip code i (where $i=(1,...,n)$ and indexes the zip codes in a given metropolitan area), $Employment_i$ as the number of jobs in zip code i , $Black$ as the total black population in the

⁷ The metropolitan areas used in the analysis are Metropolitan Statistical Areas (MSAs) and Primary Metropolitan Statistical Areas (PMSAs) as defined by the Office of Management and Budget (OMB) in 1999 for Census 2000. Consolidated Metropolitan Statistical Areas (CMSAs), which are usually much larger than MSAs or PMSAs, were not included among these metropolitan areas.

metropolitan area, and *Employment* as the total number of jobs in the metropolitan area. The dissimilarity score between blacks and jobs is given by

$$(1) \quad D = \frac{1}{2} \sum_i^n \left| \frac{Black_i}{Black} - \frac{Employment_i}{Employment} \right|.$$

As written, the dissimilarity index ranges between 0 (perfect balance) and 1 (perfect imbalance). Hence, the index value between blacks and jobs for all metropolitan areas in the U.S. describes the extent to which the areas (measured as zip codes) where blacks tend to reside in are different from the areas in which jobs are located. The results from this equation can be multiplied by 100 to allow one to interpret the index values as the percent (rather than the proportion) of either of the populations that would have to move to yield perfect balance. Job isolation indexes are also calculated for whites and Latinos. These job isolation measures are calculated for all and the poor because of special concerns of the poor and their access to employment. We focus on the poor as well for descriptive purposes only and in doing so do not imply or suggest processes of causality.

There are a number of potential problems with the use of the dissimilarity index to measure job isolation. First, a job isolation dissimilarity index may not actually measure the physical distance between the average member of a given population and jobs. The index measures the imbalance across geographic sub-units of the metropolitan area (for example, zip-codes) between members of the

population and jobs. To take an extreme example, suppose that all black residents resided in one zip code of a city while all jobs were located in a different zip code. Whether these two zip codes are one mile apart from one another or 20 miles apart will not influence the dissimilarity measure. In both instances, the dissimilarity index will be equal to 100. Nonetheless, as a summary measure, the dissimilarity measure does allow uniform comparisons across geographic areas.

We did experiment with an alternative index, the isolation index, which measures the extent to which racial groups are likely to have “contact” with jobs in a zip code.⁸ This measure is also commonly used to measure segregation, but instead measures the likelihood that racial groups will have contact with jobs within zip codes across metropolitan areas. While this alternative measure also does not take into account the distance of these groups from jobs, unlike the dissimilarity index, it does measure “job availability” to such groups within zip codes across metropolitan areas. However, use of this alternative measure did not produce qualitatively dissimilar results than those shown here. In each case, blacks had the lowest probability of contact with jobs compared to whites and Latinos, and the racial ordering of these differences remained the same.⁹ We employ the dissimilarity index in this analysis because it is more widely used and because of its use in recent mismatch research (Martin, 2004; Raphael and Stoll, 2002).

⁸ See Massey and Denton (1993) for a full description of how to calculate the isolation index.

Another concern is that use of total jobs may bias the extent to which racial groups may be in geographic isolation from low-skill jobs, a major concern of the mismatch hypothesis. To examine this, we calculated a job isolation index using retail jobs from the Business Patterns Files. Retail jobs are a good indicator of the extent to which racial groups are spatially isolated from low-skill jobs since they are disproportionately lower-skilled (Holzer, 1996).¹⁰ Results using the retail jobs dissimilarity mismatch index were qualitatively similar than those shown here for total employment.

Despite these concerns, there are a number of strengths of the dissimilarity index. First, it allows for job isolation to be measured in a uniform way across metropolitan areas. Most studies of job isolation or mismatch rely on data from a single or a limited number of metropolitan areas for a variety of reasons, most especially that detailed geographic data on jobs and people are difficult to obtain across metropolitan areas and that the typical measures used to measure mismatch such as employment based density gradients are computationally costly (usually in time such as data collection, programming, etc.). The dissimilarity measure is calculated in the exact way across metropolitan areas using the same data sources and thus allow for direct metropolitan area comparisons.

⁹ The use of the commonly used alternative to the dissimilarity index, called the exposure index, also did not produce qualitatively dissimilar results than those shown here.

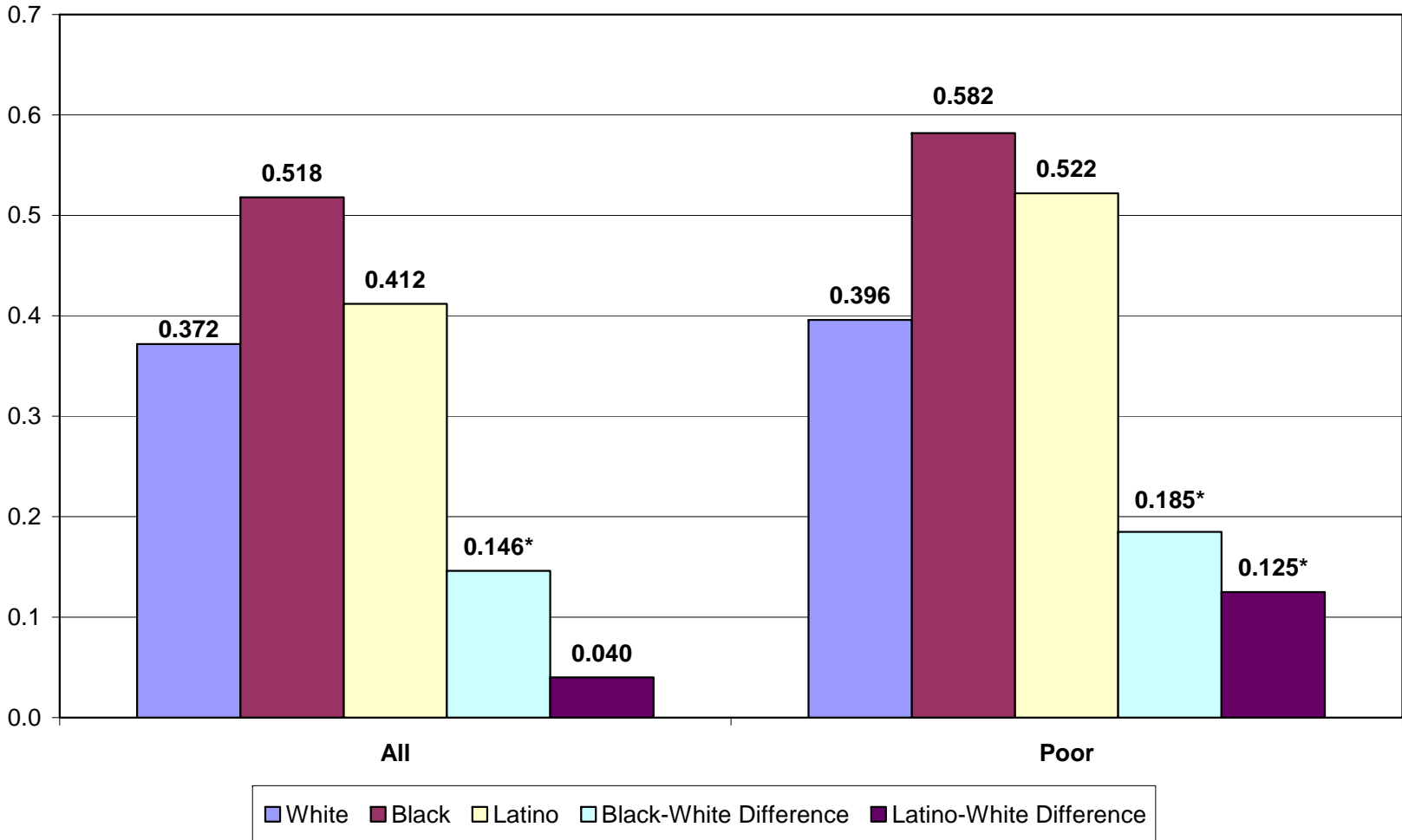
¹⁰ The U.S. Bureau of Labor Statistics for 2001 estimates that retail trade accounts for 18 percent of all jobs.

Further, the actual numerical value of the dissimilarity index has a convenient interpretation. Specifically, the index can be interpreted as the percent of either the specific racial group or of jobs that would have to relocate to different areas to completely eliminate any geographic imbalance. For example, as Figure 1 indicates, the 2000 index value describing the imbalance between the residential distribution of blacks and jobs is .518 (or 51.8 when multiplied by 100) for all metropolitan areas.¹¹ This indicates that in 2000, about 52 percent of blacks would have had to relocate within metropolitan areas towards jobs rich areas to be spatially distributed in perfect proportion with the geographic distribution of jobs.

Figure 1 also shows that blacks are the most spatially isolated racial group from jobs, followed by Latinos and then whites. This is true for the entire population and for the poor. The equivalent figures for all Latinos and whites is .412 and .372, respectively. Thus, for all groups, there are racial differences in job isolation that in the case of blacks and whites are large and statistically significant. For example, the racial gap in job isolation between blacks and whites is about 15 points, as indicated in Figure 1. These patterns and the magnitude of these results are consistent with previous literature.

¹¹ These mismatch index averages are weighted by the metropolitan area population counts for the racial/ethnic group being described by the index. Again, weighting the calculation of the average will place more weight on metropolitan areas with large populations. The weighting permits us to interpret the patterns in Figure 1 as the average degree of job isolation experienced by the typical member of each group.

Figure 1
Average Job Isolation Levels by Race, 2000



Note: * indicates statistically significant at at least the 5 percent level.
 Job isolation levels weighted by metropolitan population size.

The job isolation index levels are higher for the poor than for the entire population, and to directly address the authors' assertions presented in this paper, the racial gaps in job isolation are also larger. For example, Figure 1 shows job isolation index levels for the poor are between 2 to 11 percentage points higher than for the entire population for each racial and ethnic group. More importantly, the racial gaps in job isolation for the poor are between 4 and 9 percentage points larger than they are for the entire population. For example, the white-Latino gap in job isolation for the entire population is 4 percent points and is not statistically significant, while that for the poor is 13 percentage points and is statistically significant at or below the 5 percent level.

Thus, there are large and in most cases statistically significant racial gaps in job isolation for the entire population and the poor. The key questions of this paper are: what factors drive racial gaps in job isolation, and what is their relative importance? The empirical strategy to answer these is as follows. First, we examine bivariate relationships between racial gaps in job isolation and the main factors that are likely to drive these relationships including structural features of metropolitan areas such as racial segregation and job sprawl, metropolitan characteristics such as region and size, and other social characteristics of metro areas including their racial composition. Except in those cases where noted, to do

this, we split the explanatory variables into terciles, and examine the mean differences in the racial gaps in job isolation across these tercile categories.

However, simply examining these bivariate relationships is likely to confound our interpretations and conclusions regarding their relative importance because many of these explanatory factors are also likely to be related. For example, comparing bivariate relationships between racial segregation and racial gaps in job isolation, and that for metropolitan size and racial gaps in job isolation is likely to be confounded since racial segregation and metro size are related. (Racial segregation levels are typically higher in larger metro areas.) To address these concerns, we also employ regression analysis that includes an extensive list of metropolitan area control variables.

IV. Empirical Results

A. Unadjusted Relationship between Key Metro Factors and Racial Gaps in Job Isolation

Our expectation is that the primary metropolitan factors likely to drive racial gaps in job isolation include racial segregation in housing markets, job sprawl, region, metropolitan area size and racial composition. The primary measure of racial housing segregation is the index of dissimilarity, and 2000 U.S. Census data for the approximately 300 or so Metropolitan Statistical Areas in the U.S. is the

primary data used.¹² The index of dissimilarity is the most commonly used measure of segregation, but not the only one in the segregation literature. Others include the isolation, exposure and entropy indexes, for example, and these measure different aspects of the scope or kind of segregation. These alternative measures of segregation are well noted in the literature and their differences and consequences have been examined elsewhere as alternative measures of segregation (Massey and Denton, 1993). We have explored these alternative measures of segregation in this analysis, but the qualitative findings were very similar to those found here and thus their results are not reported.

The data used to measure the index of dissimilarity comes from the 2000 U.S. Census and its equation is similar to the one present for job isolation. The dissimilarity score between blacks and whites is given by:

$$(2) \quad D = \frac{1}{2} \sum_i \left| \frac{Black_i}{Black} - \frac{White_i}{White} \right|.$$

where $Black_i$ is the black population residing in zip code i (where $i=(1,\dots,n)$ and indexes the zip codes in a given metropolitan area), $White_i$ is the white population residing in zip code i , $Black$ is the total black population in the metropolitan area, and $White$ is the total number of whites in the metropolitan area. Again, the

¹² The metropolitan areas used in the analysis are Metropolitan Statistical Areas (MSAs) and Primary Metropolitan Statistical Areas (PMSAs) as defined by the Office of Management and Budget (OMB) in 1999 for Census 2000.

dissimilarity index ranges between 0 (perfect integration) and 1 (perfect segregation). Indexes of dissimilarity are calculated for white-Latino and black-Latino pairings to extend the analysis.¹³ The potential problems and strengths of using a dissimilarity index to measure segregation are nearly identical to those discussed for the job isolation measure, so we will not repeat this discussion here.

The job sprawl data are drawn from the 1999 U.S. Department of Commerce's ZIP Code Business Patterns files, and have been used elsewhere (Stoll, 2006; Glaeser and Kahn, 2001).¹⁴ Job sprawl is defined as the proportion of metropolitan jobs located outside of a 5 mile radius of the metropolitan area's Central Business District (CBD), and it has a straightforward interpretation: higher percentages of a metropolitan area's employment located outside the 5 mile ring around the CBD implies higher sprawl.¹⁵

The measures of region, metro size and racial composition are straightforward calculations using 2000 U.S. Census data and are well documented. Thus, we will not discuss their definitions or measurement here.

Consolidated Metropolitan Statistical Areas (CMSAs), which are usually much larger than MSAs or PMSAs, were not included among these metropolitan areas.

¹³ These segregation index averages are weighted by the metropolitan area population size. Again, weighting the calculation of the average will place more weight on metropolitan areas with large populations.

¹⁴ The latter provide information on total employment counts by ZIP code in the U.S. ZIP code business patterns data are extracted from the Standard Statistical Establishments List, a file maintained and updated by the Census Bureau of all known single and multiestablishment companies.

¹⁵ The locations of the CBDs in this analysis are drawn from the 1982 Economic Census, Geographic Reference Manual (U.S. Bureau of the Census, 1993). The CBD is a specific geographic area whose spatial boundaries are defined by the *US Census Bureau* and is that area within the central city of a metropolitan area commonly referred to as downtown. This measure of sprawl has been used elsewhere, and is correlated with other measures of sprawl, such as the concentration/centralization of people (since the spatial distribution of all people and jobs is highly

Table 1 present means of the racial gap in job isolation for all families for black-white differences and Latino-white differences by each of the key metropolitan variables. These variables are split into terciles, and the mean differences in the racial gaps in job isolation across these tercile categories are examined. Region and the black-white and Latino-white dissimilarity indexes are the two exceptions where the metropolitan variables are not split into terciles. The reason for doing so is obvious for region. For the indexes of dissimilarity, we follow the literature on racial segregation in housing and split these variables into low, moderate and high segregation levels according to the following cutoffs: 0-40, 40 to 60 and over 60. The literature describe indexes of dissimilarity of over 60 as being high or hyper levels of segregation, with that between 40 to 60 as moderate, and below 40 as low (Massey and Denton, 1993). We follow these conventions here.

Table 1 indicates that all of the key metropolitan variables of interest are statistically significantly related to the observed racial gaps in job isolation for all families. For example, the black-white and Latino-white difference in job isolation is much bigger in large and medium sized metropolitan areas than in smaller ones. For the black-white gap, this difference is quite large across different sized

correlated), and with measures typically used by economists to measure employment density, such as spatially based employment density gradients (Glaeser and Kahn, 2001; Kahn, 2001).

metropolitan areas. The racial gap is nearly 17 percentage points in large metropolitan areas, while it is only 2 percentage points in small metro areas.

Table 1 Insert here

These patterns are also similar for job sprawl and the percent of the population that is black, for both the black-white and Latino-white gap in job isolation. The pattern is less pronounced regarding the percent of the metro area that is Latino.

Nevertheless, Table 1 indicates that the biggest contributing factors to the racial job in job isolation for all families is region and racial segregation in housing markets for both the black-white and Latino-white gaps. For region, the black-white gap is 23 percentage points in the Northeast and Midwest while it is less than half that in the South and West. The same pattern is observed for the Latino-white gap except at a smaller magnitude of difference. In hyper or highly segregated metro areas, the black-white gap in job isolation is over 20 percentage points, while this gap is statistically significantly smaller in metro areas with moderate or low levels of racial segregation. The same pattern occurs for the Latino-white gap, but, again, at smaller magnitudes of difference.

Are these patterns also observed for the poor? Table 2 presents similar cross-tabulations as that in Table 1 expect for the poor. The patterns are largely similar except for some notable differences. First, racial gaps in job isolation for

the poor are statistically significantly related to all of the key metro variables except the percentage of the metro area that is black. Second, the racial gaps in each of the tercile categories for most of these metro variables are larger than that observed for all families. This finding is consistent with Figure 1 that indicates such racial gaps at the general level are larger for the poor than for all families. Finally, while region and racial segregation remain the biggest contributors to the racial gap in job isolation for the poor, the degree to which they are the biggest contributing factors is much less pronounced than that for all families. Table 2 indicates that this pattern is much more true for the black-white gap than that for the Latino-white gap.

Table 2 Insert here

B. Estimating Equations

The preceding analysis demonstrates that key metropolitan area features such as racial segregation, region, job sprawl, metropolitan size and racial composition drive much of the observed racial gaps in job isolation. Of course, many of these factors are related and thus mediate these relationships and confound interpretation. To address this, we control for these metropolitan area characteristics simultaneously using regression analysis. In particular, we estimate the following equation:

$$(3) \quad \textit{Racial Gap } JI_i = RS_i\beta_1 + JS_i\beta_2 + \beta'_3 X_i + \varepsilon_i$$

where i indexes metropolitan areas, *Racial Gap in JI_i* is the respective racial gap in job isolation examined, RS_i is the respective and relevant racial segregation index, JS_i is the job sprawl index, and X_i is a variety of metropolitan area characteristics variables, and ε_i is a mean-zero, randomly distributed disturbance term.

OLS regression models are used to estimate Equation (3). Since we are also interested in assessing the relative importance of these variables in driving the racial gap in job isolation we also present normalized regression coefficients. Of course, a variable is normalized when its mean is subtracted from it and divided by its standard deviation. OLS coefficients report on the impact of a one unit change in the independent variable on the dependent variable. The problem is that the independent variables included in this equation are measured in very different units and thus it is difficult to assess the relative importance of the independent variables' impact on the racial gap in job isolation measure with OLS coefficients. Normalization helps overcome this challenge because it converts measures of the independent variables into directly comparable units.

In addition to those already described, metropolitan area characteristics that may co-vary with these racial gaps in job isolation include the age of the oldest, main central city of the metropolitan area. Other social and economic characteristics of metropolitan areas are also important in this regard and include the number of political jurisdictions in a metropolitan area, the percentage of those

in the metro area that are over 65 or that have a college degree, as well as the industrial structure of a metro area.¹⁶ These control variables have also been used extensively in similar studies of metropolitan areas (Glaeser and Kahn, 2001; Kahn, 2001; Stoll, 2006).

Table 3 shows the means of the independent variables used in the analysis, both with and without weights for the metropolitan area's population size. They are provided for basic informational purposes and thus require little discussion. Most of these variables are collected from the 2000 U.S. Census. However, data on the age of the main central city and the number of municipalities in the metropolitan area are from the U.S. Census of Governments Organization file.¹⁷ In the analysis, we use the logs of the metropolitan area population size, the central city's age, the number of municipalities, and land area. Note that the sample size is 267 metropolitan areas. There are potentially about 315 metropolitan areas to include in the analysis. The sample is restricted to those metropolitan areas for which data on all variables examined here are available. Some metropolitan areas were excluded because metropolitan boundaries could not be calculated or

¹⁶ We also included control variables that measured within metropolitan area accessibility to low-income housing as well as a measure of economic segregation, in particular the neighborhood sorting index (NSI). The NSI was developed by Jargowsky (1996) and compares the mean income of households in neighborhoods to the mean income in a metropolitan area. None of these measures, calculated in any form or included in any models, were ever statistically significant.

¹⁷ Jordon Rappaport from the Kansas City Federal Reserve Bank graciously provided these data.

matched such as NECMAs in the Northeast. This restriction does not appear to bias the sample in any particular direction.¹⁸

Table 3 Insert here

C. Adjusted Results

Table 4 presents the OLS and normalized regression coefficients of equations predicting racial gaps in job isolation for all families. For the black-white gap, the OLS results indicate that a number of metropolitan factors are statistically significant in predicting this gap at least at the 5 percent level of significance and are in the expected direction. These factors include region, racial segregation, job sprawl, and many of the social and economic characteristics of metro areas including its level of educational attainment, industrial structure (in particular, the share of employment in service jobs), the number of political jurisdictions, and the strength of the local economy, as measured by the white male employment-to-population ratio. Indeed, the results indicate that there is an inverse relationship between the strength of the local economy and the black-white gap in job isolation as we should expect since a strong local economy is better able to either produce jobs where blacks live or provide income for others, particularly blacks, to move to more jobs-rich areas.

¹⁸ For example, there is no statistical difference in the magnitude of the coefficient on racial segregation in equations predicting racial gaps in job isolation (without control variables included) for the restricted versus unrestricted sample. This occurred despite the fact that the omitted metropolitan areas were generally of smaller size (with respect to population).

Table 4 Insert here

The OLS results indicate that many of these same factors also predict the Latino-white difference in job isolation. There are some notable exceptions however. Unlike the black-white gap, job sprawl and the number of political jurisdictions are not statistically significant related to the Latino-white job isolation difference. Instead, racial composition, in particular the percentage of the metro area that is black, and the age structure of the metro area significantly predict the Latino-white gap but are unrelated to the black-white difference in job isolation.

The results of the normalized coefficients speak directly to the central questions of the paper. These results indicate a similar ordering of importance of the metro factors examining the black-white and Latino-white gaps in job isolation. For the black-white gap, the results indicate that racial segregation and region are by far the biggest contributing factors to the gap. The remaining statistically significant factors in explaining this gap do so in similar magnitude. These include job sprawl, educational and industrial structure of the metro area, the number of political jurisdiction as well as the strength of the local economy. For the Latino-white gap, region and racial segregation are too the biggest contributing factors to this difference in job isolation. The remaining statistically significant factors in predicting this gap are second order but all do so in a similar magnitude.

Table 5 presents the OLS and normalized regression coefficients of equations predicting racial gaps in job isolation for the poor. Note that compared to the results for all families, there are fewer statistically significant factors predicting the racial gap in job isolation for either the black-white or Latino-white difference. Still, for the black-white gap, the OLS results indicate that racial segregation, region, racial composition (in particular the percent black of the metro area), and industrial structure (in particular the share of employment in service jobs) are statistically significant in predicting this gap at least at the 10 percent level of significance. The OLS results indicate that a few of these same factors also predict the Latino-white difference in job isolation. These include region and the share of employment in service jobs.

The results of the normalized coefficients indicate that racial segregation and region are the biggest contributing factors to the black-white gap in job isolation for the poor. These results are similar to those for the black-white gap for all families. Still, the percent of the metro area that is black also plays a big role in contributing to this gap. Interestingly, this result indicates that at least for the poor, the black-white gap in job isolation is smaller in more black metro areas. For the Latino-white gap in job isolation for the poor, region is by far the contributing factors to the gap.

Table 5 Insert here

IV. Conclusion

This paper sought to update conventional thinking about job access. Among many findings, the paper documents that in 2000, there remains statistically significant differences in the imbalance between employment locations and residential locations for black (and Latino) and white families. Blacks and to a lesser extent Latinos are much more physically isolated from employment than are whites, and these racial gaps are much more pronounced for poor families. These results were expected as a result of the voluminous documentation of how spatial mismatch leads to inferior wages and job attachment of inner city residents.

More importantly, the results indicate that more than any other factor, including region of residence, and other important metropolitan characteristics such as size, the extent of job sprawl, state of economy, industrial structure and other important factors, racial segregation (as measured by the index of dissimilarity) is a major determinant of racial gaps in job isolation. Like previous empirical tests of the spatial mismatch hypothesis, the results from this paper also support the premise that decentralization of jobs generally hurts job access of black families and poor black families much more than their white and Latino counterparts. These results suggest that despite dynamic changes in metropolitan areas over time such as declines in racial segregation, they have not changed enough to eliminate or reverse racial gaps in job isolation.

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Table 1
Racial Differences in Average Job Isolation Levels by Key Metropolitan Area
Characteristics, 2000

| | Black-White Difference in Job Isolation | Latino-White Difference in Job Isolation |
|--|--|---|
| Metro Size | | |
| Small | 0.023 | 0.009 |
| Medium | 0.093* | 0.024* |
| Large | 0.167* | 0.046* |
| Region | | |
| Northeast | 0.230# | 0.102# |
| Midwest | 0.231# | 0.080# |
| South | 0.073 | -0.004 |
| West | 0.115 | 0.027 |
| Black-White Index of Dissimilarity | | |
| Low | 0.018 | -0.010 |
| Moderate | 0.072* | 0.012 |
| High | 0.210* | 0.065* |
| Latino-White Index of Dissimilarity | | |
| Low | 0.098 | 0.005 |
| Moderate | 0.140 | 0.034 |
| High | 0.245* | 0.117* |
| Job Sprawl | | |
| Low | 0.044 | 0.010 |
| Moderate | 0.112* | 0.029 |
| High | 0.170* | 0.048* |
| Percent Population - Black | | |
| Low | 0.059 | 0.015 |
| Moderate | 0.152* | 0.040* |
| High | 0.169* | 0.049* |
| Percent Population - Latino | | |
| Low | 0.130 | 0.011 |
| Moderate | 0.156 | 0.047* |
| High | 0.146 | 0.046* |

Notes: * indicates statistically significant from the low or small category at at least the 5 percent level.

indicates statistically significant from the South region category at at least the 5 percent level.

The low, moderate and high (or small, medium, or large) categories represent tercile cutoffs in their respective distributions. The exception is the index of dissimilarities, whose category cutoffs are based on the segregation literature. Category cutoffs are as follows: Metro size: low (209,000), medium (209,000 to 542,000), large (over 542,000); index of dissimilarity: low (0 to 40), moderate (40 to 60), high (over 60); job sprawl: low (0 to .309), moderate (.309 to .595), high (over .595); percent black: low (0 to .050), moderate (.050 to .125), high (over .125); percent Latino: low (0 to .023), moderate (.023 to .068), high (over .068).

| Table 2 | | |
|--|--|---|
| Racial Differences in Average Job Isolation Levels for the Poor by Key Metropolitan Area Characteristics, 2000 | | |
| | Black-White Difference in Job Isolation for Poor | Latino-White Difference in Job Isolation for Poor |
| Metro Size | | |
| Small | 0.088 | 0.123 |
| Medium | 0.143* | 0.122 |
| Large | 0.201* | 0.126 |
| Region | | |
| Northeast | 0.224# | 0.203# |
| Midwest | 0.255# | 0.217# |
| South | 0.103 | 0.044 |
| West | 0.208# | 0.101# |
| Black-White Index of Dissimilarity | | |
| Low | 0.148 | 0.078 |
| Moderate | 0.125 | 0.088 |
| High | 0.228* | 0.155* |
| Latino-White Index of Dissimilarity | | |
| Low | 0.141 | 0.108 |
| Moderate | 0.187* | 0.114 |
| High | 0.254* | 0.185* |
| Job Sprawl | | |
| Low | 0.101 | 0.099 |
| Moderate | 0.149* | 0.121 |
| High | 0.208* | 0.130* |
| Percent Population - Black | | |
| Low | 0.172 | 0.130 |
| Moderate | 0.208 | 0.136 |
| High | 0.174 | 0.117 |
| Percent Population - Latino | | |
| Low | 0.150 | 0.162 |
| Moderate | 0.184 | 0.136 |
| High | 0.199* | 0.106* |

Notes: * indicates statistically significant from the low or small category at at least the 5 percent level.

indicates statistically significant from the South region category at at least the 5 percent level.

The low, moderate and high (or small, medium, or large) categories represent tercile cutoffs in their respective distributions. The exception is the index of dissimilarities, whose category cutoffs are based on the segregation literature. Category cutoffs are as follows: Metro size: low (209,000), medium (209,000 to 542,000), large (over 542,000); index of dissimilarity: low (0 to 40), moderate (40 to 60), high (over 60); job sprawl: low (0 to .309), moderate (.309 to .595), high (over .595); percent black: low (0 to .050), moderate (.050 to .125), high (over .125); percent Latino: low (0 to .023), moderate (.023 to .068), high (over .068).

Table 3
Means (std. devs.) of Variables

| | (1) | (2) |
|---|-------------------|--------------------------------|
| | Unweighted | Weighted by Population Size |
| Log (Population Size) | 12.887 (1.052) | 14.249 (1.180) |
| Northeast | 0.127 (0.334) | 0.173 (0.379) |
| Midwest | 0.300 (0.459) | 0.243 (0.430) |
| South | 0.390 (0.489) | 0.341 (0.475) |
| West | 0.184 (0.388) | 0.242 (0.429) |
| Log (city age) | 5.128 (0.330) | 5.186 (0.363) |
| Percent Black | 0.112 (0.104) | 0.142 (0.092) |
| Percent Latino | 0.099 (0.150) | 0.143 (0.153) |
| Percent over 65 years old | 0.117 (0.029) | 0.111 (0.028) |
| Percent with college degree or more | 0.169 (0.051) | 0.189 (0.050) |
| Share of employment in manufacturing | 0.141 (0.067) | 0.130 (0.054) |
| Share of employment in retail trade | 0.122 (0.0138) | 0.116 (0.012) |
| Share of employment in service | 0.427 (0.050) | 0.432 (0.038) |
| Log (number of political jurisdictions) | 2.995 (1.177) | 3.826 (1.180) |
| Job Sprawl – 5 mile radius | 0.446 (0.263) | 0.647 (0.208) |
| White male employment-to-population ratio | 0.793 (0.061) | 0.814 (0.044) |
| N | 267 | 267 |

Table 4
OLS and Normalized Regression Coefficients of Racial Difference in Job Isolation, 2000

| | Black-White Difference in Job Isolation | | Latino-White Difference in Job Isolation | |
|---|---|--------|--|--------|
| | (1) | (2) | (1) | (2) |
| Log (Population Size) | 0.006 (0.013) | 0.046 | -0.002 (0.010) | -0.018 |
| Northeast | 0.169*** (0.037) | 0.379 | 0.091*** (0.029) | 0.312 |
| Midwest | 0.121*** (0.025) | 0.406 | 0.084*** (0.020) | 0.432 |
| West | 0.099*** (0.025) | 0.287 | 0.037* (0.019) | 0.163 |
| Log (city age) | -0.052 (0.037) | -0.107 | -0.031 (0.029) | -0.097 |
| Black-White Index of Dissimilarity | 0.657*** (0.087) | 0.633 | 0.338*** (0.063) | 0.419 |
| Job Sprawl – 5 mile radius | 0.098** (0.039) | 0.183 | 0.019 (0.030) | 0.053 |
| Percent Black | -0.153 (0.116) | -0.115 | 0.189** (0.084) | 0.217 |
| Percent Latino | 0.032 (0.064) | 0.036 | -0.001 (0.054) | -0.012 |
| Percent over 65 years old | -0.395 (0.303) | -0.085 | 0.502** (0.224) | 0.165 |
| Percent with college degree or more | 0.498** (0.224) | 0.183 | 0.312* (0.174) | 0.176 |
| Share of employment in manufacturing | 0.062 (0.169) | 0.031 | -0.030 (0.135) | -0.023 |
| Share of employment in retail trade | 0.519 (0.643) | 0.052 | 0.588 (0.502) | 0.090 |
| Share of employment in service | -0.595** (0.229) | -0.219 | -0.438** (0.181) | -0.246 |
| Log (number of political jurisdictions) | -0.020* (0.011) | -0.170 | -0.008 (0.008) | -0.100 |
| White male employment-to-population ratio | -0.434** (0.169) | -0.174 | -0.412*** (0.132) | -0.252 |
| N | 267 | 267 | 267 | 267 |

Notes: Standard errors are in parentheses.

***, **, and * indicates statistically significant at the .01, .05, and .10 percent level, respectively.

(1) OLS estimates; (2) Normalized coefficients.

Table 5
 OLS and Normalized Regression Coefficients of Racial Difference in Job Isolation for the Poor,
 2000

| | Black-White Difference in Job Isolation | | Latino-White Difference in Job Isolation | |
|--|---|--------|--|--------|
| | (1) | (2) | (1) | (2) |
| Log (Population Size) | 0.006 (0.016) | 0.039 | 0.001 (0.015) | 0.001 |
| Northeast | 0.129*** (0.043) | 0.254 | 0.189*** (0.044) | 0.402 |
| Midwest | 0.103*** (0.031) | 0.306 | 0.154*** (0.030) | 0.492 |
| West | 0.134*** (0.030) | 0.343 | 0.061*** (0.030) | 0.168 |
| Log (city age) | 0.001 (0.044) | 0.002 | 0.002 (0.044) | 0.003 |
| Black-White Index of Dissimilarity | 0.540*** (0.104) | 0.458 | 0.071 (0.096) | 0.054 |
| Job Sprawl – 5 mile radius | 0.097** (0.046) | 0.158 | 0.008 (0.046) | 0.014 |
| Percent Black | -0.469*** (0.138) | -0.309 | 0.008 (0.128) | 0.005 |
| Percent Latino | 0.052 (0.076) | 0.052 | 0.004 (0.082) | 0.004 |
| Percent over 65 years old | -0.213 (0.360) | -0.041 | 0.871** (0.340) | 0.177 |
| Percent with college degree or more | 0.160 (0.266) | 0.052 | 0.152 (0.265) | 0.053 |
| Share of employment in manufacturing | 0.030 (0.201) | 0.013 | -0.136 (0.205) | -0.063 |
| Share of employment in retail trade | 0.609 (0.763) | 0.096 | 0.247 (0.762) | 0.025 |
| Share of employment in service | -0.476* (0.273) | -0.153 | -0.568** (0.276) | -0.198 |
| Log (number of political jurisdictions) | -0.018 (0.013) | -0.131 | 0.006 (0.013) | 0.045 |
| White male employment-to-population ratio ^a | 0.130 (0.200) | 0.046 | -0.153 (0.202) | -0.058 |
| N | 267 | 267 | 267 | 267 |

Notes: Standard errors are in parentheses.

***, **, and * indicates statistically significant at the .01, .05, and .10 percent level, respectively.

(1) OLS estimates; (2) Normalized coefficients.