

Does Location Matter?

In recent years, much attention has been paid to the growing gap between the earnings of Americans at the top and at the bottom of the income distribution, as reviewed by Kodrzycki (1996). As the earnings of poor Americans have fallen behind, these households have also become increasingly isolated from the places where middle-class and wealthy Americans live. The growth in inequality by location, however, has received much less attention than inequality by earnings, despite the fact that many neighborhoods in America's inner cities have become crime-ridden areas where few households of any race or income class would choose to live.

As segregation by income has increased, racial segregation has declined only modestly, suggesting that poor black children still grow up in locations that give them little chance to succeed. One study of Washington, D.C., found some particularly striking results. As compared to whites under the age of 14, black youth in the District of Columbia live in neighborhoods that have 11 times the rate of AFDC use, seven times the rate of illegitimacy, six times the rate of drug use and arrests, twice the rate of high school dropouts and long commutes, and a slightly higher rate of violent crime (Galster and Mikelsons 1995). While Washington, D.C., may be an extreme example, blacks in many other cities suffer from similar problems.

In the academic literature, the importance of location in labor market outcomes was first recognized in a series of articles and books that looked at the impact of racial discrimination in the housing market on the earnings of blacks. Developed by Kain (1968), the concept of "spatial mismatch" argues that housing discrimination confines blacks to a few central city neighborhoods where jobs have become increasingly scarce because employers have relocated to the suburbs. Written almost 30 years ago, Kain's article describes conditions that still exist today: growing suburbanization, continuing evidence of differential treatment in the housing market (see Fix and Struyk 1992; Turner 1992), and racial

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segregation that, while declining, is still extraordinarily high (Farley and Frey 1993; Harrison and Weinberg 1992).

Researchers have also contended that the segregation of the poor in inner-city ghettos has other serious consequences for residents beyond lack of access to jobs, including the lack of positive role models, concentration of crime, negative peer effects, and poor schools. Wilson (1987) has argued that reduced discrimination against blacks in the housing market has had devastating consequences for the remaining residents of inner-city ghettos, as middle-class blacks increasingly have gone to the suburbs, leaving behind neighborhoods with fewer and fewer positive role models. Wilson and others attribute

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much of the initial decline in many inner-city neighborhoods to the reduction in urban manufacturing jobs, which previously provided good-paying jobs to low-skilled workers.

This paper will discuss evidence from a variety of sources exploring the impact of location on the earnings of American households. Although many of the studies have flaws, the preponderance of evidence suggests that location does matter. In particular, spatial segregation by income is having an increasingly detrimental effect on those at the bottom of the income distribution. The Gautreaux program in Chicago provides especially strong evidence on this subject. As a result of a Supreme Court consent decree in 1976, families on the waiting list for public housing were assigned randomly to apartments in primarily white, middle-class suburbs or to units in the city of Chicago. Subsequent tracking of a sample of the Gautreaux participants indicates that those who moved to the suburbs were more likely to be employed than those assigned to city homes. Furthermore, the children of movers to the suburbs per-

formed better in school and had a higher rate of college enrollment (Rosenbaum and Popkin 1991; Rosenbaum 1995).

This paper begins by summarizing recent trends in segregation by race and income, including data from the Current Population Survey showing that the relative concentration in central cities of residents in the bottom quintile of the income distribution continues to grow, while the relative proportion of minorities in the inner cities remains flat or is modestly declining. Next, the paper explores reasons for the continuing racial and income segregation, noting that recent evidence shows that racial discrimination continues, but that such discrimination is not a complete explanation of recent trends.

The second part of the paper explores the impact of spatial isolation on residents of poor neighborhoods. The summary focuses on the most influential articles and most recent evidence on this subject. Some of the literature provides general evidence on the impact of location; other studies are more targeted, testing for the existence of spatial mismatch or neighborhood and peer effects. The final section of this paper offers some conclusions.

I. Changes in Segregation by Race and Income

For more than 30 years, researchers have documented that blacks live in significantly more segregated locations than most ethnic groups. Taeuber and Taeuber (1965) and Duncan and Duncan (1955, 1957) showed that blacks lived in cities with severe segregation during the 1950s and 1960s, and that many neighborhoods were transformed from white to black in a relatively short period of time. After the riots of the late 1960s, the Kerner Commission warned that the nation was becoming divided "into two societies; one largely Negro and poor, located in the central cities; the other, predominantly white and affluent, located in the suburbs. . . ." (See Farley and Frey 1993 for a more complete description of the historical context of discrimination.)

Because of the history of racial discrimination in the United States, most research in the past 30 years has looked at segregation by race, as opposed to segregation by income. More recently, however, researchers have recognized that some of the problems associated with segregation (peer and neighborhood effects, for example) are more closely related to poverty than to race. Most of the research summarized

in this section refers to segregation by race. However, the inclusion of a smaller number of papers on income segregation does not imply that segregation by income is unimportant; it is just less well researched. This point is particularly relevant because of the evidence from the last two decades that income segregation is rising, while racial segregation is declining.

Linking Segregation by Income and Race to Trends in Income Inequality

Changes in segregation by income and by race can be linked to the well-documented trend of rising income inequality. Figure 1 displays the ratio of the median incomes of families in the highest and lowest quintiles of the income distribution (that is, the 90th and 10th percentiles) from 1964 to 1994.¹ The figure shows that income inequality began to rise in the mid-1970s.

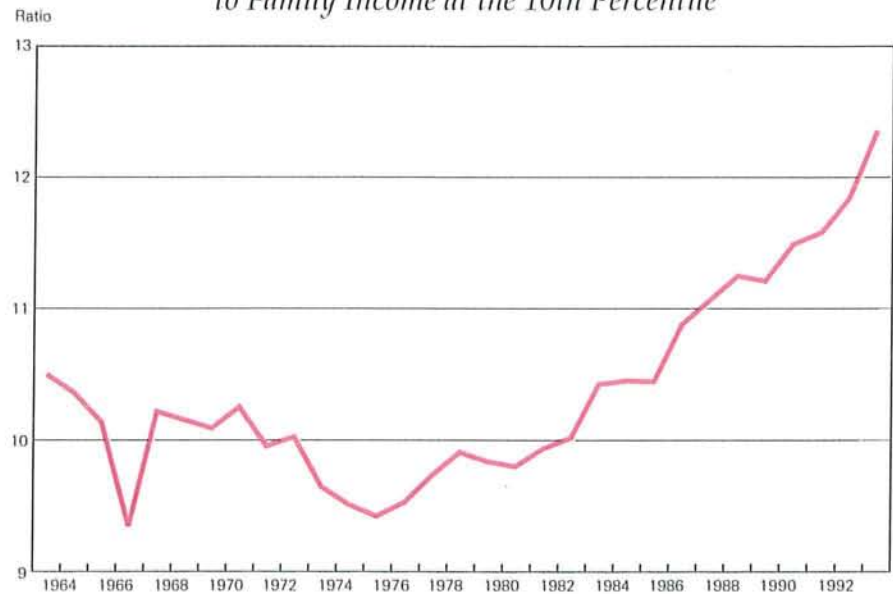
At the same time that income inequality has increased, poor families (those in the bottom quintile) continue to be disproportionately located in central cities. Figure 2 looks at U.S. families living in metropolitan statistical areas (MSAs) and compares the central city concentration of families in each income quintile to the central city concentration of all families.² In 1964, an American family in the bottom quintile of the income distribution was about 1.2 times as likely to be living in the central city as the average

¹ These data were obtained from the March Supplement of the Current Population Survey. The definition of families used here differs slightly from that of the Census Bureau in that the family data in this section include single individuals as well as traditional families (two or more related persons living together).

² Since the 1960s, the percentage of families living in an MSA has been rising, while the percentage of MSA families living in the central city has been steadily declining.

Figure 1

Ratio of Family Income at the 90th Percentile to Family Income at the 10th Percentile

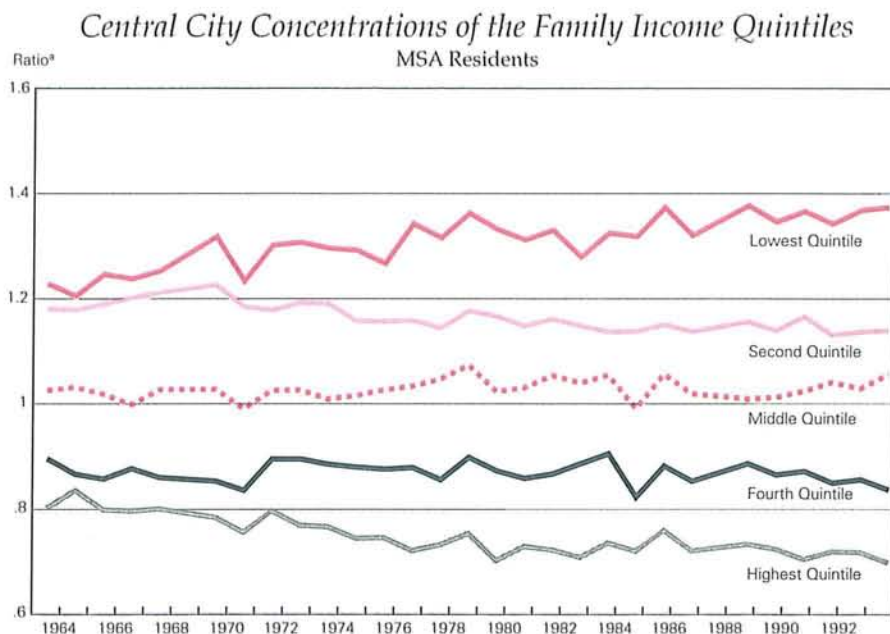


Source: Current Population Survey data, 1964 to 1994, except 1969 and 1988, which are interpolated.

family. That number has risen steadily over time, to a high of almost 1.4 by 1994. By comparison, families in the highest two quintiles have been moving out of central city locations.

While urban families at the bottom of the income distribution have always disproportionately resided in central cities, this pattern has become more pronounced in the last three decades. Spatial segregation by income has trended upward since the 1960s, well before the aggregate income distribution began widening. This suggests that changes in the income distribution explain only a part of the trend towards greater segregation by income. Indeed, the timing is consistent with causation running from spatial income segregation to increasing income inequality rather than the reverse. To the extent that the harmful effects of concentrated poverty have a lagged response or a minimum threshold (Crane 1991), rising income segregation may well have a role to play in explaining growing income inequality. Alternatively, changes in underlying factors such as the loss of manufacturing jobs (particularly in the inner city) may have an effect on both rising income inequality and spatial segregation by income.

Figure 2



* Calculated as the central city percentage of families in a given income quintile divided by the central city percentage of all families. Source: Current Population Survey data, 1964 to 1994, except 1969 and 1988, which are interpolated.

Figure 3 presents similar data on the central city concentration of blacks. After an initial rise in the 1960s, the relative concentration of blacks in the central city showed no consistent trend throughout most of the 1970s and fell slightly in the late 1980s and early 1990s. This pattern suggests that blacks have been moving out of the central city at roughly the same rate as all households. However, black families are still very heavily concentrated in the central city. The average ratio of concentration of blacks (between 1.6 and 1.7) is much higher than the average ratio of concentration for families in the bottom quintile of the income distribution (less than 1.4), although the ratios are moving closer together. The locational pattern of black families is described in more detail in Figure 4, which shows the change over time in central city concentration of blacks, by income quintile. Consistent with the observations of Wilson (1987), high-income blacks have been leaving the central cities at above average rates since the late 1960s. Even so, the relative concentration of high-income blacks in the central city remains about 30 percent above the central city concentration of all American families.

Racial Discrimination and Segregation by Location

The large concentration of blacks in the central city is not surprising given the high degree of racial discrimination that has persisted in the housing market for a long time. In prior decades, much of the discrimination was codified into law. Before the Congress passed the Fair Housing Act of 1968, local rules effectively restricted blacks from locating in many communities. Prior case law even allowed developers or owners to write deed restrictions that prohibited blacks or other minorities from living in particular developments or properties

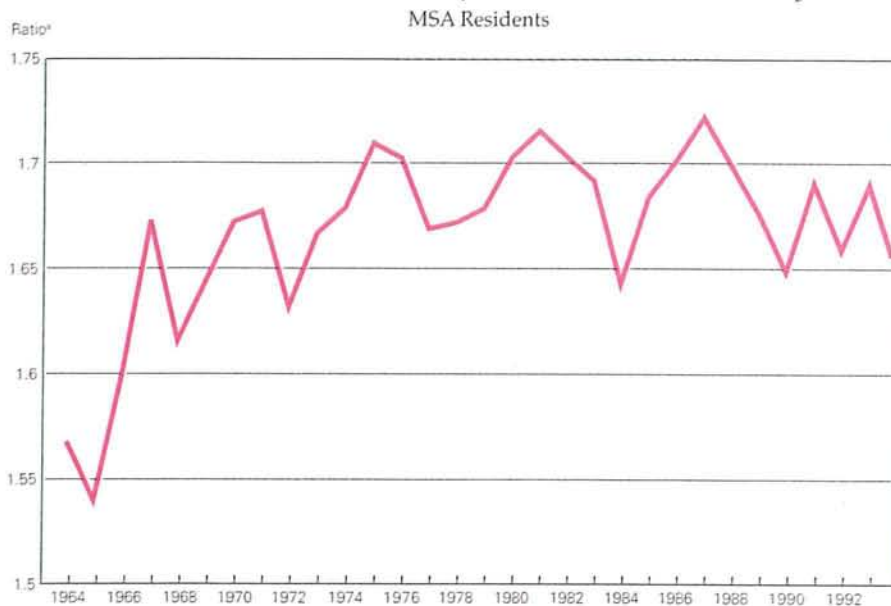
for as long as 99 years. Kain and Quigley (1975) showed that as a result of such discrimination, blacks actually paid more than whites for equivalent rental housing units, despite living in significantly worse neighborhoods.

Researchers have developed a variety of measures to quantify differences in the segregation of racial or income groups. The most common are the index of dissimilarity—which measures the evenness of the distribution of a particular racial or income group—and the index of isolation—which measures the extent to which members of a particular group are exposed to other members of the same group. (See Massey and Denton (1988) for a further discussion of these measures.) Because most data come from the decennial censuses, these measures are usually defined based on differences in the racial or poverty makeup of census tracts (areas of approximately 4,000 residents).³

³ To the extent that census tract boundaries cross actual neighborhood boundaries, these indexes could underestimate the extent of segregation, by using data for tracts that are more racially mixed than the underlying neighborhoods.

Figure 3

Relative Concentration of Blacks in the Central City



* Calculated as the central city percentage of black families divided by the central city percentage of all families. Source: Current Population Survey data, 1964 to 1994, except 1969 and 1988, which are interpolated.

The passage of fair housing laws in the 1960s and the growth of the black middle class, which has been ongoing since the end of World War II, led to a modest decline in the extent of racial segregation (measured by the index of dissimilarity) in the 1970s and 1980s. For example, Jakubs (1986) found that segregation fell in a majority of all 318 SMSAs in the 1970s, although Massey and Denton (1993) have observed that segregation remained high in the metro areas with the largest black populations. The data unambiguously support the conclusion of modestly declining racial segregation in the 1980s. Farley and Frey (1993) note that between 1980 and 1990 the average index of dissimilarity in 232 metropolitan areas with significant black populations fell from 69 to 65, with the index declining in 194 of those metro areas. Harrison and Weinberg (1992) and Massey and Denton (1993) find similar results for that decade.

Even though the Fair Housing Act of 1968 has been on the books for more than 25 years, various recent studies have found evidence that minorities are still treated differently when acquiring housing. Evidence of discrimination includes studies of lending patterns (redlining), mortgage approval, and the search process for buying or renting a home. The bulk

of these studies support the hypothesis that discrimination limits the mobility of minorities and in many cases restricts their choice of locations and makes search more costly. (See Fix, Galster, and Struyk 1992 and Yinger 1993 for an overview of this literature.) Such discrimination could explain the observed high levels of racial segregation.

Probably the most striking evidence regarding unequal treatment of minorities comes from a pair of national housing audits conducted in 1977 and 1989. (Turner 1992 and Yinger 1992 present a more detailed description of these audits.) In both

audits, pairs of testers, one minority, the other white, were sent to investigate randomly chosen housing units that were advertised in major newspapers. The testers were given identical backgrounds and incomes (in some cases the minority testers were actually given slightly higher incomes) and sent out to look for similar units. The testers recorded whether or not they were shown the advertised unit, as well as the number of other similar units they were offered. In the 1989 study, testers also documented the neighborhood characteristics of the units they were offered.

The 1989 audit showed that blacks receive some type of differential treatment in buying or renting a home more than one-half of the time (Turner 1992). The incidence for Hispanics was about one-third lower than for blacks. While the most extreme type of discrimination—the refusal of the agent to do business with the minority home seeker when units were available for the white tester—was experienced by the minorities in less than 10 percent of the cases, less severe adverse treatment was more common. For example, black testers were shown between 20 and 25 percent fewer units for sale or rent than white testers (Yinger 1992). In addition, blacks often received fewer credit offers on sales units and worse terms and

conditions for rentals, including a higher rent or security deposit and fewer offers of special terms (such as one month's free rent). In more than 20 percent of the audits, blacks and Hispanics were shown houses in neighborhoods with a higher percentage of minority residents, lower house values, or lower incomes, although the magnitude of the differences was fairly small. Finally, units for sale in minority areas were less likely to be advertised in major newspapers.

Although the 1989 results are striking, they appear to be less severe than those found in the 1977 national audit and in a smaller 1981 audit

conducted in Boston. In particular, blacks were much more likely to be told that the unit they were inquiring about was unavailable in 1977 than in 1989 (Turner 1992). In the 1981 Boston audit, blacks were shown 30 percent fewer units than comparable whites (Yinger 1986).

In addition to discrimination in the search process, blacks also face impediments to getting credit. Munnell et al. (1996) gathered data on a large number of 1990 mortgage applications in Boston, including virtually all of the information from the mortgage application. Even controlling for differences in observed personal attributes, residence location, and lender, the authors still found that a black applicant with average attributes would face a rejection probability 8 percentage points higher than a white applicant with otherwise identical attributes. While Yezer, Phillips, and Trost (1994) have criticized the conclusions of Munnell et al. because of the specification used in the analysis, their criticism is a theoretical point that cannot be resolved with the existing data. Thus, the Munnell study is the most complete look to date at racial disparities in the mortgage acceptance process, and it provides convincing evidence that minorities are treated differently when seeking

Figure 4

Central City Concentrations of Black Families in the Various Family Income Quintiles



* Calculated as the central city percentage of black families in a given income quintile divided by the central city percentage of all families.
Source: Current Population Survey data, 1964 to 1994, except 1969 and 1988, which are interpolated.

a mortgage. (See Yinger 1993, Berkovec et al. 1994, and Browne and Tootell 1995 for more detailed discussions of the evidence relating to mortgage discrimination.)

The net conclusion from most of this literature is that minorities continue to face discrimination in the housing market, although disparate treatment appears to be lessening. The recent reduction in discrimination is likely linked to the modest decline in racial segregation noted in the previous section.

Segregation by Income

More recently, researchers have begun to measure spatial segregation by income as well as by race. While racial segregation in the nation's largest cities has decreased since 1970, income segregation has grown, as middle-class households of all races continue to leave the central cities to live in the suburbs. Abramson, Tobin, and VanderGoot (1995) show that the mean value of the index of dissimilarity for the poor (calculated for census tracts within the MSA) in the largest 100 MSAs rose from 32.9 in 1970 to 34.8 in 1980 to 36.4 in 1990, an increase of 11 percent over the two decades. Massey and Eggers (1990) use a larger

number of income groups and get somewhat smaller index values for the 1970s, but a similar rate of change.

Of particular interest to researchers exploring increased sorting by income is the possibility that the exodus of middle-class households from the inner cities has left the remaining poor residents "socially isolated" (Wilson 1987) with fewer positive influences (successful peers and role models, access to informal employment networks, and so on) and more social problems (such as crime and drugs). In fact, the evidence suggests that an increasing number of poor residents have indeed become isolated in areas with a very high percentage of poor neighbors. Using a

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sample of the 100 largest cities, Kasarda (1993) shows that the share of the poor living in tracts with a poverty rate over 40 percent increased from 16 to 28 percent between 1970 and 1990, while the percentage living in tracts with a poverty rate exceeding 20 percent rose from 55 to 69 percent. Jargowsky and Bane (1991) found slightly lower increases in the 1970s, using a smaller sample of cities.

II. Does Location Matter? And If So, Why?

The overall trends described in the previous section suggest that poor Americans have suffered a double blow in the last two decades: decreased relative incomes combined with rising segregation. Policy-makers might wonder, however, whether the increase in segregation by income presents an additional barrier to raising the living standards of those at the bottom of the income distribution. This section summarizes research considering the implications of income and racial segregation. The first subsection presents evidence suggesting that segregation does matter for the labor market outcomes of individuals, while the next two subsections present evidence re-

garding the specific hypotheses of spatial mismatch and peer and neighborhood effects.

The Relationship between Income Segregation and Labor Market Outcomes

Probably the most provocative evidence suggesting that location matters comes from the Gautreaux program in Chicago. As a result of a Supreme Court consent decree in 1976, families on the waiting list for public housing were given vouchers and assigned randomly to apartments in primarily white, middle-class suburbs or to units in "revitalized" neighborhoods within the city of Chicago. Program participation was mostly a matter of luck, although families with more than four children, large debts, a history of late rent payments, or apartments showing evidence of physical abuse were excluded. Such exclusion criteria never affected more than 30 percent of otherwise eligible residents. Once relocated, participants received little special support to help them adjust to their new communities.

Subsequent tracking of a sample of the Gautreaux participants shows that the suburban movers fared better than city movers in many dimensions (Rosenbaum and Popkin 1991; Rosenbaum 1995). For example, 74 percent of suburban movers who were employed pre-move were also employed post-move, compared to 64 percent for movers to a city location. In addition, 46 percent of previously unemployed suburban movers found jobs, versus 30 percent of city movers. Living in the suburbs had little effect on average hours or wages. More striking, however, was the impact of moving to the suburbs on the children of Gautreaux participants. A 1982 survey found that Gautreaux children had managed to achieve similar grades in suburban schools, despite higher standards. A follow-up survey in 1988 found that 94 percent of the children of suburban movers attended college or were on a college track, compared to 45 percent of city movers' kids. Of those not in college, 41 percent of city-mover children were employed full-time, versus 75 percent of suburban-mover children.⁴

Although the Gautreaux program was fairly large, placing over 5,000 families since 1976, the samples used in these studies of the program were small (342 adults and 98 children), leading to the possibility of selection bias, particularly because researchers were

⁴ The differences in means between city and suburban children were significantly different from each other with a p-value of at least 0.90.

unable to contact more than 40 percent of the randomly selected households. Nonetheless, the Gautreaux evidence is the closest that social scientists have come to an experiment that randomly allocates households to different neighborhoods.

Nelson and Edwards (1993) explore the hypothesis that to the extent that minorities face discrimination in finding and acquiring housing in better neighborhoods, they should be less likely to move out of ghettos. They use data from the American Housing Survey to examine flows of households to and from poor zones in 10 cities. They find that blacks are less likely to move out of poor areas than whites, even controlling for other individual characteristics. In Chicago, for example, about 70 percent of blacks who lived in a poor zone remained in a poor zone five years later, while the comparable figure for whites was only 50 percent. In addition to race, however, income and neighborhood of origin were important in predicting mobility, suggesting that factors other than racial discrimination are also important in understanding neighborhood composition. Furthermore, the zones in this study were about 25 times larger than census tracts, so these results may understate barriers to mobility. Nonetheless, Nelson and Edwards' findings suggest that poor minorities face significant barriers to moving, even when the potential gains are substantial.

Most of the research that looks at the problems associated with racial segregation does so within a single metropolitan area, and Cutler and Glaeser (1995) argue that such studies suffer from serious biases if they do not control for the endogeneity of location within the MSA. By looking at the impact of MSA-level variables on individual outcomes across MSAs, Cutler and Glaeser claim that they can better test the hypothesis that the reduction in housing choice associated with discrimination hurts all minorities, regardless of where they live. In particular, with the exception of Gautreaux, most existing within-city studies do not control for sorting (rich people live together by choice, rather than becoming rich because of their neighbors), within-MSA mobility (suburban minorities may be a selected sample of all minorities), or between-MSA mobility (talented minorities avoid segregated MSAs). To address these problems, Cutler and Glaeser use youth observations from the 1990 Census Public Use Micro Sample to estimate whether blacks fare worse in segregated MSAs. They present both OLS and 2SLS estimates, instrumenting for the degree of segregation within a MSA and for the residential location.⁵

They find that blacks in metropolitan areas with more segregation are less likely to graduate from high school, while they are more likely to be idle or to be a teenage mother and to have lower earnings. (Galster 1987 also estimates a simultaneous equations model and finds that segregation has a negative impact on various measures of black welfare.) These results hold even when controlling for whether the individual lives in a central city, suggesting that segregation hurts all blacks in a metropolitan area, regardless of whether they live in the city or suburbs. Cutler and Glaeser also included some specific measures of neighborhood spatial isolation and peer influences, but these measures did not explain a large part of the segregation effect, possibly because of the large size of the "neighborhoods" involved (approximately 100,000 residents).

O'Regan and Quigley (1995) also find evidence of adverse effects of spatial isolation on teenage employment using a sample of at-home youth from the 1980 and 1990 Public Use Micro Samples. In the first stage, the authors estimate a logit model of employment on individual characteristics (except race), including the type of household, whether a parent is working, and whether the individual lives in a central city. The second stage involves regressing the predicted employment probability on individual race dummies and on MSA measures of economic activity, employment composition, and indexes of exposure to whites and the poor. Both exposure measures are highly significant. The coefficients suggest that reduced segregation by race or poverty would have a positive impact on black and Hispanic youth employment, but a negative effect on white employment. The latter result is explained by the fact that reduced segregation will result in whites having increased exposure to the poor and to minorities who have fewer jobs and thus worse peer effects.

Another set of provocative findings showing the importance of location involves the labor market performance of recent immigrants into the United States. Previous evidence had suggested that the performance of children of recent immigrants depends not only on their parents' skills, but also on the average skill levels of their ethnic group (Borjas 1992 and

⁵ The set of instruments includes variables relating to the MSA of previous residence, plus the degree of segregation and the number of governments in 1962, the percent of local revenue received from intergovernmental transfers, and the number of rivers between and within the MSA. Cutler and Glaeser suggest that the latter instrument is correlated with segregation because a larger number of communities likely leads to greater sorting.

1994). However, such recent immigrants often live in highly segregated neighborhoods, so the effect attributed to ethnic capital might actually be a neighborhood effect. Borjas (1995) tests for separate neighborhood and ethnic capital effects using data from the public use file of the 1970 U.S. Census and the National Longitudinal Survey of Youth. He finds evidence of very strong neighborhood effects, even controlling for other factors, but a much smaller impact of ethnicity. In fact, ethnicity matters only for persons who live in segregated neighborhoods with a large percentage of persons from the same ethnic background.

The above results provide significant evidence that segregation continues to affect the labor market outcomes of minorities and immigrants and that minorities face impediments to moving, but these results do not help to identify the mechanism through which segregation has these effects. The next subsections explore specific hypotheses about the impact of segregation, including spatial mismatch and peer and neighborhood effects.

Spatial Mismatch and Jobs

Kain's original paper on spatial mismatch (1968) began a long literature that has explored the labor market implications of racial discrimination in the housing market. (The spatial mismatch hypothesis states that housing discrimination confines blacks to living in a few central city neighborhoods, where jobs have become increasingly scarce because employers have relocated to the suburbs.) Using data from Detroit and Chicago in 1952 and 1956, Kain found that restrictions on the residential choice of African-Americans reduced non-white employment in these cities by 9,000 and 24,600 jobs, respectively. Over the next 22 years, more than two dozen papers were written in support of, or arguing against, spatial mismatch. While research on this topic slowed in the late 1970s and early 1980s, interest has recently grown more intense as America's urban problems receive greater attention.

Several recent papers have surveyed the literature on spatial mismatch and come to very different conclusions. Jencks and Mayer (1990b), for example, find that the evidence against spatial mismatch is as compelling as the supportive evidence, suggesting that "support [for the idea that job proximity increases the supply of black workers] is so mixed that no prudent policy analyst should rely on it." Kain (1992), Holzer (1991), and Ihlanfeldt (1992), on the other hand, find

significant support for spatial mismatch, relying on more up-to-date research as well as taking a more critical view of previous papers. As Ihlanfeldt (1992) notes, Kain's spatial mismatch theory is actually three separate hypotheses: 1) residential segregation affects the location of jobs that blacks obtain; 2) segregation decreases aggregate black employment; and 3) the decentralization/suburbanization of jobs magnifies the effect of residential segregation.

Much of the subsequent empirical debate over spatial mismatch turns on measurement issues, which

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are briefly summarized here. For example, many papers compare the earnings of blacks in urban and suburban neighborhoods, despite the possibility that suburban blacks are a selected sample of all blacks in the metropolitan area (even controlling for observable individual characteristics). In fact, the endogeneity of location is a problem that few authors address directly. Several recent papers attempt to avoid the problem by restricting their samples to at-home youth, arguing that a youth's residence is likely chosen by older members of the household. Such papers, however, suffer from the additional problem that, for youth, the choice between work and school is also endogenous. In addition, many researchers treat all suburban locations the same, despite the observation that suburbs with large black populations in many MSAs are significantly different from white suburbs and have poorer access to jobs. Most papers also use a general measure of residential segregation, as opposed to a more complicated measure that takes into account the relative locations of black residents and potential employers.

Probably the most well-known and controversial paper that finds evidence against spatial mismatch is Ellwood's (1986) study of Chicago youth employment. Ellwood presents several different types of evidence,

all of which suggest that location has little effect on black employment rates. First, he regresses census tract employment rates on the tract's racial make-up plus three measures of job access, finding that the access variables are insignificant and have little effect on the significant negative coefficient for percent black in tract. Even including neighborhood fixed effects does not change the coefficient on percent black. Other evidence against spatial mismatch comes from Ellwood's finding that the "labor market outcomes for blacks on the West Side ghetto are remarkably similar to those in the South Side, in spite of the dramatic

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differences in the proximity to jobs." Finally, he shows that differences in employment rates for blacks and whites within the same neighborhood are the same as the relative job differences by race for youth living across town. Ellwood concludes that racial discrimination in the labor market, rather than residential location, explains differences in employment across different neighborhoods. ("Race, not space, remains the key explanatory variable.")

Several authors have criticized Ellwood's findings on a variety of grounds. Leonard (1986) suggests that Ellwood's measures of job accessibility are unreliable because of the small sample sizes in the Chicago Area Transportation Study. Ihlanfeldt (1992) notes that the use of aggregate census tract data, rather than individual observations, might bias the coefficients on accessibility towards zero. Kasarda (1989) presents evidence that job accessibility really does not differ between the South Side and the West Side ghetto. He also makes the argument that the similarity of relative black-white employment patterns in different neighborhoods can be explained by differences in the timing of job losses in the two neighborhoods.

More recently, Engberg and Kim (1995) present evidence suggesting that place effects are minimal for workers of all education levels, using a sample of white men in Pittsburgh. They use a non-parametric

selection model to try to separate place and person effects and assume that highly educated white men face no barriers to moving. Their results suggest that the increased segregation by income may have little effect on the labor market outcomes of white low-skill workers. The study does not address employment outcomes for black workers, who may face greater barriers to moving.

On the other side, several recent papers have found evidence in favor of spatial mismatch. Ihlanfeldt and Sjoquist, together and separately, have written a series of papers that combine data on black and white youth from the 1980 Census Public Use Micro Sample with local measures of job accessibility, to show that job accessibility is strongly correlated with black youth employment prospects. In the Philadelphia MSA, they show that mean travel time for white and black youth in 26 regions is related to the probability of employment for these groups (Ihlanfeldt and Sjoquist 1990). In addition, the authors show that relative differences in mean travel times explain a significant portion of the difference between white and black employment rates. Other regressions extend these results to Chicago and Los Angeles, although the data are not as good.

Ihlanfeldt (1992, 1993) expands on this research by creating separate estimates for Hispanics, as well as for youth in various other income and location categories in 50 MSAs. Among other things, he finds that the relationship between job access and employment probability is stronger for central city than suburban youth. In fact, employment access had a significant effect on job probability for all groups except for youth located in smaller MSAs. Finally, Ihlanfeldt and Sjoquist (1991) study 43 SMSAs using data from youth living at home in the central city (to control for endogenous location), and once again find that mean travel time has a significant effect on the probability of youth employment.

While Ihlanfeldt and Sjoquist's research strongly suggests that proximity to jobs matters, the authors do not fully control for endogenous location and do not allow for neighborhood effects that might be correlated with access to employment. To address the latter issue, Gabriel and Rosenthal (1995) estimate a fixed-effects model of commuting times, using data from the 1985 and 1989 American Housing Surveys. They find that black workers with a high school or college degree have longer commutes than similarly educated Asian or white workers, even after controlling for neighborhood fixed effects and income. Surprisingly, for workers with less than a high school degree,

commutes are similar for all races. The latter finding contradicts the observations of the many other authors who argue that low-skilled minority workers are the group most likely to suffer from long commutes because of barriers to mobility and the loss of inner-city manufacturing jobs.

The results from Gabriel and Rosenthal indicate that neighborhood effects matter and that not controlling for neighborhood fixed effects biases upward the race coefficient in the commuting time regressions.⁶ (The coefficient on the black dummy variable in the commuting time regressions was about one-third higher in the specifications that did not include the neighborhood fixed effects.) Finally, Gabriel and Rosenthal find that blacks are less likely than members of other racial groups to move after four years, even controlling for other factors including the potential gains associated with moving.

In contrast to much of the previous literature, which generates variation in commuting times based on cross-sectional data, Zax and Kain (1995) take a natural experiment approach and still find that job access has a differential impact on black workers. They study worker quit behavior in response to the move of a large services industry employer from the Detroit central business district to the predominantly white suburb of Dearborn. The authors divided employees into "winners" (workers whose new commute was shorter) and "losers" (workers with a longer commute). While few, if any, white "losers" quit their jobs in the three years following the move, many black "losers" left the company. As a result of the move, at least 11 percent of the blacks who had worked at the previous location quit.

Neighborhood and Peer Effects

While the spatial mismatch literature posits a well-defined hypothesis, neighborhood and peer effects are more difficult to identify. Wilson (1987), for example, argues that low-income blacks have been negatively affected by the exodus of middle-class blacks from ghettos since the 1970s. The loss of employed households may hurt remaining residents of a poor urban neighborhood, through the loss of informal job networks (Holzer 1987) and positive adult role models and a deterioration in peer influences. Because of the high correlations among these factors within individual neighborhoods, their effects are very hard to identify separately. In addition, because individuals tend to locate in neighborhoods inhabited by people with similar characteristics, the direction of causality

between individual outcomes and neighborhood characteristics is unclear. Because of these problems, many fewer papers have looked for separate evidence of neighborhood and peer effects, and the evidence that is available is much weaker than for spatial mismatch.⁷

Jencks and Mayer (1990a) survey the literature on the impact of neighborhoods on five outcomes for children, including educational attainment, cognitive skills, criminal activity, sexual behavior, and economic success. They conclude that "there is no general pattern of neighborhood or school effects that recurs across all outcomes." Jencks and Mayer found only five papers on labor market success and none had results that were reliable.

More recently, Crane (1991) finds evidence in favor of an "epidemic" theory of ghettos in which the individual outcomes are related to neighborhood quality, particularly for very distressed neighborhoods. Using data from the 1970 Census Public Use Micro Sample, he shows that as the percentage of "high status" residents (persons with a professional or managerial job) decreases below a threshold of 10 percent, the probability of a young person having a baby or dropping out of school increases sharply, even controlling for other individual characteristics. To control for endogeneity of residence location, he restricts the sample to at-home youth.⁸ One problem with the study is that Crane tested 15 measures of neighborhood quality (which presumably were less strongly associated with social problems) before using the percentage of "high status" residents. In addition, correlations between neighborhood characteristics and personal and parental attributes could further bias the results. (See Borjas 1995.)

Corcoran et al. (1991) do a better job of controlling for family characteristics in their study of men's economic status, finding that parental income, race, and participation in welfare programs play an important role in a son's earnings. They obtain parental information from the intergenerational data in the Panel Survey of Income Dynamics. Once parental attributes

⁶ The authors attribute the impact of the fixed effects on commuting times to unobserved compensating differentials in neighborhood house prices and amenities.

⁷ This section reviews only papers that relate directly or indirectly to the impact of neighborhood factors on labor market outcomes. See Jencks and Mayer (1990a) for a survey of the much larger literature that explores the determinants of social problems such as teenage pregnancy, illegitimacy, and crime.

⁸ These results are consistent across most racial groups and locations, although the mean levels of the dropout and fertility rates were much lower for whites in the sample than for blacks.

are controlled for, however, only one of the neighborhood characteristics is significant—percent on welfare. The neighborhood characteristics are measured at the zip code level, and even the authors concede that zip code level data are inadequate for this task. (See Borjas (1995) for evidence about the imprecision of zip code level neighborhood controls.)

Because individuals tend to locate in neighborhoods inhabited by people with similar characteristics, the direction of causality between individual outcomes and neighborhood characteristics is unclear.

Several recent papers have attempted to use an instrumental variables approach to control for the simultaneity between neighborhood and peer characteristics and (unobserved) household attributes. Evans, Oates, and Schwab (1992) show the problem with ignoring the endogeneity of location and peers. Using data from the National Longitudinal Study of Youth, they estimate the probability of pregnancy and school dropout for teenage women as a function of individual and household variables, including the percentage of students in school who are disadvantaged. In a single equation model, they find that the percentage disadvantaged variable is highly significant and has a positive impact on the probability of pregnancy and a negative impact on the probability of staying in school. Next the authors use a simultaneous equations approach, in which the percentage of disadvantaged students is estimated as a function of instruments that include metropolitan area economic conditions.⁹ The coefficient on percentage disadvantaged becomes insignificant in the pregnancy and dropout equations when run in the simultaneous equations framework. While the study can be criticized for its exact choice of instruments and a single peer variable, the results strongly hint at the problem associated with the endogeneity of peers and neighborhoods.

Others find that neighborhood and peer effects do not disappear with suitable instruments for neighborhood effects. Duncan, Connell, and Klebanov (1994) argue that endogenous neighborhood choice could

actually lead researchers to underestimate neighborhood effects, if households with motivated parents choose poor neighborhoods because of low house prices. They use data from the Panel Survey of Income Dynamics to estimate the impact of individual and neighborhood characteristics on the probability of high school graduation, using the future neighborhood choice of the mother as an instrument for the neighborhood that the parents occupy while the children live at home. Such an instrument should avoid the problem that parents may choose a neighborhood in order to provide their children with better peers. The authors find a strong and significant neighborhood effect, which increases in magnitude when they use instrumental variables.

Case and Katz (1991) use targeted survey data to separate the effects of neighborhood and family attributes; they find strong evidence that both of these factors have an impact on the behavior of inner-city youths consistent with an epidemic model of neighborhood effects. They use data from a 1989 NBER survey of youths living in low-income neighborhoods that reports a variety of outcome measures, including labor force/school status, criminal activity and drug use, church attendance, and parental status. The survey also asks about the presence and demographic background of the parents and siblings, as well as the respondent's current living arrangements. The estimated neighborhood effects are especially convincing because Case and Katz use a novel approach to control for the potential endogeneity of location. For example, if the dependent variable was whether or not a youth committed a crime last year, Case and Katz include the predicted probability that the youth's neighbors committed a crime in the last year as an independent variable. The predicted value is generated from the individual characteristics of neighboring youths.

As suggested by the conflicting results listed above, Aaronson (1995) shows that instrumental variable equations are very sensitive to the choice of reasonable instruments. Instead, he uses data from siblings who differ in age by at least three years, and whose families move at least once, to estimate a model of educational attainment in which family influences are controlled for using fixed effects. The results show that neighborhood effects remain important in predicting high school graduation even when family-specific fixed effects are included in the equation.

⁹ The authors show that the included instruments are correlated with percentage disadvantaged, but uncorrelated with the dependent variables in the second stage equations.

As is clear from the papers just summarized, research on neighborhood and peer effects is less developed than that for spatial mismatch, and the results are more ambiguous. In particular, few authors have been able to identify the exact neighborhood or peer variables that matter most. Recent research shows promise, however, in controlling for the endogenous choice of location, and a number of working papers suggest that neighborhoods and peers do matter in explaining educational outcomes.

III. Conclusions

Despite the attention paid to segregation over the past 30 years, low-income and black households continue to live in neighborhoods that are highly segregated. Trends in the 1970s and 1980s show that the type of segregation is slowly changing, with segregation by race gradually falling while income segregation is rising. Racial segregation remains more pronounced than income segregation, and recent studies have found that racial discrimination in the housing market continues to exist, although the types of discrimination are less severe than in the past.

The evidence presented in this survey strongly supports the proposition that location matters in terms of labor market outcomes, particularly for households who live in distressed inner-city neighborhoods. In addition to the Gautreaux results, several studies show that minorities do worse in MSAs with more segregation (or spatial isolation) and that ethnic neighborhoods play an important role in transmitting ethnic capital. The research is less clear, however, in identifying the exact mechanism through which location affects labor market outcomes. Commuting times appear to be an important factor in explaining reduced employment for black and Hispanic youth, and several authors have found that minority families face significant barriers to mobility. Neighborhood and peer effects are harder to identify, especially because of the endogeneity of location and the strong correlations between various kinds of neighborhood problems and individual and family characteristics.

Despite the large body of evidence, significant research questions remain unanswered. Future research should continue to look for better methods of identifying neighborhood and peer effects. Focusing exclusively on at-home youth presents several problems yet to be addressed, including the choice of work versus school (which presumably depends on the availability of jobs and the quality of local schools).

Even if parents make the choice of location for youth, the parents' choice of location may be correlated with attributes of the parent that can have an independent effect on the youth's behavior. (For example, parents who use drugs may live in neighborhoods with other drug users, but also have children who are drug users. Without controlling for parental drug use, researchers cannot separately identify the impact of neighbors' drug use on a youth's drug use.) Finally, results for at-home youth may be difficult to generalize for the larger population.

Trends in the 1970s and 1980s show that the type of segregation is slowly changing, with segregation by race gradually falling while income segregation is rising.

While many studies have explored the reasons for and negative implications of segregation by race, significantly fewer papers have focused on segregation by income. Very little evidence has been developed about why this type of sorting has been rising for the past 25 years. Given this trend, however, the problems associated with the concentration of poverty, including access to education, neighborhood and peer effects, and mobility, should receive significantly more attention in the future.

Finally, most of the evidence regarding spatial mismatch comes from studying individuals, not firms. Even if individuals face barriers to mobility (such as housing market discrimination and information problems), firms could choose to locate closer to minority or impoverished neighborhoods if employers perceived profitable opportunities. Yet the establishment of enterprise zones to provide tax breaks for employers who move to distressed inner city areas has apparently failed to induce significant numbers of employers to respond. Research on the reasons that employers choose not to locate in inner cities might suggest policies that could help improve the conditions for residents of the inner city.

Given current high levels of segregation, America's urban problems are not going to disappear, and

instead they appear to be worsening. The research presented at this symposium will add to our understanding of the problems associated with location. The challenge for policy-makers is to use this research to

design policies that address the needs of the inner cities. Solutions to the problem of growing income inequality must also address the problems posed by location.

References

- Aaronson, Daniel. 1995. "Using Sibling Data to Estimate the Impact of Neighborhoods on Children's Educational Outcomes." Northwestern University, mimeo, October.
- Abramson, Alan J., Mitchell S. Tobin, and Matthew S. VanderGoot. 1995. "The Changing Geography of Metropolitan Opportunity: The Segregation of the Poor in U.S. Metropolitan Areas, 1970-1990." *Housing Policy Debate*, vol. 6, no. 1, pp. 45-72.
- Berkovec, James A., Glenn B. Canner, Stuart A. Gabriel, and Timothy H. Hannan. 1994. "Race, Redlining and Residential Mortgage Loan Performance." *Journal of Real Estate Finance and Economics*, vol. 9, no. 3, pp. 263-94.
- Borjas, George J. 1992. "Ethnic Capital and Intergenerational Mobility." *Quarterly Journal of Economics*, vol. 107, no. 1, pp. 123-50.
- . 1994. "The Intergenerational Mobility of Immigrants." *Journal of Labor Economics*, vol. 11, no. 1, pp. 113-35.
- . 1995. "Ethnicity, Neighborhoods, and Human-Capital Externalities." *The American Economic Review*, vol. 85, no. 3, pp. 365-89.
- Browne, Lynn Elaine and Geoffrey M.B. Tootell. 1995. "Mortgage Lending in Boston—A Response to the Critics." *New England Economic Review*, September/October, pp. 53-78.
- Case, Anne C. and Lawrence F. Katz. 1991. "The Company You Keep: The Effects of Family and Neighborhood on Disadvantaged Youths." National Bureau of Economic Research Working Paper No. 3705, May.
- Corcoran, Mary, Roger Gordon, Deborah Laren, and Gary Solon. 1991. "The Association Between Men's Economic Status and Their Family and Community Origins." *Journal of Human Resources*, vol. 27, no. 4, pp. 575-601.
- Crane, Jonathan. 1991. "The Epidemic Theory of Ghettos and Neighborhood Effects on Dropping Out and Teenage Childbearing." *American Journal of Sociology*, vol. 96, no. 5, pp. 1226-59.
- Cutler, David M. and Edward M. Glaeser. 1995. "Are Ghettos Good or Bad?" National Bureau of Economic Research Working Paper No. 5163, June.
- Duncan, Greg J., James Connell, and Pamela Klebanov. 1994. "Selection Bias in the Estimation of the Effects of Neighborhood Conditions on Children's Development." University of Michigan, mimeo, October.
- Duncan, Otis D. and Beverly Duncan. 1955. "A Methodological Analysis of Segregation Indices." *American Sociological Review*, vol. 20, April, pp. 210-17.
- . 1957. *The Negro Population of Chicago: A Study of Residential Succession*. Chicago, IL: University of Chicago Press.
- Ellwood, David. 1986. "The Spatial Mismatch Hypothesis: Are There Teenage Jobs Missing in the Ghetto?" In Richard B. Freeman and Harry J. Holzer, eds., *The Black Youth Employment Crisis*, pp. 147-85. Chicago, IL: University of Chicago Press.
- Engberg, John B. 1993. "Person or Place? Spatial Variation Within Local Labor Markets." Heinz School of Public Policy, Carnegie Mellon University, Working Paper No. 93-35, July.
- Engberg, John B. and Taeil Kim. 1995. "Person or Place? Parametric and Semiparametric Estimates of Intra-Metropolitan Earnings Variation." Heinz School of Public Policy, Carnegie Mellon University, Working Paper No. 95-22, September.
- Evans, William N., Wallace E. Oates, and Robert M. Schwab. 1992. "Measuring Peer Group Effects: A Study of Teenage Behavior." *Journal of Political Economy*, vol. 100, no. 5, pp. 966-91.
- Farley, Reynolds and William H. Frey. 1993. "Changes in the Segregation of Whites from Blacks during the 1980s: Small Steps toward a More Integrated Society." *American Sociological Review*, vol. 59, February, pp. 23-45.
- Fix, Michael, George C. Galster, and Raymond Struyk. 1992. "An Overview of Auditing for Discrimination." In Michael Fix and Raymond Struyk, eds., *Clear and Convincing Evidence: Measurement of Discrimination in America*. Washington, D.C.: Urban Institute Press.
- Fix, Michael and Raymond Struyk, eds. 1992. *Clear and Convincing Evidence: Measurement of Discrimination in America*. Washington, D.C.: Urban Institute Press.
- Gabriel, Stuart A. and Stuart S. Rosenthal. 1995. "Commutes, Neighborhood Effects, and Earnings: An Analysis of Racial Discrimination and Compensating Differentials." Forthcoming in *Journal of Urban Economics*. Current draft: March.
- Galster, George. 1987. "Residential Segregation and Interracial Economic Disparities: A Simultaneous Equations Approach." *Journal of Urban Economics*, vol. 21, pp. 21-44.
- Galster, George and Maris Mikelsons. 1995. "The Geography of Metropolitan Opportunity: A Case Study." *Housing Policy Debate*, vol. 6, no. 1, pp. 73-102.
- Harrison, Roderick J. and Daniel H. Weinberg. 1992. "Racial and Ethnic Residential Segregation in 1990." U.S. Bureau of the Census Research Paper, April 13.
- Holzer, Harry J. 1987. "Informal Job Search and Black Youth Unemployment." *The American Economic Review*, vol. 77, pp. 446-52.
- . 1991. "The Spatial Mismatch Hypothesis: What Has the Evidence Shown?" *Urban Studies*, vol. 28, no. 1, pp. 105-22.
- Ihlanfeldt, Keith R. 1992. *Job Accessibility and the Employment and School Enrollment of Teenagers*. Kalamazoo, MI: W.E. Upjohn Institute for Employment Research.
- . 1993. "Intra-Urban Job Accessibility and Hispanic Youth Unemployment Rates." *Journal of Urban Economics*, vol. 33, pp. 254-71.
- Ihlanfeldt, Keith R. and David L. Sjoquist. 1990. "Job Accessibility and Racial Differences in Youth Employment Rates." *The American Economic Review*, vol. 80, no. 1, pp. 267-76.
- . 1991. "The Effect of Job Access on Black and White Youth Employment: A Cross-sectional Analysis." *Urban Studies*, vol. 28, no. 2, pp. 255-65.
- Jakubs, John F. 1986. "Recent Racial Segregation in the U.S. SMSAs." *Urban Geography*, vol. 7, no. 2, pp. 146-63.
- Jargowsky, Paul A. 1995. "Take the Money and Run: Economic Segregation in U.S. Metropolitan Areas." University of Wisconsin-Madison Institute for Research on Poverty, Discussion Paper No. 1056-95.
- Jargowsky, Paul A. and Mary Joe Bane. 1991. "Ghetto Poverty in the United States, 1970-1980." In Christopher Jencks and Paul E. Peterson, eds., *The Urban Underclass*. Washington, D.C.: The Brookings Institution.
- Jencks, Christopher and Susan E. Mayer. 1990a. "The Social Conse-

- quences of Growing Up In a Poor Neighborhood." In Lawrence E. Lynn, Jr. and Michael G.H. McGeary, eds., *Inner City Poverty in the United States*, pp. 111–86. Washington, D.C.: National Academy Press.
- . 1990b. "Residential Segregation, Job Proximity, and Black Employment Opportunities." In Lawrence E. Lynn, Jr. and Michael G.H. McGeary, eds., *Inner City Poverty in the United States*, pp. 187–222. Washington, D.C.: National Academy Press.
- Kain, John. 1968. "Housing Segregation, Negro Employment and Metropolitan Decentralization." *Quarterly Journal of Economics*, vol. 82, no. 2, pp. 175–92.
- . 1992. "The Spatial Mismatch Hypothesis: Three Decades Later." *Housing Policy Debate*, vol. 3, no. 2, pp. 371–460.
- Kain, John F. and John M. Quigley. 1975. *Housing Markets and Racial Discrimination: A Microeconomic Analysis*. New York: National Bureau of Economic Research.
- Kasarda, John D. 1989. "Urban Industrial Transition and the Underclass." *The Annals of the American Academy of Political and Social Science*, vol. 501, January, pp. 26–47.
- . 1993. "Inner-City Concentrated Poverty and Neighborhood Distress: 1970–1990." *Housing Policy Debate*, vol. 4, no. 3, pp. 253–302.
- Kodrzycki, Yolanda K. 1996. "Labor Markets and Earnings Inequality: A Status Report." *New England Economic Review*, this issue.
- Leonard, Jonathan S. 1986. "Comment on 'The Spatial Mismatch Hypothesis: Are There Teenage Jobs Missing in the Ghetto?'" In Richard B. Freeman and Harry J. Holzer, eds., *The Black Youth Employment Crisis*, pp. 185–90. Chicago, IL: University of Chicago Press.
- Massey, Douglas S. and Nancy A. Denton. 1988. "The Dimensions of Residential Segregation." *Social Forces*, vol. 67, pp. 281–315.
- . 1993. *American Apartheid: Segregation and the Making of the Underclass*. Cambridge, MA: Harvard University Press.
- Massey, Douglas S. and Mitchell L. Eggers. 1990. "The Ecology of Inequality: Minorities and the Concentration of Poverty, 1970–1980." *The American Journal of Sociology*, vol. 95, no. 5, pp. 1153–88.
- Munnell, Alicia, Geoffrey M.B. Tootell, Lynn Elaine Browne, and James McEneaney. 1996. "Mortgage Lending in Boston: Interpreting the Data." *The American Economic Review*, vol. 86, no. 1, pp. 25–53.
- Nelson, Kathryn P. and John G. Edwards. 1993. "Intra-Urban Mobility and Location Choice in the 1980s." In Thomas Kingsley and Margery Austin Turner, eds., *Housing Markets and Residential Mobility*, pp. 53–95. Washington, D.C.: The Urban Institute Press.
- O'Regan, Katherine and John M. Quigley. 1995. "Teenage Employment and the Spatial Isolation of Minority and Poverty Households." Paper presented at the Western Economics Association, July.
- Rosenbaum, James. 1995. "Changing the Geography of Opportunity by Expanding Choice: Lessons from the Gautreaux Experiment." *Housing Policy Debate*, vol. 6, no. 1, pp. 231–70.
- Rosenbaum, James and Susan Popkin. 1991. "Employment and Earnings of Low-Income Blacks Who Move to Middle-Class Suburbs." In Christopher Jencks and Paul Peterson, eds., *The Urban Underclass*. Washington, D.C.: The Brookings Institution.
- Taeuber, Karl E. and Alma F. Taeuber. 1965. *Negroes in Cities: Residential Segregation and Neighborhood Change*. Chicago, IL: Aldine.
- Turner, Marjorie. 1992. "Discrimination in Urban Housing Markets: Lessons from Fair Housing Audits." *Housing Policy Debate*, vol. 3, no. 2, pp. 185–216.
- Wilson, William Julius. 1987. *The Truly Disadvantaged*. Chicago, IL: University of Chicago Press.
- Yezer, Anthony M. J., Robert F. Phillips, and Robert P. Trost. 1994. "Bias in Estimates of Discrimination and Default in Mortgage Lending: The Effects of Simultaneity and Self-Selection." *Journal of Real Estate Finance and Economics*, vol. 9, no. 3, pp. 197–215.
- Yinger, John. 1986. "Measuring Discrimination with Fair Housing Audits: Caught in the Act." *The American Economic Review*, vol. 76, December, pp. 881–93.
- . 1992. "Access Denied, Access Constrained: Results and Implications of the 1989 Housing Discrimination Study." In Michael Fix and Raymond Struyk, eds., *Clear and Convincing Evidence: Measurement of Discrimination in America*. Washington, D.C.: Urban Institute Press.
- . 1993. "Discrimination in Mortgage Lending: A Literature Review." Syracuse University, mimeo, June.
- Zax, Jeffrey and John Kain. 1995. "Moving to the Suburbs: Do Relocating Companies Leave Their Black Employees Behind?" Forthcoming in *Journal of Labor Economics*.