

## The Spatial Mismatch Hypothesis: Three Decades Later

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### *Abstract*

This paper provides a comprehensive review of the extensive scholarly literature dealing with the effect of housing market discrimination on the employment and earnings of Afro-American workers. From a historical perspective, it examines a variety of empirical studies that are as relevant today (particularly in light of recent events in Los Angeles) as they were when this discussion began nearly 30 years ago. More specifically, it reviews studies that have attempted to determine the extent to which serious limitations on black residential choice, combined with the steady dispersal of jobs from central cities, are responsible for the low rates of employment and low earnings of Afro-American workers.

The paper concludes with a discussion of policy recommendations and suggestions for continued areas of research. Three major categories in need of policy prescriptions are examined: housing, employment, and schooling. There is an assessment of the gains made since the inception of the spatial mismatch hypothesis as well as the need for continued focus.

### **Introduction**

This paper reviews the extensive scholarly literature dealing with the effect of housing market discrimination on the employment and earnings of Afro-American workers. More specifically, it examines empirical studies that have attempted to determine the extent to which serious limitations on black residential choice, particularly the nearly total exclusion of Afro-Americans from white suburban communities, combined with the steady dispersal of jobs, and especially low-skilled jobs from central cities, are responsible for the low rates of employment and low earnings of Afro-American workers.

In considering the evidence presented in this paper, it cannot be overemphasized that reduction in employment and earnings is but one of several ways in which housing market discrimination has adversely affected the welfare of Afro-American citizens. There is extensive evidence, for example, that housing market segregation has created conditions in which the housing occupied by Afro-Americans rents or sells for more than comparable units occupied

by white households (Kain and Quigley 1975; Yinger 1978, 1979).<sup>1</sup> Housing market discrimination, moreover, has restricted the range of housing opportunities available to Afro-American households and reduced their opportunities for homeownership (Kain and Quigley 1972, 1975). Lower rates of homeownership, in turn, account for a large part of the differences in wealth accumulation by Afro-American and white households (Kain and Quigley 1975).

Housing market discrimination also restricts most black children to inferior inner-city schools and creates massive concentrations of black poverty (Kain and Persky 1969; Kain 1976a; U.S. Commission on Civil Rights 1970). Others, for example Wilson (1987), suggest that the high levels of joblessness among black men in the ghetto is a primary cause of the high rates of teenage pregnancy and female-headed households. Children of teenage mothers growing up in single-family households have far fewer opportunities than children growing up in higher income two-parent households.

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<sup>1</sup>Relying on studies of single-family home values, Berry (1976), Follain and Malpezzi (1979), and Schnare and Struyk (1977) have suggested that the ghetto markups identified by earlier studies have disappeared or become discounts as a result of rapid increases in the supply of units available to Afro-American home buyers. These rapid increases in supply, they suggest, are the result of changes in Federal Housing Administration (FHA) policy in underwriting mortgages for central-city properties and the reductions in other barriers that have prevented Afro-American households from moving to white central-city neighborhoods and suburban communities. Mieszkowski (1979, p. 39) after reviewing these, and three other (at that time) recently published studies, concludes, "our reading of the evidence is that, although ambiguities and uncertainties remain regarding the success of various studies in controlling for neighborhood quality, the weight of the most recent evidence strongly supports the hypothesis that blacks pay less for housing or that a rough parity exists in inter-neighborhood prices." A paper by Chambers (1988), however, reaches different conclusions. As Kain (1980b) points out, moreover, lower current house values in ghetto neighborhoods are consistent with higher housing costs as the rate of appreciation of properties owned by Afro-American homeowners appears to be significantly less than the appreciation of units owned by white homeowners with the same socioeconomic characteristics. Evidence suggesting that ghetto properties have lower rates of appreciation, in spite of greater home repair and renovation expenditures by ghetto residents, is provided by Kain and Quigley (1975). In addition, even studies that make a serious effort to include measures of neighborhood quality fail to account for differences in the rates and availability of mortgage credit and insurance for properties in ghetto neighborhoods and in middle-class and predominantly white suburban communities. In this regard, it is significant that all of the studies that claim that ghetto markups have disappeared are housing value studies. I am aware of no studies of the rental market, with meaningful controls for neighborhood quality, that indicate ghetto markups have disappeared.

*Origins of the spatial mismatch hypothesis*

Nearly 30 years ago I presented a paper, "The Effect of the Ghetto on the Distribution and Level of Nonwhite Employment in Urban Areas," at the December 1964 meetings of the American Statistical Association (Kain 1965). This paper, which was published in the proceedings the following April, attracted no attention until Anthony Pascal, a colleague of mine at the RAND Corporation, gave it to a friend working for the McCone Commission, which had been appointed by Governor Edmund G. Brown to examine the causes of the Watts (Los Angeles) riots in summer 1965.

There is strong circumstantial evidence that my 1965 paper influenced the commission and helped shape its report. In discussing the riots in Watts, the commission found that the "most serious immediate problem that faces the Negro in our community is employment," and that the difficulties minorities had reaching job concentrations from Watts and other areas of minority concentration contributed to their low employment rates (Governor's Commission on the Los Angeles Riots 1965, p. 38). Noting that only 14 percent of the families in Watts owned cars, as opposed to at least 50 percent in the rest of Los Angeles County, the commission strongly recommended improvements in public transportation between Watts and other parts of the region.

After a year of relative peace, a reported 164 disorders involving "Negroes acting against local symbols of white American society" occurred during the first nine months of 1967 (National Advisory Commission on Civil Disorders 1968, p. 6). At least 83 persons, mostly black civilians, were killed and hundreds, if not thousands, were injured, and while the early reports of property damage were exaggerated, the damage was nonetheless quite extensive (*ibid.*, p. 60). On July 29, 1967, in response to growing fears, President Lyndon Johnson established the National Advisory Commission on Civil Disorders and appointed Otto Kerner, former Governor of Illinois, as chairman. He asked the commission to answer "three basic questions: What happened? Why did it happen? What can be done to prevent it from happening again?" (*ibid.*, p. 1).

While the Kerner Commission's investigation was more ambitious than the McCone Commission's, its findings were very similar. Like the McCone Commission before it, the Kerner Commission identified high rates of black unemployment as a major cause of the riots and gave even greater emphasis to the growing access problems of ghetto residents. I participated in a day-long informal meeting with members of the Kerner Commission staff, including its Executive Director, soon after the commission was created, and also testified

before the full commission. The commission's report appears to draw on many of the analyses and policy prescriptions I supplied to them in the form of published and unpublished papers and in formal testimony (Kain 1965, 1966, 1967, 1968a, 1968b, 1968c, 1969a). In describing employment growth within metropolitan areas, for example, the commission observed,

Most new employment opportunities do not occur in central cities, near all-Negro neighborhoods. They are being created in suburbs and outlying areas—and this trend is likely to continue indefinitely. New office buildings have risen in the downtown of large cities, often near all-Negro areas. But the outflow of manufacturing and retailing facilities normally offsets this addition significantly—and in many cases has caused a net loss of jobs in central cities.

Providing employment for the swelling Negro ghetto population will require society to link these potential workers more closely with job locations. This can be done in three ways: by developing incentives to industry to create new employment centers near Negro residential areas; by opening suburban residential areas to Negroes and encouraging them to move closer to industrial centers; or by creating better transportation between ghetto neighborhoods and new job locations (p. 392).

The publication of my more extensive analysis of the impact of housing market discrimination on black employment in the *Quarterly Journal of Economics* preceded the release of the Kerner Commission report by three months (Kain 1968a). Relying on econometric analyses of 1952 and 1956 work place and residence data for Detroit and Chicago workers, I concluded that racial discrimination in these housing markets, and the serious limitations on the residential choices of Afro-American households it produced, affected the spatial distribution of nonwhite employment and reduced nonwhite employment in both metropolitan areas. Suburbanization of employment aggravated the later problem. I estimated, moreover, that restrictions on residential choice had cost Afro-American workers in Detroit as many as 9,000 jobs and in Chicago as many as 24,600 jobs, and that further employment dispersal would lead to even greater job losses. In contrast to my earlier publication, this paper received widespread attention.

The civil disorders that led to the creation of the Kerner Commission captured the attention of policy makers and academics alike, and caused President Johnson to announce his War on Poverty and Congress to pass landmark civil rights legislation. Problems of poverty and discrimination dominated the federal domestic policy agenda. Government agencies rushed to develop programs to combat ghetto poverty and unemployment. The Urban Mass Transit

Administration, then part of the U.S. Department of Housing and Urban Development (HUD), for example, implemented numerous “inside-outside” demonstration projects that were designed to provide better access by fixed-route transit between the ghetto and outlying employment centers. The problems inherent in these efforts and their modest successes are described in a paper by Kain and Meyer (1970). Funds to study poverty and other urban problems were plentiful, and large numbers of papers were published both supporting and arguing against what is now referred to as the spatial mismatch hypothesis.

Broad interest in urban problems and the twin evils of poverty and discrimination was remarkably short lived. The election of Richard Nixon as president was closely followed by implementation of a policy of benign neglect, as double-digit inflation, declining productivity, slower income growth, worsening federal deficits, growing trade deficits, and a variety of other problems replaced urban problems, racial discrimination, and poverty on the front pages of the nation’s newspapers and the nation’s policy agenda. As funding for research on urban problems and poverty became sparse, economists and other academics turned their attention to other more topical, and more favored, areas of policy research, or gave up doing policy relevant research altogether.

### *Revival of the spatial mismatch hypothesis*

In the past decade, a growing awareness of the worsening problems of inner-city poverty and growing unemployment, particularly among minority youth in central cities, has rekindled interest in spatial mismatch. Two sociologists, Kasarda (1985, 1989) and Wilson (1987), deserve most of the credit for resuscitating the subject. Two economists, Ellwood (1981, 1986) and Leonard (1986), were initially sympathetic to the spatial mismatch hypothesis as well, but their research led them to reject the hypothesis. Ellwood (1986, p. 149) did particular damage with his pithy observation that “race, not space, remains the key explanatory variable.” His widely read paper on youth unemployment ends with the conclusion that while the results “are only for one city . . . preliminary results from other cities suggest the results also apply elsewhere . . . Chicago has all the symptoms of the mismatch disease. The disease just does not seem to be the cause of the many labor market pains of black teenagers” (p. 183).

While Leonard (1986, pp. 185–89), in a comment on Ellwood’s paper, initially raised a number of serious theoretical and methodological questions about Ellwood’s study, he subsequently joined

Ellwood in his dissent from the spatial mismatch hypothesis. After replicating Ellwood's analysis using 1980 data for Los Angeles, Leonard (1985, p. 20) found that "(T)he racial composition of a census tract accounts for much more of the variation in employment-population ratios than do other individual or spatial characteristics," and concluded that "(U)sing different data and a slightly different specification for a different city ten years later, I find essentially the same result . . . . The problem isn't space, it's race."

In spite of Ellwood's and Leonard's uncompromising rejection of the spatial mismatch hypothesis and a number of other obituaries, it has been hard to kill. One indication of the hypothesis' continued vitality is the publication of two detailed survey articles within the past two years. In a 1990 paper prepared for the National Research Council Committee on National Urban Policy, Jencks and Mayer critically reviewed more than 25 empirical studies of the spatial mismatch hypothesis, and Holzer (1991) in an even more recent paper, evaluated about 20 studies.<sup>2</sup>

### The Jencks and Mayer survey

Jencks and Mayer (1990, p. 217) accept the first of my findings (Kain 1965, 1968a), that the restriction of black households to massive central-city ghettos, and a few small and isolated black communities located elsewhere in the metropolitan area, affects the location of black employment. Strong support for this hypothesis is provided by Leonard (1987), McKersie (circa 1969), and several other studies, and I know of none that have disputed it. Otherwise Jencks and Mayer's assessment of the spatial mismatch hypothesis, while carefully qualified, is nonetheless generally negative. Their summary judgment is that —

Taken together, these findings tell a very mixed story. They provide no direct support for the hypothesis that residential segregation affects the aggregate level of demand for black workers. They provide some support for the idea that job proximity increases the supply of black workers, but the support is so mixed that no prudent policy analyst should rely on it. Those who argue that moving blacks to the suburbs would improve their job prospects, or that improving public transportation to the suburbs would reduce unemployment in the central-city ghetto, must recognize that there is as much evidence against such claims as for them (Jencks and Mayer 1990, pp. 218–19).

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<sup>2</sup>Other critical assessments of the research on spatial mismatch are provided by Kain (1974a, 1974b). Leonard (1987) and Ihlanfeldt and Sjoquist (1990a, 1990b) include detailed and quite useful surveys in their substantive papers.

Jencks and Mayer (p. 187) in discussing my 1968 paper and the findings of subsequent studies, suggest, “it is important to draw a sharp distinction between Kain’s demand-side and supply-side stories.” Unfortunately, their assessment of the demand-side stories appears to rely primarily on research by Harrison (1972a, 1972b, 1974a, 1974b) and on two studies by Masters (1974, 1975): “taking all the evidence together, the effect of residential segregation on firms’ overall demand for black workers remains almost as uncertain as it was 20 years ago.<sup>3</sup> If we rely on Masters’ findings for 1959 and 1969, the safest conclusion would be that at that time residential segregation had no consistent effect on firms’ interest in hiring blacks” (Jencks and Mayer 1990, p. 196). As I pointed out in my response (Kain 1974b) to Masters’ comment on my 1968 paper, his 1974 analysis contains a fatal flaw. Specifically, he confuses the level of racial segregation, as measured by the Taeubers’ (1965) index of dissimilarity, with the extent to which black access to the labor market is limited by the spatial pattern of racial segregation in a particular metropolitan area.

In his comment on my 1968 paper, Masters (1974) presented four cross-section regressions based on standard metropolitan statistical area (SMSA) averages for 65 large SMSAs in 1960. The dependent variable in all four regressions was the ratio of median incomes for nonwhite and white males. Each equation included two control variables, the median years of school for nonwhite males divided by the median years of school for all males, and a South dummy variable, and one of four “segregation measures,” as explanatory variables. The segregation or spatial mismatch measures used were (1) the Taeubers’ (1965) index of dissimilarity; (2) the percentage of nonwhites living in nonwhite census tracts (tracts that are at least 50 percent nonwhite); (3) the ratio of average ghetto size to the number of nonwhites living in nonwhite census tracts; and (4) absolute ghetto size the number of nonwhites living in ghettos. For the last two spatial mismatch measures, ghettos are defined as contiguous groups of nonwhite tracts. Masters (1974) observed that absolute ghetto size “appears to be the most appropriate variable for testing Kain’s transportation and job information arguments,” and that the “three measures of (relative) segregation appear more appropriate for testing his arguments based on employer discrimination.”

Masters (1974, pp. 510–11) rejects the spatial mismatch hypothesis on the grounds that, while the control variables “are statistically

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<sup>3</sup> With the exception of my (1968a) analysis of the way nonwhite employment shares varied by industry and occupation, the only analysis that casts much light on this demand side story is a recent paper by Ihlanfeldt and Sjoquist (1991).

significant, none of the segregation variables are,” and that “three of the four coefficients for the segregation variables are positive.”<sup>4</sup> Masters (p. 6) concludes that “these results together with those of Harrison cited earlier, suggest that housing segregation does not limit the relative employment opportunities of nonwhites—either in total or with regard to better jobs.” Masters’ findings are hardly surprising. None of the four segregation indexes even remotely begins to quantify the cross-section variation among metropolitan areas in the degree to which housing market discrimination limits black access to jobs. The Taeuber segregation indexes used by Masters are limited to the central city and quantify the micro, or block-level, intensity of segregation. Segregation indexes for central cities in 1960 are uniformly high, and there is no reason to believe they vary in ways that have anything to do with spatial mismatch. The final three measures, which refer to the SMSA and seek to quantify the extent of clustering, may be somewhat better, but they still fail to relate the extent of black residential segregation to the metropolitan distribution of employment opportunities, which is the essence of the spatial mismatch hypothesis.<sup>5</sup>

In a subsequent book, Masters (1975) extends his 1974 analyses (which was based on 1960 data) by estimating additional regressions based primarily on 1970 census data for 77 large SMSAs. In this study, he obtains separate ordinary least squares (OLS) regressions for three different dependent variables: (1) the median income

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<sup>4</sup> Masters (p. 511), in a footnote, reports that when the same regressions are run for 52 SMSAs with nonwhite populations that are at least 90 percent black, the coefficient for the second spatial access variable, the percentage of the SMSA’s nonwhite population living tracts that are at least 50 percent nonwhite, becomes negative, but remains statistically insignificant. Omitting SMSAs with large Hispanic or Asian populations from the sample is a good idea, as they do not exhibit the high levels of spatial concentration of Afro-Americans. Nonetheless, the basic deficiencies of the spatial mismatch measures used remain.

<sup>5</sup> In a footnote, Jencks and Mayer (1990, p. 193) acknowledge my criticism of Masters (1974), but then dismiss it with the observation that “Kain offers neither theoretical arguments nor empirical evidence that including these omitted variables would make the coefficients of Masters’ segregation measures negative instead of positive.” While this is largely true, it also misses the point. Masters finds that the measures of racial segregation he includes in his equations have no statistically measurable effect on black earnings. This is interesting, but it says nothing about the spatial mismatch hypothesis, which is concerned with the effects of inferior black access to jobs, arising from housing market discrimination and segregation, on black employment and earnings. Studies that include measures that do a better job of measuring this admittedly difficult concept generally find that an effective spatial mismatch reduces black employment and/or earnings. In general, the better the proxy, the larger the effect. In addition, if the level of spatial mismatch is high in all or most sample SMSAs, much of its adverse impact will be embedded in the constant term.



of nonwhite males divided by the median income of white males, (2) the median income of nonwhite males ages 40 to 44 divided by the median income of all males ages 40 to 44, and (3) the median earnings of nonwhite males divided by the median earnings of all males. These regressions all include the ratio of median nonwhite male years of schooling to all male years of schooling, the SMSA male unemployment rate, and the proportion of employed males with jobs in manufacturing and a South dummy as control variables. To the segregation measure he used in his earlier studies, Masters adds two measures of the industrial structure of each SMSA—the percentage of employed males working in agriculture (the percentage of SMSA jobs that are in central cities divided by the percentage of the SMSA population living in the central cities), and the relative percentages of nonwhite and nonblack males living and working in the SMSA who have suburban jobs. Masters (1975, p. 77) indicates “(T)his variable is designed to measure the relative accessibility of suburban jobs to blacks and whites.”

In contrast with the procedure used in his earlier analysis, where he included only one of the four segregation measures at a time in each of four regressions, in this analysis Masters includes all six segregation (spatial mismatch) measures as explanatory variables in each regression. Of course, if some, or all, of these segregation measures are highly correlated, as seems likely, this procedure would reduce the *t* statistics for individual coefficients and might well produce sign reversals. Nonetheless, in discussing his results, Masters (1975, p. 86) reports that “almost all the results for the two income measures do have the correct sign in the national and non-South samples,” and adds that the strongest results are obtained for the Taeuber segregation index.<sup>6</sup> The only other statistically significant results are negative coefficients for  $(CC/SMSA)_{JP}$ , that is, the percentage of jobs in the central city divided by the percentage of SMSA population in the central city, which Masters interprets as a measure of the relative tightness of the central-city labor market. He argues that since the black population is generally concentrated in the central city, “we expected a positive sign for this variable under the Kain-Mooney hypothesis.” In a conclusion that seems to have strongly influenced Jencks and Mayer’s assessment of the spatial mismatch hypothesis, Masters (p. 88) finds that “on the

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<sup>6</sup> These results are for a subsample of SMSAs in which male agricultural workers account for less than 4 percent of total male employment, the most meaningful of the several results reported by Masters. He found that among the control variables, the percentage employed in agriculture, relative education levels, the South dummy, and the percentage employed in manufacturing have the expected signs and are always, or almost always, statistically significant, while the SMSA unemployment rate is consistently insignificant.

basis of . . . (these) . . . results, together with our earlier criticism of Kain's work, we conclude that there is very little support for the hypothesis that housing segregation affects the relative money income of blacks."<sup>7</sup>

It is difficult to know just how to respond to Masters' analyses. While his results provide little, if any, support for the spatial mismatch hypothesis, it is hard to imagine any other outcome, given the poorly conceived and inadequate spatial mismatch measures used, and Masters' kitchen-sink approach to including them in his earnings equations. His and others' use of the Taeuber segregation indexes is particularly mistaken. As I have noted previously (Kain and Persky 1969; Kain 1966), the issue, as far as the spatial mismatch hypothesis is concerned, is not whether black households are segregated, but whether housing market discrimination confines them to a narrow and spatially concentrated segment of the metropolitan-area housing market. A pattern of racial segregation that resembled a checkerboard would eliminate the spatial access problem, even if the segregation was total within each block or spatially dispersed black community.<sup>8</sup>

### Harrison on spatial mismatch

Bennett Harrison has been the most persistent and most effective critic of the spatial mismatch hypothesis and the policy prescriptions that flow from it. The core data used by Harrison in his critique (1974a) are shown in table 1. These are mean earnings, unemployment rates, and occupational status for white and non-white males residing in central-city poverty areas, the rest of the

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<sup>7</sup> In an appendix, Masters (1975, p. 94) presents regressions that use the non-white/white employment ratio (the ratio of the nonwhite/white percentage of males over 14 years of age who are employed) as the dependent variable. In contrast to the earnings regressions, this analysis is limited to simple regressions of nonwhite/white employment on each of the six segregation measures. Masters reports that the only statistically significant results are for GSLN, the relative extent of ghettoization, and concludes "that, on the basis of our very simple test, the Kain-Mooney hypothesis does not appear to be very much more useful in explaining relative unemployment rates than in explaining relative incomes."

<sup>8</sup> This point is made by Downs (1968) as well, and Hughes (1988, p. 13) briefly discusses what he refers to as the "checkerboard" problem, the failure of the most commonly used segregation index, the index of dissimilarity, to quantify the extent to which highly segregate individual blocks or tracts are highly concentrated into one or two massive ghettos or to which there is a more dispersed pattern of still-segregated minority settlements.

**Table 1. Median Male Earnings, Unemployment, and Occupational Status by Race and Residential Location, 12 Largest SMSAs in 1965 or 1966**

Residential Location	Earnings (\$/week)		Unemployment Rates (%)		Occupational Status (%)	
	White	Nonwhite	White	Nonwhite	White	Nonwhite
Central city						
Poverty areas	93.33	78.19	8.80	10.40	19.4	14.7
Rest	123.67	99.87	3.90	5.30	36.8	16.7
Suburban ring	133.58	96.12	3.50	8.80	40.7	15.7

Source: Harrison (1974a), figure 8, pp. 30–31.

central city, and the suburbs of the 12 largest metropolitan areas.<sup>9</sup> After finding that the spatial patterns of all three welfare measures for whites conform to predictions obtained from the standard urban model, Harrison points out that the spatial patterns of the same three measures for nonwhite workers do not. In particular, he finds that nonwhite suburban residents have lower earnings, higher unemployment rates, and lower occupational status than the nonwhite residents of central-city nonpoverty tracts. He argues these results disprove the spatial mismatch hypothesis. In making this inference, Harrison is the first of several authors to confuse the prediction that black employment and earnings would be higher in the absence of housing market segregation with the very different prediction that the black residents of the few, small black suburban concentrations that exist *with* housing market discrimination would have higher employment and earnings than the residents of central-city nonpoverty neighborhoods, or what I have referred to as ghetto suburbs (Kain 1969b).

Jencks and Mayer (1990), in their survey of empirical studies of the spatial mismatch hypothesis, perpetuate this error. In addition to

<sup>9</sup> The estimates in table 1 are tabulations from the Survey of Economic Opportunity (SEO), which was carried out by Bureau of the Census in 1966 and 1967 for the Office of Economic Opportunity (OEO). Weekly earnings are defined as the mean weekly earnings of male workers in each of the 12 SMSAs deflated by the Bureau of Labor Statistics index of minimum family subsistence; annual unemployment is defined as weeks worked in 1965/weeks in the labor force in 1965; and occupational status is an index obtained from a scoring procedure that assigns integer values ranging from 0 to 100 to each of the 308 census occupational titles that were identified on the SEO tapes.

Harrison's (1972a, 1972b, 1974a, 1974b) critiques of my 1968 paper, Jencks and Mayer rely heavily on studies of the differences in earnings and income for black central-city and suburban residents by Price and Mills (1985) and Reid (1985) in their assessment of the spatial mismatch hypothesis. In fact, as I discussed previously, findings about the comparative levels of unemployment and earnings of nonwhite central-city and suburban residents have little, if any, bearing on the spatial mismatch hypothesis.

Analyses that claim to test the spatial mismatch hypothesis by determining whether black workers living in the suburbs have either higher employment rates or earnings or both than black workers living in the central city implicitly assume that blacks are able to live anywhere within the suburbs. In fact, while the number of Afro-American residents of suburban areas has grown rapidly during the past 20 to 30 years, their residence patterns within the suburban rings of most, if not all, metropolitan areas are still quite limited (Kain 1984, 1985; Logan and Schneider 1984; Rose 1972). Analyses by George Galster are relevant. Arguing that "the heralded phenomenon of black suburbanization should be examined more carefully," Galster (1991) constructs indexes of relative black and white residential decentralization for 40 MSAs in 1970 and 1980. He finds that while measures such as the percentage of blacks in the suburbs and the ratio of percentage of blacks to percentage of whites in the suburbs suggest a substantial suburbanization of the black population, the relative decentralization index, with a value of 47.9 in 1970 and 47.8 in 1980, remains essentially unchanged.<sup>10</sup> This finding leads Galster to conclude (p. 625) that if "many social harms attributed to the centralized black population" such as lack of access to "job growth, high-quality educational and public service packages . . . and informal social networks promoting upward mobility tend to follow higher-socioeconomic-status (white) households to the ever-more distant exurbs, blacks will benefit little if they remain spatially centralized, albeit outside the central city."

While Galster's indexes of relative decentralization are a useful metric, they tend to understate the problem as black residence patterns in most metropolitan areas are sectorial in character. In addition, suburban job growth in many metropolitan areas is occurring disproportionately in suburban sectors that are distant

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<sup>10</sup> These indexes are based on estimates of the numbers of Afro-American and white persons living in seven distance rings around the central business district (CBD) in each year. The resulting index of relative decentralization has a value of -100 when all whites live in the innermost rings and all blacks live in the outermost rings (with no mixing), is equal to zero when the proportion of blacks in each distance ring is the same, and is equal to 100 when all blacks live in the innermost distance rings and all whites live in the outermost rings.

from the sectors that are experiencing rapid increases in black occupancy.<sup>11</sup> Other evidence of this suburban mismatch is provided by Schneider and Phelan (1990, p. 305) who found that the rates of black population growth in 575 incorporated suburban jurisdictions (located in the 100 largest metropolitan areas) and changes in employment levels were negatively correlated. On the basis of these statistical analyses and more detailed studies of black suburbanization and employment change in the Chicago, Los Angeles, and New York metropolitan areas, Schneider and Phelan (p. 309) concluded that “with some variation, a spatial reorganization of jobs occurred during the 1970s and early 1980s, and jobs were not created as rapidly in suburbs experiencing expanding black population concentrations as in other suburbs.”

Analysis by Kain (1985) of black suburbanization in Chicago and Cleveland, shown in table 2, provides further evidence. As these data show, only 7.1 percent of Chicago’s and 11.1 percent of Cleveland’s Afro-American households lived in the suburban rings of these metropolitan areas in 1970; the percentages for whites in the same year were 60.5 percent and 73.3 percent.<sup>12</sup> By 1980, 20 percent of Chicago’s and 26.4 percent of Cleveland’s Afro-American households lived in the suburban ring. Even so, Kain (1974a) estimated that Chicago’s suburban black population in 1980 was only 30 percent as large as it would have been if there were no

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<sup>11</sup> This pattern is pronounced in the Dallas metropolitan statistical area (MSA), where I have spent considerable time during the past decade. Most job growth is occurring in far North Dallas and its northern suburbs. At the same time, nearly all Afro-Americans live south of the Dallas CBD, and most of the growth in the black suburban population is occurring in the southern suburbs.

<sup>12</sup> In addition, 96 percent of the Afro-American residents of the city of Cleveland lived east of the Cuyahoga River. Nearly all of the Afro-Americans living west of the river, moreover, resided in public housing projects located close to the river or in the Linndale-Bellaire section of the city. This isolated Afro-American community, which is surrounded by railroad tracks, has had permanent Afro-American residents at least since 1880, when it was settled by Afro-American train crews who boarded their trains at the nearby Nickel Plate Railroad yards. Cleveland’s suburbs had four Afro-American enclaves in 1970. Two are adjacent to Cleveland’s central-city ghetto. The remaining two were a small neighborhood in the small industrial town of Berea, Ohio, and a small enclave is Chagrin Falls Park in outlying Geauga County. A total of 147 Afro-American households lived in Berea in 1970. This settlement originated in the 1920s when the Dunham Company, manufacturers of plows, harrows, cultivators, and other farm implements, recruited Afro-Americans from the South to work in its foundries. The 207 Afro-Americans who lived in Chagrin Falls in 1970 were the descendants of a much larger number of households who settled there in the 1920s. The proposed factory, which attracted them to the area, never materialized, but the black population remained. Chagrin Falls Park, an almost rural, unsewered area with largely unpaved streets, in 1970 was adjacent to the fashionable, all-white suburb of Chagrin Falls, located in the southeast corner of Cuyahoga County.

*Table 2. Number of Communities and Black Population Shares by Black Population Size: Chicago and Cleveland, 1970 and 1980*

Type of Community	Number of Communities			
	Chicago		Cleveland	
	1970	1980	1970	1980
Suburbs by black population size				
1,000–15,000	9	19	2	7
50–999	11	39	12	14
10–49	12	28	4	13
5–9	15	15	7	5
0–4	69	15	16	2
All suburbs	116	116	41	41
Central city	1	1	1	1
Entire SMSA	117	117	42	42
Number of Black Households				
Suburbs by black population size				
1,000–15,000	20,511	84,904	8,527	28,830
50–999	2,888	9,644	2,139	2,686
10–49	271	813	53	308
5–9	103	103	49	31
0–4	99	0	27	0
All suburbs	23,872	95,464	10,795	31,855
Central city	314,640	381,601	86,474	88,795
Entire SMSA	338,512	477,065	97,269	120,650
Percent of Black Households in Metropolitan Area				
Suburbs by black population size				
1,000–15,000	6.1	17.8	8.8	23.9
50–999	0.9	2.0	2.2	2.2
10–49	0.1	0.2	0.1	0.3
5–9	0.0	0.0	0.1	0.0
0–4	0.0	0.0	0.0	0.0
All suburbs	7.1	20.0	11.1	26.4
Central city	92.9	80.0	88.9	73.6
Entire SMSA	100.0	100.0	100.0	100.0
Percent of All Suburban Black Households				
Suburbs by black population size				
1,000–15,000	85.9	88.9	79.0	90.5
50–999	12.1	10.1	19.8	8.4
10–49	1.1	0.9	0.5	1.0
5–9	0.4	0.1	0.5	0.1
0–4	0.4	0.0	0.3	0.0
All suburbs	100.0	100.0	100.0	100.0

Source: Kain (1985), tables 9.4 and 9.5.

Note: Totals may not add because of rounding.

racial barriers to black occupancy of suburban housing. Kain (1987) obtained even more striking results for the Cleveland SMSA in an analysis of actual and predicted patterns of black residence by census tracts in 1970.

As the data in table 2 reveal, just over 30,000 black households lived in 122 Chicago suburbs in 1970, and this number more than doubled to 67,000 black households by 1980. The suburban black population in both years was highly concentrated, however. Nearly seven out of every ten black suburban residents in both 1970 and 1980 lived in nine suburban communities with at least 775 black households. Most of the remaining black suburban growth between 1970 and 1980 occurred in suburban communities on the periphery of the central-city ghetto. A similar pattern existed in the Cleveland SMSA.

It cannot be overemphasized that Chicago's spatially concentrated form of black suburbanization does little to improve the access of black workers to suburban work places. It is completely different from a situation where blacks are able to choose housing anywhere in the suburbs. Most of the growth in Chicago's Afro-American suburban population is in communities located south or southwest of the southern leg of the central-city ghetto. Because these suburban communities are even less well located than the central-city ghetto in terms of access to the growing employment centers in the north and northwest suburbs, new residential opportunities for black households there do not improve spatial mismatch. Black households have moved to these relatively inaccessible suburban communities for the same reasons many white workers are willing to commute long distances from outlying suburban communities to jobs in the central business district—longer commutes enable them to obtain access to better or less expensive housing, schools, and neighborhoods. While these expanded suburban housing opportunities have enabled many black families to improve their housing, the quality of education available to their children, and other residential amenities, they have provided little, if any, improvement in their access to suburban jobs.

### **Holzer on spatial mismatch and black employment**

After reviewing “20 years worth of empirical evidence on the ‘spatial mismatch’ hypothesis,” Holzer observes—

This idea, generally known as the “spatial mismatch” hypothesis among social scientists seems to be widely accepted in popular discussions of black employment problems.

However, the empirical support for the hypothesis has always been quite hotly contested. Kain's original paper (1968), which purported to demonstrate this result was almost immediately disputed (e.g. Offner and Saks, 1971) and continues to be so to this day. Wilson (1987), in his book, *The Truly Disadvantaged*, helped to rekindle this dispute by attributing at least part of the employment problems of inner-city blacks to the suburbanization of industry and employment. But the idea remains as controversial today as it was over 20 years ago when it was first proposed (1991, p. 105).

In his review article, Holzer separates empirical studies of the spatial mismatch hypothesis into two categories, those that test for employment effects and those that test for wage or earnings effects. The 11 studies reviewed by Holzer that test for employment effects are listed in table 3. Shown are the author(s), dates of publication,

*Table 3. Studies of Spatial Mismatch Employment Effects  
Reviewed by Holzer*

Author/Date	Date	Place and Year Data	Supported Mismatch? Y/N/S	Reviewed by J-M? Y/ N
Kain	1968	Detroit (52), Chicago (56)	Y	Y
Mooney	1969	25 SMSAs, 1960	Y	Y
Offner & Saks	1971	Detroit (52), Chicago (56)	Y	Y
Friedlander	1972	25 SMSAs, 1960	S	N
Harrison	1974	12 Largest SMSAs, 1966	N	Y
Hutchinson	1974	Pittsburgh, 1967	Y	Y
Leonard	1985	Los Angeles, 1980	S	Y
Ellwood	1986	Chicago, 1970	S	Y
Farley	1987	SMSAs, 1980	Y	N
Ihlanfeldt & Sjoquist	1989	43 SMSAs, 1980	Y	N
Ihlanfeldt & Sjoquist	1990	Chicago, Los Angeles, and Philadelphia, 1980	Y	Y

*Source:* Holzer (1991).

the area or areas, year or years of each study, and codes indicating whether the study rejected the spatial mismatch hypothesis (N), supported it (Y), or reported few, or weak, effects and whether it was (Y) or was not (N) reviewed by Jencks and Mayer. Because of differential lags in publication, the publication dates shown are a poor indicator of when the research was completed. Ellwood's study, for example, was completed in 1981 as part of his Ph.D. dissertation



and was available as a National Bureau of Economic Research working paper for several years before its final publication in 1986.

In discussing spatial mismatch studies, Holzer (1991, p. 109) emphasizes that “perhaps the most important dimension along which these studies differ is in the specification of ‘mismatch’ or job access as an independent variable.” Echoing my earlier complaints about Masters’ analyses, Holzer (pp. 109–14) finds “there are clear limitations to the use of residential segregation as a measure of job access,” adding that “the latter depends on the distribution of jobs as well as of people in metropolitan areas . . . . Measures of residential segregation thus give us little insight into job access for black residents.” Even so, I fear that Holzer gives too much standing to studies that rely solely, or primarily, on segregation indexes to quantify spatial mismatch. By themselves, segregation indexes provide no information about the relationship between black residential areas and the spatial distribution of jobs within metropolitan areas. Their use to test the spatial mismatch hypothesis is clearly inappropriate.

Holzer, like Jencks and Mayer (1990), also seems to accept uncritically studies, such as Harrison’s (1972a, 1972b, 1974a, 1974b), that claim to test the spatial mismatch hypothesis by comparing employment rates, unemployment rates, or earnings of black central-city residents to those of black suburban residents. In assessing these studies, it cannot be overemphasized that while black access to suburban housing has improved during the past decade or two, most of the studies reviewed by Holzer and by Jencks and Mayer rely on data for periods when suburban housing opportunities for black households were generally limited to a few small black enclaves. These enclaves were often poorly located with respect to employment opportunities, and seldom provided very desirable housing opportunities in terms of housing quality and neighborhood amenities. In most metropolitan areas, until very recently at least, the best housing available to black households was located in “ghetto suburbs,” areas of higher quality black housing, typically at the periphery of the ghetto, but within the central city (Kain 1969a).<sup>13</sup> While there has been some improvement in black access to

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<sup>13</sup> As I observed in a 1969 paper:

[T]he ghetto expands into some of the best portions of the surrounding stock and . . . disproportionate numbers of blacks moving into previously white neighborhoods are members of higher income groups. This peripheral expansion of the ghetto serves high income blacks in very much the way that the flight to the suburbs serves upper income whites. A major difference, however, is that upper income blacks are less able to protect their “ghetto suburbs” from the incursion of lower income groups. This could provide the more rapid depreciation of high

suburban housing in the last decade or so, it would be a mistake to conclude that the barriers to blacks buying or renting housing in the suburbs have entirely disappeared (Turner, Struyk, and Yinger 1991).

In spite of generally inadequate measures of spatial mismatch, only 1 of the 11 studies reviewed by Holzer that consider the impacts of housing market discrimination on black employment, the previously discussed study by Harrison (1974a), reports *no* adverse impact on black employment.<sup>14</sup> Of the remaining studies, Mooneys' (1969) cross-section analysis of nonwhite employment rates for the residents of poverty tracts in 23 SMSAs generally supported the findings of my 1968 paper. At the same time, Mooney made the valuable observation that the level of aggregate demand, as measured by the overall SMSA unemployment rate, is very likely a more important determinant of the level of black employment than spatial mismatch.<sup>15</sup> Without diminishing in any way the value of Mooney's finding about the importance of aggregate demand, it should be understood that while the measures of spatial mismatch he used were better than those used in a number of subsequent studies, they were nonetheless rather crude proxies. As a result, it is nearly certain that Mooney's estimates of the quantitative impact of spatial mismatch on black employment were biased toward zero.

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quality units in the ghetto needed to produce a permanent discrepancy in relative prices between the ghetto and white submarket. Since they are unable to leapfrog and establish high quality, high income residential neighborhoods far from the adverse influences of low income households in the manner of high income whites, they pass houses down to lower income groups more rapidly than do whites (Kain 1969a, p. 103).

<sup>14</sup> As discussed previously, black suburban residents in 1969, the year studied by Harrison, were concentrated in a small number of isolated and typically low-quality suburban communities. In addition, in a number of the large metropolitan areas studied by Harrison, Hispanics composed a significant portion of the nonwhite suburban population. Given these facts, it is hardly surprising that the mean employment earnings and occupational status of the nonwhite residents of these communities were lower than the same measures for the nonwhite residents of nonpoor central-city neighborhoods.

<sup>15</sup> The importance of aggregate demand as a determinant of Afro-American employment and unemployment rates has been demonstrated by several authors, including most recently by Freeman. In analyses reminiscent of earlier studies by Thurow (1975) and others, Freeman (1991, pp. 109–10) used current population survey microdata for 1987 to estimate a linear probability model of youth unemployment rates across metropolitan areas. He found that a 1 percent decrease in MSA unemployment raises youth unemployment by 1.9 points and black youth employment by 4.3 points. The spatial mismatch hypothesis is more of an explanation of *relative* black/white unemployment rates than the level of black unemployment. In my policy papers, I have consistently emphasized the importance of full employment policies in increasing Afro-American employment and earnings (Kain 1966, 1968b, 1969).

Offner and Saks (1971), in their provocative reanalysis of data used in my 1968 paper, showed that my predictions of base-year job losses by Chicago and Detroit blacks were sensitive to the specification used. Using an alternative specification, they reversed my finding of a current job loss for black workers in Detroit and Chicago. At the same time, as I pointed out in my reply (Kain 1971), acceptance of Offner and Saks' alternative specification actually strengthens my first and third findings, that limitations on black residential choice affected the distribution of black unemployment, and that continued employment dispersal (without accompanying improvements in black access to the suburban housing market) would result in growing job losses for Afro-American workers.<sup>16</sup> In addition, as white retailers and other firms located outside the ghetto have increasingly welcomed Afro-American customers, the gains from obtaining a disproportionate share of retailing and service employment in ghetto neighborhoods have become smaller. Separate regressions by industry and occupation in my 1968 paper showed the black shares of employment in these industries were particularly sensitive to the racial composition of the neighborhoods surrounding the work place.

Farley's 1987 cross-section analysis of black/Hispanic unemployment for a sample of 248 SMSAs supports the spatial mismatch hypothesis. Using 1980 data from the Census of Population and 1977 data from the employment censuses, Farley "found that Black and Hispanic *male unemployment* is higher relative to that of *Whites* where jobs are most *suburbanized* and the *minority* population least so. This supports the view that *segregation* which separates minorities from *job locations* elevates minority unemployment." He added that "relative levels of Black, but not Hispanic, unemployment correlate positively to the minority percentage in metropolitan populations. This is consistent with the view that potential White gains from discrimination are greater where the Black (but not Hispanic) population is larger."<sup>17</sup>

Farley employs a somewhat sparser specification than most other SMSA cross-section tests of the spatial mismatch hypothesis and

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<sup>16</sup> As I made clear in my response to Offner and Saks, however, I am less convinced than they were about the superiority of their specification (Kain 1971).

<sup>17</sup> These results, which are based on an analysis of 1980 census data, confirm the findings of an earlier study by Farley using 1970 census data. In his earlier study, which is not cited in Holzer's review, Farley (1982) found that the percentage of blacks in the central city and the percentage of manufacturing, retailing, wholesaling, and services jobs that were located in the suburbs explained 13 percent of the variance in the inequality component of black male unemployment for his sample SMSA. The inequality component is simply the difference among SMSAs in white and Afro-American relative unemployment rates, as contrasted to differences in the *levels* of Afro-American unemployment rates.

avoids the mistake of including potentially misleading segregation indexes in his regressions. He regresses the 1980 SMSA ratio of Hispanic or Afro-American to white male (16 years and over) unemployment rates on just four explanatory variables: (1) the 1980 percentage of the SMSA's population that is non-Hispanic black; (2) the 1977 percentage of the SMSA's jobs in manufacturing, retail trade, wholesale trade, and selected services that were located in the largest central city in 1977; (3) the percentage of the SMSA's black non-Hispanic population living in the largest central city in 1980; and (4) the ratio of the percentage of blacks or Hispanics with at least four years of high school to the percentage of whites with the same educational attainment. The regression equations for Afro-American males, which explained about one-third of the variance in black/white unemployment rate ratios, indicated that black male unemployment tends to be high relative to white male unemployment in metropolitan areas that have a high percentage of blacks, dispersed employment, a centralized black population, and high levels of inequality in educational attainment.<sup>18</sup>

Holzer (1991, p. 110) also cites a study by Friedlander of central-city black unemployment rates, which used the fraction of jobs located in the central city and indexes of residential segregation as spatial mismatch proxies and found "*few* [emphasis added] significant effects on central-city black unemployment." After reviewing a large amount of descriptive data, Friedlander (1972) describes a number of multiple regression equations that are meant to explain differences in nonwhite unemployment among 30 central cities in 1960 and 1966. Friedlander estimated three regressions on nonwhite central-city unemployment rates (as contrasted to the ratio of nonwhite to white rates in Farley) in each year. The first equation, which he describes as a structural (not in the econometric sense) model, uses a rather odd collection of explanatory variables, including the same Taeuber segregation index as Masters used, and explains only 24 percent of the variance in nonwhite unemployment rates. None of the remaining variables are intended as spatial mismatch variables. The coefficient of the segregation index has a

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<sup>18</sup> Not surprisingly, Hispanic equations estimated for the entire sample of SMSAs perform poorly. When the analysis is limited to the SMSAs with at least 3 percent Hispanic population, however, Farley (1987, p. 146) found "the effects of Hispanic centralization, job suburbanization, and Hispanic/White educational inequality are strikingly similar to the effects of the comparable variables for Blacks," and that the "model explains 31.2 percent of the variation in the Hispanic/White unemployment ratio—almost identical to the power of the comparable model for Blacks in the full national sample." He found, moreover, that the "strongest effect of all is for job decentralization: where jobs are more suburbanized, Hispanic male unemployment tends to be higher relative to White male unemployment." The only variable that did not have the effect he expected was the SMSA percent Hispanic variable.

negative sign in both the 1960 and 1966 equations, but the *t* ratios are only -0.26 and -1.3. The small *t* ratios, however, did not deter Friedlander from concluding that—

[R]esidential segregation had a favorable impact on nonwhite unemployment in 1966 but not in 1960. Apparently, being locked into a limited residential area away from jobs in suburbs did not have a sufficiently strong negative effect to offset the benefits of better job information and closer proximity to the central business district, especially during times of business expansion. Residential segregation had a more significant favorable effect on the city's over-all unemployment rate than on the nonwhite, particularly in 1960. This seems to indicate that residential segregation operated to help ethnic groups but was much more meaningful to white workers. Moreover, it may lessen job competition and reduce information between groups but improve information within each ethnic labor force. Thus, in dual labor markets, residential segregation during a recession would reinforce the discrimination effect, helping both groups to experience less unemployment (Friedlander 1972, p. 93).

The two remaining equations, described by Friedlander as an economic (as opposed to a structural) model, include the average manufacturing wage, the percentage of change in SMSA employment during the previous period, the nonwhite labor force participation rate, and a measure of spatial mismatch, the percentage of SMSA employment that was located in the suburbs, as explanatory variables. In addition to these common variables, the first of the two "economic models" includes the manufacturing share of total SMSA employment and the nonwhite net migration rate as explanatory variables. The second includes the services' (including government) share of total SMSA employment and total net migration as explanatory variables. The first of these equations explained 77 percent and the second 70 percent of the variance in the dependent variable.

Friedlander found the spatial mismatch proxy had the expected sign in all four equations, but was not statistically different from zero in either of the 1960 equations; the coefficient of the spatial mismatch variable was statistically significant in both 1970 equations, however. The signs of the remaining statistically significant variables, moreover, are all plausible. The author made the following observations about results obtained for the suburbanization variable. "Another significant finding is the adverse effect of job dispersal on nonwhite unemployment rates. Spatial distribution of jobs was not significant in 1960 but, with the rapid acceleration in job dispersal between 1960 and 1966, accompanied by large nonwhite migration into the cities, the nonwhite unemployment rate rose in 1966 in cities with the greatest job dispersal" (p. 91).

The model specification and econometric analyses used by Friedlander are not very rigorous or well thought out. Thus, I would not want to put too much weight on the results of his study, particularly since the measure of spatial mismatch used, the fraction of SMSA jobs located in the suburbs, does a poor job of quantifying the differences in spatial mismatch among metropolitan areas. Nonetheless, Friedlander's finding that greater job suburbanization adversely affected black employment during periods when aggregate unemployment rates were low and had no measurable effect during periods of higher unemployment may be an important clue. (The mean unemployment rate for the 38 cities studied by Friedlander was 5.7 percent in 1960 and 4.3 percent in 1966.) It suggests the possibility that the adverse impact of spatial access on nonwhite employment is greater, or easier to detect, when labor markets are tight, and that effects of other variables, such as the aggregate demand for labor, may mask the effect of spatial mismatch during periods of high unemployment.

Holzer's brief summary of Friedlander's findings, that the study used the fraction of jobs located in the central city and indexes of residential segregation as spatial mismatch proxies and found "few significant effects on central city black unemployment," illustrates a tendency by both the authors of substantive studies of the spatial mismatch hypothesis and of survey articles to interpret "findings of small effects" as "disproving the spatial mismatch hypothesis" (p. 110), even when the variables used to quantify spatial mismatch are obviously inadequate. Ellwood's (1986) widely cited study of youth employment in Chicago in 1970 is a good example. Leonard (1986), in his comments on Ellwood's conference paper, finds that the measures used to proxy spatial mismatch to jobs are deficient. Yet Holzer (1991, p. 111), in his capsule summary of Ellwood's findings, states, "measures of job access, neighborhoods and distance from commercial centers have *no effects* [emphasis added] on the relation between percentage black and youth unemployment in neighborhood; higher commute times of blacks counteract the relative lack of jobs in their neighborhoods."

Ellwood (1986, p. 149) in describing his analysis of 1970 census tract differences in black and white unemployment in Chicago asserted that "no measure of accessibility proves to have *any* predictive power in employment equations for young people. Black-white differences are *wholly unaffected* [emphasis added] by their inclusion," that "(M)ost teenagers, black and white, don't work in their neighborhoods," and "neighborhood job proximity does not seem to account for much of these differences, at least in Chicago." As noted previously, he used the catchy slogan, "Race, not space, remains the key explanatory variable" to summarize his findings.