Understanding the Changing Fortunes of Metropolitan Neighborhoods, 1980 to 1990

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Abstract

This article develops a model that relates decadal changes in neighborhood poverty rates to metropolitan-wide economic changes and the neighborhood's demographic profile, predetermined poverty rate, and locational characteristics. The model is estimated for the 1980–1990 period using metropolitan census tracts as proxies for neighborhoods. This national sample of tracts is stratified into predominantly white, African-American, Hispanic, and mixed subsamples.

Results indicate that only a few variables consistently predict growth in neighborhood poverty: overall job availability; the age composition of neighborhood residents; the proportion of nonmarried households; and the neighborhood's 1979 poverty rate. Other variables have distinctly different coefficients depending on the racial-ethnic subsample. These coefficients include segregation, welfare benefits, the location of manufacturing employment, and availability of automobiles. We conclude that studies that focus solely on African-American poverty neighborhoods fail to recognize common patterns across all neighborhoods and to discern unique features of neighborhoods inhabited predominantly by non-African Americans.

Introduction

Poverty in metropolitan areas has long been a concern of public officials, policy makers, and social researchers. More recently, however, increasing attention has been paid to the geography of poverty—the particular neighborhoods in which poverty is more predominant. This political and scholarly interest is often motivated by the belief that the social costs of poverty grow disproportionately with the rate of poverty in a neighborhood, although evidence on the existence and severity of these reputed effects is mixed (Clark 1992; Crane 1991; Massey, Gross, and Eggers 1991; Mayer and Jencks 1989).[1]

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[1] A related notion is that concentrated poverty neighborhoods are a residential locus of, if not breeding ground for, the "underclass" (Clark and Nathan 1982). For more on how the underclass has been defined and its relationship to urban neighborhoods, see Mincy, Sawhill, and Wolf (1990), Ricketts (1992), and Mincy (forthcoming [a]).

Several highly publicized and disturbing studies have focused public attention on the eroding fortunes of certain metropolitan neighborhoods. This issue was brought to the fore most notably by William Julius Wilson in his book, *The Truly Disadvantaged* (1987). He showed that the number of neighborhoods with high rates of poverty and the fraction of all poor (especially African-American poor) who lived within them rose dramatically in Chicago during the 1970s. Jargowsky and Bane (1990, 1991) expanded the analysis to 50 large metropolitan areas. They generally confirmed Wilson's observations regarding black neighborhoods with poverty rates of 40 percent or more but found the results driven primarily by New York and Chicago. Massey and Eggers (1990) examined 1970–80 trends in spatial distribution of the poor, disaggregated by racial-ethnic composition of census tracts. In the 60 large metropolitan areas studied, they found that the percentage of poor in the average African-American person's census tract increased from 30 to 33 percent, in the average Hispanic person's tract from 24 to 27 percent, and in the average Asian person's tract from 20 to 23 percent. By contrast, the figure for Anglo poor changed only .1 percentage point (remaining virtually constant at 14 percent). Like Jargowsky and Bane, Massey and Eggers stress that these trends varied greatly across metropolitan areas and regions.[2]

More recently, Jargowsky (1993) and Kasarda (this volume) have analyzed whether trends manifested during the 1970s persisted during the 1980s. For many metropolitan areas they did not; wide cross-metropolitan variability continued as well. However, across 318 metropolitan areas, Jargowsky did find a 54 percent increase in the number of census tracts with at least 100 African Americans and with 40 percent or more African-American residents living in poverty. Jargowsky also found an increase from 37 to 45 percent in the percentage of African-American poor who live in such tracts.[3] Kasarda's (this volume) data from the largest 100 central cities revealed a 47 percent increase in the number of census tracts with 40 percent or more poor residents, although there was a slight decline in the percent of tracts classified as "severely distressed" on the basis of a number of other social indicators, and trends differed significantly among cities. From 1980 to 1990, the percent of these cities' African-American poor living in such extreme poverty tracts rose from

[2]Also note that if one uses a behavioral definition of underclass or "impacted poverty neighborhood," one obtains different trend results (Ricketts and Sawhill 1988; Ricketts and Mincy 1990; Hughes 1989).

[3]Comparable estimates were not provided for other racial-ethnic groups.

34 to 42 percent; the comparable figures for Hispanic poor were 24 percent and 28 percent; those for all poor were 23 percent and 29 percent. Thus, this recent research suggests that many urban neighborhoods have continued to suffer economic declines, especially if they were inhabited predominantly by African Americans or Hispanics, although patterns varied across cities and metropolitan areas.

Especially noteworthy is recent evidence that confounds the conventional wisdom that growth in neighborhoods with high rates of poverty is occurring primarily in large metropolitan areas and is primarily attributable to rapid growth in the minority populations of these neighborhoods. In a study of all census tracts, Mincy and Wiener (forthcoming) found that in the 1970s, neighborhood poverty concentration grew most rapidly in larger metropolitan areas in the Northeast and North Central regions, where African Americans are concentrated. These regions were also hardest hit by economic restructuring. However, there were important shifts in the regional and racial-ethnic distribution of the population in high-poverty neighborhoods from the Northeast to the South and West and from blacks to nonblacks during the 1980s. In particular, the number of non-Hispanic whites living in neighborhoods with poverty rates of 40 percent or more grew by 141 percent between 1980 and 1990, while the number of non-Hispanic blacks in these neighborhoods grew by just 49 percent. These changes increased the non-Hispanic white share of those living in high-poverty neighborhoods by 29 percent and reduced the black share of this population by 20 percent (Mincy and Wiener, forthcoming). Further, non-Hispanic whites constituted the majority of the population in 19 percent of high-poverty neighborhoods in 1980 and in 23 percent of these neighborhoods in 1990.

Moreover, the four major metropolitan areas (New York, Chicago, Philadelphia, and Detroit) that accounted for 66 percent of the growth of the population living in high-poverty neighborhoods in the 1970s accounted for just 8.7 percent of the growth of this population in the 1980s (Mincy, forthcoming [b]). Thus, there were growing pockets of white poverty in smaller metropolitan and nonmetropolitan areas, which could have the same qualitative origins as the high-poverty neighborhoods occupied by African Americans in large metropolitan areas (Mincy, forthcoming [b]; O'Hare and Curry-White 1992). By ignoring this possibility, researchers thus far have missed an opportunity to distinguish the effects of race and ethnicity from the effects of economic restructuring on the growth of neighborhoods that have been labeled underclass and "concentrated poverty areas." This distinction is at the heart of important policy debates and will be the focus of our efforts here.

This article attempts to look behind these trends measured for entire cities or in metropolitan areas as a whole and explore what has occurred in individual census tracts in metropolitan areas during the 1980s. Unlike Jargowsky (1993) and Kasarda (this volume), we attempt to develop a prototype explanatory model. Instead of describing trends and racial and geographic differences, we try to measure explicitly what it is across these groups and regions that provides the observed variations.

Our goal is to answer the following questions:

1. Do metropolitan-wide changes in economic structure affect individual neighborhoods primarily by affecting the viability of the particular types of people residing there or by affecting the nonhuman, locational attributes associated with that neighborhood?

2. Does the neighborhood's poverty rate tend to grow disproportionately once it reaches a certain level of poverty, regardless of changes in metropolitan economic conditions?

3. Do answers to the above questions depend significantly on the racial classification of the neighborhoods under consideration?

As an overview of our approach, we categorize tracts according to their predominant racial composition in 1980: majority Anglo, majority African American, majority Hispanic, and mixed. For each subset, we statistically model decadal changes in tract poverty rates as a reduced-form function of decadal changes in metropolitan economic conditions, economic and demographic characteristics of residents in the tract in 1980, and locational characteristics of the tract in 1980.

We begin with our conceptual framework for understanding changes in neighborhood poverty rates. This framework provides the context for a comparative review of three previous empirical models of urban poverty. We then present descriptions of our sample, variables, and regression model. Our statistical results are reported in light of the research questions posed above and existing empirical debates. The article closes with a summary of major results and a brief discussion of implications for policy and future research.

A conceptual framework for understanding changes in neighborhood poverty rates

Our conceptual framework begins by positing that the poverty rate change in any particular neighborhood *i* in metropolitan statistical area (MSA) *j* will be related to the overall poverty rate change observed in that MSA. In other words, the "ambient" level of neighborhood poverty is predicated on the poverty rate in the MSA, written symbolically as

$$\text{Poverty Rate}_{ij} = k\,(\ \text{Poverty Rate}_{j}) \qquad (1)$$

where Poverty Rate $_{ij}$ is the change in the poverty rate in neighborhood *i* in MSA *j* over some period and Poverty Rate $_{j}$ is the change in the poverty rate of MSA *j* over the same period.

We take as our maintained hypothesis that changes in the economic health of a metropolitan area are not, however, evenly distributed across space within that MSA. According to Hughes (1989), this maintained hypothesis was Wilson's central hypothesis, but it has been neglected in the literature. If changes in the economic health of a metropolitan area were evenly distributed across neighborhoods within that MSA, predicting changes in a neighborhood's poverty rate would be as simple as assuming that $k = 1$ in equation (1). We find this implausible, based on extant research, and thus incorporate the distinct reasons for cross-neighborhood variations in poverty growth into our conceptual framework.

If we were to distill why particular metropolitan neighborhoods are more prone to increases in poverty, three distinct versions would emerge.[4] For didactic purposes, we call these the "people-external," "place-external," and "place-internal" perspectives.

The people-external perspective

The people-external perspective sees alterations in metropolitan economic conditions that originate externally to any neighborhood as affecting particular categories of individuals differentially. Inasmuch as such people are not distributed evenly across neighborhoods, there will be cross-neighborhood variations in poverty rate changes. From this perspective, space is only spuriously correlated with poverty growth in particular

[4] We recognize that these three are not mutually exclusive; indeed, several authors allude to all.

areas. Symbolically, the people-external view can be expressed as

$$\text{Poverty Rate}_{ij} = f(\text{People}_{ij}) \tag{2}$$

where Poverty Rate $_{ij}$ is the change in the poverty rate in neighborhood i in MSA j over some period and (People_{ij}) is a vector of characteristics describing the people living in neighborhood i at the beginning of the period.

Numerous arguments in the literature fall within the people-external rubric.[5] Deindustrialization and the concomitant increase in educational requirements for decent-paying jobs clearly would be external events that adversely affect those with low educational credentials, regardless of where they live (Castells 1985; Kasarda 1988, 1989, 1990; Levy 1988; Scott 1988). Lower-skilled workers might be most vulnerable to the intensified labor market competition associated with a rapid influx of new immigrants into the area, especially from overseas (Danziger et al. 1991). More generous levels of welfare support may also be thought of as an external factor potentially having a disparate impact on women by inducing them to become female heads of households (Bane and Ellwood 1986; Murray 1984) or to drop out of the labor force (Beam 1989; Hammer 1989; Massey, Eggers, and Denton 1990; Murray 1984).

There are grounds for positing that the people-external nexus will be different according to the racial-ethnic makeup of the people in question. Because of the pervasive legacy of labor market discrimination, minorities are likely to suffer lower employment rates and wages, whatever the overall economic conditions in the MSA (Cross et al. 1990; Galster and Keeney 1988; Price and Mills 1985). For the same reason, changing employment possibilities in the MSA would produce different results among minority workers inasmuch as they were the last hired, first fired (Hammer 1989). Racial and ethnic minorities also have lower achievement scores, at any given level of schooling, and achievement-based wage premiums increased during the 1980s (Ferguson 1992; National Research Council 1993).

The place-external perspective

The place-external perspective focuses on the location-specific impacts of metropolitan-wide forces. It suggests that certain

[5] For a comprehensive review, see Moss and Tilly (1991).

places will be at a disadvantage relative to others, independent of the characteristics of people living there, and thus will evince a larger growth in poverty rates when overall MSA conditions deteriorate. Symbolically, this situation is expressed as

$$\text{Poverty}_{ij} = g(\text{Place}_{mij}) \tag{3}$$

where (Place_{mij}) is a vector of m locational characteristics describing neighborhood i (not its residents); all others are as above.

The spatial-mismatch hypothesis is a primary representative of this view (Hughes 1992; Kain 1992; Kasarda 1985, 1990): Deindustrialization may adversely affect the proximity of particular neighborhoods to employment. In addition, a neighborhood's location in a political jurisdiction that provides inferior public education and other services could well render its residents more susceptible to external poverty generators (Gottschalk and Danziger 1987; Kozol 1991; Jaynes and Williams 1989; Orfield 1992).

Again, these place-external relationships may well differ across places defined by their racial composition. For example, manufacturing plant closings have been disproportionately concentrated in or near African-American communities (Darden 1987; Lichter 1988; Soja, Morales, and Wolff 1983; Squires 1982; Wilson 1987). The remaining manufacturing jobs have progressively shifted to suburbs and small towns (Kasarda 1985; Wilson 1987). This shift, coupled with the continuing concentration of African Americans in or near central cities (Galster 1991), has created a racial-spatial mismatch. African Americans' opportunities to both learn about and commute to jobs may decline as their proximity to them declines (Ihlandfeldt and Sjoquist 1989, 1990; Jencks and Mayer 1989; Kain 1968, 1992; Straszheim 1980). The spatial mismatch is reinforced by residential segregation of minorities (Galster 1992; Massey and Denton 1992; Turner 1992), which may render them more vulnerable to economic dislocations by isolating them from social networks that might expand employment opportunities (Fernandez and Harris 1992). In addition, Massey and colleagues (Massey 1990; Massey and Denton 1992; Massey and Eggers 1990) point out that, in MSAs with rising minority poverty rates, segregation works to confine the increase in minority poor to relatively few (predominantly minority-occupied) neighborhoods. These neighborhoods, therefore, tautologically must evince higher rates of poverty.

The place-internal perspective

The place-internal perspective does not concern itself with how metropolitan-wide forces external to the neighborhood impinge upon it. Rather, it focuses on the factors within the neighborhood itself that generate higher rates of poverty, independent of metropolitan-wide conditions. This perspective is written symbolically as

$$\text{Poverty Rate}_{ij} = h(\text{Place}_{nij}) \quad (4)$$

where (Place_{nij}) is a vector of n social and physical characteristics of the neighborhood that endogenously generate poverty.

Two variants of this perspective may be identified in the literature. One argues that, once surpassing a certain threshold, the rate of poverty in a neighborhood can create "contagion effects" that spawn still more poverty by encouraging teen fertility and dropping out of school.[6] The other argues that certain neighborhoods possess such a panoply of social problems (crime, substance abuse, etc.) or physical decay (abandoned buildings, deteriorated public housing) that nonpoor residents flee (Massey and Kanaiaupuni 1990). By default, the rate of poverty observed for the area rises.

Once again, there is literature suggesting that place-internal determinants of neighborhood poverty may exhibit some distinctive interracial variations. For example, Wilson (1987) asserts that increasing numbers of middle-class African Americans have left the ghetto. This increasing class isolation may create an environment in which the community's social resources, needed by disadvantaged people to withstand the economic and psychological burdens of economic marginality, are increasingly scarce (Clark 1965; Oliver 1988; Sampson 1987; Wacquant and Wilson 1989). Family, friends, and community organizations may be less able to provide the material assistance needed in times of temporary financial distress to prevent more serious spells of poverty (Taylor, Chatters, and Mays 1988). A lack of middle-class role models in the African-American community may stunt aspirations and legitimize a reliance on welfare or criminal activities for economic gain (Wilson 1987).

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[6] See Mayer and Jencks (1989) and Mincy (forthcoming [a]) for recent reviews of the contagion-effects literature.

A unified model

The foregoing tripartite categorization should not imply that the alternatives are mutually exclusive. Indeed, it is reasonable to posit that all play some explanatory role. Therefore, our goal will be to estimate the parameters of a unified model that combines the conceptual elements presented above as follows:

$$\text{Poverty Rate}_{ij} = f(\text{People}_{ij}) + g(\text{Place}_{mij}) + h(\text{Place}_{nij}) + k(\ \text{Poverty Rate}_{j}) \quad (5)$$

However, Poverty Rate $_j$ is itself a function of the changing conditions in MSA$_j$. Thus, equation (5) can be rewritten in a reduced form:

$$\text{Poverty Rate}_{ij} = f(\text{People}_{ij}) + g(\text{Place}_{mij}) + h(\text{Place}_{nij}) + q(\ \text{MSA}_{j}) \quad (6)$$

where (MSA $_j$) is a vector of characteristics describing metropolitan-area-wide changes in factors reputed to generate poverty, such as deindustrialization and welfare benefit levels. Before explaining how we operationalize the above vectors, we briefly contrast this model to others previously developed.

Related empirical work: Comparison and critique

Previous multivariate empirical work

Three distinct strands of multivariate statistical studies have attempted to investigate cross-sectional variations in poverty rates, and they thereby provide crucial intellectual foundations to our own efforts. The first strand models cross-MSA variations in poverty rates for particular racial-ethnic groups; the second models cross-MSA variations in concentrated poverty neighborhoods; the third models cross-tract variations in an index of behaviors often associated with high-poverty neighborhoods.

As representative of the first strand of research, Galster (1991) developed a simultaneous-equation model for 59 MSAs in 1980 that sought to explain the pattern and extent of racial segregation, income segregation within the African-American community, school racial segregation, school dropout rates, and African-American poverty rates. He found that wages in various industrial categories and the proportion of African-American families headed by females are the strongest predictors of

African-American poverty. Racial segregation, class segregation, housing market discrimination, and overall levels of unemployment in the MSA are also important predictors.

Eggers and Massey (1991) developed a complex but recursive path model of variations in poverty for different racial-ethnic groups across 60 large metropolitan areas in 1980. Intervening variables included median family income, income inequality, proportion of female-headed families, sex ratios of those aged 15 to 34, and male and female employment ratios. Exogenous variables serve as proxies for level, location, and type of employment; wage levels; education levels; and value of Aid to Families with Dependent Children (AFDC) payments. They found important differences in estimated parameters among whites, African Americans, and Hispanics. The roles of welfare, family composition, and labor force participation are strongest for African-American poverty, whereas industrial restructuring variables prove most important for Hispanics. None of these factors are particularly important for whites. All three groups' poverty rates are powerfully shaped by the extent of a group's college-educated members and the MSA's overall level of employment and wages.

The second strand of research is also represented by two works. Massey, Eggers, and Denton (1990) modify and extend the aforementioned model to examine cross-MSA variations in the overall spatial concentration of African-American poverty. They employ a P^* (exposure) index to operationalize the degree of poverty concentration in the MSA overall; it measures the percent of poor of any race residing in the census tract of the average African-American poor person. Proximate causes of concentration are specified as African Americans' poverty rate, residential segregation between low- and high-income African Americans, and residential segregation between all African Americans and Anglos. Other intervening variables describing African Americans include proportion in public housing, out-migration rates, housing market discrimination, median family income, income inequality, proportion of female-headed families, sex ratios of those aged 15 to 34, and male and female employment ratios. Exogenous variables serve as proxies for prejudice, location and type of employment, and value of AFDC payments.

The authors found that the interaction of MSA-wide poverty with segregation creates a powerful impact. By contrast, class segregation within the African-American community has no correlation with poverty concentration once the interaction between the overall poverty rate and racial segregation is controlled, and the out-migration rate from poverty tracts is only weakly related to class segregation. The authors concluded, therefore, that there is little support for the hypothesis that the flight of nonpoor African Americans from the community is a major cause of concentrated poverty.[7]

Hughes (1989) focused on a particular sort of “impacted ghetto” neighborhood: predominantly African-American neighborhoods in which proportions of female-headed households, households receiving public assistance, teenage high school dropouts, and males detached from the labor force all were two standard deviations above the metropolitan area’s median.[8] He modeled variations in the number of such tracts across a sample of 38 large metropolitan areas in 1980. Since his dependent variable was the number of impacted ghetto neighborhoods in the metropolitan area, he did not test the central hypothesis that metropolitan-area variables have differential effects across neighborhoods. Nevertheless, explanatory variables include population and percent of African Americans in the metropolitan area, the percent change in central-city manufacturing employment from 1972 to 1982, the difference between the percent change in manufacturing employment in suburban and central-city areas during 1972 to 1982, and a dummy variable denoting Middle Atlantic or East North Central regions. Deindustrialization and deconcentration only prove to be statistically significant predictors of the prevalence of impacted ghettos in the Middle Atlantic and East North Central regions;[9] racial composition is uncorrelated.

The final strand consists of Mincy’s (1990) work, which is unique in its focus on individual census tracts rather than entire metropolitan areas. He considered how the tracts’ composite indexes of the four underclass indicators developed by Ricketts and Sawhill (1988) vary according to overall metropolitan

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[7] Note, however, that the class segregation variable used measured the exposure of the poor to those earning four times the poverty line, thus omitting much of the middle class. By contrast, Gramlich (1992) finds a good deal of net out-migration of nonpoor from poverty-stricken African-American tracts between 1979 and 1984.

[8] These four characteristics were initially developed by Ricketts and Sawhill (1988) as a measure of the underclass, but were applied to African-American neighborhoods and neighborhoods with other racial or ethnic majorities.

[9] It is not clear whether any additional region-specific interactions were attempted or why deindustrialization and deconcentration did not appear in the same regression.

conditions.[10] Regression models for predominantly Anglo, African-American, and Hispanic tracts are estimated across a national sample of metropolitan census tracts in 1980. Explanatory variables include 1980 tract poverty rate (and spline variables); five-year average state unemployment rate; metropolitan proportions of foreign born, females, and 18- to 24-year-olds; the gender ratio of 16- to 34-year-olds; racial residential segregation; the ratio of AFDC payments to mean earnings; and a measure of the tract's educational level relative to that demanded in the local labor market. Mincy found that educational mismatch is extremely important in explaining a tract's degree of underclass behaviors, independent of its rate of poverty or the race of its occupants. Many other variables demonstrate significant interaction effects with the poverty rate, suggesting that metropolitan conditions have stronger impacts on areas with higher poverty concentrations. The results are clearly differentiated by the racial-ethnic makeup of the tract, however.

Critique and new directions

Although path breaking and quite different in approach, the aforementioned studies suffer from several common shortcomings. They are cross-sectional approximations of dynamic relationships; they impose arbitrary causality patterns; they omit key variables from the specifications; and they are inappropriately aggregated.

Consider these shortcomings individually. Massey, Eggers, and Denton (1990), Galster (1992), and Mincy (1990) abstract from what are basically dynamic relationships evolving over time. By measuring such relationships at a moment in time and estimating their cross-sectional variations, the authors are assuming implicitly that each observation tolerably approaches some sort of steady-state equilibrium condition (or at least that deviations from this situation are randomly distributed across the sample). Hughes (1989), although utilizing 1972–82 changes in the number and location of manufacturing jobs as predictors of the 1980 number of impacted ghetto tracts, nevertheless makes questionable assumptions about dynamics: by excluding the number of such tracts in 1970, he renders the growth of such tracts independent of their starting point.

A closely related problem is simultaneity. For example, Massey and colleagues (1990) model causation running from female labor

[10] Mincy's (1990) indicators are standardized by national averages; Hughes' (1989) indicators are standardized by MSA averages.

force participation, to female household headship, to median income, to class segregation, to poverty concentration. Yet, it is equally plausible to posit a complete reversal of this sequence. Similarly, although Mincy (1990) has tract poverty rates reputedly causing female household headship, welfare dependency, dropping out of school, and labor force detachment, the opposite is clearly possible. The point is that in a given cross section what one observes is likely an amalgam of causal interplays working in many directions. It is well known that single-stage estimation procedures as employed by Massey and colleagues and Mincy will produce biased coefficients and biased and inconsistent statistical tests if such bidirectional causation is present. Although the Galster model is less subject to this criticism, the specification of female-headed households as exogenous is questionable.

Extant works often omit theoretically important variables from their models. Mincy has no proxies for the industrial composition or location of employment in the metropolitan area. Hughes (1989) has no controls for segregation, welfare payments, unemployment rates, or educational credentials of workers in the metropolitan areas sampled. Even though the overall Massey model is comprehensive, several variables (such as educational characteristics and housing discrimination) are included in some versions but not others, which could bias the coefficients of included variables to the extent that omitted and included variables are correlated.

Finally, with the exception of Mincy, all the authors develop models in which the unit of observation is the MSA, not the census tract. Although such a viewpoint is valuable for answering certain questions, it cannot distinguish among the people-external, place-external, and place-internal theoretical explanations offered above. Such MSA-level analyses inform us only about the effects of what we have referred to as external factors. But a more troubling aggregation aspect of most studies (with Eggers and Massey [1991] and Mincy [1990] the exceptions) is their myopic attention on African-American patterns, reflecting the implicit assumption that African-American neighborhoods are uniquely vulnerable to the effects of external factors. The foregoing conceptual discussion strongly suggests that such an assumption is untenable.

The model described in this article attempts to sidestep these shortcomings. It predicts the changes in a census tract's poverty rate from 1980 to 1990 (i.e., poverty as reported for 1979 and 1989) based on 1980 characteristics of the tract and its resident population. It also predicts 1980 and 1988 changes, mostly declines, in metropolitan-area-wide factors thought to determine the area's overall poverty rate. Thus, the dynamic process is explicit and, because of careful dating of explanatory and dependent variables, the causal directions are unambiguous. Indeed, our choice of the dependent variable as a change variable was guided by those concerns. We employ a rich set of explanatory variables, including welfare benefits; industrial composition; employment rates; educational mismatches; segregation; job accessibility; and the racial, foreign-born, family, and age composition of the population. Finally, we obtain evidence on variations in the effects of included variables on poverty rates in African-American and other neighborhoods by estimating separate models for subsets of tracts specified by predominant racial-ethnic composition.[11] And, because we use census tracts as the unit of analysis, we can, for the first time, explicitly investigate the people-external, place-external, and place-internal determinants of the changing fortunes of metropolitan neighborhoods.

Data and model specification

Unit of analysis, data, and sample

As noted, our unit of analysis is the census tract, serving as a proxy for a metropolitan neighborhood. On average, census tracts include 4,000 people, and the Census Bureau demarcates tract boundaries so that people in a given tract share similar socioeconomic characteristics.

To estimate the model, we use unpublished data from the 1980 and 1990 Census Summary Tape File (STF-3a) and USA County File. We also use data on employment by detailed industry file from the Bureau of Economic Analysis' Regional Information System (REIS). The STF-3a file contains aggregate counts of individuals and households across all census tracts and includes nearly the entire population of the United States. The file contains detailed information on 42,915 census tracts in 1980 and 61,258 in 1990. These data provide the substantial cross-sectional variation of neighborhood socioeconomic indicators needed to estimate our empirical model. The REIS data contain aggregate counts of employment by detailed industry (from establishment surveys) across all counties.

[11] We recognize that other aggregation biases may still be present, of course.

After excluding about half the tracts and counties, our sample includes 22,241 tracts in 3,141 counties. We exclude (1) tracts with populations less than 525 in 1980, since data on key variables would be suppressed; (2) tracts that represent a military vessel; (3) tracts in which the nonhousehold population (i.e., residents of homes for the aged, mental or other institutions, college dormitories, and group quarters) accounts for more than 29 percent of the population;[12] (4) tracts with missing or nonsensical values (i.e., percents greater than 100 or less than 0) and tracts in counties with missing values in the REIS data (e.g., suppressed detailed industry data and tracts with boundary changes between 1980 and 1990); (5) tracts (mainly in New England) located in counties in which less than 100 percent of the population resided in a unique metropolitan area and tracts that were not part of a Standard Metropolitan Statistical Area (since we require SMSA and county data for many of our variables); and (6) tracts that changed their boundaries from 1980 to 1990.

We stratified our sampling of 22,241 tracts into four subsamples depending on race and ethnicity of the tract's population. We included 3,136 tracts in which more than 50 percent of the population was African American, but not Hispanic, in our black subsample; 907 tracts in which more than 50 percent of the population was Hispanic in our Hispanic subsample; 10,846 tracts in which more than 90 percent of the population was white, but not Hispanic, in our white subsample; and the remaining 7,332 tracts in our mixed subsample.

Dependent variable

The dependent variable (Poverty $_{ij}$ in equation [6]) is the growth from 1979 to 1989 (i.e., 1989 minus 1979 values) in the nonelderly poverty rate (*NELPOOR*) in a census tract, which we call *NELPOOR89-79*. (Note that hereafter we will employ a variable acronym format in which the suffix indicates either the year for which the variable applies or, as in this case, the years for the data that are differenced.) For both years, the poverty rate is calculated from data on the total number of persons under age 65 (both unrelated individuals and in families) living below the Census Bureau poverty level divided by the total number of persons under age 65 for whom poverty status has been determined. (A glossary of all variables is provided in table 1.

[12] Examination of the frequency distribution of the population living in such group quarters suggested 29 percent as a reasonable cutoff.

Table 1. **Variable Definitions and Sources**

Model Section	Variable Name	Definition and Source[a]
Dependent variable	NELPOOR89-79	Nonelderly poverty rate in tract in 1989 minus nonelderly poverty rate in tract in 1979. 1989: table 117; 1979: table 93.
External factors	JOB/POP80-88	(Ratio of jobs located in MSA/ total population in MSA in 1980) minus (ratio of jobs located in MSA/total population in MSA in 1988). Job data: BEA;[b] population data: USA Counties.[c]
	MFGSHARE80-88	(Number of jobs in manufacturing located in MSA/total jobs in MSA in 1980) minus (number of jobs in manufacturing located in MSA/total jobs in MSA in 1988). Data from BEA.
	WELFARE88-80	Estimated real $ value of AFDC, Medicaid, and food stamps in the state in 1988 minus that value in 1980. Data from Robert Moffitt.
People-external factors	EDMISMAT80	Educational attainment of employees in MSA (estimated by weighted average of national median level of education for occupations, where weights are 1980 proportions of MSA employed in occupation)/mean educational attainment of those age 25 and older in tract. Table 48.
	NOMARRY80	Proportion of households in tract in 1980 that are not married. Table 20.
	NOCAR80	Proportion of all households in 1980 with no car available. Tables 10, 121.
	FYOUTH80	Proportion of those in tract population in 1980 between age 10 and 64 who are females aged 10–25. Table 15.

Table 1. **Variable Definitions and Sources** *(continued)*

Model Section	Variable Name	Definition and Source[a]
	FOREIGN80	Proportion of tract population in 1980 that is foreign born. Table 33.
	MYOUTH80	Proportion of those in tract population in 1980 between age 10 and 64 who are males aged 10–25. Table 15.
	BLACK80	Non-Hispanic black share of tract population in 1980. Tables 12, 14.
	HISPANIC80	Hispanic share of tract population in 1980. Tables 12, 14.
Place-external factors	NOACCESS80	1/(number of jobs in county/ number of jobs in MSA, 1980)/ (number in tract working in county/number in tract working in MSA, 1980) × (ratio of jobs located in MSA/ total population in MSA in 1980). Job data: BEA; population data: USA Counties; place-of-work data: tables 36, 38.
	MFGLOC80-88	(Number of jobs in manufacturing located in county/total jobs in manufacturing in MSA in 1980) minus (number of jobs in manufacturing located in county/total jobs in manufacturing in MSA in 1988). Data from BEA.
	ISOBLK80 and ISOHSP80	Minority isolation index for non-Hispanic blacks and Hispanics in 1980: $[P - (M/T)] / [1 - (M/T)]$ where t and m are total minority tract population and T and M are total and minority MSA population, respectively; P is $(m/M) \times (m/t)$ summed over all tracts in MSA. Tables 12, 14.
Place-internal factors	NELPOOR79	Nonelderly poverty rate in tract in 1979. Table 93.

Table 1. **Variable Definitions and Sources** *(continued)*

Model Section	Variable Name	Definition and Source[a]
	HISTAT79	Proportion of all persons 16+ years in tract in 1979 employed in professional, technical, managerial, and administrative occupations. Table 66.
	INC30P79	Proportion of all families in tract earning $30,000 or more in 1979. Table 73.
	POV > X79, STAT > X79, INC > X79	Dummy variable(s) denoting whether *NELPOOR79* > *X*; zero otherwise. Dummy variable denoting whether *HISTAT79* > *X*; zero otherwise. Dummy variable denoting whether *INC30P79* > *X*; zero otherwise. Table 93.

[a] Unless otherwise identified, tables listed are from the U.S. Department of Commerce, *Census of Population and Housing: Census Tracts* (1980 and 1990).
[b] Bureau of Economic Analysis Division, U.S. Department of Commerce, Regional Economic Analysis Division.
[c] USA Counties on CD-ROM, prepared by the Bureau of the Census.

Descriptive statistics are provided in tables A.1 through A.4.) We chose the nonelderly poverty rate because theoretically it is of more interest to analyze households whose heads may be expected to participate in the labor force. Census poverty calculations are based on total income, so ours is a measure of posttransfer poverty.

Independent variables for changing metropolitan economic conditions: The external factors component

Pursuant to the hypotheses outlined above, we specify variables for industrial restructuring and changing welfare benefits to operationalize external factors shaping the ambient level of poverty in the MSA, [MSA_j] in equation (6). Our two measures of industrial restructuring serve as proxies for the changing availability and composition of jobs. We measure changing employment prospects relative to the working-age population by *JOB/POP80-88*—the 1980–88 decline (i.e., 1980 minus 1988 value) in the ratio of the number of jobs located in the MSA to the MSA population.[13] Changing industrial composition is represented by *MFGSHARE80-88*: the 1980–88 decline (i.e., 1980 minus 1988 value) in the fraction of MSA employment in manufacturing. We employ 1980–88 changes because we assume a one-year lag for 1988 values to be reflected in 1989 poverty rates. We expect that higher values for these industrial variables (i.e., larger declines) would be associated with the deteriorating economic fortunes of the tract being observed and thus larger increases in poverty rates.

The changing value of welfare benefits for potential recipients in the tract being observed is given by *WELFARE88-80*—the real growth between 1980 and 1988 in the total value of all state benefits. These figures were computed by Robert Moffitt, a professor of economics at Brown University, as a weighted average of AFDC, Medicaid, and food stamp benefit rates, with 1980 values being subtracted from 1988 values. Theory suggests that increases in welfare benefits will discourage labor force participation and perhaps induce fertility and marital dissolution choices that generate poverty. On the other hand, our poverty measure includes the value of transfers, so it is conceivable that increases in welfare benefits will reduce poverty growth. The sign of the *WELFARE88-80* coefficient is thus uncertain.

Independent variables for resident characteristics in 1980 census tracts: The people-external component

The variables that we believe capture the key aspect of a neighborhood population's vulnerability to metropolitan-wide changes, the (People_{ij}) term in equation (6), involve educational credentials, age, gender, nativity, and auto availability. Race and ethnicity are undoubtedly crucial differentiating factors, so we control for these even though we stratify our sample of tracts on the basis of racial and ethnic composition.

To serve as a proxy for the degree of 1980 comparative educational disadvantage borne by adults in the tract, we specify *EDMISMAT80*: the ratio of (weighted) average educational attainment of the employees in the metropolitan area to the mean educational attainment of those aged 25 and older in the

[13] We calculate this decline by subtracting the value of the variable in 1980 from the value of the variable in 1988, hence our notation of *80-88* as a suffix to the variable name. Therefore, if the former is larger, indicating that decline occurred, the difference is positive. We measure other variables labeled decline in the same way.

tract as of 1980.[14] Our notion here is that the numerator serves as a proxy for the overall skill level of the work force in the metropolitan area, and the denominator serves as a proxy for the skills possessed by residents in the tract. The more this ratio exceeds unity, the greater the comparative educational disadvantage of tract residents. The greater their degree of competitive disadvantage, the more vulnerable they will be to changes in metropolitan employment levels and industrial composition.

We model six other demographic characteristics of the tract in 1980: (1) the proportion of households that are not married (*NOMARRY80*); (2) the proportion of the 10- to 64-year-old male population that is 10 to 25 years old (*MYOUTH80*); (3) the proportion of the 10- to 64-year-old female population that is 10 to 25 years old (*FYOUTH80*); (4) the proportion of the population that is foreign born (*FOREIGN80*); (5) the proportion of the population that is non-Hispanic black (*BLACK80*); and (6) the proportion of the population that is Hispanic (*HISPANIC80*). Unmarried households may be more vulnerable to economic restructuring than married ones inasmuch as the former are less likely to have an additional potential participant in the labor force. Unmarried males may have a weaker attachment to the work force during periods of economic decline, whereas unmarried women conventionally are viewed as being more influenced by increasing welfare payments. The age ranges for the *MYOUTH80* and *FYOUTH80* variables were selected to identify persons whose early-life decisions about educational attainment, fertility, marriage, and labor force participation may be most sensitive to prevailing economic conditions in their metropolitan areas. Gender distinctions are made because male youths

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[14] The 1980 average educational attainment of employees in the MSA was computed as

$$\begin{gathered}(\text{percent Professional/Technical} \times 16.504)\\ + (\text{percent Manager/Admin.} \times 13.765)\\ + (\text{percent Sales} \times 12.735) + (\text{percent Clerical} \times 12.331)\\ + (\text{percent Craft} \times 12.386) + (\text{percent Operators} \times 12.179)\\ + (\text{percent Nonfarm Labor} \times 12.049) + (\text{percent Service} \times 12.113)\\ + (\text{percent Farm Labor} \times 11.558).\end{gathered}$$

The weights used are national averages for a given occupation. The 1980 mean educational attainment of those aged 25 or older in the tract was computed as

$$\begin{gathered}(\text{percent} < 9 \text{ yrs.} \times 6.044) + (\text{percent 9–11 yrs.} \times 10.03)\\ + (\text{percent high school grad.} \times 12) + (\text{percent 1–3 yrs. college} \times 13.82)\\ + (\text{percent } 15 > \text{yrs.} \times 17.06).\end{gathered}$$

The weights used are national mean educational attainments for those in a given category.

reputedly have been most adversely affected by deindustrialization, whereas female youths reputedly have been more sensitive to changes in welfare benefits. *FOREIGN80* is intended as a proxy for shortcomings in English language and social skills that might render people more vulnerable to changes to a service economy.

Finally, we specify the proportion of households in the tract that did not have access to an automobile in 1980 (*NOCAR80*). Whatever the changing metropolitan geography of job opportunities, households that do not have the flexibility afforded by an automobile are, all else being equal, more likely to be at a competitive disadvantage.

Independent variables for locational characteristics of the census tract in 1980: The place-external component

We model two characteristics of tracts in the (Place_{mij}) component of equation (6)—social and spatial isolation—that do not by themselves cause poverty growth. They are likely to render particular neighborhoods more vulnerable to changing metropolitan economic conditions, however. Social isolation is relevant only for predominantly minority-occupied subsets of tracts. For them we define two exposure (P^*)-based indices of intraracial (or intraethnic) residential contact, one between African-American residents and their African-American neighbors (*ISOBLK80*) and the other between Hispanic residents and their Hispanic neighbors (*ISOHSP80*). Both are calculated as the proportion of their own racial-ethnic group residing in the average minority person's census tract in 1980 minus that proportion of minorities in the MSA. The result is then divided by the proportion of MSA population that is not in the given minority group (see table 1 for the formula). The entire variable assumes the minimum value of zero when the proportion of the given minority is identical to its overall proportion in the metropolitan area.[15] The variable assumes its maximum value of unity when all members of the given minority group live in tracts that are comprised entirely of members of that group.[16] The desirable properties of this isolation index are demonstrated in White (1986). Our heuristic notion is that predominantly minority neighborhoods embedded in more segregated metropolitan contexts would be more

[15] In this case, the numerator is zero.

[16] In this case, both the numerator and denominator would equal the fraction of nonminorities in the MSA.

vulnerable to economic dislocations because the minority residents would be more isolated from many informal job networks and, perhaps, mainstream behavioral and social interaction patterns. Therefore, we predict that poverty growth in these tracts will be higher.[17]

Finally, as a measure of the quality of the tract's access to employment, we specify two variables. The changing location of manufacturing jobs relative to the tract observed is measured by *MFGLOC80-88*—the 1980 minus 1988 value of the ratio of the number of manufacturing jobs located in the county (where the observed tract is located) to the total number of manufacturing jobs in the MSA. *MFGLOC80-88* measures the decline in the relative accessibility of manufacturing jobs from the perspective of residents in the observed tract, which would be predicted to have a positive coefficient.

We also compare the ratio of the proportion of those employees living in the tract and working in the MSA who also work in the tract's county with the proportion of all MSA jobs located in that county. When this measure of inaccessibility exceeds unity, the tract has poor accessibility characteristics because its resident workers' employment sites are disproportionately located inside the county compared with the geographic patterns of employment sites overall. Conversely, more accessible tracts have small fractions of resident workers employed within the same county, even if many jobs are located there. Unity then exceeds our inaccessibility measure.

We recognize that this inaccessibility measure has several shortcomings. First, a geographic unit smaller than a county would be preferable, but none were available from our data sources. Second, the measure is not a characteristic of a tract independent of its resident population. Instead, it is an amalgam of the tract's location relative to the geography of employment, the residents' access to cars, the local public transit system, and the metropolitan topography. Third, our measure may wrongly attribute to inaccessibility the tendency of residents in tight labor markets to choose employment sites within their counties. To adjust for this possibility, we deflate (divide) our inaccessibility measure by the job-to-population ratio in 1980 and call the resulting variable *NOACCESS80*.

[17] We recognize that our isolation indices do not vary across census tracts within any particular MSA, and thus we estimate empirically how a set of neighborhoods embedded in a more-segregated MSA behave relative to another set in a less-segregated one.

Independent variables for socioeconomic characteristics of the census tract in 1980: The place-internal component

Several variables are employed to operationalize the (Place_{nij}) component in equation (6). According to the theory cited earlier, the prime tract-specific feature that is likely to be associated with endogenous increases in that tract's poverty rate, independent of changes in the metropolitan economic context, is the contagion effect.[18] Contagion effects are thought to be related to the poverty rate during some earlier period. To allow for the most flexible functional form, we include the 1979 tract nonelderly poverty rate (*NELPOOR79*) and a series of dummy variables (0,1). These dummies denote whether the basic *NELPOOR79* versus *NELPOOR89-79* relationship shifts up or down when the 1979 poverty rate exceeds various thresholds, which are specified in percentage-point increments (*POV* > *X79*, where *X* represents the given 1979 percent). This specification allows us to test a variant of the contagion effects hypothesis in which the attainment of some (high) threshold level of tract poverty in 1979 is associated with a noticeable acceleration in the subsequent growth in poverty during the decade (Crane 1991).[19]

Contagion effects may be associated not only with exceeding a threshold of low-income people, but also with falling below a threshold of middle-class people in the neighborhood.[20] Wilson's (1987) claim about the lack of middle-class role models and the civic resources they provide represents this perspective. Following Crane (1991), we specify two measures of middle-class presence in the neighborhood: the 1979 proportion of all persons 16 years and older in the tract employed in professional, technical, managerial, and administrative occupations (*HISTAT79*), and the proportion of all families in the tract earning $30,000 or more in 1979 (*INC30P79*). We also test for nonlinearities by specifying various dummy variables for both that perform the function analogous to those specified for *NELPOOR79* above: *STAT* > *X79* and *INC* > *X79*, where *X* is a given 1979 percent of the respective middle-class attribute in question.

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[18] Contagion effects are consistent with, though do not necessarily involve, "culture of poverty" effects. The use of dummies allows for a more flexible functional form than the use of standard quadratic or cubic formulations.

[19] Mincy (1990), Crane (1991), and Clark (1992) use traditional spline variables to explore nonlinearities.

[20] Clark (1992) finds that there is a good deal of independence between the fraction of poor and the fraction of middle income across tracts.

Summary specification of the model

The general model presented in equation (6) can now be presented in operationalized form as a linear equation with the variables defined above as

$$\begin{aligned} NELPOOR89\text{-}79 = {} & a + [b] \times [MFGSHARE80\text{-}88 \\ & + JOB/POP80\text{-}88 + ?\ WELFARE88\text{-}80] \\ & + [c] \times [EDMISMAT80 + NOMARRY80 \\ & + MYOUTH80 + FYOUTH80 + FOREIGN80 \\ & + BLACK80 + HISPANIC80 + NOCAR80] \\ & + [d] \times [ISOBLK80 + ISOHSP80 \\ & + MFGLOC80\text{-}88 + NOACCESS80] \\ & + [p] \times [NELPOOR79 + ?\ POV > X79 \\ & - HISTAT79 + ?\ STAT > X79 \\ & - INC30P79 + ?\ INC > X79] + e_{ij} \end{aligned} \tag{7}$$

where a, $[b]$, $[c]$, $[d]$, and $[p]$ are vectors of regression parameters to be estimated; e is a random error term; and all variables are defined as above.[21] The $[b]$ vector relates to variables serving as proxies for MSA-wide external factors; the $[c]$, $[d]$, and $[p]$ vectors relate to variables serving as proxies for (People_{ij}), (Place_{mij}), and (Place_{nij}) components, respectively. Signs indicate expected coefficient signs, with ? indicating an ambiguous prediction.

[21] Our estimating equation suffers from two forms of heteroskedasticity for which we will correct in a subsequent article. First, in conventional regression models, it is assumed that the error term e in equation (7) is (among other things) of constant variance and uncorrelated across observation. In the present application, these assumptions are violated, rendering ordinary least-squares estimates of parameters inefficient and their standard errors biased (Pindyck and Rubinfeld 1981). Because our census tract units of observation vary by population and, therefore, by the size of the sample employed by the Census Bureau, heteroskedasticity will be present.

Second, the estimating equation is a cross-sectional regression with a neighborhood's poverty growth on the left-hand side and several metropolitan-area variables on the right-hand side. Each metropolitan area contains several neighborhoods in the sample, so metropolitan-area variables affect all included neighborhoods. If the variables included in the model do not capture all metropolitan-area characteristics that affect a neighborhood's poverty growth, some unmeasured characteristics will be correlated with poverty growth in every neighborhood in a given metropolitan area. This situation implies that the error terms of the model are correlated across neighborhoods within a given metropolitan area. In such a grouped structure, ordinary least squares also produce inefficient parameter estimates and biased standard errors.

Results

We report four sets of empirical results, beginning with results for the black subsample because African Americans have been the focus of the literature on the growth of urban poverty.

The black subsample

Overall, the results for the black subsample show that our model explains roughly a quarter of the cross-tract variation in the growth of poverty rates (table 2). Because the model is exploratory, we employ more conservative two-tailed tests of significance. Nevertheless, most coefficients prove statistically significant, especially those associated with variables grouped in the people-external and place-external categories.

The results provide weak support for the hypothesized relationships between external factors and poverty growth in African-American neighborhoods (table 2). Changes in AFDC benefits have no significant effect on poverty growth. This finding stands in sharp contrast to the conclusions of Eggers and Massey (1991), who found that AFDC benefits have substantial effects on African-American poverty rates at the metropolitan-area level, and in contrast to Mincy (1990), who found that the ratio of AFDC benefits to earnings significantly affects the value of the Ricketts and Sawhill (1988) underclass indicator in African-American neighborhoods.

Further, only one of the two variables representing changes in the metropolitan economy, *JOB/POP80-88*, has a significant correlation with poverty growth, which is positive, as expected. Thus, reductions in the ratio of jobs to population in the metropolitan area appear to have a particularly strong effect on poverty growth in African-American neighborhoods. This finding is consistent with Galster (1991), Eggers and Massey (1991), and Mincy (1990). In our model, a one-standard-deviation increase in this variable more than doubles the increase in poverty growth in African-American neighborhoods (compare the standardized impact = .0333 with *NELPOOR79* mean = .032 in table 2). However, once we control for this effect—and control for the changing location of manufacturing employment (below)—the changing industrial composition of metropolitan-area employment (*MFGSHARE80-88*) has no significant effect on poverty growth in African-American neighborhoods. By contrast, Eggers and Massey (1991) and Hughes (1989) found a statistically significant and negative effect of manufacturing's share of

Table 2. **Results of Black Regression**
(Adjusted R-squared = 0.2837; N = 3,136; Mean of dependent variable = 0.032)

Model Component	Explanatory Variable	Regression Coefficient	Standard Error	Standardized Impact
	Intercept	−0.181[a]	0.051	
External factors	JOP/POP80-88	1.000[a]	0.056	0.0333
	MFGSHARE80-88	0.183	0.108	
	WELFARE88-80	−0.00007	0.0001	
People-external factors	EDMISMAT80	0.196[a]	0.026	0.0224
	NOMARRY80	0.275[a]	0.024	0.0365
	MYOUTH80	0.303[a]	0.060	0.0109
	FYOUTH80	0.431[a]	0.057	0.0174
	FOREIGN80	−0.153[a]	0.025	−0.0141
	NOCAR80	−0.028	0.017	
	BLACK80	−0.067[a]	0.015	−0.0107
	HISPANIC80	−0.144[a]	0.030	−0.0110
Place-external factors	NOACCESS80	−0.001[a]	0.0001	−0.0116
	MFGLOC80-88	0.207[a]	0.049	0.0073
	ISOBLK80	0.046[b]	0.018	0.0069
Place-internal factors	NELPOOR79	−0.427[a]	0.039	−0.749
	POV025	−0.022	0.028	
	POV05	−0.037[b]	0.016	
	POV10	−0.017	0.009	
	POV15	−0.008	0.007	
	POV35	−0.012	0.007	
	POV50	−0.015	0.009	
	HISTAT79	0.012	0.069	−0.0013
	STAT05	−0.001	0.010	
	STAT10	−0.007	0.006	
	STAT15	−0.015[a]	0.005	
	STAT20	0.006	0.007	
	STAT25	−0.013	0.009	
	INC30P79	−0.170[a]	0.060	−0.0138
	INC10	−0.007	0.006	
	INC20	−0.0001	0.008	
	INC30	0.011	0.010	
	INC40	0.016	0.013	

Note: Standardized impacts are the change in *NELPOOR89-79* associated with a one-standard-deviation increase in the independent variable. The impact on *NELPOOR89-79* of a one-standard-deviation increase in *NELPOOR79* that occurs in the range of the spline (i.e., *POV05*) is calculated by summing the coefficients on *NELPOOR79*, *POV25*, and *POV05* and then multiplying by the standard deviation of *NELPOOR79*.
[a] Significant at the 0.01 level or beyond, two-tailed test.
[b] Significant at the 0.05 level or beyond, two-tailed test.

metropolitan-area employment on the level of poverty among African-American residents.

The data provide stronger support for the hypothesized relationships between people-external variables and poverty growth.

Except for *FOREIGN80*, *NOCAR80*, *BLACK80*, and *HISPANIC80*, all of the coefficients for people-external variables are statistically significant with the expected signs. Thus, neighborhood poverty grew faster in African-American neighborhoods that have high proportions of youth, unmarried households, and persons with less schooling than that associated with the mix of occupations in the metropolitan area. This finding is consistent with the findings of Mincy (1990), who determined that the same education variable has a large positive correlation with the Ricketts and Sawhill (1988) underclass indicator in African-American neighborhoods and with Eggers and Massey (1991), who found that higher fractions of African Americans with a college education are associated with a lower poverty rate among African Americans in metropolitan areas. Among these variables, the fraction of unmarried households has the largest apparent effect on poverty growth. A one-standard-deviation increase in the fraction of unmarried households would more than double the increase in poverty growth (table 2).

On the other hand, three of the four exceptions (*FOREIGN80*, *BLACK80*, and *HISPANIC80*) have statistically significant coefficients with unexpected signs. The first, *FOREIGN80*, may result because foreign-born residents of majority African-American neighborhoods (e.g., Africans, West Indians, and Hispanics) are better off or more willing to accept low-paying employment than are U.S.-born African Americans (Piore 1979). We can only guess at the interpretation of the unexpected signs for *BLACK80* and *HISPANIC80*, after noting that our model already controls for several poverty-inducing variables that are highly correlated with minority status. It could be that among predominantly African-American neighborhoods, those with higher fractions of minorities have greater economic and political solidarity and stronger community institutions than otherwise similar but more racially mixed tracts. Residents of these neighborhoods might be better able to develop working relationships and networks that reduce poverty among neighbors or to attract nonpoor minority members who prefer to live among their own race. There is some disagreement in the literature about the extent to which such ethnic enclave arrangements operate among African Americans (Kasarda 1989; Stack 1974).

The data provide mixed support for the effects of place-external factors on poverty growth in predominantly African-American neighborhoods. The coefficient of *MFGLOC80-88* is highly significant and positive, as expected. Thus, as the fraction of metropolitan-area manufacturing employment declines in the county containing observed African-American neighborhoods, poverty rates in those neighborhoods grow more rapidly. This result is broadly consistent with Eggers and Massey (1991), who found that the higher the share of manufacturing employment located in the suburbs, the higher the African-American poverty rate in the metropolitan area.

The coefficient of *ISOBLK80* is also significant with the expected positive sign. Thus, African-American neighborhoods in highly segregated metropolitan areas experienced more-rapid poverty growth. However, the coefficient of *NOACCESS80* is also significant with an unexpected negative sign, suggesting that African-American neighborhoods located in counties with limited access to metropolitan-area-wide employment experienced slower poverty growth. This latter result could be interpreted in light of our finding that in the black subsample, the share of manufacturing jobs located in the county is more important than the overall industrial composition of metropolitan-area employment. Thus, if African Americans are concentrated in large metropolitan counties, which constitute the effective labor market, opportunities elsewhere in the metropolitan area are less relevant.

Finally, the data also generally support the hypothesized relationships between place-internal variables and poverty growth in African-American neighborhoods. The coefficient of *NELPOOR89-79* is −.43 and is statistically significant. Superficially, this coefficient does not appear to support the hypothesis that the predetermined poverty rate increases poverty growth. In fact, however, it does support the hypothesis, inasmuch as *NELPOOR79* appears on both sides of the equation and thus the null hypothesis of no effect would produce a coefficient of −1.0.[22] Further, the relationship between the predetermined poverty rate and the poverty rate in the following decade is approximately piecewise linear, with virtually no net relationship between the level of poverty and its growth manifested until the level passes 10 percent, whereupon linearity prevails. These findings are consistent with those of Clark (1992), whose results (using high school dropouts for the dependent variable) also failed to confirm the epidemic variant of contagion effects advanced by Crane (1991), wherein the relationship becomes highly nonlinear (approximately exponential) past some critical value.

[22]The estimated coefficient for *NELPOOR79* (c) implicitly embodies both behavioral (b) and tautological (t) components. Because *NELPOOR79* appears on both sides of the equation (and is subtracted on the left-hand side), $t = -1$. The key parameter to test the endogenous poverty growth hypothesis is b. Thus, for any estimated value of c, b can be determined by $b = c + 1$. Here, $b = -.43 + 1 = .57$, thereby supporting the hypothesis.

Although the coefficient of *HISTAT79* is (marginally) not significant, poverty growth is modestly lower in tracts in which the proportion of neighborhood residents with high-status occupations exceeds 15 percent. On the other hand, the coefficient of *INC30P79* is significant and has the expected negative sign. This result, and the lack of significant coefficients for the associated dummy variables, supports the hypothesis that the fraction of middle-income families in predominantly African-American neighborhoods has a modest and negatively linear effect on poverty growth.

The Hispanic subsample

Overall, the regression explains 40 percent of the variation in poverty-rate growth across predominantly Hispanic census tracts. Although similar on many grounds, these results differ in important ways from those generated from the black subsample.

Two of the external factors—employment rates and industrial composition of employment—apparently have similar effects on poverty growth in Hispanic and African-American neighborhoods (tables 2 and 3). *JOB/POP80-88* has a significant and positive association with poverty growth in Hispanic neighborhoods, as was the case in African-American neighborhoods. The size of this effect also mirrors our findings for the black subsample, so a one-standard-deviation increase in *JOB/POP80-88* nearly doubles the increase in poverty growth in Hispanic neighborhoods. Also as we found in the black subsample, declines in manufacturing's share of metropolitan-area employment apparently do not affect poverty growth in Hispanic neighborhoods. This finding is not consistent with the findings of Eggers and Massey (1991). On the other hand, increases in welfare benefits (*WELFARE88-80*) apparently have a significant and positive effect on poverty growth in Hispanic neighborhoods, whereas no such effect was found in African-American neighborhoods.[23] This finding is consistent with results reported by Eggers and Massey (1991).

Several people-external variables also have different relationships with poverty growth in Hispanic and African-American

[23]Actually, welfare benefits were falling an average of $48 in Hispanic neighborhoods (see table A.2). Nevertheless, welfare benefits had a positive effect on poverty growth. So Hispanic neighborhoods in states in which welfare benefits were falling at a slower pace, all else being equal, experienced slower declines in poverty.

Table 3. **Results of Hispanic Regression**
(Adjusted R-squared = 0.4000; N = 910; Mean of dependent variable = 0.024)

Model Component	Explanatory Variable	Regression Coefficient	Standard Error	Standardized Impact
	Intercept	−0.048	0.071	
External factors	JOP/POP80-88	0.738[a]	0.109	0.0234
	MFGSHARE80-88	−0.162	0.246	
	WELFARE88-80	0.001[a]	0.0001	0.0278
People-external factors	EDMISMAT80	0.130[a]	0.037	0.0210
	NOMARRY80	0.236[a]	0.037	0.0295
	MYOUTH80	0.332[a]	0.099	0.0146
	FYOUTH80	0.167	0.110	
	FOREIGN80	−0.027	0.019	
	NOCAR80	0.085[a]	0.024	0.0223
	BLACK80	0.036	0.034	
	HISPANIC80	0.046	0.030	
Place-external factors	NOACCESS80	−0.001[a]	0.0002	−0.0232
	MFGLOC80-88	0.032	0.125	
	ISOHSP80	−0.116[a]	0.044	−0.0078
Place-internal factors	NELPOOR79	−0.703[a]	0.062	−0.0897
	POV05	−0.018	0.035	
	POV10	0.004	0.016	
	POV15	0.002	0.011	
	POV35	0.007	0.012	
	POV50	−0.005	0.013	
	HISTAT79	−0.095	0.157	
	STAT05	0.018	0.011	
	STAT10	−0.002	0.009	
	STAT15	0.001	0.011	
	STAT20	−0.005	0.014	
	STAT25	−0.002	0.020	
	INC30P79	−0.589[a]	0.128	
	INC10	0.016	0.010	−0.0550
	INC15	0.032[a]	0.010	
	INC20	0.024	0.013	
	INC30	0.065[a]	0.022	
	INC40	0.022	0.040	

Note: Standardized impacts are the change in *NELPOOR89-79* associated with a one-standard-deviation increase in the independent variable. The impact on *NELPOOR89-79* of a one-standard-deviation increase in *NELPOOR79* that occurs in the range of the spline (i.e., *POV05*) is calculated by summing the coefficients on *NELPOOR79*, *POV25*, and *POV05* and then multiplying by the standard deviation of *NELPOOR79*.
[a] Significant at the 0.01 level or beyond, two-tailed test.
[b] Significant at the 0.05 level or beyond, two-tailed test.

neighborhoods. Among the people-external variables, only *MYOUTH80*, *NOMARRY80*, *NOCAR80*, and *EDMISMAT80* are statistically significant, each with the expected positive sign. So poverty grew faster in Hispanic neighborhoods with higher fractions of male youth, unmarried households, households lacking a car, and persons with less schooling than that associated with the mix of occupations in the metropolitan area. Except for *NOCAR80*, which was not significant in the black equation, the standardized impacts of these variables are similar to those in the black equation. Kasarda (1989) has hypothesized that the lack of car ownership exacerbates the effects of spatial mismatch among low-skilled urban residents. Our data do not support this hypothesis for African Americans but do support it for Hispanics. It could be that African-American workers are unlikely to search in outlying areas, regardless of their mode of transportation (perhaps because they believe they would be denied employment opportunities anyway), whereas Hispanic workers have found suburban and exurban employment more readily available (Tienda and Steir 1991). Also, Hispanic workers are much less concentrated in central cities than African Americans. Therefore, car ownership is critical for Hispanic workers, but African-American workers can rely more on public transportation. Finally, Hispanic neighborhoods may be clustered in newer metropolitan areas in the West and Southwest, where development is more dispersed and public transportation less developed; therefore, car ownership plays a more important role in gaining access to employment.[24]

The data do not support the hypothesized relationships between place-external variables and poverty growth in Hispanic neighborhoods. Unlike the black subsample, reductions in the county's share of total manufacturing employment in the metropolitan area have no effect on poverty growth in Hispanic neighborhoods. This finding also contrasts with Eggers and Massey (1991), who found that the poverty rate among Hispanics in a metropolitan area is positively correlated with the fraction of manufacturing employment located in suburban areas. Further, the coefficients of *ISOHSP80* and *NOACCESS80* are significant but with unexpected negative signs. Thus, Hispanic neighborhoods experienced slower poverty growth if they were in highly segregated metropolitan areas and if they were in counties with limited access to employment throughout the metropolitan area. The former result seems paradoxical, unless high levels of Hispanic/non-Hispanic segregation in the metropolitan area mean more effective ethnic employment networks for residents of Hispanic neighborhoods. This possibility seems unlikely, given that the *HISPANIC80* result is insignificant. The *NOACCESS80* result is also counterintuitive, especially considering the earlier results for *NOCAR80*.

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[24]We thank Steven Hornburg for this suggestion.

Relationships between place-internal variables and poverty growth in Hispanic neighborhoods are similar to the corresponding results in African-American neighborhoods. The coefficient of *NELPOOR79* is significant and negative, as before, but the implicit parameter value has the expected positive sign. However, compared with the black subsample, the 1979 poverty rate in Hispanic neighborhoods apparently has a smaller (and linear) effect on the 1989 poverty rate.[25] Coefficients for *INC30P79* and the associated *INC > X* dummy variables suggest that the effect of the fraction of middle-income families on poverty growth in predominantly Hispanic neighborhoods is modest and approximately piecewise linear[26] but again is inconsistent with the epidemic effects variant of the contagion model.

The white subsample

Before reporting the results of our regression for the white subsample, we point out some significant differences in the descriptive statistics between white and minority neighborhoods, which will help interpret these results (tables A.1 through A.4). We focus on the contrast between white and African-American subsamples. Except for a few obvious or well-known cases (e.g., *FOREIGN80*, *HISPANIC80*, *BLACK80*, *ISOBLK80*, *ISOHSP80*, and *NOMARRY80*), the descriptive statistics for Hispanics and African Americans are similar.

Recall that we defined white and black neighborhoods asymmetrically so that we could separate highly segregated neighborhoods from mixed neighborhoods. Whites represent at least 90 percent of the tract population in our white subsample, while African Americans represent 50 percent or more of the tract population in our black subsample. As a result, the demographic characteristics of white and African-American neighborhoods are very different. These neighborhoods are in counties and metropolitan areas that also show interesting variations.

First and not surprisingly, poverty trends differed in African-American and white neighborhoods. Compared with African-American neighborhoods, poverty in white neighborhoods in 1979 was lower and grew less rapidly between 1979 and 1989.

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[25] Using the equation to infer this effect described in footnote 22, we have p_1 = 0.30 compared with .57 for the black subsample.

[26] There is virtually no relationship between *INC30P79* and *NELPOOR89-79* until *INC30P79* exceeds 30 percent in a tract, whereupon the relationship becomes mildly inverse.

Also, the variance in poverty growth was lower from one white neighborhood to another. Of course, there were differences between African-American and white neighborhoods in other poverty-related demographic characteristics. Residents of white neighborhoods were somewhat older, much more likely to work in high-status jobs, and much more likely to have levels of schooling more closely matched to the levels associated with the mix of occupations in the metropolitan area. Households in white neighborhoods were much more likely to own cars, be married, and have incomes of $30,000 or more. These differences are well known.

Less recognized are differences in the geographic areas in which African-American and white neighborhoods are located. African-American neighborhoods are predominantly in counties and metropolitan areas that jointly experienced similar reductions in manufacturing's share of total employment. By contrast, white neighborhoods are predominantly in counties in which the reduction in manufacturing's share of total employment was much less than the corresponding reduction in the metropolitan area. As a result, the national reduction in manufacturing employment is less likely to have reduced such employment opportunities for residents of white neighborhoods.

Because of these differences, the variables included in our model affect poverty growth in African-American and white neighborhoods differently. Among the external factors, *MFGSHARE80-88* has a significant coefficient in the white subsample but with an unexpected negative sign. This result could occur because shifts in the industrial composition of employment from manufacturing to services favored highly skilled workers. By contrast, the coefficient of *JOB/POP80-88* is significant and positive in the white subsample regression. Just as in African-American and Hispanic neighborhoods, if the decline in the ratio of jobs to population is one standard deviation larger, the poverty growth in white neighborhoods doubles. Eggers and Massey (1991) found no such effect for whites. Finally, declines in welfare benefits (*WELFARE88-80*) apparently modestly reduce poverty growth in white neighborhoods. Welfare benefit declines had a larger negative effect on poverty growth in Hispanic neighborhoods and no effect on poverty growth in African-American neighborhoods. Eggers and Massey (1991) found, by contrast, that welfare benefits had the largest effects on the metropolitan-area poverty rates of African Americans, smaller effects on Hispanic poverty rates, and virtually no effect on white poverty-rate variations across MSAs.

Among the people-external variables, all except *EDMISMAT80* and *FOREIGN80* have statistically significant coefficients, with the expected signs (table 4). *NOMARRY80*, *MYOUTH80*, and *FYOUTH80* have standardized impacts relative to the dependent-variable mean comparable to those found in the black subsample. *NOCAR80*, which had no effect on poverty growth in African-American neighborhoods, was statistically significant with the expected sign in the white subsample. Further, the coefficients of *BLACK80* and *HISPANIC80* are both significant and positive. This is the first time these variables have the expected signs. Thus, predominantly white neighborhoods with more minorities living in them have higher neighborhood poverty growth, perhaps because their minority residents are more vulnerable to external forces rendering them poor.

By contrast, place-external variables seemingly have similar effects on poverty growth in African-American and white neighborhoods. The coefficient of *MFGLOC80-88* is significant and positive, as expected. Thus, a decline in the county's share of manufacturing employment in the metropolitan area would increase poverty growth in white neighborhoods by about 25 percent. This effect is comparable to the corresponding effect in African-American neighborhoods. Consistent with the findings of the regressions for our minority subsamples, the coefficient of *NOACCESS80* is significant and has the unexpected negative sign. We must examine whether this variable accurately measures employment access. Perhaps variance in the denominator (the share of all MSA jobs located in the county) is swamping the numerator (the share of tract residents' workplaces located in the county). If so, the negative sign is quite interpretable as a measure of generalized job accessibility, as opposed to manufacturing in particular, which was measured by *MFGLOC80-88*.

Finally, the data generally support our hypothesized relationships between place-internal variables and poverty growth in white neighborhoods. Thus, poverty growth is higher in white neighborhoods that have higher 1979 poverty rates and, even after controlling for schooling (*EDMISMAT80*), the growth in poverty between 1979 and 1989 is slower in white neighborhoods with more middle-income families and more residents with high-status jobs. Unlike the minority subsample regressions, however, evidence of nonlinearities in the effects of place-internal variables is clearer in the white subsample regression. For example, the net effect of the 1979 poverty rate on the poverty rate change in white neighborhoods is virtually nil for neighborhoods with 1979 poverty rates of less than 5 percent. Then there

Table 4. **Results of White Regression**
(Adjusted R-squared = 0.2453; N = 10,862;
Mean of dependent variable = 0.010)

Model Component	Explanatory Variable	Regression Coefficient	Standard Error	Standardized Impact
	Intercept	0.101[a]	0.016	
External factors	JOP/POP80-88	0.366[a]	0.014	0.0115
	MFGSHARE80-88	−0.177	0.019	−0.0040
	WELFARE88-80	0.0001[a]	0.00001	0.0018
People-external factors	EDMISMAT80	−0.004	0.009	
	NOMARRY80	−0.097[a]	0.005	0.0132
	MYOUTH80	0.150[a]	0.017	0.0051
	FYOUTH80	0.180[a]	0.017	0.0058
	FOREIGN80	−0.017	0.010	
	NOCAR80	0.056[a]	0.006	0.0060
	BLACK80	0.233[a]	0.024	0.0040
	HISPANIC80	0.075[b]	0.027	0.0011
Place-external factors	NOACCESS80	−0.0001[a]	0.00002	−0.0018
	MFGLOC80-88	−0.065[a]	0.011	0.0025
Place-internal factors	NELPOOR79	−0.315[a]	0.025	−0.0223
	POV025	−0.011[a]	0.001	
	POV05	−0.009[a]	0.001	
	POV10	−0.004[b]	0.002	
	POV15	0.008[a]	0.003	
	POV35	0.007	0.008	
	HISTAT79	−0.018	0.010	−0.0105
	STAT05	−0.055[a]	0.009	
	STAT10	−0.012[a]	0.003	
	STAT15	−0.007[a]	0.002	
	STAT20	−0.004[a]	0.001	
	STAT25	−0.002	0.001	
	INC30P79	−0.036[a]	0.008	−0.0076
	INC10	−0.009[a]	0.002	
	INC15	−0.009[a]	0.002	
	INC20	−0.006[a]	0.002	
	INC30	−0.004[a]	0.002	
	INC60	0.007[a]	0.002	
	INC70	0.005	0.003	

Note: Standardized impacts are the change in *NELPOOR89-79* associated with a one-standard-deviation increase in the independent variable. The impact on *NELPOOR89-79* of a one-standard-deviation increase in *NELPOOR79* that occurs in the range of the spline (i.e., *POV05*) is calculated by summing the coefficients on *NELPOOR79*, *POV25*, and *POV05* and then multiplying by the standard deviation of *NELPOOR79*.
[a] Significant at the 0.01 level or beyond, two-tailed test.
[b] Significant at the 0.05 level or beyond, two-tailed test.

is an upward shift in this relationship for white neighborhoods with 1979 poverty rates exceeding 15 percent, after which a linear relationship is manifested. The inverse relationship between *NELPOOR89-79* and *INC30P79* attenuates as middle-class residents become a majority in a neighborhood, and there is some evidence that a paucity of such households below successive thresholds of 30, 20, 15, and 10 percent is associated with progressively larger increases in poverty growth. Finally, the inverse effect on poverty growth of the proportion of neighborhood residents with high-status occupations shifts abruptly downward for neighborhoods in which more than 5 percent of the residents hold such occupations, after which the relationship between poverty growth and the proportion of neighborhood residents with high-status occupations becomes approximately linear. The results for the occupational status and middle-class variables supply modest support for epidemic effects because of the distinct nonlinearities observed for lower values of these variables.

The mixed subsample

The results for the mixed subsample bear interesting relationships to the results for the other subsamples (table 5). In both white and mixed subsamples, the equations explained roughly one-quarter of the variation in *NELPOOR89-79*. Parameter estimates are surprisingly similar to the results for the black subsample, and therefore different from the results for the other subsamples. Both the qualitative similarities and differences are intriguing.

Consistent with the results of all other subsamples, declines in the job-to-population ratio (*JOB/POP80-88*) apparently have a significant, positive, and large effect on poverty in mixed neighborhoods. This variable (and *NOMARRY80*) is remarkably stable in all four subsamples. The effects of other external factors are similar to the black subsample regression. So, declines in manufacturing's share of metropolitan-area employment (*MFGSHARE80-88*) and declines in welfare benefits do not affect poverty growth in mixed neighborhoods.

Most of the people-external variables also have similar effects on poverty growth in African-American and mixed neighborhoods. For example, the proportion of households lacking a car (*NOCAR80*) does not affect poverty growth in mixed neighborhoods, while *EDMISMAT80*, whose mean value in mixed neighborhoods is between the mean values of *EDMISMAT80* in the black and white subsamples, has a significant positive effect on poverty growth in mixed neighborhoods.

Table 5. **Results of Mixed Regression**
(Adjusted R-squared = 0.2537; N = 7,333; Mean of dependent variable = 0.026)

Model Component	Explanatory Variable	Regression Coefficient	Standard Error	Standardized Impact
	Intercept	−0.120[a]	0.023	
External factors	JOP/POP80-88	0.568[a]	0.026	0.0189
	MFGSHARE80-88	0.019	0.045	
	WELFARE88-80	0.00001	0.00003	
People-external factors	EDMISMAT80	0.129[a]	0.015	0.0177
	NOMARRY80	0.162[a]	0.008	0.0273
	MYOUTH80	0.189[a]	0.027	0.0074
	FYOUTH80	0.394[a]	0.029	0.0146
	FOREIGN80	−0.040[a]	0.010	−0.0046
	NOCAR80	−0.001	0.008	
	BLACK80	0.017[b]	0.007	0.0022
	HISPANIC80	−0.019[b]	0.009	−0.0025
Place-external factors	NOACCESS80	−0.0003[a]	0.00004	−0.0069
	MFGLOC80-88	0.279[a]	0.025	0.0092
Place-internal factors	NELPOOR79	−0.450[a]	0.026	−0.0409
	POV025	−0.015[a]	0.005	
	POV05	−0.014[a]	0.003	
	POV15	0.006	0.003	
	POV35	−0.003	0.007	
	POV40	0.024[a]	0.009	
	POV50	0.015	0.012	
	HISTAT79	−0.062[b]	0.031	−0.0059
	STAT15	−0.003	0.003	
	STAT25	0.004	0.003	
	STAT35	0.001	0.004	
	STAT45	0.011[b]	0.005	
	STAT55	0.022[a]	0.007	
	INC30P79	−0.111[a]	0.017	−0.0093
	INC05	−0.009	0.005	
	INC10	−0.009[a]	0.003	
	INC15	−0.004	0.003	
	INC40	0.009[b]	0.004	
	INC50	0.010[b]	0.005	
	INC60	0.012	0.006	
	INC70	0.024[b]	0.008	

Note: Standardized impacts are the change in *NELPOOR89-79* associated with a one-standard-deviation increase in the independent variable. The impact on *NELPOOR89-79* of a one-standard-deviation increase in *NELPOOR79* that occurs in the range of the spline (i.e., *POV05*) is calculated by summing the coefficients on *NELPOOR79*, *POV25*, and *POV05* and then multiplying by the standard deviation of *NELPOOR79*.
[a] Significant at the 0.01 level or beyond, two-tailed test.
[b] Significant at the 0.05 level or beyond, two-tailed test.

These results are interesting, considering the Hispanic sub-sample regression. Recall that *EDMISMAT80* had no effect on poverty growth in Hispanic neighborhoods, even though the mean value of *EDMISMAT80* in these neighborhoods was the highest of all the subsamples. Also, *NOCAR80* increased poverty growth in Hispanic neighborhoods, while neither the declining share of MSA manufacturing employment located in the county (*MFGLOC80-88*) nor the manufacturing employment share in the metropolitan area (*MFGSHARE80-88*) had such effects.

Perhaps these findings mean that residents of Hispanic neighborhoods search for employment in fundamentally different labor markets than other racial and ethnic groups. They may be more willing to take low-skilled (and low-paying) jobs in manufacturing or other industries. And they may be more willing to commute to job sites where (or during hours when) public transportation is unavailable; hence, the dominant significant effect is that of *NOCAR80*. There are consistent results and arguments in the literature. For example, Tienda and Steir (1991) report that Mexican-American (and to a lesser extent, Puerto Rican) workers in poor neighborhoods had higher labor force participation rates than African Americans, despite lower levels of schooling. Wilson and Mead (1987) and Kasarda (1989) argue that Hispanic workers have higher rates of labor force participation than African-American workers because the former use carpools to commute to distant, low-paying jobs. Tienda and Steir (1991) present qualitative evidence showing that African Americans believe suburban employers are more willing to hire Hispanic workers. Employer responses suggest that this is true of suburban and nonsuburban employers (Kirschenman and Neckerman 1991). Clearly, we need to better understand how the racial and ethnic composition of neighborhoods filters the effect of economic restructuring to its residents.

Two of the people-external variables perform differently in the mixed subsample regression. Although minorities represent, on average, about 11 percent of the population in mixed neighborhoods, the (statistically significant) coefficients of *BLACK80* and *HISPANIC80* in the mixed subsample have opposite signs. The higher the fraction of African Americans in mixed neighborhoods, the greater the growth in poverty; the higher the fraction of Hispanics in mixed neighborhoods, the smaller the growth in poverty. This finding has no easy interpretation. Since poverty rates are high, on average, in predominantly minority neighborhoods, upwardly mobile minorities probably try (and are able) to live in the observed mixed neighborhoods. Nevertheless, African-American residents of such mixed neighborhoods are apparently more vulnerable to changes in external factors than other residents, while Hispanics are less so. Another possibility is that mixed neighborhoods with higher fractions of African Americans have idiosyncratic locational disadvantages not otherwise measured in the model; the opposite could be true for mixed areas with higher fractions of Hispanics.

The place-external variables, *NOACCESS80* and *MFGLOC80-88*, affect poverty growth in mixed neighborhoods as they affect such growth in African-American neighborhoods. Both variables have significant coefficients, and the former has the unexpected negative sign. A one-standard-deviation increase in *MFGLOC80-88* increases the poverty rate by 0.009 in mixed neighborhoods and by 0.007 in African-American neighborhoods. That the standardized impact of *MFGLOC80-88* on poverty growth is larger in mixed neighborhoods than in African-American neighborhoods is not important.[27] The important finding is that reductions in the county's share of metropolitan-area manufacturing employment have similar effects on poverty growth in mixed and African-American neighborhoods. Though this spatial argument is central to ghetto poverty literature, 71 percent of the residents of mixed neighborhoods, on average, are non-Hispanic whites, and the average poverty rate of these neighborhoods in 1979 was 14 percent, compared with 30 percent in African-American neighborhoods. From a policy viewpoint, therefore, the focus on the effects of macrostructural changes on poverty in African-American ghettos may be diverting attention from the similar effects of such changes on low-skilled workers (African American and white) who live in more typical American neighborhoods.

Finally, the effects of place-internal variables on poverty growth in mixed neighborhoods are least similar to the corresponding effects in African-American neighborhoods. There is some evidence of epidemic effects in the former but not in the latter. For example, the positive (implicit coefficient) effect of the 1979 poverty rate on the growth in poverty in mixed neighborhoods shifts downward for neighborhoods with poverty rates of less than 5 percent. This effect then begins to rise and shows an abrupt upward shift for mixed neighborhoods with 1979 poverty rates exceeding 40 percent. Notable increases also occur in the negative effects of both the proportion of middle-income families and the proportion of high-occupational-status families in mixed neighborhoods when the variables fall below 40 percent and 45 percent, respectively.

[27] If we accounted for the standard errors of the coefficient estimates, we would not be able to reject the hypothesis that the impacts were the same.

Summary and conclusions

This article examines the effects of cross-sectional variations in metropolitan-area economic trends on the growth of poverty rates in black, Hispanic, white, and mixed neighborhoods between 1979 and 1989. We account for several measures of metropolitan-area changes, including employment rates, changing industrial composition, and welfare benefit rates. If the effects of these changes were evenly distributed across space, we could predict changes in a neighborhood's poverty rate by assuming the same proportional increase as for the poverty rate in the entire metropolitan area. However, spatial and demographic factors unique to each neighborhood cause the effects of (externally generated) metropolitan-area changes to vary from one neighborhood to another. Other factors operating within each neighborhood apparently generate higher poverty rates independent of metropolitan-wide conditions.

We account for a rich set of what we call people-external, place-external, and place-internal variables that reflect the major hypotheses in the literature on the underclass and concentrated poverty. Our list of people-external variables includes car ownership; schooling and occupational mismatches; and the racial, ethnic, foreign-born, family, and age composition of the neighborhood population. Our list of place-external variables includes the degree of segregation, the location of manufacturing employment, and a measure of neighborhood residents' access to employment in the metropolitan area. Finally, our list of place-internal variables includes the predetermined (1979) tract poverty rate, the proportion of middle-income households, and the proportion of high-status jobholders in the neighborhood, plus dummy variables to test for nonlinearities.

Because African-American neighborhoods in northern urban areas have higher poverty rates, on average, than neighborhoods with other race and ethnic majorities, theoretical and empirical work has focused on the increase in African-American neighborhood poverty rates. However, in the 1980s, poverty rates grew rapidly in white neighborhoods in smaller metropolitan and nonmetropolitan areas. This finding provokes the question of whether the causes of increasing poverty in black, white, Hispanic, and mixed neighborhoods could be similar. Therefore, we estimate separate models for subsets of neighborhoods specified by predominant racial-ethnic composition.

We use this model to answer the following questions:

1. Do metropolitan-wide changes in economic structure affect individual neighborhoods primarily by affecting the viability of the particular types of people residing there or by affecting the nonhuman attributes associated with that neighborhood?

2. Does the neighborhood's poverty rate tend to grow disproportionately once it reaches a certain level of poverty, regardless of changes in metropolitan economic conditions?

3. Do answers to the above questions depend significantly on the racial-ethnic classification of the neighborhoods under consideration?

What do we learn about the first question? The employment rate is the only metropolitan-area external factor with a consistently significant and positive apparent effect on neighborhood poverty growth across all neighborhoods of all race-ethnic majorities. Two people-external variables (age composition and proportion of nonmarried households) also have significant and positive effects on neighborhood poverty growth in all neighborhoods, suggesting that these demographic characteristics serve as proxies for vulnerability to macroeconomic conditions. The estimated effect of the proportion of nonmarried households is particularly large.

In answer to our second question, we found that the 1979 poverty rate has a significant and positive effect on the 1979–89 neighborhood poverty rate growth, no matter what the racial or ethnic majority of the neighborhood. The proportion of middle-income families has a significant and negative effect on subsequent poverty growth in all neighborhoods, although this effect is smaller than the effect of the 1979 poverty rate. The apparent effects of poverty and the proportion of middle-income families on poverty growth are nonlinear, but we could find only modest support for the epidemic effects hypothesis, and then only in white and mixed neighborhoods.

The effects of the other variables on poverty growth depend considerably on the racial or ethnic composition of the neighborhood. Thus, our results strongly affirm our third question. Interestingly, regression results for African-American and mixed neighborhoods are quantitatively and qualitatively similar, even though the typical resident of a mixed neighborhood is nonpoor and non-Hispanic white. However, these results differ from the results of the Hispanic and white regressions, sometimes in ways that we did not predict.

For example, there were important differences in the effects of changes in the industrial composition of employment. Declines in the MSA share of manufacturing employment located in the county of the observed neighborhood apparently increased poverty growth in African-American, mixed, and white neighborhoods but had no effect on poverty growth in Hispanic neighborhoods. This effect on poverty growth was more than offset in white neighborhoods by declines in manufacturing's overall share of metropolitan-area employment, but this latter factor had no significant offsetting effect on poverty growth in African-American, mixed, or Hispanic neighborhoods.

The effects of the proportion of minorities in a neighborhood on poverty growth also varied, depending on which race or ethnic group represented the majority of the neighborhood's population. After controlling for other poverty-related variables, higher proportions of minorities in the neighborhood appear to reduce poverty growth in African-American neighborhoods, increase poverty growth in white neighborhoods, and have no effect on poverty growth in Hispanic neighborhoods. In mixed neighborhoods, the proportion of African Americans appears to increase poverty growth, but the proportion of Hispanics has the opposite effect. Segregation of the given group increases poverty growth in African-American neighborhoods but decreases poverty growth in Hispanic neighborhoods.

Other variables also have diverse effects, depending on the racial and ethnic composition of the neighborhood. For example, the proportion of households without a car increases poverty growth in Hispanic and white neighborhoods but has no effect on poverty growth in African-American or mixed neighborhoods. And increases in welfare benefits have no effect on poverty growth in African-American and mixed neighborhoods, but such increases in benefits apparently increase poverty growth in other neighborhoods.

Our efforts have been exploratory, and further investigations are clearly needed. It would be useful to test whether our models need to be further disaggregated according to type of MSA; population size and regional distinctions have, for instance, been suggested in the literature. Several interactions between pairs of independent variables are suggested by theory. Finally, experiments with spline specifications of the predetermined poverty rate, income over $30,000, and middle-class status variables might well yield more robust estimates of nonlinear relationships.

Since these results are preliminary, it is too early to expand on their policy and research implications, but two things seem clear. First, the growth of African-American neighborhood poverty depends primarily on the growth of jobs compared with the growth of population and the changing location of manufacturing employment. Therefore, as others have contended, policies focused primarily on changing the internal conditions of ghetto-poor neighborhoods are unlikely to have much effect. Second, these same two metropolitan-area changes have similar effects on the growth of poverty in white, mixed, and African-American neighborhoods. Therefore, studies that focus exclusively on the idiosyncracies of so-called African-American ghetto poverty are unlikely to yield the kinds of insights policy makers need to mobilize more broadly based political support in the fight against universally increasing poverty in all sorts of neighborhoods.

Appendix

Table A.1. **Descriptive Statistics (Black)**

Model Component	Variable	Mean	Standard Deviation
	NELPOOR89-79	0.032	0.109
External factors	JOP/POP80-88	−0.054	0.032
	MFGSHARE80-88	0.043	0.019
	WELFARE88-80	−45.156	38.138
People-external factors	EDMISMAT80	1.256	0.116
	NOMARRY80	0.614	0.140
	MYOUTH80	0.194	0.036
	FYOUTH80	0.208	0.039
	FOREIGN80	0.055	0.087
	NOCAR80	0.385	0.220
	BLACK80	0.827	0.150
	HISPANIC80	0.047	0.077
Place-external factors	NOACCESS80	8.339	13.712
	MFGLOC80-88	0.032	0.038
	ISOBLK80	0.577	0.121
Place-internal factors	NELPOOR79	0.300	0.152
	HISTAT79	0.160	0.079
	INC30P79	0.144	0.114

Table A.2. **Descriptive Statistics (Hispanic)**

Model Component	Variable	Mean	Standard Deviation
	NELPOOR89-79	0.024	0.097
External factors	JOP/POP80-88	−0.039	0.032
	MFGSHARE80-88	0.038	0.018
	WELFARE88-80	−48.434	30.302
People-external factors	EDMISMAT80	1.397	0.140
	NOMARRY80	0.478	0.140
	MYOUTH80	0.204	0.034
	FYOUTH80	0.203	0.031
	FOREIGN80	0.278	0.175
	NOCAR80	0.355	0.269
	BLACK80	0.080	0.113
	HISPANIC80	0.692	0.133
			0.175
Place-external factors	NOACCESS80	11.997	17.528
	MFGLOC80-88	0.019	0.024
	ISOHSP80	0.274	0.066
Place-internal factors	NELPOOR79	0.292	0.139
	HISTAT79	0.121	0.064
	INC30P79	0.117	0.082

Table A.3. **Descriptive Statistics (White)**

Model Component	Variable	Mean	Standard Deviation
	NELPOOR89-79	0.010	0.047
External factors	JOP/POP80-88	−0.056	0.031
	MFGSHARE80-88	0.044	0.023
	WELFARE88-80	−49.104	35.394
People-external factors	EDMISMAT80	1.0911	0.118
	NOMARRY80	0.352	0.142
	MYOUTH80	0.167	0.032
	FYOUTH80	0.166	0.031
	FOREIGN80	0.053	0.054
	NOCAR80	0.096	0.112
	BLACK80	0.012	0.017
	HISPANIC80	0.016	0.017
Place-external factors	NOACCESS80	12.032	21.301
	MFGLOC80-88	0.008	0.037
Place-internal factors	NELPOOR79	0.068	0.058
	HISTAT79	0.288	0.127
	INC30P79	0.349	0.179

Table A.4. **Descriptive Statistics (Mixed)**

Model Component	Variable	Mean	Standard Deviation
	NELPOOR89-79	0.026	0.078
External factors	JOP/POP80-88	−0.047	0.033
	MFGSHARE80-88	0.036	0.021
	WELFARE88-80	−47.071	33.953
People-external factors	EDMISMAT80	1.134	0.132
	NOMARRY80	0.474	0.170
	MYOUTH80	0.173	0.039
	FYOUTH80	0.173	0.037
	FOREIGN80	0.120	0.111
	NOCAR80	0.192	0.197
	BLACK80	0.119	0.131
	HISPANIC80	0.116	0.119
Place-external factors	NOACCESS80	11.499	20.599
	MFGLOC80-88	0.014	0.033
Place-internal factors	NELPOOR79	0.139	0.098
	HISTAT79	0.256	0.124
	INC30P79	0.264	0.164

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The research reported on here is a product of the Urban Institute Under Class Research Project, sponsored by the Rockefeller Foundation.

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