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Neighborhood Effects on AFDC Exits: Examining the Social Isolation, Relative Deprivation, and Epidemic Theories

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Linking data from the Panel Study of Income Dynamics with the 1970 and 1980 censuses, the author finds that, in accordance with the social isolation theory, neighborhood conditions greatly affect the likelihood of exiting the Aid to Families with Dependent Children (AFDC) program. Neighborhood conditions are especially strong predictors of leaving the program for African Americans, high school dropouts, and for those who marry. Members of each of these groups stay on welfare significantly longer when they live in the most economically depressed neighborhoods or neighborhoods with a relatively high proportion of manufacturing relative to professional and executive workers. I test two additional theories of neighborhood effects: relative deprivation and epidemic theories.

There has been considerable debate about the possible negative consequences of living within poor or "underprivileged" neighborhoods but relatively little analysis, mainly because of a lack of data that include neighborhood characteristics. I empirically test which of three theories on the consequences of living in particular types of neighborhoods—the social isolation theory, the relative deprivation theory, or the epidemic theory—holds greater credence in determining the likelihood of leaving the Aid to Families with Dependent Children (AFDC) pro-

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gram. I will also clarify the effect of economic conditions and policy-relevant variables on AFDC exits. If neighborhood variables are important in determining AFDC exit rates, past research that did not incorporate these variables may have biased estimates. The results from the study will give a better indication of which AFDC recipients will be most affected by the recent legislation limiting welfare receipt. It may also give policy makers a better idea of where to most effectively target job assistance aid to former AFDC recipients or women who would previously have qualified for aid.

Background

Many of the studies of neighborhood effects on a variety of outcomes have been inconclusive or have had conflicting conclusions. Among the studies that were inconclusive were analyses that explored the likelihood of dropping out of high school and other educational outcomes, giving birth as a teenager, drug use, and AFDC receipt.[1] On the one hand, a number of researchers found that living in less advantaged neighborhoods had negative, linear effects on educational attainment.[2] On the other hand, several studies found no negative linear effects of disadvantaged neighborhoods on educational outcomes but did find positive effects for living in advantaged neighborhoods.[3] Nonlinear neighborhood effects have also been found in a number of studies on a range of issues, such as dropping out of high school, postsecondary education, nonmarital births, and criminal activity.[4] These results have been mixed, perhaps because it is theoretically unclear how neighborhoods may affect outcomes.

Three theories have been developed to explain how neighborhoods affect outcomes. In the first theory of neighborhoods, the social isolation theory, an abundance of "positive" role models and institutions, or a lack of "negative" role models and institutions, are thought to have a positive effect on outcomes.[5] It is unclear whether individual outcomes are more affected by negative influences or positive influences of neighborhoods. For AFDC recipients, this may mean that having a greater percentage of people in the neighborhood working, for example, may have a positive effect on the likelihood of finding work because of the greater number of possible job contacts. Role models may also have a positive effect on work, and thus exit from AFDC. Those recipients living in neighborhoods in which many people work may be more inclined toward market-based work than those living in neighborhoods in which fewer people work. Just the opposite will be true for people living in areas with relatively few people working.

In the second theory, the relative deprivation theory, it is hypothesized that for some, living in more advantaged neighborhoods may

only create a defeatist atmosphere where it appears impossible to "catch up" to the relatively high standard of living.[6] This fatalism may force some to give up or drop out. Living in less advantaged neighborhoods, conversely, will have the opposite effect, encouraging people to strive to achieve. Hence, AFDC recipients living in relatively wealthy neighborhoods may reason that they cannot compete with their neighbors and, instead of striving to find work, they may decide to continue to receive AFDC for a relatively long period of time.

The third theory, the epidemic theory, is related to the first two theories but hypothesizes that the effects of social isolation or relative deprivation are nonlinear. Outcomes will only be affected when neighborhood conditions reach epidemic proportions.[7] When neighborhood conditions get exceptionally good or bad, outcomes will turn positive or negative. For example, the neighborhood poverty rate or the level of social isolation must reach a very high level before AFDC recipients will be affected. Thus, the poverty rate may be an indication of other neighborhood problems, such as crime.[8] When crime reaches extremely high rates, people may be afraid to leave their homes to look for work, which, in turn, exacerbates social isolation. In another example, living in a neighborhood in which an above-average number of adults are out of work or living in poverty may have no effect on the likelihood of an AFDC recipient finding work because role models and job contacts, although few, may still be available. However, living in a neighborhood in which nearly all of the neighbors of the AFDC recipient are unemployed and living in poverty will have an effect because it may become difficult to find role models or job contacts. Another possibility is that only when conditions within a neighborhood are extremely favorable will AFDC recipients respond. For example, only when job conditions are extremely favorable are AFDC recipients likely to find work because of their relatively low marketability in the job market. In other words, the unemployment rate must be extremely low for AFDC receipt to be affected.

Because of these differing theoretical effects of neighborhood conditions, the consequences of improving disadvantaged neighborhoods or of moving relatively deprived residents into more advantaged neighborhoods is unclear.[9] It is also theoretically unclear whether the effects of neighborhoods will be linear or nonlinear.

Empirical studies of AFDC recipients are similarly varied. Research has shown that some groups, such as women who do not complete high school, women with little work experience, and those with young children, tend to receive AFDC for a relatively long time.[10] Other studies on the likelihood of leaving AFDC have found that living within large or small cities, suburban areas, or rural areas makes a difference in AFDC exit probabilities.[11] For example, I found that

high school dropouts living in large cities were less likely to exit AFDC via increased earnings than were similar high school dropouts living in suburban areas.[12] This difference is likely due to the number of job contacts or jobs within areas of residence. To better target help for AFDC recipients, it is important to determine whether it is city residence or neighborhood conditions that affect the likelihood of exit due to earnings for high school dropouts.

Neighborhoods may also affect the number of "marriageable" males for AFDC recipients.[13] If neighborhood conditions make it more difficult to find stable jobs because of a lack of job contacts or role models, then neighborhoods in which relatively few are working may have few marriageable males. William Julius Wilson and others have hypothesized that a lack of marriageable males within neighborhoods inhibits the likelihood of women escaping poverty or leaving the welfare system.[14]

Because marriage or increased earnings are important routes to avoiding welfare, I examine neighborhood effects on these two ways of leaving welfare.[15] The results of this analysis show that African Americans and high school dropouts are especially affected by their neighborhood conditions. The neighborhood effects are mostly linear and align best with the social isolation theory. Although neighborhood conditions are shown to have strong effects on exits from AFDC, especially exits due to marriage, these effects do not diminish the negative effects of living in large cities on exits due to earnings for high school dropouts.

Data

The data are derived from linking the Panel Study of Income Dynamics (PSID) with the 1970 and 1980 U.S. censuses. The PSID is a nationally representative longitudinal data set and currently contains data for the years 1968–92.[16] The PSID data for this study cover 1968–86 because neighborhood data are only available through 1986.

The neighborhood variables were determined by the "best" neighborhood data available within the censuses. The "best" neighborhood was generally considered to be the smallest possible geographic division with adequate data. In most instances, the best neighborhood data were census tract data or census enumeration district data (for some untracted areas). If census tract or census enumeration district data were unavailable, then either census zip-code data or census minor civil division data were used, for whichever area had the smallest population above 30 people.[17] Also attached to PSID respondent data were data on census places (cities). The 1970 census was attached to PSID respondents for the years 1968–75; the 1980 data were attached to the years 1976–86. Neighborhood data for the sample contain 86

percent census tract data, 2.6 percent enumeration district data, 5.7 percent minor civil division data, and 5.2 percent zip-code data.

One of the basic concepts used in the analysis is a "spell" on welfare, or the number of continuous years that a woman receives AFDC income. Spells of AFDC receipt are determined by a process similar to that used by Mary Jo Bane and David Ellwood.[18] For a year to be counted as a year on AFDC, the recipient must have an AFDC income of at least $250 (1978 dollars), head her own household at the start of her spell, and live in a single-family household.[19] From 1968 to 1986, there were a total of 727 spells (or persons) on welfare, 3,413 spell years on welfare, and 498 AFDC exits.[20] Of these AFDC exits, 108 were due to marriage, 248 exits were due to increased earnings, and 142 were exits other than marriage or increased earnings.[21] A total of 229 spells are right-censored. For a recipient to have a marriage exit, she must simultaneously get married and leave AFDC. For a recipient to have an earnings exit, she must have earned at least $500 or worked 300 hours more than in the year prior to exiting AFDC.[22] In determining exit types, marriage took precedence over increased earnings, which, in turn, took precedence over other exit types. Hence, all exit types are mutually exclusive.

Method

In this study, I determine the effects of neighborhood conditions on all AFDC recipients. The eight neighborhood variables in this study were chosen for both theoretical reasons and in keeping with previous research.[23] Each neighborhood variable was tested individually because of high collinearity and because the variables reflect differing explanations of exit likelihood. These neighborhood variables include the poverty rate, the percentage of households receiving income from public assistance, the percentage of workers in professional and managerial professions, the percentage of workers in the manufacturing sector, the female employment rate, the female unemployment rate, the male employment rate, and the male unemployment rate.

Three of the variables measure socioeconomic status (poverty rate, percentage of households receiving income from public assistance, the percentage of workers in professional and managerial professions). The social isolation theory would predict that either a low level of poverty, a low rate of households receiving public assistance, or a high level of workers in high-status professions would be associated with short stays on welfare. The female employment and unemployment rates are measures of the number of role models and job contacts. Again, the social isolation theory would predict that the higher the percentage of females working, or the lower the female unemployment rate, the shorter the AFDC spell. The male employment and unem-

ployment rates are measures of marriage possibilities. The percentage working in manufacturing is a measure of relatively low-skilled but high-paying jobs in the area, leading to decreased work-search costs and increased likelihood of work.

The eight neighborhood variables were subject to a principal components analysis, with various rotations. Two neighborhood quality indexes were extracted. Together, these two neighborhood indexes account for 70 percent of the variation of the eight neighborhood variables. All of the neighborhood conditions except the percentage of employed adults working in the manufacturing sector and the percentage of adults working in professional and executive positions loaded highly (absolute values of the loadings were greater than .73) onto the first index. The higher this index, the less economically vibrant, or the poorer, is the neighborhood. The second index had high loadings for the percentage of employed adults working in the manufacturing sector (+.89) and the percentage of adults working in professional and executive positions (−.60). The higher the value of the second neighborhood index, the higher the percentage of blue-collar or manufacturing types of workers in the neighborhood and the lower the percentage of white-collar types or professionals and executives in the neighborhood. These uncorrelated indexes were used together in the hazard rate models.

Each of the neighborhood variables, including the neighborhood quality indexes, were used as both continuous and ordered categorical variables.[24] The categorical models used percentile scales in hazard models to capture nonlinear effects. The percentile intervals were 0–9, 10–24, 25–49, 50–74, 75–89, and 90–100. The excluded category in the model was the "best" neighborhood. For example, if the effects of the neighborhood poverty rate were examined, the 0–9 percentile group would be the excluded category.

Each method gives evidence for the different theories being examined. For instance, if the continuous model shows that the percentage of households receiving income from public assistance in the neighborhood has a negative effect on the likelihood of exiting AFDC, there may be greater credence in the social isolation hypothesis that neighborhood conditions affect AFDC recipients linearly. If the opposite result is found for the linear or logarithmic public assistance variable, greater credence may be given to the relative deprivation theory. If only living in neighborhoods with relatively high proportions of households receiving income from public assistance has negative effects on outcomes, then greater credence can be given to the epidemic theory of neighborhoods.[25]

Several steps were taken to minimize the effects of heterogeneity within the models. First, a rich array of family, locational, and economic characteristics were used within the model to capture differences among groups. Second, groups were examined in separate models.

Because previous research has shown that whites and African Americans have different outcomes when living in similar types of neighborhoods, and because previous research has shown large differences in exit probability for women of different educational backgrounds, especially for those living in large cities, separate analyses were undertaken for differing races and educational levels.[26] These separate analyses allowed the coefficient estimates for the neighborhood characteristics to vary for these different groups of AFDC recipients. These separate analyses better capture differences among groups.[27]

Four sets of variables were used in this study. The variables examined arise from previous studies on AFDC exit probabilities and theories previously outlined. The technique used in this article follows that used by Rebecca Blank and allows the values of many variables to vary over the period of the AFDC spell.[28] A list of variables, including their mean values and standard deviations, is given in table 1.

One of the sets of variables is location of residence and includes three dichotomous variables: large cities (population over 500,000), urban areas (population between 250,000 and 500,000), and rural areas (places outside of metropolitan areas with populations at or under 40,000). The excluded category is suburban areas (population in metropolitan areas under 250,000 or outside metropolitan areas with populations over 40,000).[29]

Dichotomous personal variables include race, the presence of children under age 6, the level of education (high school dropout or not), and whether the recipient had ever been married. Continuous personal variables include age at the beginning of the AFDC spell, the average number of hours of work in the 2 years before entering the AFDC program, and the ratio of average income to the poverty line in the 3 years prior to AFDC receipt. The effects of owning a car were also examined. It is hypothesized that those who own a car may be more likely to find jobs for several reasons, including lower information costs and greater ability to get to jobs far from their residence.[30] Dichotomous variables are used to indicate the number of years on AFDC to date.

Control variables for general economic conditions included a dichotomous variable indicating whether the year on AFDC was pre– or post–Omnibus Budget Reconciliation Act (OBRA).[31] Continuous variables for the state maximum AFDC payment for a family of four and the county unemployment rate are used for each year of the AFDC spell.

Techniques for Model Estimation

The dependent variables in this study were the likelihood of exit from AFDC via different methods: marriage, increased earnings, and all

exits. Multivariate hazard rate analysis using an exponential distribution with competing risks was used in order to determine neighborhood and other effects.[32] This technique determines the likelihood of exit from AFDC for each year of an AFDC spell.[33] The likelihood that any individual will use welfare from time 0 to t is $f(t, X_t)$, where X_t is a vector of independent variables. If the AFDC spell is right-censored, the probability of the censored event is $F(T, X_t)$.[34] The hazard rate is defined as the instantaneous rate of exiting AFDC at time $T = t$, conditional on receiving AFDC up to time t:

$$h(t, X_t) = \lim_{\Delta t \to 0} \frac{P(t \leq T \leq (t + \Delta t) | T \geq t, X_t)}{\Delta t}.$$

This technique can then be extended by allowing for different exit routes: marriage, increased earnings, and all other exits.

Results

All Exits

The results from the first analysis indicate which particular neighborhood characteristics make a difference in the likelihood of exiting AFDC, via all methods, for different groups of AFDC recipients. Table 2 shows the hazard rate results for the models using the neighborhood indexes as well as the separate neighborhood characteristic models for each of the groups examined. (The first three columns in table A1 in the appendix include the hazard rate regression results for all observations for the three exit types.) Table 3 presents the likelihoods of exiting AFDC within 2 years via the different methods if the individual is either 1 standard deviation above or below the mean of the given neighborhood characteristic.[35]

For the models using all the AFDC observations in column 5 of table 2, as well as the analysis for high school dropouts in column 1, the coefficients for both the neighborhood quality indexes are negative and highly significant. These findings are in accordance with the social isolation hypothesis. The effects of the second neighborhood index (indicating the effects of types of jobs) on all AFDC exits are stronger for African Americans than the first neighborhood index (which indicates the overall economic conditions of the neighborhood). This provides evidence that, for African Americans, the types of jobs are more important than the overall economic conditions of the neighborhoods. In contrast, whites are more affected by the overall economic conditions of the neighborhood than by the types of jobs held by neighbors. High school graduates are not affected by either neighborhood variable index.

Table 1

WEIGHTED MEAN VALUES AND STANDARD DEVIATIONS (in Parentheses), BY EDUCATIONAL LEVEL AND RACE

Variable	High School Dropouts (N = 2,058) (1)	High School Graduates (N = 1,353) (2)	African Americans (N = 2,769) (3)	Whites (N = 529) (4)	All (N = 3,411) (5)
Personal variables:					
Average hours of work before spell beginning	434.0 (576.7)	751.7 (689.2)	501.3 (609.2)	635.1 (680.2)	562.8 (643.7)
Average income to needs before spell beginning	1.05 (.68)	1.37 (.83)	.94 (.74)	1.41 (.73)	1.16 (.75)
Age at beginning of spell	26.38 (9.11)	25.38 (6.90)	26.36 (8.94)	26.19 (7.92)	26.15 (8.37)
Children age 6 or under, dummy	.61 (.49)	.71 (.45)	.63 (.48)	.65 (.48)	.65 (.48)
Number of children	2.57 (1.57)	2.09 (1.34)	2.49 (1.67)	2.27 (1.33)	2.38 (1.51)
Never married, dummy	.41 (.49)	.50 (.50)	.58 (.49)	.31 (.46)	.44 (.50)
Race = African American, dummy	.44 (.50)	.52 (.50)	.47 (.50)	.47 (.50)	.47 (.50)
Race = not African American or white, dummy	.06 (.24)	.03 (.18)	.05 (.22)	. . .	.05 (.22)
Car ownership, dummy	.37 (.48)	.44 (.50)	.17 (.38)	.62 (.49)	.40 (.49)
Policy and economic condition variables:					
Maximum state welfare payments for a family of 4 (1967 dollars)	180.63 (67.5)	187.2 (69.1)	167.7 (72.4)	194.7 (61.3)	183.1 (68.6)
County unemployment rate	7.66 (3.16)	7.40 (2.98)	7.40 (2.98)	7.59 (3.25)	7.55 (3.10)
Whether year was pre-OBRA	.76 (.42)	.69 (.46)	.72 (.45)	.73 (.44)	.73 (.45)
Locational and regional dummy variables:					
Large city	.28 (.45)	.25 (.43)	.44 (.50)	.08 (.26)	.27 (.44)
Urban area	.14 (.35)	.15 (.36)	.19 (.39)	.10 (.30)	.14 (.35)
Suburban area	.41 (.49)	.38 (.49)	.22 (.42)	.57 (.50)	.40 (.49)

Rural area	.17 (.38)	.22 (.42)	.15 (.36)	.25 (.43)	.19 (.40)
North central	.38 (.49)	.31 (.46)	.37 (.48)	.38 (.49)	.35 (.48)
Northeast	.26 (.44)	.22 (.42)	.15 (.35)	.34 (.47)	.25 (.43)
South	.24 (.43)	.21 (.41)	.36 (.48)	.12 (.33)	.22 (.42)
West	.12 (.32)	.25 (.44)	.13 (.34)	.16 (.37)	.17 (.38)
Neighborhood variables:					
Poverty rate	23.09 (14.68)	20.02 (14.34)	29.47 (15.27)	13.97 (8.48)	21.88 (14.58)
Adults working in manufacturing (%)	29.23 (11.54)	26.19 (11.20)	26.36 (11.50)	30.08 (11.25)	28.03 (11.50)
Households receiving income from public assistance (%)	16.58 (12.12)	14.48 (11.34)	21.61 (13.21)	9.39 (6.11)	15.74 (11.86)
Adults working in executive or professional occupations (%)	16.02 (8.43)	18.67 (7.95)	14.86 (7.90)	19.41 (8.27)	17.07 (8.34)
Employed adult females (%)	39.30 (9.19)	42.82 (11.02)	39.48 (10.21)	42.03 (10.03)	40.70 (10.10)
Employed adult males (%)	62.58 (12.30)	64.01 (12.94)	57.66 (13.28)	68.40 (9.68)	63.15 (12.57)
Unemployed adult females (%)	10.44 (6.55)	8.39 (5.85)	11.64 (7.47)	7.76 (4.47)	9.73 (6.35)
Unemployed adult males (%)	11.04 (8.35)	10.04 (7.88)	12.80 (9.93)	8.73 (5.66)	10.64 (8.18)
First neighborhood quality index	−.13 (.92)	.07 (.25)	.07 (1.01)	.06 (.98)	.08 (.27)
Second neighborhood quality index	.39 (1.00)	.05 (.22)	−.02 (1.02)	−.07 (.91)	.06 (.24)
Time on welfare to date, dummy variables:					
Year 1	.20 (.40)	.28 (.45)	.21 (.41)	.25 (.43)	.23 (.42)
Year 2	.16 (.36)	.21 (.41)	.16 (.37)	.19 (.39)	.18 (.38)
Year 3	.13 (.32)	.14 (.35)	.13 (.34)	.12 (.33)	.13 (.34)
Year 4	.10 (.31)	.10 (.30)	.10 (.30)	.10 (.30)	.10 (.31)
Year 5	.08 (.28)	.07 (.25)	.08 (.28)	.10 (.30)	.08 (.27)
Year 6	.06 (.25)	.05 (.25)	.07 (.25)	.07 (.26)	.06 (.24)
Year 7+	.27 (.44)	.15 (.36)	.24 (.43)	.21 (.41)	.22 (.42)

NOTE.—Tabulated from the Panel Study of Income Dynamics Geocode Files, 1968–86. OBRA = Omnibus Budget Reconciliation Act.

Table 2

HAZARD RATE RESULTS FOR THE LIKELIHOOD OF EXITING WELFARE VIA ALL METHODS, MARRIAGE AND INCREASED EARNINGS, 1968–86

Neighborhood Variables	High School Dropouts (N = 2,056) (1)	High School Graduates (N = 1,353) (2)	African Americans (N = 2,769) (3)	Whites (N = 528) (4)	All (N = 3,409) (5)
All exits:					
First neighborhood index	−.249 (.085)***	−.109 (.097)	−.094 (.058)*	−.243 (.144)*	−.162 (.062)***
Second neighborhood index	−.348 (.066)***	−.018 (.066)	−.268 (.051)***	.083 (.135)	−.171 (.045)***
Poverty rate	−.013 (.006)***	−.003 (.006)	−.003 (.004)	−.022 (.015)	−.008 (.004)**
Employed in manufacturing (%)	−.026 (.006)***	−.001 (.006)	−.027 (.005)***	.006 (.010)	−.014 (.004)***
Public assistance (%)	−.008 (.007)	−.003 (.008)	−.002 (.005)	−.026 (.021)	−.007 (.005)
Professionals and executives (%)	.019 (.008)***	−.008 (.009)	.017 (.006)***	−.016 (.015)	.007 (.006)
Females employed (%)	.023 (.007)***	.011 (.006)*	.010 (.005)**	.019 (.012)	.016 (.005)***
Males employed (%)	.004 (.006)	.007 (.006)	.004 (.004)	.009 (.014)	.006 (.004)
Females unemployed (%)	−.064 (.013)***	.015 (.013)	−.012 (.009)	−.047 (.029)*	−.024 (.009)***
Males unemployed (%)	−.015 (.009)*	−.022 (.011)**	−.010 (.007)	−.036 (.024)	−.018 (.007)***
Marriage exits:					
First neighborhood index	−.795 (.201)***	.397 (.185)**	−.821 (.185)***	−.098 (.240)	−.247 (.130)*
Second neighborhood index	−.607 (.124)***	−.182 (.141)	−.562 (.115)***	−.148 (.233)	−.417 (.087)***

Poverty rate	−.037 (.012)***	.015 (.011)	−.039 (.010)***	−.005 (.025)	−.014 (.008)*
Employed in manufacturing (%)	−.046 (.012)***	−.039 (.013)***	−.039 (.014)***	−.024 (.018)	−.042 (.008)***
Public assistance (%)	−.050 (.015)***	.014 (.016)	−.040 (.013)***	−.052 (.041)	−.026 (.011)***
Professionals and executives (%)	.053 (.013)***	−.029 (.020)	.069 (.012)***	−.031 (.028)	.017 (.010)*
Males employed (%)	.032 (.013)***	−.023 (.013)*	.050 (.012)***	−.013 (.022)	.008 (.009)
Males unemployed (%)	−.121 (.028)***	.008 (.024)	−.112 (.026)***	−.056 (.046)	−.059 (.017)***
Increased earnings exits:					
First neighborhood index	−.140 (.135)	−.291 (.131)**	.041 (.077)	−.778 (.256)***	−.223 (.092)***
Second neighborhood index	−.370 (.113)***	.107 (.086)	−.247 (.069)***	.318 (.218)	−.089 (.067)
Poverty rate	−.006 (.009)	−.004 (.008)	−.007 (.005)	−.076 (.029)***	−.009 (.006)
Employed in manufacturing (%)	−.022 (.009)**	.011 (.008)	−.035 (.007)**	.042 (.016)***	.000 (.006)
Public assistance (%)	.010 (.010)	−.007 (.010)	.004 (.006)	−.052 (.033)	−.004 (.007)
Professionals and executives (%)	.018 (.013)	−.001 (.011)	.001 (.009)	.009 (.022)	.010 (.008)
Females employed (%)	.025 (.011)**	.024 (.008)***	.011 (.007)	.036 (.017)**	.023 (.006)***
Males employed (%)	−.006 (.009)	.019 (.009)**	−.006 (.006)	.048 (.022)**	.011 (.006)*
Females unemployed (%)	−.058 (.022)***	.004 (.016)	.002 (.011)	−.076 (.045)*	−.018 (.013)
Males unemployed (%)	.006 (.013)	−.038 (.014)***	.004 (.008)	−.074 (.037)**	−.015 (.010)

NOTE.—Tabulated from the Panel Study of Income Dynamics Geocode Files, 1968–86. Standard errors are in parentheses. The first neighborhood index relates to the general economic conditions of the neighborhood, such as the poverty rate, the percentage of people on public assistance, and the employment and unemployment rates. The higher this index, the worse the economic conditions of the neighborhood. The second neighborhood index refers to the types of employment by neighborhood residents: the percentage in manufacturing and the percentage in professional and executive positions. The higher this index, the more likely people within the neighborhood are working in manufacturing jobs and the less likely they are to work in professional and executive jobs. Each of the neighborhood conditions variables, except the two neighborhood index variables, are run separately with all personal characteristics, location and region, economic conditions, and policy variables included in the models. The two neighborhood index models are run together in the same models.

* $p < .10$.

** $p < .05$.

*** $p < .01$.

Table 3

THE HAZARD OF EXITING AFDC WITHIN 2 YEARS FOR EACH NEIGHBORHOOD CHARACTERISTIC VARIABLE, BY METHOD OF EXIT, RACE, AND EDUCATIONAL LEVEL, 1968–86

Neighborhood Variables	High School Dropouts (N = 2,056)		High School Graduates (N = 1,353)		African Americans (N = 2,769)		Whites (N = 528)		All (N = 3,409)	
	1 SD Below Mean	1 SD Above Mean	1 SD Below Mean	1 SD Above Mean	1 SD Below Mean	1 SD Above Mean	1 SD Below Mean	1 SD Above Mean	1 SD Below Mean	1 SD Above Mean
All exits:										
First neighborhood index	42	28	49	51	33	27	53	36	44	34
Second neighborhood index	47	25	50	43	37	22	43	49	45	33
First and second neighborhood indexes	54	20	49	47	39	20	51	39	50	28
Poverty rate	43	31	49	44	32	30	52	38	43	36
In manufacturing (%)	47	27	47	47	38	22	44	49	45	34
On public assistance (%)	39	33	49	43	31	30	50	39	42	36
In professional and executive positions (%)	31	41	50	45	26	34	52	42	38	42
Female employment rate	29	43	42	52	28	33	39	54	34	45
Male employment rate	34	38	42	50	29	32	42	49	37	42
Female unemployment rate	47	22	44	51	33	28	52	36	44	34
Male unemployment rate	40	32	52	39	33	28	52	36	44	33
Marriage exits:										
First neighborhood index	21	6	9	18	9	2	15	14	14	9
Second neighborhood index	21	7	13	9	9	3	17	12	17	8
First and second neighborhood indexes	33	3	11	15	12	1	18	11	19	6

Poverty rate	22	8	10	16	9	3	15	15	14	10
In manufacturing (%)	22	8	15	7	8	4	18	10	18	7
On public assistance (%)	22	7	11	14	8	3	19	10	15	8
In professional and executive positions (%)	9	20	15	10	3	8	19	12	11	14
Male employment rate	8	18	19	9	2	8	17	13	11	13
Male unemployment rate	25	3	11	13	11	1	18	10	17	7
Earnings exits:										
First neighborhood index	13	11	32	20	14	16	38	9	21	14
Second neighborhood index	17	9	24	30	18	11	17	30	20	17
First and second neighborhood indexes	18	8	29	23	17	11	29	12	22	13
Poverty rate	13	12	29	25	14	17	34	10	20	16
In manufacturing (%)	16	10	23	32	20	9	15	38	18	19
On public assistance (%)	10	15	30	23	14	16	28	15	19	17
In professional and executive positions (%)	11	14	27	27	15	15	21	25	17	20
Female employment rate	10	15	21	34	13	17	16	32	14	22
Male employment rate	14	12	19	33	17	14	13	32	16	20
Female unemployment rate	16	8	27	27	15	15	29	15	20	16
Male unemployment rate	12	14	33	19	14	16	30	13	20	16

NOTE.—Tabulated from the Panel Study of Income Dynamics Geocode Files, 1968–86. The values in the table indicate the likelihood of exiting AFDC within 2 years given that the recipient is 1 SD below the mean or 1 SD above the mean for the given neighborhood characteristic or neighborhood index. The actual values for each of the nonneighborhood variables in the models are multiplied by their respective coefficient estimate in determining these likelihoods. Each of the estimates comes from models that include the personal variables, economic and policy variables, the location and region variables, and time on welfare variables that are described in the mean values and standard deviations section of the article. Each of the neighborhood characteristics is used in separate hazard rate models except the first and second neighborhood indexes, which are used in the same models.

Table 3 indicates that the likelihood of exiting AFDC for African Americans and high school dropouts is greatly affected by their neighborhood of residence. For example, living 1 standard deviation below the mean relative to 1 standard deviation above the mean for the second neighborhood index increases the overall likelihood of AFDC exit for high school dropouts by 22 percentage points and for African Americans by 15 percentage points. Overall, the likelihood of exiting AFDC is improved by 12 percentage points by living in a neighborhood with a relatively high percentage of white-collar workers compared with an area with a relatively low percentage of white-collar workers.

Examining the combined effects of the two neighborhood indexes shows that high school dropouts living in neighborhoods that are 1 standard deviation below the mean on both indexes are 34 percentage points more likely to exit AFDC in the first 2 years of an AFDC spell than high school dropouts in neighborhoods that are 1 standard deviation above the mean on both indexes. Overall, there is a 22 percentage point increase in the likelihood of exiting AFDC within 2 years when living in neighborhoods that are 1 standard deviation below the mean rather than 1 standard deviation above the mean for these two neighborhood indexes.

High school dropouts are affected by six of the eight separate neighborhood conditions in the all-exits model, supporting the social isolation hypothesis. African Americans are affected by three of the neighborhood variables, high school graduates by two of these neighborhood conditions, and whites by only one neighborhood condition. The strongest of these effects is the female unemployment rate on all exits for high school dropouts. There is a 25 percentage point difference between high school dropouts living in low versus high female unemployment neighborhoods.

Marriage Exits

For marriage exits, table 2 again shows that the coefficients for the two neighborhood indexes show strong negative effects for high school dropouts and for African Americans. In contrast, the first neighborhood index has a positive coefficient for high school graduates. In other words, in areas in which the neighborhood poverty and unemployment rates are relatively high, high school graduates are more likely to get married and leave welfare. This finding, and the negative coefficient for the male employment rate for high school graduates, are the only findings that support the relative deprivation theory. Each of the separate neighborhood characteristics has strong effects for high school dropouts and African Americans, all in the direction of the social isolation hypothesis.

The strongest effect on marriage exits for both high school graduates and African Americans is that of the male unemployment rate. Table 3 shows that African Americans living in an area with a relatively low male unemployment rate have an 11 percent probability of exiting welfare via marriage. This contrasts with a 1 percent probability of exiting via marriage for African Americans living in an area with a relatively high unemployment rate. For high school dropouts, the likelihood falls from 25 percent to 3 percent when comparing a neighborhood with a low versus a high rate of male unemployment. The only variables that negatively affect marriage exits for high school graduates are living in areas with relatively high proportions of manufacturing workers and in areas with low male unemployment rates.

Table 3 shows that there are dramatic differences in marriage exit probabilities for high school dropouts, African Americans, and the full sample when living 1 standard deviation below the mean for both neighborhood indexes. For high school dropouts, the likelihood of exit falls from 33 percent to 3 percent when going from 1 standard deviation below the mean to 1 standard deviation above the mean for the two neighborhood indexes. For African Americans, these likelihoods fall from 12 percent to 1 percent.

Increased Earnings Exits

The increased earnings exit model in table 2 shows that the second neighborhood index has negative effects on high school dropouts and African Americans, while the first neighborhood index has negative effects on high school graduates and whites. The coefficient on the first neighborhood index variable is significant for the full sample. The differences in likelihoods of exiting AFDC for African Americans, high school dropouts, and all sample members living in different types of neighborhoods are not as pronounced as in the marriage exit model. For example, living in a neighborhood that is 1 standard deviation below the mean compared with 1 standard deviation above the mean for both of the neighborhood indexes increases by 9 percent points (or 69%) the likelihood of exit via earnings by all sample members. This difference is 13 percentage points (or over 200%) for the marriage exit model. Of the separate neighborhood variables, the female employment rate has the strongest effect on the likelihood of exiting AFDC via increased earnings for the full sample. This, again, supports the social isolation hypothesis.

Nonlinear Effects

Models were run to check for nonlinear neighborhood effects to determine whether epidemic models best explained the effect of neighbor-

hoods on the likelihood of welfare exits. The results (not shown) for the neighborhood indexes do not indicate any cutoff points at which neighborhood conditions dramatically decrease or increase the likelihood of exiting AFDC for each of the exit types. This indicates that, for the overall neighborhood condition variables, little credence can be given to the epidemic theory of neighborhoods on AFDC exits.[36]

All Exits

Table 4 shows that some neighborhood conditions do have cutoff points at which the likelihood of exit from AFDC, for particular groups and for particular exit types, turns dramatically down or up. High school dropouts living in neighborhoods in which the female employment rate is in the top half of the distribution, rather than the bottom half, increases the likelihood of exit by all methods from 16 to 25 percentage points (or 64% to 132%). Other large and significant cutoffs appear in the percentage of neighbors working in the manufacturing sector. For high school dropouts, African Americans, and all sample members, there is a vast difference in the likelihood of exiting AFDC for those living in the top 50 percent of areas with adults working in the manufacturing sector as opposed to the bottom 50 percent. Small changes at the midway point in this distribution create large changes in the exit probabilities.

Marriage Exits

Some marriage exit probabilities are also highly affected by relatively small changes in the percentage of neighbors with particular characteristics at certain points in the distribution. For example, African Americans are far more likely to exit AFDC via marriage when they live in the top 9 percent of areas in proportion of professionals and executives. Moving from the 10–24 percent range to the top 9 percent on proportion of professionals and executives increases marriage exit probabilities by 8 percentage points (or nearly 100%). The same can be said for high school dropouts moving from the bottom 50 percent to the top 50 percent in proportion of professionals and executives. Even more profound for African Americans, and quite dramatic for high school dropouts, are the nonlinear effects of the male unemployment rate on marriage exits. When living in neighborhoods in which the male unemployment rate is in the bottom 75 percent relative to the top 25 percent, African-American marriage exit probabilities increase from 1–4 percent to 15–22 percent.

The neighborhood poverty rate has similar dramatic, nonlinear effects for marriage exit probabilities for African Americans and high school dropouts. For high school dropouts, living in neighborhoods in the bottom quartile of the poverty rate increases the likelihood of

exit by at least 12 percentage points (or over 100%) compared with the middle 50 percent of neighborhoods. For African Americans, going from the bottom half of poverty areas to the top half increases marriage exit probabilities by at least 11 percentage points (or by over 100%). The percentage of people in the manufacturing sector also has dramatic cutoff points in marriage exit probabilities for high school dropouts and all sample members. For high school dropouts, living in areas in the top 50 percent decreases the likelihood of a marriage exit by at least 50 percent over those living in the bottom 50 percent.

Increased Earnings Exits

In the earnings exit models, two of the groups are dramatically affected by certain small changes at particular points in the distributions of two of the neighborhood characteristics examined. For whites, living in areas in which the percentage of adults working in the manufacturing sector is in the lowest 25th percentile decreases the likelihood of an earnings exit by at least 22 percentage points (or at least 85%). For high school graduates, living in areas in which the female employment rate is in the bottom 9 percent decreases earnings exit probabilities by at least 25 percentage points (or at least 85%).

These results indicate that relatively small changes in some neighborhood characteristics at particular points in their distributions can have large effects on exit probabilities for some groups. Of the 50 models run for all AFDC exits (10 variables by five groups), only four of these models showed signs of epidemic effects. Likewise, for the marriage exit and increased earnings exit models, only nine and two of the 50 models, respectively, showed signs of epidemic effects. Thus, while the results show some evidence for epidemic models, it is the linear, social isolation models that show strong and far more consistent effects on AFDC exit probabilities.

Large Cities, Neighborhoods, and Earnings Exits

I have previously shown that living in large cities has a negative effect on exit due to earnings for high school dropouts.[37] This may be because of the differences in neighborhood conditions within large cities relative to other areas, not solely because of a large-city residence. To test for this, earnings exit models were run for high school dropouts with each of the different neighborhood characteristics.

When different neighborhood conditions were controlled in each of the models examined, none of the controls had a significant effect on the large-city coefficient. In fact, all of the models show that the large-city effect is highly significant.[38] (The model with the two neighborhood indexes is shown in the appendix, table A1, col. 4.) In other

Table 4

PROBABILITIES OF AFDC EXIT WITHIN 2 YEARS OF AFDC RECEIPT FOR GIVEN GROUPS WITH PARTICULAR NEIGHBORHOOD CHARACTERISTICS, 1968–86

	High School Dropouts	High School Graduates	African Americans	Whites	All
All exits:					
Female employment rate: lowest 90th–100th percentile:	19	. . .	. . .	. . .	. . .
75th–89th percentile	25	. . .	. . .	. . .	. . .
50th–74th percentile	19	. . .	. . .	. . .	. . .
25th–49th percentile	42	. . .	. . .	. . .	. . .
10th–24th percentile	41	. . .	. . .	. . .	. . .
0th–9th percentile	44	. . .	. . .	. . .	. . .
Manufacturing workers: highest 90th–100th percentile:	46	. . .	36	. . .	48
75th–89th percentile	65	. . .	44	. . .	44
50th–74th percentile	42	. . .	43	. . .	49
25th–49th percentile	29	. . .	20	. . .	31
10th–24th percentile	25	. . .	21	. . .	36
0th–9th percentile	16	. . .	18	. . .	30
Marriage exits:					
Poverty rate: highest 90th–100th percentile:	7	. . .	2	. . .	. . .
75th–89th percentile	6	. . .	4	. . .	. . .
50th–74th percentile	13	. . .	3	. . .	. . .
25th–49th percentile	12	. . .	9	. . .	. . .
10th–24th percentile	29	. . .	10	. . .	. . .
0th–9th percentile	25	. . .	9	. . .	. . .
Male unemployment rate: highest 90th–100th percentile:	3	. . .	1	. . .	. . .
75th–89th percentile	4	. . .	3	. . .	. . .
50th–74th percentile	11	. . .	4	. . .	. . .

25th–49th percentile	14	. . .	2	. . .	. . .
10th–24th percentile	30	. . .	22	. . .	. . .
0th–9th percentile	22	. . .	15	. . .	. . .
Professionals and executives: highest 90th–100th percentile:	9	. . .	1	. . .	. . .
75th–89th percentile	5	. . .	1	. . .	. . .
50th–74th percentile	12	. . .	4	. . .	. . .
25th–49th percentile	23	. . .	7	. . .	. . .
10th–24th percentile	21	. . .	9	. . .	. . .
0th–9th percentile	29	. . .	17	. . .	. . .
Manufacturing workers: lowest 90th–100th percentile:	33	. . .	. . .	. . .	32
75th–89th percentile	42	. . .	. . .	. . .	20
50th–74th percentile	14	. . .	. . .	. . .	11
25th–49th percentile	7	. . .	. . .	. . .	9
10th–24th percentile	7	. . .	. . .	. . .	9
0th–9th percentile	7	. . .	. . .	. . .	4
Earnings exits:					
Female employment rate: lowest 90th–100th percentile:	. . .	4	. . .	. . .	. . .
75th–89th percentile	. . .	29	. . .	. . .	. . .
50th–74th percentile	. . .	44	. . .	. . .	. . .
25th–49th percentile	. . .	38	. . .	. . .	. . .
10th–24th percentile	. . .	36	. . .	. . .	. . .
0th–9th percentile	. . .	26	. . .	. . .	. . .
Manufacturing workers: lowest 90th–100th percentile:	. . .	. . .	. . .	4	. . .
75th–89th percentile	. . .	. . .	. . .	3	. . .
50th–74th percentile	. . .	. . .	. . .	33	. . .
25th–49th percentile	. . .	. . .	. . .	31	. . .
10th–24th percentile	. . .	. . .	. . .	26	. . .
0th–9th percentile	. . .	. . .	. . .	39	. . .

NOTE.—Tabulated from the Panel Study of Income Dynamics, 1968–86. Only variables that showed signs of the epidemic theory were tabulated.

words, it is not because of the condition of large-city neighborhoods that high school dropouts are less likely to earn their way off AFDC. The loss of manufacturing, retail, and wholesale jobs within large cities helps to explain why exiting welfare via increased earnings may be more difficult for low-skilled AFDC recipients living in the largest U.S. cities.

Conclusion

This study has examined the effects of neighborhood conditions on AFDC exit probabilities, testing which of three theories best explains why some stay on AFDC a relatively long time. The evidence lends support to the social isolation theory and finds some support for the epidemic theory of neighborhoods, especially for specific groups of AFDC recipients. The only sign of the relative deprivation theory was found for high school graduates, who were more likely to marry and leave AFDC when living in more, rather than less, economically distressed neighborhoods. For high school dropouts and African-American AFDC recipients, the effects of neighborhoods are strong and consistent. Members of each of these groups stay on welfare significantly longer when they live in the most economically depressed neighborhoods or neighborhoods with a relatively high proportion of manufacturing workers relative to professionals and executive workers. The effect of neighborhoods on exits due to marriage was especially strong for African Americans and high school dropouts. The strongest neighborhood variable in these models for both groups was the male unemployment rate, which gives credence to Wilson's "marriageable male" hypothesis. Whites and high school graduates are not nearly as affected by their neighborhood conditions as are African Americans and high school dropouts, but they still have decreased probabilities of exiting due to earnings when living in economically depressed neighborhoods.

Neighborhood characteristics, however, did not eliminate the strong negative effects for high school dropouts of living within large cities. Entering neighborhood variables into the model did not dramatically change the coefficient estimates for other policy-relevant variables, such as the coefficient for the state maximum welfare payment or the coefficient for years before or after the OBRA tax changes.

Increasing AFDC exit probabilities for high school dropouts or African Americans will involve either improving neighborhood conditions or allowing AFDC recipients to move from area conditions that lower the likelihood of leaving AFDC relative to other types of areas. The Gautreaux experiment in Chicago has shown that moving residents out of particularly bad areas can increase the likelihood of work.[39] These types of experiments should be undertaken to better understand how neighborhoods affect work and AFDC outcomes.

Appendix

Table A1

RESULTS FOR HAZARD RATE MODELS FOR THE LIKELIHOOD OF EXITING WELFARE, FOR ALL OBSERVATIONS AND FOR HIGH SCHOOL DROPOUTS, 1968–86

Variable	Marriage Exits: All Observations (1)	Earnings Exits: All Observations (2)	All Exits: All Observations (3)	Earnings Exit: High School Dropouts (4)
Intercept	−.879 (.783)	−1.772 (.555)***	−.921 (.392)**	−3.004 (.914)***
Personal variables:				
Average hours of market work 2 years before spell *.001	.002 (.001)	.004 (.0001)***	.002 (.001)***	.002 (.002)
Average income to poverty line, 3 years before spell	.212 (.111)*	.092 (.081)	.039 (.061)	.316 (.169)*
High school dropout	−.018 (.187)	−.625 (.142)***	−.372 (.097)***	
Age at beginning of spell	−.062 (.015)***	−.005 (.010)	.008 (.006)	.029 (.013)**
Whether child age 6 or less	−.782 (.201)***	.246 (.157)	−.047 (.106)	.076 (.243)
Number of children	.030 (.065)	−.075 (.046)*	−.109 (.032)***	−.002 (.065)
Never married	−.737 (.203)***	−.523 (.154)***	−.634 (.109)***	−.127 (.280)
Race of black	−.558 (.229)***	.483 (.170)***	−.074 (.118)	.417 (.302)
Races other than black or white	1.027 (.287)***	−.010 (.399)	.387 (.210)	1.049 (.569)*
Car ownership	−.298 (.187)	.143 (.150)	−.043 (.102)	.043 (.245)
Policy and economic conditions variables:				
Maximum state welfare payment *.01	.003 (.002)	−.002 (.002)	−.0004 (.001)	−.002 (.002)
County unemployment rate	−.079 (.031)***	−.059 (.022)***	−.047 (.016)***	−.100 (.038)***
Whether year was pre-OBRA	−.598 (.222)***	−.074 (.176)	−.100 (.123)	−.146 (.289)

(Table continues on next page.)

Table A1 (*Continued*)

Variable	Marriage Exits: All Observations (1)	Earnings Exits: All Observations (2)	All Exits: All Observations (3)	Earnings Exit: High School Dropouts (4)
Location and region dummy variables:				
South	.878 (.353)***	.056 (.259)	.365 (.181)	.153 (.494)
North central	.380 (.249)	.319 (.178)*	.199 (.124)	.703 (.305)**
West	.546 (.243)**	.296 (.202)	.142 (.135)	.169 (.507)
Large city	−.471 (.247)*	−.373 (.198)*	−.200 (.131)	−1.407 (.350)***
Urban area	−.121 (.246)	−.347 (.220)	−.057 (.140)	−.903 (.394)**
Rural area	.009 (.249)	.548 (.170)***	.195 (.124)	.394 (.276)
Neighborhood variables:				
First neighborhood index	−.247 (.130)*	−.223 (.092)***	−.162 (.062)***	.027 (.133)
Second neighborhood index	−.417 (.087)***	−.089 (.067)	−.171 (.045)***	.320 (.121)***
Time on welfare to date dummy variables:				
Year 2	.701 (.225)***	−.181 (.172)	.027 (.118)	−.279 (.299)
Year 3	.515 (.257)**	−.393 (.214)*	−.242 (.146)	−1.224 (.470)***
Year 4	.622 (.270)**	−.004 (.215)	.038 (.150)	−.795 (.414)*
Year 5	−.074 (.367)	.203 (.225)	−.109 (.177)	.402 (.311)
Year 6	−.187 (.432)	.126 (.261)	−.126 (.202)	−.361 (.432)
Year 7+	−.563 (.339)*	−.248 (.219)	−.161 (.149)	−.158 (.298)
Log likelihood for:				
Marriage exits for all observations			−688.90	
Earnings exits for all observations			−1,074.43	
All exits for all observations			−1,855.84	
Earnings exits for high school dropouts			−454.40	

NOTE.—Tabulated from the Panel Study of Income Dynamics Geocode Files, 1968–86. OBRA = Omnibus Budget Reconciliation Act. Standard errors are in parentheses.

* $p < .10$.

** $p < .05$.

*** $p < .01$.

Notes

1. For educational outcomes see Rebecca Clark, *Neighborhood Effects on Dropping Out of School among Teenage Boys* (Washington, D.C.: Urban Institute, 1992); Mary Corcoran, Roger Gordon, Deborah Laren, and Gary Solon, "The Association between Men's Economic Status and Their Family and Community Origins," *Journal of Human Resources* 27 (1992): 575–601; Jonathan Crane, "The Epidemic Theory of Ghettos and Neighborhood Effects of Dropping Out and Teenage Childbearing," *American Sociological Review* 96 (1991): 1226–59; Linda Dacher, "Effects of Community and Family Background on Achievement," *Review of Economics and Statistics* 64 (1982): 32–41; Donna Ginther, Robert Haveman, and Barbara Wolfe, *Neighborhood Characteristics as Determinants of Children's Outcomes: How Robust Are the Relationships?* (Madison: University of Wisconsin, 1993); Robert Plotnick and Saul Hoffman, *Using Sister Pairs to Estimate How Neighborhoods Affect Young Adult Outcomes* (Washington, D.C.: Association for Public Policy Analysis and Management, 1993). For teen births, drug use, and AFDC receipt, see Anne Case and Lawrence Katz, *The Company You Keep: The Effects of Family and Neighborhoods on Disadvantaged Youth* (Boston: National Bureau of Economic Research, 1991); Paul Osterman, "Welfare Participation in a Full Employment Economy: The Impact of Neighborhoods," *Social Problems* 38 (1991): 475–91; Plotnick and Hoffman (ibid.).

2. See Clark (n. 1 above); Corcoran et al. (n. 1 above); Dacher (n. 1 above); and Ginther, Haveman, and Wolfe (n. 1 above).

3. Jeanne Brooks-Gunn, Greg Duncan, Pamela Klebanov, and Naomi Sealand, "Do Neighborhoods Influence Child and Adolescent Behavior?" *American Journal of Sociology* 99 (1993): 353–95; Plotnick and Hoffman (n. 1 above).

4. For school outcomes, see Crane (n. 1 above); and Plotnick and Hoffman (n. 1 above). For nonmarital births and criminal activity, see Case and Katz (n. 1 above).

5. Christopher Jencks and Susan Mayer, "The Social Consequences of Growing Up in a Poor Neighborhood," in *Inner City Poverty in the United States*, ed. Laurence Lynn, Jr., and Michael McGeary (Washington, D.C.: National Academy Press, 1990).

6. Ibid., pp. 113–18.

7. Ibid.; Crane (n. 1 above), pp. 1226–29.

8. Rebecca Blank, *It Takes a Nation: A New Agenda for Fighting Poverty* (Princeton, N.J.: Princeton University Press, 1997).

9. Jencks and Mayer (n. 5 above), p. 113.

10. Mary Jo Bane and David Ellwood, *Beyond Welfare: From Rhetoric to Reform* (Boston: Harvard University Press, 1994); Rebecca Blank, "Analyzing the Length of Welfare Spells," *Journal of Public Economics* 39 (1989): 245–73; David Ellwood, *Targeting "Would-Be" Long-Term Recipients of AFDC* (Princeton, N.J.: Mathematica Policy Research, 1986); John Fitzgerald, "The Effects of the Marriage Market and AFDC Benefits on Exit Rates from AFDC," *Journal of Human Resources* 26 (1991): 545–61; June O'Neill, Laurie Bassi, and Douglas Wolf, "The Duration of Welfare Spells," *Review of Economics and Statistics* 69 (1987): 241–48; Mark Rank and Thomas Hirschl, "A Rural-Urban Comparison of Welfare Exits: The Importance of Population Density," *Rural Sociology* 53 (1988): 190–206; Thomas Vartanian, *Locational Effects and AFDC Exits: Examining Local Labor Markets* (Bryn Mawr, Pa.: Bryn Mawr College, 1997).

11. John Fitzgerald, "Local Labor Markets and the Local Area Effects on Welfare Durations," *Journal of Policy Analysis and Management* 14 (1995): 43–67; Vartanian (n. 10 above).

12. Vartanian (n. 10 above).

13. William Julius Wilson, *The Truly Disadvantaged: The Inner City, the Underclass, and Public Policy* (Chicago: University of Chicago Press, 1987). Wilson defines "marriageable" males as steadily employed males.

14. Ibid.

15. Vartanian (n. 10 above).

16. It is nationally representative when weights are used. The study oversampled poor households.

17. A "minor civil division" is a legal subdivision of a county, usually a township or a city. An "enumeration district" is similar to a census tract but is located in rural areas. See Terry K. Adams, *Documentation for 1970 and 1980 Census Extract Datasets* (Ann Arbor, Mich.: University of Michigan, July 1991).

18. Bane and Ellwood (n. 10 above).

19. Because the PSID does not distinguish who in the household receives the AFDC income, it would be impossible to identify the AFDC recipient if there were more than a single family living in the household. For example, the head of the household may be a grandmother whose daughter is receiving AFDC. If the above rules were not used, the grandmother would mistakenly be counted as the individual receiving the AFDC income. See Bane and Ellwood (n. 10 above), p. 167. "Other welfare" was also included as AFDC income if the female head of household had a year of AFDC receipt because it has been found that some PSID respondents misreported AFDC income as "other welfare" income.

20. It should be noted that the PSID is a yearly longitudinal data set while AFDC payments are determined on a monthly basis. Using the PSID smooths out the actual dynamics of AFDC receipt because some AFDC recipients in the PSID will go on and off AFDC during what is coded as a year of AFDC receipt. Thus, the data may overestimate the actual length of time that PSID respondents spend on AFDC. Estimates using monthly data indicate that the mean length of time on welfare is estimated to be far shorter than when examining yearly data. For example, see Blank, "Analyzing the Length of Welfare Spells" (n. 10 above), who found the mean length of welfare spells using monthly data to be 3.1 years, while Ellwood (n. 10 above), using PSID data, found the mean length of AFDC spells to be 4.4 years. Therefore, estimates of time on welfare should be viewed with caution. However, the yearly data give a good estimate of long-term reliance on AFDC by excluding short periods of time off AFDC. Only the first observed spell for each AFDC recipient is examined to maintain the independence of observations (see Blank, "Analyzing the Length of Welfare Spells" [n. 10 above]; and Paul Allison, *Event History Analysis: Regression for Longitudinal Event Data* [Beverly Hills and London: Sage Publications, 1984]).

21. Exits other than those due to marriage or increased earnings include having no more children under the age of 18 living in the household and moving to a state in which AFDC payments are too low for a given amount of income to continue to receive AFDC income.

22. Because the PSID only reports on labor income of the head of household, and because the woman who leaves AFDC may no longer be the head of household, hours of work were also examined for those leaving AFDC. Hours of work are reported for each individual within the PSID.

23. Brooks-Gunn et al. (n. 3 above); Clark (n. 1 above); Crane (n. 1 above); Ginther, Haveman, and Wolfe (n. 1 above).

24. Crane (n. 1 above); Jencks and Mayer (n. 5 above); Plotnick and Hoffman (n. 1 above). Each of the neighborhood variables was also entered logarithmically and was found to have similar effects as the linear specifications. See Plotnick and Hoffman (n. 1 above).

25. Because AFDC recipients tend to live in poorer neighborhoods than the general population, it is assumed that the neighborhood conditions do not have to be exceptionally bad for AFDC recipients to suffer from epidemic effects. Thus, AFDC recipients may suffer from epidemic effects when they live in the worst 50 percent of neighborhoods.

26. For black-white differences, see Brooks-Gunn et al. (n. 3 above). For educational differences, see Vartanian (n. 10 above). Likelihood-ratio tests indicate that the coefficient estimates for African Americans and non–African Americans as well as for high school dropouts and graduates differ from each other at the 1 percent level of significance.

27. In results not shown, a final step to control for unobserved heterogeneity was used. In these models, a nonparametric functional form was used to control for unobserved heterogeneity, and a Weibull distribution was used for the hazard rate in order to determine if unobserved heterogeneity was causing coefficient estimates to be biased. Using a variety of support points and probability estimates for these support points, the coefficient estimates for the neighborhood variables used in the models did not show large changes when controls for unobserved heterogeneity were introduced. Similar results were found by Fitzgerald, "Local Labor Markets and the Local Area Effects on Welfare Durations" (n. 11 above).

28. Blank, "Analyzing the Length of Welfare Spells" (n. 10 above); C. J. Flinn and James Heckman, "Model for the Analysis of Labor Force Dynamics," *Advances in Econo-*

metrics 1 (1982): 35–92; James Heckman and Burton Singer, "A Method for Minimizing the Impact of Distributional Assumptions in Econometric Models for Duration Data," *Econometrica* 52 (1984): 271–320.

29. The results for this analysis were robust to changes in the definitions for these different areas. For example, increasing large cities to a minimum of 750,000 slightly increased the level of significance for the large city coefficient but did little to the coefficient estimates for neighborhood variables.

30. Marginal information costs for job searches may be lower for those with a car because they may be able to search for jobs over a larger area in a shorter period of time than those without cars. In other words, those with cars may be able to get more job-related information with the same effort than those without cars. This lower cost of information for those with cars will depend on factors such as the availability and cost of parking and mass transit.

31. The OBRA in 1981 changed AFDC rules and increased the effective tax rate on AFDC earnings from 67 percent to 100 percent (after allowances).

32. The exponential distribution assumes that the hazard rate is constant. Other distributions were also used, such as the Weibull and log-logistic, to determine whether these distributional assumptions affect the coefficients and standard errors within the models. With few exceptions, the significant coefficients are robust to these different distributional assumptions.

33. Blank, "Analyzing the Length of Welfare Spells" (n. 10 above).

34. There is right-censoring when the sampling period ends and the AFDC spell is still in progress. Left-censoring occurs when the AFDC spell is in progress when the sampling period begins. Like most other studies of AFDC spells (Bane and Ellwood [n. 10 above]; O'Neill, Bassi, and Wolf [n. 10 above]; and Blank, "Analyzing the Length of Welfare Spells" [n. 10 above], left-censored cases are excluded from the study. Left-censoring should not be a major problem for this study because 18 years of data are available and only a small percentage of AFDC beginnings are excluded by left-censoring (12%). In studies in which a larger percentage of spells are left-censored, excluding these cases may create a bias selection problem.

35. Different means and standard deviations are used for each of the groups.

36. Slopes were also determined in a piecewise linear hazard model to determine the pattern of neighborhood effects across each of the six levels. For the epidemic theory to have credence, these slopes should be relatively large and negative for the worst neighborhoods. Neither of the neighborhood indexes showed signs of the epidemic model in any of the exit models examined.

37. Vartanian (n. 10 above).

38. In each of the 10 models (including the two principal components models) for earnings exits for high school dropouts, all coefficients for the large city variable remained significant at the 1 percent level or lower.

39. Susan Popkin, James Rosenbaum, and Patricia Meaden, "Labor Market Experiences of Low-Income Black Women in Middle Class Suburbs: Evidence from a Survey of Gautreaux Program Participants," *Journal of Policy Analysis and Management* 12 (1993): 556–73.