Proximity and Opportunity: How Residence and Race Affect the Employment of Welfare Recipients

Scott W. Allard
Assistant Professor of Public Administration
Senior Research Associate, Center for Policy Research
Maxwell School of Citizenship and Public Affairs
Syracuse University
(315) 443-5455
swallard@maxwell.syr.edu

Sheldon Danziger
Henry J. Meyer Collegiate Professor of Social Work and Public Policy
Director of the Program on Poverty, the Underclass, and Public Policy
University of Michigan
(315) 998-8515
sheldond@umich.edu

September 4, 2001

This research was supported in part by the U. S. Department of Housing and Urban Development, Office of Policy, Development, and Research, Grant #H2111R6, and by grants from the Ford Foundation and the Charles Stewart Mott Foundation. The authors thank Harry Holzer, Steven Haider, Rucker Johnson, Ted Mouw, Harold Pollack, Stuart Rosenthal, and John Yinger for helpful comments on previous drafts, Nancy Collins for help with data preparation, the Michigan Familiy Independence Agency for making administrative data available to the project, and Harry Holzer for providing access to data from his employer survey.

Abstract

This paper hypothesizes that welfare recipients who live in closer proximity to employment opportunities are more likely to work and less likely to remain on welfare than those who live further away. We analyze data on the residences of welfare recipients and the location of jobs in the three-county Detroit Metropolitan Area in the late 1990s and find that proximity to employment opportunities is associated with a higher probability of working and of leaving welfare.

Introduction

The Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA) ended the federal guarantee of cash assistance and replaced Aid to Families with Dependent Children (AFDC) with the Temporary Assistance for Needy Families Program (TANF). PRWORA gives states a block grant of fixed size, places a five-year lifetime limit on the receipt of federally-funded cash welfare benefits, requires most recipients to work within two years of entering TANF, and gives states great discretion over eligibility and operational criteria. A combination of welfare program changes, a robust economic boom, and changes in other policies, such as the expanded Earned Income Tax Credit (EITC) and increased funding for child care, have contributed to a decline in the national welfare caseload of about 50 percent between 1994 and 1999.[1]

As a result, there has been growing interest in the changing nature of welfare receipt in our urban

centers. A recent study found that a larger percentage of the welfare caseload resides in major urban centers today than in the mid-1990s.[2] The characteristics of recipients may be changing as well, so that central city caseloads have increasing percentages of long-term recipients, non-white minority recipients, and recipients from large households.[3] A related literature has explored how the "spatial mismatch hypothesis," pertains to the employment of welfare recipients. According to the spatial mismatch hypothesis, the ability of central city residents to find work is shaped in part by their geographic proximity to job opportunities, as increasing distance between residents and jobs lowers the probability of work.[4] A number of studies find that greater access to jobs is related to better labor market outcomes for low-income households. Yet, few studies directly link access to jobs to the work outcomes of welfare recipients.

This paper examines the relationship between access to jobs, whether welfare recipients are working, and whether recipients continue to receive welfare benefits over time. We hypothesize that greater access to employment opportunities increases both the probability of work among welfare recipients and the probability that they will leave welfare. To test these hypotheses, we created a data set containing detailed information on welfare receipt, whether recipients work, and the location of employment opportunities in the three-county Detroit Metropolitan Area in the late-1990s. Using information on the census tract location of employers, we calculated distance-based measures of access to jobs for each welfare recipient.

Our paper proceeds as follows. First, we discuss the spatial mismatch literature and how scholars have modeled the impact of job accessibility on outcomes of low-income urban populations.

---

[1]See "Caseload Comparison since the signing of the Welfare Law: Aug. 1996 vs. Dec. 1999", U.S. Department of Health and Human Services, Administration for Children and Families, http://www.acf.hhs.gov/news/tables.htm.

[2]See Allen and Kirby (July 2000).

[3]See Allard (2001).

Second, we examine how welfare recipients' access to employment opportunities varies according to where they live in the Detroit Metropolitan Area. Third, we explain variation in earnings rates as a function of access to employment opportunities, the characteristics of welfare recipients, and tract-level characteristics. We then present a similar set of analyses exploring the factors related to welfare exit rates.

Proximity and Opportunity: The Importance of Access to Jobs

A number of recent studies consider the meaning of place and space for the employment outcomes of low-income populations. While job growth occurred at a quicker pace in suburban versus central city areas during the 1990s, welfare receipt remained largely a central city phenomenon.[5] Distance between jobs and job-seekers can affect employment outcomes in a number of ways. Suburban employers, especially those who locate away from public transportation stops, make access and commuting difficult for central city residents.[6] The amount of available information about potential job opportunities declines as distance between jobs and applicants increases.[7] As low-skill employment opportunities have increasingly located in the suburbs, those employers remaining in central city areas have increased their demand for greater labor force skills, experience, and education.[8] Residential segregation by race and by economic class limits the mobility of central city residents, preventing many low-skilled workers from moving closer to suburban jobs.[9]

There is some evidence supporting the hypothesis that differences in work outcomes between welfare recipients residing in inner city and suburban neighborhoods can be explained in part by

[4]See Ihlanfeldt and Sjoquist (1998) and Kain (1992) for reviews of the spatial mismatch literature.
[5]See Allen and Kirby (July 2000); Brennan and Hill (2001); and, Allard (2001).
[6]See Coulton et al., (1999); Holzer and Ihlanfeldt (1996); and, Holzer and Stoll (2001).
[7]Holzer et al. (1994); Rogers (1997); and, Stoll (1999).
[8]Holzer (1996) and Kasarda (1995).

differential access to employment. A recent multi-city study found that even though employees in suburban areas had many low-skilled job openings and expressed a willingness to hire welfare recipients into those openings, welfare recipients were 50 percent more likely to be hired in and around central city areas.[10] Another study found that a neighborhood's proximity to low-skill jobs is inversely related to the size of the neighborhood's welfare caseload, all other things being equal.[11] Combining data from administrative files and the 1990 Census, the authors estimate that African-Americans living in an area with job access in the 10th percentile had a welfare participation rate over 3 percentage points higher than African-Americans living in an area with job access in the upper 90th percentile (20.23 percent v. 16.98 percent, respectively).

Few studies, however, have both direct measures of job accessibility and individual-level data on whether or not welfare recipients are working. Because we have such data, we extend the literature by examining how proximity to the stock of employment opportunities and to changes in these opportunities affect the likelihood that a welfare recipient will work and will leave welfare. All things being equal, earnings rates and welfare exit rates should be higher among those recipients living closer to jobs and closer to job growth.

To test these hypotheses, we created a unique data file containing individual-level information on welfare receipt and access to employment opportunities for the three-county Detroit Metropolitan Area. The City of Detroit rests in the eastern corner of Wayne County (See Figure 1), with the largely suburban counties of Oakland and Macomb lying to the northwest and northeast of Wayne County respectively.[12] Administrative data on welfare receipt in June 1996, June 1998, and February 2000 were made available by the State of Michigan Family Independence Agency (FIA). To this

[9]See Fernandez (1997); Jargowsky (1997); Stoll et al. (1999); and, Yinger (1995, 2002).
[10]See Holzer and Stoll (2001).

administrative data, we merged data on employment opportunities from the 1992 Multi-City Survey of Urban Inequality and a 1997 survey of Detroit area employers conducted by Harry Holzer. Because these employer surveys contain information on the stock and flow of jobs in different parts of the Detroit metropolitan area, we are able to examine the spatial correlations between the location of welfare recipients and the location of jobs. See Appendix A for details on the data and Appendix B for descriptive statistics.

The relationships between welfare, work, and access to jobs in Detroit are of interest for several reasons. First, Detroit is typical of many older, rust-belt industrial urban areas with a racially residentially segregated population, a high-poverty central city, and a low-poverty suburban ring. For instance, female unemployment in 1998 in the City of Detroit was 7.2 percent, nearly twice the rate for the Detroit Metropolitan Area overall (3.8 percent).[13] The mean poverty rate in Wayne County in 1997 was 18.0 percent, compared to 5.9 percent in Macomb, and 6.0 percent in Oakland.[14] Second, restricting attention to one area allows us to examine the effects of proximity on opportunity within a specific policy and macroeconomic context. Michigan began to implement a "Work First" program in 1994 before the passage of PRWORA, but did not implement the program statewide until after 1996. Titled the Family Independence Program (FIP), the state's TANF program emphasizes job search and placement, allowing recipients to keep the first $200 of their earnings and 20 percent of all additional earnings without a reduction in their grant.[15] Danziger et al. (2001) estimate that a single mother with two children and no income other than earnings can earn approximately $800 per month in Michigan

---

[11]See Ong and Blumenberg (1998).

[12]For an account of race and economics in the Detroit metropolitan area, see Farley et al. (2000).

[13]See U.S. Census Bureau, Bureau of Labor Statistics, "Geographic Profile of Employment and Unemployment, 1998," Bulletin 2524, http://www.bls.gov/opub/gp/laugp.htm.

[14]See U.S. Census Bureau, "1997 Small Area Income and Poverty Estimates," http://www.census.gov/hhes/www/saipe/estimatetoc.html.

before her cash welfare benefit ends. Perhaps most importantly, the State of Michigan Family Independence Agency provided administrative data on individual welfare recipients in the late-1990s, data which are not usually available. Further, our employer data represents both the stock and flow of labor market demand in the Detroit metropolitan area.[16]

Empirical work exploring job accessibility in urban labor markets may be biased by the endogeneity of residential choice. More specifically, it is possible that there is a sorting effect, where those individuals most likely to work will seek neighborhoods with good job access and those individuals least likely to work will reside in areas with poor job access. As a result, the accessibility scores we computed may be less reliable among populations that are mobile across an entire metropolitan area. We believe that this is not a significant problem for welfare recipients in Detroit. Welfare recipients are highly segregated by race and class, necessarily limiting their residential options to certain neighborhoods in a metropolitan area. Limited residential choice, therefore, means that while central city residents may move with great frequency between isolated central city neighborhoods, they are less likely to make residential moves outside the central city to residential neighborhoods in the surrounding suburbs.

Variation in Access to Employment Opportunities

We created two job accessibility measures from the 1992 and 1997 employer surveys: access to all employment opportunities in 1997; and, the change in access to all job opportunities between 1992 and 1997. Both measures control for labor market competition by dividing proximity to jobs by

[15]The maximum FIP benefit for a family of three in Wayne County is $459. For more detail on the evolution of FIP in Michigan and its implementation in the Detroit metropolitan area, see Seefeldt et al. (2001).

[16]Our employer data could be biased by the fact that the two cross-sectional employer surveys we depend upn do a better job of recording changes in employment within firms than firm shutdowns, startups, or relocations.

the proximity to adults ages 18 to 64. An access score is calculated for each residential Census tract in the Detroit metropolitan area and is merged onto the administrative welfare record for all recipients who live in that tract. For ease of interpretation, we also divide each access score by the overall metropolitan mean score for that particular access measure. Thus, a welfare recipient living in a tract with an access score of 1.10 resides in proximity to 10 percent more jobs per adult than does the resident of the tract with the mean access score; a recipient living in a tract with an access score of 0.90 resides in proximity to 10 percent fewer jobs per adult than a resident of the mean tract. For our measure of change in job accessibility between 1992 and 1997, a score of 0.10 would correspond to a 10 percent increase in overall job access compared to the mean metropolitan tract. Finally, because there are over 2.5 million jobs in the Detroit metropolitan area, even small shifts in our access scores reflect important differences in access to employment. See Appendix C for details on how our accessibility measures were calculated.

(Figures 1 and 2 about here)

Figure 1 reflects access to employment opportunities in 1997. Darker areas of the map indicate tracts that have access to more jobs per job-seeker than the metropolitan mean, lighter areas reflect tracts that have access to fewer jobs per job-seeker than the metropolitan mean. As the map shows, access to job opportunities in 1997 was greatest in the western suburban areas, particularly Wayne County. Residential areas within the City of Detroit and in Macomb County tended to have the lowest job access scores in the metropolitan area. Figure 2 maps the change in access to jobs from 1992 to 1997, reflecting how access to employment opportunities shifted in the mid-1990s. The spatial trends in changing job access suggest that central city areas, those areas with greater percentages of poor families, non-white minorities, and welfare recipients, experienced a net loss in access to jobs compared

to the metropolitan mean. In contrast, many suburban areas experienced a net increase in access to jobs compared to the metropolitan mean.

(Table 1 about here)

Table 1 reflects the variation in access to jobs for those receiving welfare in June 1996 classified by the residential location, race, and educational attainment of the recipient. The first panel of Table 1 shows that welfare recipients living in suburban areas had greater access to jobs in 1997 than residents of the central city (column 1) and experienced increases in access to jobs between 1992 and 1997 (column 2). For instance, recipients living in suburban Wayne County had access to about 8 percent more jobs per adult than recipients living in the City of Detroit in 1997 (1.044 less 0.967). As a result, a greater percentage of recipients in suburban areas lived in residential tracts with access to jobs above the metropolitan mean (columns 3 and 4). Over 80 percent of adult recipients in suburban Wayne County lived in areas with access to jobs in 1997 above the metropolitan mean, yet only 7 percent of recipients in the City of Detroit lived in such areas. Welfare recipients living in the City of Detroit experienced a 3.9 percent loss in access to jobs between 1992 and 1997, whereas recipients in Oakland County experienced a net increase of 2.9 percent.

Given these suburban-urban differences, it is not surprising that white recipients in the Detroit metropolitan area, who tend to live outside of the city, had access to about 3 percent more jobs per job-seeker than non-whites (middle panel of Table 1, 1.000 less 0.972). Column 4 indicates that while roughly 42 percent of white recipients lived in areas with access to all jobs in 1997 above the metropolitan mean, only 13.4 percent of non-white recipients lived in such high job access areas. Non-white welfare recipients also tended to live in areas experiencing greater declines in access to jobs in the mid-1990s (-0.032) than white recipients (-0.009). Although differences in magnitude are quite small,

Columns 1 and 2 in Table 1 indicate that recipients with a high school degree or equivalent had greater access to jobs than those without a high school degree.

(Table 2 about here)

The percentage of recipients who report earnings, displayed in Table 2, correspond to these patterns, as the reported rates of earnings were much higher in suburban areas in June 1996 and June 1998. For instance, 22.4 percent of welfare recipients in the City of Detroit reported working in June 1996 (column 1), compared to about one-third of recipients in the rest of Wayne County and Oakland County, and 44 percent in Macomb County. The percentage of recipients who worked increased in all areas between 1996 and 1998, but recipients living in central city areas still lagged behind suburban areas. Although the increase was 13 percentage points in the City of Detroit, work rates were 35.5 percent in June 1998 (column 2), compared to about 50 percent in the other locations. Rates of reported earnings also varied by race and education. In June 1998, roughly one-third of non-white recipients worked, whereas one-half of white recipients reported earnings. Those with high school degrees reported work at higher rates in June 1996 than those without high school degrees.

When looking at mobility and work in our data, we find no evidence to suggest that welfare recipients reporting work earnings move systematically to the edge of the central city to be closer to job opportunities in the areas outside the city. Of those adults receiving welfare in both 1996 and 1998, 33.7 percent moved to a different residential tract, but only 1.4 percent moved from a central city tract to a suburban tract. Job access scores in June 1998 are slightly higher for recipients who did not work in June 1996, but who moved and were working in June 1998, than for recipients who did not work in June 1996, who moved and did not work. Those who moved and were working in 1998 had access to 0.13 percent more jobs per adult in 1998, those recipients who moved and did not work in 1998 had

access to 0.04 percent more jobs per adult in 1998 – a difference of less than one-tenth of one percent.[17]

Impact of Access to Jobs On Employment Outcomes

To assess how access to jobs might be correlated with employment, we estimated a series of logit models to identify the determinants of work among welfare recipients in June 1996 and in June 1998, where the dependent variables are simply whether or not a recipient reported work earnings in the given year. The former year is just prior to full implementation of Work First in Michigan, the latter after welfare reform's effects can be more readily seen. Because residential segregation, economic opportunity, and educational attainment differ so much by race, we estimate separate models for white and for non-white recipients. To capture both the stock and flow effects of the labor market, we include both proximity to all jobs in 1997 and change in access to jobs between 1992 and 1997. We include a number of individual-level characteristics in our models. Because they are more likely to be new to welfare, have very young children, and have less work experience, we expect younger welfare recipients to be less likely to work than older recipients. Given the challenges of finding and retaining work when responsible for dependents, we expect recipients from smaller households to be more likely to report earnings than those from larger households. We have data on educational attainment only for recipients in June 1996, and expect that welfare recipients with a high school degree will be more likely to work than those without a degree. Only in June 1998, do we have reliable information on how long the current case file has been open, allowing us to see whether long-term recipients are more or less likely to work than those whose cases have been active for shorter periods of time. To control for

[17]Further, Ross' (1998) examination of job and residential mobility in the Panel Study of Income Dynamics

variation in county administration of welfare-to-work activities, we include a set of dichotomous variables for the county of residence. We use residence in the City of Detroit as the excluded category, allowing us to see if suburban recipients were more likely to work even after controlling for access to jobs. Finally, we include the neighborhood tract poverty rate in 1990. All things being equal, we expect recipients from the central city and from poorer neighborhoods to be less likely to work than those from neighborhoods with lower poverty rates.

(Table 3 about here)

The results from the logit models, presented in Table 3, support several of these hypotheses. As shown in the first row of Table 3, the coefficients on access to jobs in 1997 are positive and significant across racial groups, indicating that both whites (column 1) and non-whites (column 3) closer to jobs had higher rates of earnings in June 1996 than those further from jobs. Access to jobs in 1997 is also positive and significant in columns 2 and 4, suggesting that even two years after the 1996 welfare reform act, access to jobs remains a significant determinant of whether recipients were working or not. Change in access to jobs between 1992 and 1997 has a positive and significant impact on the likelihood of work for whites in June 1996, meaning that closer proximity to job growth increases earnings rates. The negative and significant sign on the coefficient for change in access for non-whites (columns 3 and 4) is likely driven by the fact that nearly all non-white welfare recipients in 1996 and 1998 lived in areas that experienced the highest declines in job access during the mid-1990s.

Consistently, we find that younger recipients were less likely to work than older recipients and that those from households with six or more individuals were less likely to work than recipients from smaller households. Educational achievement of welfare recipients had a significant effect on earnings

---

supports this point. While blacks in the PSID were less likely to make a job change than whites, there was no evidence that blacks made residential moves that were related to job change.

rates in June 1996 (see columns 1 and 3), as those without a high school degree were less likely to work all things being equal. Duration of the active welfare case in June 1998 had different effects on work outcomes of whites versus non-whites. As shown in column 2, white recipients with a case file that had been active for more than a year were more likely to work than white recipients with a case file that had been opened within the previous year. In contrast, column 4 of Table 3 suggests that non-white recipients with case files that had been active for longer periods were less likely to work than those whose cases had been activated relatively recently. Tract poverty rate had a negative and significant effect on the likelihood of work, suggesting that other factors related to living in poor neighborhoods affect work outcomes of recipients.[18] Finally, even after controlling for access to jobs and individual characteristics, recipients living in suburban Macomb and Oakland counties (particularly non-white recipients) were more likely to report work earnings than recipients living in the central city.

(Table 4 about here)

Table 4 shows the impact of differences in job accessibility on the likelihood of reporting work earnings. In June 1996, a white welfare recipient living in a tract with access to 10 percent more jobs per adult than the mean metropolitan tract is predicted to have an earnings rate probability about 9 percentage points higher than a white recipient living in a tract with access to 10 percent fewer jobs per adult than the mean metropolitan tract (38.1 percent versus 29.3 percent). Job access continues to have a significant effect on earnings in June 1998. For instance, a non-white minority recipient in a tract with access to 10 percent more jobs per adult than the mean metropolitan tract is predicted to have an earnings rate 16 percentage points higher than a non-white recipient living in a tract with access to 10 percent fewer jobs per adult than the mean metropolitan tract (48.0 versus 32.0 percent). Also evident

[18]Very similar results were produced when a dichotomous variable for living in a high poverty neighborhood (tract poverty rate of 40 percent or higher) was included in our models in place of a continuous variable for tract

in Table 4 are the striking differences between predicted earnings rates for whites and non-whites living in areas with similar access to employment. For instance, whites living in areas with good access to jobs (Access to Jobs in 1997 = 1.10 and Change in Access = 0.05) have predicted probabilities of reporting work earnings in June 1998 that are nearly 15 percent higher than for non-whites living in areas with similar access to employment opportunities (60.4 percent versus 46.3 percent respectively).

Impact of Job Access and Work On Welfare Exits

Our administrative welfare data allows us to discern whether recipients receiving assistance in June 1996 were receiving assistance two years later in June 1998 and whether those receiving assistance in June 1998 were receiving assistance in February 2000.[19] Thus we can estimate the impact of job access and recipient characteristics on the likelihood of a welfare exit. We estimate a set of logit models using whether a recipient had left welfare in June 1998 and in February 2000 as the dependent variables. Again, we estimate different models for white and non-white recipients. We model welfare exits as a function of work, access to jobs, tract poverty rate, and characteristics of the welfare recipient. Because work should eventually lead to welfare exits, we expect that recipients reporting work earnings in June 1996 and June 1998 are more likely to have left welfare by June 1998 and February 2000 respectively than those recipients not reporting work earnings. Greater access to job opportunities should ensure greater opportunities for employment advancement and stability in work, so we expect that those recipients with greater access to jobs in 1997 and a net increase in access to jobs between 1992 and 1997 will be more likely to exit welfare in subsequent periods than those further

---

poverty rate.

[19]Our administrative data does not have any information on the nature of a welfare exit. Thus, we are not able to discern whether an adult recipient made a voluntary exit for marriage or other reasons, nor can we discern whether an exit was due to work.

from job opportunities and job growth.[20]

Earnings disregards do not increase with household size in Michigan; the first $200 plus 20 percent of monthly earnings is disregarded and the remainder of earnings is subtracted from the monthly welfare grant. Monthly welfare grants do increase with household size in Michigan, however, meaning that recipients from larger households have to earn more than recipients from smaller households before they are transitioned off of welfare. Coupled with the fact that recipients from larger households are less likely to work, we expect household size to have an inverse relationship to the likelihood of exiting welfare.

It is likely that variation in the implementation of welfare-to-work programs and requirements would affect welfare exit rates. Again, to capture variation in county administration of welfare-to-work activities, we include a set of dichotomous variables for the county of residence. By using residence in the City of Detroit as the excluded category in the model, we are able to see if suburban recipients were more likely to leave welfare even after controlling for work, access to jobs, and neighborhood poverty levels. Recipients from higher poverty neighborhoods are expected to be less likely to leave welfare than those from lower poverty areas, all things being equal. We also control for the age of the recipient in both periods and for education in June 1996.

(Table 5 about here)

The coefficient estimates for these welfare exit models are presented in Table 5. Again, many of our hypotheses are confirmed. In three of the four models, those recipients reporting work earnings in the past were more likely to have exited welfare two years later. Access to jobs in 1997 was positively and significantly related to welfare exits in all four models, an indication that those with greater access to

[20]Again, similar findings were produced when looking at changes in access to jobs. Appendix E contains the results of models estimated with the change in access to jobs between 1992 to 1997 as our job accessibility

jobs were more likely to have left welfare. Change in access did not have a significant effect on the likelihood that recipients would exit welfare in either 1998 or 2000. Tract poverty rate has a negative and significant impact on the probability of exiting welfare, meaning that those recipients from high poverty neighborhoods were less likely to exit welfare, even after controlling for job access.

A number of individual characteristics also affect the likelihood that recipients had exited welfare between the different reporting periods. Welfare recipients in June 1996 without a high school degree were less likely to have left welfare by June 1998 (see columns 1 and 3 in each table). Consistent across both race groups and time periods, was the fact that recipients from smaller households were more likely to have exited welfare between reporting periods than those from larger households. As shown in columns 3 and 4 of each table, older non-white minorities were more likely to exit welfare between reporting periods – many perhaps exiting when their children turned 18 and became ineligible for assistance. Three of the four models indicate that suburban recipients were more likely to exit welfare than recipients living in the City of Detroit. Non-whites living in suburban counties were more likely to exit welfare in February 2000, although county of residence was not significant for whites in the latter period.

(Table 6 about here)

To reflect the impact that access to jobs has on welfare exit probabilities, Table 6 contains predicted probabilities of welfare exits for white and non-white minorities receiving welfare in June 1996 and June 1998. Job accessibility affects the probability of exiting welfare in both time periods, although the impact of access is stronger in the earlier period. For instance, a white welfare recipient living in a tract with access to 10 percent more jobs per adult than the mean metropolitan tract has a probability of exiting welfare between June 1996 and June 1998 that is nearly 23 percentage points higher than a

measure.

white recipient living in a tract with access to 10 percent fewer jobs per adult than the mean metropolitan tract (57.1 versus 34.8 percent respectively).

Conclusion: Access to Jobs, Work, and Welfare

In an effort to extend the spatial mismatch literature, we examine how variation in access to job opportunities among welfare recipients affects work outcomes and welfare exits. Our descriptive findings indicate that access to jobs varies by race and location across the Detroit metropolitan area, with white recipients and those recipients living in suburban areas experiencing greater access to employment opportunities than non-white minorities and those recipients living in central city neighborhoods. We found that job access is an important determinant of earnings rates among welfare recipients, as greater access to employment corresponded to higher rates of work earnings among white and non-white recipients. Further, even after controlling for work and individual characteristics, we found that job access has a positive and significant effect on the likelihood that a welfare recipient will leave welfare.

Our analyses also highlight the potential utility of state administrative data as a tool for the planning, tracking, coordination, and evaluation of welfare-to-work activities. As states continue to press for greater discretion and flexibility in compliance with federal welfare reform guidelines, the federal government should provide incentives for states to use administrative data to assess program activity and to develop performance standards. Not only can such data be useful in measuring the impact of welfare-to-work programs over time, but such data can help identify areas where programmatic efforts may be better coordinated.

More importantly, our findings suggest that welfare reform programs do not occur on a

featureless plane. Because work outcomes and program participation among welfare recipients are related to residential location, we should continue to anticipate how place might affect welfare reform outcomes and how place might affect the implementation of welfare-to-work programs in the future. Much of the debate about continued welfare-to-work programming has focused on how we can best encourage and support work among welfare recipients. Some argue that the current system of time limits and work requirements has worked well. Others want to maintain work requirements, but increase access to support services such as child care subsidies, food stamps, and Medicaid. Expansions of the Earned Income Tax Credit (EITC) and the minimum wage have also been suggested as ways to reward and encourage work. While each of these strategies will help reduce poverty and joblessness, none of these strategies seek to better connect welfare recipients to the opportunities in the surrounding community. None of these strategies reduce the lingering spatial isolation of central city residents from economic opportunities. Further, none of these strategies will enhance the ability of local administrators to respond to the needs of their particular clients, nor to the dynamics of the local economic and social service setting.

With welfare caseloads becoming more concentrated in central cities, policies that can enhance mobility and access to job opportunities, particularly low-skill opportunities in outlying suburban areas, become increasingly important to achieving welfare-to-work goals. For those recipients with limited mobility due to poor access to public or automobile transportation, policy-makers should think about how to ease the burden of complex commutes to and from these isolated central city areas. Depending on the nature of the spatial isolation, these solutions may involve public transportation or expanding access to private automobile transportation. Although little research has been done, there is reason to believe that health care, mental health, and substance abuse service providers may be increasingly

locating to areas outside of central cities.[21] If we seek to support work among welfare recipients, it is important for states to ensure that service providers, as well as jobs, remain accessible to welfare recipients. Further, we should seek to create vocational training or apprenticeship programs through existing community organizations that provide important skills to recipients, while also enhancing their connection to the institutions, employers, and job opportunities in the surrounding community.

We are at a unique point in time in the history of the American welfare state. Not only are we at a point where we can continue to improve programs supporting work and the work-related needs of low-income families, but we can link these work support programs more systematically to other human service, transportation, and housing programs. As we continue forward with a "work first" orientation toward our social welfare programs, policy-makers should pursue programs that better link people seeking work to places with job opportunities. Enhancing access and mobility, therefore, will help mitigate the negative effects that persistent economic and spatial isolation have on the work outcomes of low-income households in urban America.

[21] See Allard et al. (2001).

Table 1. Welfare Receipt and Access to Jobs, June 1996[1]

Characteristic of Welfare Recipient in June 1996	Mean Access to All Jobs, 1997 (1)	Mean Δ in Access to All Jobs, 1992 to 1997 (2)	Percentage Of Recipients in Tracts Above Metropolitan Mean Access to All Jobs, 1997 (3)	Percentage Of Recipients in Tracts Above Metropolitan Mean Δ in Access to All Jobs, 1992 to 1997 (4)	N
Residing in:					
Macomb County	0.950	0.012	0.25	42.15	1,967
Oakland County	1.003	0.029	60.72	66.81	3,381
Wayne County	1.044	0.004	82.33	50.76	5,609
City of Detroit	0.967	-0.039	7.03	0.00	37,537
Race:					
White	1.000	-0.009	42.32	33.90	9,732
Non-White Minority	0.972	-0.032	13.40	6.80	38,762
Educational Attainment:					
High School Degree	0.980	-0.024	17.11	10.56	24,047
No High School Degree	0.975	-0.030	21.35	13.95	24,447

[1]All differences between reported means and percentages by county, race, and educational attainment are significant at the .01 level or below. See Appendix C for details on the calculation of job access measures.

Sources: June 1996 Administrative Data from the State of Michigan Family Independence Agency; 1992 Multi-City Employer Survey; 1997 Holzer Employer Survey.

Table 2. Percentage of Welfare Recipients with Earnings, June 1996 and June 1998[1]

Characteristic of Welfare Recipient in June 1996	Percentage Reporting Work Earnings in June 1996[1] (1)	N	Percentage Reporting Work Earnings in June 1998[2] (2)	N
Residing in:				
Macomb County	44.0	1,966	52.3	1,607
Oakland County	32.9	3,378	46.9	2,888
Wayne County	35.5	5,606	47.0	4,238
City of Detroit	22.4	37,499	35.5	31,936
Race:				
White	37.6	9,729	49.8	7,792
Non-White Minority	22.4	38,720	35.4	33,331
Educational Attainment:				
High School Degree	29.0	24,018	--	--
No High School Degree	22.1	24,431	--	--

[1]All differences between reported percentages by county, race, and educational attainment are significant at the .05 level or below.

[2]With the exception of Oakland and Wayne counties, all differences between reported means by county and race are significant at the .01 level or below.

Sources: June 1996, June 1998 Administrative Data from the State of Michigan Family Independence Agency

Table 3. Logit Models of the Determinants of Earnings Among Welfare Recipients, June 1996 and June 1998

	White Recipients				Non-White Minority Recipients			
	Dependent Variable: Recipient Reporting Earnings in June 1996 (1)		Dependent Variable: Recipient Reporting Earnings in June 1998 (2)		Dependent Variable: Recipient Reporting Earnings in June 1996 (3)		Dependent Variable: Recipient Reporting Earnings in June 1998 (4)	
Independent Variables	**B**	**SE**	**B**	**SE**	**B**	**SE**	**B**	**SE**
Access to All Jobs, 1997	1.984*	0.863	2.278*	0.916	2.119**	0.535	3.376**	0.499
Change in Access to All Jobs, 1992 to 1997	1.844**	0.595	0.040	0.639	-2.355**	0.572	-1.353*	0.545
Under 25 years of age	-0.576**	0.112	-0.267*	0.120	-0.462**	0.066	-0.300**	0.062
25 to 34 years of age	-0.205*	0.106	0.139	0.112	-0.036	0.062	0.133*	0.058
35 to 44 years of age	-0.018	0.109	0.085	0.115	-0.036	0.064	0.067	0.060
Three or fewer individuals in HH	0.110*	0.050	0.103†	0.054	-0.031	0.029	-0.035	0.028
Six or more individuals in HH	-0.083	0.063	-0.147*	0.066	-0.115**	0.034	-0.094**	0.031
Less Than HS Degree	-0.299**	0.044	--	--	-0.302**	0.025	--	--
Current Case File Open 1 to 4 years	--	--	0.152**	0.053	--	--	-0.150**	0.026
Current Case File Open +4 years	--	--	0.208**	0.065	--	--	-0.177**	0.032
Reside in Macomb County	0.451**	0.098	0.217*	0.104	0.873**	0.132	0.598**	0.137
Reside in Oakland County	0.004	0.087	0.099	0.093	0.387**	0.071	0.187**	0.068
Reside in Wayne County	0.127†	0.077	0.002	0.082	0.140	0.073	-0.112	0.074
Tract Poverty Rate	-0.863**	0.063	-0.922**	0.206	0.186*	0.092	-0.327**	0.088
Constant	-2.098*	0.876	-2.296*	0.928	-3.144**	0.528	-3.675**	0.494
N	9,729		7,612		38,720		32,952	

† - p < .10 * - p < .05 ** - p < .01

Sources: June 1996, June 1998 Administrative Data from the State of Michigan Family Independence Agency; 1997 Holzer Employer Survey.

Table 4. Impact of Job Access on Predicted Probability of Reporting Work Earnings, June 1996 and June 1998

Job Accessibility Measure	June 1996[1]	June 1998[2]
	Probability of Reporting Work Earnings For Whites	
Access to Jobs, 1997 = 1.10[3]	38.1	60.3
Access to Jobs, 1997 = 0.90[3]	29.3	49.1
Change in Access to Jobs, 1992 to 1997 = 0.05[4]	35.7	54.8
Change in Access to Jobs, 1992 to 1997 = -0.05[4]	31.6	54.7
Access to Jobs, 1997 = 1.10 and Change in Access to Jobs, 1992 to 1997 = 0.05	40.3	60.4
Access to Jobs, 1997 = 0.90 and Change in Access to Jobs, 1992 to 1997 = -0.05	27.4	49.0
	Probability of Reporting Work Earnings For Non-White Minorities	
Access to Jobs, 1997 = 1.10[3]	24.1	48.0
Access to Jobs, 1997 = 0.90[3]	17.2	32.0
Change in Access to Jobs, 1992 to 1997 = 0.05[4]	18.6	38.1
Change in Access to Jobs, 1992 to 1997 = -0.05[4]	22.5	41.4
Access to Jobs, 1997 = 1.10 and Change in Access to Jobs, 1992 to 1997 = 0.05	22.1	46.3
Access to Jobs, 1997 = 0.90 and Change in Access to Jobs, 1992 to 1997 = -0.05	19.0	33.5

[1] Predicted probabilities based on a welfare recipient who is a 25 to 34 year old head of household with no more than two dependents, who does not have a high school degree, lives Census tract with a 20 percent poverty rate, and lives in a Census tract in the City of Detroit.

[2] Predicted probabilities based on a welfare recipient who is a 25 to 34 year old head of household with no more than two dependents, who has been on assistance for between 1 to 4 years, lives Census tract with a 20 percent poverty rate, and lives in a Census tract in the City of Detroit.

[3] Change in Access to Jobs, 1992 to 1997 = 0.00.

[4] Access to Jobs, 1997 = 1.00.

Sources: June 1996 and June 1998, Administrative Data from the State of Michigan Family Independence Agency; 1997 Holzer Employer Survey.

Table 5. Logit Models of the Determinants of Welfare Exits, June 1996 and June 1998

	White Recipients				Non-White Minority Recipients			
	Dependent Variable: Exit Welfare By June 1998 (1)		Dependent Variable: Exit Welfare By February 2000 (2)		Dependent Variable: Exit Welfare By June 1998 (3)		Dependent Variable: Exit Welfare By February 2000 (4)	
Independent Variables	**B**	**SE**	**B**	**SE**	**B**	**SE**	**B**	**SE**
Reported Work Earnings in Previous Observation	-0.038	0.044	0.338**	0.056	0.312**	0.025	0.307**	0.026
Access to All Jobs, 1997	4.576**	0.836	4.414**	1.100	2.533**	0.458	2.093**	0.524
Change in Access to All Jobs, 1992 to 1997	0.126	0.586	-0.018	0.789	0.273	0.504	-0.117	0.601
Under 25 years of age	0.231*	0.110	0.314*	0.142	-0.257**	0.057	-0.506**	0.066
25 to 34 years of age	-0.050	0.104	0.013	0.130	-0.242**	0.055	-0.390**	0.062
35 to 44 years of age	-0.096	0.108	-0.026	0.134	-0.156**	0.056	-0.207**	0.064
Three or fewer individuals in HH	0.068	0.048	0.326**	0.068	0.272**	0.025	0.488**	0.030
Six or more individuals in HH	-0.115†	0.060	-0.360**	0.074	-0.205**	0.030	-0.325**	0.032
Less Than HS Degree	-0.255**	0.043	--	--	-0.287**	0.022	--	--
Reside in Macomb County	0.644**	0.095	0.145	0.125	0.509**	0.126	0.045	0.157
Reside in Oakland County	0.392**	0.084	0.105	0.114	0.410**	0.063	0.249**	0.080
Reside in Wayne County	0.027	0.073	-0.074	0.098	0.151*	0.064	0.192*	0.083
Tract Poverty Rate	-0.792**	0.185	-0.670**	0.249	-0.680**	0.079	-0.739**	0.093
Constant	-4.314**	0.848	-3.259**	1.108	-2.463**	0.452	-0.811	0.516
N	9,729		7,612		38,720		32,954	

† - p < .10 * - p < .05 ** - p < .01

Sources: June 1996, June 1998, and February 2000 Administrative Data from the State of Michigan Family Independence Agency; 1997 Holzer Employer Survey.

Table 6. Impact of Job Access on Predicted Probability of Exiting Welfare, June 1998 and February 2000[1]

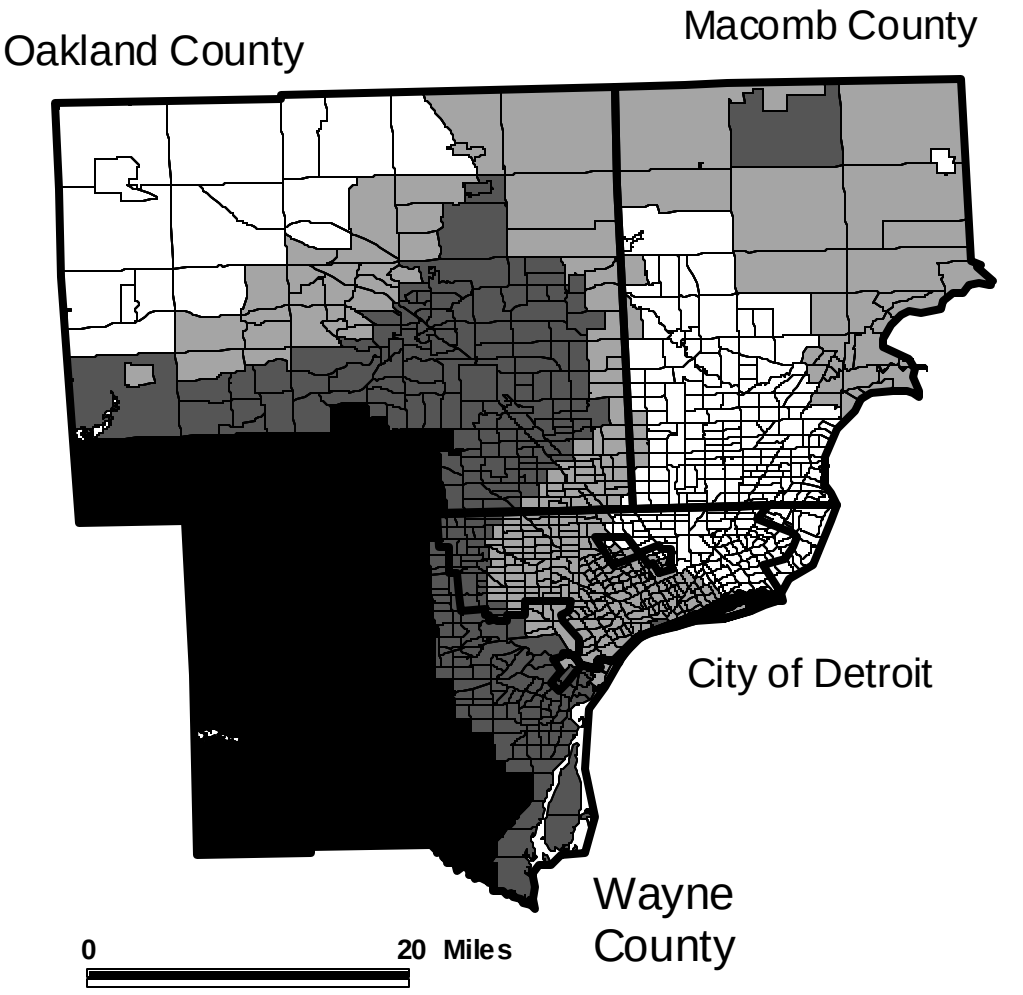
Job Accessibility Measure	June 1998[1]	February 2000[2]
	Probability of Exiting Welfare For Whites	
Access to Jobs, 1997 = 1.10	57.1	89.5
Access to Jobs, 1997 = 0.90	34.8	77.8
	Probability of Reporting Work Earnings For Non-White Minorities	
Access to Jobs, 1997 = 1.10	56.1	85.2
Access to Jobs, 1997 = 0.90	43.5	79.0

[1] Predicted probabilities based on a welfare recipient who is a 25 to 34 year old head of household with no more than two dependents, who does not have a high school degree, lives in a Census tract with no change in job access (change in job access score = 0), lives Census tract with a 20 percent poverty rate, and lives in a Census tract in the City of Detroit.

[2] Predicted probabilities based on a welfare recipient who is a 25 to 34 year old head of household with no more than two dependents, lives in a Census tract with no change in job access (change in job access score = 0), lives Census tract with a 20 percent poverty rate, and lives in a Census tract in the City of Detroit.

Sources: June 1996, June 1998, February 2000 Administrative Data from the State of Michigan Family Independence Agency; 1997 Holzer Employer Survey.

Figure 1: Access to Job Opportunities, 1997

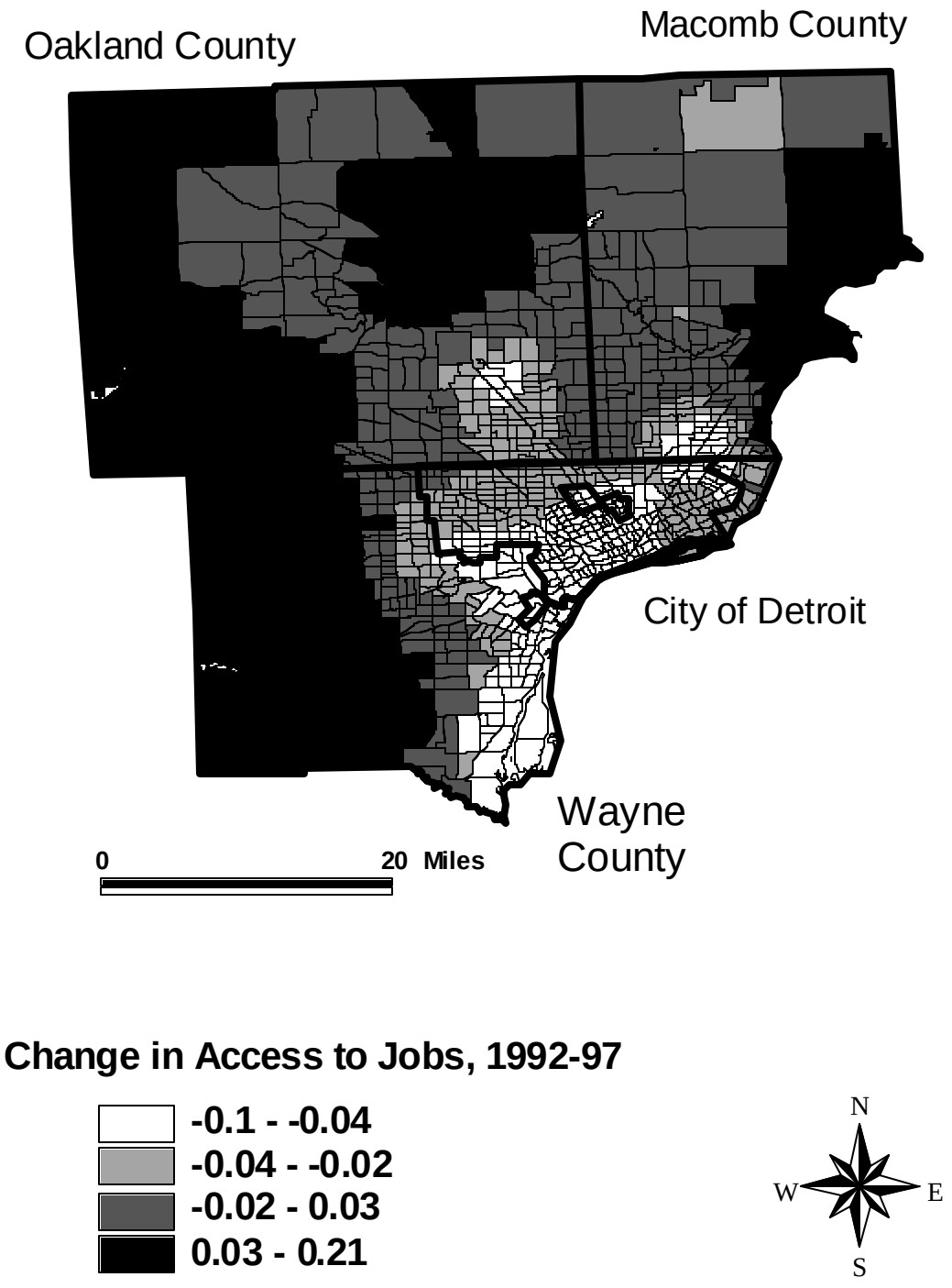


Access to All Jobs, 1997

- **0.9 - 0.96**
- **0.96 - 0.99**
- **0.99 - 1.04**
- **1.04 - 1.15**

N
W E
S

Figure 2: Change in Access to Job Opportunities, 1992 to 1997



Appendix A: Data Sources

State of Michigan, Family Independence Agency Client Database

Under a research agreement between the State of Michigan Family Independence Agency (FIA) and the Poverty Research and Training Center at the University of Michigan, we received administrative data on the universe of single mother welfare recipients in the three counties in June 1996 (N=57,802), June 1998 (N=41,169), February 2000 (N=24,752). Our analysis of June 1996 data includes only the 48,494 cases that were participating in the State of Michigan's Work First program at the time. For each case, we have information on start date of casefile, age, household size, race, and earnings from work reported for the previous month. Information on education level is available for June 1996 only.

Employer Surveys

To generate measures of employment access, we use data from the Detroit component of the 1992 Multi-City Survey of Urban Inequality (MCSUI) and a comparable 1997 Detroit employer survey. The MCSUI survey was conducted with a random sample of 803 Detroit metro area employers, where each firm was asked a range of questions relating to the characteristics of the workers and changes in the firm's workforce. When weights are applied, this survey represents an accurate descriptive and spatial picture of employment. A similar survey was completed by Harry Holzer of the Urban Institute in 1997. The 366-employer sample for the 1997 Holzer survey was size-weighted and reflects an accurate picture of employment opportunities in that year.

Appendix B: Variable Definitions and Sample Means

Variable	Sample Mean June 1996	Sample Mean June 1998	Variable Definition
Job Access, 1997	0.977	0.976	Distance-weighted measure of proximity to employment opportunities in 1997. See Appendix C.
Change in Job Access, 1992 to 1997	-0.027	-0.028	Difference between distance-weighted measure of proximity to employment opportunities in 1997 and 1992. See Appendix C.
Percentage Reporting Work Earnings	26.7	38.2	Whether or not recipient reported work earnings according to State of Michigan FIA administrative file.
Poverty Rate	31.8	32.6	Percentage of Census tract residents living below the poverty line, 1989.

Variable	Percentage in June 1996	Percentage in June 1998	Variable Definition
Non-white Minority	78.5	81.0	Race category entered in State of Michigan FIA administrative file.
White	21.5	19.0	
Resident of Macomb County	4.7	4.0	Geocoded from address in State of Michigan FIA administrative file.
Resident of Oakland County	7.7	7.1	
Resident of Wayne County (excluding City of Detroit)	11.7	10.4	
Resident of the City of Detroit	75.9	78.5	
Received High School Degree	49.6	--	Education code entered in State of Michigan FIA administrative file.
No High School Degree	50.4	--	
2-3 Individuals in Household	46.7	43.2	Number of recipients in household entered in State of Michigan FIA administrative file.
4-5 Individuals in Household	32.2	33.0	
6 or More Individuals in Household	21.2	23.8	
Case file open for < 1 year	--	37.6	Date of case file opening entered in State of Michigan FIA administrative file.
Case file open for 1 to 4 years	--	40.2	
Case file open for > 4 years	--	22.2	

Appendix C: Calculating Employment Access Measures

To estimate the proximity of residential tracts to employment opportunities, we created tract-level employment access measures from two surveys conducted in the three-county Detroit metropolitan area: a 1992 survey by the Multi-City Survey of Urban Inequality (MCSUI), and a follow-up survey by Harry Holzer of the Urban Institute in 1997. In each survey, employers were asked for information on the total number of employees at the time of the interview and how the size of firm's workforce had changed in the previous year. Each survey represents a random sample of employers in the Detroit metropolitan area and an accurate representation of employment opportunities.

To generate measures of access to jobs, we created weighted distances between residential tracts *i* and employment tracts *j* by the employment opportunities in each tract *j*. The first step was to calculate the distances between all tracts *i* and *j*.

$$\text{Distance}_{ij} = \left(\sqrt{(HH_{xi} - E_{xj})^{**}2 + (HH_{yi} - E_{yj})^{**}2}\right)/0.0145 \qquad (1)$$

Where HH_{xi} is the latitude coordinate for the centroid of the household tract; HH_{yi} is the longitude coordinate for the centroid of household tract; E_{xj} is the latitude coordinate for the centroid of the employer tract; E_{yj} is the longitude coordinate for the centroid of the employer tract. To convert from coordinate distance to miles, the tract-to-tract distances were divided by 0.0145. If the household and employer are in the same tract, we use the area of the tract to generate a radius for the track and use this calculated tract radius as the inter-tract distance:

$$\text{Distance}_{i} = \left(\sqrt{area_i/8.1367}/\sqrt{2}\right) \qquad (2)$$

To allow us to control for labor market competition, we estimated similar inter-tract distances between all residential tracts in the same manner.

We used the following distance decay function to estimate access to different types of employment opportunity in 1997 and 1992:

$$\text{Access}_i = \left(\sum X_j (e^{\lambda d ij})\right) / \left(\sum LC_i (e^{\lambda d ik})\right) \quad (3)$$

Where, X_j is a measure of job opportunity in employer tract j (presence of employer in 1997 and number of jobs in 1992),[22] λ is the distance decay parameter (in this case -0.092),[23] d_{ij} is the distance of the household tract to the job tract in miles, LC_i is the measure of labor market competition in residential tract k, and d_{ik} is the distance in miles of the household tract to the residential tract containing competing workers. Our measure of labor market competition was defined as the percentage of all adults ages 18 to 64 in the metropolitan area in a given tract and was taken from 1990 Census. This method of calculating access to jobs controls for employer-size and distance, as it weights larger employers and employment opportunities nearby a welfare or housing assistance recipient greater than those that are smaller and/or further away.

To estimate access to employment growth from 1992 to 1997, we used the following distance decay function:

$$\text{Access}_{i9792} = \left[\left(\sum X_{j97} (e^{\lambda d ij})\right) / \left(\sum LC_i (e^{\lambda d ik})\right)\right] - \left[\left(\sum X_{j92} (e^{\lambda d ij})\right) / \left(\sum LC_i (e^{\lambda d ik})\right)\right]. \quad (4)$$

Where, X_{j97} is a measure of job opportunity in employer tract j in 1997, X_{j92} is a measure of job opportunity in employer tract j in 1992, and LC_i is the measure of labor market competition in residential tract k.

[22]The 1997 survey sample was size-weighted, so we only need to calculate distances to firms to generate our measure of job opportunity. Because we standardize access scores by the metropolitan mean for each year, we can create comparable measures for 1992 and 1997.

[23]The λ weights for jobs at different distances, placing greater weight on jobs closer to a fixed point of interest and placing less weight on jobs further from that fixed point. This method of calculating distance-based access measures of employment opportunity was drawn from Raphael (1998) and Mouw (1999). Our value for λ was derived from a negative binomial count model of commuting patterns from 1990 CTPP data in Detroit.

References

Allard, Scott W. 2001. "The Urban Geography of Welfare Reform: Spatial Patterns of Caseload Dynamics in Detroit." Center on Urban and Metropolitan Policy, The Brookings Institution, Washington D.C.

Allard, Scott W., Danny Rosen, and Richard M. Tolman. 2001. "Linking the Spatial Distribution of Social Service Providers to Service Utilization Rates." Paper to be presented at the 2001 APPAM Fall Research Conference, 1-3 November. Washington, D.C.

Allen, Katherine, and Maria Kirby. 2000. "Unfinished Business: Why Cities Matter to Welfare Reform." Center on Urban and Metropolitan Policy, The Brookings Institution, Washington D.C., July .

Brennan, John, and Edward W. Hill. 2001. "Where Are The Jobs?: Cities, Suburbs, and the Competition for Employment." Center on Urban and Metropolitan Policy, The Brookings Institution, Washington D.C., April.

Coulton, Claudia, Laura Leete, and Neil Bania. 1999. "Housing, Transportation, and Access to Suburban Jobs by Welfare Recipients in the Cleveland Area." In Sandra J. Newman (ed.), *The Home Front*, Washington, DC: The Urban Institute Press.

Danziger, Sheldon, Colleen M. Heflin, Mary E. Corcoran, and Elizabeth Oltmans. 2001. "Does it Pay to Move From Welfare to Work?" Working Paper, Michigan Program on Poverty and Social Welfare Policy. http://www.ssw.umich.edu/poverty/pubs.html.

Farley, Reynolds, Sheldon Danziger, and Harry J. Holzer. 2000. *Detroit Divided*. Russell Sage Foundation, New York, 2000.

Fernandez, Roberto M. 1997. "Spatial Mismatch: Housing, Transportation, and Employment in Regional Perspective." In Burton A. Weisbrod and James C. Worthy (eds.), *The Urban Crisis*, Evanston: Northwestern University Press.

Holzer; Harry J. 1996. *What Employers Want*. New York: Russell Sage Foundation.

Holzer, Harry J., and Keith R. Ihlanfeldt. 1996. "Spatial Factors and the Employment of Blacks at the Firm Level." *New England Economic Review,* May/June: 65-82.

Holzer, Harry J., Keith R. Ihlanfeldt, and David L. Sjoquist. 1994. "Work Search and Travel Among White and Black Youth." *Journal of Urban Economics,* 35: 320-45.

Holzer; Harry J., and Michael A. Stoll. 2001. "Meeting the Demand: Hiring Patterns of Welfare Recipients in Four Metropolitan Areas." Center on Urban and Metropolitan Policy, The Brookings Institution, Washington D.C., May.

Ihlandfeldt; Keith F., and David L. Sjoquist. 1998. "The Spatial Mismatch Hypothesis: A Review of Recent Studies and Their Implications for Welfare Reform." *Housing Policy Debate,* 9(4): 849-892.

Jargowsky, Paul. 1997. *Poverty and Place*, New York: Russell Sage Foundation.

Kain; John F. 1992. "The Spatial Mismatch Hypothesis: Three Decades Later." *Housing Policy Debate*, 3(2):371-460.

Kasarda, John. 1995. "Industrial Restructuring and the Consequences of Changing Job Locations." In Reynolds Farley (ed.), *State of the Union,* New York: Russell Sage Foundation.

Massey, Douglas, and Mitchell Eggers. 1990. "The Ecology of Inequality: Minorities and the Concentration of Poverty." *American Journal of Sociology,* 95: 1153-88.

Mouw, Ted. 1999. Job Relocation and the Racial Gap in Unemployment in Detroit 1980-1990, Ph.D. Dissertation. Ann Arbor, MI: University of Michigan.

Ong, Paul, and Evelyn Blumenberg. 1998. "Job Accessibility and Welfare Usage: Evidence from Los Angeles." *Journal of Policy Analysis and Management* 17(4), pp. 639-57

Raphael, Steven. 1998. "The Spatial Mismatch Hypothesis and Black Youth Joblessness: Evidence From the San Francisco Bay Area." *Journal of Urban Economics*, 43: 79-111.

Rogers, Cynthia L. 1997. "Job Search and Unemployment Duration: Implications for the Spatial Mismatch Hypothesis." *Journal of Urban Economics*, 42: 108-32.

Ross. Stephen L. 1998. "Racial Differences in Residential and Job Mobility: Evidence Concerning the Spatial Mismatch Hypothesis." *Journal of Urban Economics*, 43: 112-35.

Seefeldt, Kristin S., Jacob Leos-Urbel, Patricia McMahon, and Kathleen Snyder. 2001. "Recent Changes in Michigan Welfare and Work, Childcare, and Child Welfare Systems." Urban Institute.

Stoll; Michael A. 1999. "Spatial Job Search, Spatial Mismatch, and the Employment and Wages of Racial and Ethnic Groups in Los Angeles." *Journal of Urban Economics*, 46: 129-55.

Stoll, Michael A., Harry J. Holzer, and Keith R. Ihlanfeldt. 1999. "Within Cities and Suburbs: Racial Residential Concentration and the Spatial Distribution of Employment Opportunities across

Submetropolitan Areas." Discussion Paper No. 1189-99, Institute for Research on Poverty, Madison: University of Wisconsin.

Yinger, John. 1995. *Closed Doors, Opportunities Lost*, New York: Russell Sage Foundation.

Yinger, John. 2002. "Housing Discrimination and Residential Segregation as Causes of Poverty." In Sheldon H. Danziger and Robert H. Haveman (eds.), *Understanding Poverty*, Cambridge: Harvard University Press.