Location and the Low Income Experience: Analyses of Program Dynamics in the Iowa Family Investment Program

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Abstract

In 1993, Iowa obtained a waiver to enact many of the key provisions of Temporary Assistance for Needy Families (TANF) in its welfare assistance and initiated the Iowa Family Investment Program (FIP). We use Iowa state administrative data for the period 1993-95 and study why some low-income households successfully leave public assistance while others who leave later return. We focus on those who were active in FIP at the time of the program reforms. The research explores the role of employment, earnings, and other support such as the Food Stamp Program (FSP) and child support for recipients who leave FIP. Geographic (metro and nonmetro) differences are of specific interest. Reasons for recidivism are examined over time, with specific attention to local labor market conditions and factors that differentiate areas by degree of rural/metro location (various classifications). The analysis provides evidence on the effects of programmatic changes in Iowa's welfare programs. Among those active in FIP in all months of the two-year period, employment increased. Multivariate analysis of recidivism shows that during the first two quarters, those in nonmetro areas were more likely to return to FIP; however, after this initial period, the risk of return was very similar in the two areas. The analysis provides specific results for better understanding of the impact of recent reforms on low-income households in a state that is relatively rural.

LOCATION AND THE LOW INCOME EXPERIENCE: ANALYSES OF PROGRAM DYNAMICS IN THE IOWA FAMILY INVESTMENT PROGRAM

Introduction

In 1993, the State of Iowa, through waivers, implemented reforms creating the Family Investment Program (FIP), a program similar to Temporary Assistance for Needy Families (TANF) created under the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA). FIP's goals of helping program recipients leave poverty and become self-supporting parallel the intent of TANF and PRWORA (Holcomb et al., 1998; Iowa Department of Human Services, 1996). FIP merged and coordinated several existing programs and tied support for job training, education, child care, and transportation more directly to income transfers. Iowa has had to change FIP very little to meet current federal guidelines. Thus, Iowa provides over six years of experience under a program with rules and incentives similar to those instituted nationwide only recently.

The changes in welfare policies and programs created by the PRWORA of 1996 raise questions about how rural families who have received assistance are faring as work requirements and time limits on cash assistance are implemented. Whether rural welfare recipients face a more difficult transition from welfare to sustained employment given the challenges facing some rural areas is not well understood.

This paper examines the dynamics of welfare participation during the pre-TANF period of Iowa's reform (1993–95). Iowa had received a waiver to enact many of the key provisions of TANF during this period, including encouragement of recipients to enter job training and the labor market. The analyses make use of a unique data set comprised of linked state administrative records. These data are ideal for longitudinal analyses because key variables are available on a monthly basis. The data also allow us to track location and change in location of the FIP households. The research has the specific objective of determining how programmatic, demographic, and macroeconomic factors

relate to recidivism among program participants. Reasons for recidivism are examined over time, with specific attention to the local labor market conditions and by degree of metro/nonmetro location (various classifications).

In the next section, we provide background to Iowa's welfare program, review previous research and discuss the aspects of geographic differences that may influence the FIP experience. In section three, we outline the main features of the Iowa administrative data used here. We also discuss the benefits and drawbacks of using administrative data for research purposes. Section four provides descriptive analyses of the dynamics of FIP participation. In section five, we employ a semiparametric duration model and examine the distribution of the first exit spells and incidence of recidivism. The semiparametric approach has the advantage of not requiring distributional assumptions on the duration of the exit spells. We conclude the paper by drawing several policy implications from our findings.

Background

Throughout the 1990s rural states enjoyed the benefits of a healthy economy. In Iowa in the latter half of this decade, for example, the statewide unemployment rate remained well below the national rate. In 1999, 95 of the 99 Iowa counties had unemployment rates below the national mark of 4.1 percent. Iowa's economic success, however, has had an uneven geographic distribution. County level unemployment rates in Iowa in 1999 ranged from 1.7 percent (Warren County) to 4.5 percent (Butler County), with all but one of the seven counties having the highest unemployment rates being predominately rural counties (Iowa Department of Workforce Development, 2000). In the more rural counties, manufacturing jobs have absorbed many of the numbers of those leaving farming, however since 1993, most of Iowa's population growth has been in the state's 10 metropolitan counties (Eathington, Swenson, and Otto, 2000).

During the 1990s, caseloads in Iowa for the Aid to Families with Dependent Children (AFDC)/FIP and the Food Stamp Program (FSP) both peaked around the time of the implementation of the FIP waivers. Since early 1994, the caseloads for both programs have declined relatively steadily (see Figure 1). Interestingly, the proportion of

cases from metro versus nonmetro counties has been about the same for AFDC/FIP and FSP during this decade; about one-half of the cases for each program came from the 10 metro counties while the other one-half came from the 89 nonmetro counties. Stated another way, while rural unemployment rates in Iowa remain generally higher than metro rates, both nonmetro and metro counties alike have seen a reduction in assistance program participation.

Most studies of former welfare recipients have found that between one-half and three-quarters of parents are employed shortly after they leave the rolls (see Parrott, 1998). However, wages are low, typically below $8 per hour and often below $6 per hour. As a result, studies measuring earnings over three-month periods find earnings levels well below poverty.

Much of the policy debate over welfare reform has centered on the plight of poor urban families. While poverty has become more urbanized over the past several decades, most poor and welfare-recipient families live outside of central cities, and many live outside of metropolitan areas altogether. As indicated by Food Stamp, TANF, and Medicaid caseload patterns, welfare reform appears to have distinct geographic components (Goetz and Freshwater 1997). Some evidence suggests that rural workers may face substantially greater barriers than urban workers to being fully employed and moving to economic self-sufficiency. In nonmetropolitan areas, poor families are already more likely to be working, and more likely to be underemployed (working part-time, earning low wages, or unemployed), compared to poor families in metro areas (Findeis and Jensen, 1998). In Iowa, average nonfarm earnings in rural counties are below those in metropolitan and other counties. In manufacturing, average rural manufacturing earnings are much below urban and metro manufacturing levels at 68 percent of national levels; in the services sector, rural earnings were 49 percent of the U.S. average (Eathington, Swenson, and Otto, 2000).

The majority of the early literature on welfare participation finds that greater nonwage income, higher wage rates, more years of schooling, fewer children, good health, and being white are related to lower participation rates and higher exit rates. Moreover, these studies also show the existence of "negative duration dependence" that

occurs when the exit rate falls as the duration of the welfare spell lengthens, or reentry rates fall, the longer the spell off of assistance. Moffitt (1992) reviews the concepts and measures of welfare dependence presented in this early literature. He finds that the most common definition of welfare dependence focuses on the length of a single welfare spell; this measure does not consider the high reentry (recidivism) rates among welfare recipients.

Important determinants of recidivism identified in the literature include having fewer years of education, not being married, and having little job experience (Sandefur and Cook, 1997; Brandon, 1995). Cao's (1996) analyses indicate that initial welfare dependency and recidivism are correlated with the recipient's age, years of education, marital status, ethnic origin, and region.

Born et al. (1998) provide preliminary analyses of administrative data from the Maryland Family Investment Program. Nearly 20 percent of the cases they examined were reopened within the first three to six months post-exit. Reentry rates were lowest among women who exited for employment reasons. Born et al. also find that women whose exits were short-lived tended to have younger children than those women who managed to stay off of the program. Reidy (1998) examines the role of noncash benefits for those leaving AFDC. One result is that those who leave AFDC but continue to claim noncash benefits (including FSP) are more likely to return to AFDC than others who leave both AFDC and other noncash benefit programs at the same time.

The limited information to date on differences between rural and urban areas (e.g., Porterfield 1998) shows that those in urban areas have longer spells on welfare compared to others in rural, or smaller urban locations. Differences in labor market opportunities, the household and individual characteristics of those in the two areas (including human capital differences), and costs of working (i.e., logistics of transportation, or child care services) are possible sources of differences. The shorter spells on welfare in rural areas may also be due to lack of program information and stigma attached to public assistance (Porterfield, 1998). Also, Porterfield found that rural families are more likely to *enter* welfare due to decreases in earnings or income (compared with urban families), but urban families were more likely to *exit* welfare through earnings or income increases.

A significant difference between metro and nonmetro areas may lie in the labor market and job opportunities. Davis, Connolly and Weber (1999) point to the spatial mismatch that has occurred as seekers of jobs in small markets have less success in obtaining jobs, and employers in other markets have a hard time finding the types of employees they seek. The greater prevalence of underemployment in nonmetro areas, typified by low wage employment, involuntary part-time work, or "discouraged" workers, may explain part of the inconsistency between relatively low unemployment rates in many areas and continued low incomes (Findeis and Jensen, 1998).

The current study examines the effects and outcomes of an assistance program quite similar to the TANF programs that have been established in many states. The early experiences with FIP in Iowa allow examination of the experiences of individuals and families who left FIP in the two-year period following its introduction. We study why some low-income households successfully leave public assistance while others who leave later return. We examine a specific set of families who were enrolled and active in FIP at the time of the newly enacted changes in the system.

Data

Iowa was one of the early states to link administrative data across programs to support program administration and policy analysis. In 1995, a project was designed to develop administrative data systems for research purposes. The product of this effort was a 3-year (April 1993 to March 1996) longitudinal data file that matches and merges FIP, Medicaid, the FSP, child support, and quarterly earnings records for all FIP recipients during this period. FIP, food stamps, and Medicaid represent the key assistance programs for low-income families; child support and earnings are the key sources of nonpublic assistance income. These data are specific as to amounts (e.g., program benefits, child support received, and earnings) and dates (e.g., program exit and reentry) and are preferred over survey data for this reason; these data are not subject to problems related to respondent recall and respondent bias. Data are linked for all FIP recipients in April 1993. Observations (cases) are added to the file as they enter FIP; cases are followed throughout the data period, even after exiting FIP.

We supplement the administrative data file in two ways. First, we classify each county as being metro (counties in metro area), urban (nonmetro counties with urban population of 20,000 or more), rural adjacent (counties with urban population of 2,500 to 19,999 or rural counties, adjacent to a metro area), or rural non-adjacent (Butler and Beale, 1994). The last three categories can be combined into a nonmetro group. Second, we merge monthly county unemployment rates and county income per capita to account for the effect of local economic conditions in our analyses. Monthly county unemployment rates are available from Iowa Workforce Development.

We create a two-year panel data set, beginning October 1993, the start of the FIP program, and ending September 1995. All cases identified as receiving FIP benefits in October 1993 (n=38,632) are included in the panel. No samples are drawn for these analyses. We observe 22,080 FIP exits among these cases, where exit is defined as being inactive (i.e., no benefits) for two months in a row. The total number of observations for the empirical analyses is reduced to 32,309 after deleting cases with missing information other than educational attainment. Of these cases, there were 17,159 cases (53 percent) metro and 15,150 cases (47 percent) nonmetro.

Although the Iowa linked data set includes detailed information on child support collections, FIP participation, and quarterly wage earnings, the household and demographic variables are limited. Available information includes the case head's educational attainment, age, marital status, ethnic origin, gender, disability status, and county of residence. The number of children in the household also is known.

Unfortunately, it is not mandatory to provide educational attainment when applying for FIP, and about 50 percent of our observations have missing data on education. Comparison of the sample means of variables including and excluding observations with missing education fails to support the assumption that the occurrences of missing data on educational attainment are distributed randomly throughout the population. Because deleting nonrandom missing data would lead to biased estimates and a loss of information, we employed a multiple imputation procedure (Rubin 1987) to compensate for the missing educational attainment data. The multiple imputations generate 6,593 observations (40.5 percent) with no high school degree for two years, 9,436 observations

(57.9 percent) with at least a high school degree for two years, and 270 observations (1.6 percent) experiencing a change in educational attainment (receiving their high school degree) some time during the two-year period.

Family Investment Program Participation

How well did the families fare during the initial period of the FIP program? And, were there differences in the experiences of those in metro areas compared to those in nonmetro areas? Differences may be attributed to a number of factors, and are explored in this paper. First we consider the differences using tabular analysis.

The data analyzed over the two-year period come from cases active in October 1993. During the data period observed, the overall FIP caseload initially increased and then fell. Some evidence suggests that the initial caseload increase resulted from the more generous FIP income disregards and the stronger support programs that were introduced in 1993 (Fraker et al., 1998). Of the cases, 53.1 percent were in metro areas; 46.9 percent were in nonmetro areas.

As shown in Table 1, about 90 percent of the FIP cases received food stamps, and, as expected, almost all cases included households with children. Of these cases, 46 percent had a single adult with child(ren) and 91 percent of the case heads were female. At the beginning of the period (October 1993) nonmetro cases had a lower share of households on the FSP. The nonmetro cases were more likely to have wage earnings and to be receiving child support, compared with those in metro countries. The nonmetro cases were also more likely to have a case-head that was married, was white, and had less than a high school degree compared to metro cases.

Table 2 provides basic descriptive information comparing the FIP cases of metro and nonmetro areas from the beginning of the period (end of first quarter observed in 1993) to the end of the period (end of last quarter observed in 1995). In both metro and nonmetro areas, nearly half of the cases observed as active in October 1993 were active at the end of the two-year period (51 percent for metro and 49 percent for nonmetro areas). Food stamp participation also fell in a similar way, although remained a bit higher than the FIP participation (57 percent for metro and 53 percent for nonmetro areas).

The percentage of households with wage income increased in both locations. For metro areas, the increase was from 52 percent to 67 percent; for nonmetro areas, the increase was 58 percent to 72 percent. Local unemployment rates fell during the same time period in both areas, although in both periods, the unemployment rates were higher for nonmetro counties. The average wage income received by those with positive wage income was higher for those in nonmetro areas in both periods. These differences suggest differences in jobs or differences in work effort (i.e., more hours worked) by those in nonmetro areas. By September 1995, over 70 percent of the households in nonmetro areas were receiving some wage income.

The percent of cases receiving child support also increased during this period; again, a relatively higher share of households in nonmetro areas received child support, compared to those in metro areas, and the average amount of child support received was higher for those living in nonmetro areas. In both areas the percent with high school degree increased, as did the percentage who report being married. In sum, in addition to improvements in the overall economy during the two-year period (as measured by unemployment rates), other indicators for our cohort of cases (such as average wage income, child support, being married, and achieving a high school degree) also improved.

There were also differences among the nonmetro areas, as shown in Table 3. All three nonmetro areas (urban, rural-adjacent, and rural non-adjacent) had higher rates of unemployment compared to the metro areas, in both periods; the unemployment rates were highest in the urban (nonmetro) areas. Other indicators suggest that those in the urban areas did less well than those in rural areas (as measured by percent with wage income, average wage income, percent with child support, child support levels, and FIP or FSP participation).

The measure "percent living in metro counties" shows the location of those who started in one area, and then lived in a metro area. The largest share moving to metro areas occurred for those who were living in rural-adjacent areas at the beginning of the period. Of those living in rural-adjacent areas in October 1993, 7 percent ended up in metro areas by September 1995.

We explore the mobility of cases between counties, and metro/nonmetro counties further. The FIP population is a relatively mobile population. For those in our data set, 11.5 percent moved out of the original county of residence (October 1993) at least once during the 2-year period. In metro areas, 7.0 percent of cases moved to another county; in nonmetro areas, 16.6 percent of cases moved. Of those who moved from the metro area, nearly 21.8 percent had moved back to the original county at the end of two years compared to 14.6 percent of those in nonmetro counties. The evidence suggests that FIP recipients in metro areas are more likely to stay (or return) to their "home" county compared with nonmetro recipients. (Of course, they may move within the county and the metro areas have more housing and different location options. We are not able to evaluate this possibility. Also, there is greater availability of public housing options in metro areas.)

If labor resources were fully mobile, we would expect FIP participants would move locations to obtain a job and that coincident with the change in location would be a change in FIP status. Did the moves lead to a change in FIP status? Table 4 shows the FIP status before and after moving to another county for metro and nonmetro movers during the period. The FIP status during the quarter preceding each move was compared to the FIP status in the first quarter in the new location (each observation is a move). As shown in Table 4, for those starting in metro counties, among active cases before the move, 69.2 percent were active in FIP after the move to a different county; 30.8 percent became inactive after the move. In comparison, for those starting in nonmetro counties, among the active cases before moving, 63.6 percent were active FIP cases after the move; 36.4 percent became inactive. In sum, nearly two-thirds of moves to another county are not associated with leaving FIP in the next quarter; however, metro movers who go to another county are less likely to leave FIP than are those from nonmetro areas. One caveat to these results is that there is some lag in the system for determining eligibility based on previous month's income.

We report on data for the two-year period October 1993 to September 1995[1] and looked at the amount of time (in months) the recipients were on FIP in each of the two years. In metro areas, 15.6 percent of recipients had relatively short spells during the first year (measured with up to six months on FIP in the first year); 64.3 percent remained on FIP during the full 12 months. The distribution of cases is similar for nonmetro areas, with slightly more (17.1 percent) receiving assistance six months and fewer, and 61.0 percent staying on for the full first12 months.

The extremes in our data are those who do not participate in FIP at all during the second year ("long-term leavers"), and those who participate in FIP all 24 months observed (the "hard-core"). The first group includes the 24.2 percent of all metro cases and 26.4 percent of all nonmetro cases who did not participate in FIP at all during the second year (0 months). The second group includes the 38.1 percent of metro cases and 35.0 percent of nonmetro cases that remained on FIP all 24 months of the 2-year period. Table 5 compares differences in the groups across the four geographic locations between the beginning and the end months of the two-year period.

To start, we compare those with no FIP participation in the second year across the four geographic areas. For this group, employment rates (receipt of wage income) were relatively high (ranging from 74 to 84 percent) during both years, although in all areas the percentage with wage income fell (had a negative growth rate). The highest rates of employment were in the rural adjacent areas, areas that have benefited from strong growth in jobs and available jobs in metro areas. For those earning wage income, the earnings were higher in the second year. The lowest average wage income was reported in metro areas.

The percentage receiving child support increased in all geographic areas for the groups with no FIP participation in the second year. Average annual child support increased between 68 and 79 percent in all of the areas. Receipt of food stamps decreased: falling from levels above 85 percent participation in the first year to

1 Note that our data are left censored. That is we do not have information about the case and case members before April 1993. Further, for these analyses, we do not make use of information preceding the start of the FIP program, October 1993.

participation between 26 and 30 percent of cases in the second year when there was no FIP participation. Note, however, that even with no FIP participation, up to 30 percent of the cases received food stamp assistance.

The experience for those on FIP for all 24 months was very different. These cases had lower employment rates, although even during the first year between 63 and 69 percent of cases had some wage income. The lowest labor force participation rates were reported in metro areas. Employment rates rose in the second year, with the most rapid increases occurring in metro and urban locations. The number of quarters worked also increased for these households. The annual wage income increased, however the increase was both at a level and growth rate lower than for those who were off of FIP by the second year. The lowest wage income was reported in metro areas.

Rates of child support for the "hard core" FIP cases increased as well in all areas. The annual levels of child support received were greatest in rural areas. Food stamp assistance was relatively common, and the highest food stamp participation rates occurred in metro counties (with rates of 92 to 93 percent).

In sum, in all geographic areas, there were changes in labor market activity for all FIP households during the two-year period: the average number of quarters worked increased for all groups; for those with no months on FIP in the second year, the percentage with employment fell. Increased work by the hard-core (24 months on FIP) may be attributed to success in meeting FIP's program goals. In comparing across geographic areas, the lower level of wage income and child support in metro areas is striking, especially compared with the two rural locations. Among those on FIP for the full 24 months, those in metro areas received the lowest wage income and near the lowest levels of child support. Growth rates for both wages and child support were higher for those in the two rural areas.

Empirical Analysis of Welfare Recidivism

We next examine recidivism through the duration of the first exit spell. We discuss the methods of analysis in detail in the following subsections.

Definitions of Variables

We analyze the first exit spell to gain a better understanding of welfare recidivism. An exit is said to occur when a FIP recipient leaves the program for at least two consecutive months. Hence, an exit spell ranges between 2 and 23 months in our data. We require two consecutive months with $0 in FIP benefits to avoid problems with individuals counted as an "exit" due to administrative delays, or due to an individual not receiving a benefit in the short term to reasons of being eligible for a benefit of less than $10, for example.[2] If the first exit spell of a case lasts only for a single month, we choose the next valid exit spell. There are 18,382 exit spells in our sample of 32,309 cases (Table 6). The distribution of spells for the metro and nonmetro areas are similar. Twenty-five percent of the exit spells are complete before the end of our sample period; the remaining spells are right-censored. The average length of all exit spells is 11 months. The average length of the complete spell, however, is six months, which suggests that for those who returned to FIP, the duration of their exit spell is relatively short.

Estimation Procedure

A semiparametric proportional hazard model with time-varying covariates is applied to our grouped duration data (Prentice and Gloeckler, 1978; Kiefer, 1990). The advantage of the semiparametric method is that the baseline hazard is nonparametric and is estimated along with the coefficients of the explanatory variables through a maximum likelihood procedure.

We grouped the exit spells by duration into eight mutually exclusive time intervals. That is, reentry occurs in one of the following intervals [0, 4), [4, 7),…, [22, ∞), where a month is the unit of the measurement. The exit intervals are defined as $[0, a_1)$, $[a_1, a_2)$,…, $[a_i, \infty)$. The probability of an exit spell ending in interval i is equivalent to the probability that a spell survives to interval i-1 and fails in interval i. Hence, the probability is given by

2 Program rules are such that a FIP program participant eligible for a cash benefit of less than $10 in a given month does not receive a cash benefit that month, but continues to remain eligible for, and must participate in, all other aspects of the program as if she/he had received a cash benefit.

$$\text{Prob}(a_{i-1} <= T < a_i) = (1 - P_{a_i}) \prod_{j=1}^{i-1} P_j ,$$

where j= 1,…,7.

We treat survival or failure (reentry) in each time interval as an observation. As a result, each FIP case contributes i observations to the likelihood function where i is the interval in which reentry takes place. For exit spells censored in a given interval, we assume that censoring occurs at the beginning of the interval. Given a sample with n individuals, the likelihood function is given as

$$L(\theta) = \prod_{k=1}^{n} (1 - P_{a_{ik}})^d \prod_{j=1}^{i-1} P_{a_j k},$$

where d=0 if the individual is still at risk and d=1 if reentry occurs.

To estimate the likelihood function, we use a proportional hazard function $\lambda(t,X_t) = \lambda_0(t)\phi(\beta,X_t)$ where $\lambda_0(t)$ is the baseline hazard function, $\phi(\beta,X_t) = \exp(\beta' X_t)$, and X_t is a set of regressors. Instead of specifying the functional form for the baseline hazard, the semiparametric method estimates the baseline hazard function for each time interval. The resulting log likelihood function can be rewritten as follows:

$$\log L^*(\theta) = \sum_{k=1}^{n} \{1 - \exp[-\exp(r_{ik} + \beta' X_{tk})]\} - \sum_{k=1}^{n} \sum_{j=1}^{i-1} \exp(r_{jk} + \beta' X_{jk}) ,$$

$$\text{where } \theta = (r_1, r_2, ..., r_m, \beta)$$

$$r_{ik} = \log[-\log \delta_i]$$

$$\delta_i = \exp\left[- \int_{i-1}^{i} \lambda_0(s) ds \right] .$$

δ_i is the conditional survival probability in interval i when $\beta' X_i$ is equal to zero.

Our model allows the values of the time-varying covariates to vary across different time intervals but requires them to remain constant within the time interval. The time-varying covariates include quarterly potential wage, quarterly child support collections, marital status, number of children, an indicator of the food stamp participation in the previous quarter, an indicator of the area of residence (metro county vs. nonmetro county), and the quarterly local unemployment rate. Time invariant variables are gender and race (white or nonwhite).

Because wage income is an important predictor of FIP participation, and because decisions regarding labor force and FIP participation are jointly determined, we use an instrumental variable approach to control for the endogeneity. The observed wage income in the quarter with highest reported wage income was used in predicting the potential wage income. The instruments for the potential wage include age, education, local unemployment rate, quarter, gender, income per capita of the county of residence, share of county population with a college degree, and an indicator of residing in a metro county.

Empirical Results

The descriptive statistics for variables used in the analysis are given in Table 7. Note, because the values of several of the variables change during the exit spell, the means are provided in Table 7 for the first quarter of the exit spell only. We note that the magnitude of the predicted potential wage is relatively high, a result that may be due to the choice of the quarter of highest wage income for the prediction. The estimated coefficients of the duration model are reported in Table 8.

We identify several important factors affecting FIP reentry. Results are presented for all cases, as well as metro and nonmetro cases. Most of the estimated coefficients are similar across the two geographic areas, except for those of demographics (marital status and gender), local unemployment and for the potential wage. With the data combined, living in a metro county decreases the reentry hazard, although this result is not statistically significant.

For all areas, higher quarterly wage income reduces the reentry hazard. This result is statistically significant for all cases and for nonmetro. Child support is negatively related to the probability of reentering FIP in a given interval. The magnitude of the coefficients indicates greater relative importance to increases in child support compared to wage income. The hypothesis that a higher (current) unemployment rate increases the probability of reentry is not supported here. Lagged unemployment rates produced similar results. The estimated coefficient is statistically significant only for nonmetro areas.

Receipt of food stamps in the previous quarter is positively associated with return to FIP. This result is consistent with that found by Reidy in Illinois. Those who continue to receive some form of assistance are more likely to return to FIP. The result suggests that the FSP provides a safety net for those most at risk of return to FIP.

Being married decreases the likelihood of returning to FIP in metro areas; the effect is not statistically significant in nonmetro areas. Male-headed cases are less likely to return to FIP than female-headed cases, and this effect is stronger in metro than in nonmetro areas. Race does not affect the reentry rates. Families with a greater number of children are more likely to return to welfare.

The estimated coefficients R1 to R7 in Table 8 are used to calculate the hazard rate. Figure 2 shows the shape of the reentry (hazard) rate, which is estimated at the sample means of the explanatory variables. The hazard rate decreases almost monotonically as the exit spell lengthens, confirming the existence of negative duration dependence. In the first quarter, the hazard rate is 0.093 in metro areas and 0.101 in nonmetro areas. By the end of the sixth quarter, the hazard rate decreases to 0.029 for metro areas and 0.030 in nonmetro cases. The hazard rate falls throughout the spell (except the last quarter). Although the rates differ in the first quarters where metro cases are more likely to return than those in nonmetro areas, for longer spells, the hazard rates of return are very similar.

Discussion and Conclusions

We examined the dynamics of welfare participation and the initial experience of welfare reforms in Iowa. Over 60 percent of the FIP recipients we followed in this study left the program at some point during this two-year period. Although improvements in the Iowa economy account for a share of the exits, our results provide some evidence that Iowa's reform of its welfare program may have helped reduce the FIP caseloads, as well. There are differences, too, between the experience of those in metro and nonmetro areas.

Analysis of FIP participants shows that between the first quarter and the last quarter during the period observed, there were marked economic improvements for some of the households. The employment situation for many in nonmetro areas shows higher wage earnings. Food assistance programs continued to offer assistance to these households, and

seemed especially important during periods of transition. However, many with support from the FSP returned. There was a relatively high degree of mobility among FIP participants, especially for those in nonmetro areas. The moves were not primarily associated with concurrent moving from being an active FIP participant.

What is most apparent, though, is that some households are able to move off of FIP, and others experience great difficulties in achieving self-sufficiency. Thirty-seven percent of FIP cases in our data stayed on FIP for the full two years. Several indicators suggest that those in metro areas in Iowa were more dependent on FIP sources of income: they were less likely to obtain wage earnings or child support and received lower wage earnings and lower child support amounts. Under TANF, the five-year lifetime limit on receiving benefits may affect this group most directly. They may be without assistance if state governments can exempt only 20 percent of their caseloads from the time limit.

The average length of a completed exit spell is six months, implying that FIP recipients who returned to the program did so quickly. Our data show that among FIP recipients, those in metro areas are less likely to leave FIP compared with those in nonmetro areas, but once they leave, those who left in metro areas are less likely to return right away. The multivariate analysis of likelihood of return to FIP after leaving shows that after the first two quarters, there is little difference in the likelihood of returning between metro and nonmetro locations.

The reasons for the differences (and similarities) are likely to be complex and we are only beginning to understand the experience of those who leave FIP (and the FSP) through closer examination of administrative data, as well as survey data on leavers. Characteristics of the leavers may differ across the geographic areas. Perhaps metro recipients do not leave FIP until they have very good economic prospects. Once off FIP, they stay off longer and are less likely to return immediately. There may be also differences in non-participation among eligibles, and the administrative data can provide only very limited evidence of this.

The lessons learned here provide a preliminary indication of what we can expect from a state TANF program. Iowa's experience suggests that human capital, marriage, child support, and the presence of children are major determinants of welfare dependence

and recidivism. Food assistance programs provide significant support to those most at economic risk. Programs and policies designed to enhance education, encourage marriage, provide and impose job training and job search, and further enforce the support of children by non-custodial parents are likely to be most effective in helping families achieve economic self-sufficiency, in either metro or nonmetro areas.

The empirical analyses for this study were conducted using state administrative data. Having the opportunity to use administrative data for research is a mixed blessing. These data allowed for analyses that could not have been conducted with survey data. On the other hand, they have their own challenges and limitations relative to survey data that cannot be ignored. We addressed one of these challenges in detail in another study: the problem of missing data for a key explanatory variable (educational attainment). In this paper we took advantage of the ability to track location change and the dynamics of active program participation. Based on our experiences with these data for this and other studies, we find that research based on administrative data complements well traditional survey-based research and should be encouraged.

Table 1. FIP caseloads by demographic variables: October 1993

Demographic Variables	Total	Metro	Nonmetro
Total Caseload-- Active in October 1993	32,309	17,159	15,150
Percent on Food Stamp Program	89%	90%	87%
Number of Children	2.2	2.2	2.1
Area of Residence			
Living in Metro	53.1%		
Living in Urban Nonmetro	16.9%		
Living in Rural Adjacent	13.7%		
Living in Rural Nonadjacent	16.3%		
Earnings and Child Support			
Family Had Wage Earnings	55%	52%	58%
Family Received Child Support	29%	26%	32%
Number of Adults			
No Adult	1%	1%	0.7%
One Adult Case	46%	52%	40%
Two Adults Case	34%	31%	38%
More Than Two Adults Case	19%	16%	21%
Married	20%	15%	24%
Gender			
Male	9%	8%	11%
Female	91%	92%	89%
Ethnicity			
White	85%	76%	94%
Black	12%	20%	3%
Others	3%	4%	3%
Educational Attainment			
High School, GED or More	61%	58%	64%
Less Than High School	39%	42%	36%

Table 2. Means and standard deviation of selected demographic variables for metro and nonmetro cases: December 1993 and September 1995

Variables	Metro Cases		Nonmetro Cases	
	December 1993	September 1995	December 1993	September 1995
Quarterly Wage Income ($)	2781 (2889)[a]	3,575 (3,299)	3,223 (3,154)[a]	4,207 (3,706)
Proportion with Quarterly Wage Income	0.52 (0.50)	0.67 (0.47)	0.58 (0.49)	0.72 (0.45)
Quarterly Child Support ($)	162 (178)	435 (596)	166 (195)	480 (634)
Proportion with Quarterly Child Support	0.26 (0.44)	0.32 (0.47)	0.32 (0.47)	0.41 (0.49)
Proportion with High School Degree or Above	0.58 (0.49)	0.61 (0.49)	0.64 (0.48)	0.66 (0.47)
Proportion Married	0.15 (0.36)	0.18 (0.39)	0.24 (0.43)	0.29 (0.45)
Number of Children	2.20 (1.33)	2.31 (1.37)	2.14 (1.25)	2.23 (1.29)
Proportion Living in Metro Counties	1.0 (0.0)	0.97 (0.18)	0.0 (0.0)	0.04 (0.20)
Local Unemployment Rate	3.48 (0.83)	2.97 (0.55)	4.04 (1.11)	3.58 (0.85)
Proportion of FIP Participation	0.92 (0.27)	0.51 (0.49)	0.91 (0.28)	0.49 (0.50)
Proportion Receiving Food Stamps	0.86 (0.35)	0.57 (0.50)	0.82 (0.38)	0.53 (0.50)
Number of Observations	17,159	17,159	15,150	15,150

[a] Standard deviation is in parentheses.

Table 3. Means and standard deviation of selected demographic variables for urban, rural-adjacent and rural-nonadjacent cases: December 1993 and September 1995

Variables	Urban		Rural-adjacent		Rural-nonadjacent	
	December 1993	September 1995	December 1993	September 1995	December 1993	September 1995
Quarterly Wage Income ($)	3,124 (3,146)[a]	3,998 (3,532)	3,313 (3,231)[a]	4,361 (3,865)	3,242 (3,092)	4,290 (3,732)
Proportion with Quarterly Wage Income	0.54 (0.50)	0.71 (0.45)	0.60 (0.49)	0.73 (0.44)	0.59 (0.49)	0.72 (0.45)
Quarterly Child Support ($)	164 (190)	444 (566)	165 (157)	492 (596)	168 (225)	503 (712)
Proportion with Quarterly Child Support	0.30 (0.45)	0.38 (0.48)	0.32 (0.47)	0.39 (0.49)	0.35 (0.48)	0.45 (0.50)
Proportion with High School Degree or Above	0.61 (0.49)	0.63 (0.48)	0.65 (0.48)	0.67 (0.47)	0.66 (0.47)	0.69 (0.46)
Proportion Married	0.23 (0.42)	0.28 (0.45)	0.25 (0.43)	0.30 (0.46)	0.25 (0.43)	0.29 (0.46)
Number of Children	2.13 (1.25)	2.23 (1.31)	2.14 (1.26)	2.24 (1.31)	2.15 (1.23)	2.21 (1.26)
Proportion Living in Metro Counties	0.0 (0.0)	0.03 (0.17)	0.0 (0.0)	0.07 (0.25)	0.0 (0.0)	0.03 (0.17)
Local Unemployment Rate	4.38 (0.82)	3.91 (0.86)	3.86 (1.05)	3.33 (0.74	3.84 (1.34)	3.45 (0.82)
Proportion of FIP Participation	0.92 (0.27)	0.51 (0.50)	0.90 (0.30)	0.47 (0.50)	0.91 (0.28)	0.47 (0.50)
Percent Receiving Food Stamps	0.85 (0.35)	0.57 (0.49)	0.79 (0.40)	0.50 (0.50)	0.81 (0.39)	0.51 (0.50)
Number of Observations	5.472	5.472	4.427	4.427	5.251	5.251

Table 4. FIP status before and after moving to another county for movers: October 1993 to September 1995

Before Moving to Another County	**After Moving to Another County**		
Metro moves (n = 1,629)[a]	Active	Inactive	Total
Active	69.23 (59.5)	30.77 (7.58)	(19.15)
Inactive	11.16 (40.5)	88.84 (92.42)	(80.85)
Total	22.28	77.72	100.00
Before Moving to Another County	**After Moving to Another County**		
Nonmetro moves (n = 3,439)	Active	Inactive	Total
Active	63.62 (61.85)	36.38 (9.95)	(21.34)
Inactive	10.65 (38.15)	89.35 (90.05)	(78.66)
Total	21.95	78.05	100.00

Column percentages are in parentheses.

[a] Note that "n" represents the number of moves and not number of movers.

Table 5. Comparison of selected demographic variables among five dynamic participation patterns: October 1993 to September 1995 (October 1993 base year)

Variables	Metro 0 Months in 2nd Year N=4,183 (24.4%)			Metro 24 Months in 2 years N=6,541 (38.1%)			Urban 0 Months in 2nd Year N=1,356 (24.8%)			Urban 24 Months in 2 Years N=2,035 (37.2%)		
	Yr. 1	Yr. 2	Growth Rate	Yr. 1	Yr. 2	Growth Rate	Yr. 1	Yr. 2	Growth Rate	Yr. 1	Yr. 2	Growth Rate
Annual Wage Income ($)	10,478	14,665	40.0	7,671	8,504	11.6	11,317	16,119	42.4	9,148	10,070	10.1
Proportion Employed	0.79	0.74	-5.5	0.63	0.74	16.4	0.79	0.78	-1.4	0.66	0.77	16.2
Annual Child Support ($)	1,323	2,279	72.3	377	394	4.5	1,419	2,381	67.8	372	391	5.1
Proportion Having Child Support	0.42	0.43	2.7	0.38	0.40	6.1	0.48	0.51	5.9	42.9	47.7	10.7
Proportion with Food Stamps	0.88	0.26	-70.0	0.93	0.92	-0.2	0.88	0.28	-68.0	0.935	0.938	0.4
Number of Children	2.04	2.04	0.01	2.33	2.44	4.5	2.01	2.01	0.1	2.22	2.32	4.6
Proportion High School or Above[a]	0.61	0.63	3.7	0.56	0.58	4.0	0.65	0.67	3.4	0.60	0.61	3.2
Proportion Married	0.19	0.20	6.9	0.132	0.13	0.7	0.23	0.25	5.7	0.217	0.22	1.6
Quarters Worked	2.50	2.62	4.6	1.85	2.24	21.4	2.53	2.77	9.6	1.95	2.38	21.6
Unemployment Rate	3.55	3.19	-10.2	3.67	3.29	-10.4	4.54	4.15	-8.7	4.53	4.15	-8.3
Proportion with Move to Another County	0.03			0.03			0.05			0.05		

Table 5. Continued

Variables	Rural Adjacent 0 Months in 2nd Year N=1,218 (27.5%)			Rural Adjacent 24 Months in 2 Years N=1,506 (34.0%)			Rural Non-Adjacent 0 Months in 2nd Year N=1,420 (27.0%)			Rural Non-Adjacent 24 Months in 2 Years N=1,760 (33.5%)		
	Yr. 1	Yr. 2	Growth Rate	Yr. 1	Yr. 2	Growth Rate	Yr. 1	Yr. 2	Growth Rate	Yr. 1	Yr. 2	Growth Rate
Annual Wage Income ($)	13,033	17,758	36.3	9,796	11,176	14.1	12,578	17,487	39.0	9,369	10,771	15.0
Proportion Employed	0.84	0.81	-3.9	0.69	0.76	9.4	0.82	0.78	-4.3	0.68	0.75	9.8
Annual Child Support ($)	1,430	2,462	72.1	389	418	7.5	1,409	2,521	78.9	386	421	9.1
Proportion Having Child Support	0.47	0.49	3.9	0.46	0.47	3.5	0.548	0.55	1.0	0.47	0.51	6.8
Proportion with Food Stamp	0.86	0.30	-65.3	0.869	0.866	-0.3	0.85	0.28	-66.7	0.89	0.88	-1.1
Number of Children	2.07	2.10	1.1	2.18	2.27	4.1	2.05	2.04	-0.1	2.20	2.27	3.4
Proportion with High School or Above[a]	0.68	0.70	2.2	0.62	0.65	4.2	0.70	0.71	2.2	0.66	0.68	3.6
Proportion Married	0.28	0.29	2.9	0.24	0.24	0.6	0.25	0.26	3.7	0.24	0.24	0.0
Quarters Worked	2.79	2.93	4.8	2.12	2.43	14.9	2.69	2.81	4.1	2.07	2.39	15.5
Unemployment Rate	4.10	3.84	-6.3	4.26	3.94	-6.7	4.14	3.87	-6.4	4.28	3.97	-7.4
Proportion with Move to Another County	0.09			0.10			0.10			0.10		

[a] The average of five imputation data sets is reported.

Table 6. Distribution of exit spells: October 1993 to September 1995

Duration	All Spells		Complete Spells		Right-censored Spells	
	Obs	Food Stamp (%)	Obs	Food Stamp (%)	Obs	Food Stamp (%)
2	1,596	41	963 (60)[a]	41	633 (40)	40
3	1,427	45	731 (51)	44	696 (49)	45
4	1,143	42	482 (42)	40	661 (58)	43
5	963	41	439 (46)	37	524 (54)	45
6	926	47	382 (41)	45	544 (59)	48
7	805	43	313 (39)	49	492 (61)	40
8	750	40	263 (35)	38	487 (65)	41
9	806	44	168 (21)	37	638 (79)	46
10	711	41	142 (20)	44	569 (80)	40
11	766	41	127 (17)	41	639 (83)	41
12	863	38	120 (14)	37	743 (86)	39
13	772	29	97 (13)	42	675 (87)	27
14	732	31	87 (12)	38	645 (88)	30
15	743	35	64 (9)	41	679 (91)	34
16	714	33	42 (6)	38	672 (94)	32
17	605	34	39 (6)	44	566 (94)	33
18	636	36	33 (5)	30	603 (95)	36
19	587	34	27 (5)	30	560 (95)	34
20	615	30	20 (3)	25	595 (97)	30
21	751	33	18 (2)	33	733 (98)	33
22	746	29	6 (1)	50	740 (99)	29
23	725	26			725 (100)	26
Mean	11.10		6.00		12.78	
Spells	18,382		4,563		13,819	

[a] Row percentages are in parentheses

Note: Food stamp percentage is computed according to the food stamp status in the first month of the exit.

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Table 7. Definitions, means, and standard errors of variables

Variable	Mean (Standard Error)			Definition
	All Cases	Metro Cases	Nonmetro Cases	
Male	0.1	0.09	0.11	Dichotomous variable equals 1 if FIP recipient is male
	(0.30)	(0.29)	(0.32)	
White	0.86	0.78	0.95	Dichotomous variable equals 1 if FIP recipient is white
	(0.35)	(0.41)	(0.22)	
Potential Wage	6.15	6.12	6.18	Predicted quarterly wage income (thousand) in the first
	(0.81)[a]	(0.81)[a]	(0.82)[a]	quarter of the exit spell
Child Support	0.277	0.24	0.32	Quarterly child support collections (thousand) in the first
	(0.97)	(0.50)	(0.79)	quarter of the exit spell
Local Unemployment	3.80	3.41	4.21	Quarterly average local unemployment rate (percent) in
Rate	(1.14)	(0.83)	(1.27)	the first quarter of the exit spell
Number of Children	2.15	2.16	2.14	Number of children in the first quarter of the exit spell
	(1.26)	(1.29)	(1.23)	
Married	0.24	0.19	0.29	Dichotomous variable equals 1 if married in the first
	(0.43)	(0.39)	(0.45)	quarter of the exit spell
Receipt of Food Stamps	0.44	0.44	0.44	Dichotomous variable equals 1 if received food stamp in
	(0.50)	(0.50)	(0.49)	the first quarter of the exit spell
Metro	0.52	1.00	0.0	Dichotomous variable equals 1 if lived in metro counties
	(0.50)	(0.0)	(0.0)	in the first quarter of the exit spell

[a] The average of five imputation data sets is reported.

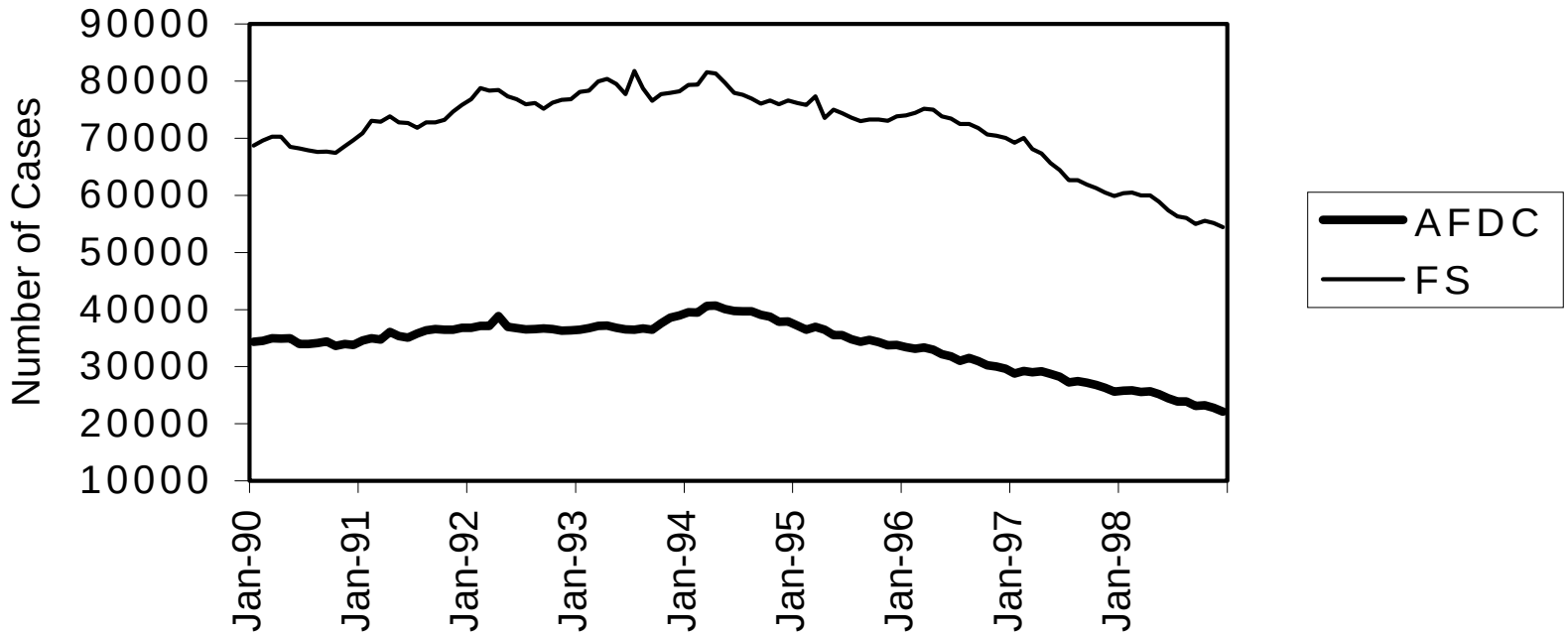
Note: Means are provided for the first quarter of the exit spell only where the variable changes during the exit spell.

Table 8: Average maximum likelihood estimates of recidivism: October 1993 to September 1995[a]

Independent Variables	All Cases	Metro Cases	Nonmetro Cases
Potential (Predicted) Wage	-0.06**	-0.04	-0.07**
Child Support	-0.52***	-0.55***	-0.49***
Local Unemployment Rate	-0.02	0.03	-0.04**
Receipt of Food Stamps (0,1)	0.61***	0.62**	0.60**
White (0,1)	0.02	0.0003	0.12
Married (0,1)	-0.02	-0.13**	0.06
Male (0,1)	-0.16***	-0.23**	-0.11*
Number of Children	0.10***	0.089***	0.10***
Metro Location	-0.06		
Other Parameters Estimated			
R7	-2.78***	-3.0***	-2.77***
R6	-3.10***	-3.35***	-3.06***
R5	-2.81***	-3.15***	-2.68***
R4	-2.73***	-2.93***	-2.75***
R3	-2.40***	-2.66***	-2.37***
R2	-2.17***	-2.46***	-2.09***
R1	-2.42***	-2.73***	-2.33***
Number of Observations	18,382	9,492	8,890
Log Likelihood[b]	-15,592.94	-7,915.97	-7665.08

*** significant at 1 percent level.
** significant at 5 percent level.
* significant at 10 percent level.

Figure 1. AFDC(TANF) and Food Stamp Caseloads in Iowa 1990-1998



Source: Iowa Dept. of Human Services

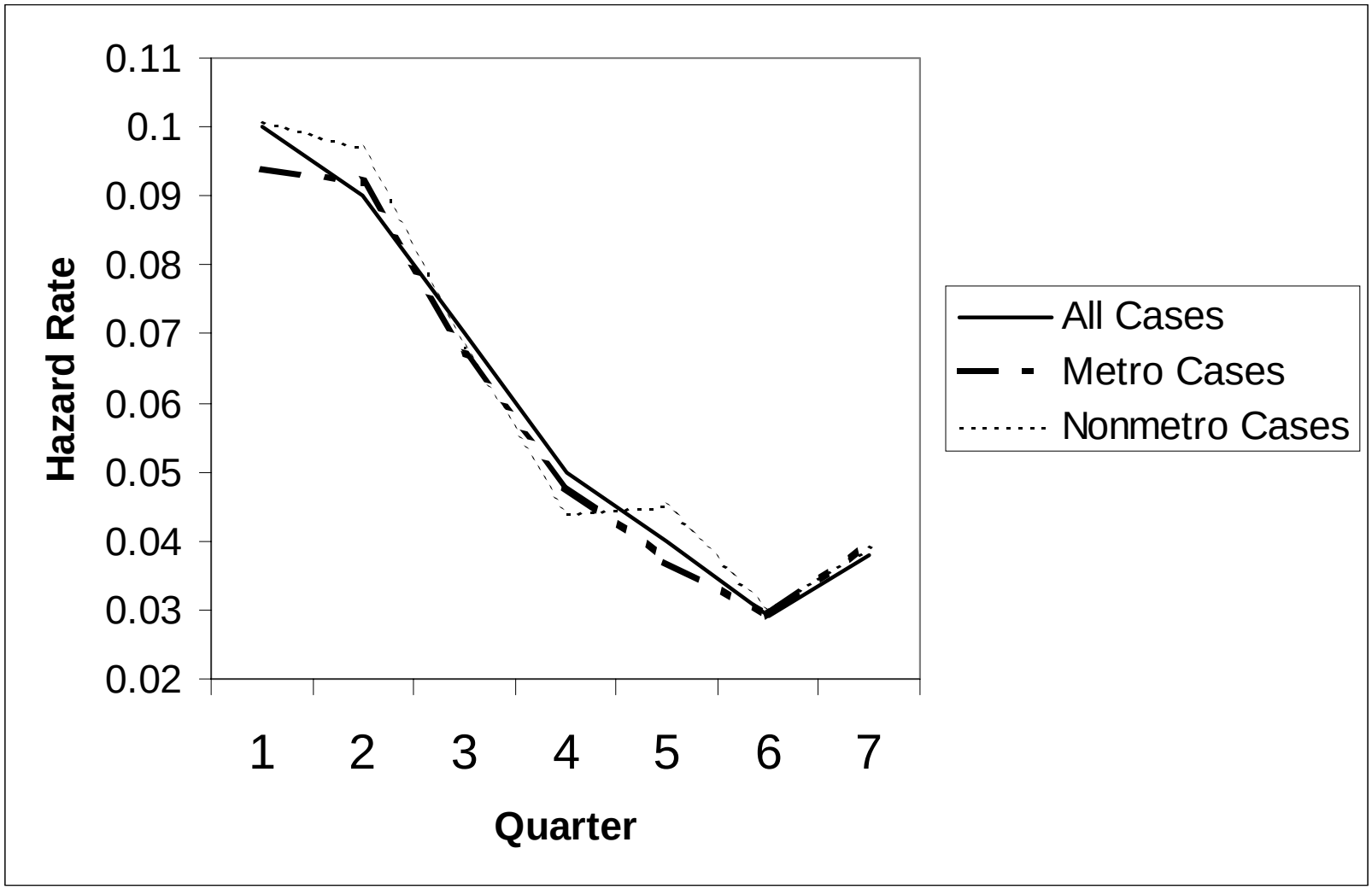


Figure 2. Predicted hazard rate evaluated at the sample means by county of residence

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