

Exploring the Possible Effects of TANF on Low-income Families through  
Analyses of Recidivism and Dynamics of Welfare Participation in a State  
Waiver Program

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## **I. Introduction**

Welfare programs were originally designed to alleviate the high rate of poverty among single-parent families during economic downturns. Although these public assistance programs indeed provide a safety net for people in need, many studies have shown that welfare programs result in two undesirable outcomes: teenage pregnancy and disincentive for work. In 1996, the Temporary Assistance for Needy Families (TANF) program was established under the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA). Section 401 in PRWORA addresses the purposes of TANF program: (1) to provide assistance to needy families; (2) to end the dependence of needy parents by promoting job preparation, work and marriage; (3) to prevent and reduce out-of-wedlock pregnancies; and (4) to encourage the formation and maintenance of two-parent families.

TANF tightens the eligibility criteria and gives state governments full authority to administer their welfare programs. The financial assistance from the federal government to states becomes a fixed block grant. New changes include a five-year lifetime limit of receiving benefits, stricter work and education requirements to qualify for benefits, and greater enforcement of child support obligations. By 2002, and the state governments are required to have fifty percent of the welfare recipients participating in approved work activities in order to receive federal grant continuously.

In 1993, the State of Iowa, through waivers, implemented reforms creating the Family Investment Program (FIP), a program similar to TANF. FIP merged and coordinated several existing programs and tied support for job training, education, child care and transportation more directly to income transfers. The reforms were designed to encourage and require welfare

recipients to make plans and changes toward achieving self-sufficiency. The design of FIP shifts the role of welfare program from long-term income maintenance to temporary assistance leading to self-sufficiency.

FIP has three major features: (1) making work pay; (2) responsibility with consequences; and (3) family stability. To encourage employment, FIP gives higher disregards and providing longer transitional child cares. FIP recipients have to sign a Family Investment Agreement (FIA) outlining the plans and steps that the recipients will take to achieve self-sufficiency. FIP recipients are expected to follow their FIA and participate in PROMISE JOBS offering job search, job training, and education opportunities. Failure to sign or follow the FIA results in being assigned to Limited Benefit Plan (LBP) under which cash benefits are first reduced for the first three months and then eliminated for the following six months. FIP also recognizes that stable two-parent family is a key for achieving self-sufficient families by releasing restrictions for two-parent and stepparent families to qualify for cash assistance.

Iowa has over five years of experience under a program with rules and incentives similar to those instituted nationwide only recently. Preliminary evaluation of Iowa's welfare reform was conducted by Fraker et al. (1998). They show that, during the first two years of Iowa's reform, participation in employment-related activities and earnings increase, although caseloads increases because of more generous eligibility rules.

This study uses Iowa's administrative records available between April 1993 and March 1996 to examine the dynamics of welfare participation during the pre-TANF period of Iowa's welfare reform. The data set is ideal for dynamic analysis because many variables are collected on a monthly basis. We first document the experience of Iowa's reform in terms of changes in FIP

caseloads, FIP participation patterns, and the demographic characteristics of each pattern. We then investigate what determines welfare dependence and recidivism using two different measures: (1) annual total numbers of months on FIP, and (2) the duration of the first exit spell. The first measure captures welfare dependence more precisely than the duration of a single spell because it takes into account the frequent reentry of welfare recipients. To control for unobserved heterogeneity, we apply a fixed effect model to the first measure. We use a semiparametric duration model to examine welfare recidivism. The semiparametric approach has the advantage of not making distribution assumption on spell duration. Moreover, with monthly data, we are able to incorporate time-varying variables, e.g., child support collections, and local economic conditions, into the duration analysis of welfare recidivism. Finally, we conduct simulations to evaluate the effects of policies targeting welfare dependence and recidivism.

In the next section, we review previous research. In section three, we outline the main features of the Iowa's administrative data and discuss sample selections. Section four provides the descriptive analysis of FIP caseloads and the dynamics of FIP participation. In section five, we present the fixed effect model and estimate the determinants of total time staying on FIP. Then, in the following section, we examine the distribution of the first exit spell and incidence of reentry, and use a duration model to examine welfare recidivism. We conclude the paper by drawing several policy implications from our findings.

## **II. Literature Review**

Moffit (1992) reviewed the concepts and measures of welfare dependence. The most common definition of welfare dependence focuses on the length of a single welfare spell; this measure does not consider the high reentry rates among welfare recipients. The majority of earlier literature includes estimates of either the probability of welfare participation at a point in time (Moffit, 1983, 1986; Robins, 1986; Blank, 1989a; Blank and Ruggles, 1996; Hu, 1999) or the exit rates of a welfare spell (Plotnick, 1983; O'Neil et al., 1987; Ellwood, 1986; Blank, 1989b, Fitzgerald, 1991). These studies found 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 showed the existence of "negative duration dependence", which occurs when the exit rate falls as the duration of the welfare spell lengthens.

Until recently, with increasing concern about welfare dependence and recidivism from policy makers, new research has begun to look at welfare recidivism and multiple participation spells. Using data from the Survey of Income and Program Participation (SIPP) Blank and Ruggles (1994) studied short-term recidivism among households headed by single mothers with children under age 19. They found that twenty percent of the former Aid to Families with Dependent Children (AFDC) recipients returned to the program before the end of the sample period. Their results also show that the average post-AFDC spell is 6 months, implying that most of the single mothers returned to AFDC relatively quickly. Both Cao (1996) using the National Longitudinal Survey of Youth (NLSY) and Barrett and Cragg (1998) examining the Canadian welfare system confirmed Blank and Ruggles' finding of considerable reoccurrence of welfare reciprocity. Gleason, Rangarajan, and Schochet (1998) showed that the inner-city teenage mothers have longer welfare

spells and higher recidivism rates than other groups of women receiving AFDC. The important determinants of the reentry rates identified in the recidivism literature include educational attainment, marital status, ethnic origin, non-wage income, and number of children.

### **III. Data**

The State of Iowa was one of the early states to link administrative data across programs to support program administration and policy analysis for welfare and child support program. 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 - March 1996) longitudinal data file (IOWALINK) that matches and merges FIP, Medicaid, Food Stamp, 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 collections and quarterly earnings are the key sources of nonpublic assistance income. These data are specific as to monthly amounts (e.g. program benefits and child support received) and dates (e.g. program exit and re-entry) and are preferred over survey data for this reason. These data are not subject to problems related to respondent recall and respondent bias.

Household and demographic variables are limited in IOWALINK. They include educational attainment, age, marital status, ethnic origin, gender, disability, number of children in the household, and county of residence. Providing information of educational attainment is not mandatory when applying to FIP. As a result, nearly fifty percent of our observations have missing data on education. We compare the sample means of variables with and without missing values.

The results support the assumption that the occurrences of missing education and other demographic variables are random events because demographic information was entered by income maintenance workers.

We create a two-year panel data set, beginning from October 1993, the start of the FIP program, and ending September 1995. Only cases that received FIP benefits in October 1993 and have complete information of FIP statuses in the entire two-year period are included. The total number of observations is 38,632 FIP cases before deleting missing demographic variables. This number is 1,000 cases greater than the actual FIP active cases in October 1993 reported in the FIP program. We think that the IOWALINK is reliable because active FIP cases generated from the IOWALINK are very close to the actual FIP caseloads.

Iowa's 99 counties are classified as metro, urban, and rural counties using locating codes ranging from 0 to 10 (Butler and Calvin, 1994). Locating codes distinguish metropolitan counties from non-metropolitan counties. Non-metropolitan counties are further classified either as "urban" counties or "rural" counties according to the size of their urban populations. Monthly county unemployment rates are provided by the Iowa Workforce Development. We merge county unemployment rates with IOWALINK to take into account the effect of local economic condition on the dynamics of welfare participation and welfare recidivism. The analyses and discussions in the following sections are based on the two-year panel data.

#### **IV. Stylized Facts**

Figure 1 shows the time trend of the FIP caseloads in Iowa. By the end of our sample period, September 1995, the caseloads decreased by 50 % from 38,632 to 19,189. Although Iowa's average annual unemployment rates during the two-year period are 3.76 and 3.46 percent, respectively, the decline in unemployment rate does not seem large enough to explain fully the changes of FIP caseloads. Hence, the onset of FIP program and new welfare rules in October 1993 must have contributed to the decrease in FIP caseloads.

In Figure 2, we examine the change in the distribution of the annual numbers of months on FIP. The U-shaped distribution indicates that the majority of the FIP cases were either staying off of FIP or staying on FIP for the whole year. In the first year (October, 1993 to September, 1994), 62.4 % of the FIP cases were active for the full 12 month period. The percentage decreases to 40 % in the second year. Moreover, almost twenty-six percent of the cases stayed off of FIP for the entire second year. The results suggest that the distribution shifts toward fewer months staying on FIP in the second year. The average total time on FIP is 10 months in the first year, whereas the number drops 30 % to 7 months in the second year.

We next examine the dynamics of FIP participation. Particularly, we are interested in knowing if long-term welfare recipients, defined as staying on FIP for at least 7 months, can achieve self-sufficiency during the initial period of Iowa's reform. We separate annual numbers of months on FIP in the first year into three distinct time groups: 1-6 months, 7-11 months, and 12 months. The same classification applies to the second year except we add one more category: 0 month. The first part of Table 1 shows that, in the first year, eighty-three percent of the welfare recipients are long-term recipients. The percentage drops to fifty-seven percent in the second year. FIP

recipients staying off of FIP for more than 6 months in the first year were more likely to continue this participation pattern or became self-sufficient (annual numbers of months are zero) in the second year. Ninety percent of non long-term recipients in the first year have equal or fewer months on FIP in the second year. On the other hand, only thirty-three percent of long-term recipients in the first year have equal or fewer months in the second year. Most importantly, fifty-eight percent of those who were FIP active for 12 months in the first year continue the same participation pattern in the second year.

The lower part of Table 1 shows the difference in the length of participation over the two-year periods. We classify the sample into five mutually exclusive groups: (1) staying 0 month on FIP in the second year, (2) staying equal months in the second year, (3) staying fewer months in the second year, (4) staying more months in the second year, and (5) staying for 24 months. It is clear that the majority of welfare recipients do better in the second year. Fifty-seven percent of them stayed fewer months on FIP in the second year. Only six percent of the cases were more dependent on FIP in the second year. However, thirty-six percent of the cases relied on FIP for 24 months.

Table 2 compares the demographic characteristics among these five groups after deleting missing values in demographic variables. The numbers of observations are 17,506. The first panel shows the two-year averages and the second panel gives the growth (decline) rate of these demographic variables between the first year and the second year. FIP recipients who did better in the second year not only have higher average wage, greater child support, more years of schooling and fewer children, but also experience a greater magnitude of growth in wage, child support, the

percentage of being married, and of decline in the number of children. The most distinct contrast is between "0 month", "Fewer Months" and "More Months" groups. The second panel of Table 2 clearly shows that "0 Month" and "Fewer Months" group experienced the greatest growth in average wage income, child support collection, and the percentage of being married. On the contrary, FIP cases staying longer in the second year, suffer a decline in the average wage income, child support, and marital dissolution. Moreover, the growth rate of number of children for "More Months" group is also 6 times higher than that for "Fewer Months" group, while "0 Month" even has a decline in the numbers of children.

Surprisingly, sixty-four percent of cases in the "24 Months" group hold at least a high school degree. However, the average wage income is forty percent lower than that of recipients who did better in the second year. It implies that the disincentive for work may exist among long-term FIP recipients. When the percentage of living in metro county are stable over time and doesn't vary much across demographic groups, the mobility of FIP cases is hidden if cases move from one metro county to another metro county or from one non-metro county to another non-metro county. Therefore, we compute the percentage of reporting moving to another county. An interesting finding is that both "0 Month" and "24 Months" groups have the lowest mobility rates, 5 %. On the contrary, "More Months" group has the highest mobility rate, nearly 13 %. Low mobility for "0 Month" group may be associated with working in more stable jobs.

## **V. Empirical Analysis of Welfare Dependence and Recidivism**

We examine welfare dependence and recidivism in two ways: (1) the annual numbers of months on FIP and (2) the duration of the first exit spell. We discuss each variable and the methods of estimation in detail in the following subsections.

### ***A. Annual Numbers of Months on FIP***

#### *(1) Definitions of Variables and Method of Estimation*

To estimate the determinants of total time on FIP, we first calculate the annual total numbers of months on FIP for each case in each year. A welfare recipient is said to have greater welfare dependence if he stays on FIP longer in a given year. Unobserved heterogeneity will bias the estimates if ignored. Here, we use a fixed effect model to account for unobserved heterogeneity. The explanatory variables in the regression analysis include total annual child support collections, average annual local unemployment rate, county of residence (metro or non-metro), marital status dummies, dummy for having high school degree or above, and numbers of children in the household. For the fixed effect model, time invariant variables, e.g., gender and ethnic origin, are excluded from the regression analysis. After deleting observations with missing values, there are 35,012 observations.

We create three marital status transition dummies in each year: (1) "become married" (2) "become divorced or separated" and (3) "remain single". The baseline category is "remain married". Another two additional variables, number of quarters being married and number of quarters being divorced or separated, are also computed. Then, we add two interaction terms into the regression: (1) the number of quarters being married and "become married" dummy and (2) the number of quarters being divorced or separated and the dummy of "become divorced or

separated". Along with marital status dummies, these two interaction terms allow us to estimate the effects of marital status change and the lengths of the new status on total time staying on FIP. Table 3 gives the definitions of variables, and descriptive statistics.

We expect that greater child support collections decrease the total time on FIP. On the other hand, a higher annual local unemployment rate and more children in the household should increase the total time on FIP. A high school binary variable approximates an individual's human capital and his potential of getting a job in the labor market. A person with a high school degree or above stays on FIP shorter than his counterpart because he has more opportunities in the labor market. Living in metro counties may be positively related to total time on FIP because the welfare stigma may not be as strong as for those living in non metro areas, or the network of private support resources is not as great as for those living in non metro counties. Individuals who remain married for the entire year should have the fewest months staying on FIP than those with other marital statuses. As for the interaction terms, the longer a person is married (divorced or separated), the shorter (longer) he stays on FIP. The empirical specification of the fixed effect model is given as follows:

(1)

where  $\alpha_i$  represents the effect of those variables peculiar to the  $i$ th individual and the effect is the same over time.  $\beta_j$  represents year and  $\epsilon_{ij}$  is the error term that varies by individuals and time.

## (2). *Empirical Results*

The empirical results are reported in Table 4. The signs of the coefficients are consistent with the predictions and are all statistically significant except for the binary variable for the divorced or separated. Our model fits the data relatively well and the results of the hypothesis testing on a common intercept favors the fixed effect model over ordinary least squares. We found that greater child support collections reduce the total time on FIP. A one thousand dollar increase in annual child support reduces the annual numbers of months on FIP nearly by two months. The average annual total numbers of months on FIP will decline from 8.7 months to 6.7 months if we can increase annual child support for every FIP case by \$1,000. In terms of elasticity, the results show that total time on FIP reduces by 0.1 % when child support increases by 1 %. In the other word, if child support is doubled (100 % increase), the annual total numbers of months on FIP are reduced by 10 % or 0.87 month on average. Holding a high school degree or above reduces the numbers of months on FIP by 0.7 month. The effect is small because, as shown in the previous section, many long-term recipients finish at least high school.

Local economic conditions have a strong effect on the annual numbers of months on FIP. A one percentage increase in the unemployment rate would lengthen the months on FIP by 2.5 months. The elasticity with respect to local unemployment rate is 1.03, implying that low unemployment rate in recent years in Iowa contribute to the decline in Iowa's FIP caseloads and

FIP caseloads are sensitive to the changes of economic conditions. Consistent with other studies, the presence of children increases the annual numbers of months on FIP. One additional child will add 0.65 month to the annual total months spent on FIP.

For marital status, the baseline group is those who remain married in 12 months. The results indicate that the baseline group stays fewest months on FIP than its counterparts. "Remain single" group stays 1.4 months longer on FIP than the baseline group. FIP recipients who got married during the year stay 2 more months than the baseline group. However, the length of stay decreases by 0.41 month with one additional quarter of being married. As a result, FIP recipients who were married for 3 quarters stay 0.79 month longer than the baseline group. It also implies that FIP recipients who become married during the year stay 0.2 months (or 1 week) longer than "remain single" group if they are married for only one quarter. The coefficient on divorce dummy is not significant, but the interaction term suggests that annual numbers of months on FIP increase by 0.56 month with one additional quarter of being divorced or separated. FIP recipients living in the metro counties stay almost one month longer on FIP than their counterparts.

## **B. Welfare Recidivism**

### *(1). Definitions of Variables and the Distribution of First Exit Spells*

We choose the first exit spell for reentry analysis. An exit is said to occur when a welfare recipient leaves FIP for at least two months. Hence, an exit spell ranges between 2 months and 23 months. We require two consecutive months with \$0 in FIP benefits before we consider the individual to have exited FIP. We do this to avoid situations where a individual remains part of the FIP program, but does not receive a FIP benefit in a given month for reasons of sanction or being

eligible for a benefit of less than \$10. In addition, if the first exit spell only lasts for a single month, we choose the next valid exit spell. There are 22,080 exit spells in our data.

Table 5 presents the distribution of the exit spells. Column one shows the distribution for all exit spells. We separate the complete spells and right-censored spells because their distributions are quite different. Twenty-five percent of the exit spells returned to FIP before the end of our sample period (September 1995) and the remaining spells are right-censored. The average length of all exit spells is slightly more than 11 months. However, the average length of the complete spell is 6 months, which suggests that, for those who returned to FIP, they do so relatively quickly. By comparing the distributions in column two and column three, we found that the majority of them returned to FIP, for FIP cases with spell lengths shorter than 4 months. The percentage of right-censored spells increases as the duration of the spells lengthens. Like the search models, our data show "negative duration dependence", that is, the probability of recidivism is a function of the length of the exit spell. The longer an individual stays off of FIP, the less likely he will be to return to FIP.

## (2). *Estimation Procedure*

We grouped the duration of the exit spell into 8 mutually exclusive intervals. That is, reentry occurs in either of the following intervals  $[0,4)$ ,  $[4,7)$ , ...,  $[22, \infty)$ . A semiparametric proportional hazard model with time-varying covariates can be applied to our grouped duration data (Prentice and Gloeckler, 1978; Kiefer, 1990; Han and Hausman, 1990; Sueyoshi, 1992). The advantage of the semiparametric method is that the baseline hazard is nonparametric and is estimated along with the coefficients of explanatory variables by maximum likelihood estimation.

The basic model is to assume that given regressors,  $X_t$ , the density function of duration  $T$  is  $f(t, X_t)$  and its associated hazard function is

(2)

If the intervals are  $[0, a_1), [a_1, a_2), \dots, [a_i, \infty)$ , the probability that  $T$  is greater than  $a_i$ , given that  $T$  is greater than  $a_{i-1}$ , can be expressed as

(3)

where  $i=1, 2, 3, \dots, m$  and there are  $m+1$  intervals. The probability that an exit spell ends 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

(4)

Given a sample with  $n$  individuals, the likelihood function is given as

(5)

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 and  $\phi(\beta, X_t) = \exp(\beta'X_t)$ . Instead of specifying the functional form for the baseline hazard function, the semiparametric method estimates the baseline hazard function for each time interval.

We treat survival or failure (reentry) in each interval as an observation. As a result, each FIP case contributes  $i$  observations to the likelihood function where  $i$  is the interval that reentry take places. Right-censored exit spells occur when the data period ends before individuals complete their exit spells. For the exit spell censored in a given interval, we assumed that censoring occurs at the beginning of that interval. Hence, if a case's exit spell is censored in interval  $i$ , we delete the  $i$ th observation and only use  $i-1$  observations for the case.

Our model handles time-varying covariates by assuming that the values of the time-varying variables vary across different time intervals, but remain constant within the time interval. The time varying covariates include quarterly child support collection, schooling, marital status, number of children, area of residence (living in metro county) and quarterly local unemployment rate. Time invariant variables are gender and ethnic origins. The resulting log likelihood function can be rewritten as follows:

(6)

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

(3). *Empirical Results*

Most of the coefficients in Table 6 are consistent with the findings in the recidivism literature. Having a high school degree reduces the reentry hazard. Nonwage transfer income–child support, is also negatively related to the probability of reentering welfare in a given interval. Surprisingly, the hypothesis that a higher unemployment rate increases the probability of entry is not supported here; the coefficient is not statistically significant. Being white is less likely to return to FIP. Marital status does not have an effect on the reentry rate. Men are less likely to return to FIP than their counterparts, but the estimate is insignificant. Families with greater number of children are more likely to return to welfare. Living in a metro county decreases the reentry hazard.

Figure 3 shows the shape of the reentry rate (hazard rate), which is estimated at the sample means of 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 0.06. By the end of the 7th quarter, the hazard rate decreases nearly to 0.02.

#### (4) *Simulations*

We conduct policy simulations by changing the values of the following explanatory variables: child support, schooling, and number of children. First, we double the average quarterly child support collections. The average quarterly child support is about \$270. Second, we increase the percentage of recipients holding a high school degree or above by ten percent. The average percentage is 0.68. And finally, we decrease the numbers of children by ten percent. The average numbers of children are 2.07.

The simulation results are reported in Figure 4. The vertical axis represents the marginal effect on the hazard rate. We combine the simulations of child support, schooling, and numbers of children in the same figure to compare the magnitudes of the effects. Both numbers of children and schooling have greater marginal effects than child support on survival probability. To obtain the same magnitudes of the marginal effects of numbers of children and schooling, we would have to triple the child support. On the contrary, tighter eligibility rules may encourage enrollment in school and reduce incentives for more children. The marginal effects of additional child support, having a high school degree or above, and having fewer children decrease over time. This suggests that the changes to these factors may be particularly effective and important in reducing recidivism at early times of the exit. This finding also indicates that child support enforcement, job training and school enrollment requirement, and reducing incentives to have additional children are keys to successfully assist FIP recipients to achieve self sufficiency.

## **VI. Conclusions**

We examined the dynamics of welfare participation and the initial experience of welfare reforms in Iowa. For FIP recipients we followed in this study, the caseloads decline by fifty percent. The improvement in Iowa's economy is not large enough to fully account for the decline. The results support the success of Iowa's welfare reforms on reducing FIP caseloads.

The dynamics of FIP participation reveals that on average, FIP recipients stayed fewer months on FIP in the second year; however, eighty-three percent of FIP recipients are long-term recipients and two thirds of these long-term recipients remain long-term dependents in the second

year. More importantly, forty-four percent of the long-term recipients stayed on FIP for the entire sample period. Our analysis suggests that the decline in caseloads is mainly attributed to cases that did not stay on FIP for 12 months in the first year because sixty percent of those who stayed 12 months on FIP in the first year continue the same pattern in the second year.

We also find that FIP recipients who did better in the second year not only had more years of schooling, fewer children, and higher wages and child support, but also experienced greater growth in wage, child support, the percentage of being married, and had a decline or smaller growth in the number of children. Multivariate analysis also confirms that these variables are key determinants of both annual numbers of months on FIP and welfare recidivism. Greater child support, fewer children, and getting a high school degree decrease annual numbers of months on FIP and FIP reentry rate. On the other hand, being married reduces annual numbers of months on FIP, but does not have an effect on the probability of reentering FIP.

The average length of the completed exit spell is about six months, implying that FIP recipient who returned to FIP did so quickly. The hazard rate is monotonically decreasing with time, which indicates the existence of negative duration dependence. We learn that the marginal effects of increasing child support, education, and of decreasing numbers of children diminish as the duration of the exit spell lengths. In the other words, these factors are crucial in determining the chances of exiting from FIP and of continuing to stay off of FIP during the early months of the exit.

Our results show that human capital, child support, marital status, and presence of children are the major determinants of welfare dependence. Given that the majority of FIP population is single mothers, and the goal of welfare reform is self-sufficiency. The policies should aim at helping

recipients finish their formal education, providing and imposing job training and job search, enforcing non-custodial parents to support their children, and preventing out of wedlock births.

Iowa's first two-year experience after welfare reform suggests that there exists a group of FIP recipients who experience great difficulties in achieving self-sufficiency, regardless of economic improvements and tighter rules. Under TANF, the five-year life time limit of receiving FIP benefits may begin to affect this group of recipients in a few years. Although the state government can exempt twenty percent of its welfare caseloads from the time limit, it will be difficult to determine who should be included in the exemption. The percentage of FIP caseloads showing long-term dependence is much higher than twenty percent. Our two-year data shows that there are thirty-six percent of FIP cases staying on FIP for two years (Table 1). These people rely on public assistance and, under new rules, they could be worse off once they are forced out of the welfare system.

The lesson that we learn from Iowa's welfare reform provides a preliminary evaluation of TANF. Although we only use the first two years of post-reform administrative records, the results show a significant decrease in caseloads. More years of data are needed to fully estimate the effect of welfare reform on Iowa's FIP caseloads. Particularly, it is equally important to continuously follow those who left welfare program and to compare their socioeconomic conditions before and after the exit. We plan to pursue these issues when the latest Iowa data are available.

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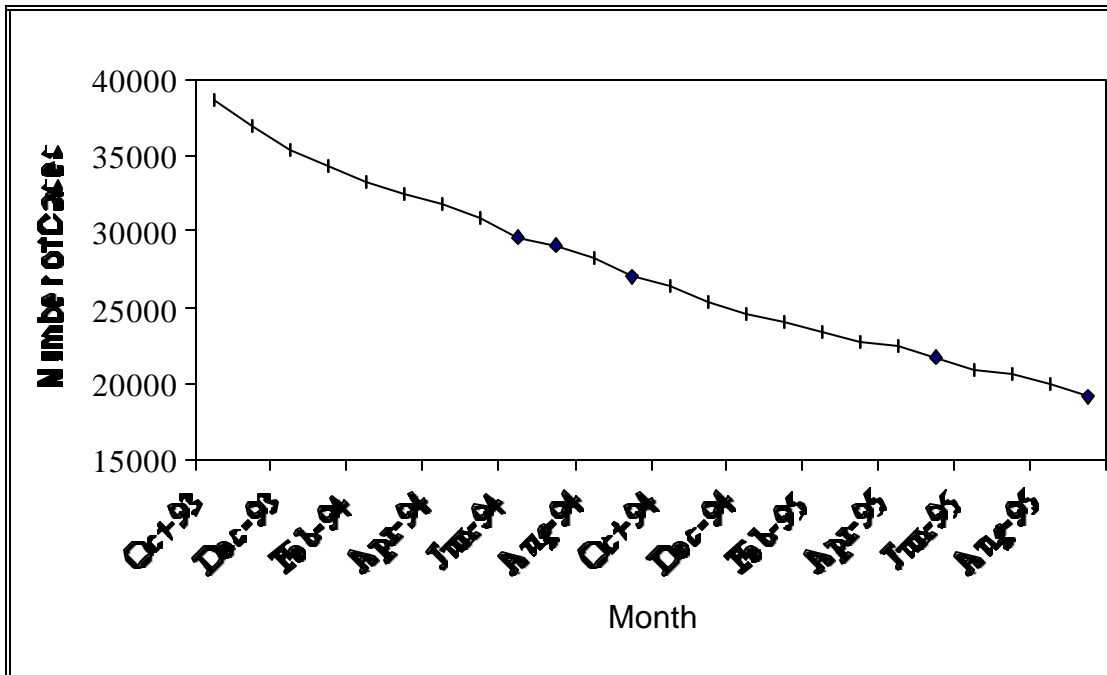


Figure 1: FIP caseload time trend in Iowa: Oct. 1993 to Sept. 1995

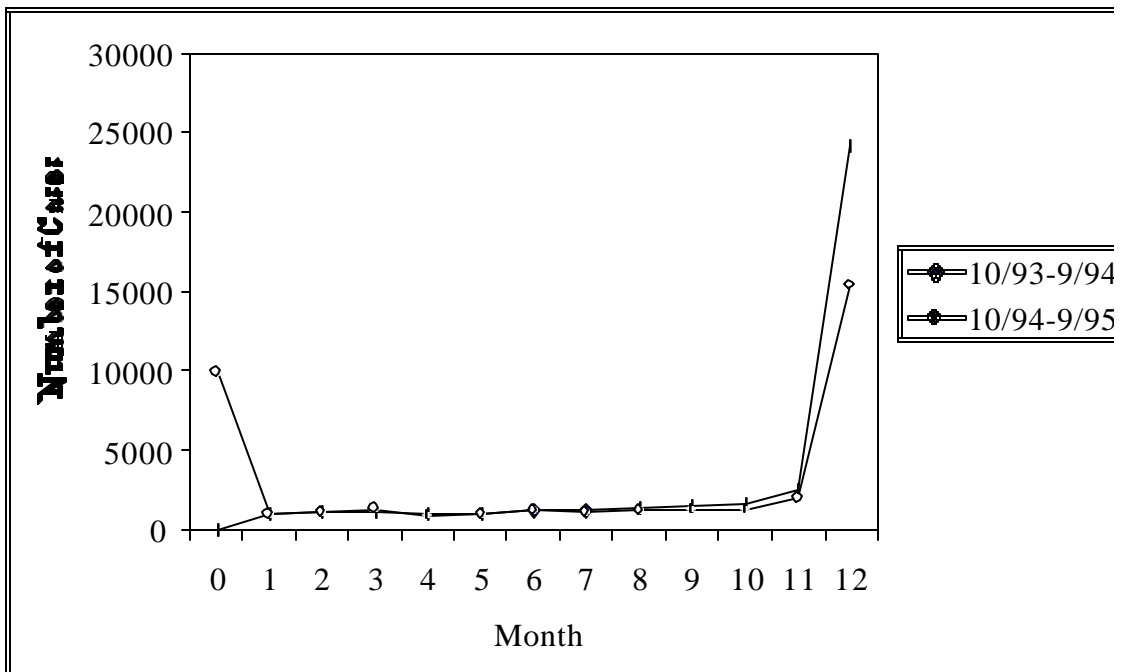


Figure 2: Distribution of total time on FIP in Iowa: Oct. 1993 to Sept. 1995

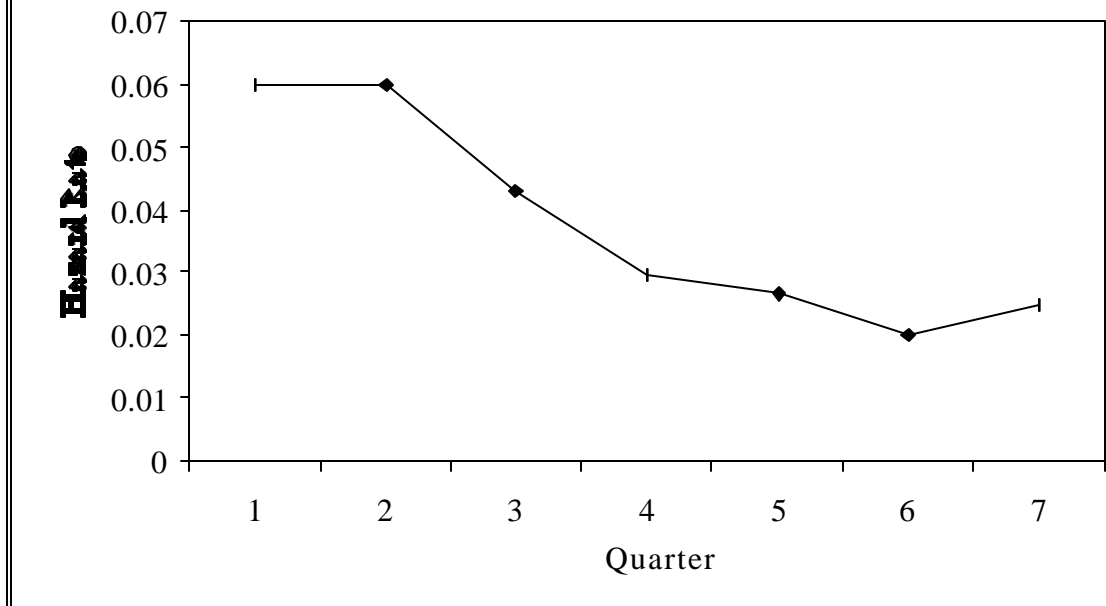


Figure 3: predicted hazard rate evaluated at the sample means of explanatory variables.

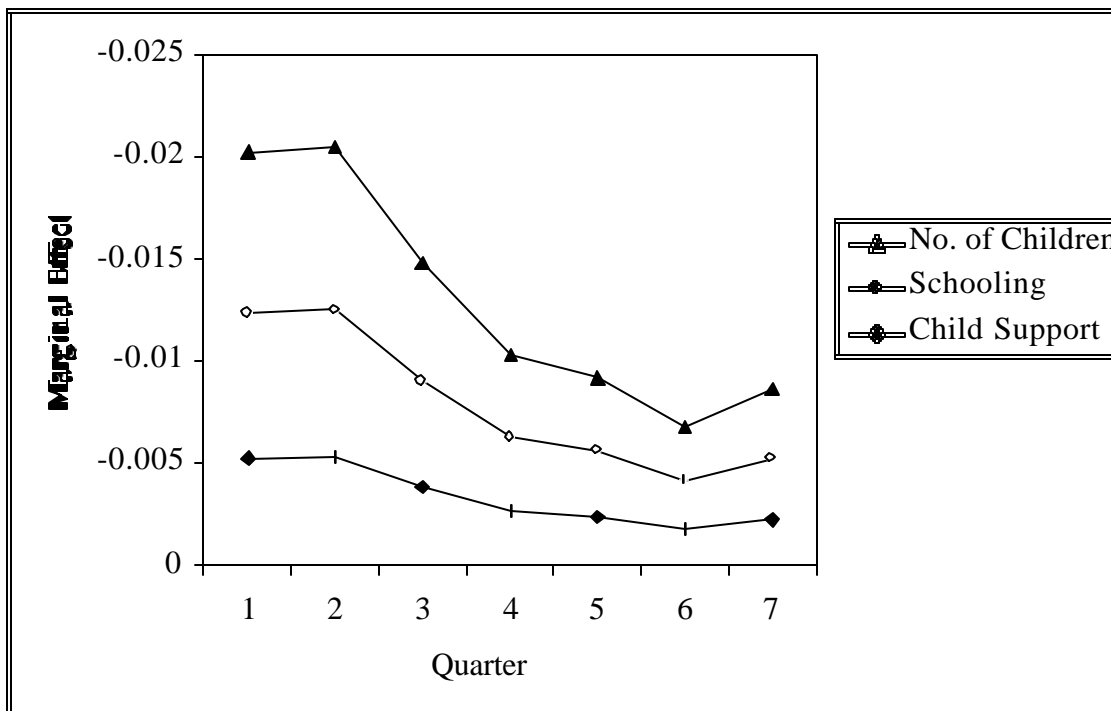


Figure 4: Marginal effects of child support, schooling, and number of children on hazard rate.

Table 1. Dynamics of FIP Participation in Iowa: Oct. 1993 to Sept. 1995<sup>a</sup>

Total Time on FIP in the First Year	Total Time on FIP in the Second Year				Total
	0 Month	1-6 Months	7-11 Months	12 Months	
1-6 Months	78.35 (50.55) <sup>b</sup>	11.97 (11.89)	6.49 (6.08)	3.20 (1.33)	16.59
7-11 Months	50.49 (41.26)	19.37 (24.38)	15.93 (18.91)	14.21 (7.49)	21.02
12 Months	3.37 (8.19)	17.06 (63.73)	21.28 (75.01)	58.29 (91.18)	62.39
Total	25.71	16.70	17.70	39.89	100
Distribution of Participation in the Second Year					
0 Month	Equal Months	Fewer Months	More Months	24 Months	
9,934 (26)	455 (1) <sup>c</sup>	11,816 (31)	2,378 (6)	14,049 (36)	

<sup>a</sup> Number of observations are 38,632.

<sup>b</sup> The numbers in the parentheses are column percentage.

<sup>c</sup> The numbers in the parentheses are percentage.

Table 2. Comparison of Means and growth rates among Five Dynamic Participation Patterns:  
By Demographic (Oct. 1993 to Sept. 1995).

Variables	0 Month.	Fewer Months.	More Months.	24 Months.	Equal Months.
Annual Wage Income	11,674	10,250	9,444	6,779	10,895
Annual Child Support	979	484	400	178	467
Number of Children	2.17	2.35	2.46	2.5	2.49
High School or Above	0.69	0.67	0.61	0.64	0.60
Married	0.25	0.23	0.24	0.20	0.30
Living in Metro County	0.55	0.55	0.56	0.59	0.63
Move to Other County	0.04	0.08	0.11	0.05	0.08
N (=17506)	4,119	5,404	1,106	6,678	199

The Growth Rate of Demographic Variables Between the First Year and the Second Year					
Variables	0 Mo.	Fewer Mos.	More Mos.	24 Mos.	Equal Mos.
Annual Wage Income	0.34	0.51	-0.02	0.28	0.12
Annual Child Support	0.75	2.09	-0.39	0.13	0.06
Married	0.06	0.06	-0.02	0.01	0.00
Number of Children	-0.01	0.01	0.06	0.02	0.07

Note: The means and growth rates of the full sample (38,632 observations) are very close to those reported above.

**Table 3. Definitions, Means, and Standard Errors of Variables**

Variable	Mean (Standard Error)	Definition
Spell	8.745 (4.45)	Annual numbers of months on FIP
Male	0.096 (0.29)	Dichotomous variable equals 1 if FIP recipient is male
White	0.81 (0.39)	Dichotomous variable equals 1 if FIP recipient is white
DSCHOOL	0.654 (0.48)	Dichotomous variable equals 1 if FIP recipient has a high school degree
CS	0.478 (1.12)	Annual child support collections (thousand)
URATE	3.914 (0.96)	Annual average local unemployment rate (percent)
NOCHILD	2.371 (1.357)	Numbers of children at the beginning of the year
DMARRIED	0.056 (0.23)	Dichotomous variable equals 1 if married during the year
QMARRIED	0.153 (0.647)	Numbers of quarters being married
DDIVORCED	0.047 (0.211)	Dichotomous variable equals 1 if divorced or separated during the year
QDIVORCED	0.133 (0.609)	Numbers of quarters being divorced or separated
DSINGLE	0.721 (0.449)	Dichotomous variable equals 1 if remained single through the year
DMETRO	0.564 (0.496)	Dichotomous variable equals 1 if lived in metro counties

Table 4. Coefficients of the Fixed Effect Model on Annual Total Numbers of Months on FIP:  
Oct. 1993 B Sept. 1995

Independent Variables	Dependent variable
	Annual Total Numbers of Months on FIP
CS	-1.71 (0.03)****
DSCHOOL	-0.70 (0.298)**
URATE	2.49 (0.05)****
NOCHILD	0.65 (0.084)***
DMARRIED	2.03 (0.464)****
DMARRIED x QMARRIED	-0.41 (0.178)**
DDIVORCED	-0.844 (0.597)

DDIVORCED x QDIVORCED	0.56 (0.23)**
DSINGLE	1.38 (0.246)***
DMETRO	0.964 (0.213)***
Adjusted R-Squared	0.54
F Statistics	4565.5
Number of Observations	3,5012

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<sup>a</sup> Standard errors are in the parentheses.

\*\*\* significant at 1 % level.

\*\* significant at 5 % level.

Table 5. Distribution of Exit Spells: Oct. 1993 to Sept. 1995

Duration of Spell	All Spells	Complete Spells	Right-censored Spells
2	1,865	1,119 (0.60) <sup>a</sup>	746 (0.40)
3	1,675	860 (0.51)	815 (0.49)
4	1,407	602 (0.43)	805 (0.57)
5	1,135	510 (0.45)	625 (0.55)
6	1,098	451 (0.41)	647 (0.59)
7	958	377 (0.39)	581 (0.61)
8	905	313 (0.35)	592 (0.65)
9	970	214 (0.22)	756 (0.78)
10	843	162 (0.19)	681 (0.81)
11	903	164 (0.18)	739 (0.82)
12	1,025	137 (0.13)	888 (0.87)
13	929	122 (0.13)	807 (0.87)
14	878	99 (0.11)	779 (0.89)
15	924	79 (0.09)	845 (0.91)
16	877	50 (0.06)	827 (0.94)
17	731	50 (0.07)	681 (0.93)
18	765	42 (0.05)	723 (0.95)
18	718	32 (0.04)	686 (0.96)
20	747	25 (0.03)	722 (0.97)
21	912	21 (0.02)	891 (0.98)
22	905	6 (0.01)	899 (0.99)
23	910		910 (1.00)
Mean Duration	11.18	6.05	12.87
Numbers of Exit Spells	22,080	5435	16645

<sup>a</sup> Row percentages are in the parentheses.

Table 6: Maximum Likelihood Estimates of Recidivism: Oct. 1993 to Sept. 1995

Independent Variables	Coefficients
High School or Above	-0.34 (0.04)****
Total Child Support Collections	-0.36 (0.048)***
Local Unemployment Rate	-0.023 (0.019)
White	-0.091 (0.053)*
Married	0.04 (0.045)
Male	-0.1 (0.066)
Number of Children	0.081 (0.014)***
Living in Metro County	-0.1 (0.043)**
Other Parameter Estimated	
R7	-2.65 (0.206)***
R6	-2.87 (0.169)***
R5	-2.58 (0.141)***
R4	-2.48 (0.128)***
R3	-2.11 (0.117)***
R2	-1.78 (0.117)***
R1	-1.79 (0.116)***
Number of Observations	22080
Log Likelihood	-8381.10

<sup>a</sup> Standard errors are in the parentheses.

\*\*\* significant at 1 % level.

\*\* significant at 5 % level.

\* significant at 10 % level.