The Role of Non-Financial Factors in Exit and Entry

in the TANF Program

Robert Moffitt
Johns Hopkins University

February, 2003

The author would like to thank James Walker as well as seminar participants at several universities for comments, and Wei Tan and Katie Winder for research assistance. The financial assistance of the National Institutes of Health and several foundations is also gratefully acknowledged. An early version of these results was presented at a conference sponsored by the Economic Research Service and the Institute for Research on Poverty in May, 2002 in Washington, DC.

aclcrep8a_v2.wpd
2/16/03

Abstract

The dramatic decline in the AFDC-TANF caseload in the 1990s has refocused attention on the process of exit from and entry into welfare, a long-standing topic of interest in the research literature on the U.S. welfare system. This paper focuses on the role of non-financial factors in exit and entry in the post-1996 TANF program. The non-financial factors are work and other requirements, sanctions, and diversion. Using data from a study of welfare and non-welfare families in Boston, Chicago, and San Antonio in the period 1999-2001, both descriptive evidence and evidence from an econometric model suggest that these factors played a large role in exit and entry over the period.

The dramatic decline in the AFDC-TANF caseload in the 1990s has refocused attention on the process of exit from and entry onto welfare, a topic upon which a considerable research literature has been built, starting from Boskin and Nold (1975) and continuing through the present (Bane and Ellwood, 1994; Blank and Ruggles, 1994, 1996; Moffitt, 2001; see Moffitt, 1992,2003, for reviews). Most recent attention has been focused on the determinants and consequences of the decline in the AFDC-TANF in the last decade, with one strand of literature focusing on consequences of leaving welfare for employment and income (see Acs and Loprest, 2001; Brauner and Loprest, 1999; Moffitt, 2002 for reviews) and another strand focusing on the estimation of aggregate caseload models attempting to parcel out the relative contributions of the economy and welfare reform (see Blank, 2002, for a review). The first strand of literature shows that welfare "leavers" have substantial increases in employment upon exit but only modest increases in total income, while the second strand shows similarly large increases in employment but also large increases in income in the welfare-eligible low-income population as a whole. The larger income increases in the latter literature suggest that income may have risen among women who did not enter welfare or among those who remained on welfare.

This paper focuses on the contribution of non-financial factors to exit and entry in the TANF program. The non-financial factors examined are work and other requirements, sanctions, and diversion. While each of these factors has some financial implications--earnings should rise as a result of work requirements, benefits should be reduced from sanctions, and so on--they also impose a non-financial utility cost on welfare participation, in the case of work requirements and sanctions, and on welfare entry, in the case of diversion. These utility costs should be expected

to increase exit and decrease entry, and are conceptually separate from the traditional financial factors such as benefits, wages, and the EITC which have been shown to play a strong role in welfare participation prior to 1996.[1] Another important financial reform occurring since 1996 has been a lowering of earnings disregards, but they are unlikely to be an explanator for declining caseloads because they decrease exit, increase entry, and increase static welfare participation rates.

There has been a considerable amount of analysis attempting to estimate the effects of cross-state variation in work requirements, sanction, diversion, and other rules on the aggregate caseload, usually in the pre-1996, waiver period when not all states had implemented reforms. Unfortunately, that literature has produced generally insignificant and/or uninterpretable results (Bell, 2001; Blank, 2002), probably because the formal rules are not easily measured, because they may be only weakly correlated with actual implementation, or because there are unobserved state-specific factors that are correlated with, and hence confound, the estimated effects of the rules. This paper uses instead a data set from three cities (Boston, Chicago, and San Antonio) containing information from a survey which gathered respondent-supplied information on the actual experiences of a set of low-income single mothers with these rules. For TANF recipients, questions were asked about experiences with work and other requirements and with sanctions, and, for TANF applicants, questions were asked about experiences with diversion. The data set is a two-wave panel and hence allows the estimation of the determinants of both exit and entry,

[1] In the traditional leisure-income model, the four determinants of welfare participation are the wage rate, nonwelfare nonwage income, the welfare guarantee, and the welfare tax rate. Studies of the AFDC program have shown all four to be significantly related to static welfare participation rates as well as welfare entry and exit. See Moffitt (1992, 2003) for reviews of this literature.

the latter possible because the sampling frame included non-recipients as well as recipients (many data sets only have recipients in their sampling frames and hence can only analyze exit). The chief advantage of the data set is its information on individual experiences with work requirements, sanctions, and diversion, data not available in any national data set. Their chief disadvantages are that they are only available for three cities, and hence little cross-sectional program variation is available, and the data only cover a post-1996 period (1999-2001) and hence there is no before-and-after program variation available as well. Consequently, the analysis will necessarily use, for estimation, variables for welfare rules experiences which are based on variation across individuals within cities in a constant-policy-regime environment.

The first section of the paper provides institutional background on the nature of work and other requirements, sanctions, and diversion in welfare reform since 1996. The second section describes the data and presents a fairly extensive descriptive analysis of the turnover rates, the employment and financial correlates of that turnover, and the experiences with non-financial rules. The third section presents simple theoretical model of exit and entry in the presence of non-financial costs, and the subsequent two sections present an econometric model of exit and entry, respectively, and estimates of those models showing the role of non-financial factors. A summary concludes the paper.

I. Work and Other Requirements, Sanctions, and Diversion in Welfare Reform

The 1996 federal welfare legislation made major structural changes in the cash assistance program for low income single mothers by converting the matching-grant system for AFDC to a

block grant system with attendant increases in state authority over program design. However, the law also imposed several new federal mandates prescribing minimum percentages of the caseload required to be engaged in a work or related activity, prescribing the types of activities that would satisfy those requirements, and allowing states to impose sanctions (i.e., benefit penalties) for noncompliance with work and other requirements. Nevertheless, within the new federal mandates, states now have much greater freedom than under the AFDC system to set eligibility requirements, benefit formulas, the nature of work, sanction, and diversion activities, and even the form of assistance itself (cash vs in-kind). Most importantly, the entitlement nature of the program was ended and there is no obligation by the states to serve all those who satisfy any particular set of eligibility criteria. States have exercised this freedom extensively and have redesigned their programs in major ways, in almost all cases refocusing them on the aim of getting recipients into work or other activities, and off welfare.

The focus of the analysis in this paper is on three key aspects of reform: work and other requirements, sanctions, and diversion. At least the first two of these have been thought to have had the most important initial impact on the caseload, as both work requirements and sanctions were effectively introduced quickly after 1996 and, in some states, prior to 1996 through waiver programs.[2]

As for work requirements, the 1996 federal law imposed the requirement that 50 percent

[2] Time limits, on the other hand, are generally considered to have had less impact, at least up through 2000 and 2001. This is partly because very few families had hit their limits by that time, but also because several random assignment studies have concluded that the "anticipatory" effects of time limits (e.g., from an incentive for recipients to leave welfare prior to the end of their eligibility in order to "bank" their benefits) have been small. See Pavetti and Bloom (2001).

of single-parent recipients eventually be working or in work-related activities, a high rate considering that less than 10 percent of AFDC recipients generally worked. In 2000, about one-third of TANF recipients were indeed in work or a work-related activity (U.S. DHHS, 2002), an historic high.[3] Further, the federal law ruled out general education and training as activities that would satisfy these requirements. Most states have embraced this idea by developing "Work First" programs that get recipients into work or a work-related activity (e.g., job search) as quickly as possible, avoiding longer-term human capital investment programs (Strawn et al., 2001). Virtually all states allow some exemptions from work requirements, however, most often if the welfare recipient has a very young child or is disabled or in poor health, and sometimes if the recipients is caring for an older family member or lacks transportation to get to work.

The federal law also imposed a number of other requirements, such as the requirement that minor mothers live at home to receive assistance. States have added other requirements related to school attendance, cooperation with child support enforcement, obtaining immunization for children, and other activities.

The federal law gave the states the option to impose benefit sanctions for failure to comply with work requirements, sanctions that could be partial or full.[4] States have gone far beyond what is in the federal law and have created elaborate sanction systems which begin with

---

[3] The 50 percent figure has been considerably reduced by a provision in the law which allowed states to meet a lower maximum, the greater they had reduced their caseloads. Thus the work requirement has been legally met in all the states, to date.

[4] Sanctions are used in other programs and there is some evidence on their effects. For European programs, see Abbring et al. (2000), Lalive et al. (2002), and Van den Berg et al. (2002).

initial sanctions for first-time noncompliance and which escalate as repeated offenses are made. Sanctions are generally imposed for some specified length of calendar time or until the recipient comes into compliance, although there are some instances of lifetime bans on further receipt. Sanctions are also imposed for noncompliance with the other, non-work-related requirements (school attendance, cooperation with child support enforcement, etc.). Sanctions can also be imposed for failure to respond to requests for information or failure to appear at the welfare office when summoned.[5]

Nationwide, about 5 percent of welfare recipients is sanctioned in a given month (Bloom and Winstead, 2002). This implies a sizable number of recipients sanctioned at least once over longer periods of time. Those who are sanctioned have the opportunity to come into compliance and have the sanction removed, but only 30 percent do so (Pavetti and Bloom, 2001). Sanctioned recipients are drawn disproportionately from the more disadvantaged portions of the caseload, and there is evidence that caseworkers use considerable discretion in deciding whom to sanction (Bloom and Winstead, 2002 and Pavetti and Bloom, 2001).

The 1996 federal law made no provision for diversion, but the majority of states have nevertheless enacted such programs. A common type of diversion program is one that provides the recipient with a one-time cash payment, together with the stipulation that the individual not reapply for some length of time like 3 or 6 months. Another common requirement is that recipients work or demonstrate job search activity prior to application. States sometimes also counsel applicants and discuss their financial situation, in an effort to devise ways to stay off

[5] These sanctions were present prior to 1996, and are often classified instead as administrative case closings. However, it is quite likely that their use has increased after 1996.

welfare, and applicants are sometimes directed to other welfare programs. There is no national data on the extent of diversion and very little state or local data giving the incidence of diversion by type. This paper presents some of the first data on these issues.

II. Data and Descriptive Analyses

The data used in this paper are drawn from the Three-City Study, a two-wave longitudinal survey of approximately 2,400 families with children in the age ranges 0-4 and 10-14 living in low- and moderate-income neighborhoods in Boston, Chicago, and San Antonio and whose household income at the first wave was less than 200 percent of the poverty line (Winston et al., 1999). The restriction to families with income below this income cutoff is inconsequential for TANF recipients, for TANF income breakevens are far below this level, but this relatively high cutoff does provide a set of non-welfare families with somewhat higher incomes. The sample therefore includes both welfare and nonwelfare families, unlike many other studies, thus permitting an analysis of the flow into welfare as well as the flow off.[6] Certain groups were oversampled (e.g., those on welfare, single mothers, and families below the poverty line) but, using survey weights, the data constitute a representative sample of families in the low income areas of these three cities with children in these age ranges and with income below 200 percent of the poverty line.

The first wave of data collection took place between March and December 1999 and the

[6] Unless otherwise specified, all generic references to "welfare" should be taken to refer to the TANF program.

second wave took place between September 2000 and May 2001. The response rates on the two surveys were 74 percent and 88 percent, respectively. A full set of standard socioeconomic variables were collected at each wave. The analysis sample used here includes all women who were present at both waves, a sample of 2,136 observations, 806 of whom were on welfare in the first wave and hence at risk of exit by the second wave, and 1,330 of whom were off welfare the first wave and hence at risk of entry.

The AFDC-TANF rolls have fallen dramatically in the three cities, with percentage drops from 1994 to 1999 of 46 percent, 53 percent, and 50 percent in Boston, Chicago, and San Antonio, respectively. These figures are similar to those for the nation as a whole. Unemployment rate and employment-population ratios in the three states in which the cities are located also show strong similarity both with each other and with national averages, although Massachusetts had the strongest employment growth and greatest unemployment decline of the three. The three cities can, therefore, be regarded as not very different from the rest of the country in these broad patterns of caseload trends and economic growth.

Information on experiences with sanctions and with work and other requirements were obtained in the interviews for those on welfare, and information on experiences with diversion were collected for those who had applied for welfare. These variables constitute the main variables of interest in the analysis and will be discussed further below. The TANF policies regarding these requirements differ in the three cities. Massachusetts is a Work First state that requires work activity within 60 days, and has a moderate number of exemptions from the requirement. Sanctions are imposed not only for noncompliance with work but also for non coooperation with child support enforcement, failure to have children immunized, failure to

cooperate with child support enforcement, and a number of other reasons. Sanctions are initially imposed only on the adult, but then escalate to full sanctions. Massachusetts has no official diversion policy. Illinois is not a Work First state, requiring work only within the first two years of benefit receipt, and has both a large number of allowable activities and a large number of exemptions. Sanctions can, as in Massachusetts, be imposed for a number of reasons, but are more gradually imposed, though they can ultimately be full. It also has no official diversion policy. Texas is a Work First state that requires immediate work--although only if the recipient has been processed by the state workforce agency, which is sometimes delayed--and makes possible a modest number of activities and exemptions. Sanctions are imposed for noncompliance with a large number of requirements, and are gradually imposed, but are always partial in nature. It has an official diversion policy requiring job search prior to entry, and for one-time payments for staying off welfare for 12 months.

Descriptive Analysis. We first show turnover, employment, and income correlates of exit and entry between the waves, then proceed to the questions about experiences with welfare rules.

Table 1 shows the transition rates for the two samples.[7] Of those on TANF in wave 1, almost half were off TANF by wave 2, 18 months later. Of those off TANF at wave 1, about 90 percent were also off the rolls at wave 2. The latter percent is largely a function of the income composition of the sample, for, as mentioned previously, the sample is representative of the population in our three inner cities with incomes below 200 percent of the poverty line; such an

[7] The tables and discussion in this section are partly drawn from Moffitt and Winder (2003).

income level necessarily includes a large number of nonrecipients with low probabilities of entry. As a result of the transitions shown in Table 1, the percent of the sample on TANF dropped from 32 percent at wave 1 to 25 percent at wave 2. Thus the trends in this sample are the same as those in the three states as a whole referred to previously and consistent with national trends.[8]

Table 2 reports the employment transitions that accompany the welfare transitions separately for stayers, leavers, entrants, and those never on (the four columns). As expected, almost one-fifth (18 percent) of those on TANF went to work between the periods, no doubt reflecting both low earnings disregards and work requirements. Another 11 percent were working and on welfare both periods. Also, over a third (34 percent) of those who left welfare experienced a movement from nonwork to work, and one-fifth of those who entered the rolls went from working to not working, presumably from losing a job. Those off welfare both periods had the highest rates of work and the lowest rates of nonwork.

However, there are many women who did not exhibit these conventional patterns. Among welfare leavers, there is a sizable group (31 percent) who were not working after leaving. While there may have been forms of income off welfare from sources other than earnings available to these women (to be discussed next), clearly earnings was not the reason for

[8] The decline in the percent on TANF can be decomposed into components arising from entry and exit. If p_t is the fraction on welfare at t (t=1,2), and if μ and λ are the entry and exit rates, respectively, then $p_2-p_1=\mu(1-p_1)-\lambda p_1$. The first component is the entry contribution and the second component is the exit contribution The figures in Table 1 imply that the caseload would have risen by 7.2 percentage points because of entry, but exit forced the caseload down by 14.2 percentage points, resulting in the 7.0 percentage point decline. Thus entry is significant and equals almost half of exit. At these entry and exit rates, the equilibrium percent on welfare is 18.5 percent.

exit for a significant fraction of leavers. Also, over a quarter (30 percent) were working prior to leaving the rolls. While they may have left welfare to obtain higher-earnings jobs than they had on welfare, this also raises the question of why exit occurred if work was possible while still receiving benefits. In addition, about a quarter (25 percent) of entrants were working prior to coming onto welfare, suggesting the need to establish work prior to entry. Another interesting finding in Table 2 is that 60 percent of women on welfare were not working either period, which suggests either that exemptions from work requirements are extensive in these data or that those requirements are not fully enforced for those who are eligible (evidence on this issue will be given momentarily).

Table 3 shows total monthly income and its components for the different welfare transition groups. Those who were on welfare both periods experienced an average increase in monthly income of $136, an 11 percent gain. This gain was almost entirely the result of increases in earnings, both of the mother and others in the household, consistent with the increases in employment for stayers noted earlier. The rise in total income that results from increased earnings is also partly a result of the relatively small reduction in TANF benefits, a sign of low benefit-reduction rates. When an estimate of the potential EITC is added in--that is, estimating the amount for which each family is eligible and assuming 100 percent takeup--income rose by only 12 percent, a sign that the earnings of women working while on welfare are still quite low and do not generate large EITC payments

The columns of Table 3 pertaining to leavers show an increase in income of $166 per month, or a 13 percent increase. This is a modest jump in income, and is only slightly greater than the increase for those who remained on TANF. The small marginal gain obtained by

exiting welfare rather than staying on is explained by two factors. First, while the earnings of leavers rose by a very large amount, tripling in magnitude, this increase was largely offset by the loss of TANF benefits as well as reductions in Food Stamp benefits. Second, the low benefit reduction rate in these data implied by the stayers' results implies that earnings have a much bigger impact on total monthly income if staying on welfare than if leaving. This is a familiar result from the literature on earnings disregards, welfare tax rates, and the negative income tax, a literature which has demonstrated that work incentives on welfare tend to decrease exit rates.[9] Table 3 therefore raises questions about the role of financial factors in leaving TANF, given the small marginal gain in income obtained by leaving rather than staying.

The rest of Table 3 shows income changes associated with entering the TANF rolls and never being on welfare. Those entering welfare experience about a 9 percent reduction in income, suggesting that entry is not a result of earnings being lower than benefits--one traditional perspective--as much as reductions in earnings exceeding the gain in benefits from coming onto welfare. The changes in earnings, TANF benefits, and Food Stamp benefits are all essentially symmetric with those of leavers. The table also shows that those who were off welfare both periods experienced the largest gains in income, almost $700 per month, and the largest declines in poverty. This suggests that much of the income gains for the low income female-headed population as a whole found in other studies may have been a result of other, possibly business-cycle-related, causes.

---

[9] Adding in an estimate of potential EITC income increases the percentage gain from leaving TANF to about 18 percent, a much larger increase, but this gain must be tempered by a decline in Medicaid participation of about 10 percentage points and increases in unreimbursed child care and transportation expenses (not shown in Table 3).

While these tables raise questions about the importance of financial factors in exit and entry, tables 4-8 show evidence from these data which bear on the importance of non-financial factors. Table 4 shows the answers to questions about work requirements.[10] About 54 percent of recipients said that they had been told that they would face a work requirement, implying that 46 percent are ineligible or exempt. Of those who said that they faced a work requirement, 85 percent had actually been required to work. Thus the bulk of the nonwork in the sample turns out to be because of ineligibility, rather than eligibility without being required to work, although the percent in the latter category is nontrivial. Respondents stated that ineligibility was most often because of poor health, although having a young child or caring for a disabled person were also reasons.

Table 5 shows answers to questions about other types of requirements. About 66 percent of recipients were told they were required to have their children immunized, 66 percent were told they would have to cooperate with child support enforcement, 86 percent of those under 18 were told they would have to stay in school, and 86 percent of those under 18 were also told that they would have to live with their parents Thus large numbers of recipients faced requirements in addition to those pertaining to work. All of these requirements are sanctionable.

Table 6 shows the incidence of sanctions in the sample.[11] About one-fifth of the sample had experienced a sanction in the last 18 months, with the vast majority being partial rather than

---

[10] All questions about work and other requirements were asked of respondents who were on TANF as of the wave 2 interview date or who were off TANF then but had been on TANF between waves 1 and 2. In the latter case, the questions were asked as of the most recent TANF spell.

[11] For a prior and more detailed analysis of the wave 1 answers to these questions, see Cherlin et al. (2002).

full. Interestingly, however, 66 percent of those who had been sanctioned stated that they had tried to get their benefits back, and a substantial 83 percent of those were successful. Thus about 55 percent of sanctions were apparently either in error or the result of some temporary issue of noncompliance that went away quickly. This raises a question of how accurate the sanctioning process is, whether there is not a large random element in their application, or whether caseworkers might be testing recipients to determine who feels strongly enough to appeal.

The most common reason given for the sanctions was having missed an appointment, with a smaller number reporting reasons specifically related to one of the sanctionable requirements--work, child immunization, school attendance, or failure to cooperate with child support enforcement. This is consistent with anecdotal studies in other states indicating that missed appointments (Pavetti and Bloom, 2001, p.252). However, appointment reasons could easily have been related to one of the other underlying requirements, so the answers to these questions are not necessarily as informative as they might appear in telling which rule had been violated.

Tables 7 and 8 turn to the issue of diversion. Table 7 shows the experiences of applicants, and demonstrates that applicants experienced diversion events rather commonly. About 69 percent said that they had been told they would have to comply with a work requirement prior to acceptance onto TANF, 38 percent had been asked by their caseworker to discuss a plan to get by off welfare, 24 percent had been told to apply for a different program, and 29 percent were given a temporary cash payment. These experiences occurred in all three cities, even though only one (Texas) has an official diversion policy. Table 8 shows the reasons

that non-applicants gave for not applying. The most common reason was "too much hassle," consistent with the notion that the cost of application was too great. This is probably a lower bound on the importance of cost factors, for the 14 ercent who did not apply because of work requirements and the 17 percent who found a job or other support may have done so because of the high cost of application. The table also shows that many women visited the welfare office but chose not to apply, with "too much hassle" again an important reason cited but with "found a job" slightly more important. However, about 34 percent said that they didn't apply partly because the caseworker "discouraged" the woman from applying or because they were treated "badly" by the welfare office. These figures constitute informal evidence on the importance of cost factors in the application process and in the decision to apply.

III. A Model of Exit and Entry with Costs

We imagine that, in the absence of non-financial requirements, individuals on welfare receive utility $V_1=U(Y_1)- F_1$ where Y_1 is income on welfare and F_1 is the net time and stigma cost of being on welfare (the time cost includes the value of leisure and hence can be positive or negative). Individuals off welfare receive utility $V_0=U(Y_0)- F_0$, where Y_0 is income off welfare and F_0 is the utility of leisure off welfare. Individuals on welfare exit if V_0 becomes greater than V_1 and individuals off welfare enter if the opposite occurs. This is the traditional voluntary model of welfare turnover in the economics literature.

In the presence of a requirement imposed on those on welfare, V_1 is altered. Let C be an indicator variable for whether the individual chooses to comply with the requirement, F_C be the

time and utility costs of compliance, p and q be the probabilities of being sanctioned if C=0 and C=1, respectively (we assume q may be nonzero though less than p), and M the monetary penalty for being sanctioned. We suppose that p and q are the result of random monitoring by caseworkers and, given that we assume q may be nonzero, to contain random error. Then the ex ante, expected utility of being on welfare is

$$\begin{aligned} V_1 &= p(1-C)[U(Y_1-M)] + (1-p)(1-C)[U(Y_1)] + qC[U(Y_1-M)-F_C] \\ &\quad + (1-q)C[U(Y_1)-F_C] - F_1 \\ &= U(Y_1) - CF_C - [p+(q-p)C][U(Y_1) - U(Y_1-M)] - F_1 \end{aligned} \tag{1}$$

Individuals on welfare choose C. C equals 1 if

$$(p-q)[U(Y_1) - U(Y_1-M)] - F_C > 0 \tag{2}$$

and equals 0 otherwise (recall that we assume that p>q). The probability of being sanctioned is [p+(q-p)C] and hence follows directly from the choice of C.

Eqns (1) and (2) thus constitute the model for the determination of V_1, and the exit rate is a positive function of V_0-V_1. The comparative statics are mostly obvious, with greater values of M, F_C, p, and q all reducing V_1 and hence increasing the probability of exit. Y_1 and Y_0 have negative and positive effects on exit probabilities, respectively. Note that realized values of compliance (C) will also depend on Y_0, despite its absence from eqn (2), because higher values

of Y_0 will mean that an individual will be more likely to leave welfare and hence C will be unobserved; it is only the latent, partially unobserved value of C that would have been chosen had the individual stayed on welfare that is independent of Y_0. Likewise, the probability of observing a realization of a sanction will be correlated with Y_0.[12]

In the presence of multiple requirements, there are monetary and non-monetary costs, and probabilities of sanction, for each. Let E_r be an indicator variable for eligibility for the rth requirement, r=1,...,R, and let $V(C_1,...,C_R|E_1,...,E_R)$ be the value of being on welfare if the C_r are indicator variables for compliance with the rth requirement, for those r for which E_r=1. Then expression (1) evaluated at the values of the C_r is a cumbersome expression equal to the sum of the probabilities of r-specific sanctions for each combination of the C_r multiplied times utilities, with utilities in the sanctioned cases containing summed monetary penalties for that combination and utilities in the compliance cases containing summed values of the F_C for that combination (p and q are r-specific as well). That expression is not shown for brevity. Individuals optimize over the C_r and this results in an expected value of V_1 as a function of the exogenous variables and parameters in the problem. Individuals exit welfare if this value of V_1 falls below V_0.

The data contain information only on Y_1, Y_0, E_r, and S, where S is an indicator for being sanctioned for at least one of the requirements. No data on p, q, M, F_C, or C_r are available. Therefore we shall consider reduced form expressions for exit and for S (the two endogenous variables) containing only Y_1, Y_0 and E_r as determinants. The effects of E_r on exit and on S

[12] The timing convention in this model, in other words, is that the individual on welfare at the initial point forms an ex ante expectation of V_1, and then goes off welfare immediately if that value is less than V_0, so neither C nor S is ever observed.

will be interpreted as working through the choice of the C_r with the sanction probabilities and monetary and non-monetary costs of sanction and compliance as fixed parameters.

The entry model can be dealt with briefly, for entry occurs when the expected value of being on welfare, which is the same expected value of V_1 just described for welfare participants, exceeds V_0 and the cost of entry.[13] The cost of entry includes F_0 but now also some additional expected diversion costs. Unfortunately, there is no information on expected diversion costs in the data for those who did not apply for TANF, nor information on expected E_r even for applicants, so a pure entry equation can only contain Y_1 and Y_0. A model estimated on applicants alone, while on a self-selected sample, can, however, contain variables for experiences with diversion as well as Y_1 and Y_0. These will be estimated below.

IV. Econometric Model and Results: Exit Analysis

As noted previously, the data consist of information on low-income single mothers at two points in time, with total family income and TANF participation status observed at each,. We estimate exit and entry equations defining exit as having been on TANF at the first time point and off TANF at the second, and vice-versa for entry. The exit equation, estimated on those on TANF at wave 1, can be written as

[13] This assumes that individuals off welfare know the rules exactly and that they know their eligibility for each requirement exactly. If those are not known, they must also be replaced by expected values. Note that a model with longer-run expectations would require that the exit model also contain the expected value of reentry, with associated costs, and thus diversion costs would also enter the exit equation.

$$I_i^* = \alpha + \beta(y_{1i} - y_{0i}) + E_i\delta + X_i\gamma - \epsilon_i \quad (3)$$

$$I_i = 1(I_i^* > 0) \quad (4)$$

where I_i equals 1 if individual i exits TANF between waves 1 and 2 and equals 0 if not, y_{1i} is the potential income gain from leaving TANF, y_{0i} is the potential income gain from staying on TANF, E_i is a vector of dummies signifying eligibility for various TANF requirements, and X_i is a vector of exogenous variables affecting exit (all measured as of wave 1). Note that the variables y_{1i} and y_{0i} represent changes in income from wave 1 to wave 2, not levels; the lower-case notation is intended to capture this difference from the previous section. The mean realized values of y_{1i} and y_{0i} for those who exited and did not exit are, respectively, according to the first four columns of Table 3, $166 (=1405-1239) and $136 (=1315-1179).

The parameter δ captures the effects of work and other requirements holding constant their effects on income. Because those requirements and their compliance and sanction consequences affect earnings and benefits on and off welfare as well, the variables y_{1i} and y_{0i} are affected by E_i. The parameter δ thus captures only the direct, non-financial, utility costs of the requirements and their effects on exit. These are the costs of compliance, for those who comply (and are not sanctioned) experience no financial consequences but do incur time costs which may come out of leisure and other costs related to compliance (e.g., in relationship with the father in the case of child support enforcement cooperation requirements).

The main inferential issue for the purpose of this paper is the identification of the effect of E_i. For the most part we shall include in X_i all variables that are available in the data that are

likely to affect E_i (human capital variables, health, presence of young children, etc.) and then assume that E_i is independent of ϵ_i conditional on X_i. This assumption will be violated if caseworkers set eligibility requirements differentially on those who have greater or less unobserved probabilities of exit, or if respondent reports of those requirements and policies are similarly correlated. Essentially, the conditional independence assumption must mean either that there is some discretion in the application of the requirements, that there is random queuing (in the case of work requirements), or that there are variables determining eligibility which are uncorrelated with exit directly. There are no plausible instruments in the data set to test this assumption.[14]

A second issue in the estimation of equation (3) is that both y_{1i} and y_{0i} are never observed for any individual, for only y_{1i} is observed for those who make a transition and only y_{0i} is observed for anyone not making a transition. This is a traditional missing data problem and appears frequently in selection models. Our approach to this issue will be to first estimate (3) in reduced form, including all variables that are likely to affect exit directly or which will affect income gains. No exclusion or other restrictions are necessary for consistent estimation of this model, although the resulting coefficients on E_i will capture the total financial and non-financial effect on exit and entry, not just the non-financial component. We will then proceed to

[14] The traditional instrument used in other contexts--though variables for E_i are not available in national data sets, which is why the current data set is being used--is cross-area variation in formal rules. We can use this variation in a limited fashion by instrumenting E_i with city dummies, but this requires the strong assumptions that those dummies have no direct effect through X_i and that they are independent of ϵ_i, which together are implausible given the large number of other differences in the three cities. In addition, the availability of only three cities only permits the estimation of the effects of two E_i variables, whereas the data provide more than two.

estimation of a structural model in which equations for y_{1i} and y_{0i} are specified and estimated, with resulting estimates of the structural parameters in eqn (3) , most notably β and δ. This estimation will require exclusion restrictions (i.e., instruments) and is necessarily a weaker form of inference because of the additional assumptions required and because the plausibility of the estimates will depend on the credibility of the exclusions.

Let $V_i\pi$ denote the latent index in reduced form, that is, where V_i contains X_i, E_i, and the determinants of income growth, and where π denotes the reduced-form coefficients on those variables. The vector E_i affects income growth so the reduced-form effect of those variables on exit include both financial and non-financial effects. Let G denote the c.d.f. of the composite error term in the reduced form. Then since $E(I_i|V_i) = G(V_i\pi)$, we can write the model as

$$I_i = G(V_i\pi) + \upsilon_i \qquad (5)$$

where υ_i is an error term that is mean-independent of $G(V_i\pi)$ by construction. Consistent estimates of π in eqn (5) can be obtained by nonlinear least squares (we assume G to be the normal c.d.f.), and robust standard errors allowing for arbitrary heteroskedasticity can be computed in the usual way. This method of estimating binary choice models is slightly less restrictive than maximum likelihood because it does not impose homoskedastic and normal errors on the full error distribution (if viewed as an approximation to the true function in that case) but is less efficient if those errors are homoskedastic and normal. It is nevertheless different from the linear probability model by allowing I_i to be nonlinear in V_i, as is implied by latent index models with additive and continuous errors.

Reduced Form Results. The exit rate is measured by determining which of those women on welfare at wave 1 were off welfare by wave 2, and all regressors are measured as of wave 1. The definitions of the variables available for the analysis are shown in the Appendix. Variables for three of the E_i in Tables 4 and 5 are represented--whether the individual was subject to a work requirement, had to have their children immunized, or had to cooperate with child support enforcement (the last two requirements in Table 5 are only applied to minors, and there are insufficient observations on that subsample so they are ignored). The equation also includes variables for age, race, education, family size and number of young children, poor health, marital status, and city of residence. Two variables for welfare participation history during childhood are also included, on the presumption that they are correlated with tastes for welfare. Many of these variables should also be determinants of income growth, but four variables for parental education and two variables for work experience are additionally included because they are correlated with skill levels and hence with the growth of earnings, one component of income.

Table 9 shows the reduced form results for eqn (5) in the first column. The work requirement eligibility variable has a positive and significant effect on exit, consistent with its having a positive effect on the costs of participation in the welfare system and/or on earnings which would lead to exit. The child immunization eligibility variable has an insignificant effect, while the child support enforcement eligibility variable has a positive effect on exit that is on the borderline of conventional significance levels. Thus there is some evidence of an effect of the three requirement variables. The other variables in the equation show that exit rates are higher for younger women, for those with smaller households, those who married, and in Boston and

Chicago relative to San Antonio. Those who have spent most of their childhood on welfare are less likely to exit, as are, surprisingly, those with greater father education and who have worked more recently. However, the effect of human capital per se is ambiguous in this model because higher earnings increases income on welfare as well as off, and if the marginal tax rate on welfare is low but there is a notch at the end of eligibility, the return to work may be higher on welfare than off. On the other hand, having ever worked increases exit rates.

As emphasized previously, the interpretation of the effects of the requirement variables as causal for the effects of eligibility requires that the other variables in the equation pick up all differences between those who were told they faced a requirement and those who did not that are related to exit, and that the remaining variation in eligibility is related to waiting lists, caseworker discretionary decisions, or other random factors that are not highly related to exit. The last three columns of Table 9 report estimates of the determinants of the three eligibility variables as a function of the other regressors in the equation. While not addressing the unobservable selectivity problem directly, these equations are of some interest insofar as they may provide evidence on the general determinants of eligibility. Having been informed of eligibility for a work requirement is significantly affected by very few variables in the data set. Those who are married are less likely to be eligible, possibly because their husbands face a work requirement; Boston has lower work requirements than either of the other two cities; and three of the human capital variables for parental education and work experience have an effect, though not always of the expected sign (e.g., those who worked more in the recent past are less likely to have a work requirement). Variables such as health and the presence of young children, which are formal determinants of work requirement exemptions, are insignificant in these data (nor do

they significantly affect exit), an indirect indication that their influence is weak relative to other factors. Thus, while there are some suggestive hints in these results of a systematic classification of recipients into those who can and cannot work, or who should be expected to, the fact that most of the variables are insignificant suggests the lack of a very rigid formula. In addition, the pseudo R-squared for the work requirement equation is only .188, indicating that very little of the variance in who is eligible for a work requirement and who is not is explained by these variables.

Being told of a requirement for immunization is more highly affected by the variables, and the pseudo R-squared is almost one-third. Immunizations are mostly relevant for young children although, rather surprisingly, the variable for having children under 3 is itself insignificant. Nevertheless, younger women, who are more likely to have young children, are more likely to be told of this requirement, for example, and a number of the other coefficients are significant.[15] It is possible that the immunization requirement variable is sufficiently well explained by these variables that it is has no strong residual variation, and this could be the reason for its insignificance in the exit equation.

The child support equation again has a lower pseudo R-squared and shows only a few significant coefficients. Being told that the mother has to cooperate with child support enforcement may be correlated with the characteristics of the absent father and whether he has or has not made sufficient child support payments in the past. The fact that older women, whose

[15] Another possibility is that some mothers have already had their children immunized and hence they were not 'told' of such a requirement, even though they implicitly faced it. In this case, the variable for immunization measures not having had one's children immunized to date, which could be correlated with demographic characteristics.

absent fathers may also be older and have higher earnings, are less likely to be subject to the requirement would be consistent with this view, as is the fact that more educated mothers are less likely to be told of such a requirement. The scattering of other significant coefficients, however, does not lend itself to easy explanation for a simple child support enforcement formula.

While these equations suggest the absence of a rigid formula for work requirement and child support enforcement impositions, the unobservables could still be correlated with exit. Caseworkers could have more information on which women could earn more off welfare than we do, and those caseworkers could impose work requirements on those women. They could also impose child support enforcement requirements on those women they think could do better off welfare for other reasons. While essentially nothing can be done to test these hypotheses with these data, an exercise was conducted which instrumented the eligibility rules with city of residence. This does require omitting those variables from the exit equation, where they are significant, but they were at least significant in the requirement equations and hence have some strength as instruments. However, when this was tested, the exit equation became unstable because of high collinearity.[16]

Table 10 shows an estimate of an equation for the determinants of sanctions as a function of the requirement and other reduced form variables. As the theoretical model and intuition should make clear, being eligible for a requirement should increase the probability of sanctioning unless compliance is very high. The table indicates that work requirement eligibility has the

[16] Specifically, the coefficients on the work requirement and child support requirement variables remained significant but increased in magnitude by a factor of 10 and the equation became unstable. The immunization requirement variable was omitted because there are only two city instruments.

strongest effect in the expected direction, but does not quite achieve significance at conventional levels, while neither the immunization nor child support enforcement variables were close to significance. This could imply either that compliance with the requirements was extremely high or that those requirement variables were measured with error, but it could also result from high rates of sanctions for other reasons. Indeed, taken at face value, the respondent reports in Table 6 imply that many of the reasons for sanctions--missed appointments and failure to file paperwork, for example--could be unrelated to these requirements, and the likelihood of being sanctioned for those offenses could be equal to that resulting from the requirements.[17] Yet another possibility is that, again based on Table 6, there is a large random element to sanction impositions, given that a substantial fraction of them are shortly reversed.

The rest of the results from the sanctions equation again provides little evidence of systematic rules or correlates of who gets sanctioned and who does not. Women with children under 3 are actually more likely to get sanctioned that those who are not--perhaps they have more difficulty making appointments.[18] Women with fathers of higher education are more likely to be sanctioned, possibly because they have higher human capital and caseworkers make them subject to more other requirements as a result.

Structural Model and Results. As noted previously, separating the effect of the non-financial costs of requirement eligibility on exit from the financial factors requires estimates of a

---

[17] These latter reasons are generally termed 'administrative case closings' rather than 'sanctions,' for the latter are often specifically restricted to violations of the requirements. The question in the survey includes both, and they are together termed 'sanctions' here.

[18] Because of the small sample size of those who obtained sanctions and the general insignificance of the equation, several variables had to be omitted to obtain stable estimates. The omitted variables were all insignificant in the initial runs.

structural model and the imposition of additional identification restrictions A conventional switching regression formulation which expands upon the model in equation (3) is used:

$$I_i^* = \alpha + \beta(y_{1i} - y_{0i}) + E_i\delta + X_i\gamma + W_i\kappa - \epsilon_i \quad (6)$$

$$I_i = 1(I_i^* > 0) \quad (7)$$

$$y_{1i} = \psi_1 + E_i\zeta_1 + X_i\phi_1 + Z_i\theta_1 + \eta_{1i} \quad \text{observed if } I_i=1 \quad (8)$$

$$y_{0i} = \psi_0 + E_i\zeta_0 + X_i\phi_0 + Z_i\theta_0 + \eta_{0i} \quad \text{observed if } I_i=0 \quad (9)$$

where I_i, y_{1i}, and y_{0i} are as defined before, and where X_i is now defined as a vector of exogenous variables common to all equations, W_i is a vector of exogenous variables present only in the exit equation, and Z_i is a vector of exogenous variables present only in the income growth equations. The exclusion restrictions embodied in W_i and Z_i are needed to identify the model without distributional assumptions on the unobservables. To minimize the importance of those assumptions, we make no distributional assumptions on the additive errors in the three equations, and we represent the conditional means of η_{0i} and η_{1i} by a polynomial series in the index function in eqn(6), an approach suggested by Newey (1999). We estimate the model in reduced form, which is the following:

$$I_i = G(V_i\pi) + \upsilon_i \quad (10)$$

$$Y_{1i} = \psi_1 + E_i\zeta_1 + X_i\phi_1 + Z_i\theta_1 + \sum_{k=2}^{K} \tau_{1k}(V_i\pi)^{k-1} + \omega_{1i} \quad \text{in the } I_i=1 \text{ sample} \quad (11)$$

$$Y_{0i} = \psi_0 + E_i\zeta_0 + X_i\phi_0 + Z_i\theta_0 + \sum_{k=2}^{K} \tau_{0k}(V_i\pi)^{k-1} + \omega_{0i} \text{ in the } I_i=0 \text{ sample} \quad (12)$$

where

$V_i = [\,1 \quad E_i \quad X_i \quad Z_i \quad W_i]$

$\pi = [\,\pi_1 \quad \pi_2 \quad \pi_3 \quad \pi_4 \quad \pi_5\,]'$

$\pi_1 = \alpha + \beta(\psi_1 - \psi_0)$

$\pi_2 = \delta + \beta(\zeta_1 - \zeta_0)$

$\pi_3 = \gamma + \beta(\phi_1 - \phi_0)$

$\pi_4 = \beta(\theta_1 - \theta_0)$

$\pi_5 = \kappa$

$G(*) =$ c.d.f. of $[\epsilon_i + \beta(\eta_{1i} - \eta_{0i})]$

and where it is assumed that

$$E(\eta_{1i} \mid V_i, I_i = 1) = \sum_{k=1}^{K} \tau_{1k}(V_i\pi)^{k-1} \quad (13)$$

$$E(\eta_{0i} \mid V_i, I_i = 0) = \sum_{k=1}^{K} \tau_{0k}(V_i\pi)^{k-1} \quad (14)$$

We take G(*) to be the normal cdf, and we take the series in (13) and (14) to be parametric and exact for purposes of computing standard errors.[19] The three errors in eqns (10), (11), and (12) are mean zero and mean-independent of the regressors by construction, and hence the underlying

[19] The first term in each series is incorporated into the intercepts of (13) and (14), which should now be understood to equal the original intercepts plus these terms.

structural parameters appearing in eqns (6)-(9) can be consistently estimated by joint nonlinear least squares of (10)-(12), imposing the common parameter restrictions. Robust standard errors are calculated.[20]

We divide the non-requirement regressor variables in the reduced form in Table 9 into the vectors X_i, W_i, and Z_i by a priori assumptions based on theories of the determinants of exit and income growth. We choose the two welfare background variables Welfare Ever and Welfare Most to constitute the vector W_i, on the theory that their primary influence will be on tastes for welfare developed as a child. We choose the four variables representing mother and father's education to be included in Z_i on the presumption that income growth whether on or off welfare is partly a result of earnings growth and hence related to human capital determinants. Family background variables for human capital which predate the decisions being studied here is the usual rationale for these variables. We also include the variables for months worked and ever worked in the Z_i, although with weaker justification. Both are again likely to be related to future earnings growth and hence income growth, and both predate the wave 1 data (they apply to the two years prior to that date), but are more recent in time than variables pertaining to childhood and hence potentially more endogenous. We will conduct some sensitivity testing to the different Z_i variables, but the data set here does not provide any stronger exclusion restrictions.[21]

---

[20] Two-step rather than joint estimation is also possible but calculation of standard errors is easier in joint estimation.

[21] Because the data only cover three states, cross-area variation in welfare policies is not a plausible candidate for the instrument given the large number of other differences in the states and cities. City dummies are instead included in all equations. Some estimates were nevertheless obtained using city dummies as exclusion restrictions; see below.

The results of the estimation are shown in Table 11. The first three columns show the estimates of the three equations. In the first column, which shows the estimates of the exit equation, the coefficient on the income gain is positive but statistically insignificant, while the effects of work requirements and child support enforcement requirements are both positive and significant, as in the reduced form. This suggests that non-financial factors may have been more important in explaining exit than the financial factors. Further, the three requirement eligibility variables do not significantly affect income growth if the woman either stays on welfare or goes off, as shown by the coefficients on those variables in the second and third columns. Nor does the difference in those coefficients, which is what affects the income gain or loss to exit--shown in the fourth column--affect the gain. These results therefore together suggest that the reduced form effect of work and child support requirements found in Table 9 were mostly the result of effects independent of income and, indeed, their magnitudes are about the same as in Table 11.

The other variables in the three equations are occasionally significant and, on average, more likely to be so than in the reduced form. For example, education and health now significantly affect exit rates. Both welfare history variables are significant as well (important since these are identifying variables), although one of them--the effect of ever being on welfare in one's childhood--affects exit positively; possibly this is a proxy for welfare cyclers, given that Welfare Most is being controlled for. The two income growth equations are significantly affected by several of the variables as well, in particular several of the Z variables which serve as instruments. The F-statistic for the Z variables is 7.70, which is acceptable at conventional levels but is not high by the stricter standards of the literature on weak instruments. Further, many of the signs on the Z variables are not easily interpreted. Greater mother's education

increases income gains to leaving welfare over some ranges but not others, for example, and greater father's education reduces the income gain to staying on welfare. More months worked in the past also reduces the latter income gain. When the modest F-statistic is combined with these counterintuitive results, confidence in the estimate of β in the structural model is necessarily reduced.[22]

As shown by the last row in the two income gain columns--only a single linear index term could be successfully entered--selection bias is sometimes significant (the sign implies that those with higher probabilities of exit have greater income gains to leaving welfare in the first place). The last two columns of Table 11 show estimates from a model assuming no selection bias in the two income gain equations. The results imply that omitting those selection bias terms has no effect on the estimates of the effect of the work requirement and child support enforcement requirement variables, and makes β negative.

Given the weakness of the instruments and the poor results for the effect of income gains on exit, a variety of alternatives were tested. Education was tested as an instrument, for example, and so were the city dummies (i.e., they were included in Z and not in X). In both cases the estimate of β remained insignificant, but the coefficients on the requirement variables were unchanged. Alternative specifications using either the four parental background variables, or the two work experience variables, in Z were also tested, with the results shown in Table 12. The work experience variables have very low F-statistics and yield a negative and significant β, while the parental background variables have modest F-statistics and yield a positive but

[22] The column for the difference in the income gains is shown because that is the equation for the actual instrumenting equation. Only three of the six coefficients are significant in that equation, and one has a counterintuitive sign.

insignificant β. While it is true that the income gain to leaving welfare relative to staying on welfare is quite small at the mean of the sample, as the descriptive tables indicated, it is surprising that intrasample variation in that gain is not correlated with exit.

V. Entry Analysis

The analysis of entry will be much briefer because the general framework is the same as that for entry. The analysis will be conducted on those who applied for welfare between waves 1 and 2, for those are the observations who were asked whether they had been told of any of the four diversion activities described in Table 7. Applicants are necessarily a selected sample, but it is possible that at this early stage of welfare reform the knowledge of diversion activities had not percolated through the eligible population to have significantly affected the decision to apply. If it did, then the estimates here do not capture the effect of application and cannot be extrapolated to larger populations of potential applicants.

An applicant who is told that she would have to face a work requirement before eligibility, who would have to discuss a plan for getting by off welfare, would have to apply for a different program, and was given temporary cash assistance, could still enter welfare and indeed many did (see Table 7). Applicants in some cases could fulfill the requirement and then enter the welfare rolls, or they could apply for a different program and be rejected by that program, or they could exhaust their temporary cash payment and then reapply. The data here allow us to measure whether the woman had entered welfare by wave 2 of the data, which could have been several months after the application event, allowing yet more room for entry to occur.

Nevertheless, the prima facie presumption is that the diversion requirements increase the cost of application and of going onto welfare, and therefore should be expected to decrease entry.

As with the exit model, a reduced-form entry equation can be estimated on applicants with the diversion variables as regressors, and a structural form can be estimated which attempts to separate the monetary from non-monetary effects of those variables. Clearly most of them have monetary implications. The models to be estimated here are the same in structure as those estimated for the exit decision.

Table 13 shows reduced form estimates of entry in the first column. Work requirements reduce entry but not significantly, while having to discuss a plan for getting by off welfare decreases entry rates significantly. Surprisingly, however, having to apply for a different program and having been told of a temporary cash payment both increase the rate of entry. The first presumption is that these positive signs must reflect some unobserved selectivity in who is told of the requirements. In particular, it is quite likely that those who are told to apply for a different program have above-average difficulties or disadvantages of some kind that would make them possibly eligible for additional services or benefits from a different program, and it is possible that those who are offered a temporary cash payment are not the better-off women in the applicant pool--who would be rejected by other criteria--but rather the worse-off who would be eligible in all other respects save for what a caseworker might discretionarily judge to be a temporary downturn in circumstances.

These speculations receive only modest support in the last four columns of Table 13 which, in analogy to the eligibility requirements in the exit analysis, show equations for the determinants of who is told of the four diversion requirements and who is not as a function of the

same characteristics. Those who are told of a work requirement are distinguished from those who are not by virtually none of the characteristics measurable in the data, and likewise for the differential between those who are told of a temporary cash payment and those who are not (marital status is about the only significant correlate). Those who are told of the need to discuss a plan to get by without welfare do seem to be drawn from the more disadvantaged population, both those with less education and with greater welfare histories. Those told to apply for a different program are, however, not those in the worst health.[23] On the whole, the large number of insignificant coefficients in these regressions indicates again that there seem to be no systematic rule for assigning the diversion requirements, at least one based on or correlated with the usual sociodemographic variables.

Table 14 shows the estimates of the structural model for entry, using the same model as for exit and the same identifying restrictions.[24] While the income gain coefficient is again positive but insignificant, the work requirement variable is now negative and significant on entry. The other three diversion variables retain the same sign and significance as in the reduced form. The diversion variables have impacts on ultimate income gains in some circumstances (y_1 is the income gain to entering welfare while y_0 is the income gain to staying off); for example, those who were directed to a different program had a greater income gain if staying off welfare. However, those who were required to discuss a plan on how to get by off welfare

[23] The sample size of those told of a different program application is too small to include all regressors. Consequently, some are omitted.

[24] The small sample size required the estimation of a smaller model than for exit. Variables were omitted which were insignificant and which caused the model to become unstable.

actually had lower income gains if staying off, a possible indication of the negative selection referred to previously, and those who were told of a temporary cash payment had larger income gains if they were to enter welfare, a possible indication of the same selection. None of the diversion variables except the temporary cash payment significantly affected the relative income gains to going on versus staying off, however, as indicated in the last column.

VI. Conclusions

This paper has examined the importance and role of non-financial variables in the exit and entry decisions of women in three U.S. cities in the post-1996 period. For the exit decision, the analysis examined work requirements, child immunization requirements, and child support enforcement requirements, while for the entry decision the analysis examined four diversion practices. The descriptive evidence shows that large numbers of women on TANF were told of one or more of the three requirement variables, and that large numbers of applicants were told of diversion activities. Moreover, the descriptive evidence shows that mean income gains to leaving welfare are quite modest, especially given the increasing prevalence of work while on the rolls, suggesting that other factors may have been important in the recent decline in the TANF caseload. The reduced-form estimates of exit show that the requirement variables have a significant impact on exit, and that this impact holds up when monetary gains are separately controlled for in a structural model, albeit one that is based on rather weak identifying restrictions. An investigation of the reasons that different recipients were assigned different requirements, conditional on the observables in the data, turned up rather little in the way of

predicting variables, suggesting that there may be no systematic rules for assigning these requirements. The entry analysis yielded more mixed results, with some diversion practices discouraging entry and others seeming to encourage it. The latter findings may be the result of selectivity on unobservables which have not been controlled for.

Further progress on this topic is critically dependent on data availability. While it would be preferable to conduct nationwide studies using cross-state variation, the type of detail on what recipients have been faced with and what applicants have been told that is available here is not available on nationwide data. More likely to be available are more detailed studies in more cities or other areas which could yield more precise information on how requirements and diversion practices are assigned to different individuals.

References

Abbring, J.; G.. van den Berg; and J. C. van Ours. 2000. “The Effect of Unemployment Insurance Sanctions on the Transition Rate from Unemployment to Employment.” Mimeo, Free University and Tilburg University.

Acs, G. and P. Loprest. 2001. "Final Synthesis Report of the Findings from ASPE's 'Leavers' Grants." Washington: Urban Institute.

Bane, M.J. and D. Ellwood. 1994. Welfare Realities: From Rhetoric to Reform. Cambridge: Harvard University Press.

Bell, S. 2001. "Why Are Caseloads Falling?" Assessing the New Federalism Discussion Paper. 01-02. Washington: Urban Institute.

Blank, R. 2002. “Evaluating Welfare Reform in the United States.” Journal of Economic Literature 90 (December): 1105-1166.

Blank, R. and P. Ruggles. 1994. “Short-Term Recidivism Among Public Assistance Recipients.” American Economic Review 84 (May): 49-53.

_____. 1996. “When Do Women Use Aid to Families with Dependent Children and Food Stamps?” Journal of Human Resources 31 (Winter): 57-89.

Bloom, Dan and Don Winstead. 2002. “Sanctions and Welfare Reform.” In Welfare Reform and Beyond: The Future of the Safety Net, eds. I. Sawhill, R. Weaver, R. Haskins, and A. Kane. Washington: Brookings Institution.

Boskin, M. and F. Nold. 1975. “A Markov Model of Turnover in the Aid to Families with Dependent Children Program.” Journal of Human Resources 19 (Fall): 467-481.

Brauner, S. and P. Loprest. 1999. "Where Are They Now? What States' Studies of People Who Left Welfare Tell Us." ANF Paper Series A, No. A-32. Washington: The Urban Institute.

Cherlin, A.; K. Bogen; J. Quane; and L. Burton. 2002. "Operating within the Rules: Welfare Recipients' Experiences with Sanctions and Case Closings for Noncompliance." Social Service Review 76: 387-405.

Lalive, R.; J. C. van Ours; and J. Zweimuller. 2002. “The Effect of Benefit Sanctions on the Duration of Unemployment.” Mimeographed.

Moffitt, R. 1992. "Incentive Effects of the U.S. Welfare System: A Review." Journal of Economic Literature 30 (March): 1-61.

Moffitt, R. 2001. "Experience-Based Measures of Heterogeneity in the Welfare Caseload. In Studies of Welfare Populations: Data Collection and Research Issues, ed. R. Moffitt and M. Ver Ploeg. Washington: National Academy Press.

Moffitt, R. 2002. "From Welfare to Work: What The Evidence Shows." Policy Brief 13. Washington: Brookings Institution.

Moffitt, R. 2003. "The Temporary Assistance for Needy Families Program." In Means-Tested Transfers, ed. R. Moffitt. Chicago: University of Chicago Press.

Moffitt, R. and K. Winder. 2003. "The Correlates and Consequences of Welfare Exit and Entry: Evidence from the Three-City Study." Three-City Working Paper 03-01.. Baltimore: Johns Hopkins University. Available at http://www.jhu.edu/~welfare.

Newey, W. 1999. "Two-Step Series Estimation of Sample Selection Models." MIT WP: 99-04. Camb: MIT.

Pavetti, L. and D. Bloom. 2001. "Sanctions and Time Limits." In The New World of Welfare, eds. R. Blank and R. Haskins. Washington: Brookings Institution.

Strawn, J.; M. Greenberg; and S. Savner. 2001. "From Welfare-to-Work to Workforce Development." In The New World of Welfare, eds. R. Blank and R. Haskins. Washington: Brookings Institution.

U.S. Department of Health and Human Services. 2002. TANF: Fourth Annual Report to Congress. Washington: Administration for Children and Families.

Van den Berg, G.; B. van der Klaauw; and J. C. van Ours. 2002. "Punitive Sanctions and the Transition Rate from Welfare to Work." Mimeo, Free University and Tilburg University.

Winston, P.; R. Angel; L. Burton; P. L. Chase-Lansdale; A. Cherlin; R. Moffitt; and W.J. Wilson. 1999. Welfare, Children, and Families: A Three City Study. Overview and Design. Baltimore: Johns Hopkins University.

Table 1

TANF Transition Rates Between Waves 1 and 2
(percent distribution)

Wave 1	Wave 2		
	On TANF	Off TANF	All
On TANF	55.6	44.4	32.0
	71.0	18.9	
Off TANF	10.7	89.3	68.0
	29.0	81.1	
All	25.0	75.0	100.0

Notes:

Table entries show row percents on the top and column percents on the bottom.
Last column and last row show marginal percents.
Welfare participation status is as of the date of interview

Table 2

Employment Transitions by Welfare Transition Group
(percent distribution)

Employment Transitions	Welfare Transition Groups			
	On TANF Both Waves	On Wave 1, Off Wave 2	Off Wave 1, On Wave 2	Off TANF Both Waves
Working both waves	11.4	29.9	25.8	49.1
Working then not working	10.5	5.8	20.3	8.4
Not working then working	18.1	33.8	4.1	15.9
Not working both waves	60.0	30.5	49.8	26.6
Total	100.0	100.0	100.0	100.0
Working at Wave 1	21.9	35.7	46.1	57.5
Working at Wave 2	29.4	63.7	29.9	65.0

Notes:

Employment is measured as of the week of interview.

Table 3

Income at Waves 1 and 2, by Welfare Transition Group

	On TANF Both Waves		On Wave 1, Off Wave 2		Off Wave 1, On Wave 2		Off TANF Both Waves	
	Wave1	Wave2	Wave1	Wave2	Wave1	Wave2	Wave1	Wave2
Total HH Income Not including EITC income	$1179	$1315	$1239	$1405	$1419	$1300	$1377	$2035
Including EITC income	$1236	$1389	$1317	$1552	$1554	$1365	$1515	$2161
Poverty rate (including EITC income)	0.76	0.70	0.69	0.56	0.55	0.70	0.51	0.33
Earnings								
Individual	138	207	224	682	410	209	585	795
Others in HH	124	171	136	297	543	223	461	813
TANF								
Individual	323	309	357	0	0	306	0	0
Others in HH	18	14	16	1	5	7	2	0
Food Stamps								
Individual	272	264	270	153	204	275	60	62
Others in HH	29	28	14	3	4	7	5	3
SSI								
Individual	146	185	77	89	85	43	90	76
Others in HH	25	14	15	19	67	7	8	23
SSDI								
Individual	20	35	17	17	10	21	14	9
Others in HH	30	27	19	15	26	61	21	16

Table 3, continued

	On TANF Both Waves		On Wave 1, Off Wave 2		Off Wave 1, On Wave 2		Off TANF Both Waves	
	Wave1	Wave2	Wave1	Wave2	Wave1	Wave2	Wave1	Wave2
Child Support	15	21	45	47	17	60	58	55
Help from friends and relatives	8	6	14	30	5	8	14	25
Social Security	15	19	18	12	14	7	20	55
Other	17	15	16	45	29	26	39	101

Notes:

All amounts pertain to month prior to interview
TANF, Food Stamp, and SSI "individual" amounts include the child benefit for child-only cases

Table 4

Experiences with Work Requirements
(percents)

	Full Sample	Boston	Chicago	San Antonio
Were told of a work requirement	54.3	41.8	64.0	52.4
Fulfilled the requirement	85.1	78.9	86.8	87.1
Reason not required to work				
Children too young	6.2	6.8	1.1	14.1
Poor health	78.8	76.7	91.2	61.7
Caring for disabled person	4.9	6.2	1.6	7.0

Notes: Questions were asked of all women on TANF as of the interview date, or who had been on TANF since the wave 1 interview, which was generally about 18 months earlier, and referred to experiences while on TANF. Unweighted sample sizes in the full sample are 777 for the 'were told of a work requirement' question and 79 for the "reason not required to work" question, which was asked only of those who said that they were not required to work.

Table 5

Other Requirements of which Recipients Were Told
(percents)

	Full Sample	Boston	Chicago	San Antonio
Immunization of children	65.6	73.6	47.0	85.2
Cooperation with child support enforcement[a]	66.2	65.9	69.2	61.8
School attendance[b]	85.7	--	100.0	--
Living at home with parents[b]	85.7	--	100.0	--

Notes: Questions were asked of all women on TANF as of the interview date, or who had been on TANF since the wave 1 interview, which was approximately 18 months earlier, and referred to experiences while on TANF. Maximum unweighted sample size in the full sample is 772. Cells with no entries have less than 50 observations.

[a] Asked of women not living with the fathers of their children.

[b] Asked of mothers age 17 and younger.

Table 6

Experience with Sanctions (percents)

	Full Sample	Boston	Chicago	San Antonio
Percent Sanctioned				
Full[a]	4.2	1.5	8.7	0.4
Partial[b]	16.9	10.1	22.6	15.2
Total	21.1	11.6	31.2	15.6
Of those sanctioned				
Welfare office called or met with first	37.7	25.5	31.5	64.1
Tried to get benefits back	65.8	56.5	68.7	29.8
Successful	82.5	86.6	76.3	97.8
Reason for sanction				
Missed appointment	35.4	4.9	50.5	14.5
Failed to file paperwork	5.1	6.3	6.0	1.4
Refused to take a job	5.1	1.8	1.0	19.4
Didn't show up for work	10.2	4.3	14.2	3.1
Didn't attend school	2.6	4.1	0	0.1
Didn't cooperate with child support	6.3	5.4	7.0	5.0
Didn't get immunization	3.2	8.8	0	8.2

Notes: Questions asked of all women who were on TANF or who went off TANF since the wave 1 interview, and refer to experiences while on TANF. Unweighted full-sample sample sizes for the "percent sanctioned", "of those sanctioned," and "reason for sanction" questions are 774, 150, and 150, respectively.

[a] A "full" sanction is defined as a woman having said she went off TANF because of a rule violation, and therefore includes administrative case closings.

[b] Only women who had not experienced a departure from the rolls for rules violation reasons were asked about partial sanctions.

Table 7

Experiences of TANF Applicants
(percents)

	Full Sample	Boston	Chicago	San Antonio
What applicant was informed of upon application:				
Were told would face work req prior to acceptance	68.9	49.7	69.7	79.7
Caseworker discussed a plan to get by without welfare	37.9	23.9	27.5	51.9
Told to apply for a different program	24.2	14.4	21.6	30.6
Were given temporary cash assistance	29.2	24.7	27.7	30.5
Application accepted and benefits were received	65.7	69.9	34.4	86.9

Notes:

Questions asked of all those who applied for TANF since wave 1. Unweighted full-sample sample sizes for the two questions in the tables are 381 and 303.

Table 8

Reasons for Not Applying for TANF
(percents)

	Full Sample	Boston	Chicago	San Antonio
Of those who did not apply but considered applying, reasons for not applying:				
Too much hassle	30.9	31.6	21.0	49.6
Stigma and embarrassment	23.7	20.1	24.3	28.5
Time limits	4.7	0.8	0.4	20.0
Work requirements	13.9	2.2	20.3	21.3
Found a job	17.0	6.2	24.3	21.0
Found other support	12.9	26.3	2.6	10.1
Not eligible	12.7	9.8	15.5	12.4
Of those who visited the welfare office to apply but didn't, reasons for not applying:				
Too much hassle	32.4	5.6	34.9	48.5
Stigma and embarrassment	14.5	0	0	41.7
Found a job	36.6	10.8	43.2	47.0
Found other support	1.9	6.5	0	1.0
Not eligible	16.2	32.1	3.9	19.3
Caseworker discouraged applying	17.3	0	0.6	49.0
Welfare office treated applicant badly	16.7	0	0.5	47.5

Notes: Questions asked of those not on TANF since wave 1, and refer to periods not on TANF. The sample size for the full sample is 95 for the first question and 198 for the second. The unweighted sample sizes for each city for the first (second) question 75 (26) for Boston, 71 (30) for Chicago, and 52 (39) for San Antonio. Percents add to more than 100 percent because respondents could answer yes to multiple categories

Table 9

Estimates of Reduced Form Exit and Requirement Equations

	Exit Eqn	Requirement Equations		
		Work	Immunization	Child Support
Work Req	.579* (.293)	--	--	--
Immunization Req	.226 (.310)	--	--	--
Child Support Req	.478 (.317)	--	--	--
Age 25-35	-.012 (.307)	-.202 (.266)	-1.803* (.385)	-.255 (.289)
Age 35+	-.847* (.397)	-.382 (.300)	-1.502* (.438)	-.548* (.319)
Education Post High School	-.231 (.281)	.144 (.257)	1.054* (.407)	-.519* (.293)
Black	.298 (.309)	-.294 (.262)	.081 (.263)	.312 (.273)
Poor Health	-.463 (.339)	-.281 (.221)	.217 (.275)	-.044 (.225)
Household Size	-.124* (.076)	.050 (.057)	.105 (.074)	.082 (.067)
Child Under 3	.009 (.297)	-.294 (.248)	-.409 (.285)	-.180 (.232)
Married	-2.661* (.630)	-1.095* (.411)	-1.215* (.465)	-1.037* (.426)
Boston	.750* (.348)	-.649* (.288)	-.550 (.421)	-.010 (.291)

Table 9, continued

	Exit Eqn	Requirement Equations		
		Work	Immunization	Child Support
Chicago	.952* (.423)	-.056 (.274)	-2.120* (.492)	-.557* (.304)
Welfare Ever	.210 (.289)	.055 (.231)	--	-.228 (.255)
Welfare Most	-1.047* (.377)	.309 (.262)	--	.538* (.286)
Mother High School	-.047 (.434)	-.222 (.333)	-.074 (.387)	-.315 (.322)
Mother Post High School	-.535 (.516)	.142 (.380)	-.937* (.474)	-.118 (.408)
Father High School	-1.541* (.501)	-.413 (.321)	-.976* (.460)	.121 (.350)
Father Post High School	.020 (.402)	.833* (.481)	-.747 (.484)	1.579* (.538)
Months Worked	-.044* (.024)	-.033* (.020)	-.032 (.027)	-.017 (.023)
Ever Worked	1.312* (.421)	.750* (.313)	.141 (.421)	.558* (.348)
Intercept	-1.545* (.694)	.642 (.402)	3.112* (.668)	.303 (.451)
Pseudo R-squared[a]	--	.188	.332	.176

Notes:
Standard errors in parentheses; *: significant at 10 percent level
[a] [(TSS-RSS)/TSS], where TSS=total sum of squared residuals with only an intercept, RSS=sum of squared residuals in fitted model
N=473

Table 10

Sanction Equation

Work Req	.437 (.314)
Immunization Req	-.060 (.372)
Child Support Req	-.002 (.289)
Age 25-35	.069 (.320)
Education Post High School	-.421 (.471)
Black	.359 (.262)
Poor Health	.107 (.340)
Household Size	-.031 (.088)
Child Under 3	1.409* (.611)
Married	-.852 (.753)
Boston	-.313 (.315)
Chicago	-.103 (.377)

Table 10 (continued)

Father High School	.835* (.425)
Father Post High School	.972* (.529)
Intercept	-1.635* (.709)
Pseudo R-squared	.097

Notes:
Standard errors in parentheses; *: significant at 10 percent level
Dependent Variable: Dummy =1 if sanctioned, =0 if not

Table 11

Estimates of the Structural Model for Exit

	With Selection				Without Selection	
	I^*	y_1	y_0	y_1-y_0	I^*	y_1-y_0
Income Gain (β)	.162 (1.215)	--	--	--	-.718 (1.224)	--
X:						
Work Req	.445* (.115)	-2.949 (2.307)	-1.400 (.871)	-1.550 (2.466)	.464* (.123)	1.129 (1.665)
Immunization Req	.001 (.123)	3.014 (2.126)	-.306 (.661)	3.319 (2.227)	.064 (.118)	3.313* (1.924)
Child Support Req	.525* (.129)	-2.804 (2.903)	1.466 (.956)	-4.270 (3.056)	.562* (.128)	-1.633 (2.270)
Age 25-35	-.035 (.150)	-2.372 (2.294)	1.687* (.741)	-4.060* (2.411)	-.069 (.154)	-4.218* (2.060)
Age 35+	-.373* (.211)	7.618* (3.427)	-.015 (1.068)	7.633* (3.589)	-.477* (.193)	4.320 (2.736)
Education Post High School	-.305* (.185)	3.918 (4.145)	.915 (.835)	3.003 (4.228)	-.317* (.164)	-431 (3.784)
Black	.277 (.257)	-7.613* (3.887)	-.630 (1.111)	-6.983* (4.042)	.266 (.234)	-3.235 (2.777)
Poor Health	-.282* (.113)	-2.168 (2.606)	-2.031* (.808)	-1.137 (2.729)	-.385* (.120)	-2.122 (1.659)
Household size	-.157* (.038)	1.737* (.831)	.378 (.284)	1.360 (.878)	-.132* (.031)	.111 (.520)
Child under 3	-.143 (.170)	3.387 (2.748)	-2.219* (.757)	6.607* (2.851)	-.114 (.151)	3.774* (1.982)
Married	-.675* (.400)	13.179* (6.829)	-3.341* (1.401)	16.520* (6.971)	-.696* (.335)	8.958* (4.945)
Boston	-.091 (.304)	8.517* (3.332)	-.842 (1.030)	9.359* (3.487)	-.029 (.282)	8.894* (2.725)

Table 11, continued

	With Selection				Without Selection	
	I*	y_1	y_0	y_1-y_0	I*	y_1-y_0
Chicago	.140 (.320)	-2.187 (4.191)	-.046 (1.361)	-2.141 (4.408)	.159 (.293)	-2.327 (3.408)
W:						
Welfare Ever	.495* (.176)	--	--	--	.277* (.137)	--
Welfare Most	-.404* (.157)	--	--	--	-.663* (.129)	--
Z:						
Mother High School	--	-6.049* (2.244)	-.679 (.774)	-5.370* (2.373)	--	-5.598* (2.406)
Mother Post High School	--	4.330* (2.474)	-1.212 (.987)	5.542* (2.664)	--	3.379 (2.432)
Father High School	--	.293 (3.047)	-3.323* (.860)	3.616 (3.166)	--	4.343 (3.072)
Father Post High School	--	5.553* (3.424)	-1.694* (1.042)	7.247* (3.579)	--	8.826* (3.545)
Months Worked	--	.048 (.163)	-.193* (.058)	.241 (.173)	--	.199 (.170)
Ever Worked	--	-.659 (2.032)	1.464* (.902)	-2.123 (2.223)	--	-1.838 (2.273)
$V\pi$	--	9.189* (4.244)	1.188 (1.638)	--	--	--

Notes:
Intercept estimates not shown
Parameters in y equations divided by 100 and β multiplied by 100
Standard errors in parentheses; *: significant at 10 percent level
F-statistics for Z variables: 7.70 (with selection), 7.07 (without selection)

Table 12

Selected Coefficient Estimates of the Structural Model for Exit
with Alternative Z Sets

Income Gain (β)	-.075* (.035)	.010 (.015)
Work Req	.387* (.181)	.435* (.124)
Immunization Req	-.050 (.144)	-.045 (.135)
Child Support Req	.147 (.257)	.561* (.142)
Z Set	Months Worked, Ever Worked	Mother and Father High School and Post High School
F Statistic for Z vector	1.373	6.390

Notes:

Standard errors in parentheses
*: significant at the 10% level

Table 13

Estimates of Reduced Form Entry and Diversion Equations

	Entry Eqn	Diversion Equations			
		Work	Plan	Diff Pgm	Temp Cash
Work Required	-.179 (.245)	--	--	--	--
Plan Discussed	-.444* (.277)	--	--	--	--
Different Program	.395* (.323)	--	--	--	--
Temporary Cash	.883* (.270)	--	--	--	--
Age 25-35	-.590* (.327)	.734* (.332)	.697* (.432)	--	-.486 (.411)
Age 35+	-.271 (.393)	.118 (.394)	.303 (.519)	--	-.656 (.553)
Education Post High School	-.396 (.269)	-.282 (.276)	-.680* (.331)	-.269 (.512)	-.273 (.358)
Black	-.098 (.225)	-.096 (.238)	.128 (.243)	--	.282 (.249)
Poor Health	.019 (.284)	-.201 (.290)	.131 (.308)	-1.286* (.565)	.153 (.293)
Household Size	-.071 (.066)	-.055 (.073)	-.142 (.098)	-.019 (.109)	.003 (.099)
Child under 3	-.504* (.297)	-.331 (.307)	-.296 (.342)	-.403 (.420)	-.652 (.423)
Married	.472 (.347)	-.158* (.390)	.745* (.408)	1.347* (.470)	.900* (.436)

Table 13 (continued)

	Entry Eqn	Diversion Equations			
		Work	Plan	Diff Pgm	Temp Cash
Boston	-.189 (.277)	-.351 (.281)	-.965* (.330)	--	-.212 (.285)
Chicago	-.665* (.306)	-.191 (.314)	-.622* (.330)	--	-.286 (.365)
Welfare Ever	.425 (.286)	.068 (.293)	-.361 (.314)	--	.257 (.330)
Welfare Most	.208 (.300)	.328 (.326)	1.038* (.341)	--	.365 (.346)
Pseudo R-squared	.243	.110	.203	.210	.118

Notes:
Standard errors in parentheses
*: significant at 10 percent level
Applicants only
N=328

Table 14

Estimates of the Structural Model for Entry

	I^*	y_1	y_0	y_1-y_0
Income Gain (β)	.987 (1.90)	--	--	--
X:				
Work Required	-.212* (.109)	1.014 (1.994)	.376 (1.381)	.639 (2.452)
Plan Discussed	-.274* (.124)	-2.611 (2.690)	-4.640* (1.663)	2.029 (3.163)
Different Program	.462* (.166)	-.347 (2.708)	4.272* (1.862)	-4.619 (3.287)
Temporary Cash	.803* (.226)	12.574* (4.271)	2.655 (3133)	9.920* (1.873)
Education Post High School	-.416* (.151)	-9.514* (3.117)	-3.582* (1.828)	-5.933* (3.513)
Children Under 3	-.163* (.098)	-1.825 (1.888)	-1.285 (1.201)	-.540 (2.229)
Boston	-.204 (.143)	.772 (2.856)	2.390 (1.689)	-1.618 (3.319)
Chicago	-.850* (.115)	-7.650* (4.198)	-7.439* (2.913)	-.210 (5.109)
W:				
Welfare Ever	.486* (.126)	--	--	--
Welfare Most	-.352* (.133)	--	--	--

Table 14 (continued)

	I*	y_1	y_0	y_1-y_0
Z:				
Mother High School	--	4.446* (1.843)	.535 (1.462)	3.911* (2.352)
Mother Post High School	--	14.430* (4.634)	3.193 (3.292)	11.240* (5.684)
Father High School	--	-1.756 (2.456)	.670 (1.744)	-2.426 (3.012)
Father Post High School	--	-4.630 (5.869)	2.213 (2.349)	-6.843 (6.322)
Months Worked	--	-.051 (.155)	-2.877* (.094)	.236 (.181)
Ever Worked	--	2.748 (1.921)	2.421 (1.691)	.327 (2.559)
$V\pi$	--	-14.931* (4.073)	-6.484* (2.963)	--

Notes:
Standard errors in parentheses
*: significant at the 10 percent level
F-statistics for Z variables: 7.237

Table A-1

Definitions of the Variables in the Econometric Model

Short Name	Definition
I	Dummy =1 if made a transition between waves 1 and 2
Sanction	Dummy = 1 if individual was sanctioned sometime between waves 1 and 2
Work Req	Dummy = 1 if individual was informed between waves 1 and 2 that she was subject to a work requirement
Immunization Req	Dummy = 1 if individual was informed between waves 1 and 2 that she was required to have children immunized
Child Support Req	Dummy = 1 if individual was informed between waves 1 and 2 that she was required to cooperate with child support enforcement
Work Required	Dummy = 1 if individual was told upon application that there would be a work requirement prior to entry
Plan Discussed	Dummy = 1 if individual was told upon application that the caseworker would discuss with them a plan to get by without welfare
Different Program	Dummy = 1 if individual was told upon application to apply for a different program
Temporary Cash	Dummy = 1 if individual was given upon application a temporary cash payment in lieu of entry
Y	Monthly Household Income Change from Wave 1 to Wave 2
Age <25	Dummy =1 if less than 25
Age 25-35	Dummy =1 if 25 to 35
Age 35+	Dummy = 1 if over 35
Post High School	Dummy =1 if any post-high-school education
Household Size	Number of household members
Children Under 3	Dummy = 1 if any children under 3 in the household

Appendix Table A-1, continued

Short Name	Definition
Black	Dummy = 1 if household head was black
Poor Health	Dummy = 1 if health is poor or fair
Married	Dummy = 1 if woman is married
Boston	Dummy = 1 if in Boston
Chicago	Dummy = 1 if in Chicago
Welfare Ever	Dummy = 1 if woman's family was ever on welfare while she was a child
Welfare Most	Dummy = 1 if woman's family was on welfare most or all of the time as a child
Mother High School	Mother of woman had a high school education
Mother Post High School	Mother of women had education beyond high school
Father High School	Father of woman had a high school education
Father Post High School	Father of woman had education beyond high school
Months Worked	Number of months worked in two years prior to wave 1
Ever Worked	Dummy = 1 if ever worked in the two years prior to wave 1

Notes:

Exit Sample includes all women on TANF at wave 1 and Applicant Sample includes all women who applied for TANF between wave 1 and wave 2.