# Rational Choice, Culture of Poverty, and the Intergenerational Transmission of Welfare Dependency*

MWANGI S. KIMENYI
*University of Mississippi*
*University, Mississippi and*
*University of Connecticut*
*Storrs, Connecticut*

## I. Introduction

It has now become evident that, contrary to the expectations of the proponents of the Great Society, a significant number of recipients of transfer benefits have welfare careers that last for many years. Prolonged reliance on welfare has generated a wide range of issues related to the process and patterns of welfare dependency and has raised questions about how best to reform welfare policy. For example, it has been suggested that welfare use is "addictive," creating a "welfare culture" that is transmitted across generations. Glicken [7, 31] states that most recipients of AFDC benefits are those people "whose parents were recipients—people who have been socialized into the welfare system as children." Duncan, Hill, and Hoffman [5, 469], on the other hand, investigate the patterns of welfare dependence among AFDC recipients and conclude that "[t]he stereotype of heavy welfare dependence being routinely passed from mother to child is . . . contradicted. . . ."[1] Other studies [2; 24] have suggested that there are significant racial differences in the duration of time on welfare pointing to a race-based dependency pattern. Rank [24], for example, finds that black women remain on welfare for significantly longer periods than white women. Specifically, he finds the median number of months on welfare to be 21.6 months for white women and 45.2 for black women.[2] Other studies have suggested that long-time welfare use

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1. However, although the authors reach this conclusion, they also find that "[t]he fraction of daughters from highly dependent homes who themselves become highly dependent (20 percent) is much greater than the fraction of daughters from nonrecipient families who become highly dependent (only 3 percent)" [5, 469].

2. Rank [24] suggests that these differences could be a result of cultural and opportunity differences between blacks and whites.

is a rational response to high state welfare benefits and yet others have argued that dependency is a consequence of behavioral patterns of the underclass such as early teenage pregnancies that are consequences of a "culture of poverty."[3]

The studies that have attempted to analyze welfare utilization over time have generally used data from three main sources: the National Longitudinal Survey (NLS) of Young Women, the Panel Study of Income Dynamics (PSID), and local caseload files.[4] Each of these data sets present several problems when used to analyze welfare dependency. In both the PSID and NLS data sets, welfare receipt is observed only on an annual basis and exits off and back on the welfare rolls that occur within a year are not recorded. In studies using such data, any year in which an individual reports welfare receipt is counted as a spell year. Consequently, an individual who remains on welfare the whole year and one who receives benefits for only one month or less in the same year are considered equally dependent. Studies that use these types of data grossly inflate the extent of welfare dependency for some recipients.

The NLS includes a sample of women aged 14–24 in 1968 and aged 25–35 in 1979. The major advantage of the data from this survey is that it includes a large number of recipients. However, although the sample is used to analyze AFDC utilization, it is not representative of the AFDC population because the NLS data are not confined to AFDC payments but include all types of public assistance. Furthermore, the NLS data set does not report the welfare status of women in some of the years which leaves the researcher to make assumptions about welfare utilization for those years.

The original PSID data consisted of some 5,000 poor families in 1968, with one third of the sample being black and therefore the sample is clearly not representative of the nation's welfare population. A more complex problem associated with the PSID data set is that it is difficult to identify subfamilies within the sample particularly for females who never lived independently and yet are welfare recipients themselves. Thus the PSID data understates the extent of welfare use and fails to reveal parent-to-child welfare use.

Caseload data sets are often accurate and contain detailed information about recipient characteristics. However, these data show false exits when an individual changes administrative jurisdictions while still receiving welfare benefits. Furthermore, most studies using these types of data often look at welfare utilization by sample recipients between two time periods—say recipients on welfare between $t_0$ and $t_1$. Such data ignore prior history of welfare use and therefore are poor indicators of the length of time on welfare.[5]

The present study investigates the determinants of the length of time individuals remain on welfare using a sample consisting of 991 AFDC recipients from the state of Tennessee. The survey sample, which met standard sample selection criteria, was selected from a statewide universe of 66,297 AFDC cases active as of January 25, 1988. The data were obtained through in-home interviews conducted in March and April 1988. An important advantage of this data set is that

3. See for example, Gallaway and Vedder [6], and Murray [17]. For details regarding the culture of poverty hypothesis, see Lewis [15; 16].

4. Studies using these types of data include Duncan, Hill, and Hoffman [5] Murray and Laren [18], O'Neil et al. [19], O'Neil, Bassi, and Wolf [20], Rydell et al. [27], and Rein and Rainwater [25]. There are other studies that have used data from income maintenance experiments, including Plotnick [22] and Plant [21]. A relatively new data set that may be useful in the study of welfare dependency is the Survey of Income and Program Participation (SIPP). The first panel of SIPP contains data from October 1983. Although SIPP contains a wide range of variables, each panel follows recipients for only two and a half years. Kimenyi [13] provides some preliminary estimates of welfare dependency using the 1984 panel of SIPP.

5. This is the problem of left and right censoring discussed below (see note 7).

it contains information that takes into account previous episodes of welfare use and rather than counting any year of positive welfare receipt as a spell year, such as in O'Neil, Bassi, and Wolf [20], only the actual months of welfare receipt are counted. We therefore have information on actual length of welfare careers precisely to the month. The data also include information about recipients' employment history, marital status, education, and also information that can reveal whether the recipients are themselves children of welfare recipients, and other demographic and economic variables that are necessary to explain the process of welfare dependency. In addition, the sample includes a wide range of recipients based on age, area of residence, and so on, which avoids biases introduced by selecting recipients from specific categories or age groups such as in Murray and Laren [18].

After a random sample was selected, all the recipients chosen responded because the interviews were conducted simultaneously with case reviews giving an almost 100 percent response rate and hence avoiding any biases that would be introduced by selective responses (for example, longer term users could refuse to respond to the survey). Second, the problems of jurisdictional changes were eliminated because history of welfare use was recorded regardless of where the individual used such services.

While most studies on welfare dependency generally focus on the urban poor, particularly in northern metropolitan areas, the present study focuses on a sample from a typical southern state. Some unique features of southern states make the study of welfare dependency in those states interesting. Some of these features include: high concentration of low wage employment, seasonality of employment, high concentration of poverty in some rural areas, thin labor markets, and the low level of education attained by most residents. In addition, welfare policy in the South has for long been influenced by powerful employers for the purpose of increasing labor supply and maintaining low wages. These factors may lead to patterns of welfare dependency that differ from those observed in other areas.

The focus of this paper is to empirically investigate the factors that tend to lead to prolonged reliance on welfare—that is, those factors that reduce the probability of exit from welfare. Section II outlines a model of welfare dependency and the methodology used to examine the determinants of duration of time on welfare. Section III presents empirical results, and section IV contains concluding remarks.

The empirical evidence presented in this paper sheds some light on the process of welfare dependency but at the same time suggests disturbing and challenging public policy questions concerning welfare use and dependency. Although we find economic variables to be important determinants of welfare dependency, we also find evidence of intergenerational transmission of dependency. While blacks remain on welfare for longer periods than whites, this outcome does not originate from racial differences in attitudes about welfare recipiency, but is largely a result of the lower probability of exit from welfare by way of marriage.

## II. A Model of Welfare Dependency

We start with the basic premise that an individual only remains on welfare if utility on welfare $U_W$ is greater than utility off welfare $U_O$. Let $U_W = U_W(Y_T, \alpha)$ where $Y_T$ is the amount of transfer income, and $\alpha$ is a measure of the disutility associated with "being on welfare." Let $U_O = U_O(\Theta Y_E, \Phi, \beta)$ where $Y_E$ is potential income that would be earned from work, $\Theta$ is a measure of the probability of obtaining employment and, $\Phi$ takes into account those factors that

increase the opportunity cost of working (such as the provision of child care services). $\beta$ is a measure of disutility associated with work. The individual will receive welfare at any particular time $t$ only if

$$U_W(Y_T, \alpha) - U_O(\Theta Y_E, \Phi, \beta) > 0. \tag{1}$$

Prolonged welfare use implies that the condition for welfare receipt holds through time periods, $t_0, t_1, t_2, t_3, \ldots, t_n$, or at least the condition will hold most of the time so that exits from the welfare system will be brief. The participation function in time $t$ can then be expressed as:

$$\Omega_t = U_W(Y_T, \alpha) - U_O(\Theta Y_E, \Phi, \beta) > 0. \tag{2}$$

$Y_T$ is determined by the political process and is usually based on the number of children in the recipient household. Thus recipients can only increase aggregate transfers by increasing the number of children. On the other hand, the aggregate transfers are reduced by an implicit tax when an individual earns market income. The expected income from work $Y_E$ will depend not only on economic factors such as the unemployment rate, but also on the probability of obtaining employment which is influenced by factors such as education, location, and other recipient characteristics such as age, work experience, and so on. Race could also be an important factor if the probability of obtaining employment differs across racial groups, other things equal.

The existing literature on welfare dependency suggests that attitudes toward welfare may be shaped by the degree to which recipients have been exposed to welfare usage. Recipients whose parents were welfare recipients are more likely to have been "socialized" into the system so that they accept welfare use more readily than those from nonrecipient families. Consequently a proxy for $\alpha$ could be whether or not a recipient came from a welfare family. We have no proxy for $\beta$ and it is assumed that tastes for work are uniform across recipients with similar characteristics.

To analyze welfare dependency using the survey data described above, some features associated with the data need to be considered. To illustrate, consider two welfare recipients $X$ and $Y$, both of whom had up to three different periods of welfare utilization ($x_1, x_2, x_3$, and $y_1, y_2, y_3$) as shown in Figure 1. At the time of survey ($t_1$), $Y$ had exited the welfare system after completing the third period and was therefore not included in the survey while $X$ was still on welfare and was included in the sample. Several problems are associated with duration data of this nature. First, the survey information is only available for those on welfare at the time of survey. Such a sample under-represents those with shorter periods and over-represents those with longer periods who are likely to be on welfare at any particular time—leading to the problem of length-biased sampling.[6] Secondly, at the time of survey, $X$ was in the middle of a period ($x_3$). Consequently, the length of time on welfare that is recorded is for incomplete episodes which means that for those in the sample, the periods are right censored. Right censoring would tend to understate the welfare careers of young recipients and recent entrants.[7] Finally, an important characteristic

6. A comparable example is the problem associated with analyzing the duration of hospital stay by patients. Although most patients are hospitalized for only brief periods (2 to 5 days), a small number of patients (for example those with chronic diseases or the elderly) are hospitalized for far longer periods of time (several weeks or months). A survey conducted at any period of time is likely to over sample those who have been in hospital for a long time because these patients are likely to be in the hospital. Consequently, such a sample would be biased if used to provide information say of the average hospital stay.

7. One other problem with most other survey data is that they do not include information about the length of periods of welfare use before interview (for example ignore $x_1$ and $x_2$ in Figure 1). Such data are poor measures of wel-

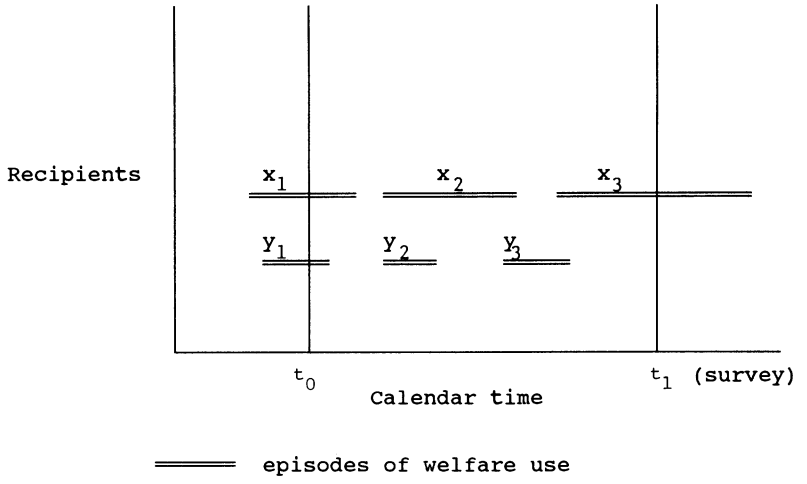


**Figure 1.** Duration on Welfare

of duration data is the property of duration dependence. Duration dependence simply means that the duration of a welfare period is dependent on the length of the period at any particular time. Positive duration dependence implies that the probability of exit from welfare increases the longer a recipient has been on welfare, while negative duration dependence means that the probability of exit decreases the longer a recipient has been on welfare.

These type of problems are common in the analysis of duration data such as the length of time on welfare. Using standard regression analysis would therefore not be appropriate. A suitable method for handling these types of data involves the application of hazard functions as discussed by Kiefer [11]. Hazard functions focus on conditional probabilities of an individual leaving a particular state in time $t_n$, given that the individual has been in that state up to time $t_{n-1}$. We can therefore explain the factors that lead to long term welfare use by estimating a model that would provide information regarding the likelihood of an individual with particular characteristics remaining on welfare. Hazard functions are particularly attractive to modeling welfare dependency because it is possible to specify functional forms that capture duration dependence.[8]

The likelihood of an individual remaining in the same state is obtained by estimating a survival function. To estimate the survival function of welfare participation, we first define the cumulative distribution of time on welfare as

$$F(t, R_t) = \Pr(T < t) \tag{3}$$

where $R_t$ is a vector of recipient and program characteristics that affect the decision to participate

fare dependency because they understate duration on welfare. Other surveys that gather information between two periods (say between $t_0$ and $t_1$ in Figure 1) have the problem of both left and right censoring. We are avoiding the problem of left censoring by considering all previously completed spells ($x_1$ and $x_2$). Our survey data are therefore reasonably good given that right censoring cannot be avoided if the sample is obtained from those on welfare. The problem of right censoring could be reduced if data were for only those who had already exited from welfare. Unfortunately, once a case is closed (which is the basic assumption when benefits are interrupted by non receipt), information about those individuals is difficult to obtain because of privacy laws. Nevertheless, the estimation procedure discussed below adequately handles right censored duration data.

8. For an excellent review of literature on hazard functions, see Kiefer [11]. For more detailed discussion on models and methods of duration data, see Kalbfleisch and Prentice [10] and Lawless [14].

in the welfare program, $F$ represents the results of a series of participation decisions from $\Omega_0$ through $\Omega_t$. The distribution function represents the probability that the duration on welfare ($T$) for an individual with $R_t$ vector of characteristics is $< t$.

The density function associated with the above distribution is given by

$$f(t, R_t) = \delta F(t, R_t)/\delta t \tag{4}$$

and the survival function for participation defined as the proportion still on welfare at time $t$ is given by

$$S(t, R_t) = 1 - F(t, R_t). \tag{5}$$

Finally, we define the hazard function (the hazard rate of exits from welfare) conditional on participating up to time $T = t$ as:

$$\lambda(t, R_t) = \lim_{\delta t \Rightarrow 0} \Pr(t < T < t + \delta t | T > (t, R_t))/\delta t \tag{6}$$

$$\lambda(t, R_t) = f(t, R_t)/S(t, R_t) \tag{7}$$

$$\lambda(t, R_t) = -d \ln(S(t, R_t))/\delta t. \tag{8}$$

By integrating the hazard function, the survival function becomes

$$S(t, R_t) = \text{EXP}(-\int_0^t \lambda(u, R_u) du. \tag{9}$$

We can then investigate how different variables affect the probability of continued welfare receipt (survival) by estimating different distributions of the hazard model.

## III. Model and Empirical Results

To investigate the determinants of welfare dependency, we specify a general hazard model of duration on welfare as follows:

$$WDEP = f(EDUC, CUNEMPL, NCHILD, RURAL, TEENFCB, RAFDCC, RACE, SEXRATIO, EMARR, REMP, TOUEY)$$

where

*WDEP* = cumulative number of months that recipient has received AFDC benefits;
*EDUC* = number of years that recipient has been in school;
*CUNEMPL* = relative change in the unemployment rate since time of entry to time of survey;
*NCHILD* = number of children in the recipient unit;
*RURAL* = 1 if recipient resides in a rural area, and = 0 otherwise;
*TEENFCB* = 1 if recipient was a teenager when she had her first child and = 0 otherwise;
*RAFDCC* = 1 if recipients parents were themselves welfare recipients, and = 0 otherwise;
*RACE* = 1 if recipient is nonwhite, and = 0 if recipient is white;

*SEXRATIO* = ratio of females to males by race and age group;
*EMARR* = 0 if recipient has never been married, and = 1 otherwise;
*REMP* = 1 if recipient was employed shortly before the first welfare period (six months or less), otherwise = 0;
*TOUEY* = total other unearned income.

The dependent variable *WDEP* measures length of time that recipients have received welfare benefits. Although most of the recipients in the sample had been on welfare rolls for less than 4 years (55%), about 21% have welfare careers of 8 or more years.[9]

Probably the most important determinants of how long an individual remains on welfare are those factors that increase the potential earnings in the labor market. Most important among these include the recipients' level of education, the change in the unemployment rate since joining welfare rolls, and the expected loss of income resulting from exiting the system. Recipients with higher levels of education are expected to exit from reliance on welfare more easily because they are more likely to obtain employment and receive higher wage offers than those with lower levels of education. On the other hand, increases in the unemployment rate are expected to lead to longer welfare durations. *CUNEMPL* measures the relative change in the unemployment rate since time of entry to time of survey, calculated as follows:

$$CUNEMPL = [\text{unemployment rate at time of survey} / \text{unemployment rate at the time of entry}].$$

If *CUNEMPL* is greater than 1, then the unemployment rate has on average increased since the time the recipient started receiving welfare benefits. Our argument is simple: a recipient who enters the welfare rolls because of a downturn in the economy is not likely to exit unless the unemployment rate falls below the level it was at the time of entry. Thus, those who enter when unemployment rate is very low are likely to remain on welfare for longer periods than those who enter when unemployment is high. We therefore expect a positive relationship between *CUNEMPL* and the length of time on welfare.[10]

The number of children may affect the length of time on welfare because of several reasons. First, more children mean that the recipient must seek alternative child care services, which increases the opportunity cost of earning market incomes. Second, having more children necessarily implies that more time will be taken off from work (for example when children are sick) which translates into longer and more frequent episodes of welfare use. Finally, the number of children in a recipient household can be used to proxy the expected loss of income of exiting from welfare. Welfare benefits such as AFDC payments are based on the number of children in the household and a recipient's resources. If a recipient mother exits from welfare, she earns market incomes that are not based on the number of children in the household. Consequently, the more children there are in a recipient household, the larger the expected loss of income from exiting from wel-

9. Many studies define welfare dependency as merely participation in welfare programs while others have defined dependency based on the amount of welfare income received relative to earned income [1; 3; 4; 26]. The present study, on the other hand, defines dependency as the cumulative length of time that a recipient receives welfare benefits (in this case AFDC).

10. The unemployment data are based on the state unemployment rate and are obtained from various issues of the *U.S. Statistical Abstract* [28]. It would be more accurate to use locational specific data (e.g., county unemployment rate) but unfortunately we do not have these data for all the years. Furthermore, use of such data would require us to assume that recipients have not changed jurisdictions since time of entry.

fare.[11] We would therefore expect the number of children to increase duration on welfare, that is, reduce the probability of exit from welfare.

Even within the same state, employment opportunities may differ significantly between rural and urban areas so that there may be systematic differences in the duration of welfare use resulting solely from locational factors. In addition, because of larger seasonal variations in job opportunities in rural areas (for example, farm work during the winter) than in urban areas, we may expect to find longer welfare careers among rural recipients than urban recipients. On the other hand, recipients living in inner cities where employment opportunities are practically nonexistent are likely to depend on welfare for extended lengths of time. How area of residence affects welfare durations will depend on the employment opportunities available and we have no a priori prediction as to how the variable *RURAL* is related to dependency.

Some studies have suggested that one of the characteristics of long-term AFDC use is the age at which the recipients have their first child, with teen mothers having significantly longer welfare durations.[12] First, early teenage pregnancies necessarily hinders human capital formation which translates into lower earning potential, and consequently lower employment opportunities. Second, early teenage pregnancies are often associated with the "culture of poverty" which suggests that teen mothers are more likely to come from families that exhibit cultural patterns that more readily accept welfare use. The variable *RAFDCC* controls for whether the recipient was an AFDC child. We expect recipients from welfare families to remain on welfare for longer periods themselves. This is because individuals from welfare families may have a lower disutility from welfare use than others.

Racial differences in the length of time on welfare may result from the labor market experiences or from differences in attitudes toward welfare receipt. If, for example, blacks face labor market discrimination, other things equal, they would be expected to use welfare for longer periods. On the other hand, if there are racial differences in attitudes towards welfare, for example if more blacks have been socialized into the system to the extent that they have a positive attitude toward welfare, we are likely to observe longer welfare careers amongst these recipients.

One of the most important routes of exit from welfare is by way of marriage. Darity and Myers [3; 4] have suggested that racial differences in welfare dependency may be partly due to the nature of marriage markets. Specifically, black females are faced with a very unfavorable marriage market because there are relatively far fewer noninstitutional males compared to the number of females. The shortage of marriageable males reduces the potential of exit from welfare by way of marriage. The sex ratio variable (female/male) is included in the model to control for the role of marriage markets on welfare use. We expect the sex ratio to have a positive impact on welfare dependency. Simply, the more females there are relative to available men, the lower the probability of exit from welfare.[13]

11. Note that the amount of AFDC would be a good proxy for the expected loss of income if the amount varied from recipient to recipient—say for example for recipients in different political jurisdictions such as states. Because all data are from the same state, we do not include the amount of AFDC since this is captured by the number of children in the recipient household.

12. See for example papers discussed in Hopkins [9].

13. Sex ratio data for the state of Tennessee for 1988 were not available and the data used in this study are for the entire country. We calculated the female sex ratio by race for 5-year age groups beginning with the 15–19 age group for females. A basic assumption is that for females in a particular age group (for example 15–19), the relevant age group for males from which the females are likely to get marriage partners is the next older group (20–24). The sex ratio data used in this study seem to be appropriate because national data correspond closely with data for Tennessee for the years when such data are available (1980 census). We have to note that marriage markets are difficult to analyze because it is not clear how the relevant market should be defined—county, city, state, and so on.

**Table I.** Descriptive Statistics

| Variable | Mean | Standard Deviation |
|---|---|---|
| *WDEP* | 59.19 | 58.75 |
| *EDUC* | 10.41 | 2.25 |
| *CUNEMPL* | 1.02 | 0.33 |
| *NCHILD* | 1.89 | 1.08 |
| *RURAL* | 0.45 | 0.49 |
| *TEENFCB* | 0.66 | 0.47 |
| *RAFDCC* | 0.29 | 0.45 |
| *RACE* | 0.52 | 0.49 |
| *SEXRATIO* | 1.17 | 0.19 |
| *EMARR* | 0.45 | 0.48 |
| *REMP* | 0.32 | 0.46 |
| *TOUEY* | 18.30 | 74.76 |

Although most AFDC recipients are single mothers, some of those in the sample were married and are currently single because of divorce, separation, or the death of a spouse. Ever married females are expected to have fewer and shorter periods of welfare use than never married single female householders. The presence of a spouse in the household at sometime in the past could have reduced the demand for welfare because of spouse's income, or could have made the household ineligible for receipt of AFDC benefits.

Welfare dependency is expected to be influenced by employment history of the recipient as shown by the labor market status variable (*REMP*). This variable is an important indicator of the extent to which a recipient is attached to the labor market, and may also indicate attitudes toward work. We would therefore expect those recipients who held a job shortly before entering the welfare system to experience shorter spells of welfare use. Finally, although this study focuses on AFDC recipiency, it is necessary to investigate how other government transfers affect the duration on welfare. *TOUEY* measures the aggregate of all transfers that the recipient gets. The larger this amount is, the more attractive it is for the recipient to remain on welfare.[14]

*Estimation and Results*

Except for unemployment and sex ratio variables which are calculated from data obtained from the *U.S. Statistical Abstract* [28], all the other variables are from the survey of AFDC recipients described earlier. Table I shows the means and standard deviations of these variables.

We estimated three distributions of the hazard model—the Weibull hazard, Loglogistic hazard, and the lognormal hazard. The dependent variable was specified as right censored for all observations. The maximum likelihood results are shown in Tables II (Weibull), III (loglogistic), and IV (lognormal).[15] By and large, the results are consistent for the three distributions and are largely consistent to our expectations. In the discussion that follows, we focus only on the results of the Weibull hazard.

Focusing on Table II, several generalizations can be made. First, duration on welfare is influ-

14. Total unearned income includes social security income, supplemental income, and unemployment compensation. Food stamp amounts are excluded because typically all recipients receive food stamps and the amounts are dependent on household size. The unearned income could also be viewed as a proxy of expected loss of exiting from welfare.

15. For a detailed discussion on the estimation procedure of hazard models and the implications of different distributions, see documentation of the LIMDEP computer program by Green [8].

**Table II.** Duration Models for Time on Welfare

| | Weibull Hazard | | |
|---|---|---|---|
| | 1 | 2 | 3 |
| Constant | 3.410 | 2.309 | 2.344 |
| *EDUC* | −0.0359 | −0.0294 | −0.0300 |
| | (0.116) | (0.0121) | (0.0119) |
| *CUNEMPL* | 0.976*** | 0.9350*** | 0.9371*** |
| | (0.079) | (0.0862) | (0.0853) |
| *NCHILD* | 0.120*** | 0.1041*** | 0.1041*** |
| | (0.028) | (0.028) | (0.0285) |
| *RURAL* | 0.0738 | 0.0715 | 0.0651 |
| | (0.0649) | (0.0658) | (0.0614) |
| *TEENFCB* | 0.1038* | 0.1596*** | 0.1562*** |
| | (0.0596) | (0.0620) | (0.060) |
| *RAFDCC* | 0.9847** | 0.9904** | 0.9835** |
| | (0.4496) | (0.4388) | (0.438) |
| *RACE* | 0.1650** | −0.0210 | |
| | (0.0678) | (0.0800) | |
| *SEXRATIO* | | 0.9794*** | 0.9894*** |
| | | (0.200) | (0.166) |
| *EMARR* | −0.04288 | | |
| | (0.0630) | | |
| *REMP* | −0.3005*** | −0.2447*** | −0.2465*** |
| | (0.0581) | (0.0594) | (0.0585) |
| *TOUEY* | 0.0002533 | 0.000078 | 0.000079 |
| | (0.000390) | (0.000390) | (0.000390) |
| *N* | 895 | 935 | 935 |
| Log-likelihood | −569.16 | −550.54 | −550.57 |

*Notes: N* less than 991 because of missing data or miscoded responses. Standard errors in parentheses. Asterisks denote significance at the 1 percent (***), 5 percent (**), and 10 percent (*) levels.

enced significantly by economic conditions such as the unemployment rate and the labor market attachment of recipients. Those who enter the welfare rolls when the unemployment rate is low are likely to remain on welfare for an extended period of time. On the other hand, those who had recent employment history before the start of a period of welfare use are likely to use welfare for only short durations. The number of children increase duration on welfare as expected. This is because the per capita loss from exiting the welfare system is higher for those with more children. In addition, provision of child care services increases the cost of getting off welfare. The cultural adaptation variables—teenage births and history of welfare use in the family increases the duration of time on welfare. Having been married before, area of residence,[16] and amount of other government transfers do not significantly affect duration on welfare. An interesting but

16. The survey instrument classified recipient's area of residence into seven categories: 1. major urban center, 2. suburbs of a major urban center, 3. medium size city, 4. suburbs of a medium size city, 5. small town, 6. suburbs of a small town, and 7. rural area. In the present study we classified 1–4 as urban and 5–7 as rural. Changing the classification so that only categories 1 and 2 are considered urban did not change the results.

**Table III.** Duration Models for Time on Welfare

| | Loglogistic Hazard | | |
|---|---|---|---|
| | 1 | 2 | 3 |
| Constant | 4.755 | 3.548 | 3.600 |
| *EDUC* | −0.0367 | −0.0293 | −0.0302 |
| | (0.029) | (0.0302) | (0.0295) |
| *CUNEMPL* | 0.968*** | 0.8986*** | 0.9019*** |
| | (0.212) | (0.2256) | (0.2249) |
| *NCHILD* | 0.122* | 0.1257* | 0.1755* |
| | (0.069) | (0.070) | (0.0702) |
| *RURAL* | 0.0321 | 0.0229 | 0.0134 |
| | (0.1678) | (0.1698) | (0.1583) |
| *TEENFCB* | 0.1132 | 0.1714 | 0.1665 |
| | (0.1555) | (0.1600) | (0.156) |
| *RAFDCC* | 0.8942 | 0.9800 | 0.9701 |
| | (1.196) | (1.2055) | (1.203) |
| *RACE* | 0.1827 | −0.0322 | |
| | (0.1671) | (0.2010) | |
| *SEXRATIO* | | 0.94357** | 0.9814** |
| | | (0.492) | (0.405) |
| *EMARR* | −0.06758 | | |
| | (0.1627) | | |
| *REMP* | −0.2813* | −0.2228 | −0.2316 |
| | (0.1540) | (0.1560) | (0.1550) |
| *TOUEY* | −0.0000432 | 0.000268 | 0.000267 |
| | (0.000931) | (0.000930) | (0.000930) |
| *N* | 895 | 935 | 935 |
| Log-likelihood | −141.91 | −139.42 | −139.43 |

Note: See Table II.

rather surprising result is that education has no effect on the duration on welfare. This is probably because for most low wage employment, number of years that a recipient has been in school may be a poor signal for job performance.

Finally, the effects of race and sex ratio on welfare dependency are interesting. The coefficient on the sex ratio variable is positive and statistically significant. If we omit the sex ratio, results show that being black tends to increase the likelihood of a recipient remaining on welfare. When both sex ratio and race variables are included in the model, however, the coefficient for race becomes negative (but insignificant) indicating that white recipients have a lower probability of exiting from welfare if sex ratio is held constant across the races. This result gives credibility to the Darity and Myers [3; 4] conclusions that it is not welfare use that leads to female headship, but rather it is female headship that leads to welfare dependence, and that female headship, particularly among black females, is a result of a shortage of males.

**Table IV.** Duration Models for Time on Welfare

| | Lognormal Hazard | | |
|---|---|---|---|
| | 1 | 2 | 3 |
| Constant | 3.843 | 2.677 | 2.723 |
| *EDUC* | −0.0361 | −0.0293 | −0.0301 |
| | (0.168) | (0.0169) | (0.0166) |
| *CUNEMPL* | 0.958*** | 0.9179*** | 0.9209*** |
| | (0.116) | (0.1228) | (0.1221) |
| *NCHILD* | 0.119*** | 0.1090*** | 0.1088*** |
| | (0.039) | (0.039) | (0.0398) |
| *RURAL* | 0.0498 | 0.0432 | 0.0346 |
| | (0.0948) | (0.0944) | (0.0880) |
| *TEENFCB* | 0.1104 | 0.1668* | 0.1624* |
| | (0.0874) | (0.0888) | (0.086) |
| *RAFDCC* | 0.9781*** | 0.9490*** | 0.9597*** |
| | (0.0701) | (0.0690) | (0.0691) |
| *RACE* | 0.1733* | −0.0287 | |
| | (0.0970) | (0.1128) | |
| *SEXRATIO* | | 1.0899*** | 1.0502*** |
| | | (0.281) | (0.229) |
| *EMARR* | −0.05562 | | |
| | (0.0920) | | |
| *REMP* | −0.28609*** | −0.2314*** | −0.2343*** |
| | (0.0860) | (0.0862) | (0.0853) |
| *TOUEY* | 0.0000843 | −0.000118 | −0.000117 |
| | (0.000541) | (0.000530) | (0.000530) |
| *N* | 895 | 935 | 935 |
| Log-likelihood | −202.67 | −198.25 | −198.31 |

Note: See Table II.

## IV. Conclusion: Dependency Theories and Public Policy

The results presented in this paper suggest that long-term welfare use is a result of economic constraints, (such as the lack of employment opportunities), rational choice (which focuses on considerations of the expected loss of exiting from welfare), and cultural adaptation. In addition, we find marriage markets to be very important particularly in explaining the frequently observed racial differences in duration on welfare.

The results have some important public policy implications in relation to welfare policy. First, the results can be used to target specific policies to potential long term users. For example job training related programs could focus on teen mothers who have no prior work history. Secondly, it does appear that because of the child care costs, the choice not to work appears most rational. Because extended welfare use is likely to be associated with negative duration dependence, it may be necessary for the government to design child care programs so that welfare mothers can enter the labor market and thereby avoid the multiplicative effects of prolonged welfare use. At the

same time, more strict enforcement of child support policies could help some mothers enter the labor market which would translate into reduced welfare dependency.

It may appear as though the problem of unfavorable marriage market for black females may be out of the scope of public policy. However, it is necessary to realize that it is because of their economic status that many black males are involved in activities such as drugs, crime, alcoholism, and so on, which make them unsuitable as marriage partners while others end up in institutions such as prisons and mental hospitals, and yet others are killed at an early age, reducing the pool of males in the population. Unless those trends are reversed, black females will continue to be faced with unfavorable marriage markets. This will translate into increases in female headed households and consequently increased welfare dependency. Thus it appears that welfare policies to reduce dependency particularly among black females, should also focus on the employment opportunities of black males, drug treatment programs, and so on.

Finally, the fact that education has no effect on the duration on welfare suggests that education does not improve the employment prospects of recipients.[17] This is disturbing because it suggests that the high drop out rates in the South represent rational behavior. Welfare reform policies should therefore be accompanied by education reform such that remaining in school improves employment prospects of the poor.

17. The number of years in school does not tell us whether the recipient has a high school diploma or not. Having a high school diploma may actually be the relevant signal used by employers in hiring decisions. Kimenyi [12] finds that having a high school diploma significantly reduces the duration of food stamp receipt. Results based on the number of years a recipient attended school as the measure of education should therefore be interpreted with caution.

## References

1. Barr, N. A. and R. E. Hall, "The Probability of Dependence on Public Assistance." *Economica*, May 1981, 109–23.

2. Coe, Richard D., "Welfare Dependency: Fact or Myth." *Challenge*, September–October 1982, 43–49.

3. Darity, William A. Jr., and Samuel L. Myers, Jr., "Changes in Black Family Structure: Implications for Welfare Dependency." *American Economic Review*, May 1983, 59–64.

4. ——— and ———, "Does Welfare Dependency Cause Female Headship? The Case of the Black Family." *Journal of Marriage and the Family*, November 1984, 765–79.

5. Duncan, Gregg J., Martha S. Hill, and Saul Hoffman, "Welfare Dependence Within and Across Generations." *Science*, January 1988, 467–71.

6. Gallaway, Lowell and Richard Vedder, "Paying People to be Poor." National Center for Policy Analysis, Policy Report No. 121, 1986.

7. Glicken, Morley D., "Transgenerational Welfare Dependency." *Journal of Contemporary Studies*, Summer 1981, 31–41.

8. Green, William. *LIMDEP: Version 5*. Mimeo., New York, 1988.

9. Hopkins, Kevin R. *Welfare Dependency: Behavior, Culture and Public Policy*. Alexandria, Virginia: Hudson Institute, 1987.

10. Kalbfleisch, J. D. and Ross L. Prentice. *The Statistical Analysis of Failure Time Data*. New York: John Wiley and Sons, 1980.

11. Kiefer, Nicholas M., "Economic Duration Data and Hazard Functions." *Journal of Economic Literature*, June 1988, 646–79.

12. Kimenyi, Mwangi S. "Welfare Dependence: A Hazard Function Analysis." Working Paper, Department of Economics and Finance, The University of Mississippi, 1990a.

13. ———. "Welfare Use, Welfare Dependency, and Labor Markets in the Deep South." Working Paper, Department of Economics and Finance, The University of Mississippi, 1990b.

14. Lawless, J. F. *Statistical Models and Methods of Lifetime Data*. New York: John Wiley and Sons, 1982.

15. Lewis, Oscar. *Five Families: Mexican Case Studies in the Culture of Poverty*. New York: Basic Books, 1959.

16. ———. *A Study of Slum Culture: Backgrounds to LaVida*. New York: Random House, 1966.

17. Murray, Charles A. *Losing Ground: American Social Policy, 1950–1980*. New York: Basic Books, 1984.

18. ——— and Deborah Laren. "According to Age: Longitudinal Profiles of AFDC Recipients and the Poor by Age Group." Prepared for the Working Seminar on the Family and American Welfare Policy, September, 1984.

19. O'Neil, June A., Douglas A. Wolf, Laurie J. Bassi, and Michael Hanan. *An Analysis of Time on Welfare*. Report to the Department of Health and Human Services, Washington, D.C.: Urban Institute, 1984.

20. ———, Laurie J. Bassi, and Douglas A. Wolf, "The Duration of Welfare Spells." *Review of Economics and Statistics*, May 1987, 241–48.

21. Plant, Mark W., "An Empirical Analysis of Welfare Dependence." *American Economic Review*, September 1984, 673–84.

22. Plotnick, Robert D., "Turnover in the AFDC Population: An Event History Analysis." *Journal of Human Resources*, Winter 1983, 65–81.

23. Rank, Mark R., "Exiting From Welfare: A Life-Table Analysis." *Social Service Review*, September 1985, 358–76.

24. ———, "Racial Differences in Length of Welfare Use." *Social Forces*, June 1988, 1080–101.

25. Rein, Martin and Lee Rainwater, "Patterns of Welfare Use." *Social Service Review*, December 1978, 511–34.

26. Robins, Philip K., "Child Support, Welfare Dependency, and Poverty." *American Economic Review*, September 1986, 768–88.

27. Rydell, Peter C., Thelma Palmeria, Gerard Blasis, and Dan Brown. *Welfare Caseload Dynamics in New York City*. New York: The Rand Institute, 1974.

28. U.S. Department of Commerce, Bureau of the Census, *Statistical Abstract of the United States*, Washington, D.C.: U.S.G.P.O., (various issues).