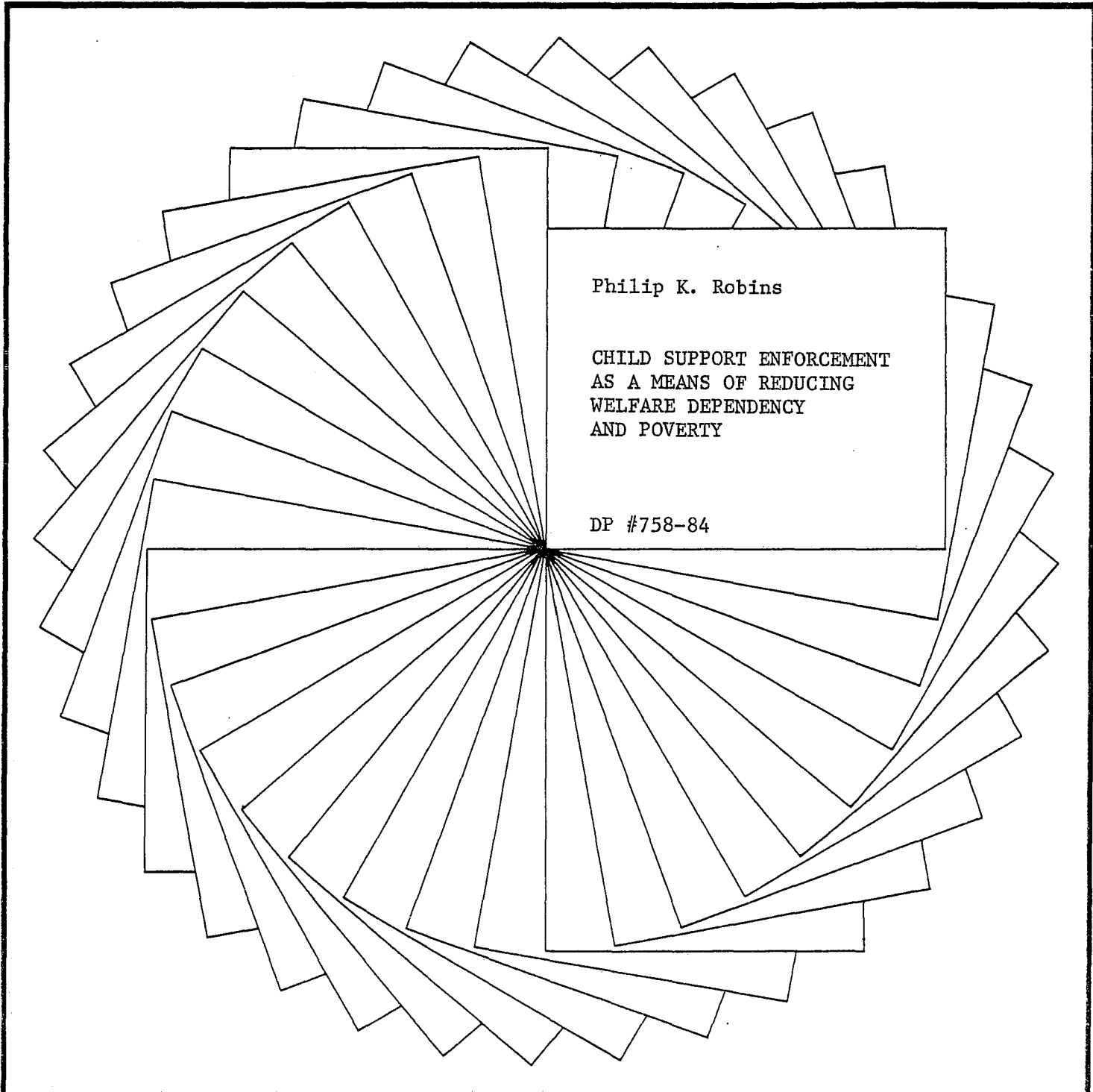

IRP Discussion Papers



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AS A MEANS OF REDUCING
WELFARE DEPENDENCY
AND POVERTY

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Abstract

The purpose of this paper is to investigate empirically two important questions concerning child support enforcement. First, what is the impact of receiving child support on welfare dependency and poverty? Second, how effective are current child support enforcement procedures? The analysis utilizes data from the 1979 AFDC Recipient Characteristics Study and the March/April 1982 Current Population Survey (CPS). A theoretical model of participation in the AFDC program is developed and estimated using the CPS data. The welfare participation model results are used in conjunction with data from the CPS and AFDC surveys on the Child Support Enforcement (IV-D) Program to derive estimates of the impact of the IV-D program (as it existed in 1979 and 1981) on receipt of child support for AFDC and non-AFDC families. Based on the empirical findings, simulations are performed to predict how a variety of child support enforcement policies would affect welfare dependency, poverty, and welfare costs. The simulations suggest that child support enforcement represents a potentially effective means for reducing welfare costs, but that given the current award structure there is little prospect for its having a significant impact on reducing either welfare dependency or poverty among single parent families.

1. Introduction

Female-headed families have among the highest poverty rates of any major demographic group in the United States. In 1982, 48 percent of all female headed families were poor, compared to 10 percent of other types of families (U.S. House of Representatives, 1983a). Despite the fact that only one-fifth of all families with children are headed by women, this group constitutes the majority (55 percent) of all poor families.

With an increasing rate of illegitimacy and a high divorce rate, the size of the female-headed population continues to grow.¹ In 1960, there were 1.9 million female-headed families in the U.S., or 7 percent of all families. By 1983, the number of female-headed families totaled 5.7 million, or 19 percent of all families (USDHHS, 1983).

The increase in the number of female-headed families has resulted in a growing number of children not living with both natural parents. In 1982, 20 percent of children under the age of 18 were living with their mother only (U.S. House of Representatives, 1983b). Moynihan (1981) has projected that by the year 2000, only one-half of all children born in the U.S. will have spent their entire childhood living with both natural parents. Unless new policies are developed for increasing the economic well being of female headed families, it seems certain that overall poverty and welfare dependency in the United States will increase.

The traditional approach adopted by policymakers to reduce poverty and welfare dependency in families headed by women has centered on increasing the employment of the mother.² While such policies may have had an impact, they have raised important and difficult tradeoffs concerning the well-being of the younger children. Nevertheless, despite the existence of work requirements,

few women on welfare hold jobs³ and the incidence of poverty remains high for this group.

One important alternative (or perhaps complement) to policies aimed at increasing the employment of the mother is to collect child support from the absent father. Such an approach has received increasing attention in recent years. In 1975, Congress established the Child Support Enforcement Program as Part D of Title IV of the Social Security Act.⁴ The IV-D program, primarily a state program, with significant federal involvement and federal funding, requires each state to develop a child support enforcement program that provides services for establishing paternity, locating absent parents, establishing support obligations, and enforcing such obligations. The states are required to provide these services to all AFDC families and to non-AFDC families who request such services, although a fee must be charged to the latter families.⁵ To facilitate collection across states, a Federal Parent Locator Service was established with access to Federal data files on individuals, including Social Security Administration earnings records and Internal Revenue Service tax records. States are also given financial incentives for cooperating with one another.⁶

Very few women on welfare receive child support from the absent father. According to data from the Current Population Survey (CPS) for 1981, only 15 percent of full-year recipients of AFDC benefits received child support and only 28 percent had a formal child support award.⁷ Clearly, there are a large number of absent fathers who are contributing nothing to the support of their children. However, the problems encountered in collecting support are reflected in the fact that almost one-half of the children in AFDC families had parents who were not married⁸ and in 47 percent of the cases the whereabouts

of the father is reported as unknown, although the true percentage of missing fathers may be less because the implicit 100 percent tax rate on child support income by the AFDC program creates incentives for the mothers to conceal this information.

Despite difficulties in collecting support, the Child Support Enforcement Program has grown steadily since its inception. In 1982, however, the Office of Child Support Enforcement (OCSE) expressed concern that growth in the program may be tapering off (USDHHS, 1982a).⁹ In FY 1983, child support collections on behalf of AFDC families totaled \$880 million, or about 6.6 percent of AFDC benefits paid (USDHHS, 1983). Collections were over \$1.1 billion for non-AFDC families.¹⁰

Two major changes are occurring in the IV-D program that are likely to increase collections in the future. First, section 2331 of the Omnibus Reconciliation Act of 1981 (P.L. 97-35) authorizes the Internal Revenue Service to withhold Federal income tax refunds for persons seriously delinquent in child support payments to AFDC families. OCSE acts as the agent of IRS in the tax refund intercept process. This is the first time the IRS has participated in a major collection activity not directly related to tax liabilities. It signifies an important new direction in social policy legislation in the U.S.¹¹

The second major change in the IV-D program is that it appears to be focusing greater attention on the non-AFDC component of the program. The main purpose of the non-AFDC component is "cost avoidance"; that is preventing families from going on AFDC (and other welfare programs) by collecting child support payments. The Child Support Enforcement Amendments of 1984, signed by President Reagan in August 1984, is designed to aid non-AFDC families in

collecting child support. The legislation authorizes mandatory wage withholding of child support for delinquent parents, expands use of the federal and state tax intercept programs, and increases federal incentives to states in their collection efforts.

With increased federal and state involvement in child support enforcement, there has emerged a significant need for developing ways of evaluating the government's role in this area. In order to make informed policy decisions, two major research questions must be answered. First, how effective are current child support enforcement procedures? Second, what is the impact of receiving child support on welfare dependency and poverty? The purpose of this paper is to investigate empirically these two questions using data from two recent microeconomic household surveys: the merged March/April 1982 Current Population Survey (CPS) and the 1979 AFDC Recipient Characteristics Study. A theoretical model of participation in the AFDC program is developed and estimated using the CPS data.¹² The results indicate that economic incentives play a significant role in determining welfare participation and that receiving child support acts to reduce welfare dependency. The welfare participation model results are used in conjunction with data on the IV-D program to derive estimates of the impact of the IV-D program (as it existed in 1979 and 1981) on receipt of child support. Data from both the CPS and AFDC Survey are used in this analysis. The results indicate significant impacts of certain types of IV-D services on child support outcomes. Overall, it is estimated that in 1981 the IV-D program increased the child support reciency rate by about 9 percent and collections by about 5 percent. The empirical findings are used to simulate the effects of various child support enforcement policies on welfare dependency, poverty, and welfare costs. The simulations

suggest that child support enforcement represents a potentially effective means for reducing welfare costs but has little impact on welfare dependency and poverty.

2. Impact of Receiving Child Support on Welfare Dependency

In this section, a model of participation in the AFDC program is developed and estimated.¹³ The model's results are used to assess the impact of receiving child support on welfare dependency and provide the basis for the analysis in the next section where estimates are derived for the impact of the IV-D program on child support outcomes for AFDC and non AFDC families.

Theoretical Framework

A female headed family is assumed to participate in the AFDC program if participation increases its utility. Consider a family which is hypothesized to maximize a monotonic, strictly quasi-concave utility function $U(H, Y)$, where H is hours of work, Y is expenditures on market goods, $U_H < 0$, $U_Y > 0$, $U_{HH} < 0$, $U_{YY} < 0$, and $U_{HY} < 0$. The budget constraint for the family is $Y = WH + N + PB$, where W is the wage rate, N is nonwage income other than AFDC, P is a binary (1, 0) variable indicating whether or not the family receives AFDC benefits, and B is the level of AFDC benefits. For the period covered in this study (1981), monthly AFDC benefits are determined by $B = r(gS - N - 2/3WH + 20 + D)$,¹⁴ where r is the ratable,¹⁵ S is the AFDC standard of need, g is the standard of need reduction rate, N is nonwage income other than AFDC (including child support), and D is work expenses which are assumed to vary linearly with earnings ($D = bWH$).¹⁶ Using the AFDC benefit formula, the budget constraint can be rewritten as $Y = \hat{Y}N + \hat{W}H$, where $\hat{Y}N = N(1 - rP) + rP(gS + 20)$ and $\hat{W} = (1 - rP(2/3 - b))W$.¹⁷

Maximization of the utility function subject to the budget constraint yields a set of equations determining Y , H , and the marginal utility of income as functions of \hat{W} and $\hat{Y}N$. Substituting these solution equations into the direct utility function yields the indirect utility function $V = V(\hat{W}, \hat{Y}N)$. Denoting V^1 as the value of V for $P = 1$ and V^0 as the value of V for $P = 0$, yields the AFDC participation decision:

Participate in AFDC if

$$\Delta V = V^1 - V^0 > 0 \quad (1)$$

A second order Taylor series expansion of (1) around the initial position (W, N) yields:

$$\begin{aligned} \Delta V = & V_y \Delta \hat{Y}N + V_w \Delta \hat{W} + 1/2 V_{yy} (\Delta \hat{Y}N)^2 + 1/2 V_{ww} (\Delta \hat{W})^2 \\ & + V_{yw} \Delta \hat{Y}N \Delta \hat{W} + \text{remainder}, \end{aligned} \quad (2)$$

where $\Delta \hat{W} = -Wr(2/3 - b)$

$$\Delta \hat{Y}N = -r(N - gS - 20)$$

Assuming an upward sloping labor supply function, it is expected that $V_y > 0$, $V_w > 0$, $V_{yy} > 0$, $V_{ww} > 0$, and $V_{yw} < 0$. In reality, these parameters are likely to vary across families, but in the empirical work below only their average values in the sample are estimated.

It may be noted that knowledge of the second order terms of (2) enables calculation of income and substitution effects on initial labor supply. This can be seen by making use of Roy's Identity, which is a function of the two first order terms of (2) (Silberberg, 1978; Henderson and Quandt, 1980):

$$H_0 = V_w/V_y, \quad (3)$$

where H_0 is initial (pre-AFDC) hours of work.¹⁸

Differentiating Roy's identity with respect to \hat{W} and \hat{Y}_N yields the relationships for income and wage effects on initial hours of work as functions of the first and second order terms of (2):

$$\partial H_0 / \partial \hat{Y}_N = (V_y V_{y_w} - V_w V_{yy}) / V_y, \quad (4)$$

$$\partial H_0 / \partial \hat{W} = (V_y V_{ww} - V_w V_{yw}) / V_y. \quad (5)$$

Equations (4) and (5) form the basis for calculating various labor supply elasticities of interest.¹⁹

In the application presented here, interest is in estimating the impact of receiving child support on utility and hence on AFDC participation.²⁰ Denoting child support payments by C and noting that C is a component of N yields

$$(\partial \Delta V / \partial C) = -r(V_y + V_{yy} \Delta \hat{Y}_N + V_{yw} \Delta \hat{W}). \quad (6)$$

Hence, so long as $\Delta \hat{Y}_N > 0$ and $\Delta \hat{W} < 0$ the theoretical model implies that receiving child support reduces the probability of being dependent on welfare. The magnitude of the reduction depends on the magnitude of the change in net nonwage income, the magnitude of the change in the net wage rate, and the size of the implicit tax rate on child support payments (given by the value of r).²¹

Estimation

Equation (2) is the basic model to be estimated. Denoting the remainder in (2) by an error term u yields the following model of participation in the AFDC program:

$$P = \begin{cases} 1 & \text{if } u < -x\alpha \\ 0 & \text{if } u \geq -x\alpha, \end{cases} \quad (7)$$

where $x\alpha = \alpha_1 \Delta\hat{Y}N + \alpha_2 \Delta\hat{W} + \alpha_3 (\Delta\hat{Y}N)^2 + \alpha_4 (\Delta\hat{W})^2 + \alpha_5 \Delta\hat{Y}N \Delta\hat{W}$. If u is normally distributed with scale parameter a so that u has unit variance, then (7) is simply a probit model for participation. Estimation of (7) by probit analysis enables identification only of $a\alpha$, however equations (3), (4), and (5) can still be solved.

Complications

AFDC is a monthly program. Hence, proper estimation of (7) requires monthly data on AFDC participation. Unfortunately, the data file used to estimate the model (the merged March/April 1982 Current Population Survey) does not contain monthly data on AFDC participation. However, the data file does contain information sufficient for estimating a model determining the number of months on AFDC during the survey year (1981), or equivalently, the fraction of the year spent on AFDC (number of months divided by 12). Thus empirically, the focus will be on the AFDC participation decision over the 12 month period of 1981 rather than in any given month. The model actually estimated may be written as:

$$F^* = x\beta + \varepsilon$$

$$F = \begin{cases} 0 & \text{if } F^* \leq 0 \\ F^* & \text{if } 0 < F^* < 1 \\ 1 & \text{if } F^* \geq 1, \end{cases} \quad (8)$$

where $\beta = a\alpha$ and F is the observed fraction of the year spent on AFDC. The error term ε is assumed to be normally distributed with mean 0 and variance σ^2 . This model has the general form of a two limit probit regression model (see Rosett and Nelson, 1975).

Denoting $\Phi_1(-x\beta/\sigma)$ by Φ_1 , $\Phi_2((1-x\beta)/\sigma)$ by Φ_2 , $\phi_1(-x\beta/\sigma)$ by ϕ_1 , and $\phi_2((1-x\beta)/\sigma)$ by ϕ_2 , where Φ and ϕ are the standard normal distribution and density functions respectively, the model implies

$$E(F) = (\Phi_2 - \Phi_1) x\beta + \sigma(\phi_1 - \phi_2) + (1 - \Phi_2). \quad (9)$$

Differentiating (9) with respect to C and substituting in equation (6) gives:

$$\partial E(F)/\partial C = -r(\Phi_2 - \Phi_1)(V_y + V_{yy} \Delta \hat{Y}_N + V_{yw} \Delta \hat{W}), \quad (10)$$

which represents the effect of receiving child support on (annual) AFDC participation.

The CPS does not identify F^* directly for nonlimit observations (families who spent only part of the year on AFDC). Instead, the survey identifies whether the family received AFDC benefits for part of the year, without specifying the precise number of months. As Rosett and Nelson (1975) show, this information is sufficient to identify β and σ^2 . The likelihood function for the model is given by

$$L(\beta, \sigma | F, x) = \prod_{F=0} \phi_1 \prod_{0 < F^* < 1} (\phi_2 - \phi_1) \prod_{F=1} (1 - \phi_2). \quad (11)$$

$$F=0 \quad 0 < F^* < 1 \quad F=1$$

Maximization of L with respect to β and σ gives consistent estimates of β and σ .²²

Data and Variables

The data, as mentioned earlier, are from the merged March/April 1982 Current Population Survey. This survey is the second attempt by the Department of Commerce to obtain detailed information about child support arrangements of families in which the children are not living with both natural parents.²³ Although the survey covers families in which the mother is currently either married or unmarried, the focus in this paper is on families with only one parent in the home because these families have a greater risk of becoming dependent on welfare. The 1982 CPS is particularly useful for this study because it contains information on participation in the AFDC program as well as on various services performed by administrators of the IV-D program on behalf of AFDC and non-AFDC families.²⁴

The main variables included in the empirical participation model are those contained in equation (2). In addition, some control variables are added to account for varying preference structures of families.²⁵

Main Economic Variables

The main economic variables are $\Delta \hat{W}$, $\Delta \hat{Y}^N$ and the second order transformations of these variables. In order to calculate $\Delta \hat{W}$, information is required on r (the ratable), b (the reduction in the AFDC tax rate due to work related expenses), and W (the mother's gross wage rate). For r , the statutory value given in USDHHS (1981) is used. This variable is equal to one in every state

except Mississippi and South Carolina. To derive b , the procedure suggested by Hutchens (1978) is used.²⁶ Because W is only observed for a subset of women (those who worked during the year 1981), the standard selectivity correction procedure developed by Heckman (1979) is used to estimate W for all sample members.²⁷

The second economic variable is $\Delta \hat{Y}_N$. To calculate $\Delta \hat{Y}_N$, information is required on N (nonwage income), S (the AFDC standard of need), and g (the standard of need reduction rate). Annual amounts are used for N and S . N is derived from data in the CPS on family nonwage income. Alimony and child support payments are included in N and are taken from the April supplement, while the other nonwage income comes from the income section of the main March questionnaire.²⁸ Other nonwage income includes all cash public and private transfers (excluding AFDC) as well as reported capital income. To derive S and g , the values given in USDHHS (1981, 1982) are used. Because AFDC need standards and reduction rates are determined on a fiscal year basis and the CPS data refer to the calendar year, the weighted averages of S and g for the two fiscal years under study are used (USDHHS, 1981, 1982). The values of S used vary with family size, which is reported in the CPS.²⁹

Control Variables

In order to allow for varying preferences across families, several control variables are added to the equation. These include dummy variables for region of the country (Northwest, Northcentral, West), dummy variables for race/ethnicity (Black, Hispanic), age and years of schooling of the mother, family size, dummy variables for marital status of mother (divorced, separated), dummy variables for employment status of the mother at the time of the marital dissolution (working full-time, working part-time, and unemployed),³⁰

and a dummy variable for whether the state in which the family resides imposes a limit on the AFDC payment or imposes less than a 100 percent tax rate on child support payments and other nonwage income.

Table 1 presents the means and standard deviations of the variables in the AFDC participation model. On average, the AFDC program reduces the net wage of the mother by \$1.72³¹ and increases net nonwage income by \$2,600 per year. The fairly large increase in net nonwage income illustrates the generosity of the AFDC program relative to existing child support collections and other nonwage income.

Results

Estimates of the AFDC participation model are presented in Table 2. Two versions of the model are presented. The first includes only the first order terms of the Taylor series expansion. The second includes the first and second order terms.

For the version with the first order terms only, the two estimated parameters of the indirect utility function (V_w and V_y) are statistically significant and of the expected sign. The results suggest that economic incentives play a significant role in determining welfare participation. The higher tax rate of the AFDC program relative to the control environment acts to discourage participation while the higher nonwage income (in the form of the AFDC guarantee) encourages participation. The results also imply that participation is higher for low-wage women and lower for women that receive child support payments. The implied initial hours of work from the first order terms (V_w/V_y) is 992 per year. Average hours of work in the sample is 1,101.

The results also indicate that the mother's preference for work is a strong determinant of AFDC participation. Mothers who were employed at the

Table 1

Means and Standard Deviations of Variables
in AFDC Participation Model
(N = 2,543)

<u>Variable</u>	<u>Mean</u>	<u>Standard Deviation</u>
$\Delta\hat{W}$	-1.72	.56
$\Delta\hat{Y}N$ ($\times 10^{-3}$)	2.66	2.68
$(\Delta\hat{W})^2$	3.29	2.24
$(\Delta\hat{Y}N)^2$ ($\times 10^{-6}$)	14.27	15.28
$\Delta\hat{Y}N\Delta\hat{W}$ ($\times 10^{-3}$)	-4.38	5.26
1 = Northeast	.20	.40
1 = Northcentral	.24	.42
1 = West	.22	.42
1 = Black	.31	.46
1 = Hispanic	.08	.26
Years of Schooling	11.80	2.40
1 = Divorced	.49	.50
1 = Separated	.25	.43
1 = Worked Full-time at Time of Dissolution	.31	.46
1 = Worked Part-time at Time of Dissolution	.07	.26
1 = Unemployed at Time of Dissolution	.08	.27
Family Size	3.15	1.34
Age of Mother	32.45	8.74
1 = Limit on State AFDC Payment or Ratable on Deficit	.31	.46

Table 2

Estimates of AFDC Participation Model
(Estimated Asymptotic Standard Errors in Parentheses)

Variable	First Order Approximation		Second Order Approximation	
$\Delta\hat{W}$.151*	(.079)	.187	(.278)
$\Delta\hat{Y}N$ ($\times 10^3$)	.152***	(.016)	.027	(.051)
$(\Delta\hat{W})^2$	----		-.038	(.078)
$(\Delta\hat{Y}N)^2$ ($\times 10^6$)	----		.006*	(.003)
$\Delta\hat{W}\Delta\hat{Y}N$ ($\times 10^3$)	----		-.061**	(.029)
1 = Northeast	.273***	(.095)	.250**	(.099)
1 = Northcentral	.361***	(.088)	.344***	(.091)
1 = West	.087	(.098)	.055	(.102)
1 = Black	.406***	(.072)	.401***	(.072)
1 = Hispanic	-.027	(.111)	-.026	(.111)
Years of Schooling	-.110***	(.015)	-.113***	(.015)
1 = Divorced	-.037	(.089)	-.033	(.089)
1 = Separated	.018	(.087)	.011	(.087)
1 = Worked Full-time at Time of Dissolution	-.665***	(.078)	-.663***	(.078)
1 = Worked Part-time at Time of Dissolution	-.362***	(.124)	-.355***	(.125)
1 = Unemployed at Time of Dissolution	-.008	(.105)	-.009	(.106)
Family Size	.013	(.023)	-.002	(.025)
Age of Mother	-.027***	(.004)	-.028***	(.004)
1 = Limit on State AFDC Payment or Ratable on Deficit	-.050	(.066)	-.055	(.067)
Constant	1.394***	(.207)	1.670***	(.331)
$1/\hat{\sigma}$.306***	(.020)	.306***	(.020)
- Log of Likelihood	1709		1705	
Nonrecipients			1,692	
Partial Year Recipients			206	
Full Year Recipients			645	

*Significant at 10% level.

**Significant at 5% level.

***Significant at 1% level.

time of the marital dissolution are much less likely to become welfare recipients than mothers who did not work. The effect of full time work is almost twice the effect of part-time work. Mothers who were unemployed at the time of the marital dissolution are just as likely to become welfare recipients as mothers who were out of the labor force.

When the second order terms are included in the equation, the results are weakened somewhat. Although 4 of the 5 estimated parameters of the indirect utility function are of the expected sign, only 2 are statistically significant. However, a likelihood ratio test reveals that the second order terms are statistically significant at the 5 percent level (Chi-square = 8.16, degrees of freedom = 3); hence the expanded specification is more appropriate. Unfortunately, the implied labor supply effects from the parameters of the expanded model do not make much sense. Apparently, the high degree of collinearity between the linear and quadratic terms make it extremely difficult to identify separately the 5 main parameters of the indirect utility function.

The results can be used to estimate the impact of receiving child support on AFDC dependency (see equation (10)). Evaluated at the sample means of the variables in the model, the effect per \$1,000 of child support is -.044. That is, an increase in annual child support payments of \$1,000 will reduce the probability of being on AFDC by 4.4 percentage points.³² It is important to note that this represents a very large increase in child support payments relative to the mean payment in the sample (\$751). Later in this paper, results are presented for simulating the effects of a variety of more realistic child support policies on welfare dependency and poverty.

The results can also be used to calculate the effect of changing the implicit tax rate on child support payments on AFDC dependency. One way to

change this tax rate is to reduce the ratable, r . Changing the ratable affects not only the implicit tax rate on child support but also the implicit tax rate on earnings and the AFDC guarantee level.³³ As can be seen from equation (2), changing the ratable affects all terms in the Taylor series expansion. For example, a decrease in the ratable increases $\Delta\hat{W}$ and decreases $\Delta\hat{Y}_N$ (so long as $N < gS + 20$). Because the effects of these two variables are offsetting the expected net effect on AFDC dependency is uncertain. Evaluated at the sample means of the variables in the expanded version of the model, the results imply that reducing the ratable (and hence implicit tax rate on child support) from 100 percent to 75 percent would increase AFDC dependency by 1.4 percentage points. This implies that the income effect of the tax rate change dominates the wage effect.³⁴

3. Effectiveness of Current Child Support Enforcement Procedures

In this section, data from the merged March/April CPS and the 1979 AFDC Recipient Characteristics Study are used to estimate the impact of the IV-D program on various child support outcomes. Because IV-D impacts are likely to vary by AFDC status, separate estimates are derived for AFDC and non-AFDC families.³⁵ As will be shown, the results from the AFDC participation model in the previous section play an important role in the analysis of this section.

The Model

The basic empirical model to be estimated in this section is given as follows:

$$C_i = Z_i \gamma_i + IVD_i \delta_i + u_i, \quad (12)$$

where C_i = child support outcome for the i th group,
 Z_i = vector of control variables for the i th group,
 IVD_i = vector of variables representing services provided by the
 IV-D program for the i th group,
 u_i = a random error term.

For the CPS data, three groups are identified: nonrecipients of AFDC, partial year recipients of AFDC, and full year recipients of AFDC. For the AFDC survey data, the only group for which the model can be estimated is recipients of AFDC in the survey month.

The impact of the IV-D program on child support is given by estimates of δ_i for each group. In empirically implementing equation (12), three potentially serious problems arise. First, if selection into each of the three groups depends on unmeasured variables affecting AFDC status, then standard regression analysis applied to (12) will yield biased estimates of δ_i . Using equation (8) from the previous section, this can be formally shown as follows:

Nonrecipients of AFDC

$$E(C_1) = Z_1\gamma_1 + IVD_1\delta_1 + E(u_1 | F^* \leq 0), \quad (13)$$

Partial Year Recipients of AFDC

$$E(C_2) = Z_2\gamma_2 + IVD_2\delta_2 + E(u_2 | 0 < F^* < 1), \quad (14)$$

Full Year Recipients of AFDC

$$E(C_3) = Z_3\gamma_3 + IVD_3\delta_3 + E(u_3 | F^* \geq 1). \quad (15)$$

Under the assumption that the u_i s are normally distributed with zero means and standard deviations equal to σ_i , (13)-(15) can be rewritten as:

$$\begin{aligned}
E(C_1) &= Z_1\gamma_1 + IVD_1\delta_1 + E(u_1 | \varepsilon < -x\beta), \\
&= Z_1\gamma_1 + IVD_1\delta_1 - \rho_1\sigma_1\phi_1/\Phi_1,
\end{aligned} \tag{16}$$

$$\begin{aligned}
E(C_2) &= Z_2\gamma_2 + IVD_2\delta_2 + E(u_2 | -x\beta < \varepsilon < 1 - x\beta), \\
&= Z_2\gamma_2 + IVD_2\delta_2 + \rho_2\sigma_2(\phi_1 - \phi_2)/(\Phi_2 - \Phi_1),
\end{aligned} \tag{17}$$

$$\begin{aligned}
E(C_3) &= Z_3\gamma_3 + IVD_3\delta_3 + E(u_3 | \varepsilon > 1 - x\beta), \\
&= Z_3\gamma_3 + IVD_3\delta_3 + \rho_3\sigma_3\phi_2/(1 - \Phi_2),
\end{aligned} \tag{18}$$

where $\rho_1 = \sigma_{1\varepsilon}/\sigma\sigma_1$ is the partial correlation coefficient between u_1 and ε . Hence, only if u_1 is uncorrelated with ε will ordinary least squares estimation of δ_1 be unbiased. Since there is no reason to presume zero correlation, this type of selectivity bias must be taken into account in estimation.

Following Heckman (1979), selectivity bias correction terms are constructed for (16)-(18) based on the results in Table 2. These selectivity correction terms are then entered into equations (16)-(18) and standard regression analysis is applied.³⁶ The effects of this type of selectivity bias on the results are discussed later in this section.

The second and third problems arising in estimating (12) stem from the fact that IV-D services are not provided on a random basis to the population. The second problem has to do with the fact that not all families seek help from OCSE. In particular, only families having difficulties obtaining child support are likely to apply. This type of selectivity bias is particularly relevant for non-AFDC families because their participation in the program is voluntary. Because all AFDC families are required to assign support rights to

the IV-D agency, selection into the program may not cause as serious a bias for them, although such a bias still may be present. Failure to correct for this problem could lead to a significant underestimate of the impact of the IV-D program.

The third problem has to do with the possibility that among those who apply for services, the IV-D agency targets services in a nonrandom way. This potential source of bias is particularly relevant for AFDC families because IV-D services are provided to them free of charge.³⁷ Faced with resource constraints and performance standards, there may be an inducement to "cream," that is provide services to the easiest cases. If such creaming exists, estimated impacts of the IV-D program would be too high.

In the empirical work below, an attempt is made to adjust for nonrandom provision of services. For the problem of selection into the IV-D program, the adjustment is made by including as a control variable a dummy variable denoting whether the family contacted OCSE. The expected sign of this variable is negative, particularly for non-AFDC families. The variable is only available for the CPS sample. However, as mentioned above, the problem may not be as serious for AFDC families.

The problem of nonrandom targeting is more difficult to deal with empirically. It essentially requires purging the program service variables of systematic unmeasured effects. Since this problem is likely to be most important for AFDC families, an adjustment is attempted only on the AFDC survey sample. A generalized least squares, instrumental variable procedure is adopted (to account for the endogeneity of the program service variable) and the results are reported later in this section. The results are not entirely satisfactory, but they imply that IV-D program administrators target services

on the more difficult rather than the easier cases. Hence, there is no evidence of "creaming" by program administrators. The main results presented below do not adjust for nonrandom targeting so, if anything, they underestimate the true impact of the IV-D program.

Empirical Specification

Both the CPS and the AFDC survey data provide information on the types of services provided by the IV-D program. In the CPS, mothers were asked whether they had ever contacted OCSE, whether they received help, and what types of services were provided. The services listed are (1) an attempt to locate the father, (2) an attempt to establish paternity, (3) an attempt to establish a support obligation, (4) an attempt to enforce a support order, (5) an attempt to obtain collection, and (6) other (unspecified) services. Three sets of variables measuring program impacts are constructed from this information. The first is a dummy variable indicating whether help was received. The second is a variable denoting the number of different types of services provided. The third is a set of dummy variables denoting which specific services were provided. Four child support outcomes are examined as dependent variables: whether child support was received, the amount of child support received, whether a child support obligation exists, and the amount of the child support obligation.³⁸

In the AFDC survey, information is available on three IV-D services: (1) whether an action was taken to locate the father, (2) whether an action was taken to establish paternity, and (3) whether an action was taken to enforce a support order. This information was provided by the caseworker rather than the mother and hence may not have the same interpretation as the information given in the CPS.

Table 3 presents the means of the child support outcome variables and the various IV-D service variables used in this analysis. As one would expect, nonrecipients of AFDC have higher child support award and reciplency rates. They are also less likely to use IV-D services. Full year recipients of AFDC in the CPS have approximately the same child support award and reciplency rates as AFDC families in the AFDC survey sample, lending credence to the accuracy of the data. The dollar amounts in the CPS are somewhat higher, reflecting presumably the different survey periods (1979 versus 1981).

Surprisingly, there are very large differences in the reported use of IV-D services for AFDC families in the CPS and the AFDC survey samples. It is not clear why the reported usage is so much higher in the AFDC survey sample. It may reflect lack of knowledge on the part of the mother regarding which services are provided or it may reflect different definitions of whether a service is performed. The very large numbers in the AFDC survey sample seem to imply that some of the services reported by the caseworkers may be simply verification of information pertaining to the mother's child support situation. For example, a paternity action may represent merely a verification of the fact that paternity is known rather than an actual attempt to establish paternity. In the CPS it is not known whether the low numbers reflect lack of knowledge or low utilization of the program. Certainly in the case of non-AFDC families, the figures suggest low utilization of the program.³⁹ In any event, without access to actual IV-D case records, there is no way of assessing the general accuracy of the service information provided in the two surveys.

In addition to the program impact variables, the empirical models contain several control variables. The control variables consist of dummy variables

Table 3

Means of Selected Variables in IV-D Impact Model by AFDC Status

Variable	CPS			AFDC Survey
	Nonrecipients (N = 1,692)	Partial Year Recipients (N = 206)	Full Year Recipients (N = 645)	Recipient in March 1979 (N = 15,116)
1 = Received Child Support	.45	.31	.15	.12
Amount of Child Support Received	978.1	428.2	258.9	147.8 ^a
1 = Child Support Obligation Exists	.55	.46	.28	.30
Amount of Child Support Obligation	1,368.8	859.4	612.1	443.8 ^a
1 = Contacted OCSE	.20	.43	.36	N.A.
1 = Received Help from OCSE	.10	.24	.19	.74
Number of Services Provided	.14	.36	.29	1.55
1 = Attempt to Locate Father	.03	.07	.07	.63
1 = Attempt to Establish Paternity	.003	.02	.02	.49
1 = Attempt to Establish Obligation	.03	.07	.07	N.A.
1 = Attempt to Enforce Support Order	.04	.08	.04	.43
1 = Attempt to Obtain Collection	.03	.06	.05	N.A.
1 = Received Other OCSE Service	.02	.05	.04	N.A.

N.A. = Not Available

^aMonthly data converted to annual terms.

for region of the country (Northeast, Northcentral, West), dummy variables for race/ethnicity (black, Spanish), age and education of the mother, number of children in various age groups (0-5, 6-11, 12-18), dummy variables for marital status of mother (divorced, separated), years since the marital dissolution, number of child support enforcement procedures used in the state (see USDHHS, 1981), a dummy variable for whether the state has a tax intercept program, a dummy variable for whether the state has a statute of limitation for establishing paternity, and the two selectivity correction terms (a dummy variable for whether the mother contacted OCSE and the appropriate variable defined in equations (16)-(18)).

Program Impacts on Receipt of Child Support

Tables 4 and 5 present the estimated impacts of the IV-D program on whether child support is received and the amount received. These results indicate that the IV-D program has a significantly positive impact on receiving child support for each group. The estimated impacts in the two data sets are qualitatively similar.

In the CPS, families who reported receiving help from OCSE have a 20 percentage point higher probability of receiving child support than families who did not report receiving such help. Prior to receiving IV-D services, the mean probability of receiving child support for those who contacted OCSE is .18.⁴⁰ Provision of OCSE services raises this probability to .38. Interestingly, the mean child support recipiency rate for those who did not contact OCSE is also .38, so the program appears to raise the probability of receiving child support to the level prevailing in the rest of the population. Overall, the IV-D program appears to have increased the child support recipiency rate among single-parent families in the United States by .03, which is about a 9 percent increase.⁴¹

Table 4

Estimated Impact of IV-D Program on Probability of Receiving Child Support
(Standard Errors in Parentheses)

	1 = Received Help From OCSE ^e	Number of Services Provided ^e	Type of Service Provided					
			1 = Attempt to Locate Father	1 = Attempt to Establish Paternity	1 = Attempt to Establish Obligation	1 = Attempt to Enforce Obligation	1 = Attempt to Obtain Collection	1 = Other Service
<u>CPS^a</u>								
Full Sample (N = 2,543)	.20*** (.03)	.09*** (.02)	-.14*** (.05)	-.01 (.09)	.12*** (.05)	.22*** (.05)	.21*** (.05)	-.02 (.05)
Nonrecipients of AFDC (N = 1,692) ^b	.19*** (.05)	.09*** (.02)	-.10 (.07)	-.10 (.20)	.06 (.07)	.22*** (.06)	.19*** (.07)	.02 (.08)
Partial Year Recipients of AFDC (N = 206) ^b	.29*** (.09)	.11** (.05)	-.22* (.13)	.10 (.19)	.13 (.13)	.11 (.13)	.37** (.16)	.21 (.14)
Full Year Recipients of AFDC (N = 645) ^b	.18*** (.04)	.08*** (.02)	-.15*** (.06)	-.10 (.10)	.18*** (.06)	.16** (.07)	.26*** (.07)	-.02 (.06)
<u>AFDC Survey^c</u>								
Recipients of AFDC in Survey Month (N = 15,116)	.11*** (.01)	.10*** (.01)	-.01* (.01)	.02*** (.01)	f	.22*** (.01)	f	f
Divorced (N = 4,049) ^d	.21*** (.02)	.10*** (.01)	-.03* (.02)	.02 (.01)	f	.31*** (.02)	f	f
Legally Separated (N = 444)	.16** (.06)	.11*** (.02)	.02 (.05)	.02 (.04)	f	.27*** (.05)	f	f
Deserted (N = 3,415)	.10*** (.01)	.07*** (.005)	-.002 (.01)	.01 (.01)	f	.20*** (.01)	f	f
Unmarried (N = 8,447)	.11*** (.01)	.07*** (.002)	-.01 (.01)	.04*** (.01)	f	.19*** (.01)	f	f

^aEffects are for 1981.

^bEffects are adjusted for selectivity bias.

^cEffects are for March 1979 and are not adjusted for selectivity bias.

^dIndividual categories sum to more than total sample because some families have children in more than one category.

^eEntered in separate regressions.

^fVariable not available in survey.

*Significant at 10% level.

**Significant at 5% level.

***Significant at 1% level.

Table 5

Estimated Impact of IV-D Program on Amount of Child Support Received
(Standard Errors in Parentheses)

	I = Received Help From OCSE ^e	Number of Services Provided ^e	Type of Service Provided						
			I = Attempt to Locate Father	I = Attempt to Establish Paternity	I = Attempt to Establish Obligation	I = Attempt to Enforce Obligation	I = Attempt to Obtain Collection	I = Other Service	
<u>CPS^a</u>									
Full Sample (N = 2,543)	258.4*** (100.6)	113.4** (52.0)	-188.8 (143.0)	290.4 (292.9)	319.0** (146.4)	111.7 (146.4)	180.9 (155.9)	-175.5 (166.9)	
Nonrecipients of AFDC (N = 1,692) ^b	208.0 (146.9)	120.6 (78.6)	-124.1 (128.4)	506.1 (656.8)	350.7 (230.3)	86.1 (195.4)	191.3 (220.1)	-109.0 (264.1)	
Partial Year Recipients of AFDC (N = 206) ^b	284.6* (174.0)	42.4 (88.6)	-208.3 (247.0)	62.7 (383.9)	177.1 (242.3)	241.6 (249.8)	-82.3 (300.5)	32.3 (275.4)	
Full Year Recipients of AFDC (N = 645) ^b	293.1*** (96.9)	122.3** (48.6)	-254.7** (127.5)	158.9 (222.9)	96.8 (130.9)	76.7 (169.6)	426.2*** (152.9)	-31.9 (149.5)	
<u>AFDC Survey^c</u>									
Recipients of AFDC in Survey Month (N = 15,116)	112.8*** (9.5)	74.8*** (3.6)	-24.7** (10.0)	1.2 (8.8)	f	252.8*** (9.8)	f	f	
Divorced (N = 4,049) ^d	269.4*** (34.0)	125.9*** (11.1)	-77.6*** (29.5)	22.6 (23.0)	f	414.5*** (26.7)	f	f	
Legally Separated (N = 444)	151.1 (107.9)	133.6*** (32.7)	25.6 (92.6)	-28.6 (73.7)	f	366.5*** (87.6)	f	f	
Deserted (N = 3,415)	124.2*** (22.7)	88.4*** (8.4)	-19.7 (21.2)	1.1 (18.5)	f	270.7*** (21.4)	f	f	
Unmarried (N = 8,447)	88.7*** (9.0)	61.9*** (3.5)	3.5 (10.4)	20.9** (10.2)	f	174.5*** (10.5)	f	f	

^aEffects are for 1981.

^bEffects are adjusted for selectivity bias.

^cEffects are for March 1979 converted to annual amounts and are not adjusted for selectivity bias.

^dIndividual categories sum to more than total sample because some families have children in more than one category.

^eEntered in separate regressions.

^fVariables not available in survey.

*Significant at 10% level.

**Significant at 5% level.

***Significant at 1% level.

Dollarwise, families using the IV-D program are not receiving as much as the rest of the population. Prior to receiving IV-D services, the mean amount of child support received per year for those who contacted OCSE is \$271. Provision of OCSE services increases average collections to \$530 per year. The mean amount of child support received by those who did not contact OCSE is \$874 per year. Overall, the IV-D program appears to have increased collections nationwide by about 5 percent.

For both data sets, the results suggest that successful collection of child support is the result of a cumulative package of services. This can be seen by examining the estimated impacts on the individual program service variables. Use of the parent locator service to find the absent father, for example, actually reduces the probability of obtaining support unless enforcement services are also provided.

Similarly, establishing paternity does not increase collection rates unless further services are provided. Finally, there appears to be a positive payoff from attempts to establish support obligations but collection rates can be increased even further if enforcement services are also provided.

The IV-D program appears to be effective for both AFDC and non-AFDC families. However, in terms of dollars collected, the program appears to be more effective for AFDC families. This may be a reflection of the fact that collections for AFDC families offset AFDC benefit amounts (and therefore AFDC program costs) on a dollar-for-dollar basis, so the incentive for the program administrators to pursue collection for AFDC families is greater. Collection for non-AFDC families also reduces AFDC program costs but this "cost avoidance" impact of the program is indirect, resulting from its effect of reducing welfare dependency.

The large sample size in the AFDC survey enables estimation of separate IV-D program impacts according to marital status. As would be expected, the impacts are largest for divorced women and smallest for unmarried women. The impacts are smallest for unmarried women because usually more services have to be provided for them, the fathers are less willing to pay, and the fathers are less able to pay.⁴²

Overall, the results in Tables 4 and 5 indicate that the IV-D program is fairly successful in its enforcement operations. As more comprehensive collection mechanisms are put into effect, such as those contained in recent legislation, program effectiveness should become even greater.

Impact of Selection Bias on the Results

As indicated earlier, the empirical results are adjusted for two types of selectivity bias; one arising from selection into the AFDC program and one arising from selection into the IV-D program. Table 6 shows the effects of these two types of selectivity bias on the results. Of the two, selection into the IV-D program is clearly the most important.

Selection into the AFDC program causes the impacts of the IV-D program for AFDC families to be underestimated and the impacts for non-AFDC families to be overestimated. For each AFDC status, the selectivity correction term is statistically significant. An approximate calculation of ρ is also given in the table. These estimates imply that the error terms in the AFDC participation equation and the error terms in the child support equations are positively correlated.

Selection into the IV-D program causes the impacts of the IV-D program to be severely underestimated for each group. In fact, without the correction term (the contact variable), the estimated IV-D impacts are negative for two

Table 6
Impact of Selectivity Corrections on Results
CPS Sample^a

	<u>1 = Received Help From OCSE</u>	<u>Selectivity Correction Term</u>	<u>$\hat{\rho}$</u>	<u>1 = Contacted OCSE</u>
<u>AFDC Status</u>				
Nonrecipients (N = 1,692)	208.0 (146.9)	-8,211.1*** (572.0)	.57	-527.3*** (111.2)
	285.3* (155.5)	---	---	-657.9*** (117.5)
	-287.6** (118.2)	---	---	---
Partial Year Recipients (N = 206)	284.6* (174.7)	4,106.0*** (551.7)	.51	-399.1** (156.5)
	314.3 (198.7)	---	---	-526.0*** (177.0)
	-85.2 (149.3)	---	---	---
Full Year Recipients (N = 645)	293.1*** (96.9)	5,055.9*** (403.0)	.65	-264.4*** (81.2)
	264.9** (108.4)	---	---	-327.0*** (90.7)
	16.0 (84.3)	---	---	---

^aResults are for estimates of amount of child support received in 1981. The standard errors are not corrected for heteroskedasticity.

*Significant at 10% level.
**Significant at 5% level.
***Significant at 1% level.

of the groups. The term measuring the bias (the coefficient of the contact variable) is greatest for non-AFDC families (as expected), but is large and statistically significant for AFDC families as well.

Impact of Nonrandom Targeting

The third possible source of bias in the results is due to nonrandom targeting of IV-D services. In order to investigate the potential importance of this problem, three-stage least squares is performed on the program impact model using the AFDC survey sample. The results are presented in Table 7.

The results suggest very large biases due to program targeting. Moreover, rather than indicating "creaming" by IV-D administrators, the results suggest just the opposite; that program administrators target services on the more difficult cases. However, the estimated impact of the IV-D program increases by a factor of 4 when nonrandom targeting is allowed. This result seems somewhat implausible but strengthens the basic conclusion that the IV-D program has a significant positive impact on receipt of child support.

Program Impacts on Establishing Child Support Obligations

Collection activities represent an important part of the IV-D program and as indicated earlier, much recent legislation is aimed at improving the collection process. However, collection is only part of the overall child support problem in the U.S. Equally important from a policy perspective is the establishment of formal child support obligations. More than one-half the mothers in the CPS sample do not have a formal child support award. Lack of a child support award is particularly prevalent among unwed mothers, who constitute half the AFDC caseload. Without a formal child support award, collection is not possible.

Table 7

Impact of Nonrandom Targeting on Results^a
AFDC Survey Sample

	Number of Services Provided	Type of Service Provided		
		1 = Locate Father	1 = Establish Paternity	1 = Enforce Obligation
Estimated Impact - Random Targeting	74.8*** (3.6)	-24.7** (10.0)	1.2 (8.8)	252.8*** (9.8)
Estimated Impact - Nonrandom Targeting	292.4*** (16.2)	-149.8* (83.2)	-100.6 (76.3)	925.0*** (88.4)
Estimated Covariance of Error Terms	-270.0	-35.4	-10.0	-128.2
Estimated Correla- tion of Error Terms	-.45	-.14	-.04	-.50

^aDependent variable is amount of child support received per year.

*Significant at 10% level.

**Significant at 5% level.

***Significant at 1% level.

Tables 8 and 9 show the estimated impacts of IV-D services on whether the mother has a child support obligation and the amount of the obligation. Unfortunately, information on whether there was an attempt to establish an obligation is not available for the AFDC survey sample. Hence, the results from the CPS and AFDC survey samples are not directly comparable.

The CPS results indicate significant impacts of the program on establishing an obligation for AFDC families but not for non-AFDC families. As before, the results highlight the cumulative nature of the IV-D program. Without following through with an attempt to establish an obligation, father locator and paternity establishment services do not appear to yield a positive payoff.

The lack of a significant impact for non-AFDC families on whether an obligation is established and for all families on the amount of the obligation, suggests a possible mechanism for further improving the IV-D program. Most current proposals are aimed at improving collection for families already having a formal child support award. The results presented here seem to indicate that improvements can also be made in the procedures used to establish obligations. Because a formal child support award does not exist in over one-half the families, such improvements could lead to a substantial increase in overall collections.⁴³ As the results below will indicate, such improvements are potentially as effective as those directed toward families already having an obligation.

4. Implications of the Results

In the previous sections, an attempt has been made to determine the impact of current child support enforcement procedures on receipt of child support and the impact of receiving child support on welfare dependency.

Table 8

Estimated Impact of IV-D Program on Probability of Having a Child Support Obligation
(Standard Errors in Parentheses)

	Type of Service Provided			
	I = Received Help from OCSE ^e	I = Attempt to Locate Father	I = Attempt to Establish Paternity	I = Attempt to Establish Obligation
<u>CPS^a</u>				
Full Sample (N = 2,543)	.11*** (.03)	.03 (.04)	-.10 (.09)	.12*** (.05)
Nonrecipients of AFDC (N = 1,692) ^b	.05 (.04)	.02 (.07)	.09 (.19)	.04 (.07)
Partial Year Recipients of AFDC (N = 206) ^b	.21** (.10)	-.04 (.13)	-.16 (.22)	.14 (.13)
Full Year Recipients of AFDC (N = 645) ^b	.14*** (.05)	-.01 (.07)	-.20* (.12)	.18*** (.07)
<u>AFDC Survey^c</u>				
Recipients of AFDC in Survey Month (N = 14,367)	.19*** (.01)	.17*** (.01)	.09*** (.01)	f
Divorced (N = 3,841) ^d	.23*** (.02)	.27*** (.02)	-.002 (.01)	f
Legally Separated (N = 414)	.16** (.07)	.36*** (.05)	-.01 (.05)	f
Deserted (N = 3,221)	.16*** (.02)	.20*** (.02)	.02 (.01)	f
Unmarried (N = 8,075)	.22*** (.01)	.11*** (.01)	.19*** (.01)	f

^aEffects are for 1981.

^bEffects are adjusted for selectivity bias.

^cEffects are for March 1979 and are not adjusted for selectivity bias.

^dIndividual categories sum to more than total sample because some families have children in more than one category.

^eEntered in a separate regression.

^fVariable not available in survey.

*Significant at 10% level.

**Significant at 5% level.

***Significant at 1% level.

Table 9

Estimated Impact of IV-D Program on Amount of Child Support Obligation
(Standard Errors in Parentheses)

	Type of Service Provided			
	T = Received Help from OSCE ^e	T = Attempt to Locate Father	T = Attempt to Establish Paternity	T = Attempt to Establish Obligation
<u>CPS^a</u>				
Full Sample (N = 2,543)	190.3 (161.6)	674.0*** (226.5)	-194.8 (469.7)	44.1 (231.3)
Nonrecipients of AFDC (N = 1,692) ^b	321.9 (218.7)	1,100.7*** (336.8)	-90.2 (963.1)	157.3 (340.5)
Partial Year Recipients of AFDC (N = 206) ^b	183.5 (258.8)	-585.6* (343.2)	-431.3 (558.4)	-189.0 (344.0)
Full Year Recipients of AFDC (N = 645) ^b	48.1 (293.7)	602.4 (386.5)	-377.1 (687.7)	-193.6 (389.4)
<u>AFDC Survey^c</u>				
Recipients of AFDC in Survey Month (N = 14,367)	175.9*** (14.2)	209.0*** (14.2)	40.9*** (13.6)	f
Divorced (N = 3,841) ^d	253.1*** (42.8)	342.1*** (38.7)	-57.6* (33.5)	f
Legally Separated (N = 419)	216.9 (192.7)	703.6*** (151.5)	6.6 (146.3)	f
Deserted (N = 3,221)	188.4*** (33.3)	265.2*** (106.1)	-20.3 (28.5)	f
Unmarried (N = 8,075)	210.5*** (13.2)	113.3*** (14.6)	169.4*** (14.6)	f

^aEffects are for 1981.

^bEffects are adjusted for selectivity bias.

^cEffects are for March 1979 converted to annual amounts and are not adjusted for selectivity bias.

^dIndividual categories sum to more than total sample because some families have children in more than one category.

^eEntered in a separate regression.

^fVariable not available in survey.

*Significant at 10% level.

**Significant at 5% level.

***Significant at 1% level.

Empirical models have been developed to explain welfare dependency and to estimate the impact of the Child Support Enforcement (IV-D) Program on various child support outcomes. The results indicate that the IV-D program has a significantly positive effect on receipt of child support and that receipt of child support reduces welfare dependency.

The precise magnitude of the impact of child support enforcement policies on welfare dependency and poverty can be estimated by applying the results to an analysis of various types of child support systems. In this section, such an analysis is undertaken. The objective is to compare several policy outcomes under the following child support systems:

1. no child support
2. child support, but no IV-D program
3. current IV-D program (as of 1981)
4. expansion of IV-D program
 - a. full participation among those due child support
 - b. full participation among all eligible families
 - c. full enforcement of existing obligations
 - d. full enforcement of obligations for all single parent families

By simulating welfare dependency and poverty rates under each of these systems, an overall assessment can be made of the potential of the IV-D program as a mechanism for increasing the economic well being of single-parent families.⁴⁴

No Child Support

The first system considered is one in which no child support is paid. This represents the worst possible situation for single parent families. To provide estimates of the effects of this system, all child support payments

received under the current system are subtracted from the family's total income.

Child Support, But No IV-D Program

Under this system, it is assumed that the family receives child support, but the estimated program impacts in Table 5 (based on the CPS sample) are subtracted for all families that reported receiving help from OCSE. Thus, all calculations under this system are supposed to represent what families would have obtained through their own efforts without the help of the IV-D agency.

Current IV-D Program

This system represents the current situation for each family. Here, calculations are made using the data reported in the CPS.

Expansion of the IV-D Program

Full Participation Among Those Due Child Support. Four potential expansions of the IV-D program are considered. The first, full participation among those due child support, involves application of the estimated program impacts in 1981 to all families who did not report receiving enforcement assistance from OCSE. The estimated impacts from Table 5 for the services that attempt to enforce an obligation and obtain collection are applied to these families.⁴⁵

There are two major limitations to the estimates derived under this approach. First, it is assumed that the impacts would be the same for those who have not received IV-D services as for those who have received IV-D services. If targeting of services under the current system is nonrandom or if there are important interactions with observed characteristics of the families that are not captured in the estimates of Table 5, then these impacts would not be appropriate for the families not currently receiving IV-D

services. Since it is likely that the impacts for such families would be lower, the estimated effects of this system may be overstated.

The second limitation to deriving estimates under this system concerns underreporting of OCSE contact for AFDC families. As indicated earlier in Table 3, the CPS and the AFDC survey differ considerably in reported use of the IV-D program by AFDC families. It is not clear how underreporting of contact with the IV-D agency would affect the calculations under this system. On the one hand, if more families actually received services from OCSE, then the calculations would overstate the impact of the hypothesized expansion.⁴⁶ On the other hand, underreporting of OCSE contact may have caused an underestimate of the program's impact in Table 5, which would lead to an understatement of the impact of the expansion. Without more information, it is not possible to assess the importance of these potential biases in the estimates.

Full Participation Among All Eligible Families. Under this system, IV-D services are assumed to be provided to all families currently lacking a child support obligation as well as all families currently having a child support obligation. To derive the estimates under this system, each family is given the estimated impacts in Table 5 for services they did not receive. If the family had contacted the IV-D agency but did not receive assistance in establishing or enforcing an obligation, they were given these services. If the family had not contacted OCSE, then they were given the full range of services.⁴⁷ As in the previous system, these calculations may lead to biased impacts if the true program impacts for nonparticipants are different than for current participants.

Full Enforcement of Existing Obligations. Under this system, it is assumed that there are no new attempts to establish child support obligations,

but that full enforcement is achieved for all families currently having an obligation. This system represents the maximum possible amount that could be collected under a system of mandatory wage withholding. The calculations are made by assuming each family due child support receives the full amount due.

Full Enforcement of Obligations for All Families. The final system investigated assumes full enforcement of child support obligations for all families. It represents the maximum amount of child support payments possible under the current legal environment. To make the calculations, it is necessary to predict an award amount for all families currently lacking an obligation. This is done by applying the behavioral equations underlying the estimates in Tables 8 and 9 to each family currently lacking an obligation and then deriving an obligation amount conditional on having an obligation. Using these estimated obligation amounts, it is then assumed that the families receive the full amount due.⁴⁸

Outcomes Examined

Under each system described above, three policy outcomes are examined: the AFDC participation rate, the poverty rate, and the amount of child support collected as a percentage of AFDC benefits paid. To calculate the AFDC participation rate, the results of Table 2 are applied to each family under each system using equation (9). The variables varying across each system are those involving changes in nonwage income.⁴⁹ To calculate the poverty rate, each family's total income is compared to the poverty level for that family, which is given on the CPS. The CPS defines poverty on the basis of cash income only and does not consider in-kind benefits. For our purposes, this is not an important limitation because we are interested primarily in comparing poverty rates across different child support systems rather than examining the poverty

rate itself. Poverty rates are not calculated for the second, fourth, and fifth systems because the method used to calculate income under these systems would lead to incorrect estimates of the poverty rate.⁵⁰

In calculating the poverty rate, no behavioral changes are assumed. This means that the poverty rate under the first system (no child support) is overestimated and the poverty rate under the last system (full enforcement of child support obligations for all eligible families) is underestimated.⁵¹ Hence, the range of poverty rates presented here will represent the maximum possible range under the various systems examined.

The third policy outcome calculated is the amount of child support collections as a percentage of AFDC benefits. This is an often-quoted figure in discussions of child support policies and appears regularly in OCSE publications. It is intended to serve as an indicator of the collection potential of the IV-D program. This percentage is calculated in two ways; first by dividing child support received by the family under each system to the AFDC benefit the family would receive if there were no child support, and second by dividing child support received by the family under each system to the AFDC benefit the family would receive under that system. These calculations are only performed for families who reported receiving AFDC benefits in the CPS in 1981.

Results

The simulation results are presented in Table 10. Three things stand out in this table. First, the results indicate that AFDC dependency is quite insensitive to changes in child support policies. Moving from the worst possible situation in which no child support is collected to the best possible situation in which the maximum amount of child support is collected for each

Table 10

Predicted Effects of Child Support Enforcement on Welfare
Dependency, Poverty, and Welfare Costs

<u>Child Support System</u>	<u>AFDC Participation Rate</u>	<u>Poverty Rate^a</u>	<u>Child Support Collections as a Percent of AFDC Benefits^b</u>	
No Child Support	.36	.52	0	(0)
Child Support - No IV-D Program	.34	---	4.8	(5.1)
Current Child Support System (in 1981)	.34	.48	6.2	(6.7)
Expansion of IV-D Program				
Full participation among those due child support	.34	---	7.9	(8.6)
Full participation among all eligible families	.34	---	13.5	(15.5)
Full enforcement of all existing obligations	.34	.47	13.5	(15.6)
Full enforcement of obligations for all families	.32	.43	31.6	(46.2)

^aAssumes no behavioral changes. Range would be smaller if behavioral changes were incorporated into estimates.

^bAmong existing AFDC recipients in 1981. Percentage measured from base with no child support. Figures in parentheses are percentages measured relative to AFDC benefits paid under the system in question.

family, reduces the AFDC dependency rate by only .04, or by about 11 percent. The IV-D program, even if it were to provide services to all eligible families is predicted to have virtually no impact on AFDC dependency.

Second, as an antipoverty device, child support enforcement again appears somewhat ineffective. Comparing the worst possible situation to the best possible situation reduces the poverty rate by .09 percentage points, which is about a 17 percent reduction. Within the feasible policy range, poverty is only slightly affected.⁵²

Part of the reason for such a relatively small impact of child support enforcement on welfare dependency and poverty is low child support award amounts. In the CPS sample, the average child support award amount in 1981 was \$197 per month, or about \$111 per child. Because the average AFDC benefit was about \$282 per month and the average poverty level was about \$650 per month, full enforcement of child support obligations simply does not generate enough of an increase in income to cause many families to escape welfare dependence and poverty. Higher award amounts and/or other sources of income (principally earnings) are necessary.⁵³

Third, while child support policies appear to have a minimal effect on welfare dependency and poverty, they do have a potentially significant effect on AFDC costs. Under the current system, child support collections represent approximately 6.7 percent of current AFDC benefits.⁵⁴ The analysis in this paper suggests that about 1.6 percent (or just under one-third) can be attributed directly to the IV-D program. In the absence of the IV-D program, it is estimated that the remaining 4.8 percent would have been collected by the mothers through their own efforts.⁵⁵

If the IV-D agencies provided the full range of services to all AFDC

families, it is estimated that they could recover about 15.5 percent of AFDC costs. This is about the same as would be collected if there were full enforcement of all existing obligations, illustrating the potential effectiveness of greater efforts to establish obligations. If there were full enforcement of obligations for all families, close to one-half of AFDC benefits paid out could be recovered. These findings suggest that a successful system of mandatory wage withholding coupled with greater efforts to establish obligations could recover somewhere between 15 and 20 percent of AFDC benefits.

5. Conclusions

Child support enforcement has been receiving increased attention among policymakers in recent years, as evidenced by the enactment of several important pieces of legislation. One of the main purposes of such legislation is to reduce welfare costs by shifting responsibility for the support of young children from the government to the absent parent. In addition, it is hoped that child support enforcement will enable many families to eventually escape welfare dependency either by leaving the rolls or by being prevented from joining the rolls.

The analysis of this paper suggests that child support enforcement represents a potentially effective means for controlling AFDC program costs, but as an antipoverty device, it appears limited within the context of the current legal system which sets and establishes child support obligations. However, child support enforcement activities appear to provide an important complement to traditional welfare agency activities of encouraging work effort in generating an overall increase in the economic well-being of single-parent families.

APPENDIX

Table A-1

State Data Used in Analysis
(1981)

	gS	t	LT	TI	FEE	CR	AP	NE	SL	YS	U
Alabama	148	.41	0	0	1	1	0	7	1	3	10.7
Alaska	544	.30	0	0	0	0	1	5	0	0	9.3
Arizona	244	.43	0	0	0	0	0	5	0	0	6.1
Arkansas	177	.09	0	0	0	1	0	5	0	0	9.1
California	573	.37	1	1	0	0	0	7	0	0	7.4
Colorado	358	.59	0	0	0	0	0	6	1	3	5.5
Connecticut	483	.49	0	0	0	1	1	6	1	3	6.2
Delaware	312	.35	0	0	1	0	1	5	0	0	7.9
D.C.	349	.26	0	0	1	0	0	6	1	2	9.0
Florida	230	.31	0	0	0	1	0	6	1	4	6.8
Georgia	199	.37	0	1	1	1	1	6	0	0	6.4
Hawaii	546	.47	0	0	0	0	0	5	1	3	5.4
Idaho	323	.46	0	0	0	0	0	6	1	3	7.6
Illinois	336	.45	0	1	1	1	0	7	1	2	8.5
Indiana	315	.30	1	0	1	1	0	5	1	2	10.1
Iowa	419	.39	0	1	0	0	0	7	1	2	6.9
Kansas	367	.57	0	1	1	0	1	7	1	1	4.2
Kentucky	235	.31	1	1	0	0	0	3	1	3	8.4
Louisiana	200	.38	0	0	0	0	0	4	0	0	8.4
Maine	359	.26	0	0	1	1	1	7	0	0	7.2
Maryland	326	.38	0	1	0	1	0	7	1	2	7.3
Massachusetts	445	.31	0	0	0	0	0	6	0	0	6.4
Michigan	512	.47	0	0	0	0	1	7	1	6	12.3
Minnesota	755	.29	0	1	0	1	0	7	1	3	5.5
Mississippi	120	.31	1	0	1	1	0	3	1	1	8.3
Missouri	290	.35	1	0	1	0	0	7	0	0	7.7
Montana	337	.56	0	0	1	1	1	7	1	3	6.9
Nebraska	405	.48	1	0	0	0	0	4	1	4	4.1
Nevada	321	.41	0	0	0	1	0	6	1	3	7.1
New Hampshire	392	.45	0	0	1	0	1	6	1	2	5.0
New Jersey	414	.34	0	1	0	0	0	4	0	0	7.3
New Mexico	271	.39	0	0	1	1	0	5	1	2	7.3
New York	486	.41	0	0	0	0	0	4	1	2	7.6

	gS	t	LT	TI	FEE	CR	AP	NE	SL	YS	U
North Carolina	210	.42	0	1	1	0	0	7	1	3	6.4
North Dakota	408	.50	0	0	0	1	0	6	1	5	5.0
Ohio	325	.52	0	0	0	0	0	6	0	0	9.6
Oklahoma	349	.47	1	0	1	1	1	6	1	3	3.6
Oregon	384	.41	0	1	0	1	1	6	1	10	9.9
Pennsylvania	395	.40	0	0	0	0	0	3	1	6	8.4
Rhode Island	397	.47	0	0	1	1	0	6	1	4	7.6
South Carolina	159	.31	1	0	1	1	0	2	0	0	8.4
South Dakota	361	.45	0	0	1	1	0	6	1	2	5.1
Tennessee	148	.38	1	0	0	0	0	6	1	2	9.1
Texas	140	.51	1	0	1	1	0	3	1	1	5.3
Utah	421	.52	0	1	1	1	1	7	0	0	6.7
Vermont	560	.41	0	0	1	0	1	7	0	0	5.7
Virginia	283	.51	1	0	1	0	1	6	0	0	6.1
Washington	491	.39	1	0	1	1	1	6	1	5	9.5
West Virginia	249	.43	1	0	1	0	0	6	1	3	10.7
Wisconsin	538	.35	0	0	0	0	0	7	1	6	7.8
Wyoming	340	.49	0	0	1	1	0	6	1	3	4.1

KEY: gS = AFDC monthly guarantee level (family of 4)
t = Effective AFDC benefit reduction rate on earned income
LT = 1 if ratable on deficit or limit on AFDC payment
TI = 1 if state tax intercept program in operation prior to 1981
FEE = 1 if application fee charged for non-AFDC cases
CR = 1 if costs recovered for non-AFDC cases
AP = 1 if administrative procedures used to enforce support obligations
NE = number of enforcement procedures used
SL = 1 if there is a statute of limitation for establishing paternity
YS = length of statute of limitation for establishing paternity
U = male unemployment rate

Table A-2

Wage Equation Estimates - CPS
(Standard Errors in Parentheses)

Variable	Probit on Whether a Wage is Observed		Logwage Equation	
Constant	-1.29***	(.36)	.75**	(.29)
1 = Family Head	.16**	(.07)	--	
1 = Northeast	-.40***	(.08)	.003	(.04)
1 = Northcentral	-.25***	(.08)	.02	(.03)
1 = West	-.27***	(.08)	.06	(.04)
1 = SMSA	.06	(.07)	.12***	(.03)
1 = Central City	-.05	(.07)	-.07**	(.03)
1 = Large SMSA	-.29***	(.08)	.06	(.04)
1 = Black	-.38***	(.07)	-.04	(.03)
1 = Spanish	-.18*	(.11)	-.07	(.06)
Education	.10*	(.06)	-.03	(.04)
(Education) ²	-.001	(.002)	.004**	(.002)
Experience (Age-Education-5)	.05***	(.01)	.03***	(.01)
(Experience) ²	-.001***	(.0002)	-.001***	(.0001)
1 = High School Diploma	.57***	(.08)	.02	(.05)
1 = Homeowner	.17***	(.06)	--	
Nonwage Income (\$000)	-.02***	(.01)	--	
1 = Divorced	.34***	(.08)	--	
1 = Separated	.05	(.08)	--	
LAMBDA	--		.05	(.04)
-2 Log Likelihood	617.49		----	
R ²	----		.14	

*Significant at 10% level.

**Significant at 5% level.

***Significant at 1% level.

Footnotes

¹Over 1 million divorces occur annually in the United States (compared with about 2 million marriages) and the rate of illegitimate births increased from 10.7 percent in 1970 to 17.1 percent in 1979.

²One such attempt is the Work Incentive (WIN) program which requires AFDC mothers with children over the age of 6 (over the age of 3 under current proposals) to be available for work or training programs. Refusal to accept WIN services can result in loss of AFDC eligibility. Most welfare programs impose some form of work requirement as a condition of eligibility for receipt of benefits.

³According to the 1979 AFDC Recipient Characteristics Study only about 15 percent of women receiving AFDC benefits hold full- or part-time jobs.

⁴A detailed discussion of the legislative history of Title IV-D is given in U.S. Department of Health, Education, and Welfare (1976).

⁵Child support collections made on behalf of AFDC families are used to offset AFDC benefit amounts on a dollar-for-dollar basis. Because the AFDC mother does not gain financially from receipt of child support (as long as she remains on the welfare rolls), she has no incentive to seek child support or to report any collections to the welfare authorities. Hence, as a condition of eligibility for receipt of benefits, AFDC authorities require AFDC mothers to assign their support rights to the IV-D agency, who in turn pursues collection.

⁶In the last 2 years, federal funding for the IV-D program has been cut back. The Tax Equity and Fiscal Responsibility Act of 1982 (P.L. 97-248), for example, reduced the federal matching rate for most administrative costs from 75 percent to 70 percent. In addition, the Child Support Enforcement Amendments of 1984, recently signed by President Reagan, reduces the federal matching formula further in gradual increments, to 66 percent by 1990.

⁷Although the CPS is known to undercount the number of families receiving AFDC benefits and is suspected to undercount the number of AFDC families receiving child support (because the IV-D agency makes the collections), these figures are corroborated by data from the 1979 AFDC Recipient Characteristics Study as well as other sources. By way of contrast, 45 percent of non-AFDC women received child support in 1981 and 55 percent had a formal child support award. One should not conclude from these figures, however, that lack of child support is the most important factor contributing to welfare dependence.

⁸Never married mothers constitute about one-quarter of all female headed families in the United States, according to the April 1982 CPS.

⁹Given relatively high turnover in the AFDC population, a tapering off of collection rates does not necessarily imply the program's impact on welfare dependency is declining.

¹⁰Official statistics on child support collections for non-AFDC families

should be viewed with caution because they are suspected of being highly inaccurate, possibly overstating collections by as much as several hundred million dollars (USDHHS, 1982b).

¹¹States are also required to have similar programs for state tax refunds and laws exist in several states to withhold Unemployment Insurance benefits from delinquent absent parents.

¹²The AFDC survey obviously cannot be used to investigate the welfare participation decision because only AFDC families are surveyed.

¹³The model is similar to the one presented by Robins and West (1980) for determining participation in a negative income tax program. The model is also similar to the AFDC program participation model developed by Moffitt (1983). Unlike the Moffitt model, however, the present model does not explicitly parameterize welfare stigma and does not impose a particular functional form on the utility function. For other recent models of welfare participation, see Ashenfelter (1983) and Plant (1984).

¹⁴The actual benefit formula in practice for this period is $B = \text{Min} \{ r(gS - N - \text{Max}(0, 2/3WH - 20 - D)), M \}$, where M is the maximum monthly benefit (see USDHHS, 1981). The benefit ceiling is indirectly accounted for in the empirical work below but is abstracted from in the theoretical analysis.

¹⁵In only two states, Mississippi and South Carolina, is the ratable (and hence the implicit tax rate on child support) less than one.

¹⁶In late 1981, the AFDC regulations changed when the Omnibus Budget Reconciliation Act of 1981 standardized work expenses to \$75 per month and imposed a tax rate of 100 percent on earned income after the first four months of being on the program. The new regulations became effective in October 1981, which is during the latter part of the analysis period for this paper. Most states did not formally implement the new regulations until 1982 so they should have no impact on the analysis.

¹⁷This formulation abstracts from the positive tax system and other tax and transfer programs that are income conditioned. I do not account for these other programs in the empirical analysis and do not think they would substantially alter the empirical results.

¹⁸Allowing V_w and V_y to vary in the sample also allows H_0 to vary. Since I estimate average values of V_w and V_y , I can derive average H_0 and average income and substitution effects evaluated at H_0 .

¹⁹For example, the uncompensated wage elasticity is given by $(V_{ww}/V_w - V_{yw}/V_y)\hat{W}_0$, the uncompensated income elasticity is given by $(V_{yw}/V_w - V_{yy}/V_y)\hat{Y}N_0$, and the total income elasticity is given by

$$((V_y V_{yw} - V_w V_{yy}) / V_y^2) \hat{W}_0.$$

²⁰The model can also be used to determine the impact of AFDC guarantee levels and tax rates on utility and AFDC participation.

²¹In the empirical work below, I perform a test to determine whether child support payments affect AFDC dependency in a manner different from other nonwage income. The results suggest that they do not.

²²As Rosett and Nelson also show, if F^* is observed for nonlimit observations, the likelihood function is given by $\Pi \Phi_1 \Pi \phi / \sigma \Pi (1 - \Phi_2)$

where $\phi = \phi((F^* - x\beta) / \sigma)$. F=0 F=F* F=1

²³The first survey took place in April 1982 and the most recent survey took place in April 1984. Each child support survey has been merged (by the Census Bureau) with the March CPS of that year. Thus, in addition to child support information, the public use files contain a considerable amount of economic and demographic information for each family. See U.S. Department of Commerce (1981, 1983) for a description of the first two surveys.

²⁴The CPS is known to understate the number of families receiving AFDC. However, it is not known whether the unidentified families are a random subset of the CPS population. If they are a random subset, the results presented in this study will not be biased.

²⁵A more general analysis (not taken in this paper) would be to allow for varying preferences through the basic budget constraint variables in equation (2).

²⁶Data from the 1979 AFDC Recipient Characteristics Study are used to derive estimates of b for each state. I modified Hutchens' procedure by suppressing the constant terms in the work related expense regressions and excluding all other variables. Estimates of b are obtained in all but 2 states (Nevada and Vermont), where the mean estimate of b is used instead. The implied AFDC tax rates ($r(2/3 - b)$) are presented in the Appendix Table A-1, along with the other state variables used in this study. These estimated AFDC tax rates are similar to those reported by Fraker and Moffitt (1983) who use the same data source for deriving the estimates.

²⁷The results for estimating W are presented in the Appendix Table A-2.

²⁸Alimony and child support data are also available in the income section of the March questionnaire, but are not used because the data from the April supplement are judged to be more accurate.

²⁹Appendix Table A-1 gives the values of gS for a family of 4 for each state.

³⁰Employment status of the mother at the time of the marital dissolution is a proxy for the preference for work. This variable is available only for women who were previously married. Because variables are included for marital status, the omitted category (never married) will pick up effects of marital

status and work preference on AFDC participation.

³¹Recall that the effects of the positive tax system and other transfer programs are ignored.

³²It is possible that child support has an effect different from other nonwage income on AFDC dependency. To test this, the model was reestimated allowing the effects of the two types of nonwage income to be different. The unconstrained model has 4 additional terms in the second order Taylor series expansion. A likelihood ratio test was performed on the two models. The Chi-square statistic (d.f. = 4) is 3.28, which is not significant at the 10 percent level. Thus, the hypothesis that the effects of child support and other nonwage income are the same cannot be rejected.

³³Currently, 23 states reduce the AFDC guarantee level through g rather than through r . Using r for this purpose would allow a reduction in the implicit tax rates on earnings and child support as well.

³⁴Since virtually all AFDC families in the sample are currently subjected to a 100 percent tax rate on child support payments, this result should be viewed with caution. However, if the constraints imposed by the model are valid, the result will be reasonably accurate.

³⁵AFDC families are required to assign their support rights to the state IV-D agency while participation in the IV-D program is strictly voluntary for non-AFDC families. Furthermore, AFDC families do not gain financially from collection of child support while non-AFDC families do. For these and other reasons, the effectiveness of child support enforcement procedures is likely to be different for the two groups of families.

³⁶The estimated standard errors of the coefficients in (16)-(18) are not corrected for bias due to heteroskedasticity. The selectivity correction is made only for the CPS sample and not for the AFDC survey sample because all the variables needed to construct the selectivity correction term are not available in the AFDC survey.

³⁷As indicated earlier, many states charge a fee to non-AFDC families and some have cost recovery provisions.

³⁸By child support obligation, it is meant that child support was actually due in 1981. Some mothers had a child support award but were not due payments in 1981.

³⁹As indicated earlier, OCSE has been focusing greater attention recently on the non-AFDC component of the IV-D program.

⁴⁰This figure is derived from the coefficient on the contact variable which is not reported in Table 4.

⁴¹This is obtained by multiplying the impact coefficient (.20) by the fraction of families receiving IV-D services (.13).

⁴²Almost one-half the AFDC caseload consists of women not married to the

children's father. This represents a major stumbling block for the IV-D program in its attempt to reduce welfare dependency through child support collections.

⁴³Although increasing the award rate represents a potential way of increasing collections, it may not be cost effective. A rigorous determination of whether the IV-D program is cost-effective is beyond the scope of this paper.

⁴⁴Oellerich and Garfinkel (1983) also simulate the effects of various child support systems. Their analysis, however, does not consider the impact of the IV-D program or expansions of it. Furthermore, they do not investigate the effects of various child support policies on AFDC dependency and AFDC costs. On the other hand, they consider new systems in which child support awards are increased and are tied directly to estimates of the absent parent's ability to pay. For portions of their analysis that overlap with what is presented here, the results are qualitatively similar.

⁴⁵No family is allowed to receive more child support than it is due.

⁴⁶Correspondingly, the calculations would understate the impact of the current system relative to system 2 (child support but no IV-D program).

⁴⁷They were not given paternity services or father locator services because it was not possible to determine whether such services were required. As the coefficients in Table 5 reveal, this would lead to an understatement of the impact for non-AFDC families, while for AFDC families this would lead to an overstatement of the impact.

⁴⁸The behavioral equations are available, upon request, from the author.

⁴⁹The results using the first and second order Taylor series approximations are virtually identical.

⁵⁰The reason is because each family is assigned an expected change in income and the distribution of the changes in the sample is not considered. It would be possible, using more elaborate simulation techniques, to calculate poverty rates under these three systems.

⁵¹The poverty rate under the first system is overestimated because when child support is taken away, some families will increase their labor supply and some families will join the AFDC rolls. Both of these behavioral changes will partially cushion the income loss due to the removal of child support and reduce the true poverty rate. The poverty rate under the last system will be underestimated for precisely the opposite reasons.

⁵²While the percentage of families in poverty is only slightly affected, the poverty gap may be significantly lowered (see Oellerich and Garfinkel, 1983).

⁵³Oellerich and Garfinkel (1983) find that higher award amounts and enforcement of such awards could significantly reduce poverty.

⁵⁴The official statistics (USDHHS, 1983), report that child support collections were 5.2 percent of AFDC payments in fiscal year 1981.

⁵⁵The IV-D agencies refer to such collections as "redirected payments."

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