Have Families Become the New Safety Net?
An Examination of the Receipt of Kin Support, Child Support, and Welfare

Laura M. Argys
Department of Economics
University of Colorado at Denver
Laura.Argys@cudenver.edu

George H. Jakubson
School of Industrial and Labor Relations
Cornell University
Gj10@cornell.edu

and

H. Elizabeth Peters
Policy Analysis and Management
Cornell University
Ep22@cornell.edu

This paper was prepared for the 2005 meeting of the Population Association of America. The authors acknowledge support from NIH/NICHD grant 1 R01 HD045605-01. The authors would like to thank Suzann Eshleman and Asia Sikora for outstanding research assistance.

I. Introduction

Welfare reform legislation enacted in 1996 translated into a series of important changes to the welfare program in the United States. Expectations of a publicly provided lifetime safety net vanished after the introduction of work requirements for recipients and a 5-year (or less) lifetime limit on welfare receipt. In an effort to shift support from the state to parents, this (and earlier) reform efforts included comprehensive measures to improve child support collection for children with a non-residential parent.

Families and communities were called upon to provide assistance to those in need as policymakers reduced the availability of public assistance. The central question addressed in this paper is "to what extent do private transfers augment shrinking welfare benefits?" The answer to this question is crucial in an era of binding welfare constraints. In this proposal we investigate the relationship between intergenerational family transfers (specifically kin support and child support from a non-residential parent) and welfare.

Although studies have examined the incentives for transfers from non-residential parents to their children (Beller and Graham, 1994; Garfinkel, McLanahan, and Robins, 1994; Weiss and Willis, 1985) and from parents to their grown children (McGarry and Schoeni, 1995; Rosenzwieg and Wolpin, 1994, little work has been done to examine the *interrelationship* between these three sources of financial support for children in single-parent families. To integrate these decisions, we extend theoretical models of altruistically motivated inter-vivos transfers from grandparents (kin support) and non-residential parents (child support). This model formalizes the notion that increases in one type of income will reduce the incentives for other transfers, and highlights the role of welfare and child support policies in these decisions.

We use U.S. micro data from the Panel Study of Income Dynamics (PSID). In addition to socio-demographic information on children and their resident parent, the PSID surveys include reports of monthly receipt of AFDC or TANF, child support, and financial support from non-household relatives. We extract samples of households that include children with a non-

resident father. Geographic identifiers in the PSID allow us to link these households with state policies regarding welfare eligibility and generosity and the efficacy of state child support collection efforts.

In this paper we address three specific questions:

- How frequently do families receive kin support child support and welfare, and in what combination?
- What is the relative importance of these three types of income to children with a non-residential father?
- Does income from these sources respond to changes in welfare and child support policies?

As government contributions to children in single-parent homes decline under welfare reform, the answers to these questions provide some insight as to the likely income composition for children in single-parent homes. If welfare dollars are, to a large extent, replaced by family transfers then the overall financial resources available to these children may not decline. In fact, some studies have found that welfare income is less beneficial for children than other types of income (Peters and Mullin, 1997), so shifts away from public transfers toward private transfers may improve child well being. If, on the other hand, welfare payments are not replaced, child well-being may decline as a result of the reduction in income.

II. Previous Research

Kin support for single mothers can take a variety of forms: co-residence, financial assistance and time assistance. Several studies, using state welfare generosity as an instrument for welfare receipt, concluded that welfare receipt affects the decisions of mothers to reside independently or to live with other adult relatives. Ellwood and Bane (1985) found that in states with more generous AFDC benefits, young mothers were more likely to live independently rather than as a subfamily in an extended household. Recognizing that welfare

benefits are frequently adjusted based on living arrangements, Hutchens, Jakubson, and Schwartz, (1989) examined the effects of AFDC generosity and welfare treatment of co-residence on the likelihood of subfamily formation. They conclude that the lower benefits paid to subfamilies do affect the probability a mother will live in a subfamily, but the overall generosity of AFDC benefits has no effect. Rosenzweig and Wolpin (1994) examined the effect of welfare generosity on both financial kin support and co-residence. Their estimates suggest that a decrease in welfare of $1,000 per year would be only modestly offset; the probability of parental aid (both financial and co-residential) would increase by only three percent among those most likely to be welfare eligible. In an extensive analysis of kin support and welfare, Hao (1994) found that welfare benefits and co-residence are substitutes for black mothers but not for white mothers in the NLSY79. She found financial kin support to be unaffected by welfare generosity for both groups of mothers. Finally, in their analysis of the President's Commission on Pension Policy data, Cox and Jakubson (1995) used an instrumental variables approach to examine the impact of changes in AFDC income on the probability and amount of financial kin support. They concluded that increases in AFDC reduced the probability of kin support, but did not diminish the amount of kin support conditional on assistance. All of these studies point to a consistent, but modest effect of welfare generosity on various forms of assistance to single mothers from their relatives.

A few studies have examined the connection between child support and welfare. Robins and Dickinson (1986) found that child support enforcement efforts could substantially reduce welfare dependency for divorced or separated mothers and their children. More recently, Hu (1999) examines the responses of welfare participation to policies that alter child support payments in a model that jointly determines child support, welfare and mother's labor supply. His results from analyses of matched pairs of husbands and wives from the Panel Study of Income Dynamics suggest that increases in child support via exogenous policy changes would

lead to modest decreases in welfare participation and increases in work among divorced and separated mothers.

Note that none of the previous research integrates the decision by extended family to provide kin support with the non-custodial parent's decision to pay child support. In response to this gap in the literature, we develop a theoretical model of the interrelationship between welfare receipt, kin support and child support and estimate reduced-form models and instrumental variables models to measure the magnitude of the responses of these transfers to each other.

III. Theoretical Model of Kin Support, Child Support and Welfare Payments

To examine the well-being of children who reside with a custodial parent and have an absent parent, we model the decisions made by two generations of relatives concerned with the well-being of the third generation. Specifically, we assume that grandparents (g) and the absent parent (for simplicity, assumed to be the father – f) may desire to make transfers to the custodial mother (m) to benefit the child (c). The behavior of the custodial parent is central since, in this principal-agent model, she receives the transfers and spends on behalf of the child. (See Weiss and Willis, 1985, for the first treatment of the principal-agent model in this context.)

The model developed here is a single-period model of inter-vivos family transfers motivated by altruism. Since the recipient family consists of members most at risk of living near or below the poverty line, the single-period model is a simplification of a multi-period model when faced with borrowing constraints. That is, the single parent cannot simply borrow in times of need and pay back in later periods. The basic model is an extension of the model of absent father transfers by Argys and Peters (2003) combined with the model of intergenerational transfers adopted by McGarry (1999).

Since the impact of transfers on child well being is determined by the mother's spending choices, we begin with her spending decision. We model her decision in two possible states: 1) in the absence of welfare and 2) as a welfare recipient. We next model the financial transfer

decisions of absent fathers and grandparents in both states, taking the mother's behavior into consideration, then we derive the conditions under which the mother will choose to participate in welfare. A final section discusses modifications to the model when transfers take the form of joint living arrangements rather than financial transfers.

The Mother's Decision. Specifically, the mother has the following general utility function:

(1) $U_m = U_m(X_c, X_m, L)$

Where X_c and X_m represent expenditures on the child (c) and mother (m) respectively, and L represents her non-labor time. Assuming financial constraints, the mother must satisfy her budget constraint in each year. We first model the mother's choices in the absence of welfare. Her budget constraint

(2) $\omega H + T_f + T_g = X_c + X_m$

reflects the fact that the mother's expenditures on herself and her child cannot exceed her income. In this model, her income is derived from earnings (ωH) and transfers from the child's father (T_f) and grandparents (T_g). She also face a time constraint

(3) $H + L = 1$

indicating that total time (normalized to one) can be split only between non-labor (leisure) time and hours of work (H). To solve this maximization problem explicitly, we assume a Cobb-Douglas utility function of the form

(4) $X_c^{\alpha} X_m^{\beta} L^{(1-\alpha-\beta)}$

such that $0<\alpha<1$ and $0<\beta<1$ and $\alpha+\beta<1$. The Cobb-Douglas specification imposes some restrictions, most notably, constant consumption shares. The general conclusions of the model hold under more general utility specifications. Maximizing (3) subject to (2), yields the following optimal consumption choices:

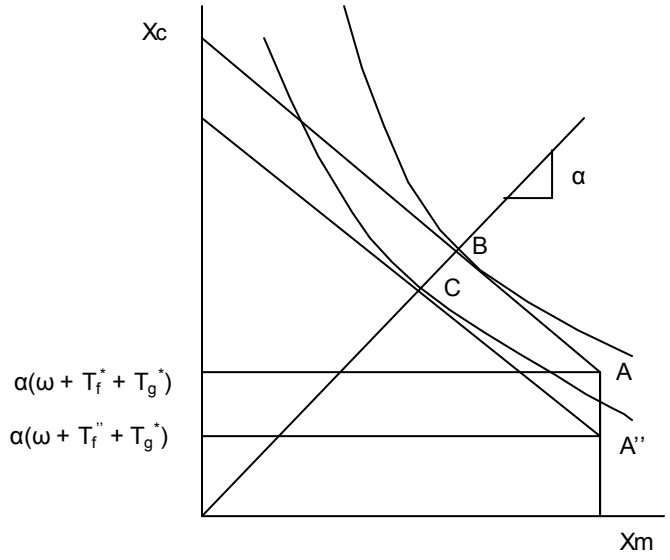
(5) $X_c^* = \alpha(\omega + T_f^* + T_g^*)$

(6) $X_m^* = \beta(\omega + T_f^* + T_g^*)$

(7) $L^* = (1-\alpha-\beta)(\omega + T_f^* + T_g^*)/\omega$

In other words, the mother will spend a fraction (α) of her income on her child's consumption, a fraction of her income (β) on her own consumption, and the remainder on hours of leisure. This illustrates the principal-agent problem discussed by Weiss and Willis (1985) in their model of child support transfers. Specifically, if the father (or grandparent for that matter) increases his transfers by one dollar, child expenditures will rise by only α dollars. This, in effect, raises the price to the father of providing child expenditures, since some of his transfer from being spent for other purposes. Equations (5) – (7) and Figure 1 below, also illustrate that child expenditures are increasing in wages and transfers.

Figure 1. The Mother's Expenditure Decision



As T_f, T_g, or ω increase, causing the budget constraint to shift upward from A'' to A, the mother increases her own consumption as well as consumption on her child (and reduces her labor supply accordingly).

Similarly, we can derive the mother's optimal consumption and work patterns if she participates in the welfare system. Her utility function remains the same, but now she faces a

budget constraint that incorporates the rules of the welfare system. As described earlier, states have a great deal of discretion regarding the specific rules incorporated into their welfare (AFDC or TANF) programs. All states provide a maximum payment (W^{max}). W^{max} varies by family size. As income increases, welfare benefits typically decline. In some states, various types of income are subject to disregards, and then a benefit reduction rate is applied to the remainder. For simplicity we model a benefit reduction rate on earned income (γ_H) and a benefit reduction rate on transfers from relatives (γ_g). In theory, receipt of kin support would result in a dollar-for-dollar reduction in benefits, but the reporting of kin support to welfare agencies is likely to be very low. The precise interpretation of γ_g is discussed below. Child support on the other hand, has become increasingly bureaucratized. States require that payments be processed through the IV-D agency. Of the child support received by the agency from an absent father, states allow a pass-through of $P (note that the pass-through varies in our data across states and time) that does not reduce welfare benefits, and the remaining child support payment simply reimburses the state for welfare payments. That is, the tax on any child support payments greater than $P is equal to one, and from the perspective of the mother, her available child support is anything the father pays up to $P. The budget constraint for a welfare recipient is:

(8) $$W^{max} + (1- \gamma_H)\omega H + \min(P,T_f) + (1- \gamma_g)T_g \geq X_c + X_m$$

Maximizing (3) subject to (8) yields the following demand functions for a welfare recipient

(9) $$X_c^w = \alpha(W^{max} + (1- \gamma_H)\omega + \min(P,T_f^w) + (1- \gamma_g)T_g^w)$$

(10) $$X_m^w = \beta (W^{max} + (1- \gamma_H)\omega + \min(P,T_f^w) + (1- \gamma_g)T_g^w)$$

(11) $$L^w = (1-\alpha-\beta)(W^{max} + (1- \gamma_H)\omega + \min(P,T_f^w) + (1- \gamma_g)T_g^w)/(1- \gamma_H)\omega$$

Where T_f^w and T_g^w represent the father's and grandparents' transfer decisions when the mother is receiving welfare (derived below).

The Transfer Decisions. In this model we ignore the family members' (father and grandparent) labor supply decisions and represent their objective functions as

(12) $U_i = X_c^{ai} X_i^{bi}$ where i = f,g

As with mothers, we assume that fathers and grandparents are concerned about the well-being of the child. Child expenditures enter their utility functions, and a_i and b_i represent the relative weights of child and own consumption in their utility functions. The budget constraints faced by fathers and grandparents,

$$(13)\ Y_i = X_i + T_i$$

where Y_i represent the exogenous income of the family member, illustrates that one dollar of own consumption must be sacrificed for each dollar that is transferred to the mother on behalf of the child.

Due to the mother's allocation decision, only part of each dollar transferred is spent on the child, however. For both fathers and grandparents, child expenditures increase only by α each time a dollar is transferred. The mother's behavior in the absence of welfare is incorporated into the maximization problem by substituting equation (5) into equation (13):

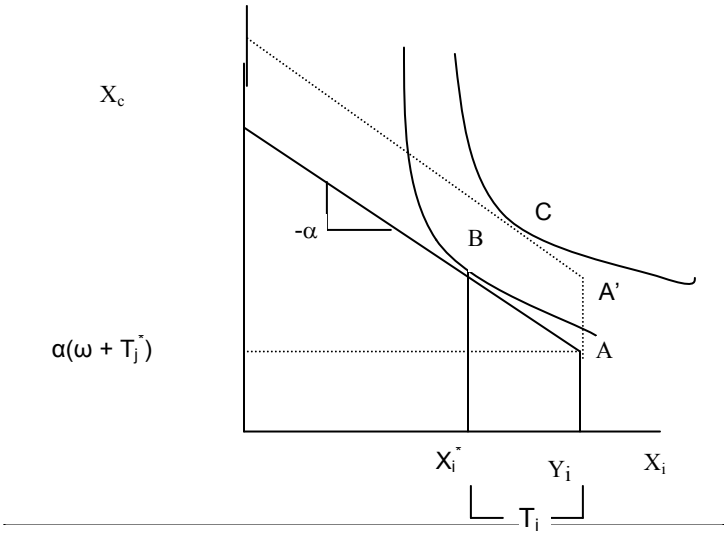
$$(14)\ U_i = [\alpha(\omega + T_f^* + T_g^*)]^{ai} X_i^{bi} \qquad \text{where } i = f,g$$

Note that this specification implies that the father and grandparent are concerned only about the amount of income available to their child or grandchild, and are not strategically altering their transfers to affect the mother's labor supply. Maximizing (14) subject to (13) results in

$$(15)\ T_i^* = (a_i/(a_i + b_i\alpha)Y_i - (b_i\alpha/(a_i + b_i\alpha)(\omega + T_j^*) \quad \text{where } i = f,g \text{ and } j \neq i$$

Transfers by each family member are an increasing function of own income, reflecting the fact that under the Cobb-Douglas utility specification child well-being is a normal good. Transfers are a decreasing function of both wages and transfers from other family members. This reflects the fact that other sources of income create a disincentive for transfers, since the amount of X_c in the absence of transfers increased. Figure 2 illustrates the transfer decision.

Figure 2. Father and Grandparent Transfers in the Absence of Welfare.



This figure shows the father's and grandparents' transfer decisions. If no transfer is made, for example, by the grandparents, then $X_c = \alpha(\omega + T_f^*)$ reflecting the fact that the mother will spend a fraction of the income available to her through her earnings and any transfer from the father. Because child well being is a public good, the grandparents benefit from the child expenditures though they have not contributed. As grandparents increase their transfers, their consumption is reduced, from $X_g = Y_g$ at point A to $X_g = X_g^*$ at point B. At point B, $T_g = Y_g - X_g^*$. Child expenditures will rise only by αT_g since the mother spends only a fraction of additional income on her child. The slope of the budget line in figure 1 above is $-\alpha$.

This figure also demonstrates that transfers from one relative may be affected by transfers from another relative. An increase in T_f, for instance, will cause the budget constraint to shift vertically at point A. If own consumption is a normal good, X_g will rise, causing T_g to fall.

Though the father's and grandparents' decisions to voluntarily transfer money to the mother on behalf of the child appear to be identical, the absent father can be forced to make involuntary transfers. That is, the state can force the establishment of a child support awards and enforce payment. In contrast to the grandparents' transfer represented by equation (15), the expected payment by the father will be:

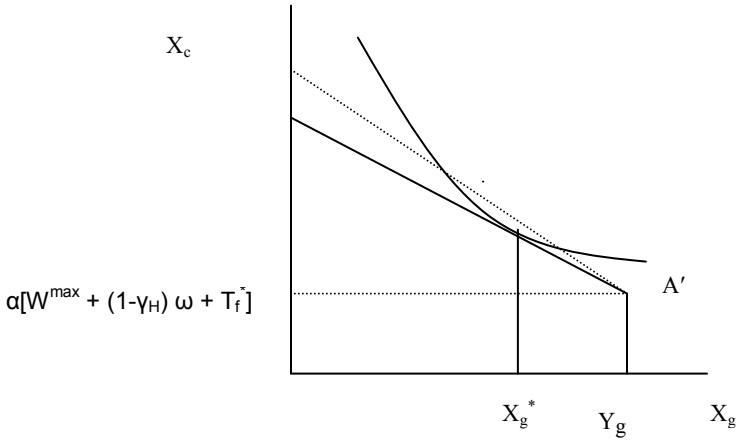
$$T_f^w = (1-\rho)\,[(a_f/(a_f + b_f\alpha)Y_f - (b_f\alpha/(a_f + b_f\alpha)(\omega + T_g^*)] + \rho\,(T_s)$$

Where ρ represents the probability that the state enforces child support payments in the amount T_s. Transfers by the father are non-decreasing in ρ and T_s.

If the mother has chosen to participate in welfare, the transfer decisions faced by family members changes; the proportion of each dollar transferred that reaches the child is diminished. Specifically, a transfer by grandparents is reduced by welfare benefit reduction rate applied to the fraction of transfers that are detected by the welfare agency. Most researchers have noted that the fraction detected is quite low, but we model the possibility that grandparent transfers are affected by this policy. Optimal transfers by the grandparents are

$$(16)\,T_g^w = a_g/(a_g + b_g\alpha)Y_g - b_g\alpha/(a_g + b_g\alpha)[W^{max} + (1-\gamma_H)\omega + T_f^w]/(1-\gamma_g)$$

Figure 3. Transfers by Grandparents if the Mother Participates in Welfare.



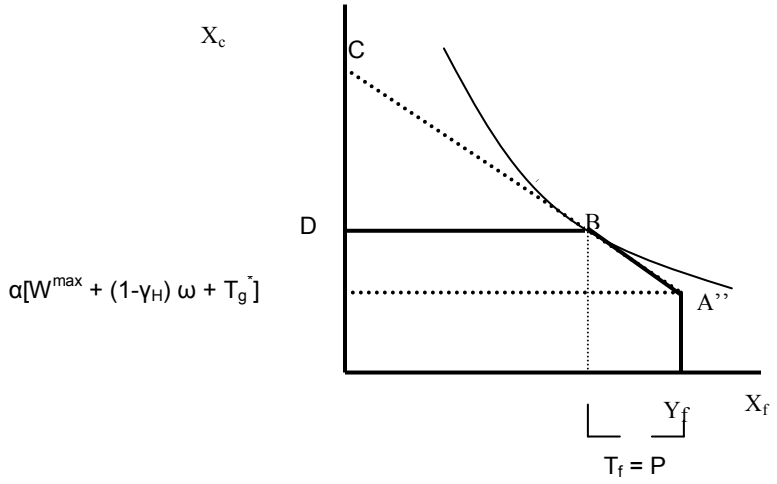
There are two changes that result from welfare participation. First, A′ will likely differ from A. The point A′ represents child expenditures in the absence of transfers from the grandparents. Under welfare, the mother now has additional unearned income in the form of welfare transfers, but her earnings and the father's transfer likely declines in response. In addition, the "price" of child expenditures to the grandparent has risen since any of the transfer

that is identified by the welfare agency (likely a small fraction) results in reductions to welfare benefits. As a result, the slope of the budget constraint is now $-\alpha(1-\gamma_g)$ as illustrated by the downward shift in the budget constraint in Figure 3. Depending on the change in X_g, , the change in T_g in response to this price increase is ambiguous. In response to a pure income effect, such as that caused by an increase in W^{max} or a decrease in γ_H, grandparents will reduce their transfers (assuming normality of own consumption). In other words, as the provision of child expenditures by others rises, grandparents substitute their own consumption for transfers for their grandchildren.

Because the welfare rules regarding child support are stringently enforced, the father's decision to make transfers when the mother is a welfare participant is quite different from that for grandparents. Most child support awards are filed immediately with the IV-D agency, and wage withholding begins automatically. Assuming that child support payments are known to the agency, they can fully enforce the welfare payment reduction. Most states allow a pass-through (P), and then apply a 100% benefit reduction. No child support in excess of the pass-through reaches the mother unless it exceeds the entire welfare payment. His desired transfer when the mother is on welfare is represented by:

$$(17) \qquad T_f^w = \min \{ [(a_f/(a_f + b_f\alpha)Y_f] - (b_f\alpha/(a_f + b_f\alpha)(W^{max} + (1- \gamma_H)\omega + (1-\gamma_g)T_g^w) , P \}$$

Figure 4. Transfers by an Absent Father if the Mother Participates in Welfare.



The budget constraint facing the father if the mother is a welfare recipient is represented by A'' B D. As long as the father's optimal transfer lies between A'' and B, then the transfer amount is identical to the no-welfare case. However, if utility maximization would have occurred between points B and C, then his optimal transfer is P. There is no possibility that utility maximization would occur between points B and D.

Participation in welfare also alters the amount of X_c independent of the father' transfer (point A''). The position of A″ relative to A in the no-welfare case is unknown, since the provision of W^{max} is offset by reductions in earnings and grandparent transfers. Regardless of the position of A'' there is no incentive for fathers to voluntarily pay more than P. Below P, increases in W^{max} and T_g reduce T_f.

In the welfare state, the father's actual transfers are still subject to enforcement by the state. Although welfare receipt reduces his desire to make transfers in excess of P voluntarily, state enforcement efforts could still force his payment of T_s. Assuming his voluntary transfer is not below P, the father's expected actual transfers, T_f will be $(1-\rho)\,P + \rho\,(T_s)$.

The Probability of Welfare Receipt. Whether or not the family participates in the welfare program depends on the relative value of the alternatives as evaluated by the mother. Specifically she will choose to receive welfare if:

(18) $W = 1$ if $(X_c^W)^{\alpha} (X_m^W)^{\beta} (L^W)^{(1-\alpha-\beta)} - (X_c^*)^{\alpha} (X_m^*)^{\beta} (L^*)^{(1-\alpha-\beta)} > 0$

Substituting equations (5)-(7) and (9)-(11) into (18) yields the following condition

(19) $W = 1$ if $[W^{max} + (1- \gamma_H)\omega + (1-\rho) P + \rho (T_s) + (1- \gamma_g)T_g^w]/(1- \gamma_H)^{(1-\alpha-\beta)} - \omega - (1-\rho) T_f^* - \rho (T_s) - T_g^* > 0$

Welfare participation responds predictably to the parameters of the state welfare program. Welfare receipt is more likely the greater are W^{max}, and P, and the smaller are γ_H and γ_g . The more income is provided by the state in benefits and the more they allow child support to benefit the mother an child, the more likely she is to remain on welfare. Features of the child support program also alter the probability of welfare receipt. Greater enforcement and more generous child support awards will decrease the attractiveness of welfare participation.

The labor supply decision of the mother is embedded in our model with the assumption of homothetic preferences. That is, we assume that the mother's consumption of non-labor time (for simplicity, leisure) is a constant share of full income. While increases in kin-transfers would reduce labor supply and increase leisure consumption, we assume that, similar to the choice of child expenditures, leisure consumption is not a strategic decision that is made to illicit additional transfers from outside the household. Solving this model using a more flexible specification for the utility functions and substituting the labor supply (leisure demand) function into our model will still account for the mother's labor supply decision in reduced form.

The interdependence between the three decisions is demonstrated in the following system of three reduced-form equations:

(20) $T_f = f(Y_f, \omega, \rho, T_s, P, T_g, W)$

(21) $T_g = g(Y_g, \omega, \gamma_g, T_f, W)$

(22) $W = h(\omega, W^{max}, \gamma_H, \gamma_g, P, T_f, T_g)$

Each includes the labor market opportunities of the mother since ω (the mother's potential earnings) appears in each of the equations. This will be reflected in our empirical model by including mother's education, race and labor market conditions as explanatory variables.

IV. Data

To determine the importance of kin support, child support and welfare as sources of income for families with children of a non-residential father we use from the Panel Study of Income Dynamics (PSID). The PSID is a nationally representative longitudinal survey of families with an over sample of low-income mostly African-American families. The PSID began in 1968 with 5,000 families who have been interviewed annually through 1997, and every two years since. Due partially to the inclusion of "split-off" households as family members leave to live independently and partially to the addition of nearly 2,000 Latino families, by 1996, the PSID sample had grown to nearly 9,000 family units. In 1997, the PSID reduced the core sample and added a refresher sample of immigrants. The 2001 PSID sample consists of over 7,000 families.

The household information allows us to identify the sample of households with children with a non-residential father. Income questions from the PSID include detailed information on the three types of income we examine: income from relatives, income from child support, and income from welfare. Beginning with the 1993 survey through the survey in 2001, respondents are asked to indicate separately whether or not the head of household or spouse/partner received income from welfare, from child support, and from relatives in the calendar year prior to the interview. If the response is affirmative, the amount and months received are recorded.

Because information about all three types of income are collected each year for the head of household and spouse/partner, the data allow us to construct annual samples to be used to examine the relationship between the three types of financial support (financial kin support, child support, and welfare). For analysis of financial transfers, we restrict our sample to families that

include at least one child with an absent father in which the mother is identified as the head of household or spouse/partner. Because of data limitations we exclude households in which the mother is not identified as the head or spouse (i.e. she is living in a sub-family with other adult relatives), because we do not have the required components of income for each year. In addition to the income measures and standard socio-demographic variables such as age, race, and education, we are able to identify the composition of each household in terms of the number and gender of the children. We are able to identify the reason for the father's absence (a nonmarital birth or the dissolution of a marriage) from the marital and fertility histories. Heads and spouse/partners also report information about their parents and siblings. In the preliminary results reported in this paper we only include data from 1993, before welfare reform under PRWORA. Ultimately this analysis will include annual samples from 1993 – 1995 and 1998 – 2001.

From the 1993 PSID data, we have extracted a sample of mothers who have children with non-residential fathers. To identify such families, we select households in which the head of household is female, implying that there is no male partner in the home, and her biological children are listed in the household roster. There are 1159 such mothers in the 1993 PSID data. We refer to this as the MOMHEAD sample. In addition, we select households in which the head of household is male, a wife or female partner is present, and the household roster lists step-children of the male head. The 1993 data include 444 such MOMWIFE households. In this analysis of financial transfers we are unable to include children with a nonresident father who are residing with their mother as a subfamily in the home of another PSID head of household. Detailed income data are not available for household members other than the head or "wife" in most years.

Excluding those with missing income data leaves us with 953 MOMHEAD families and 344 MOMWIFE families. Table 1 reports the characteristics of our full sample, weighted to population totals, and sub-samples by type of income received. The racial and ethnic

composition of the sample reflects both the makeup of the U.S. population and the nature of our sample (mothers not residing with the biological father of her children). Just over 8 percent of the sample identify themselves as Hispanic. Over 1/3 indicate that they are African-American in the first racial categories mentioned.[1] Slightly fewer than 2 percent are non-Hispanic and identify themselves in a racial category other than African-American or white. The average education level for mothers in our sample is 12.4 years.

We include three variables that describe the composition of the household. As noted above, just less than ¾ of these households are single parent families; the remaining 25 percent of the mothers reside with a spouse or partner who lists at least one stepchild on the household roster. On average, these mothers have 1.8 children; .8 of whom were identified, using the marital and fertility histories of the mother, as being children from a prior marriage. Identifying these children is important, since the likelihood of child support receipt is substantially higher for children of divorced parents than for children whose parents never married each other.

To provide information on the potential for kin support, we characterize the mother's nuclear family. Heads and wives in the PSID are asked about the education level of their parents (the children's grandparents), and are asked to report the number of brothers and sisters. On average, grandmothers and grandfathers have completed 10.8 and 10.5 years of education, respectively. Education levels are missing for 4 percent of grandmothers and 9 percent of grandfathers. Ninety-six percent of the mothers in our sample have siblings, and report just over four siblings on average.

Finally, Table 1 indicates the average amount of total income, $28,543, and various components of income. The PSID includes detailed information on income from a variety of sources, including income from wages and salaries of the mother (and spouse if applicable), income from businesses, such as farms and rental properties, income from assets and income from other transfer programs such as Unemployment Insurance and Social Security. We focus

[1] PSID respondents are permitted to list up to four race categories.

on income from three sources, AFDC income received by the mother, Child Support income received by the mother, and money received from the mother's relatives; We combine income from all other sources into a category that we call "base income". Of the income sources that are the focus of this paper, child support is the most common. Thirty-six percent of the mothers in our sample reported receiving any child support, contributing $3778 in annual income for those who received child support. Eighteen percent of the mothers reported receiving income from welfare in the 1993 interview, adding $3258 to recipient income. Money support from kin is reported by only 9 percent of the mothers in our sample, totaling $1177 for those who received support.

V. Empirical Methods and Results

The first part of our analysis addresses the questions "How frequently do families receive child support, kin support and welfare, and in what combinations?" and "What is the relative importance of these three types of income to children with a non-residential father?" To answer these questions, we divide our sample into categories based on the types of income received. Figure 5 illustrates the distribution of families in these categories based on income reported in the 1993 PSID.

The largest group, 49 percent of families, received base income only. That is, they reported no kin support, child support, or welfare income during 1992. Although the remaining 51 percent received at least some child support or kin support or welfare income, only 9 percent received multiple types of income. Twenty-three percent of families reported receiving child support but no welfare income or support from relatives, 15 percent received welfare only, and 4 percent received only kin support. The majority of families receiving income from multiple sources, combined either welfare and child support (3.2 percent of families) or welfare and kin support (2.6 percent of families). The receipt of child support, kin support and welfare in the same year is very rare (.6 percent).

To determine the importance of each type of income, we calculate the amount of income from each source: kin support, child support, welfare, and base income (i.e., all other income sources). These amounts are illustrated in Figure 6 separately by the types of income received. A few interesting patterns emerge. First, and not surprisingly, families who receive welfare, regardless whether other income is received, have the lowest incomes among our sample. Families who receive all three types of income report total family income of just under $7,000. State provided welfare comprised nearly $3,000 in annual income. Child support added just under $1,000 and relatives contributed about $300. For these mothers, child support, kin support and welfare comprise nearly 2/3 of their annual income. Figure 7, which replicates the calculations in Figure 6 but restricts the sample to female-headed households, illustrates that, for these women, child support, kin support and welfare are even more important contributors to total family income.

In addition to documenting the proportions and amounts of income from the three sources, we estimate changes in income composition in response to changes in various welfare and child support policies. To answer our third question: "Do income sources respond to changes in welfare and child support policies?" we estimate the following reduced-form models:

$$Ij^* = \alpha_j + X_i \beta_j + Z_s \gamma_j + \varepsilon_{ij} \qquad j = c, k, w \qquad (1)$$

Where I* is a continuous latent measure of the annual amount of income of type j (child support, kin support and welfare). Though the income measures in the data are continuous, we characterize income as a latent variable because of the clustering of the data at 0, and estimate equation (1) as a tobit model. Alternatively, we use dichotomous indicators of the receipt of child support, kin support and welfare income and estimate probit models.

The vector X is composed of child and family characteristics, including the mother's current marital status and her marital status at the time of the child's birth, the number of children and age of the youngest child, mother's race and ethnicity and education, and duration of marriage for mothers who were married to the children's father. To capture the likelihood that

kin support is available, we include variables indicating the education levels of the mother's parents and the number of her siblings.[2]

The focus of this analysis is on the impact of policies on these three types of income. The vector Z includes measures of the level of mandated child support awards (award amounts specified in the state's child support guidelines), state child support collection efficiency (measured by child support enforcement expenditures and collections), and the generosity of the state's welfare programs. These policies, detailed in Table 2 vary across states and over time, but until we have data from multiple years of the PSID, we rely on cross-state variation.

The estimates from the reduced-form probit models of the probability of receiving child support, kin support and welfare, converted to marginal probabilities are shown in columns 1, 3 and 5 of Table 3. Estimated coefficients from tobit models, which represent changes in the latent variable, are reported in columns 2, 4, and 6.

Patterns of income receipt and amounts by characteristics of the mother are evident. Non-white mothers are substantially less likely to receive child support by over 20 percentage points. This result has been noted in many other studies. These same mothers are more likely to receive welfare income during the year, though the effect is most pronounced for African-American mothers. Better educated mothers receive more child support and, as expected, are significantly less likely to receive welfare income. There are no significant differences in the receipt of kin support by mother's race, ethnicity or educational attainment.

The types of income received also depend upon the composition of the family. Mothers who reside with a spouse or partner are significantly less likely to receive support of any kind. Not surprisingly, these mothers are 19 percentage points less likely to receive welfare. Somewhat more surprising is the effect of a spouse or partner in reducing the likelihood of receiving child support (by 8 percentage points) and kin support (9 percentage points). The

[2] In revised versions of this paper we will also include variables including whether the mother's parents are alive.

contribution of spousal income clearly reduces the incentive for nonresident fathers and other relatives to contribute to family income.

Receipt of child support, kin support and welfare also depend on the number of children in the family, but these effects vary by the marital status of the children at the time of their birth. Specifically, the receipt of child support is dependent, not on the total number of children in the family, but on the number of children born to the mother during a prior marriage. The fact that child support awards are substantially more likely for divorced or separated mothers than for mothers who never marry the father of their child is reflected in this pattern. Welfare, on the other hand, depends only on the total number of children in the family. Similarly, kin support increases with the total number of children in the family regardless of the mother's marital status at the time of their births.

As noted earlier, we include measures of the characteristics of the mother's family of origin, in the form of her parents' education levels and the presence and number of siblings to capture the potential for kin support. These variables are significant predictors of kin support and are unrelated to the receipt of other types of income. Likely reflecting a greater ability to provide support, the greater is the educational attainment of her parents, the greater is the amount of kin support received by the mother. However, the larger is her family of origin, as measured by the number of brothers and sisters, the less likely is kin support.

We turn now to the effect of state welfare policies, state efforts to improve child support collection, and labor market characteristics on the receipt of kin support, child support and welfare. Only the receipt of welfare income responds to labor market conditions. The higher is the local unemployment rate, the more likely is welfare receipt. As expected, the state's welfare generosity, measured by the maximum monthly payment for a family of three is a significant determinant of welfare receipt. A women residing in a state that provides $100 more in welfare each month is 2 percentage points more likely to be on welfare than a comparable woman in another state. Welfare generosity, however, affects neither the receipt of child support or kin

support. This suggests that reductions in welfare benefits are not offset by increases in support from relatives.

Policies designed to increase child support income appear to have the desired effect. Though they don't reach conventional levels of statistical significance, both the amount that the state spends for each IV-D child support case and the effectiveness of these expenditures as measured by the ratio of child support collections to administrative expenditures are positively related to the receipt of child support income. The level of child support required by the state, as measured by the child support calculation for a representative family from the state's child support guideline formula, significantly increases both the probability of receiving child support and the amount received. The last column in Table 3 shows that improvements in these child support collection measures (state child support expenditures) may partially be offset by reductions in kin support.

The interrelationship between these three types of income is difficult to discern in these reduced-form models. To better disentangle the interdependence between income sources we estimate an instrumental variables model. Recognizing that income from each of the three sources are determined simultaneously we ultimately will estimate a structural simultaneous system of equations. For now we estimate three instrumental variables tobit models. The success of this empirical strategy depends on our ability to identify instruments that affect the receipt and amount of one type of income but do not affect the receipt of the others. Instruments for child support income include the child support policy variables described above, and the number of children from a previous marriage. Our welfare receipt instrument is the state's welfare generosity. Characteristics of the mother's family of origin comprise the instruments for kin support.

The instrumental variables model that we estimate involves a two-step procedure. First, the amounts of income from two of the sources, welfare and kin support for instance, are estimated in separate OLS regressions. Predicted values for these two sources of income are

then used as regressors in a second-stage tobit model of the amount of child support income. This method serves to eliminate any correlation between the error term in the first two equations and the error term in the second-stage. In effect, it enables us to determine the impact of exogenous changes in welfare and kin support on the amount of child support received. This exercise is repeated so that a second stage equation is estimated for each income source. The results of this exercise are reported in Table 4.

The effects of most variables are qualitatively similar to those reported in Table 3, and so we focus on the first three rows of Table 4. With one exception, the estimated tobit coefficients are negative. This implies that the amount of one type of income will decline in response to exogenous increases in other types of income. Only the negative effect of increased child support on welfare income reaches conventional levels of significance. Specifically, a one dollar increase in child support income, perhaps through increased state efforts to improve child support collection, will decrease the latent welfare income variable by $1.92. However, this is not the observed effect of an increase in child support on actual welfare income received. This one dollar increase in child support will result in an observed increase in welfare income of $0.35.[3]

VI. Conclusions

This paper uses data from the PSID to estimate the importance of and interrelationships between various types of support for children from sources outside the immediate residential family, specifically support from government welfare, support from a non-residential father, and support from other kin living outside the household. We find that a little more than half of families with children who have a non-residential father rely solely on sources of income within

[3] The conversion of tobit coefficients (β) into marginal effects (m) requires adjusting the coefficient by the proportion of observations above the lower limit. In this case, 18 percent of our sample receive welfare income and so $m = .18\beta$.

the household—primarily income from earnings. About one-quarter of families receive child support from the non-residential father and more than 20% receive welfare; about 9% receive support from relatives outside the household.

Theory suggests that transfers from altruistic relatives will be negatively related to the availability of other sources of income, and the responsiveness of private transfers to the receipt of welfare income is an important policy question. In addition, a negative correlation between welfare and child support receipt is a consequence of specific aspects of child support and welfare policies.

Our preliminary empirical results based on data from 1993 support some of these hypotheses. Specifically, we find that welfare policies affect welfare receipt and child support policies affect child support receipt. In addition, receipt of child support significantly reduces the amount of welfare receipt, and kin support negatively affects child support, but the effect is not precisely measured. Surprisingly, the amount of kin support is not affected by either receipt of welfare or child support. In future work we will use data from multiple years before and after the 1996 welfare reform, which led to major changes in both welfare and child support policies. The availability of additional cross-state and within-state policy variation can help increase the validity of estimates of the interrelationships of interest.

Table 1. Weighted Summary Statistics

	Full Sample n = 1297	No Other Income n = 632	Child Support Only n = 303	Welfare Only n = 200	Kin Support Only n = 53	All Other Combinations n = 109
			Income Variables			
Welfare 1992	571.20	-	-	3342.29	-	1872.35
	(4372.63)	-	-	(5017.61)	-	(6478.55)
Child Support 1992	1350.88	-	3833.33	-	-	2460.37
	(8521.32)	-	(9055.71)	-	-	(17783.99)
Kin Support 1992	110.37	-	-	-	1400.43	744.049
	(2309.77)	-	-	-	(5750.57)	(6168.19)
Family Income 1992	28543.06	29941.31	40372.08	7108.33	22374.23	14143.18
	(78426.85)	(77062.62)	(90732.18)	(17947.10)	(50322.74)	(42188.72)
Received Child Support 1992	0.36	-	1	-	-	0.69
Received Welfare 1992	0.18	-	-	1	-	0.66
Received Kin Support 1992	0.09	-	-	-	1	0.68
			Family Background Variables			
Hispanic	0.08	0.11	0.03	0.11	0.17	0.04
Black	0.34	0.35	0.20	0.70	0.51	0.31
Other Race	0.02	0.02	0.02	0.01	0.002	0.04
Spouse/Partner Present	0.25	0.32	0.31	0.01	0.16	0.07
Mother's Education	12.36	12.35	12.90	10.84	12.48	12.57
	(6.79)	(6.97)	(6.78)	(5.24)	(4.79)	(6.43)
Total Number of Children	1.86	1.78	1.82	2.13	(1.94)	2.03
	(3.07)	(2.85)	(3.18)	(3.51)	1.71	(3.26)
Number of Children from Marriage	0.77	0.65	1.12	0.29	(0.87)	0.88
	(2.56)	(2.31)	(2.64)	(1.76)	0.76	(3.62)
Grandmother's Education	10.82	10.48	11.35	9.99	(2.38)	11.35
	(9.13)	(9.15)	(9.39)	(7.20)	(9.25)	(9.47)
Grandmother's Education Missing	0.04	0.05	0.01	0.07	0.14	0.01
Grandfather's Education	10.49	10.06	11.25	9.67	11.54	10.99
	(10.56)	(10.36)	(11.10)	(9.82)	(9.87)	(9.98)
Grandfather's Education Missing	0.09	0.09	0.06	0.20	0.12	0.06
Any Siblings	0.97	0.98	0.97	0.96	0.99	0.94
Number of Siblings	4.20	4.25	4.19	4.66	3.70	3.55
	(8.87)	(8.21)	(10.30)	(8.76)	(6.91)	(9.03)

Table 1. Weighted Summary Statistics, Continued

	Full Sample n = 1297	No Other Income n = 632	Child Support Only n = 303	Welfare Only n = 200	Kin Support Only n = 53	All Other Combinations n = 109
Policies						
County Unemployment Rate	7.52	7.44	7.17	8.24	9.50	7.57
	(7.10)	(6.31)	(7.74)	(6.56)	(8.59)	(8.28)
State Child Support Collections/Expenditures	4.27	4.21	4.33	4.18	3.81	4.57
	(5.98)	(5.78)	(6.58)	(5.22)	(3.44)	(7.36)
State Expenditures per Case	136.86	133.12	150.28	134.95	122.05	121.15
	(267.46)	(248.50)	(341.49)	(270.54)	(135.38)	(146.40)
Welfare Payment for a Family of 3	364.57	349.21	388.14	355.42	364.71	379.58
	(412.52)	(394.83)	(444.14)	(339.85)	(370.37)	(517.71)
Guideline Amount	403.52	401.30	408.30	393.04	407.25	411.16
	(128.69)	(127.71)	(139.34)	(111.88)	(92.86)	(137.66)

Table 2. State Child Support Activities and Welfare Generosity.

Variable	Definition	Source	Sample Mean
IV-D Expenditures	Annual Administrative Expenditures by the State IV-D Office per Case	Annual Reports of the Office of Child Support Enforcement	140.1 (273.2)
IV-D Collection Ratio	Ratio of Child Support Collections by the State IV-D Office to their Annual Administrative Expenditures	Annual Reports of the Office of Child Support Enforcement	4.27 (5.98)
Child Support Guideline Amount	The amount from the state's monthly child support guideline. (NCP income = $20,112 and CP income = $11,050)	Argys and Peters, 2001	403.5 (128.7)
Maximum Welfare Benefit	Maximum monthly AFDC or TANF payment for a family of three	U.S. House of Representatives, Committee on Ways and Means	364.6 (412.5)

Table 3. Reduced Form Models of Receipt of Child Support, Welfare and Kin Support

	Child Support Received	Amount of Child Support Received	Welfare Income Received	Amount of Welfare Income Received	Kin Support Received	Amount of Kin Support Received
Hispanic	-0.24***	-3811.91***	0.05	1325.80**	-0.002	115.76
	(0.03)	(621.25)	(0.04)	(670.63)	(0.02)	(447.79)
Black	-0.25***	-3605.92***	0.09***	1748.24***	-0.01	-280.39
	(0.03)	(487.23)	(0.03)	(563.72)	(0.02)	(366.79)
Other Race	-0.21***	-4084.71***	0.01	723.17	0.003	25.00
	(0.05)	(1514.71)	(0.10)	(1608.01)	(0.06)	(1032.33)
Mother's Highest Grade Completed	0.02**	331.71***	-0.02***	-408.95***	0.001	49.98
	(0.01)	(88.83)	(0.01)	(85.14)	(0.003)	(65.41)
Spouse/Partner Present	-0.08***	-1316.17***	-0.19***	-4168.99***	-0.09***	-2311.48***
	(0.03)	(420.85)	(0.02)	(632.14)	(0.01)	(473.27)
Total Number of Children	0.004	169.74	0.07***	1313.09***	0.01**	210.87
	(0.01)	(195.92)	(0.01)	(166.12)	(0.01)	(132.47)
Number of Kids from Marriage	0.06***	1209.19***	-0.06***	-963.95***	0.01	113.73
	(0.02)	(215.43)	(0.01)	(214.92)	(0.01)	(153.58)
Grandmother's Education	0.003	7.92	-0.00003	-0.22	0.004	85.48*
	(0.005)	(66.64)	(0.004)	(66.39)	(0.003)	(49.84)
Grandmother's Education Missing	-0.15***	-2532.50**	-0.07	-1554.90*	-0.01	-124.93
	(0.05)	(1008.77)	(0.04)	(798.45)	(0.03)	(593.67)
Grandfather's Education	0.002	14.37	0.001	11.12	0.003	81.41*
	(0.01)	(59.95)	(0.004)	(62.71)	(0.002)	(44.54)
Grandfather's Education Missing	0.02	392.38	-0.03	-453.78	0.003	-142.67
	(0.05)	(602.28)	(0.03)	(556.44)	(0.02)	(411.13)
Any Siblings	-0.05	-469.98	-0.01	514.96	0.03	446.80
	(0.08)	(941.25)	(0.07)	(1075.38)	(0.03)	(692.49)
Number of Siblings	0.004	52.58	-0.003	-49.95	-0.01***	-167.22***
	(0.01)	(64.22)	(0.004)	(62.11)	(0.003)	(54.57)
County Unemployment Rate	-0.003	-88.13	0.01**	161.52**	0.004	79.78
	(0.01)	(76.36)	(0.01)	(76.01)	(0.003)	(57.74)
State Child Support Collections/Expenditures	0.01	157.14	-0.003	-21.63	-0.004	-107.40
	(0.01)	(113.41)	(0.01)	(116.75)	(0.01)	(88.26)
State Expenditures per Case (100's of $)	0.06	801.18	-0.02	15.25	-0.03	-866.84*
	(0.05)	(571.14)	(0.04)	(656.81)	(0.03)	(495.39)
Welfare Payment for a Family of 3 (100's of $)	-0.004	54.72	0.02**	706.87***	0.0003	68.56
	(0.01)	(166.76)	(0.01)	(167.61)	(0.01)	(124.95)
Guideline Amount (100's of $)	0.08**	1143.71**	-0.01	-173.38	0.01	-74.42
	(0.04)	(471.40)	(0.03)	(483.86)	(0.02)	(349.45)
Constant		-10854.08***		-4014.64		-4505.09**
		(2544.30)		(2580.64)		(1911.63)

Table 4. Instrumental Variables Tobit Models

	Amount Child Support	Amount Welfare Income	Amount Kin Support
Amount Welfare Income Received	0.54	-	-0.26
	(0.65)	-	(0.29)
Amount Child Support Received	-	-1.92***	-0.03
	-	(0.45)	(0.29)
Amount of Kin Support Received	-1.23	-0.30	-
	(2.78)	(2.41)	-
Mother's Highest Grade Completed	409.40***	-133.76	34.00
	(124.54)	(111.83)	(80.68)
Hispanic	-4044.52***	-1050.60	186.79
	(643.87)	(839.97)	(572.52)
Black	-3671.61***	-578.03	-250.47
	(548.30)	(877.03)	(595.63)
Other Race	-4187.61***	-1948.72	86.32
	(1578.80)	(1804.94)	(1118.82)
Spouse/Partner Present	-1121.41**	-4751.95***	-2408.50***
	(542.41)	(733.56)	(531.86)
Total Number of Children	-132.32	1356.23***	344.80*
	(379.62)	(187.67)	(187.59)
County Unemployment Rate	-112.86	62.77	83.89
	(81.28)	(81.22)	(60.03)
Grandmother's Education	-	-	84.21*
	-	-	(50.26)
Grandmother's Education Missing	-	-	-265.27
	-	-	(632.37)
Grandfather's Education	-	-	87.79*
	-	-	(45.32)
Grandfather's Education Missing	-	-	-151.90
	-	-	(414.19)
Have Any Siblings	-	-	490.18
	-	-	(706.43)
Number of Siblings	-	-	-168.78***
	-	-	(55.16)
State Child Support Collections/Expenditures	118.33	-	-
	(121.48)	-	-
State Expenditures per Case (100's of $)	456.38	-	-
	(673.10)	-	-
Guideline Amount (100's of $)	941.65*	-	-
	(499.25)	-	-
Number of Kids from Marriage	1376.03***	-	-
	(317.08)	-	-
Welfare Payment for a Family of 3 (100's of $)	-	917.54***	-
	-	(137.82)	-
Constant	-9875.15***	-4852.11***	-5857.25***
	(2392.55)	(1356.71)	(1309.00)

Figure 5. Types of Income Received: PSID - 1993

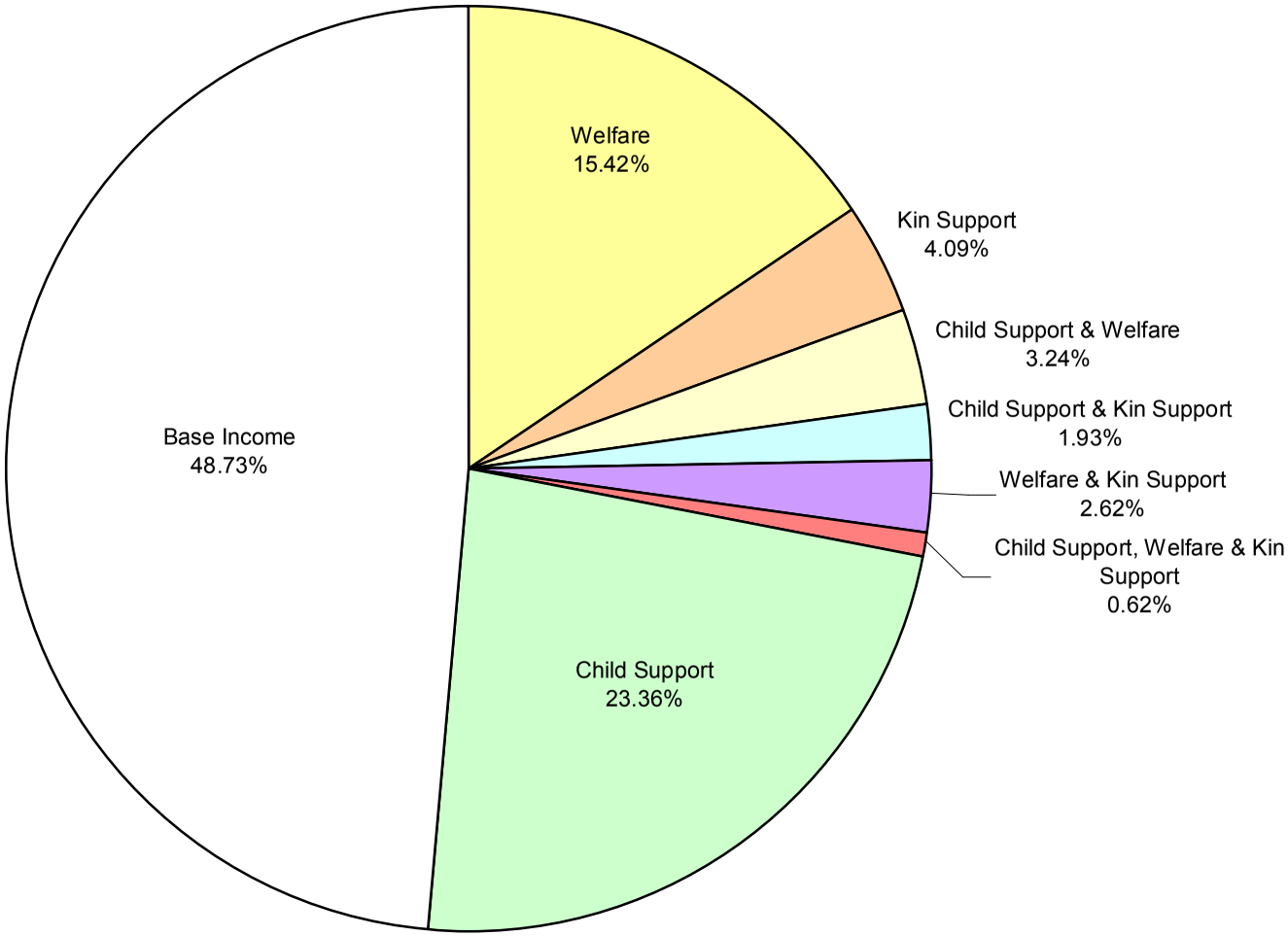
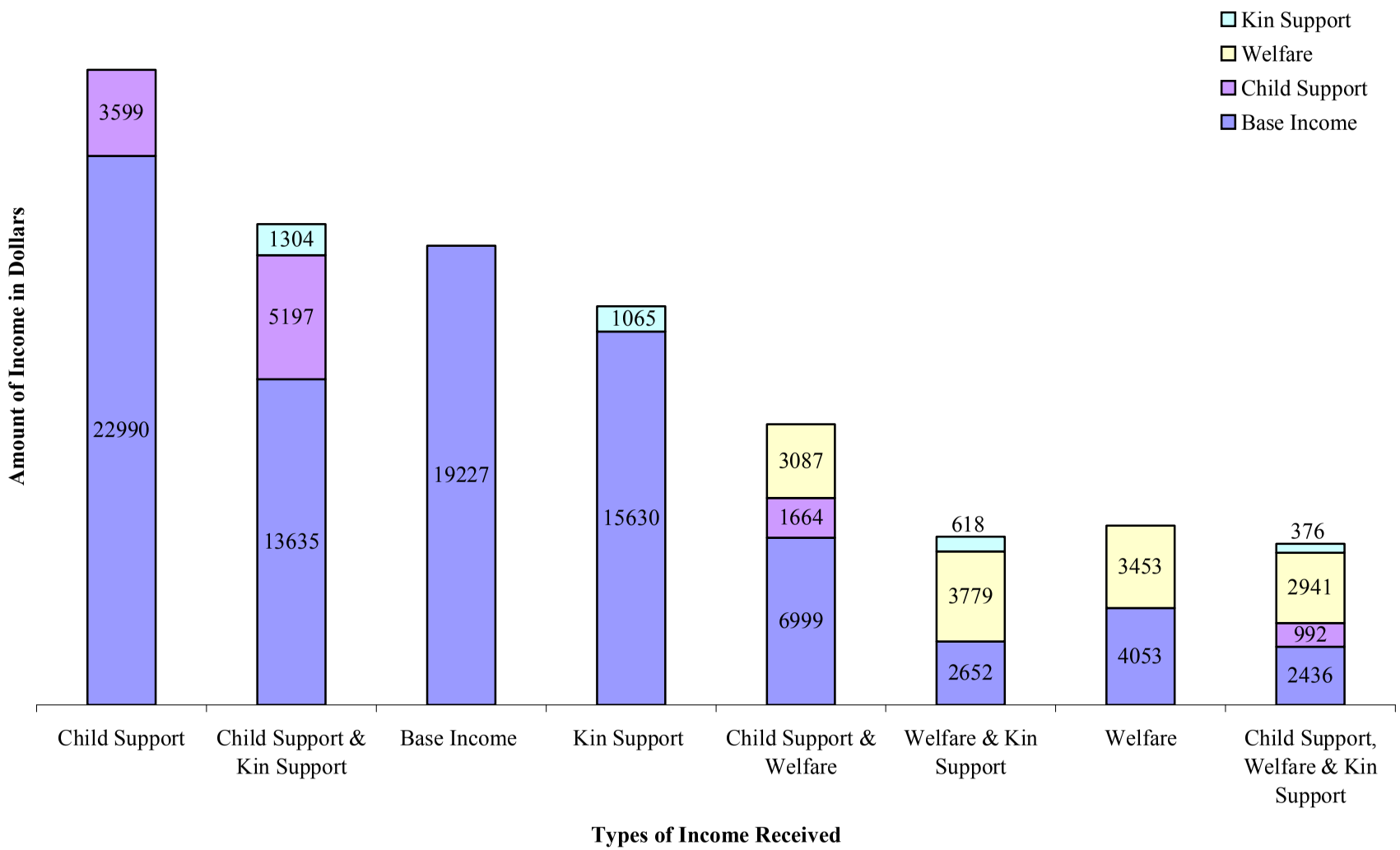


Figure 6. Components of Family Income: PSID – 1993

Figure 7. Components of Income for Female Headed Households: PSID – 1993



References

Argys, L.M. and H.E. Peters. (2004) "Can Adequate Child Support be Legislated? Responses to Guidelines and Enforcement" *Economic Inquiry*, 41(3): 463-479.

Argys, L.M. and H.E. Peters. (2001) "Interactions Between Unmarried Fathers and Their Children: The Role of Paternity Establishment and Child-Support Policies." *American Economic Review.* Vol. 91, No. 2, pp. 125-129.

Argys, L.M., H.E. Peters and D.W. Waldman. (2001) "Can the Family Support Act Put Some Life Back into Deadbeat Dads? An Analysis of Child-Support Guidelines, Award Rates and Levels." *Journal of Human Resources*, Vol. 36, No. 2, pp. 226-252.

Beller, A. H. and J. W. Graham. (1993) *Small Change: The Economics of Child Support*. New Haven, CT: Yale University Press.

Cox, D. and G.H. Jakubson. (1995) "The Connection Between Public Transfers and Private Interfamily Transfers." *Journal of Public Economics*. Vol. 57. pp. 129-167.

Garfinkel I. and P.K. Robins. (1994) "The Relationship Between Child Support Enforcement Tools and Child Support Outcomes." ." In *Child Support and Child Well-Being*, I. Garfinkel, S. McLanahan and P. K. Robins, eds. Washington, D.C. pp. 133-171.

Hao, L. (1994) *Kin Support, Welfare, and Out-of-Wedlock Mothers*. Garland Publishing Inc.: New York.

Hu, W., (1999) "Child Support, Welfare Dependency, and Women's Labor Supply." *Journal of Human Resources,* Vol. 34, No. 1, pp. 71-103.

Hutchens, R., G. Jakubson, and S. Schwartz. (1989) "AFDC and the Formation of Subfamilies." *Journal of Human Resources*. Vol. 24, No. 4. pp. 599-628.

McGarry, K. (1999) "Inter Vivos Transfers and Intended Bequests." *Journal of Public Economics*. Vol. 73. pp. 321-51.

McGarry, K. and R.F. Schoeni. (1995) "Transfer Behavior: Measurement and the Redistribution of Resource Within the Family." *Journal of Human Resources*. Vol. 30. Supplement. pp. S184-S226.

Robins, P.K. and K.P. Dickinson. (1985) "Child Support and Welfare Dependence: A Multinomial Analysis." *Demography*. Vol. 22, No. 3, pp. 367-380.

Rosenzweig, M.R. and K.I. Wolpin. (1994) "Parental and Public Transfers to Young Women and Their Children." *American Economic Review*. Vol. 84, No. 5, pp. 1195-1212.

Weiss, Y. and R. J. Willis. (1985) "Children as Collective Goods in Divorce Settlements." *Journal of Labor Economics.* Vol. 3, No. 3, pp. 268-292.