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Public Transfers and the Living Arrangements of the Elderly

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Abstract

This paper examines whether the public transfer program for low-income elderly individuals, Supplemental Security Income (SSI), displaces in-kind private support from their adult children in the form of shared living. My finding shows that a small trade-off exists between the public transfer, SSI, and the private support from the adult children among elderly individuals extracted from the Assets and Health Dynamics Among the Oldest Old Study. Specifically, my estimates indicate that a $1,000 increase in SSI annual benefits reduces the probability of shared living by 0.41 percent.

Keywords：

The elderly; Supplemental Security Income; Living arrangements

1．Introduction

Among elderly individuals, low-income elderly individuals rely heavily on both family members and government transfer programs for their basic living needs. Among elderly persons who are eligible for the public transfer to low-income elderly individuals in the Assets and Health Dynamics

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Among the Oldest Old Study (AHEAD), I find that 50 percent of them receive the public transfer. One third of these elderly persons also receive private transfer from their children that is mostly in the form of shared living. These figures show that public transfer and private transfer are important sources of support for low-income elderly persons.

An examination of how government transfers interact with private support from family members is needed. Counter to the intentions of the government transfer program, it may displace private support from family members of elderly individuals instead of supplementing it; as a result, the welfare of elderly persons might be worsened. However, few studies have examined this possibility.

This paper examines the extent to which the generosity of the public transfer to low-income elderly individuals, Supplemental Security Income (SSI), displaces the private support from their adult children in the form of shared living. To examine this hypothesis, I use the estimation method which is employed by Rosenzweig and Wolpin (1994). They have examined the extent to which the generosity of the public transfer to low-income young women with small children, Aid to Families with Dependent Children (AFDC), displaces the private support from their parents in the form of shared living and monetary transfer. Following their method, I first measure the effect of parents' non-welfare income on private support in the form of coresidence with their adult children among elderly parents who are not participating in SSI. I then use this effect as a proxy for the effect of a temporary increase in SSI benefits on coresidence among elderly parents who are participating in SSI.

My finding shows that a $1,000 increase in SSI annual benefits reduces the probability of coresidence by 0.41 percent among SSI participants. This

implies a small effect of the SSI program on coresidence with children for low-income elderly individuals.

Among the literature studying the effect of government policy on the living arrangements of elderly individuals, little attention has been paid to the effect of SSI on the living arrangements of elderly individuals.[1] Related studies in this field are highlighted below. Costa (1997) has examined the effect of the Union Army pension on living arrangements of retired Union Army veterans in 1910. Costa (1999) has examined the effect of Old Age Assistance (OAA) on living arrangements of older unmarried women in 1940 and 1950.[2] McGarry and Schoeni (1998) have studied the effect of the expansion in social security benefits and OAA/ SSI benefits on living arrangements among widows from 1940 to 1990, using the decennial censuses.[3] Engelhardt, Gruber, and Perry (2005) have examined the relationship between the change in social security benefits and the living arrangements among the elderly, including married and singles, using a sample drawn from the 1980s and 1990s. Hoerger, Picone, and Sloan (1996) have examined the effects of Medicaid reimbursement for nursing home care and subsidies for home health care on the elderly's living arrangements.

Moreover, among studies on the relationship between government policy and the living arrangements of elderly persons, except Hoerger et

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[1] See McGarry (1996) for SSI participation decisions, Neumark and Powers (1998) for the effect of SSI on saving decisions and Neumark and Powers (2000) for the effect of SSI on working decisions.

[2] Old Age Assistance was replaced by the SSI program in 1974.

[3] McGarry and Schoeni use the sum of two variables as a proxy for each respondent's income: (1) average social security benefits calculated by conditioning on age and race, and (2) maximum OAA/ SSI benefits available in each respondent's state of residence irrespective of his or her eligibility for OAA/ SSI.

al., little attention has been paid to adult children's income. Without the consideration of adult children's income, an endogeneity problem would arise. First, as Perozek (1998) discusses, adult children with higher earnings tend to live farther away from their parents. Second, the positive relationship between parents' income and adult children's income is likely to exist. Hence, the estimated effect of the parent's income on living arrangements will be biased downward without the consideration of adult children's income. The AHEAD study provides detailed information on adult children of elderly individuals. Therefore, my use of the AHEAD study enables me to avoid this endogeneity problem.

The plan of this paper is as follows. Section 2 provides a brief description of the SSI program. A description of the AHEAD data set is provided in Section 3. Section 4 consists of three parts. Section 4.1 identifies the candidate for coresidence among multiple children in a family. Empirical specifications of the parent's living arrangement and SSI program participation decisions are provided in Section 4.2. Estimation results are discussed in Section 4.3. This is followed by a section of concluding comments.

2．The SSI Program

The SSI program provides benefits to the blind, the disabled (irrespective of age), and the elderly (sixty-five and over). This paper focuses on the effect of the SSI program on low-income elderly individuals. The benefit amounts differ by marital status.[4] U.S. House of Representatives Committee on Ways and Means (1994) reports that the maximum federal benefits were $422 for singles and $633 for couples per month in 1993.

Each household's benefit is calculated as follows. If a household has no

income, the household receives the full benefit amount. On the other hand, if a household has any earned or unearned income or both, the benefit is given by the difference between the full benefit and countable income. The countable income is derived by subtracting disregards from the total income, where disregards are the first $20 of unearned income, the first $65 of earned income, and one-half of earned income that is greater than $65. Unearned income includes private pension, social security, and interest income. In addition, the value of in-kind assistance provided by federal or local government, such as food stamps, housing or social services, and home energy cost, are counted as disregards. None of means-tested transfer income, such as veteran's pensions, is disregarded.

Each household's SSI benefit per month is given by the following formula:

$$\begin{aligned}\text{Benefit} = \text{Max}\,[0,\ (G - 0.5 * \{&\text{earned income} - \text{Min}\,\{\text{earned income},\ \$65\}\}\\ &- \{\text{unearned income} - \text{Min}\,\{\text{unearned income},\ \$20\}\}\\ &- \{\text{means-tested transfer income}\})],\end{aligned}$$

where G denotes the maximum federal benefit per month, which is $422 for singles and $633 for couples in 1993. In addition to the federal benefit, 27 states (including the District of Columbia) provide a supplemental benefit with their own rules. The maximum amount of a state supplemental benefit ranges from $2 a month (Oregon) to $374 a month (Alaska) for singles and

[4] SSI benefits are decreased by one-third if an elderly person meets the four categories below: an elderly person who (1) does not own a home or does not rent herself, (2) does not buy food separately from the household members, (3) eats meals with the household members rather than eating meals out, and (4) does not pay a pro rata share of the household's food and shelter expenses. U.S. House of Representatives Committee on Ways and Means (1994) reports that 7% of SSI recipients in 1993 are subject to this one-third reduction rule.

from $9 a month (Hawaii) to $544 a month (Alaska) for couples among 27 states. The median state supplemental benefit is $31 a month for singles and $30 a month for couples.

In addition to the income test, there is an asset test. The asset test requires that countable assets be less than $2,000 for singles and $3,000 for couples. Countable assets are derived by subtracting disregards from total assets, where disregards are an owner occupied home regardless of its value, a car that is required for medical reasons or employment, and life insurance with a face value of less than $1,500.

3．AHEAD

As previously mentioned, 27 states provide a supplemental benefit in addition to the federal benefit. To determine eligibility for the SSI program, geographic identifiers are needed. Hence, to examine whether the generosity of the SSI program crowds out private support from their adult children, information on the characteristics of both elderly individuals and their adult children and information on the state of residence are needed. No one data set, however, meets all of these requirements.

Geographic identifiers in the AHEAD are restricted to those with a $25,000 or more federal grant; I do not have access to a state of residence. However, the AHEAD provides rich information on adult children of elderly individuals. In this study, I use a sample extracted from the AHEAD. The AHEAD is a nationally representative sample consisting of respondents born in 1923 or earlier. By the sample design of the AHEAD, all respondents are noninstitutional residents. For the analysis, I use Wave 1 (1993), which originally includes 8,222 respondents in 6,048 households. I restrict my sample to households in which respondents have at least one

child.

Detailed descriptive statistics on the parent's characteristics and the child's characteristics are reported in Section 4.2. One thing to note is that the rate of shared living with the child is 11.61 percent among married parents and 23.64 percent among unmarried parents. Unmarried parents are two times as likely to coreside with a child as married parents. Thus, I examine the question of whether the generosity of SSI benefits crowds out private support, using two samples: a sample consisting of married and unmarried parents and a sample consisting of unmarried parents only.

To divide a sample into those eligible for SSI and those ineligible for SSI, I use the federal criteria only, assuming no state supplemental benefits in 27 states. This leaves some respondents ineligible for SSI in my study, although they are actually eligible once a state supplemental benefit is considered. Thus, the eligibility bound in my study is lower than the one calculated by using both federal and state criteria. Table 1a reports that 7.07 percent of married and unmarried parent households are eligible for SSI. Table 1b shows a higher percent of eligible unmarried parent households, 10.26 percent.

McGarry (2000) has access to geographic identifiers in the AHEAD. McGarry reports that the percent of eligible households based on both federal and state criteria is 8.75, and the percent of eligible households based on federal criteria only is 7.04, using all households in the AHEAD irrespective of the parent's marital status and the number of children. Although my sample differs from the one in McGarry, given that the percent of eligible households are similar (7.07 percent in my study and 7.04 percent in McGarry), my use of federal criteria only seems a reasonable approximation of actual eligibility.

4．Empirical Specification and Estimation Results

The main goal of this paper is to examine whether the generosity of SSI benefits crowds out private support from family members in the form of coresidence. To answer this question, I need to calculate a potential SSI benefit for each individual in the AHEAD. As discussed before, information on the state of residence in the AHEAD is restricted to those with federal grants and therefore not available to this study. The lack of information on the state of residence prevents me from calculating the potential SSI benefits for each individual in the AHEAD. To overcome this difficulty, I follow the empirical specification which is used by Rosenzweig and Wolpin (1994).

Specifically, I examine the effect of an increase in parent's non-welfare income on coresidence. Those not participating in SSI are treated as a control group. This group is not influenced by the SSI program. Therefore, the response of coresidence to a change in non-welfare income among a control group reflects pure family response. Those participating in SSI are treated as a treatment group. An increase in their non-welfare income will decrease their SSI benefits since there is a tax of SSI benefits on non-welfare income. Therefore, the response of coresidence to a change in non-welfare income among a treatment group reflects adjustments to a change in SSI benefits. When I observe a difference of responses between these two groups, I propose that there is evidence for substitution between the generosity of SSI benefits and private support in the form of coresidence.

4.1 Identification of the Candidate for Coresidence

Before I examine the effect of the generosity of SSI benefits on private support, I need to identify the child who is likely to coreside with the parent

among multiple children. I assume that the parent sorts his or her children by their desirability to live with him or her, and that the parent picks the child with the highest desirability. Both biological children and stepchildren are included in this step in the estimation.

I identify the child who is likely to coreside with the parent as follows. First, using families with multiple children in which the parent lives with a child, I estimate a probability that the parent lives with each child. Second, using estimates of the first step, I identify the candidate for coresidence among families with multiple children in which the parent lives alone.

I assume that the parent i's value of living with *jth* child, $w(X_{ij})$, is given by:

$$w(X_{ij}) = X_{ij}\gamma + v_{ij},$$

where the observable component of $w(X_{ij})$ is linear in child's characteristics X_{ij} and the unobservable component of $w(X_{ij})$ is given by v_{ij}. The candidate for coresidence, k_i^*, is written as:

$$k_i^* = \underset{j\in\{1,2,\cdots,J\}}{\text{argmax}} \{ X_{ij}\gamma + v_{ij} \},$$

where J is the number of children.

To identify the candidate for coresidence, I create two subsamples among married and unmarried parent households: (1a) families with multiple children in which the parent lives with a child, 781 families and 2,981 children, and (1b) families with multiple children in which the parent lives alone, 3,119 families and 10,343 children. Similarly, I create two subsamples among unmarried parent households: (2a) families with multiple children in which the parent lives with a child, 547 families and 2,089 children, and (2b) families with multiple children in which the parent lives alone, 1,569 families and 5,100 children.

I assume that v_{ij} is given by:

$$v_{ij} = c_i + e_{ij},$$

where c_i is a family specific unobservable term, and e_{ij} is a child specific unobservable term. e_{ij} is assumed to be distributed identically and independently both across siblings within each family and across families and to follow a logistic distribution.

Given the assumption of v_{ij}, using the subsamples of families with multiple children in which the parent lives with a child, (1a) and (2a), I estimate a following equation by fixed effects logit model.

$$K_{ij} = X_{ij}\gamma + c_i + e_{ij} \qquad for\ i \in \{(1a),(2a)\},$$

where $K_{ij} \in \{1,0\}$, $K_{ij} = 1$ if the parent in family i lives with jth child and $K_{ij} = 0$ if the parent in family i lives away from jth child. X_{ij} is a 1×6 vector of jth child's characteristics in family i. As child's characteristics, I use years of schooling, age, an indicator for a daughter, marital status, the number of the child's children, and an indicator for a biological child.[5] As discussed by Stern (1995), the distance from the parent and the working status of children are clearly endogenous to the parent's living arrangements. Thus, I do not use these two variables as child's characteristics.

Table 2 reports the fixed effects logit estimates $\hat{\gamma}$ for married and unmarried parent households and for unmarried parent households. I find that children who are daughters, single, younger, and have a smaller number of children than average are significantly more likely to live with the parent. The coefficient on years of schooling is negative but insignificant for married and unmarried parent households, whereas the coefficient on years of schooling is positive and insignificant for unmarried parent households. One explanation for the insignificant coefficient on child's years

[5] Adopted children are treated as biological children.

of schooling from two samples is that the variation of years of schooling among siblings in each family is small.

To examine the validity of estimates, I make a comparison of the predicted coresident child and the actual coresident child among families with multiple children in which the parent lives with a child. The child with the highest predicted probability among siblings in each family is chosen as the predicted coresident child. Table 3a reports the comparison of the actual child and the predicted child for married and unmarried parent households. The estimates correctly identify the actual coresident child of 532 families among 781 families (68.12 percent of 781 families) and identify 88.68 percent of the actual non-resident children (1,951 children among 2,200 children). Overall, the estimates correctly identify 83.29 percent of the children's living arrangements.

Similarly, Table 3b reports the comparison for unmarried parent households. The estimates correctly identify the actual coresident child of 361 families among 547 families (66.00 percent of 547 families) and identify 87.94 percent of the actual non-resident children (1,356 children among 1,542 children). Overall, the estimates correctly identify 82.19 percent of the children's living arrangements. Note that the median number of children in each family is three for married and unmarried parent households, and for unmarried parent households. Suppose that I randomly choose a coresident child. Although a variation exists in the number of children across families, a correct identification of the actual coresident child will be made for roughly 33.33 percent.

Turning to families with multiple children in which the parent lives alone, subsamples (1b) and (2b), I identify the candidate for coresidence as follows. By calculating the predicted probability that the parent lives with

each child, I choose the child with the highest predicted probability among siblings in each family as the candidate for coresidence.

While which child is living with the parent is observable to us in subsamples (1a) and (2a), I use the predicted child as a candidate for coresidence for all families to be consistent with the underlying distribution of the child specific unobservable component e_{ik^*}. Note that the use of an actual coresident child implies that the selection of the candidate is made conditional on both the observable component $X_{ij}\hat{\gamma}$ and the unobservable component e_{ik^*}. Hence, e_{ik^*} is drawn from conditional distribution, g $(e_{ik^*} \mid e_{ik^*} \geq e_{ij} + X_{ij}\hat{\gamma} - X_{ik^*}\hat{\gamma})$ for j =1,.., J and $j \neq k^*$. The use of a predicted child, on the other hand, implies that the selection of the candidate is made conditional on only the observable component $X_{ij}\hat{\gamma}$. Hence, e_{ik^*} is drawn from an unconditional distribution.

Having identified the child who is most likely to live with the parent, I obtain a sample of 4,841 matched parent-child pairs for married and unmarried parent households, and a sample of 2,757 matched parent-child pairs for unmarried parent households.

4.2 Living Arrangement and SSI Program Participation Decisions

Household i faces the living arrangement decision as follows

$$Y_i^* = \alpha_1 X_i + \alpha_2 S_i + \alpha_3 X_i S_i + Z_i \alpha_4 + \varepsilon_i .$$

The elderly parent lives with the child if $Y_i^* > 0$ and lives alone otherwise. X_i is the parent's non-welfare income and S_i equals one if the parent participates in SSI and zero if doesn't participate in SSI. Vector Z_i includes the parent's other characteristics and the child's characteristics. ε_i is an unobserved component of the living arrangement decision.

When the unobserved component of the program participation decision

influences the living arrangement decision, the SSI participation will be endogenous to coresidence. To account for this endogeneity, I employ a recursive simultaneous equations model of the relationship between the living arrangement and the SSI participation.

Specifically, I add the following equation to determine SSI participation

$$S_i^* = \beta_1 E_i + \beta_2 X_i + Z_i \beta_3 + u_i.$$

As described above, SSI participation indicator S_i equals one if $S_i^* > 0$ and zero otherwise. SSI eligibility indicator E_i equals one if the parent is eligible for SSI and zero if the parent is ineligible for SSI. SSI eligibility is used as an instrumental variable for the SSI program participation. SSI eligibility is assumed to influence the participation decision but not to influence the living arrangement decision once the parent's non-welfare income and networth are controlled. u_i is an unobserved component of the SSI program participation decision.

(ε, u) is assumed to be independent of X, E, and Z, distributed as bivariate normal with mean zero, and to have unit variance. Correlation between ε and u is denoted by ρ. If $\rho \neq 0$, estimates $(\widehat{\alpha_1}, \widehat{\alpha_2}, \widehat{\alpha_3}, \widehat{\alpha_4})$ in probit regression of living arrangement will be inconsistent.

The parent's characteristics in Z_i include the parent's networth and demographic variables such as age, marital status, years of schooling, gender, and health status.[6] The child's characteristics in Z_i include years of schooling and demographic variables such as age, marital status, the

[6] To measure the parent's health status, I use the self-reported health status, the number of the activities of daily living (ADL) limitations, and the number of instrumental activities of daily living (IADL) limitations. Self-reported health status is constructed from the following question: "would you say your health is excellent, very good, good, fair, or poor?" I construct four health status dummies; the reference group consists of parents who report excellent.

child's number of children, gender, and an indicator for a biological child. In the AHEAD, the child's income (including his or her spouse, if present) is unavailable except when the child is coresident with his or her parent. To be consistent, I use the child's years of schooling as a proxy for the child's income for both coresident and non-resident child.

As discussed by Perozek (1998), more educated children tend to live farther away from their parents. At the same time, the positive relationship between the parent's income and the child's years of schooling is likely to exist. Without the consideration of adult child' years of schooling, an omitted variables problem arises; the estimated effect of the parent's income on living arrangement decisions will then be biased downward. To examine the relevance of the child's characteristics to the parent's living arrangement decisions, I estimate two specifications. The first specification includes parental characteristics only, excluding the child's characteristics in covariates. The second one includes both the parent's characteristics and the child's characteristics in covariates.

Table 4a reports descriptive statistics on the parent's characteristics and the child's characteristics for married and unmarried parent households. Note that self-reported health status is hump-shaped, with 10.5 percent of parents reporting excellent, 23.0 percent very good, 30.6 percent good, 23.0 percent fair, and 12.9 percent poor. Similarly, descriptive statistics for unmarried parent households are reported in Table 4b.

One thing to note is that among AHEAD respondents 1.19 percent of married parents and 3.80 percent of unmarried parents receive monetary transfer which is greater than $500 from their children in 1992. On the other hand, 11.61 percent of married parents and 23.64 percent of unmarried parents live together with their children in 1993, as previously

discussed. The number of observations is too small to derive the precise estimates for the alternative where elderly parents receive monetary transfer from their children and participate in SSI or the alternative where elderly parents receive monetary transfer and do not participate in SSI. Therefore, in this paper, the private support from family members is restricted to coresidence.

4.3 Estimation Results

Table 5a reports the bivariate probit model estimates for married and unmarried parent households and table 5b reports the estimates for unmarried parent households. With these estimates, I first make an inference of the effect of the generosity of SSI benefits on coresidence. I then discuss average partial effects (APEs) of some variables on living arrangement and the SSI program participation decisions.

To make an inference about the effect of the generosity of SSI benefits on private support from family members in the form of coresidence, consider an increase in a parent's non-welfare income by $1,000. Among those not participating in SSI, coresidence will be likely to decrease because of a pure income effect when the non-welfare income is increased. Among those participating in SSI, the increase in non-welfare income has two opposite effects. On the one hand, coresidence will be likely to decrease because of the pure income effect as in those not participating in SSI. On the other hand, coresidence will be likely to increase because of the tax of SSI benefits on non-welfare income. Therefore, the net effect of the increase in non-welfare income on coresidence is ambiguous among those participating in SSI. As long as the magnitude of decrease in coresidence among those not participating in SSI is larger than the magnitude of decrease in coresidence

among those participating in SSI, my research supports the thesis that there is evidence for substitution between the generosity of SSI benefits and private support from family members in the form of coresidence.

Among married and unmarried parent households not participating in SSI, private support in the form of coresidence decreases by 0.23 percent (from 17.31 percent to 17.27 percent) when the non-welfare income is increased by $1,000. On the other hand, among those participating in SSI, coresidence increases by 1.94 percent (from 32.33 percent to 32.96 percent) after a similar increase in non-welfare income. Turning to unmarried parent households, among those not participating in SSI, coresidence decreases by 0.54 percent (from 21.94 percent to 21.82 percent) after a similar increase in non-welfare income. In contrast, among those participating in SSI, coresidence increases by 2.61 percent (from 37.82 percent to 38.81 percent) after a similar increase in non-welfare income. Therefore, there is evidence for substitution between the generosity of SSI benefits and private support in the form of coresidence.

Moreover, as long as the further two assumptions are satisfied, I am able to make an additional inference about the effect of the generosity of SSI benefits on coresidence. First, the source of parent's income is irrelevant to the living arrangement decisions: a dollar increase in parent's non-welfare income is treated by the parent and the child as equivalent to a dollar increase in SSI benefits. Second, the effect of an increase in a parent's non-welfare income on coresidence is the same for all parent's income levels regardless of participation in SSI, when the amount of SSI benefits is held constant.[7] Under these two assumptions, the coefficient on non-welfare income in the probit regression of living arrangement among those not participating in SSI serves as a proxy for the effect of a temporary increase

in SSI benefits on coresidence among those participating in SSI.

Using the estimates among those not participating in SSI in the probit regression of living arrangement, I derive the predicted distributions of living arrangements among those participating in SSI. Among married and unmarried parent households participating in SSI, a $1,000 increase in SSI benefits decreases the probability of coresidence by 0.19 percent (from 31.55 percent to 31.49 percent). Once the child's characteristics are included, the probability of coresidence decreases by 0.15 percent (from 32.89 percent to 32.84 percent). Similarly, among unmarried parent households participating in SSI, a $1,000 increase in SSI benefits decreases the probability of coresidence by 0.44 percent (from 33.68 percent to 33.53 percent). Once the child's characteristics are included, the probability of coresidence decreases by 0.41 percent (from 33.45 percent to 33.31 percent). My result indicates that a small trade-off exists between public transfers to low-income elderly individuals and private support from their adult children in the form of coresidence. It also shows that the effect of the generosity of SSI benefits on private support will be overestimated if we do not take account of adult child's characteristics.

APEs reported in this subsection are evaluated at the sample mean characteristics. When elderly parents are unmarried, estimated APE shows a 7.2 percentage point increase in the likelihood of coresidence. When elderly parents have more care needs, measured by the number of IADL limitations from 1 to 2, the APE shows a 5.4 percentage point

[7] Rosenzweig and Wolpin report the following results to support this assumption. An increase in young daughters' non-welfare income decreases parental transfers among those ineligible for welfare, and an increase in young daughters' non-welfare income decreases parental transfers among those eligible for welfare, once welfare benefits controlled.

increase in the likelihood of coresidence for married and unmarried parent households and an 8.4 percentage point increase for unmarried parent households. When adult children are more educated, from 12 to 13 years of schooling, the APE shows a 1.0 percentage point decrease in the likelihood of coresidence for married and unmarried parent households and a 0.9 percentage point decrease for unmarried parent households.

Elderly parents whose children are more educated are significantly less likely to participate in the SSI program. Estimated APE shows a decrease in the likelihood of the SSI program participation by 8.5 percent when adult child is more educated (from 12 to 13 years of schooling). Given that years of schooling is used as a proxy for the income of adult children in this paper, this finding implies that the SSI participation is greater for elderly parents with low-income adult children than it is for elderly parents when their adult children have a higher income.

The estimated correlation coefficient $\hat{\rho}$ has a t-statistics of −0.32 for married and unmarried parent households and −0.86 for unmarried parent households. Therefore, I am unable to reject the null hypothesis that there is no correlation between the unobserved component of living arrangement and the unobserved component of the program participation.

Using the log-likelihoods from the two specifications, I test the null hypothesis that the adult child's characteristics, including an indicator for a biological child, years of schooling, marital status, gender, age, and their number of children, are irrelevant to the parent's living arrangement and SSI program participation decisions. The likelihood ratio statistics are 573.87 for married and unmarried parent households, and 291.18 for unmarried parent households. The likelihood ratio statistics from two samples exceed the upper 1 percent quantile of the χ^2_6 distribution. Hence,

these results indicate that including the child's characteristics is relevant to the parent's living arrangement and SSI program participation decisions.

5 . Conclusion

In this paper, I have examined whether the generosity of SSI benefits displaces private support from adult children in the form of coresidence. My estimates of a sample drawn from the AHEAD indicate that a small trade-off exists between the SSI program and coresidence with adult children. Specifically, my findings indicate that a $1,000 increase in annual SSI benefit decreases the probability of coresidence by 0.41 percent. Moreover, my simulation indicates that the effect of the generosity of SSI benefits on coresidence will be overestimated without the consideration of adult child's characteristics.

As discussed earlier, federal SSI benefits and state supplemental benefits in some states will be decreased by one-third when elderly persons live with others and do not own a home or do not rent themselves. In this study, I examine the effects of the generosity of SSI benefits on coresidence before this one-third rule is imposed.

Further research that incorporates this tax of SSI benefits on coresidence will require a state of residence. Access to geographic identifiers will enable me to take advantage of the variations in the amount of SSI benefits across states. I believe that future investigation will show that the implicit tax on coresidence will have two opposite effects: substitution effect and income effect. Coresidence will decrease because of a substitution effect. On the other hand, coresidence will increase because of an income effect. Therefore, the net effect of this implicit tax on coresidence will be ambiguous. Examining the net effect of this implicit tax is beyond the scope of this paper, but worthy of further research.

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Table 1a: Income and asset eligibility percent of married and unmarried parent households (N=4,841)

	Asset Test		
Income Test	Ineligible	Eligible	Total
Ineligible	69.41%	19.44%	88.85%
	(3,102)	(1,062)	(4,164)
Eligible	4.08%	7.07%	11.15%
	(214)	(463)	(677)
Total	73.49%	26.51%	100%
	(3,316)	(1,525)	(4,841)

Notes: Percentages are weighted figures. Number of households are unweighted.

Table 1b: Income and asset eligibility percent of unmarried parent household (N=2,757)

	Asset Test		
Income Test	Ineligible	Eligible	Total
Ineligible	60.22%	24.79%	85.01%
	(1,510)	(742)	(2,252)
Eligible	4.73%	10.26%	14.99%
	(135)	(370)	(505)
Total	64.95%	35.05%	100%
	(1,645)	(1,112)	(2,757)

Notes: Percentages are weighted figures. Number of households are unweighted.

Table 2: Fixed effect logit estimates, probability that the parent lives with each child among families with multiple children in which the parent lives with a child

Independent variable	Married and Unmarried Parent Households	Unmarried Parent Households
Child's age	−0.053***	−0.042***
	(0.009)	(0.010)
Child's years of schooling	−0.004	0.012
	(0.025)	(0.030)
Child's gender	0.133	0.382***
(Female=1)	(0.108)	(0.124)
Child's marital status	−2.377***	−2.178***
(Married=1)	(0.138)	(0.153)
Child's number of children	−0.142***	−0.109***
	(0.036)	(0.039)
1 (Biological child)	0.796	1.101
	(0.540)	(0.767)
Log likelihood	−676.082	−501.595

Notes: *** denotes significance at 1%, ** at 5%, and * at 10%. Asymptotic standard errors are in parentheses.

Table 3a: Comparison of actual and predicted coresident child among married and unmarried parent households (781 Families and 2,981 Children)

		Predicted		
		Live together	Live away	Total
Actual	Live together	532	249	781
		(68.12%)	(31.88%)	(100%)
	Live away	249	1,951	2,200
		(11.32%)	(88.68%)	(100%)
	Total	781	2,200	2,981

Table 3b: Comparison of actual and predicted coresident child among unmarried parent households (547 Families and 2,089 Children)

		Predicted		
		Live together	Live away	Total
Actual	Live together	361	186	547
		(66.00%)	(34.00%)	(100%)
	Live away	186	1,356	1,542
		(12.06%)	(87.94%)	(100%)
	Total	547	1,542	2,089

Table 4a: Descriptive statistics on parent's and child's characteristics among married and unmarried parent households (N=4,841)

Variable	Mean	S.D.	Minimum	Maximum
Parent's characteristics				
Non-welfare income	20878.300	27454.930	0.000	700000.000
Networth	165710.800	383180.100	−285000.000	14700000.000
1 (Married)	0.430	0.495	0.000	1.000
Age	77.626	6.024	70.000	103.000
Years of schooling	10.720	3.748	0.000	17.000
Self-reported health status (Very good = 1)	0.230	0.420	0.000	1.000
Self-reported health status (Good = 1)	0.306	0.460	0.000	1.000
Self-reported health status (Fair = 1)	0.230	0.420	0.000	1.000
Self-reported health status (Poor = 1)	0.129	0.335	0.000	1.000
1 (Living in South)	0.388	0.487	0.000	1.000
1 (Non-white)	0.134	0.341	0.000	1.000
1 (Female)	0.579	0.493	0.000	1.000
Number of IADL limitations	0.581	1.133	0.000	5.000
Number of ADL limitations	0.691	1.350	0.000	6.000
Number of children	2.963	1.887	1.000	12.000
Child's characteristics				
1 (Daughter)	0.552	0.497	0.000	1.000
1(Married)	0.449	0.497	0.000	1.000
Age	46.069	9.413	25.000	82.000
Years of schooling	13.416	2.669	0.000	17.000
Number of children	1.585	1.471	0.000	14.000
1 (Biological Child)	0.899	0.300	0.000	1.000

Table 4b: Descriptive statistics on parent's and child's characteristics among unmarried parent households (N=2,757)

Variable	Mean	S.D.	Minimum	Maximum
Parent's characteristics				
Non-welfare income	14435.000	17646.020	0.000	400000.000
Networth	104297.200	223257.200	−139898.000	5304000.000
Age	78.874	6.323	70.000	103.000
Years of schooling	10.310	3.707	0.000	17.000
Self-reported health status (Very good = 1)	0.213	0.409	0.000	1.000
Self-reported health status (Good = 1)	0.303	0.459	0.000	1.000
Self-reported health status (Fair = 1)	0.240	0.427	0.000	1.000
Self-reported health status (Poor = 1)	0.143	0.350	0.000	1.000
1 (Living in South)	0.401	0.490	0.000	1.000
1 (Non-white)	0.168	0.374	0.000	1.000
1 (Female)	0.806	0.395	0.000	1.000
Number of IADL limitations	0.654	1.210	0.000	5.000
Number of ADL limitations	0.852	1.464	0.000	6.000
Number of children	2.860	1.914	1.000	12.000
Child's characteristics				
1 (Daughter)	0.627	0.483	0.000	1.000
1(Married)	0.444	0.497	0.000	1.000
Age	48.569	9.513	25.000	82.000
Years of schooling	13.219	2.693	0.000	17.000
Number of children	1.768	1.558	0.000	13.000
1 (Biological Child)	0.969	0.172	0.000	1.000

Table 5a: Bivariate probit model estimates
among married and unmarried parent households (N=4,841)

	With child characteristics		Without child characteristics	
	Coresidence	SSI participation	Coresidence	SSI participation
Independent variable				
Constant	−1.705***	−0.626	−0.856**	−0.558
	(0.420)	(0.676)	(0.353)	(0.619)
Parent's characteristics				
1 (SSI participation)	−0.139	-	−0.076	-
	(0.160)		(0.155)	
1 (SSI participation)	2.405*	-	2.444*	-
×Non-welfare income	(1.259)		(1.289)	
($\times 10^{-5}$)				
Non-welfare income	−0.201	−3.551***	−0.177	−3.628***
($\times 10^{-5}$)	(0.136)	(1.357)	(0.136)	(1.359)
1 (SSI eligible)	-	1.078***	-	1.086***
		(0.116)		(0.115)
Networth	−0.205*	−3.819***	−0.183*	−4.006***
($\times 10^{-6}$)	(0.116)	(1.218)	(0.100)	(1.223)
1 (Married)	−0.360***	0.078	−0.422***	0.031
	(0.063)	(0.109)	(0.057)	(0.104)
Age	0.325***	−0.110	−0.011	−0.133**
($\times 10^{-1}$)	(0.052)	(0.079)	(0.040)	(0.066)
Years of schooling	−0.150*	−0.464***	−0.152**	−0.557***
($\times 10^{-1}$)	(0.080)	(0.117)	(0.071)	(0.110)
Self-reported health	0.150	0.235	0.076	0.241
status (Very Good = 1)	(0.093)	(0.180)	(0.085)	(0.180)
Self-reported health	0.061	0.390**	0.000	0.395**
status (Good = 1)	(0.090)	(0.165)	(0.082)	(0.165)
Self-reported health	0.128	0.443***	0.011	0.462***
status (Fair = 1)	(0.095)	(0.165)	(0.086)	(0.165)
Self-reported health	0.092	0.552***	0.019	0.579***
status (Poor = 1)	(0.110)	(0.174)	(0.099)	(0.174)

1 (Living in South)	−0.070	0.073	−0.112**	0.083
	(0.050)	(0.072)	(0.046)	(0.071)
1 (Non-white)	0.263***	0.243***	0.389***	0.233***
	(0.069)	(0.087)	(0.062)	(0.083)
1 (Female)	0.083	0.449***	−0.039	0.453***
	(0.061)	(0.097)	(0.055)	(0.092)
# of IADL limitations	0.215***	0.014	0.212***	0.018
	(0.027)	(0.036)	(0.024)	(0.036)
# of ADL limitations	−0.012	−0.002	−0.010	−0.004
	(0.022)	(0.031)	(0.020)	(0.031)
Number of children	−0.051	0.486***	0.849***	0.521***
($\times 10^{-1}$)	(0.134)	(0.182)	(0.114)	(0.161)
Child's characteristics				
1 (Daughter)	−0.150***	−0.041		
	(0.048)	(0.074)		
1 (Married)	−0.878***	−0.056		
	(0.057)	(0.084)		
Age	−0.247***	−0.020		
($\times 10^{-1}$)	(0.035)	(0.050)		
Years of schooling	−0.499***	−0.325**		
($\times 10^{-1}$)	(0.097)	(0.147)		
Number of children	−0.141***	0.029		
($\times 10^{-1}$)	(0.021)	(0.022)		
1 (Biological child)	0.757	0.321**		
	(0.117)	(0.157)		
	$\rho = -0.032$		$\rho = -0.056$	
	(0.100)		(0.105)	
Log likelihood	−2531.134		−2818.074	

Notes: *** denotes significance at 1%, ** at 5%, and * at 10%. Asymptotic standard errors are in parentheses.

Table 5b: Bivariate probit model estimates
among unmarried parent households (N=2,757)

	With child characteristics		Without child characteristics	
	Coresidence	SSI participation	Coresidence	SSI participation
Independent variable				
Constant	−1.813***	−0.819	−1.207***	−0.906
	(0.525)	(0.785)	(0.427)	(0.692)
Parent's characteristics				
1 (SSI participation)	−0.027	-	−0.048	-
	(0.183)		(0.182)	
1 (SSI participation)	3.710***	-	3.252**	-
×Non-welfare income	(1.432)		(1.387)	
($\times 10^{-5}$)				
Non-welfare income	−0.473*	−2.369*	−0.456*	−2.428*
($\times 10^{-5}$)	(0.272)	(1.424)	(0.259)	(1.441)
1 (SSI eligible)	-	1.112***	-	1.115***
		(0.123)		(0.124)
Networth	−0.105	−3.578**	−0.075	−3.742**
($\times 10^{-6}$)	(0.157)	(1.522)	(0.138)	(1.545)
Age	0.278***	−0.090	0.023	−0.120
($\times 10^{-1}$)	(0.062)	(0.089)	(0.048)	(0.075)
Years of schooling	−0.071	−0.574***	−0.075	−0.649***
($\times 10^{-1}$)	(0.099)	(0.133)	(0.090)	(0.127)
Self-reported health	0.107	0.181	0.064	0.194
status (Very Good = 1)	(0.114)	(0.204)	(0.106)	(0.203)
Self-reported health	0.000	0.328*	−0.019	0.342*
status (Good = 1)	(0.109)	(0.186)	(0.102)	(0.185)
Self-reported health	0.044	0.393**	−0.030	0.425**
status (Fair = 1)	(0.117)	(0.188)	(0.107)	(0.187)
Self-reported health	0.023	0.530***	0.003	0.566***
status (Poor = 1)	(0.131)	(0.196)	(0.121)	(0.196)
1 (Living in South)	−0.003	0.128	−0.028	0.142*
	(0.061)	(0.080)	(0.057)	(0.080)

1 (Non-white)	0.198**	0.356***	0.363***	0.356***
	(0.081)	(0.097)	(0.075)	(0.092)
1 (Female)	0.011	0.679***	−0.056	0.678***
	(0.080)	(0.140)	(0.073)	(0.135)
# of IADL limitations	0.259***	−0.009	0.256***	−0.009
	(0.033)	(0.040)	(0.030)	(0.040)
# of ADL limitations	−0.024	0.022	−0.026	0.018
	(0.026)	(0.034)	(0.025)	(0.034)
Number of children	0.030	0.483**	0.857***	0.487**
($\times 10^{-1}$)	(0.162)	(0.215)	(0.143)	(0.190)
Child's characteristics				
1 (Daughter)	−0.077	−0.072		
	(0.060)	(0.087)		
1 (Married)	−0.854***	0.000		
	(0.067)	(0.096)		
Age	−0.193***	−0.041		
($\times 10^{-1}$)	(0.043)	(0.056)		
Years of schooling	−0.314***	−0.238		
($\times 10^{-1}$)	(0.119)	(0.162)		
Number of children	−0.102***	0.034		
($\times 10^{-1}$)	(0.022)	(0.025)		
1 (Biological child)	0.631***	0.107		
	(0.219)	(0.253)		
	$\rho = -0.095$		$\rho = -0.077$	
	(0.110)		(0.116)	
Log likelihood	−1796.755		−1942.349	

Notes: *** denotes significance at 1%, ** at 5%, and * at 10%. Asymptotic standard errors are in parentheses.