Transitions to Adulthood of Children in Subsidized Housing

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Abstract

The timing and circumstances of leaving home are an important part of the status attainment process. To the extent that early transitions interfere with investments in education or hasten the assumption of family roles, these patterns can contribute to the intergenerational transmission of poverty and disadvantage. My project is a detailed examination of how children who grew up in subsidized housing make the transition to adulthood. I use the counterfactual approach to causal inference to statistically match children who grew up in subsidized housing to ones who are similar on observable characteristics but did not live in subsidized housing. I find that the effects of subsidized housing vary by the race and gender of the child in that subsidized housing accelerates the establishment of an independent household and the first birth for black girls only. I also find that children who grew up in subsidized housing during any age in childhood are much more likely to remain in subsidized housing as adults. By analyzing how government support in childhood interacts with the transitions of children into adulthood, this project sheds light on whether federal policies aimed at supporting poor families hinder the upward mobility of children.

Early adulthood is a demographically dense period characterized by multiple short-spaced transitions to higher education, marriage, parenthood, employment and independent living. It is a period when young adults "[try] out various life possibilities and gradually [move] toward making enduring decisions" (Arnett 2000, 473). However, the life circumstances of many young people may compel them to adopt adult roles at earlier ages or limit the types of transitions they can make (Keller et al. 2007). The timing and order of assuming adult responsibilities are can set in place trajectories that are difficult to reverse, and thus, can have long-term consequences for individual wellbeing. This project examines how children who grew up in subsidized housing make the leap to adulthood and the extent to which they return to the subsidized housing program as adults.

A persistent controversy in academic and policy circles has been whether government programs aimed at helping the poor undermine the upward mobility of those who receive assistance. The importance of the issue can hardly be overstated, especially when it concerns the federal subsidized housing program. There are roughly 2 million families with children in subsidized housing; median length of stay for these families is about 3 years, but lengths of stay up to 25 years occur (Lubell et al. 2003). Therefore, it is important to know if the subsidized housing program is not only helping to meet shelter needs, but also does not hinder the educational, economic and marriage prospects of children who grow up in subsidized housing.

My project is a detailed examination of how children who grew up in subsidized housing make the transition to adulthood. Specifically, I estimate the effect of subsidized housing on the timing of first marriage, first birth, and the establishment of an independent household. I also asses whether living in subsidized housing makes children less likely to complete high school, continue their education after high school, and complete college and more likely to live in

subsidized housing after age 18. I use the counterfactual approach to causal inference to statistically match children who grew up in subsidized housing to ones who are similar on observable characteristics but did not live in subsidized housing. I use these "treatment" and "control" groups to derive race- and gender-specific estimates of the effect of subsidized housing on the transition to adulthood. I also assess whether these effects vary by the stage in childhood when the stay in subsidized housing occurred, i.e. early childhood, middle childhood or adolescence.

I find that subsidized housing accelerates the establishment of an independent household only for black girls who were in subsidized housing between the ages of 6 and 11 and 12 and 17. It also accelerates the first birth of black girls who were in subsidized housing between the ages of 6 and 11. The most consistent finding in my paper, however, is that children who grew up in subsidized housing during any age in childhood are also much more likely to remain in subsidized housing as adults. If the subsidized housing program is indeed reproducing itself to a high degree and if subsidized units continue to be located in some of the poorest and socially marginalized inner-city neighborhoods, the program may be creating a persistent marginalized population that is not able to transmit the needed human and social capital to the next generation so that it would not need further government assistance.

Determinants of the Timing and Pathways out of the Parental Home

Non-traditional family arrangements as well as low socioeconomic status accelerate the transitions out of the parental home. First, children in stepfamilies (White and Booth 1985) and single-parent families (Bianchi 1987, Mitchell, Wister, and Burch 1989, Aquilino 1991, Goldscheider and Goldscheider 1993) leave the nest sooner than children who live with both

biological parents. The differences between children in two-parent families versus those who grew up with other living arrangements is particularly large when it comes to leaving home to attend college. (Goldscheider and Goldscheider 1998). Growing up in a variety of alternative family arrangements decreases the likelihood of leaving home via college attendance and increases the likelihood of leaving early, especially to independence and marriage (Goldscheider and Goldscheider 1998). Nevertheless, among children who do not leave home to attend college, delayed home leaving and a period of premarital residential independence are associated with higher educational attainment (White and Lacy 1997).

Second, children from more affluent homes leave the nest later (Bianchi 1987) and marry later (Goldscheider and DaVanzo 1989, Michael and Tuma 1985) than less affluent children. This shows that parents could use their income to retard very early departures of their children and to deter the youngest adults' from leaving via marriage (Avery, Goldscheider and Speare 1992). Leaving home early while not being well prepared to enter the labor force or at the expense of additional educational attainment may restrict the future options of young adults especially with respect to career and family formation (Goldscheider and Goldscheider 1998).

Gender and race also have discernible effects on the timing and pathways out of the family home independent of family circumstances. Women leave the nest earlier than men, with most differentials stemming from women's earlier age at marriage (Goldscheider and DaVanzo 1985, DaVanzo and Goldscheider 1990). Girls with a stepparent and stepsiblings are more likely to establish early residential independence than girls from intact families (Aquilino 1991). Unmarried mothers, however, are much more likely to live with their parents than unmarried fathers (Goldscheider and DaVanzo 1985, Aquilino 1991). Blacks are less likely and Asians are

much less likely than whites to be home leavers, with the differentials for blacks largely attributable to lower likelihoods of leaving for marriage (Goldscheider and DaVanzo 1989).

Nevertheless, parental resources, gender and race are only part of the determinants of leaving home. Housing costs (Christian 1989, Haurin, Hendershott and Kim 1993, Whittington and Peters 1996), job opportunities (Whittington and Peters 1996) and for women the extent of government-provided cash assistance (Ellwood and Bane 1995) affect when and how children transition to adulthood. First, children are more likely to live outside their parents' homes if rents are lower and wage opportunities higher (Haurin et al. 1992). Second, higher welfare benefits reduce the likelihood of a single mother living with her parents (Ellwood and Bane 1985, Hutchens et al. 1989). In fact, the growth of Aid to Families with Dependent Children (AFDC) may have had as much an impact on the increase in the proportion of those ages 15 to 24 who head their own households between 1961 and 1979 as the growth in real wages (Kent 1992).

Welfare and Children's Well-Being

Given the relationship between poverty and leaving home early especially for reasons other than education, one might expect that children whose parents received some form of welfare benefits would follow the paths out of the home that poor children usually take. For example, parental welfare receipt has a negative effect on children's educational attainment, regardless of race and gender, especially for children whose mothers received welfare payments when the child was an adolescent (Ku 2001). Teens whose mothers received welfare are more likely to give birth out of wedlock and receive welfare themselves (An et al. 1993). More generally, growing up poor makes children twice as likely to drop out of high school, 1.3 times more likely to have emotional or behavioral problems and three times more likely to have a

teenage non-marital birth (Brooks-Gunn & Duncan 1997). Receiving welfare does not seem to break the cycle of the intergenerational transmission of poverty. Growing up poor has a negative impact upon the development of human capital, which in turn places individuals at a greater risk of needing aid from public assistance programs at some point later in life (Rank and Cheng 1995).

Nevertheless, there is some evidence that increasing welfare benefits leads to an increase in children's educational attainment, boosting the likelihood that a child would complete 1 to 4 years of college (Butler 1990). In this case, rather than creating a detrimental environment for children, welfare income is used by the family for investment in the human capital of the next generation similarly to other sources of income (Butler 1990). This finding is consistent with Becker's "Treatise on the Family" where he posits that parents invest in their children's human capital as they expect to reap high economic and psychic rewards from that investment later in life (Becker 1981). It is also consistent with the contention that rather than undermining the children's self-esteem and control over their lives, adequate welfare levels provide a floor of income security and allow the family to focus on the future rather than worry about daily expenses (Perlman 1960, Butler 1990).

Subsidized Housing and Children's Transitions to Adulthood

Given the mostly negative effects of growing up poor and receiving welfare benefits on children's future life chances as well as the accelerated departures out of the home for children from disadvantaged backgrounds outlined above, how does subsidized housing influence the decision of children to leave the parental nest?

First, compared to all income-eligible renters, subsidized households are more likely to have lower levels of education, to be female-headed, and to rely on income from Social Security, TANF, SSI and Food Stamps (HUD 2008). Therefore, given their more disadvantaged socioeconomic backgrounds, children in subsidized housing may leave the parental home at a younger age. Second, subsidized housing residents are less likely to experience overcrowding, more likely to stay in their apartments longer and more likely to have access to better housing quality than they would otherwise enjoy in the private market (HUD 2008, Newman and Schnare 1997). Moreover, receipt of project-based assistance is associated with large decreases in rent burden and modest decreases in paying utilities (Berger et al. 2008). Therefore, as subsidized tenants are less likely to suffer from overcrowding and about as likely to report housing quality deficiencies as the income-eligible population, children may not be compelled to move out at the first available opportunity due to physical inadequacies in their parents' homes (HUD 2008). Moreover, as subsidized households are more residentially stable than other income-eligible renters, children need not face the disruption of moving, adjusting to new schools and finding new friends (Newman 2008). Lastly, as rents in subsidized housing are lower than rents in the private sector, parents may have relatively more disposable income to invest in their children possibly cushioning the transition out of the family home (Newman 2008). In fact, children in subsidized housing are less likely to have been held back in school (Currie and Yelowitz 2000), less likely to be undernourished (Meyers et al., 1995, 2005), and more likely to be working and less likely to receive welfare as adults (Newman and Harkness 2002) compared to children of similar socioeconomic backgrounds who did not grow up in subsidized housing. These findings suggest that some of the negative effects of growing up in a poor family may be mitigated by access to stable, not overcrowded and structurally sound housing.

Nevertheless, results from Britain show that children of public housing tenants compared to children of renters and home-owners experience most transitions to adulthood faster (Kneale and Sigle-Rushton 2010). They not only become parents sooner but also are more likely to stop their education at an earlier phase (Kneale and Sigle-Rushton 2010). The beneficial aspects of public housing do not work through investments in education but through the parents' ability to provide housing in kind, especially for their sons (Kneale and Sigle-Rushton 2010). The negative effects of subsidized housing appear to be concentrated in more recent cohorts as the subsidized housing sector in Britain has become smaller and more focused on the most disadvantaged (Lupton et al. 2009). Therefore, the transition of the housing program to serving poorer households over time counteracted the beneficial effects of housing quality and stability and sped up children's nest leaving process (Kneale and Sigle-Rushton 2010).

A related question regarding the process by which children in subsidized housing transition to adulthood is whether they move out of the subsidized program at all or return to it at some later point. Ethnographic evidence captures many families that have been in subsidized housing for generations (Venkatesh 2002), however, it is not clear whether this is a feature of the subsidized program as a whole or only of the most distressed public housing projects. As public housing is far more likely to be located in racially segregated areas with high concentrations of households in poverty and high proportions of males who are not regularly employed (Newman and Schnare 1997), the passing-down of subsidized housing status goes hand-in-hand with the intergenerational transmission of disadvantaged neighborhood environments. The negative effects of prolonged exposure to poor neighborhoods not only manifest themselves within the same generation but also can propagate across generations (Sharkey and Elwert 2010). If the subsidized housing program is reproducing itself by elevating the risk of children reentering the

program as adults and if subsidized units continue to be located in some of the poorest and socially marginalized inner-city neighborhoods, the program may be creating a persistent marginalized population that is not able to transmit the needed human and social capital to the next generation so that it would not need further government assistance.

Research Model and Hypotheses

This paper will specifically model the transitions to adulthood of children who have lived in subsidized housing before age 18 as well as their probability of staying or re-entering subsidized housing after age 18. There is growing evidence to suggest that children who live in subsidized housing are better off than their counterparts in the private market when it comes to grade retention in adolescence and employment status and earnings later in life (Currie and Yelowitz 2000, Newman and Harkness 2002). One mechanism through which the beneficial effects of subsidized housing might manifest themselves in adult outcomes is through the timing and types of transitions that children make at the juncture of entering adulthood. Therefore, by looking at the timing of exiting the parental home as well as the modes through which subsidized housing children make that exit, this paper will shed light on the mechanisms through which government welfare program might cushion the transition to adulthood. At the same time, by examining the frequency with which children return to the subsidized housing program as adults, this paper will answer the question of whether the program has any tendency to reproduce itself.

First, I hypothesize that given the disadvantaged status of families in the subsidized housing program, children would experience most transitions to adulthood at an early age. Second, I hypothesize that subsidized housing may postpone some of the transitions to adulthood, especially when it comes to establishing an independent residence. Third, I

hypothesize that being in subsidized housing as a child elevates the risk of utilizing the program as an adult.

Methods

I explore the following transitions to adulthood: (a) first marriage, (b) first birth, (c) establishing an independent household, (d) high school completion, (e) continuing education after high school, (f) college completion, and (g) living in subsidized housing after age 18. I compare these transitions to adulthood between children who were in subsidized housing between ages 2 through 5, ages 6 though 11 and ages 12 through 17 to the transitions to adulthood of children who did not live in subsidized housing across these age periods. I select children who entered the PSID at birth for the analysis for ages 2 through 5, who entered the PSID before age 3 for the analysis for ages 6 through 11 and before age 9 for the analysis of ages 12 through 17. In addition, I only include children who were at least 25 years old in 2007 and did not attrit from the survey before they reached 25. I have chosen to only examine the transitions to adulthood of children who have at least reached 25, as these respondents would have had sufficient time to experience most transitions while still under observation in the survey.

In order to estimate the comparisons in my analysis, I use the potential outcome approach in which the effect of subsidized housing is defined as the difference between the two potential outcomes in the "treatment" (in subsidized housing) and "control" (not in subsidized housing) groups (Morgan and Winship 2007, Heckman 2005, Imbens 2004, Rubin 1974). This amounts to asking whether children who lived in subsidized housing across the different age periods in childhood would have had different transitions to adulthood had they not lived in subsidized housing. The potential outcome approach to estimating the effect of living in subsidized housing

is meant to address the fundamental problem of causal inference. The problem stems from the

impossibility to observe the same child experience both the "treatment" and "control" conditions

(Holland 1986). The main limitation of the potential outcome approach is the assumption of

"ignorability" or "selection on observables." This assumption states that conditional on the set of

pre‑treatment observable covariates, there are no additional confounders between children who

grew up in subsidized housing and ones who did not. While this is an assumption, which is

impossible to verify in practice, my dataset provides me with a set of pre-treatment covariates

that allow me to create "treatment" and "control" groups that are statistically similar on observed

characteristics.

My analysis proceeds in two steps. First, I estimate the probability of being in subsidized

housing between ages 2 and 5, ages 6 and 11 and ages 12 and 17 based upon a set of pre-

treatment observed socioeconomic covariates. I obtain these probabilities using a probit

regression of the following form:

$$P = p(d_i = 1 \mid X) = \Phi \left(\Sigma^K_{k=0} \left(\beta_k X_{ik} \right), \right. \tag{1}$$

where P is the propensity score; d_i indicates whether or not individual i is in subsidized housing;

and X represents a vector of observed socieconomic covariates lagged with respect to the

treatment period in childhood. I estimate separate probit models by race to compute the

probability of being in subsidized housing respectively between ages 2 and 5, ages 6 and 11 and

ages 12 and 17. The covariates for the first model are evaluated at birth, for the second model at

age 3 and for the third model at age 9.

The procedure described above creates three separate treatment effects that depend on the

different ages over childhood that individuals can be in subsidized housing, i.e. early childhood

(ages 2-5), middle childhood (ages 6-11) and adolescence (ages 12-17). Treatment in childhood

can occur in none, any or all of the three periods. The controls include all those children who do not experience the treatment during a childhood period regardless of whether they experience the treatment in prior or subsequent periods.

Second, I estimate the effects of subsidized housing on first birth, first marriage, and establishing an independent household using discrete-time event history analysis. The conditional probability of each of these outcomes at time t is the discrete-time hazard rate:

$$ln\ (f_{it}\ /\ 1\text{-}f_{it}\ )\ = \alpha_t + \delta d_i\ + \beta Pi\ +\ \lambda_1 A_{it} + \lambda_2 A_{it}^2,\ (5),\qquad\qquad (2)$$

where f_{it} is a binary variable equal to 1 if the outcome occurs to the ith observation at time t and 0 otherwise; d_i indicates whether or not individual i was in subsidized housing during the relevant childhood period; P_i represents the propensity for being in subsidized housing as estimated by equation (1); and A indicates age. The parameter δ is the average effect of subsidized housing. For simplicity, I only condition on the propensity score P as a function of X rather than X itself, as work by Rosenbaum and Rubin (1983, 1984) demonstrates that it is sufficient to only use the propensity score as opposed to the whole vector of observables that go into the estimation of the propensity score.

Third, I estimate unadjusted differences in the probability of high school completion, continuing education after high school, college completion, and living in subsidized housing after age 18 and compare these to kernel matching estimates where children are matched according to their propensity to be in subsidized housing during childhood using a weighted distance between each treated child and each untreated child based on the propensity of each child to be in subsidized housing for each period during childhood (Rosenbaum and Rubin 1983, 1984, Rubin 1997). I estimate the propensity to be in subsidized housing during childhood using equation (1). Then, I derive the average treatment effect on the treated (TT) as:

$$E[\delta \mid d = 1, P] = E[y^{d=1} - y^{d=0} \mid d = 1, P] \tag{3}$$

While there is no consensus as to which matching estimator performs best (Morgan and Harding 2006; Morgan and Winship 2007), kernel matching (Leuven and Sianesi 2003) has the least bias with a well-specified propensity equation. On the other hand, nearest neighbor matching with five neighbors (Abadie et al. 2004; Herr et al. 2004) performs best with a poorly specified propensity score equation. Therefore, as a sensitivity test for misspecification of my propensity score equation, I compare the estimates I obtain with kernel matching to estimates I obtain with nearest neighbor matching with five controls.

Data

I use the Panel Study of Income Dynamics (PSID) for my analysis. The PSID is a nationally representative, longitudinal survey of US households, which started in 1968. It was conducted annually through 1997 and biennially thereafter. The PSID contains a rich set of household structure and socioeconomic variables with an oversample of low-income and minority families. Attrition from the PSID has been modest and has not compromised the representativeness of the data (Fitzgerald et al. 1998, Lillard and Panis 1994). The PSID has been asking household heads whether they live in public housing or whether they receive any other help from federal, state or local sources in paying their rent in every wave of the survey since 1986. Moreover, out of concern for the quality of information obtained by asking respondents about their receipt of housing subsidies (Shroder and Martin 1996), each PSID family in every year through 1995 has been identified as living in a subsidized unit by matching its address to HUD and local Public Housing Agencies' administrative records (Newman et al. 2009). The subsidized status of voucher recipients has not been matched to administrative records, as HUD

does not maintain a database with the addresses of those subsidized through the voucher program. In order to identify children who have lived in a home that has received a low-income housing subsidy, I use both the self-reports of household heads regarding their receipt of housing assistance as well as the information matched to administrative records. This allows me to use the full span of PSID data from 1968 through 2007. I do not disaggregate across different types of housing subsidies as there are too few cases to support such analyses especially for white children.

In addition to using the PSID demographic and socioeconomic data on respondents, I also incorporate into the analysis the PSID-geocode files which match the addresses of PSID respondents to the corresponding metropolitan area, county and census tract in which they live. I use these codes to attach census tract and metropolitan-level information to every respondent at each interview year. Although census tracts are only an approximation of the concept of a neighborhood, their use in this capacity is widespread in sociological research. I use the Geolytics Neighborhood Change Database (NCDB) to access U.S. Census data for 1970, 1980, 1990 and 2000 in constant 2000 census tract boundaries. The consistency of census tracts across decades allows me to employ linear interpolation to compute the census tract characteristics of PSID respondents during intercensal years.

Results: *Descriptive Statistics*

Tables 1 and 2 describe the covariates used to predict stays in subsidized housing by childhood stage and by race.[1] These measures include socioeconomic characteristics associated

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[1] The group of non-black children is overwhelmingly non-Hispanic white. Even though the PSID has made an effort to fold in a sample of Latinos after 1990, their numbers are not large enough to warrant a separate group for analysis.

with the household of each child in addition to characteristics that may make some households more likely to participate in the subsidized housing program given the administrative rules of the program. Covariates for the 2 to 5 age period are measured at birth, for the 6 to 11 age period are measured at age 3 and for the 12 to 17 age period are measured at age 9.

The descriptive statistics show that children who are in subsidized housing during each respective period are much more likely to have been in subsidized housing before the treatment period. They are also more likely to come from a single-headed household and slightly less likely to have extended family members present in the household. Subsidized children also come from slightly smaller families and are slightly less likely to have a sibling of the opposite gender. I am including the covariate that describes the gender composition of the sibship because of a subsidized housing regulation that states that children of opposite genders above the age of 5 need to have their own bedrooms. This rule makes households with children of opposite genders less likely to live in a subsidized housing apartment even if they have been successful in securing the subsidy. Local housing authorities usually manage units with fewer bedrooms than the ones required to accommodate families with siblings of opposite genders and they will not place families in units that are smaller than what is considered adequate given the gender composition of the sibship.

On average, non-subsidized children live with more educated parents and have family income about twice that of subsidized children. The families of subsidized children, on the other hand, receive at least 50 percent more transfer income, are more likely to be on food stamps and receive AFDC/TANF payments. Children in subsidized housing are less likely to live in smaller MSAs and more likely to live in MSAs of a size between 500,000 to 5,000,000 people. Finally, children in subsidized housing are more likely to come from neighborhoods with higher

proportion of non-Hispanic blacks, and higher rates of poverty, unemployment, welfare receipt, female-headed households and density of children. The neighborhood characteristics that I am using in this paper correspond to the scale of neighborhood "concentrated disadvantage" developed by Sampson et al. (1997) to study the effect of neighborhoods on children's outcomes. In the context of my study, it is important to fold into the propensity score the types of metropolitan areas that children come from as well as the types of neighborhoods they live in prior to experiencing the treatment of subsidized housing. That makes the propensity score reflect the disadvantage that children are facing not only with respect to their family environments but also with respect to their neighborhood environments.

Results: *Propensity score estimation*

Tables 3 and 4 show the probit results of the estimation of the propensity score of being in subsidized housing by childhood stage. I estimate the propensity score separately by race. This separation in the analyses for blacks and non-blacks provides a better statistical balancing of the estimated propensity score between children who were in subsidized housing during childhood and those who were not. Nevertheless, please note that non-black children have a significantly lower propensity to enter subsidized housing. Therefore, any analyses of the non-black population should be interpreted with caution as they are based on few "treatment" cases. For example, only 2 percent of non-black children in the PSID are in subsidized housing between the ages of 2 and 5 (N=36). The corresponding number for black children is 21 percent (N=920). These numbers reflect the reality of the U.S. subsidized housing program, where black households with children represent an overwhelming majority of the tenants of units targeted to families with children while white households represent a majority of the tenants of units

targeted to the elderly (Bickford and Massey 1991). Therefore, while I present results for non-black children below, those analyses are based on few actual cases and should be interpreted with caution.

The betas in the probit propensity score models in Tables 3 and 4 are z-scores that can be interpreted as the expected changes in the standard deviation units in the latent dependent variable for each covariate in the model. Previous stays in subsidized housing and family labor income are the strongest statistically significant predictors of being in subsidized housing across all childhood periods. Other variables have the expected sign but are generally not statistically significant. For example, children who have siblings of different gender and those who are living with extended family members are less likely to be in subsidized housing. Children of single headed households and those from families in the middle of the educational distribution are more likely to be in subsidized housing. Similarly to family labor income, family transfer income generally reduces the probability of being in subsidized housing. For black children, the percent non-Hispanic black in the neighborhood reduces the probability of being in subsidized housing while the percent female-headed households increases the probability.

Results: *Discrete-time hazard analyses*

Tables 5, 6 and 7 show discrete-time hazard analyses of the probability of first marriage, first birth, and establishment of an independent household disaggregated by childhood stage in subsidized housing, gender and race. As mentioned above, the coefficient on the variables that indicates whether a child is in subsidized housing represents the average effect of being in subsidized housing during the respective period in childhood. For example, black boys who were in subsidized housing between the ages 2 and 5 have a .10 lower hazard of getting married (or

10% reduction in the odds of getting married) than similar black boys who were not in subsidized housing between the ages of 2 and 5. This effect of subsidized housing is not statistically significant. On the other hand, black girls who were in subsidized housing between the ages of 2 and 5 have .34 higher hazard of getting married (or a 40% increase in the odds of getting married) than similar black girls who were not in subsidized housing between the ages of 2 and 5. This effect of subsidized housing is also not statistically significant.

In fact, subsidized housing does not seem to have a statistically significant effect on most of the outcomes across gender, race and childhood stage. There are no statistically significant results for black boys. For black girls, a stay in subsidized housing during the ages of 6 and 11 is associated with 35% higher odds of first birth. Again for blacks girls, a stay in subsidized housing between the ages of 6 and 11 is associated with 52% higher odds of establishing an independent household, while a stay between the ages of 12 and 17 is associated with 25% higher odds of establishing an independent household.

On the other hand, for non-blacks the effect of subsidized housing is statistically significant only for males. First, non-black boys have a 99% higher odds of first marriage if they were in subsidized housing between the ages of 2 and 5, 107% higher odds of becoming a father for the first time if they were in subsidized housing between the ages of 2 and 5 and a 105% higher odds if they were in subsidized housing between the ages of 12 and 17. In addition, they also have 180% higher odds of establishing an independent household if they were in subsidized housing between the ages of 12 and 17. While these are large numbers, they are based on very few cases and I present them here for completeness of the analysis rather than to draw substantive conclusions about the effect of subsidized housing.

Results: *Kernel matching analyses*

In Tables 8 and 9, I report unmatched and matched differences between children who were in subsidized housing by childhood stage and children who were not in subsidized housing in that particular childhood stage for the last two sets of outcomes: being in subsidized housing after age 18 and the probability of reaching different educational milestones. The unmatched differences establish baseline estimates of the effect of subsidized housing against which I can compare my matched results. The unmatched differences show that children who were in subsidized housing during childhood are more likely to be in subsidized housing after age 18, less likely to complete high school, less likely to continue their education after high school and less likely to get a college degree. These differences are bigger in magnitude and statistical significance for white children, however, they hold for all groups of black children but the ones who were in subsidized housing between the ages of 2 and 5.

Kernel matching reduces both the point estimates of the effect of subsidized housing and the statistical significance of the estimates especially for black children. When I match children using the propensity of being in subsidized housing, black children who were in subsidized housing during any stage in childhood do not have statistically different educational outcomes from black children who were in subsidized housing during the respective childhood stage. The only outcome for black children that remains statistically significant at the .05-level after the matching procedure involves being in subsidized housing after age 18. For example, black children who were in subsidized housing between the ages of 6 and 11 have a 14 percent higher level of being in subsidized housing after age 18. Black children who were in subsidized housing between the ages of 12 and 17 have a 32 percent higher level of being in subsidized housing after age 18. The results of this outcome are similar for white children. For example, white children

who were in subsidized housing between the ages of 12 and 17 have a 26 percent higher level of being in subsidized housing after age 18.

White children who were in subsidized housing, however, do seem to have worse educational outcomes than similar white children who were not in subsidized housing during the respective childhood periods. These effects are especially big for white children who were in subsidized housing between the ages of 12 and 17. Nevertheless, as mentioned above these results should be interpreted with caution given the small number of white children who actually received the "treatment" of subsidized housing.

The nearest neighbor estimates are in line with the kernel estimates and do not change the substantive conclusion I reach while using the kernel estimates. As mentioned above, kernel matching (Leuven and Sianesi 2003) has the least bias with a well-specified propensity score equation (Morgan and Winship 2007). Matching with five nearest neighbors (Abadie et al. 2004, Herr et al. 2004) has the least bias with a poorly specified propensity score equation (Morgan and Winship 2007). The fact that my kernel matching estimates are similar to my nearest-neighbor matching estimates gives me confidence that my results hold under different assumptions regarding the propensity score equation.

Discussion

The timing and circumstances of leaving home are an important part of the status attainment process (White and Lacy 1997). To the extent that early transitions interfere with investments in education or hasten the assumption of family roles, these patterns can contribute to the intergenerational transmission of poverty and disadvantage. Early transitions to adulthood may have negative consequences for the life chances of children who may not be prepared to

take on adult responsibilities or be able to sustain adult roles successfully (Chassin et al. 1992). As subsidized housing provides stable and better-quality housing than what most families would be able to afford on their own (Newman et al. 2009), children growing up with rental subsidies may be shielded from some of the adverse consequences of growing up in poor families. On the other hand, if growing up in subsidized housing makes children more likely to remain in subsidized housing as adults, the program may be confining generations of individuals to poor disadvantaged neighborhoods. By analyzing how government support in childhood interacts with the transitions of children into adulthood as well as the probability of re-entering subsidized housing as an adult, this project sheds light on whether federal policies aimed at supporting poor families hinder the upward mobility of children.

In this study, I use nationally representative longitudinal data on children that follows them across different stages in childhood and into adulthood. I focus on the subsidized housing program as a possible intervening mechanism in the transition to adulthood. I adopt the potential outcome approach using propensity score matching to explore the following transitions to adulthood: (a) first marriage, (b) first birth, (c) establishing an independent household, (d) high school completion, (e) continuing education after high school, (f) college completion, and (g) living in subsidized housing after age 18. I compare these transitions to adulthood between children who were in subsidized housing between ages 2 through 5, ages 6 though 11 and ages 12 through 17 to the transitions to adulthood of children who did not live in subsidized housing across these age periods. I find that subsidized housing accelerates the establishment of an independent household only for black girls who were in subsidized housing between the ages of 6 and 11 and 12 and 17. It also accelerates the first birth of black girls who were in subsidized housing between the ages of 6 and 11. The most consistent finding in my paper is that children

who grew up in subsidized housing during any age in childhood are also much more likely to remain in subsidized housing as adults. On one hand, these findings show that subsidized children and especially black boys do not have different transitions to adulthood than non-subsidized children. On the other hand, these findings show that the subsidized housing program does have a tendency to reproduce itself by having those who grew up in subsidized housing remain in the program after age 18.

The main limitation to my findings is the assumption of "ignorability" based on observed covariates, which implies that I have adequately controlled for all covariates that influence the propensity to be in subsidized housing. While this is not an assumption that is verifiable using observational data, it is crucial to interpreting the effects I find as causal as opposed to just associational. Even though I have access to extensive measures on family and neighborhood characteristics for every child in the PSID, it could still be the case that children who never were in subsidized housing are different in unmeasured ways from those who did have experience with the program. Moreover, due to sample size limitations, I am averaging over the effects of building-based and voucher subsidized housing. These two programs could potentially have very different implications for the development of children as voucher users can use their subsidy on the private housing market and do tend to live in slightly more advantaged neighborhoods than families in traditional building-based subsidized housing. Therefore, future steps in this project would include more sensitivity testing of my findings under different specifications of my propensity score. In addition, the PSID is currently in the final stages of coding all subsidized housing spells after 1995 using administrative records. I will incorporate these data in future drafts of ths paper. I will also look more closely into the order and spacing of transitions into adulthood for children in subsidized housing to those outside of subsidized housing as well as

what the socioeconomic implications are of my finding that children subsidized before age 18 are much more likely to be in subsidized housing after age 18. On one hand, it could be the case that subsidized parents are more likely to provide housing in kind to their children even after their eighteenth birthday. This transfer of resources from the parents to the children may in the long run cushion the transition to adulthood of children who come from disadvantaged backgrounds. On the other hand, it could also be the case that children who grew up in subsidized housing apply for an apartment themselves and remain in subsidized housing because they have few opportunities to find an affordable apartment on the private market given their earnings and the prevailing rents in the areas where they live. While the results in this paper do not distinguish between these two possibilities, in future work it is important to consider both as they have very different implications regarding the well-being of children as they transition to adulthood.

Bibliography

Abadie, Alberto, David Drukker, Jane L. Herr, and Guido W. Imbens. 2004. "Implementing Matching Estimators for Average Treatment Effects in Stata." *Stata Journal* 4(3):290-311.

An, Chong-Bum, Robert Haveman and Barabara Wolfe. 1993. Teen out-of-wedlock births and welfare receipt: The role of childhood events and economic circumstances. *The Review of Economics and Statistics* 75(2): 195-208.

Aquilino, William S. 1991. Family structure and home-leaving: A further specification of the relationship. *Journal of Marriage and the Family* 53: 999-1010.

Arnett, Jeffrey. 2000. Emerging adulthood. A theory of development from the late teens through the twenties. *American Psychologist 55*: 469-480.

Avery, Roger, Frances Goldscheider and Alden Speare, Jr. 1992. Feathered nest/gilded cage: The effects of parental re-sources on young adults' leaving home. *Demography* 29: 375-388.

Becker, Gary S. 1981. *A Treatise on the Family*. Cambridge: Harvard University Press.

Berger, Lawrence, Theresa Heintze, Marcia Meyers, and Wendy Naidich. 2008. Subsidized housing and household hardship Among low-income single-mother households. *Journal of Marriage and Family* 70(4): 934-949.

Bickford, Adam and Douglas Massey. 1991. "Segregation in the Second Ghetto: Racial and Ethnic Segregation in American Public Housing, 1977." *Social Forces* 69: 1011-1036.

Bianchi, Suzanne M. 1987. Living at home: Young adults' living arrangements in the 1980s. Un-published paper, Center for Demographic Studies.

Brooks-Gunn, J., & Duncan, G. (1997). The effects of poverty on children and youth. *The Future of Children* 7: 55- 71.

Butler, Amy. 1990. The effect of welfare guarantees on children's educational attainment. *Social Science Research* 19: 175-203

Chassin, L., Proessen, C. C., Sherman, S. J., and Edwards, D. A. 1992. The natural history of cigarette smoking and young adult social roles. *Journal of Health and Social Behavior* 33: 328-347.

Christian, P. 1989. Non-family households and housing among adults. *Ethnicity and the New Family Economy*, Frances Goldscheider and Calvin Goldscheider, Eds. Boulder, CO: Westview.

Currie, J. and Yelowitz, A. 2000. Are public housing projects good for kids? *Journal of Public Economics* 75: 99-124.

DaVanzo, Julie and Frances Goldscheider. 1990. Coming home again: Returns to the nest in young adulthood. *Population Studies* 44, 241-255.

Ellwood, David and Mary Jo Bain. 1985. The impact of AFDC on family structure and living arrangements. In Roland G. Ehrenberg, ed., *Research in Labor Economics* Vol. 7. Greenwich, CT: JAI Press.

Fitzgerald, John, Peter Gottschalk, and Robert Moffitt. 1998. "An Analysis of the Impact of Sample Attrition on the Second Generation of Respondents in the Michigan Panel of Income Dynamics." *Journal of Human Resources* 33:300–343.

Goldscheider, Frances and Julie DaVanzo. 1985. Living Arrangements and the Transition to Adulthood. *Demography* 22(4): 545-563.

Goldscheider, Frances and Julie DaVanzo. 1989. Pathways to independent living in early adulthood: Marriage, semiautonomy, and premarital residential independence. *Demography* 26: 597-614.

Goldscheider, Frances and Calvin Goldscheider. 1998. The Effects of Childhood Family Structure on Leaving and Returning Home. *Journal of Marriage and the Family* 60: 745–56.

Goldscheider, Frances and Calvin Goldscheider. 1993. *Leaving home before marriage: Ethnicity, familism, and generational relationships*. Madison: University of Wisconsin Press.

Guo, S., R. Barth, & C. Gibbons. 2004. "Introduction to Propensity Score Matching: A New Device for Program Evaluation". Presented at the Annual Conference of the Society for Social Work Research in New Orleans, LA on January 2004.

Haurin, D., Hendershott, P. and Kim, D. 1993. The impact of real rents and wages on household formation. *Review of Economics and Statistics* 75: 284-293.

Heckman, James J. 2005. "The Scientific Model of Causality." Pp. 1–98 in *Sociological Methodology,* Vol. 35, edited by Ross M. Stolzenberg. Boston, MA: Blackwell Publishing.

Herr, Jane L., David Drukker, Guido W. Imbens, Alberto Abadie. 2004. "NNMATCH: Matching Estimator for Average Treatment Effects in Stata."

Hutchens, Robert, George Jakubson, and Saul Schwartz. 1989. AFDC and the Formation of Subfamilies. *Journal of Human Resources* 24(4): 599-628.

Imbens, Guido W. 2004. "Nonparametric Estimation of Average Treatment Effects under Exogeneity: A Review." *The Review of Economics and Statistics* 86:4–29.

Keller, Thomas, Gretchen Cusick and Mark Courtney. 2007. Approaching the transition to adulthood: Distinctive profiles of adolescents agint out of the child welfare system. *Social Science Review*: 455-484.

Kent, R. 1992. Household formation by the young in the United States. *Applied Economics* 24: 1129-1137

Kneale, Dylan and Wendy Sigle-Rushton. 2010. Transition to Adulthood by Housing Status: A Cross Cohort Comparison. Paper presented at the Annual Meeting of Population Association of America, Dallas, TX.

Ku, Inhoe. 2001. The effect of welfare on children's education. *Social Science Review*: 245-270.

Leuven, Edwin and Barbara Sianesi. 2003. "PSMATCH2: Stata Module to Perform Full Mahalanobis and Propensity Score Matching, Common Support Graphing, and Covariate Imbalance Testing." http://ideas.repec.org/c/boc/bocode/s432001.html. Version 3.1.5.

Lillard, Lee A., and Constantijn W. A. Panis. 1994. "Panel Attrition from the PSID: Household Income, Marital Status, and Mortality." Working Paper series 94–16. Rand Labor and Population Program, Santa Monica, Calif.

Lupton, R., Tunstall, R., Sigle-Rushton, W., Obolenskaya, P., Sabates, R., Meschi, E., Kneale, D. and Salter, E. 2009. *Growing Up in Social Housing: A Profile of Four Generations from 1946 to the Present Day*. York: Joseph Rowntree Foundation.

Meyers, A., Frank, D., Roos, N., Peterson, K., Casey, V., Cupples, A., et al. 1995. Housing subsidies and pediatric undernutrition. *Archives of Pediatric and Adolescent Medicine* 149: 1079–1084.

Meyers, A., Cutts, D., Frank, D., Levenson, S., Skalicky, A., Cook, J., et al. (2005). Subsidized housing and children's nutritional status: Data from a multisite surveillance study. *Archives of Pediatric Adolescent Medicine* 159, 551–556.

Michael, R and N Tuma .1985. Entry into marriage and parenthood by young men and women. *Demography* 22: 515-544

Mitchell, B., Wister, A. and Burch, T. 1989. The family environment and leaving the parental home. *Journal of Marriage and the Family* 51: 605-613.

Morgan, Stephen and David Harding. 2006. "Matching Estimators of Causal Effects: Prospects and Pitfalls in Theory and Practice." *Sociological Methods and Research* 35(1):3-60.

Morgan, S. & C. Winship. 2007. *Counterfactuals and Causal Inference.* Cambridge: Cambridge University Press.

Newman, Sandra. 2008. Does Housing Matter for Poor Families? A Critical Summary of Research and Issues Still to Be Resolved. *Journal of Policy Analysis and Management* 27(4): 895-925.

Newman, Sandra and Joseph Harkness. 2002. The long-term effects of public housing on self-sufficiency. *Journal of Policy Analysis and Management* 21: 21–43.

Newman, Sandra, C. Scott Holupka and Joseph Harkeness. 2009. The long-term effects of housing assistance on work and welfare. *Journal of Policy Analysis and Management* 28(1): 81-101.

Newman, Sandra J., and Ann B. Schnare. 1997. '... And a Suitable Living Environment': The Failure of Housing Programs to Deliver on Neighborhood Quality. *Housing Policy Debate* 8 (4): 703—41.

Perlman, H. 1960. Are we creating dependency? *Social Science Review* 34: 323-333.

Rank, Mark and Li-Chen Cheng. Welfare use across generations: How important are the ties that bind? *Journal of Marriage and Family* 57: 673-684.

Rosenbaum, P., & Rubin, D. 1983. The central role of the propensity score in observational studies for causal effects. *Biometrika* 70: 41–55.

Rosenbaum, P., & Rubin, D. 1985. Constructing a control group using multivariate matched sample methods that incorporate the propensity score. *The American Statistician* 39: 33–38.

Rubin, Donald. 1974. "Estimating Causal Effects of Treatments in Randomized and Nonrandomized Studies." *Journal of Educational Psychology* 66:685-701.

Rubin, Donald. 1997. "Estimating Causal Effects from Large Data Sets Using Propensity Scores." *Annals of Internal Medicine* 127:757–63.

Sampson, Robert J., Stephen W. Raudenbush, and Felton Earls. 1997. "Neighborhoods and Violent Crime: A Multilevel Study of Collective Efficacy." *Science* 277:918–24.

Sharkey, Patrick and Felix Elwert. The legacy of disadvantage: multigenerational neighborhood effects on cognitive ability. Center for Demography and Economy, University of Wisconsin-Madison. Working Paper No. 2010-06.

Shroder, Mark and M Martin. 1996. New results from administrative data: Housing the poor, or what they don't know might hurt somebody. Washington, DC: U.S. Department of Housing and Urban Development, Office of Policy Development and Research.

US Department of Housing and Urban Development. 2008. *Characteristics of HUD-assisted renters and their units in 2003*. www.huduser.org

Venkatesh, Sudhir A. 2002. *American Project: The Rise and Fall of a Modern Ghetto*. Harvard University Press.

White, L., and A. Booth. 1985. The quality and stability of remarriages: The role of stepchildren. *American Sociological Review* 50:689-698.

White, Linda and Lacy, N. 1997. Pathways from home and educational attainment. *Journal of Marriage and the Family* 59: 982-995.

Whittington, L. and Peters, H. 1996. Economic incentives for financial and residential independence. *Demography* 33: 82-97.

Table 1. Descriptive statistics (Blacks)

	Ages 2-5		Ages 6-11		Ages 12-17	
	Non-subsidized	Subsidized	Non-subsidized	Subsidized	Non-subsidized	Subsidized
In subsidized housing at birth/age3/age9	0.023	0.387	0.034	0.294	0.032	0.449
Sibling of different gender	0.534	0.471	0.584	0.552	0.750	0.721
Family size	5.473	5.058	5.459	5.000	6.098	5.741
Household structure						
Married/cohabitating couple	0.704	0.492	0.683	0.505	0.644	0.373
Single-headed household	0.296	0.508	0.317	0.495	0.356	0.627
Number of children under age 6	2.077	1.932	2.010	2.074	0.969	1.058
Extended family members present	0.317	0.314	0.260	0.187	0.214	0.166
Education of household head						
Less than 8th grade	0.198	0.199	0.195	0.137	0.262	0.151
Some high school	0.277	0.366	0.281	0.361	0.279	0.360
High School Diploma	0.270	0.267	0.255	0.268	0.203	0.251
Some college	0.195	0.152	0.212	0.217	0.187	0.199
College Diploma/Grad School	0.061	0.016	0.057	0.017	0.069	0.039
Income (in 2000 $)						
Family labor income (in '000s)	21.606	14.778	24.090	14.669	25.591	12.803
Family transfer income (in '000s)	3.127	4.412	3.392	5.032	4.350	6.635
Whether receiving food stamps	0.268	0.393	0.268	0.485	0.293	0.547
Whether receiving AFDC/TANF	0.171	0.283	0.184	0.358	0.177	0.280
MSA population						
Less than 250,000	0.066	0.047	0.070	0.033	0.060	0.035
250,000-500,000	0.183	0.147	0.199	0.157	0.172	0.149
500,000-1,000,000	0.064	0.147	0.067	0.114	0.070	0.103
1,000,000-5,000,000	0.392	0.414	0.418	0.538	0.460	0.565
5,000,000+	0.295	0.246	0.246	0.157	0.239	0.149
Neighborhood Characteristics						
Percent non-Hispanic black	50.825	55.820	53.035	61.688	56.206	66.232
Percent in poverty	19.532	25.349	20.572	27.473	20.857	30.741
Percent unemployed	6.587	8.534	6.894	9.635	7.395	10.848
Percent receiving welfare	11.280	16.811	11.882	18.528	12.534	20.191
Percent female-headed households	26.267	36.360	27.222	40.249	29.160	44.195
Density of children	26.610	30.916	27.861	32.177	29.040	33.645
N	920	191	1132	299	1790	517

Table 2. Descriptive statistics (Non-blacks)

	Ages 2-5		Ages 6-11		Ages 12-17	
	Non-subsidized	Subsidized	Non-subsidized	Subsidized	Non-subsidized	Subsidized
In subsidized housing at birth/age3/age9	0.008	0.194	0.005	0.242	0.004	0.351
Sibling of different gender	0.344	0.389	0.493	0.500	0.649	0.635
Family size	4.019	3.611	4.419	4.194	4.970	5.095
Household structure						
Married/cohabitating couple	0.958	0.722	0.931	0.694	0.891	0.689
Single-headed household	0.042	0.278	0.069	0.306	0.109	0.311
Number of children under age 6	1.661	1.639	1.788	1.968	0.615	0.595
Extended family members present	0.043	0.028	0.038	0.032	0.047	0.041
Education of household head						
Less than 8th grade	0.052	0.083	0.058	0.081	0.074	0.149
Some high school	0.137	0.306	0.149	0.290	0.160	0.392
High School Diploma	0.236	0.417	0.222	0.339	0.205	0.243
Some college	0.362	0.194	0.353	0.258	0.329	0.162
College Diploma/Grad School	0.214	0.000	0.218	0.032	0.232	0.054
Income (in 2000 $)						
Family labor income (in '000s)	41.025	20.609	43.087	21.791	49.287	26.167
Family transfer income (in '000s)	1.420	3.526	1.555	3.347	2.371	4.231
Whether receiving food stamps	0.071	0.250	0.076	0.339	0.072	0.351
Whether receiving AFDC/TANF	0.027	0.194	0.033	0.306	0.029	0.176
MSA population						
Less than 250,000	0.121	0.194	0.115	0.145	0.115	0.081
250,000-500,000	0.094	0.083	0.100	0.032	0.096	0.081
500,000-1,000,000	0.115	0.167	0.123	0.081	0.122	0.041
1,000,000-5,000,000	0.231	0.222	0.255	0.306	0.279	0.149
5,000,000+	0.439	0.333	0.406	0.435	0.388	0.649
Neighborhood Characteristics						
Percent non-Hispanic black	6.513	3.904	6.231	11.509	5.963	8.741
Percent in poverty	6.209	6.884	6.367	8.300	7.205	10.967
Percent unemployed	3.715	5.127	3.785	5.510	4.113	5.604
Percent receiving welfare	3.490	5.025	3.644	5.212	4.029	6.868
Percent female-headed households	9.309	11.804	9.639	13.966	10.947	16.768
Density of children	22.730	20.753	22.957	22.679	24.209	22.547
N	1728	36	1986	62	2805	74

Table 3. Probit regression of propensity of being in subsidized housing by childhood stage (Blacks only)

	Ages 2-5		Ages 6-11		Ages 12-17	
	b	s.e.	b	s.e.	b	s.e.
In subsidized housing at birth/age3/age9	**1.869**	**0.164**	**1.258**	**0.135**	**1.592**	**0.101**
Sibling of different gender	-0.217	0.121	-0.112	0.098	-0.172	0.088
Family size	0.004	0.034	-0.012	0.026	0.029	0.020
Household composition (Married/cohabitating couple omitted)						
Single-headed household	0.209	0.154	-0.171	0.122	0.077	0.093
Number of children under age 6	-0.041	0.067	0.096	0.052	0.070	0.036
Extended family members present	-0.042	0.156	-0.096	0.119	-0.072	0.092
Education of Head (Less than 8th grade omitted)						
Some high school	0.010	0.155	0.138	0.134	**0.253**	**0.104**
High School Diploma	-0.247	0.174	0.161	0.142	**0.399**	**0.114**
Some college	-0.226	0.193	0.153	0.153	**0.405**	**0.121**
College Diploma/Grad School	**-0.948**	**0.385**	-0.467	0.306	0.059	0.173
Income						
Family labor income (in '000s)	-0.007	0.005	**-0.015**	**0.004**	**-0.015**	**0.003**
Family transfer income (in '000s)	-0.011	0.014	-0.004	0.010	-0.005	0.006
Whether receiving food stamps	-0.014	0.127	0.186	0.101	0.097	0.084
Whether receiving AFDC/TANF	-0.039	0.169	0.039	0.124	-0.094	0.095
MSA population (5,000,000+ omitted)						
Less than 250,000	-0.311	0.246	-0.226	0.230	0.087	0.177
250,000-500,000	-0.225	0.196	0.169	0.170	0.197	0.134
500,000-1,000,000	0.338	0.201	**0.494**	**0.184**	**0.505**	**0.146**
1,000,000-5,000,000	-0.300	0.160	0.274	0.144	**0.263**	**0.112**
Neighborhood Characteristics						
Percent non-Hispanic black	-0.003	0.002	**-0.004**	**0.002**	**-0.004**	**0.001**
Percent in poverty	-0.015	0.008	-0.012	0.006	0.001	0.005
Percent unemployed	0.003	0.015	-0.017	0.012	-0.009	0.008
Percent receiving welfare	0.006	0.011	0.006	0.009	-0.002	0.007
Percent female-headed households	0.012	0.007	**0.019**	**0.005**	**0.016**	**0.004**
Density of children	0.012	0.006	0.006	0.005	-0.001	0.004
Intercept	**-0.974**	**0.235**	**-1.236**	**0.211**	**-1.534**	**0.179**
N	1111		1431		2307	
Log-likelihood	-382.25		-591.84		-876.81	

Note: Coefficients statistically significant at the p<.05 level (two-tailed) are in bold

Table 4. Probit regression of propensity of being in subsidized housing by childhood stage (Non-blacks only)

	Ages 2-5		Ages 6-11		Ages 12-17	
	b	s.e.	b	s.e.	b	s.e.
In subsidized housing at birth/age3/age9	**1.407**	**0.352**	**1.929**	**0.303**	**2.280**	**0.256**
Sibling of different gender	0.177	0.230	-0.066	0.157	-0.169	0.141
Family size	-0.201	0.146	-0.011	0.068	**0.088**	**0.044**
Household composition (Married/cohabitating couple omitted)						
Single-headed household	0.255	0.319	0.186	0.232	0.022	0.217
Number of children under age 6	0.051	0.180	0.106	0.100	-0.116	0.089
Extended family members present	0.056	0.544	-0.245	0.352	-0.238	0.300
Education of Head (Less than 8th grade omitted)						
Some high school	-0.111	0.360	0.202	0.316	0.294	0.217
High School Diploma	0.084	0.350	0.372	0.312	-0.001	0.228
Some college	-0.509	0.363	0.165	0.318	-0.142	0.234
College Diploma/Grad School			-0.309	0.408	-0.488	0.317
Income						
Family labor income (in '000s)	**-0.012**	**0.006**	**-0.010**	**0.005**	-0.005	0.004
Family transfer income (in '000s)	0.013	0.022	-0.020	0.020	-0.007	0.013
Whether receiving food stamps	-0.081	0.285	0.175	0.210	0.124	0.196
Whether receiving AFDC/TANF	-0.142	0.379	0.677	0.258	0.457	0.257
MSA population (5,000,000+ omitted)						
Less than 250,000	0.377	0.269	-0.295	0.236	**-0.467**	**0.233**
250,000-500,000	0.431	0.339	**-1.069**	**0.399**	-0.314	0.215
500,000-1,000,000	**0.641**	**0.287**	**-0.576**	**0.273**	**-0.705**	**0.260**
1,000,000-5,000,000	0.267	0.281	-0.298	0.201	**-0.752**	**0.206**
Neighborhood Characteristics						
Percent non-Hispanic black	-0.005	0.007	0.004	0.003	0.001	0.003
Percent in poverty	-0.041	0.028	-0.024	0.022	-0.014	0.016
Percent unemployed	0.050	0.037	**0.085**	**0.027**	0.015	0.030
Percent receiving welfare	0.042	0.040	**-0.069**	**0.035**	0.007	0.027
Percent female-headed households	0.012	0.017	**0.032**	**0.014**	0.024	0.011
Density of children	-0.015	0.009	0.000	0.007	0.000	0.007
Intercept	-1.082	0.572	**-2.086**	**0.444**	**-2.174**	**0.321**
N	1764		2048		2079	
Log-likelihood	-134.35		-198.26		-228.96	

Note: Coefficients statistically significant at the p<.05 level (two-tailed) are in bold

Table 5. Discrete time hazard model of first marriage by childhood stage

	Blacks				Non-blacks			
	Ages 2-5							
	First marriage, Males		First marriage, Females		First marriage, Males		First marriage, Females	
	b	s.e.	b	s.e.	b	s.e.	b	s.e.
Subsidized in age period	-0.10	0.25	0.34	0.22	**0.69**	**0.32**	0.22	0.32
Propensity Score	-0.86	0.55	-0.39	0.41	**-2.32**	**1.17**	-0.78	0.94
Age	**1.21**	**0.18**	**1.03**	**0.12**	**1.24**	**0.11**	**1.31**	**0.11**
Age Squared	**-0.02**	**0.00**	**-0.02**	**0.00**	**-0.02**	**0.00**	**-0.03**	**0.00**
Intercept	**-19.50**	**2.20**	**-16.42**	**1.43**	**-18.71**	**1.29**	**-18.44**	**1.19**
N	13166		15550		16348		15415	
Log-likelihood	-663.67		-931.79		-1459.90		-1565.32	
	Ages 6-11							
	First marriage, Males		First marriage, Females		First marriage, Males		First marriage, Females	
	b	s.e.	b	s.e.	b	s.e.	b	s.e.
Subsidized in age period	-0.18	0.20	-0.14	0.17	0.11	0.25	-0.06	0.31
Propensity Score	-0.61	0.45	-0.58	0.39	-0.56	0.70	-0.09	0.59
Age	**0.93**	**0.11**	**0.87**	**0.09**	**1.19**	**0.09**	**1.21**	**0.09**
Age Squared	**-0.02**	**0.00**	**-0.02**	**0.00**	**-0.02**	**0.00**	**-0.02**	**0.00**
Intercept	**-15.92**	**1.41**	**-14.46**	**1.04**	**-18.12**	**1.08**	**-17.35**	**0.97**
N	16715		19447		20627		19240	
Log-likelihood	-942.79		-1229.15		-1838.95		-1977.83	
	Ages 12-17							
	First marriage, Males		First marriage, Females		First marriage, Males		First marriage, Females	
	b	s.e.	b	s.e.	b	s.e.	b	s.e.
Subsidized in age period	-0.27	0.15	-0.26	0.14	0.49	0.26	-0.19	0.25
Propensity Score	-0.12	0.27	**-0.67**	**0.25**	-1.03	0.56	0.29	0.43
Age	**0.88**	**0.07**	**0.75**	**0.05**	**1.10**	**0.06**	**1.10**	**0.06**
Age Squared	**-0.02**	**0.00**	**-0.01**	**0.00**	**-0.02**	**0.00**	**-0.02**	**0.00**
Intercept	**-14.97**	**0.85**	**-12.70**	**0.60**	**-16.87**	**0.76**	**-15.74**	**0.65**
N	29873		34006		30632		27955	
Log-likelihood	-1945.75		-2422.21		-2910.79		-3491.89	

Note: Coefficients statistically significant at the p<.05 level (two-tailed) are in bold

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Table 6. Discrete time hazard model of first birth by childhood stage

	Blacks				Non-blacks			
	Ages 2-5							
	First time father, Males		First birth, Females		First time father, Males		First birth, Females	
	b	s.e.	b	s.e.	b	s.e.	b	s.e.
Subsidized in age period	0.10	0.18	0.09	0.16	**0.73**	**0.31**	0.22	0.36
Propensity Score	-0.08	0.36	**0.61**	**0.28**	1.29	0.84	0.42	0.90
Age	**1.43**	**0.14**	**1.43**	**0.11**	**1.08**	**0.11**	**0.80**	**0.07**
Age Squared	**-0.03**	**0.00**	**-0.03**	**0.00**	**-0.02**	**0.00**	**-0.01**	**0.00**
Intercept	**-18.61**	**1.48**	**-17.32**	**1.06**	**-17.50**	**1.30**	**-13.06**	**0.82**
N	11275		12227		17127		15966	
Log-likelihood	-1067.88		-1385.34		-1314.70		-1545.58	
	Ages 6-11							
	First time father, Males		First birth, Females		First time father, Males		First birth, Females	
	b	s.e.	b	s.e.	b	s.e.	b	s.e.
Subsidized in age period	0.09	0.15	**0.30**	**0.12**	0.10	0.28	-0.01	0.32
Propensity Score	0.16	0.31	0.26	0.26	**1.87**	**0.62**	0.62	0.59
Age	**1.26**	**0.11**	**1.37**	**0.09**	**1.01**	**0.09**	**0.78**	**0.06**
Age Squared	**-0.03**	**0.00**	**-0.03**	**0.00**	**-0.02**	**0.00**	**-0.01**	**0.00**
Intercept	**-16.94**	**1.15**	**-16.78**	**0.90**	**-16.71**	**1.07**	**-12.88**	**0.69**
N	14301		15139		21736		20091	
Log-likelihood	-1373.76		-1799.27		-1642.79		-1963.66	
	Ages 12-17							
	First time father, Males		First birth, Females		First time father, Males		First birth, Females	
	b	s.e.	b	s.e.	b	s.e.	b	s.e.
Subsidized in age period	0.09	0.12	0.09	0.10	**0.72**	**0.27**	0.26	0.25
Propensity Score	0.27	0.21	**0.43**	**0.17**	-0.03	0.54	0.11	0.44
Age	**0.99**	**0.06**	**1.21**	**0.06**	**0.98**	**0.06**	**0.84**	**0.05**
Age Squared	**-0.02**	**0.00**	**-0.03**	**0.00**	**-0.02**	**0.00**	**-0.02**	**0.00**
Intercept	**-14.55**	**0.68**	**-15.42**	**0.61**	**-16.22**	**0.78**	**-13.31**	**0.54**
N	25765		26405		33086		30025	
Log-likelihood	-2506.22		-3152.79		-2607.62		-3117.00	

Note: Coefficients statistically significant at the p<.05 level (two-tailed) are in bold

Table 7. Discrete time hazard model of establishing an independent household by childhood stage

	Blacks				Non-Blacks			
	Ages 2-5							
	Males		Females		Males		Females	
	b	s.e.	b	s.e.	b	s.e.	b	s.e.
Subsidized in age period	0.03	0.18	0.06	0.17	**1.03**	**0.32**	-0.34	0.32
Propensity Score	**0.73**	**0.34**	0.43	0.30	0.08	0.84	**2.30**	**0.88**
Age	**1.46**	**0.15**	**1.71**	**0.13**	**2.05**	**0.14**	**2.13**	**0.15**
Age Squared	**-0.03**	**0.00**	**-0.03**	**0.00**	**-0.04**	**0.00**	**-0.04**	**0.00**
Intercept	**-22.08**	**1.79**	**-23.37**	**1.50**	**-27.38**	**1.63**	**-27.46**	**1.67**
N	12623		13654		15326		14514	
Log-likelihood	-1070.35		-1425.73		-1605.89		-1605.49	
	Ages 6-11							
	Males		Females		Males		Females	
	b	s.e.	b	s.e.	b	s.e.	b	s.e.
Subsidized in age period	0.09	0.14	**0.42**	**0.12**	0.00	0.23	-0.39	0.29
Propensity Score	0.22	0.31	-0.18	0.27	0.33	0.55	0.29	0.56
Age	**1.46**	**0.13**	**1.79**	**0.12**	**1.87**	**0.11**	**1.98**	**0.12**
Age Squared	**-0.03**	**0.00**	**-0.04**	**0.00**	**-0.04**	**0.00**	**-0.04**	**0.00**
Intercept	**-21.71**	**1.52**	**-24.22**	**1.37**	**-25.41**	**1.34**	**-25.72**	**1.38**
N	15929		17256		19349		18304	
Log-likelihood	-1397.04		-1767.62		-2036.74		-2020.87	
	Ages 12-17							
	Males		Females		Males		Females	
	b	s.e.	b	s.e.	b	s.e.	b	s.e.
Subsidized in age period	0.10	0.12	**0.22**	**0.10**	0.22	0.25	0.15	0.25
Propensity Score	0.26	0.22	**0.36**	**0.18**	-0.06	0.49	0.13	0.46
Age	**1.17**	**0.07**	**1.47**	**0.08**	**1.75**	**0.09**	**2.17**	**0.11**
Age Squared	**-0.02**	**0.00**	**-0.03**	**0.00**	**-0.03**	**0.00**	**-0.05**	**0.00**
Intercept	**-18.67**	**0.92**	**-21.01**	**0.94**	**-24.19**	**1.05**	**-27.53**	**1.22**
N	30460		33961		32014		31432	
Log-likelihood	-2394.98		-2855.90		-2968.47		-2845.23	

Note: Coefficients statistically significant at the p<.05 level (two-tailed) are in bold

Table 8. Matched outcomes (Blacks)

	Unmatched differences	PS kernel matching, TT (psmatch2)	PS nearest neighbor matching (5 controls), TT (nnmatch)
In subsidized housing ages 2-5			
In subsidized housing after age 18	0.218 ***	0.107 †	0.208 ***
	(.039)	(.064)	(.045)
High School Completion	-0.043	0.007	-0.032
	(.028)	(.047)	(.034)
Continuing education after high school	-0.069 †	-0.051	-0.069
	(.040)	(.066)	(.045)
College degree	-0.039	-0.081 †	-0.020
	(0.029)	(0.046)	(0.031)
In subsidized housing ages 6-11			
In subsidized housing after age 18	0.247 ***	0.144 ***	0.199 ***
	(.032)	(.038)	(.035)
High School Completion	-0.060 **	-0.006	-0.053 †
	(.023)	(.030)	(.028)
Continuing education after high school	-0.064 *	0.027	0.006
	(.032)	(.040)	(.037)
College degree	-0.075 ***	-0.022	-0.021
	(0.023)	(0.026)	(0.023)
In subsidized housing ages 12-17			
In subsidized housing after age 18	0.381 ***	0.322 ***	0.356 ***
	(.024)	(.040)	(.027)
High School Completion	-0.089 ***	-0.044	-0.064 **
	(.018)	(.031)	(.024)
Continuing education after high school	-0.084 ***	-0.037	0.051
	(.025)	(.042)	(.030)
College degree	-0.034 *	0.016	-0.018
	(0.016)	(0.027)	(0.019)

† p<.10 * p <.05 ** p < .01 *** p < .001 (two-tailed tests)

Table 9. Matched outcomes (Non-Blacks)

	Unmatched differences	PS kernel matching, TT (psmatch2)	PS nearest neighbor matching (5 controls), TT (nnmatch)
In subsidized housing ages 2-5			
In subsidized housing after age 18	0.285 ***	0.231 ***	0.272 ***
	(.058)	(.090)	(.083)
High School Completion	-0.079 †	-0.013	-0.006
	(.028)	(.070)	(.070)
Continuing education after high school	-0.299 ***	-0.194 ***	-0.217 **
	(.081)	(.088)	(.091)
College degree	-0.243 ***	-0.157 ***	-0.161 *
	(0.078)	(0.058)	(0.070)
In subsidized housing ages 6-11			
In subsidized housing after age 18	0.248 ***	0.133 †	0.134
	(.045)	(.073)	(.079)
High School Completion	-0.136 ***	-0.012	-0.048
	(.037)	(.062)	(.066)
Continuing education after high school	-0.331 ***	-0.171 **	-0.169 *
	(.062)	(.078)	(.079)
College degree	-0.191 ***	-0.067	-0.041
	(0.060)	(0.066)	(0.059)
In subsidized housing ages 12-17			
In subsidized housing after age 18	0.348 ***	0.256 ***	0.230 **
	(.041)	(.071)	(.081)
High School Completion	-0.169 ***	-0.133 ***	-0.162 *
	(.034)	(.062)	(.066)
Continuing education after high school	-0.305 ***	-0.162 ***	-0.200 *
	(.058)	(.075)	(.083)
College degree	-0.225 ***	-0.135 **	-0.178 **
	(0.054)	(0.057)	(0.061)

† p<.10 * p <.05 ** p < .01 *** p < .001 (two-tailed tests)