

RESEARCH REPORT

HOMEOWNERSHIP AND PARENTING PRACTICES:  
*Evidence from the Community Advantage Panel*

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### **Abstract**

This study examines whether there is a significant relationship between homeownership and positive parenting practices among low- and moderate-income households. Using a quasi-experimental research design and techniques which account for selection effects, we test whether homeowners are more likely than renters to engage in parenting behaviors such as reading to their children or participating in school events. Controlling for individual and neighborhood conditions, analyses demonstrate that homeowners are more likely than renters to engage in a variety of positive parenting practices. Implications for low-income housing policy are discussed in light of these findings.

The association between homeownership and positive child outcomes has been well documented in previous research. Children of homeowners have higher educational achievement (Green and White 1997; Boehm and Schlotman 1999; Aaronson 2000; Harkness and Newman 2002; Haurin, Parcel, and Haurin 2002), fewer behavior and emotional problems (Boyle 2002; Haurin et al. 2002; Cairney 2005), and fewer problems later in life, including poverty, idleness, teenage pregnancy (Green and White 1997; Harkness and Newman 2002), and poor health (Cohen et al. 2004; Chen et al. 2006; Miller and Chen 2007). In addition, adult children of homeowners have higher incomes and are more likely to become homeowners themselves (e.g., Henretta 1984; Boehm and Schlotman 1999).

Researchers have linked a stimulating, high-quality home environment to higher child outcomes in the areas of intelligence, language development, academic achievement, attention, memory, and school readiness (Coscia et al. 2001; Luster, Lekskul, and Oh 2004; Foster et al. 2005; National Institute on Child and Human Development Early Child Care Research Network 2005; Oxford and Spieker 2006). Furthermore, empirical research underscores the importance of the home environment when examining the relationship between family socioeconomic status (SES) and child well-being (McLoyd 1998; Dearing and Taylor 2007).

Previous research makes clear that child outcomes are affected by both family environment and household SES, but the relationship between these two factors remains unclear. What role does household wealth – specifically home ownership – play in fostering positive parenting practices? Exploring antecedents of high-quality home environments has valuable implications for both building conceptual frameworks and developing interventions (Brooks-

Gunn, Klebanov, and Liaw 1995). The purpose of this study is to examine one such antecedent: homeownership. Using data from the Community Advantage Secondary Home Loan Mortgage Program (CAP) panel demonstration, this study explores the relationship between homeownership and parental practices that are associated with stimulating home environments and positive child outcomes.

Our study offers several important contributions to research on homeownership and parenting. Much of the previous research used samples of middle- and upper-income households that were examined within non-experimental frameworks. In contrast, our study uses a sample of low- and moderate-income homeowners and a comparison group of renters to examine the relationship between homeownership and parental practices. Our study is also unique among those in the field because we measure influences on parental practices rather than child outcomes. Through a set of indicators such as parental involvement in school, home literacy practices, and child participation in organized activities, we explore the specific parenting behaviors that might lead the children of homeowners to have relatively better outcomes than the children of renters on a wide array of developmental and social measures. Finally, we address the important statistical issue of endogeneity. Homeownership and parental involvement share common predictors so traditional regression models would be biased due to correlation between the error terms. By using a recursive bivariate probit (treatment effects) model, we are able to account for endogeneity and evaluate the impact that homeownership has on parenting practices independent of their shared predictors. This is a unique contribution as most previous studies in this line of research did not address the endogeneity problem. In sum, our study differs from

previous work in this area in design, sample, and method. These significant differences make this study an important contribution to the fields of asset building and child development.

## **Literature Review**

Recent studies on child outcomes and family socio-economic status have turned from focusing primarily on household income to exploring a full range of household wealth measures. Recent studies have demonstrated an important connection between household wealth, typically measured as total net worth, and child outcomes (Conley 1999, Orr 2003; Shapiro 2004; Williams Shanks 2007). When considering whether financial assets affect parenting practices among low to moderate income households, it is particularly important to examine homeownership because home equity likely comprises the largest proportion of a family's net worth. Moreover, parents often use personal wealth to try to create better and transformative opportunities for their children by moving to neighborhoods with high-quality schools (Shapiro 2004). However, in non-experimental frameworks, there is concern that homeownership might simply be a proxy for parental practices, demographic and financial characteristics, or neighborhood quality and not a relevant influence on its own.

Although it seems reasonable to theorize that homeownership and parenting practices are connected, empirical studies have yet to conclusively demonstrate this relationship. Thus, the purpose of this study is to fill that gap by examining the extent to which such a relationship exists. The purpose of this study is to present a rigorous test of whether homeownership is associated with increased positive parenting practices among low- to moderate-income families.

We begin with a brief overview of the child outcomes associated with commonly cited parenting practices, including home literacy practices, parental-school involvement, child screen time with television and video games, and child participation in organized activities. Using statistical techniques which account for endogeneity, we test the relationship between each of these parenting practices and homeownership status. Our study results have implications for both asset-building and child- development policies.

### *Parental-School Involvement*

Among elementary and middle-school students, parental-school involvement is consistently linked to higher student grades and achievement test scores (e.g., Miedel and Reynolds 1999; Fan and Chen 2001; Jeynes 2003; Xu and Corno 2003). Likewise, among high-school students, parental involvement is linked to positive indicators of school success including lower rates of grade retention and attrition, and higher rates of participation in advanced courses and on-time completion of high school (e.g., Ma 1999; Marcon 1999; Miedel and Reynolds 1999; Trusty 1999; Barnard 2004). For example, Nancy Hill and Stracie Craft (2003) examined the relationship between parent-school involvement and school performance in a sample of 103 kindergarten students, and found parent-school involvement was significantly associated with reading and math achievement when controlling for family socio-economic status. The effect of parent-school involvement on middle- and high-school students' performance was shown in Susan Stone's (2006) work that uses a subsample of data from the 1988 National Education Longitudinal Study. Stone's results show that parental involvement was significantly associated with their child having a higher grade point average and a decreased likelihood of dropping out.

### *Home Literacy Practices*

Research has consistently demonstrated the importance of the home literacy environment to school readiness and later reading development among preschool and school-age children (Sénéchal and Cornell 1993; Bus and van Ijzendoorn 1995; Sénéchal et al. 1996; Raikes et al. 2006; Hood, Conlon, and Glenda 2008). A number of family reading behavior indicators define the home literacy environment: shared parent-child reading; parent teaching the child letters, words, and name writing; number of books in the home; frequency of a parent reading to the child; average duration of reading events; and frequency of parent-child library trips.

Among these indicators, shared parent-child reading is one of the most common behaviors, and one that also fosters school readiness and reading development. Several studies have examined the relationship of shared reading and reading development. In a three-year longitudinal study that included more than 100 preschool-age children, researchers found that shared parent-child reading is related to greater vocabulary attainment in the first grade (Hood, Conlon, and Andrews 2008). Similarly, among 2,581 low-income mothers and their children, investigators found that shared reading was associated with vocabulary and language comprehension at 14 months, and with vocabulary and cognitive development at 24 months (Raikes et al. 2006). Moreover, researchers investigating reading behavior in low-income families with a sample of 233 Head Start preschool children established a link between shared parent-child reading and early literacy skills including receptive vocabulary, comprehension of story text, and general emergent literacy skills (Bracken and Fischel 2008). Other research demonstrates that shared reading in the home promotes expressive language development and increased attention during reading (Fletcher et al. 2008).

*Child Participation in Organized Activities*

Children's involvement in constructive organized activities at school and in the community has been linked to school success via promoting pro-social interaction (Randolph et al. 2004). Studies evaluating this relationship have found strong, consistent positive effects across a diverse range of populations, activities, and outcomes. For example, among a socio-economically diverse sample of youth, researchers have shown that participation in volunteer service and faith-based activities is associated with higher academic achievement in high school as well as lower rates of high-risk behaviors (Eccles and Barber 1999). Similarly, using a sample of at-risk students, Joseph Mahoney and Robert Cairns (1997) showed that the early school dropout rate (i.e., failure to complete 11<sup>th</sup> grade) is noticeably lower for students with a history of participating in extracurricular activities compared with those who did not participate. In analyses of longitudinal data obtained from participants interviewed during high school and again at age 20, researchers further demonstrated that consistent participation in school-sponsored extracurricular activities is associated with long-term educational success, including increases in college attendance (Mahoney, Cairns, and Farmer 2003).

Analysis of data from the 1988 National Educational Longitudinal Study also supports the effect of participation in extracurricular activities on high-school students' socio-emotional development and academic achievement (Broh 2002). In a sample of nearly 13,000 students, participation in interscholastic sports during both 10<sup>th</sup> and 12<sup>th</sup> grade promoted students' academic achievement, self-esteem, locus of control, and time spent on homework. Playing sports also increased social ties between students and parents, students and their schools, parents and schools, and parents and parents. Beckett Broh's findings were consistent with similar, earlier work by Ralph McNeal (1995) who used data from the first wave (1980) of the High

School and Beyond survey to examine the role of extracurricular activities in promoting academic outcomes. McNeal's findings show that participation in either athletics or fine arts significantly reduced a student's likelihood of school dropout.

Qualitative research and detailed ethnographic studies have demonstrated that middle- to high-income parents are more likely than lower-income parents to provide structured activities and be involved in school or extracurricular pursuits. Drawing on in-depth observations of black and white families, Annette Lareau (2000, 2002, 2003) found that middle-class families viewed their children as projects to be cultivated and were more likely to use a variety of structured activities to develop their children's talents and skills. Thus, middle-class children, unlike working-class and poor children, become adept at interacting with and negotiating societal institutions.

### *Child Screen Time*

Screen time refers to the amount of time children and youth spend viewing television, playing video games, and using a computer (Eisenmann et al. 2008). Typical studies in this area examine health-related outcomes of child and youth screen time. For example, Giuseppe Corbo and colleagues (2008) investigated more than 20,000 six and seven year-olds and found that children who spent five or more hours per day watching television were more likely to experience asthma symptoms compared to those who viewed less than one hour of television per day. Amy Mark and Ian Janssen (2008) found that in a sample of more than 1,000 adolescents, higher rates of screen time were associated with an increased likelihood of metabolic syndrome. Adolescents who reported screen times greater than three hours per day were up to three times

more likely to have metabolic syndrome than adolescents with daily screen times of one hour or less.

A few studies also examine the influence of screen time on academic outcomes (MacBeth 1996; Shin 2004). Although some researchers propose that television, particularly programs with educational content, can promote knowledge development and academic achievement, findings show the total hours watching television has an overall negative influence on academic achievement (Shin 2004).

We argue that household wealth is positively associated with parenting resources; lower-income families with household wealth are able to use that wealth to invest in resources for their children that might otherwise be inaccessible. Lower-income families who lack household wealth are more likely to experience financial strain and be less able to invest in child-focused resources. Among low- and moderate-income families, owning a home may provide enough of a financial “safety net” that parents have the ability to do things like leave work to volunteer at school or pay for sports equipment. We therefore hypothesize that homeownership will be significantly associated with increased literacy promotion in the home, more parental involvement in the school, greater child participation in extracurricular activities, and less child screen time. The present study adds to the emerging body of research linking low- and moderate-income homeownership to parenting practices, and is among the first quantitative studies in this area.

## **Method**

### *Context of this Investigation*

Data for this analysis were gathered as a part of the Community Advantage Home Loan Secondary Market Program (CAP), a partnership between Self-Help, a leading Community Development Financial Institution, the Ford Foundation, and Fannie Mae. Self-Help purchases affordable mortgages such as Community Reinvestment Act loans from participating lenders using funds from a Ford Foundation grant to underwrite a substantial portion of the credit risk. Without the intervention of Self-Help, these loans could not readily be sold in the secondary market because of factors such as limited assets, lack of private mortgage insurance, nontraditional employment, or poor credit history. Participating lenders originate and service the loans under contract with Self-Help. Because Self-Help retains recourse on these loans, the organization can then sell the mortgages to Fannie Mae, thus effectively creating a traditional outlet for otherwise non-liquid loans. This program allows lenders to extend prime-priced, fixed rate home loans to customers who might not qualify under traditional mortgage guidelines. Thus, all CAP borrowers received 30-year, fixed-rate mortgages with a maximum debt-to-income ratio of 38%. It is important to note, however, that respondents who entered the study as renters and subsequently purchased a home may have received non-conforming or sub-prime loans. Likewise, members of the initial owners sample may sell the house they bought under the CAP program and purchase a different home with different loan originators and terms or may return to renting. Analyses presented below capture homeownership at Wave 4 (2007) and thus include those from both original samples as home-owners.

To qualify for CAP, borrowers had to meet one of three criteria: (1) household income under 80 percent of the area median income (AMI) for their metropolitan area; (2) be a minority with household income less than 120 percent of AMI; or (3) purchase a home in a high-minority

(i.e., greater than 30 percent) or low-income (i.e., less than 80 percent AMI) census tract and have an income less than 120 percent AMI. The participating lenders served the affordable market successfully. As of September 2007, the average loan size was \$86,472. Median borrower income was \$30,600, and 86% percent of borrowers earned less than 80% of area median income. In addition, 38% of the borrowers were minority and 42% were female-headed households. The loans themselves were fixed-rate, purchase money mortgages originated through retail channels. Moreover, 69% of the loans had an original loan-to-value higher than 95%. Losses as of September 2007, CAP's ninth year of operation, remained below 1% of loans purchased.

In 1998, the Ford Foundation enlisted the Center for Community Capital to conduct an evaluation of CAP looking at loan performance and the social and financial impacts of homeownership for LMI borrowers. To carry out this comprehensive evaluation, the Center for Community Capital developed a panel study of CAP homeowners and a comparison group of renters that were matched by neighborhood location and income criteria. This matching was limited to the 30 metropolitan areas in the United States with the highest number of CAP owners. The CAP study uses a quasi-experimental longitudinal design that involves annual interviews with the panels of borrowers to collect data on household and community characteristics<sup>1</sup>.

### *Data and Sample*

The data used in this study came from the 2007 wave of data collection. The Wave-1 CAP owners panel (2003) included 3,743 homeowners who were interviewed an average of 17 months

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<sup>1</sup> As of 2007, five panel interviews (four for renters) have been collected. The Year-0 (2003) baseline survey, for owners only, focused on mortgage origination process, homeownership education, lender selection, and closing costs. The Year-1 survey (2004) repeated a set of core questions and added an additional module on parenting practices. The Year-2 (2005) and Year-3 (2006) interviews included an extensive review of wealth, assets and liabilities; financial literacy and attitudes; and sense of community. The Year-4 (2007) interviews repeated the core questions and the parenting module, the results of which are the topics of this paper.

after they purchased their homes. The renter panel ( $N=1,530$ ) was created following the first year of owner panel data collection in order to better isolate and understand the effects of homeownership (Akin et al. 2004). In order to evaluate the generalizability of the CAP sample, the Center for Community Capital compared CAP with low-income homeowners from the 2004 Current Population Survey (CPS). The socio-demographic composition of CAP is very similar to the CPS sample. CAP includes more men in the homeowner sample because respondents were selected based on the first name to appear on the mortgage deed. CAP also includes more minority respondents than the CPS sample since one of the goals of the program was to increase minority homeownership. The final difference between CAP and CPS is that over 90% of CAP homeowners are employed while only 70% of CPS low-income homeowners are employed. We believe this is because all CAP owners purchased their homes within the immediate years prior to the start of the panel survey and therefore had to have a steady source of income at that time, while the CPS owners include people who purchased their homes much earlier and have since left the workforce for some reason (Riley and Ru 2009).

The parenting module used in the present study (Year-4) collected information on one child randomly selected at baseline from each household in the sample with children ages 0-17 years (1,349 owners; 731 renters). Because of sample attrition and selected children aging out of or moving out of the household, at Year 4 731 owners and 265 renters still had the selected child in the household and available for study. After removing the cases with missing data on all variables of interest, the final analytic sample comprises 883 households (658 owners; 225 renters).

### *Measurement*

*Dependent variables.* This study uses four dependent variables: parental school involvement, frequency of reading to child, child's participation in organized activities, and child's screen time either television viewing or playing video games. Different questions were asked depending on the age of the selected child, so the sample size varies depending on which dependent variable is being analyzed.

Parental school involvement for children ages 6–17 years was measured using two items, “How many parent-teacher meetings have you attended?” (1= All; 0= Some or none) and “Have you gone to any school event, like a play, sports event, or science fair at school?” (1= Yes; 0= No). To create a variable for analysis, those who attended all parent-teacher meetings and reported attending a school event were grouped together (coded 1) and all other pairs of responses were grouped together (coded 0).

Home literacy practices for children ages three to nine years was re-coded from the one item, “About how often do you or your spouse read to your child?” (1= Almost everyday; 0= Once a week or less often, or More than once a week). This coding follows that developed for analysis of the National Longitudinal Survey of Youth (Baker, et. al 1993). The third dependent variable, child's participation in organized activities, was measured for children ages 6–17 years from the item, “Does the child play a musical instrument, participate in organized sports, take dance or karate lessons, or participate in other organized activities like the Boy or Girl Scouts?” (1= Yes; 0= No). Child screen time was measured from the one item, “How much time would you say the child spends watching television or videos or else playing video games (either in your home or elsewhere)?” It is important to note that although the literature often defines

screen time as including online computer use, this study did not include computer use in its measure of child's screen time.

*Independent variables.* The key independent variable indicates the tenure status of the household. We use a dichotomous indicator of home ownership status as of the 2007 survey (1= Owner, 0= Renter)<sup>2</sup>.

*Control variables.* Control variables include various individual, financial, and household characteristics<sup>3</sup>. Householder demographic data included age (in years), gender (1 = Male, 0 = Female) a dummy variable indicating employment status (employed=1 not employed=0); and dummy variables for Black, Hispanic, Other race, and White. The reference group in all models is White. We control for marital status using a set of two dummy variables indicating marital status as married or partnered (reference category), never married, or widowed, divorced, or separated. We measure education using dummy variables for less than a high school diploma (the reference group), high-school diploma, some college but no degree, and graduated from college.

Householder financial characteristics were measured using three dummy variables indicating whether the householder holds a checking account (1 = Yes, 0 = No), has a credit card (1= Yes, 0= No), or put money in a savings account in the prior year (1 = Yes, 0 = No) and relative income (logged to adjust for skewness) measured as household annual income divided by Census tract median income. Household characteristics included the number of children

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<sup>2</sup> It is important to note that some of those who entered the survey as “renters” bought homes and are therefore owners in this analysis. Likewise, among those who were initially “owners”, some sold or lost their home between baseline and Year 4 and are in the renter group in this analysis.

<sup>3</sup> All responses to questions about the child and household characteristics were gathered from one respondent in the household, labeled the householder

(younger than 18 years) and adults (18 years and older) living in the household. Researchers also controlled for the age (in years) and gender (1= Boy, 0= Girl) of the selected child.

Neighborhood variables affecting homeownership, selected based on previous literature, were measured at the census tract level. These include tract homeownership rate (DiPasquale and Glaeser 1999; Aaronson 2000); a modified version of Green and White's (1997) measure of housing cost calculated here as the median house value divided by median rent, and tract population density (Haurin et al. 2002). Finally, a set of dummy variables indicating region (northeast or west, midwest, and south) was included to control for macro-level geographical variations. Northeast and west are grouped together because of small cell counts for those regions and because their housing markets were quite similar during the period of study.

#### *Data Analysis*

Homeownership is the endogenously defined treatment of this study. If homeownership was randomly assigned, we could simply use a dummy variable for homeownership and estimate the effect of homeownership on parenting by comparing owners and renters. However, households select homeownership on a non-random basis influenced by income, wealth, expected mobility, and a range of other factors (Haurin et al. 2002). Thus, in the absence of experimental data, attention has to be given to alternative estimation strategies. Homeownership is endogenous because unobserved individual characteristics (e.g., financial thriftiness, motivation) are correlated both parenting practices and homeownership. For example, it is possible that high levels of financial thriftiness influence both tenure choice and parenting practices, so the positive correlation between homeownership and better parenting practice is

mistaken for a causal relationship (Lerman and McKernan 2008 ). In econometric terms, this problem is referred as endogeneity of explanatory variables (Wooldridge 2002, p. 50).

In this analysis, we address the issue of endogeneity using the recursive bivariate probit model for the dichotomous outcomes and the treatment effect model for the continuous outcome variable (Maddala 1983; Greene 2003; Stata Corporation 2005; Jones 2007). These models simultaneously estimate the choice variable (homeownership), fit the model for the outcome variable, and estimate the correlation between outcomes and the error term directly in order to eliminate selection on unobservables. The Wald test statistics of rho ( $\rho$ ) estimates the correlation between the error terms of the two equations. If rho is not significantly different from zero there is no selection bias and we can rely on estimates of single-equation models such as ordinary least square (OLS) or logistic regression models.

These analytic approaches allow us to measure the unbiased impact of homeownership on outcomes, separate from the impact of covariates common to both outcomes. Every outcome was analyzed in a two-stage approach either by recursive bivariate probit model or treatment effects model. Correlated error terms between the treatment equation and the second equation indicate the presence of endogeneity bias or selection on unobservables (Jones 2007). If no endogeneity was detected, the relationship and predictive effects of tenure status on outcome variables were presented using conventional logistic regression or OLS regression.

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Table 1 here

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## **Results**

### *Demographics*

Table 1 shows several differences in individual, financial, and household characteristics CAP Homeowners and CAP Renters using t-tests and chi square tests as appropriate. CAP Homeowners were significantly more likely to be male, white, college graduates, employed, married/partnered, have more adults in household, have a checking account, have put aside money in savings and have a higher household income to tract median income ratio. Sixty-one percent of CAP owners were white compared with 37% of CAP renters ( $p < .001$ ). CAP homeowners were also more likely to be college graduates; 26% of homeowners had at least a college education as compared with 11% of CAP renters ( $p < .001$ ). 92% of homeowners were employed (92%) as compared with 70% of renters ( $p < .001$ ). More homeowners were married/partnered (77%) as compared with 44% of renters ( $p < .001$ ).

In addition, homeowners report significantly more financial resources than renters. For example, 96% of owners have a checking account compared to 72% of renters ( $p < .001$ ). Moreover, 77% of homeowners have put aside money in savings compared to 52% of renters ( $p < .001$ ). CAP homeowners are more likely than CAP renters to own a credit card ( $p < .001$ ). The ratio of household annual income to AMI (logged) for homeowners is significantly higher, with a mean ratio of .85 for owners as compared with .57 for renters ( $p < .001$ ).

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 Table 2 here  
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### *Regression Analysis*

We first tested predictors of each outcome variable in a bivariate probit model or treatment regression. This step allowed us to identify the issue of endogeneity, as discussed

previously. In the model for parental school involvement, endogeneity was detected and we proceeded with the recursive bivariate probit model. In our other outcomes, reading to child, organized activities, and hours of child screen time,  $\rho$  was not significant in the recursive bivariate probit model and thus endogeneity was not detected. Consequently, we used a logistic or ordinary least square (OLS) model<sup>4</sup> for these outcomes.

#### *Parental school involvement*

In the two-stage bivariate probit, the predicted probability of homeownership from the first stage (Table 2) is included as an independent variable (owner) in the second stage (Table 3) predicting parental school participation. The estimated  $\rho$  of the probit regression is significant, indicating the presence of endogeneity and thus, that error terms of homeownership and parental-school involvement are correlated. This correlation implies that the coefficients estimated with the conventional logistic regression are biased. We therefore interpret the two-stage model.

In the first stage model predicting homeownership, we find that several demographic, financial, and neighborhood characteristics predict homeownership. Blacks are significantly less likely than whites to own their own home. Those who are employed are more likely to be homeowners than those who are not employed. Higher relative income positively affects the probability of homeownership. Similarly, living in a Census tract with higher rates of homeownership and with lower population density makes one more likely to own one's own home.

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Table 3 about here

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<sup>4</sup> See appendix for two-stage model results with no endogeneity detected

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The covariates in this first-stage model, together, produce a predicted probability of homeownership for each respondent that then enters into the second stage of the biprobit model (Table 3) as the key independent variable (owner). Net of other variables, an increase in a respondent's predicted probability of homeownership significantly increases the respondent's odds of being involved in their child's school. Other demographic characteristics are also significantly related to parental school involvement. Those with older children are less likely to be involved with the child's school. Male respondents report lower school involvement than female respondents and increasing respondent age makes a respondent less likely to be involved with their child's school. Blacks are significantly less likely than whites to be involved at school. High school graduates are more likely than those without a high school degree to be involved. Finally, the more time a respondent spends with her child, the higher the probability she will all be involved at her child's school.

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Table 4 here  
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### *Home literacy practices*

Table 4 presents logistic regression results for the measure of whether a parent reads frequently to his/her child. The following covariates emerged as significant predictors of home literacy practices: child's age, respondent's age, black or Hispanic racial or ethnic status, number

of adults in household, number of children, hours of child screen time, and homeownership.

Surprisingly, homeownership was found to have a negative relationship to a parent reading to a child with homeowners 56 percent less likely to read to their child than renters. Controlling for all other covariates, a one-year increase in child age was associated with a 17 percent decrease in the predicted odds that a parent reads often to his/her child. While a respondent's one-year increase in age was associated with a 4 percent increase in the likelihood of parent reading to child. The odds of a parent reading to child for black respondents were 46 percent lower than the odds for white respondents ( $p < .05$ ). The odds of parent reading to child for Hispanic respondents were 55 percent lower than the odds for white respondents ( $p < .05$ ). A one adult increase in number of adults living in the household is associated with a 51 percent increase in the predicted odds of a parent reading to the child ( $p < .05$ ). However, the odds for positive home literacy practices for households with three or more children are 52 percent lower than the odds for household with one child ( $p < .05$ ). Not surprisingly, there was an inverse correlation between screen time and time spent reading to child. The more time a child spent watching TV or playing video games, the less time he or she was read to by his or her parents.

#### *Child participation in organized activities*

Children of homeowners are more likely to participate in organized activities than children of renters. These odds for homeowners are 80 percent higher than the predicted odds for renters ( $p < .05$ ). Controlling for all other covariates, the odds of a child participating in organized activities increases as the child gets older. Each one-year increase in a child's age is associated with a 16 percent increase in the likelihood the child will participate in organized activities. The odds of child participation in organized activities is highest for White children

than for all other racial and ethnic groups. Participation also increases as parent level of education increases. Odds of child participation are dramatically influenced by the number of children in the household; having three or more children in the household is associated with a 45 percent decrease in the predicted odds compared to those in households with one child.

A family's financial assets are also associated with children's participation in organized activities. Households that put aside money in savings are 61% more likely to have a child who participates in organized activities compared with households that have no savings. Similarly, households with greater parental-school involvement also have greater child participation in activities. The odds of child participation in organized activities associated with higher parental-school involvement are 63 percent higher than those predicted for households with lower parental-school involvement. As with home literacy, the more time a child spends watching TV or playing video games, the less time he or she spends in organized activities.

#### *Child screen time*

When controlling for covariates, children of homeowners are more likely to have lower total screen time as compared with children of renters. Older children have more screen time than younger children, while Hispanic children have less screen time. Controlling for all other covariates, child's age, hours spent with parents, and hours of child care provided by others were positively related to an increase in the hours of child screen time. Hispanic respondents report less child screen time than do white respondents.

#### *Limitations and Implications for Research*

As is always the case, this study faces several notable limitations to be explored in future research. First, our analyses only examine parental behaviors and home ownership at one point in time using cross sectional data. Future research should test the relationship between homeownership and parental behaviors using longitudinal data that will allow us to observe this relationship over time. Second, this study relies on respondents' retrospective self-reporting of their parental behaviors. Our findings are only reliable insofar as respondents accurately recall and report their behaviors. Because the survey instrument asks respondents to recall events over a long span of time, it is possible that their memory falters when recalling specific parenting behaviors. Also, there remains the possibility that some respondents over-reported their positive parental behaviors, introducing social desirability bias into the study. Further research could improve the accuracy of parenting behavior information by including information collected closer to the incidence of positive parental behavior and evaluation of parenting behavior by other informants.

Finally, research has highlighted the possibility of omitted variable bias in homeownership research (Dietz and Haurin 2003). While our study controlled for a host of individual and neighborhood characteristics, our data did not contain information on respondent's personality traits that may correlate with both homeownership and parenting behaviors. More information on these unobserved characteristics would improve the fit and explanatory power of our models in future work.

## **Discussion**

The purpose of this study is to examine the understudied relationship between LMI homeownership and parenting practices. We find that after addressing endogeneity between the

outcomes and homeownership and controlling for demographic and demographic characteristics, we find a significant relationship between homeownership and parental behavior. Specifically, we find that even when earning similar incomes and living in comparable neighborhoods, homeowners seem to exhibit more beneficial parenting practices than renters. Considering parent involvement, participation in organized activities and even the amount of time spent watching television and playing video games, caregivers that own rather than rent seem to engage in practices that over time would likely lead to better child outcomes.

Given our other findings, it may seem counter-intuitive that being a homeowner is correlated with a lower likelihood of reading to one's child, given that many studies find this to be a positive parenting trait. This may be because the survey asked this question across a large age range, from 3 to 9 years old, rather than just of pre-school students. Other research has noted that for slightly older children (ages 8 to 12), reading to a child is negatively related to achievement, probably indicating compensatory behavior given that most children can read on their own at this point (Davis Kean, 2005). This may help explain the direction of this finding.

Two primary strengths of this study result in a meaningful contribution to the field of asset building and LMI homeownership research. First, this study addresses the selection bias concerns that are prevalent among earlier studies of the relationship between homeownership and positive social and economic outcomes (Rohe, McCarthy, and Van Zandt 2000). By employing a two-stage regression model, we are better able to measure the effect of homeownership on parenting practices. Second, by using a quasi experimental research design of low income homeowners and a comparison group of renters, this study helps to fill a critical knowledge gap

around the effects of homeownership on parental practices among LMI populations. Thus, the design and rigor of the present study makes the findings valuable to the asset-building field.

This study reinforces the importance of exploring mechanisms that produce known causal relationships. While it has long been known that children of homeowners are advantaged relative to children of renters, this study posits and demonstrates that homeownership specifically relates to parenting behaviors known to produce those outcomes. This deepens our understanding of how and when advantage is transmitted intergenerationally. Because we address issues of endogeneity specifically, our study untangles a host of related influences that obscure causal relationships parental characteristics and child outcomes. Many have dismissed homeownership as a proxy for socio-economic status, income, or a host of other characteristics but these analyses show that it has a significant, independent effect on parenting behaviors.

Our findings provide evidence that there may be some intangible benefits that are fostered through homeownership, even among low and moderate income households, and reinforces the policy case for encouraging sustainable homeownership. It is possible that as parents take the necessary steps to attain the goal of homeownership, they may also be more consistent in parenting and supporting their children in other long-term goals and aspirations. Finally, it is also important to note, especially in light of the recent housing crisis in the United States, that all of the homeowners who participated in the CAP program received prime, fixed-rate, 30-year mortgages with a 38% debt-to-income criteria. Thus, policies that reduce barriers to homeownership and promote home retention may have independent, significant, positive effects on non-economic outcomes including parenting behaviors.

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Table 1 Sample Characteristics

	Owners (N=658)		Renters (N=225)	
	n	% /M (s.d.)	n	% /M (s.d.)
<b>Characteristics of child</b>				
Boy	354	53.80	111	49.33
Age (in years)	658	9.16 (4.37)	225	9.45 (4.53)
<b>Characteristics of respondent</b>				
Male ***	363	55.17	53	23.56
Age (in years)	658	32.50 (7.58)	225	33.54 (8.69)
Race/Ethnicity ***				
White	401	60.94	84	37.33
Black	109	16.57	95	42.22
Hispanic	126	19.15	39	17.33
Others	22	3.34	7	3.11
Education ***				
Less than High school grad.	74	11.25	29	12.89
High school grad.	170	25.84	79	35.11
Some college	241	36.33	91	40.44
College grad. and More	173	26.29	26	11.56
Employment ***				
Employed	605	91.95	158	70.22
Unemployed	16	2.43	35	15.56
Retired & out of labor force	37	5.62	32	14.22
Marital status ***				
Married & living with partner	507	77.05	100	44.44
Divorced/Separated/Widowed	92	13.98	57	25.33
Never married	59	8.97	68	30.22
<b>Household characteristics</b>				
Number of children				
One child	283	43.0	89	39.6
Two Children	245	37.2	82	36.4
Three or more	130	19.8	54	24.0
Number of adults ***	658	1.86 (.59)	225	1.61 (.75)
Checking account ***	637	95.90	162	72.20
Put money in savings account ***	511	77.66	117	52.00
Credit card ***	512	77.81	78	34.67
Logged (income /Area Median Income) ***	658	.85 (.27)	225	.57 (.26)
<b>Census Tract Characteristics</b>				
Tract % of homeownership ***	658	.70 (.16)	225	.60 (.22)
Tract Housing cost	658	204.85 (56.94)	225	202.76 (62.77)
Tract population density ***	658	6.71 (1.70)	225	7.36 (1.46)
<b>Region ***</b>				
Northeast & West	94	14.3	30	13.3
Midwest	171	26.0	27	12.0
South	393	59.7	168	74.7

Note: Asterisks indicate percentages or means that differ significantly across groups as determined either by  $\chi^2$  or t-test

1. p < .05. \*\* p < .01 \*\*\* p < .001

Table 2. First Stage Model Estimating Predicted Probability of Homeownership

Variable	Bivariate Probit	
	$\beta$	S.E
<i>Owner</i>		
Age	0.010	0.009
Male	0.266	0.159
(White)		
Black	-0.392*	0.168
Hispanics	0.157	0.195
Other	-0.513	0.351
(Less than HS grad.)		
High school grad.	-0.459*	0.224
Some college	-0.407	0.232
BA and More	0.087	0.287
Employed	0.524**	0.176
Tract % of homeownership	1.518***	0.422
Tract Housing cost	-0.0003	0.001
Tract Population Density	-0.00005*	0.00002
(Northeast and West)		
Midwest	0.211	0.234
South	-0.322	0.204
N	672	

\*p < .05. \*\* p < .01 \*\*\* p < .001

Table 3 Second Stage of Bivariate Probit Regression on Parental involvement

Variable	Bivariate Probit		Logistics		
	$\beta$	S.E	$\beta$	S.E	OR
<b><i>Parental school involvement</i></b>					
Intercept	-0.191	0.436	-0.003	0.723	
Boy	-0.078	0.097	-0.108	0.166	0.897
Child Age	-0.031*	0.015	-0.048	0.027	0.953
Male	-0.244*	0.129	-0.308	0.213	0.735
Age	-0.003	0.007	-0.003	0.122	0.996
Race/Ethnicity					
(White)					
Black	-0.319*	0.149	-0.742***	0.226	0.476
Hispanic	-0.262	0.147	-0.458	0.242	0.632
Others	-0.226	0.273	-0.521	0.440	0.594
Education					
(Less than HS grad.)					
High school grad.	0.132	0.184	0.082	0.299	1.085
Some college	0.552*	0.188	0.839**	0.309	2.314
BA and More	0.387	0.214	0.661	0.353	1.937
Employed	-0.219	0.166	-0.143	0.264	0.866
Single parent	0.053	0.164	-0.017	0.273	0.983
Number of Adults	0.137	0.087	0.214	0.150	1.24
Number of Children					
(One child)					
Two Children.	0.099	0.118	0.129	0.196	1.138
Three or more	0.143	0.142	0.162	0.235	1.176
Logged income/AMI	-0.138	0.245	0.311	0.350	1.364
Checking account	0.015	0.183	0.087	0.310	1.092
Credit card	-0.027	0.122	-0.042	0.207	0.959
Money in savings account	0.217	0.119	0.378	0.202	1.459
Hours spent with a child: respondents	0.024*	0.012	0.040*	0.021	1.041
Hours spent with a child: spouse	-0.017	0.013	-0.025	0.022	0.975
Hours taken care by other	-0.032	0.034	-0.040	0.057	0.960
Owner (From 1st stage model)	0.747*	0.327	-0.009	0.238	0.991
N	672		672		
Rho	-.524*				
Log Likelihood	- 674.85 (42)***		-426.37 (23) ***		

\*p < .05. \*\* p < .01 \*\*\* p < .001

Table 4 Regression Results for Read to Child, Organized Activities and Hours of Child Screen Time

Variable	Read to Child (3 – 9)			Organized activities (6- 18)			Hours of child screen time (3- 18)	
	$\beta$	S.E	OR	$\beta$	S.E	OR	$\beta$	S.E
Intercept	0.386	1.03		-1.504	0.851		0.577	0.363
Boy	-0.015	0.204	0.985	0.037	0.199	1.037	0.069	0.081
Child Age	-0.192***	0.056	0.825	0.144***	0.035	1.155	0.033**	0.012
Male	0.059	0.266	1.062	0.057	0.259	1.059	0.092	0.104
Age	0.043*	0.016	1.043	-0.008	0.014	0.992	0.006	0.006
Race/Ethnicity								
(White)								
Black	-0.609*	0.304	0.544	-0.288	0.273	0.750	-0.132	0.112
Hispanic	-0.801*	0.318	0.449	-1.048**	0.279	0.351	-0.296*	0.124
Others	-0.660	0.598	0.517	-0.361	0.549	0.697	-0.291	0.231
Education								
(Less than HS grad.)								
High school grad.	-0.461	0.399	0.631	0.751*	0.332	2.118	0.104	0.154
Some college	-0.361	0.416	0.697	0.905**	0.347	2.472	0.118	0.158
BA and More	0.532	0.456	1.703	1.457***	0.429	4.295	0.328	0.175
Employed	0.539	0.349	1.715	-0.214	0.306	0.807	0.066	0.133
Single parent	0.119	0.337	1.127	-0.358	0.328	0.699	0.092	0.133
Number of Adults	0.414*	0.210	1.514	0.102	0.167	1.108	-0.003	0.078
Number of Children								
(One child)								
Two Children	-0.328	0.231	0.721	-0.112	0.241	0.894	0.045	0.094
Three or more	-0.735*	0.305	0.479	-0.602*	0.276	0.548	-0.187	0.116
Logged (income/AMI)	0.036	0.439	1.037	0.342	0.440	1.408	0.243	0.169
Checking account	0.235	0.426	1.265	-0.391	0.346	0.676	0.193	0.158
Credit card	0.090	0.257	1.095	-0.068	0.255	0.934	0.009	0.101
Money in savings account	-0.255	0.256	0.775	0.474*	0.236	1.607	-0.008	0.100
Hours spent with a child: respondents	0.040	0.025	1.041	-0.003	0.024	0.997	0.025**	0.009
Hours spent with a child: spouse	0.012	0.022	1.012	0.021	0.029	1.021	0.022*	0.009
Hours taken care by other	-0.078	0.061	0.925	0.046	0.071	1.047	0.079**	0.026
Hours of child screen time	-0.325***	0.091	0.723	-255*	0.085	0.775		
Parental school involvement				0.489*	0.209	1.632		
Owner	-0.829**	0.306	0.437	0.594*	0.274	1.793	-0.478***	0.115
N		487			608			883
-2 Log L / R <sup>2</sup>		659.50			745.50			0.067
Likelihood Ratio (df)		75.44 (24) ***			118.73 (25) ***			

\* p <.05. \*\* p <.01 \*\*\* p< .001

Table 5 (Appendix) Bivariate Probit Models for Read to Child, Organized Activities and Screen Time

Variables	Read to Child Bivariate Probit		Organized activities Bivariate Probit		Child Screen Time Treatment Reg.	
	$\beta$	S.E	$\beta$	S.E	$\beta$	S.E
Intercept	0.213	0.61	-0.769	0.50	0.546	0.36
Boy	-0.003	0.12	0.022	0.12	0.067	0.08
Child Age	-0.115**	0.03	0.083**	0.02	0.032**	0.01
Male	0.067	0.18	0.016	0.15	0.065	0.11
Age	0.027**	0.01	-0.006	0.01	0.005	0.01
Race/Ethnicity (White)						
Black	-0.406*	0.19	-0.117	0.17	-0.089	0.12
Hispanic	-0.486**	0.19	-0.611**	0.17	-0.297*	0.12
Other	-0.412	0.37	-0.153	0.33	-0.266	0.23
Education (Less than HS grad.)						
High school grad.	-0.281	0.24	0.505*	0.20	0.125	0.15
Some College	-0.209	0.25	0.588**	0.21	0.132	0.16
B.A. and more	0.340	0.27	0.867**	0.25	0.325	0.17
Employed	0.343	0.21	-0.201	0.20	0.011	0.14
Single parent	0.065	0.21	-0.166	0.19	0.110	0.13
Number of Adults	0.253*	0.12	0.067*	0.10	-0.002	0.08
Number of Children (One child)						
Two children	-0.195	0.14	-0.049	0.14	0.046	0.09
Three or more Children	-0.458*	0.19	-0.330*	0.17	-0.180	0.11
Logged (Income/AMI)	0.090	0.32	0.020	0.32	0.127	0.19
Credit card	0.060	0.15	-0.052	0.15	0.010	0.10
Checking account	0.157	0.25	-0.240	0.21	0.182	0.16
Money in savings account	-0.161	0.15	0.276*	0.14	-0.010	0.10
Hours spent with a child: respondents	0.024	0.02	-0.001	0.01	0.025**	0.01
Hours spent with a child: spouse	0.008	0.01	0.009	0.02	0.022*	0.01
Hours taken care by other	-0.042	0.04	0.027	0.04	0.077**	0.03
Hours of child screen time	-0.198**	0.05	-0.155**	0.05		
Parental school involvement			0.293*	0.12		
Owner	-0.663	0.41	0.739	0.44	-0.221	0.25
Owner						
Intercept	-3.365	0.85	-2.285	0.70	-2.565	0.57
Age	0.025*	0.01	0.015	0.01	0.016*	0.01
Male	0.627**	0.19	0.244	0.17	0.334*	0.14
(White)						
Black	-0.334	0.22	-0.414*	0.18	-0.360*	0.15
Hispanics	0.449	0.26	0.128	0.21	0.291	0.18
Other	-0.123	0.49	-0.560	0.36	-0.331	0.32
(Less than HS grad.)						
High school grad.	-0.440	0.29	-0.537*	0.24	-0.397*	0.20
Some College	-0.306	0.30	-0.551*	0.25	-0.458*	0.21

\* p < .05. \*\* p < .01 \*\*\* p < .001

Table 5 (Continued) Bivariate Probit Models for Read to Child, Organized Activities and Screen Time

Variables	Read to Child		Organized activities		Child Screen Time Treatment Reg.	
	$\beta$	S.E	$\beta$	S.E	$\beta$	S.E.
Employed (Married and Partnered)	0.403	0.23	0.505**	0.19	0.663**	0.16
Widowed, Divorced, Separated	0.124	0.26	-0.069	0.20	-0.043	0.16
Never been married (One child)	0.034	0.29	-0.167	0.21	-0.150	0.18
Two children	-0.113	0.18	-0.187	0.16	-0.045	0.13
Three or more children	-0.207	0.22	-0.128	0.19	-0.064	0.16
Logged (income/AMI)	2.846**	0.38	2.512**	0.33	2.494**	0.26
Tract % of homeownership	2.283**	0.53	1.662**	0.45	1.784**	0.37
Tract Housing cost	-0.003	0.00	0.000	0.00	-0.001	0.00
Tract population density (Northeast and West)	0.000	0.00	0.000	0.00	0.000*	0.00
Midwest	0.360	0.29	0.232	0.25	0.338	0.21
South	-0.260	0.25	-0.192	0.22	-0.259	0.18
Intercept	-3.365	0.85	-2.285	0.70	-2.565	0.57
N	487		608		883	
rho	0.1148	0.25	-0.247	0.28	-0.142	0.12
Log Likelihood	-457.9 (42)***		-543.7 (44)***		-1723.3 (23)**	

\* p &lt;.05. \*\* p &lt;.01 \*\*\* p&lt;.001

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