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## 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 engaged parenting practices among low- and moderate-income households. Using analytic methods which account for selection effects and clustering, we test whether homeownership can act as a protective factor against parental disengagement from children. Controlling for individual characteristics, analyses demonstrate that homeowners are more likely than renters to demonstrate engaged parenting behaviors such as organizing structured activities for their children. While renters are more likely to read to their children, the children of homeowners spend less time watching television and playing video games. Implications for low-income housing policy are discussed in light of these findings.

### Keywords

Parenting; Homeownership; Assets; Low-income families; Child development

## 1. Introduction

Can homeownership promote engaged parenting practices in the home, school, and community? Several prior studies have documented an association between homeownership and positive child outcomes, but these studies have also left many questions unanswered. Why do the children of homeowners perform better in school? Is it because they have more household resources or because they live in better neighborhoods? Are prior findings robust when accounting for selection effects or when looking at low-income children? This study focuses on parental engagement, shown previously to contribute to positive child outcomes, and considers whether homeownership may help promote greater parental engagement which then contributes to better child outcomes.

Much of the previous research on homeownership and children used samples of middle-class households, which resulted in findings that may not be applicable to a low-income population. In contrast, our study uses a sample of low- and moderate-income homeowners and a matched comparison group of renters. This allows us to draw conclusions about the potential benefits homeownership may bring to those parents most likely to experience disengagement. Our study is also unique because we measure the influence of homeownership on parental engagement rather than child outcomes. By measuring parental engagement in the home, school, and community, we explore specific parenting behaviors that could contribute to the positive child outcomes associated with homeownership. Finally, we address the important statistical issue of selection. Homeownership and parental involvement share common predictors so traditional regression models would be biased due to correlation between the error terms. By using recursive bivariate probit and treatment effects models, 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 which makes this study an important contribution to the fields of housing research, asset building, and parenting studies.

## 2. Background

The association between homeownership and positive child outcomes has been well documented in previous research. Children of homeowners have higher educational achievement (Green & White, 1997; Haurin, Parcel, & Haurin, 2002), fewer behavior and emotional problems (Boyle, 2002; Cairney, 2005), and fewer problems later in life including poverty and teenage pregnancy (Green & White, 1997; Harkness & Newman, 2002). However, only one of these studies (Harkness & Newman, 2002) focused on low-income families. Yet it is important to consider that homeownership, particularly among low-income families, often comes as a bundle of features that is difficult to untangle (Newman, 2008; Dietz & Haurin, 2003). It could include characteristics of the home itself (housing quality, less crowding, subsidized assistance, and increased equity) or parental/caregiver characteristics (saving behavior, greater investment, and goal attainment). And if the key factor influencing child outcomes really isn't homeownership itself, but other correlated home and parent characteristics, resources could be put into increasing housing quality and affordable rental options rather than encouraging homeownership among low-income populations.

Barker and Miller (2009) address possible selection bias and find that when controlling for a variety of important asset factors the outcomes from homeownership beneficial for children are reduced or eliminated. Coming to a similar conclusion, Mohanty and Raut (2009) find that homeownership doesn't have an independent effect, but rather works through other factors such as home environment and neighborhood quality. However, relatively little attention has been paid to the relationship between homeownership and parenting outcomes. We know that parenting influences child outcomes and seek to examine whether engaged parenting might serve as another mediating factor that connects homeownership and child outcomes. Parents who demonstrate engaged parenting behaviors such as limiting children's

media exposure or attending parent–teacher conferences are more likely to have children who perform well in school (Astone & McLanahan, 1991; Hong & Ho, 2005). Similarly, increases in parent–child interaction through shared reading and games are related to fewer behavior problems in elementary school (Zick, Bryant, & Österbacka, 2001). In this study, we examine whether there is a relationship between homeownership and engaged parenting behaviors in the home, school, and wider community.

We propose that homeownership supports engaged parenting practices in two ways, one economic and one psycho-social. The first theory comes from Haurin, Parcel, et al. (2002) who argued that homeownership yields positive child outcomes by putting children in more nurturing neighborhoods. Their explanation is that both homeowners and renters may aspire to be engaged parents, but homeowners live in neighborhoods with more opportunities for school involvement or participation in neighborhood activities. In an empirical test of this theory, however, Haurin, Weinberg, and Reagan (2002) found that neighborhood homeownership rates did not have an independent effect on child outcomes. In a similar study using data from the Panel Study of Income Dynamics (PSID) and using methods to control for selection bias, Mohanty and Raut (2009) found that neighborhood environment did significantly predict child educational achievement and concluded that “a subsidy for home ownership may lead to positive effects on academic achievement by placing children in a better home environment, better neighborhood, and more stable residences” (p. 488). We therefore propose that one way home-ownership may support engaged parenting practices is by putting parents in neighborhoods where they have more opportunities to get involved in school and community activities with their children.

In addition to neighborhood effects, homeownership may also support engaged parenting practices by buffering families from financial stress. According to the Family Stress Model, economic hardship such as low income and a high debt-to-asset ratio often leads to economic pressure which causes parental emotional distress, conflict among caregivers, and parental disengagement (Conger & Conger, 2002; Conger & Donnellan, 2007). An interesting aspect of this model is that the economic hardship itself does not directly predict parental emotional distress and poor parenting, but rather is mediated by economic pressure, a set of conditions that give psychological meaning to the stresses of economic hardship (Conger & Donnellan, 2007). Thus, it is the unmet material needs, inability to pay bills and make ends meet, and having to cut back on necessary expenses that result in personal problems that distract parents from demonstrating affection toward their children, staying involved in their daily lives, and being consistent in discipline (Conger & Donnellan, 2007).

A similar study specifically examined the mediating pathways between economic hardship and the quality of parenting (Leinonen, Solantaus, & Punamäki, 2002). The authors found that fathers experiencing economic hardship face both the general economic pressure of not being able to pay bills and not having enough money left over at the end of month as well as the specific pressures of having to find new sources of income, cutting household expenditures, and cutting back on items that specifically affect their child. These pressures produced anxiety that led fathers to become less involved and more punitive toward their children. Mothers facing economic hardship also faced general and specific pressures that

produced anxiety and depression that led mothers to be less involved and more authoritative toward their children (Leinonen et al., 2002).

While both low-income homeowners and low-income renters likely face times of economic hardship, we argue that being a homeowner may limit the severity of such hardships and the degree to which financial hardships result in psycho-social stress and disengaged parenting. First, low to moderate-income households that are able to purchase a home have already found effective ways to manage their limited finances in order to become eligible for a mortgage. If such effective strategies are sustained, it could help reduce economic pressure. Likewise, they have greater access to formal credit to sustain the household during times of economic hardship, putting less strain on familial relationships and parenting. In the Community Advantage Panel sample used for this research, homeowners have higher adjusted net worth and liquid assets than renters (p. 21; Stegman, Freeman, & Paik, 2007). In other studies, assets have been found to instill a sense of economic security and reduce the perception of economic stress (Moore et al., 2001; Page-Adams & Vosler, 1997; Scanlon & Page-Adams, 2001, 2006; Sherraden et al., 2005; Shobe & Boyd, 2005). We therefore hypothesize that homeownership promotes parental engagement by giving parents more options for managing financial hardships and reducing the severity of financial hardships when they do occur, thereby reducing stress and disengagement from children.

Taken together, these two explanations offer a reasonable framework of how homeownership supports engaged parenting practices. Homeowners are able to live in neighborhoods which offer more opportunities for parent-child engagement in the schools and communities. At the same time, homeownership helps reduce the stressful effects of financial hardship which fosters parent-child engagement within the home. Our formal hypotheses are listed below; our measures are described in the following section:

- 1 Community Advantage Program (CAP) homeowners are more likely than CAP renters to demonstrate engaged parenting behaviors.
- 2 Parents who experience financial hardship are less likely to demonstrate engaged parenting behaviors.
- 2a Homeowners report less financial hardship than renters.

### 3. Data

This study uses data collected to evaluate the Community Advantage Program (CAP) study. CAP is a secondary mortgage market program developed out of a partnership between the Ford Foundation, Fannie Mae, and Self-Help, a leading community development financial institution in North Carolina. The goal of this program was to underwrite 30-year fixed-rate mortgages for families who would have otherwise received a sub-prime mortgage or been unable to purchase a home at all. In order to qualify for the program, participants had to meet one of the following criteria: 1) have an annual income of no more than 80% of the area median income (AMI), or 2) be a minority with an income not in excess of 115% of AMI, or 3) purchase a home in a high-minority (>30%) or low-income (<80% of AMI) census tract and have an income not in excess of 115% of AMI. By the end of 2004, almost 29,000 mortgages had been financed through CAP.

This study's data originated from a survey designed to evaluate the impacts of homeownership on families who purchased homes through CAP. In order to facilitate this analysis, a random sample of CAP borrowers was selected to participate in annual surveys. Once the sample of homeowners was selected, a comparison group of renters was matched to the homeowners based on neighborhood proximity and income. This matching was limited to the 30 metropolitan areas in the United States with the highest numbers of CAP owners. The renter sample was obtained by randomly selecting households who lived within the same census blocks<sup>1</sup> as already-enrolled homeowners, based on public telephone directory lists. Like the CAP homeowners, the renters had to meet income or racial criteria. Respondents had to be between 18 and 65 years old, pay rent to the owner of their residence, and have an annual income of less than 80% AMI or 115% AMI in a predominantly-minority neighborhood. The final year one sample was comprised of 3743 homeowners and 1530 renters.

The data used in this study came from year four of data collection, collected in 2007. The Year 4 sample included 2079 homeowners and 903 renters. This represents an overall attrition rate of 44% for owners and 41% for renters. The majority of attrition, around 30% for both groups, occurred between the Year 1 and Year 2 surveys. As with most surveys, attrition is higher among minorities, respondents with less education, and those over age 40.

In order to evaluate the generalizability of the CAP sample, the Center for Community Capital at the University of North Carolina 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 & Ru, 2009).

At baseline, one child was randomly selected from each household in the sample with children ages 0–17 years (1349 owners; 731 renters). Because of sample attrition, children aging out, or children moving out of the household, by Year 4 there were 731 owners and 265 renters who had the focal 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 857 households (638 owners; 219 renters). Table 1 shows the descriptive statistics for the owners and renters in the analytic sample.

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<sup>1</sup>When eligible renters could not be found within the census block, the radius was expanded up to four miles.

### 3.1. Measurement

**3.1.1. 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 (television viewing and playing video games). Taken together, these measures reflect parenting behaviors widely believed to be associated with positive child outcomes. Each practice, individually, can be taken as an indicator that a parent is adhering to normatively valued modes of parenting. In the module from which our dependent variables are drawn, the age of the focal child determined which questions a householder was asked. Consequently, not every respondent was asked about each of our outcomes and our sample size differs between analyses.

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). This measure allows us to distinguish between those parents who are more involved in their child’s school and those who are less engaged.

Home literacy practices for children ages three to nine years were evaluated with a question that asks, “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, Keck, Mott, & Quinlan, 1993). In that survey, researchers suggest an empirical difference between very frequent reading to a child and less frequent reading to a child and we capture that distinction with our measure.

The third dependent variable, child’s participation in organized activities, was measured for children ages 6–17 years with the question, “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). Given the difficulties associated with attempting to gauge and interpret depth or intensity of participation in organized activities, we opt for this binary indicator of participation. While we may lose the nuance that a more detailed set of questions would allow, we gain conceptual clarity and substantially reduce the potential for measurement error.

Child screen time was measured with 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) [in a typical week]?” It is important to note that although the literature often defines screen time as including online computer use, the CAP survey does not include a measure of the amount of time a child uses a computer in a given week. Also, some computer usage is likely captured as time spent playing video games. Still, we think this continuous measure gives us a reasonable representation of the screen time of the focal child.



**3.1.2. Independent variables**—The key independent variable indicates the tenure status of the household. We use a dichotomous indicator of homeownership status as of the 2007 survey (1 = owner, 0 = renter). 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. The researchers considered using homeownership trajectory as the key independent variable in the analysis. Because this is a categorical measure, it is impossible to estimate the class of models needed to control for endogeneity. While the recursive bivariate ordered probit model would estimate outcomes for ordered variables, we find the imposition of an ordered evaluation of tenure change to be unduly problematic both in concept and in practice. We cannot, for instance, justify the creation of an ordinal relationship between transitioning from renting to owning compared to always owning in a way that reliably represents the concept we think important. The strength of our cross-sectional, dichotomous measure of our independent variable is its clarity and fidelity to the concept it measures.

**3.1.3. Control variables**—Control variables include various individual, financial, and household characteristics.<sup>2</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 indicator variables for race. The reference group in all models is White. We included an indicator variable for whether the householder is a single parent. This is based on the reported marital status of the respondent. A fuller measure of marital status is highly collinear with the number of adults in the household and could not be included. We measure education using indicator 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 owns a savings account (1 = yes, 0 = no). We also controlled for the decile of income in the sample into which the respondent’s reported household annual income falls (coded 1–10). This measure gives a marker of position relative to other sample members and avoids shocks caused by outlying values of income. In the model it operates as a continuous variable. Household characteristics included the number of children (17 years old and younger) and adults (18 years old and older) living in the household. Because substantial research suggests that parenting behaviors are conditioned by characteristics of the child, researchers also controlled for the age (in years) and gender (1 = boy, 0 = girl) of the focal child. Likewise, the number of hours (in a typical) week the child is cared for by someone other than a member of the immediate family was included in the model to account for potential effects of parental absence on the outcomes of interest. In an ideal world, we would also control for other characteristics of the focal child such as birth order but these data are not available in CAP.

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<sup>2</sup>All responses to questions about the child and household characteristics were gathered from one respondent in the household, labeled the householder.

Neighborhood variables affecting homeownership but unrelated to parenting practice, selected based on previous literature, were measured at the census tract level. These include tract homeownership rate (DiPasquale & Glaeser, 1999; Aaronson, 2000); a modified version of Green and White's (1997) measure of the relative median cost of homeownership calculated here as the median house value divided by median rent, and tract population density (Haurin, Parcel, et al., 2002; Haurin, Weinberg, et al., 2002). These tract-level measures comprise the instrument for the recursive bivariate probit model discussed below. To be a valid instrument, these variables must be predictive of the first stage outcome (homeownership) but uncorrelated with the second stage outcomes (our dependent variables). Based on the literature cited above and empirical testing in the data, the researchers conclude that this instrument meets these criteria.

### 3.2. Data Analysis

Many previous studies exploring the link between homeownership and parenting practices suffer in that their authors fail to adequately address the issue of endogeneity. A variable is endogenous if unobserved individual characteristics (e.g., attitude, world view, motivation) are correlated with both the dependent variable and the independent variable (Wooldridge, 2002, p. 50). With regard to 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 & McKernan, 2008). The factor causing us to worry about endogeneity between homeownership and parenting practices can be easily seen in Table 1. In the analytic sample and in the LMI population generally, homeowners and renters are quite different from one another. Consequently, we fear that results depicting a positive relationship between ownership and parenting simply reflect the precursors common to both rather than a real effect. To alleviate these important concerns, we pursue alternative estimation strategies.

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 use Full Information Maximum Likelihood (FIML) estimators to 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 according to the equations:

$$H_i^* = \alpha_o + \alpha_i Z_i + \theta X_{1i} + \mu_{i2}, H = 1 \text{ if } H_i^* > 0 \quad (1)$$

$$y_i^* = \beta_o + \beta_1 H_i^* + \theta_1 X_{1i} + \theta_2 X_{2i} + \mu_{1i}, y = 1 \text{ if } y_i^* > 0 \quad (2)$$

where  $H_i^*$  is the homeownership,  $Z_i$  is the instrument predictive of homeownership but uncorrelated with  $y^*$ , and  $X_{1i}$  is a vector of control variables that appear in both equations.  $X_{2i}$  is a vector of control variable only used in the estimation of  $y^*$ , the dependent variable. Importantly, notice the estimated  $H_i^*$  appears as an independent variable in Eq. (2). Eqs. (1) and (2) are estimated simultaneously. In addition, both the recursive bivariate probit model



and the treatment effects model produce a Wald test statistic  $\rho$  ( $\rho$ ) which estimates the correlation between the error terms  $\mu$  of the two equations. Correlated error terms between the treatment equation and the second equation (if  $\rho$  is significantly different from 0) indicate the presence of endogeneity bias or selection on unobservables (Jones, 2007). If no endogeneity was detected, the relationship and predictive effects of homeownership on outcome variables are presented using conventional logistic regression or OLS regression.

These analytic approaches allow us to measure the unbiased impact of homeownership on outcomes, separate from the impact of covariates common to both outcomes. In other words, these models both test for and correct endogeneity that may be present. They do so by using an instrument that is at once predictive of the choice variable (homeownership) but uncorrelated with the dependent variable. Our instrument, discussed above, meets these assumptions. The estimate of the choice variable produced by the selection equation is used in the estimation of the parameters of the dependent variable equation.

Another issue common to the data on this topic is clustering in the sample design. As noted above, the design of CAP produced a sample that is mildly clustered. To avoid bias from this, the researchers estimate standard errors after relaxing the standard assumption to allow for non-independence of observations within clusters but maintaining independence between clusters using a clustered sandwich estimator.

## 4. Results

### 4.1. Demographics

Table 1 shows several differences in individual, financial, and household characteristics between CAP homeowners and CAP renters using *t*-tests and proportion tests as appropriate. The most important aspect of the table is the apparent difference between owners and non-owners on a wide array of characteristics. On the surface, this suggests these populations have differences that could correlate with differences in parenting practices. Consequently, a rigorous analysis of these questions must account for potential endogeneity, as we do with the use of exogenous instrumental variables. It should also be noted that in these bivariate comparisons, we see differences between owners and renters on several of our dependent variables. The children of owners participate in organized activities at a greater rate than children of renters and children of renters have, at the mean, two additional hours of screen time in a typical week. CAP homeowners were significantly more likely than renters to be male, white, college graduates, employed, married or partnered, have more adults in the household, have a checking account, and have a savings account.

In addition, homeowners report significantly more financial resources than renters. The average owner is in a significantly higher income decile than the average renter. CAP homeowners are more likely than CAP renters to own a credit card ( $p < .001$ ), and owners are less likely to have been contacted by a collection agency or to have taken out a payday loan. These findings are important because they fit with our theory that LMI homeowners may face, on average, fewer financial stressors than renters.

## 4.2. Regression analysis

We first tested predictors of each outcome variable in a bivariate probit model or treatment regression. This step allowed us to identify endogeneity, as discussed above. 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 model and thus endogeneity was not detected. Consequently, we are justified in using a logistic or ordinary least square (OLS) model<sup>3</sup> for these outcomes and have shown the absence of endogeneity between our independent and dependent variables. In all of our analysis, we correct for clustering in our sample and present robust standard errors.

**4.2.1. Parental school involvement**—In the two-stage recursive bivariate probit (Table 2), the predicted probability of homeownership from the first stage is included as an independent variable (owner) in the second stage, predicting parental school participation (see Eqs. (1) and (2), above). The estimated rho of the probit regression is marginally 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. Male respondents are significantly more likely than female respondents to own their own home, blacks are significantly less likely than whites to own their home, and decile of income positively affects the probability of homeownership.

The covariates in this selection equation, together, produce a predicted probability of homeownership for each respondent that then enters into the second stage of the bivariate probit model as the key independent variable (owner). The model suggests that net of covariates the predicted propensity for homeownership is not associated with increased parental school involvement. Other demographic characteristics are 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. Hispanics are significantly less likely than whites to be involved at school. Respondents with some college education are more likely than those without a high school degree to be involved.

**4.2.2. Home literacy practices**—The first column of Table 3 presents logistic regression results for the measure of whether a parent reads frequently to his or her child. Surprisingly, homeownership was found to have a negative relationship to a parent reading to a child with homeowners 62% less likely to read to their child than renters ( $p < .001$ ). This is opposite of our hypothesized relationship. This finding is robust against different specifications of the outcome variable and consistent across all of the age groups in the presented analyses.

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<sup>3</sup>See Appendix A for two-stage model results with no endogeneity detected.

Controlling for all other covariates, a one-year increase in child age was associated with a 17% decrease in the predicted odds that a parent reads often to his or her child but for all age groups, renters were more likely to read to the child than were owners. A one-year increase in respondent's age was associated with a 4% increase in the likelihood of parent reading to child. The odds of a parent reading to child for black respondents were 44% lower than the odds for white respondents ( $p < .01$ ). The odds of parent reading to child for Hispanic respondents were 49% lower than the odds for white respondents ( $p < .05$ ). The addition of more children in the household is associated with a decreased likelihood the parent will read to the focal child. Finally, we see a potential influence of financial stress as taking a payday loan is associated with a 60% reduction in the odds of reading to the focal child.

**4.2.3. Child participation in organized activities**—Children of homeowners are more likely to participate in organized activities than children of renters. In fact, the focal child in the household of an owner is nearly twice as likely to participate in organized activities as the child of a renter ( $p < .001$ ). Controlling for all other covariates, the odds of a child participating in organized activities increases as the child gets older. The odds of child participation in organized activities are higher for white children than for blacks or Hispanics. Participation also increases as parent level of education increases. Odds of child participation are influenced by the number of children in the household; an additional child is associated with a 17% reduction in the odds of the focal child's participation. A family's financial assets are also associated with children's participation in organized activities. Households with a savings account are 66% more likely to have a child who participates in organized activities compared with households that have no savings account.

**4.2.4. Child screen time**—When controlling for covariates, children of homeowners have lower total screen time as compared with children of renters ( $p < .001$ ). In a typical week, the child of an owner will watch nearly 3 hours less than the child of a renter. Older children have more screen time than younger children, while Hispanic children have less screen time than white or black children. Controlling for all other covariates, child's age and hours of child care provided by others were positively related to an increase in the hours of child screen time. The children of college graduates receive more screen time than the children of high school dropouts. It is possible that this may be an effect of socio-economic status that is not captured by income.

### 4.3. 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 homeownership at one point in time. It is likely that in addition to a significant effect of homeownership status that we find, transitions between owning and renting and the duration of homeownership may also significantly affect parental behavior and attitudes. Future research will include longitudinal measures of homeownership and of parental behaviors that can vary over time based on the age of the child.

Next, 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. Further research could improve the accuracy of parenting behavior information by including information collected prospectively and evaluation of parenting behavior by other informants.

Finally, research has highlighted the possibility of omitted variable bias in homeownership research (Dietz & 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.

## 5. Discussion

The purpose of this study is to examine the under studied relationship between LMI homeownership and engaged parenting behaviors. We used an instrumental variable approach to address the endogeneity between the propensities to own a home and to engage in positive parenting behaviors. Our results suggest that children of CAP homeowners are more likely to participate in organized activities and have less screen time when compared with CAP renters. We weigh these positive parental behavior outcomes against the counterintuitive finding that owners are less likely to read to their children than are renters. We find no effect of homeownership on parental school involvement. On the whole, our findings suggest that home-ownership and financial stability may create opportunity for parents to engage in some positive parenting behavior.

This study reinforces the importance of exploring mechanisms that produce known causal relationships. In our study, the use of instrumental variables to account for endogeneity allows us to examine the actual causal relationship between homeownership and parenting practices. 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 between parental characteristics and parenting behaviors. Many have dismissed homeownership as a proxy for socio-economic status, income, or a host of other characteristics but our study suggests that homeownership has a significant, independent effect on some engaged parenting behaviors. In addition, 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.

Another important contribution of our study is that we integrate and test previous theory on financial hardship, homeownership, and parenting practices. Our CAP homeowners were less likely than renters to report financial hardships. We suspect that these financial stressors may reduce the ability of renters to afford organized activities for their child. Screen time, on the other hand, is relatively inexpensive for most families. In the midst of the current mortgage crisis, we may expect homeowners to incur increased financial stress. This is not an issue among owners in our sample because all CAP participants received prime fixed-rate

mortgages and therefore have not experienced the financial shocks of interest rate adjustments or the stress of excessively high interest rates in many sub-prime mortgages.

Our findings provide evidence that there may be some intangible benefits that are fostered through homeownership, even among low-and moderate-income households. Further, our findings reinforce the policy case for encouraging sustainable and responsible homeownership. Finally, it is also important to emphasize, 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 can have independent, significant, positive effects on non-economic outcomes including engaged parenting behaviors.

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Table 1

Sample characteristics.

	Homeownership status in Year 4				<i>t</i> -test and proportion test	
	Non-owners		Owners		<i>t/z</i>	
	Count	Mean/%	Count	Mean/%	SD	SD
<i>Dependent variables</i>						
Parental school involvement	168	0.54	504	0.60		-1.31
Read to child	120	0.63	367	0.57		1.13
Child organized activities	160	0.55	461	0.75		-4.71***
Child screen time	219	12.43	638	10.67	7.90	2.66**
<i>Child characteristics</i>						
Boy	219	0.49	638	0.54	0.50	-1.10
Child age	219	9.22	638	8.89		1.01
<i>Demographics</i>						
Male	219	0.24	638	0.56		-8.12***
Age	219	33.18	638	32.27	7.52	1.49
<i>Race (white)</i>						
Black	219	0.42	638	0.16		8.06***
Hispanic	219	0.18	638	0.19		-0.33
Other	219	0.03	638	0.03		-0.07
<i>Education (less than HS)</i>						
HS graduate	219	0.35	638	0.26		2.45*
Some college	219	0.40	638	0.37		0.85
College grad or more	219	0.11	638	0.26		-4.44***
Single	219	0.56	638	0.22		9.58***
Number of adults in HH	219	1.79	638	1.95	0.57	-3.12**
Number of children in HH	219	1.88	638	2.02	0.97	-1.87
Decile of income	217	3.09	629	6.16	2.61	-15.52***
Own a checking account	219	0.71	638	0.96		-10.33***

	Homeownership status in Year 4				t-test and proportion test	
	Non-owners		Owners		t/z	
	Count	Mean/%	SD	Count	Mean/%	SD
Own a credit card	219	0.33		638	0.78	-12.22***
Own a savings account	219	0.52		638	0.78	-7.47***
Hours child cared for by other	219	5.15	11.82	638	5.77	11.21
Employed	219	0.69		638	0.91	-7.84***
<i>Financial stress</i>						
Visit/call from collection	219	0.57		638	0.27	8.18***
Ever bankrupt	219	0.03		638	0.03	-0.18
Took payday loan	219	0.13		638	0.04	4.54***
<i>Tract characteristics</i>						
Percent homeownership	219	0.60	0.22	638	0.70	0.16
Population density	219	3333.16	4701.41	638	2277.32	3246.89
Housing cost ratio	219	203.66	62.83	638	204.53	56.02

\*\*\*  $p < 0.01$ ,

\*\*  $p < 0.05$ ,

\*  $p < 0.1$ .

**Table 2**

Bivariate probit regression on parental school involvement.

Variables	Estimating homeownership		Estimating parental school involvement	
	Coef	SE	Coef	SE
Homeownership			0.948	(0.586)
Boy			-0.0590	(0.0955)
Child age			-0.0286*	(0.0168)
Own checking account			-0.0109	(0.164)
Own credit card			-0.0353	(0.125)
Own savings account			0.197*	(0.115)
Hours other cares for child			-0.00370	(0.00461)
Employed			-0.158	(0.129)
Visit/call from collection			-0.106	(0.101)
Ever bankrupt			-0.152	(0.224)
Took payday loan			0.187	(0.166)
Single parent household			0.0547	(0.161)
Male	0.423***	(0.143)	-0.323***	(0.121)
Age	0.00664	(0.00798)	-0.00389	(0.00722)
<i>Race and ethnicity (White)</i>				
Black	-0.594***	(0.160)	-0.234	(0.194)
Hispanic	0.0635	(0.177)	-0.266*	(0.150)
Other race	-0.561**	(0.243)	-0.315	(0.341)
<i>Education (Less than HS)</i>				
HS grad	-0.303	(0.262)	0.0707	(0.199)
Some college	-0.146	(0.254)	0.452**	(0.186)
BA grad or more	0.169	(0.264)	0.283	(0.195)
<i>Household composition</i>				
Number of adults	-0.0963	(0.0800)	0.0643	(0.0816)
Number of children	-0.00951	(0.0651)	-0.0128	(0.0551)
Decile of income	0.230***	(0.0294)	-0.0386	(0.0436)
<i>Tract-level characteristics</i>				
% homeownership <sup>+</sup>	0.692	(0.429)		
Population density <sup>+</sup>	-2.72e-05	(1.82e-05)		
Housing cost ratio <sup>+</sup>	-0.000915	(0.00113)		
Constant	-0.457	(0.620)	0.131	(0.585)
Observations	664		664	

\*\*\*  
 $p < 0.01$ ,\*\*  
 $p < 0.05$ ,\*  
 $p < 0.1$ ,

<sup>+</sup> variable in instrument.

Table 3

Regression results for read to child, organized activities, and hours of child screen time.

Variables	Parent reads to child		Organized activities		Screen time	
	Ages 3–9		Ages 6–17		Ages 3–17	
	Coef	SE	Coef	SE	Coef	SE
Homeownership	-0.966***	(0.327)	0.682***	(0.238)	-2.856***	(0.912)
Boy	0.0304	(0.206)	-0.0187	(0.199)	0.535	(0.562)
Child age	-0.1193***	(0.0544)	0.0982***	(0.0343)	0.179*	(0.102)
Own checking account	0.165	(0.421)	-0.513	(0.356)	0.972	(1.141)
Own credit card	0.125	(0.273)	0.0377	(0.241)	0.301	(0.696)
Own savings account	-0.295	(0.266)	0.508**	(0.207)	0.0401	(0.690)
Hours other cares for child	-0.0180**	(0.00883)	-0.000741	(0.00833)	0.0737**	(0.0322)
Employed	0.288	(0.342)	-0.243	(0.282)	-0.0509	(1.004)
Visit/call from collection	-0.0119	(0.251)	0.0696	(0.202)	0.0467	(0.829)
Ever bankrupt	-0.0310	(0.477)	0.537	(0.663)	4.149*	(2.375)
Took a payday loan	-0.893**	(0.427)	0.286	(0.356)	1.104	(1.433)
Single parent household	-0.366	(0.379)	-0.520*	(0.309)	-0.355	(0.808)
Male	0.0967	(0.242)	0.0533	(0.232)	0.935	(0.723)
Age	0.0385**	(0.0191)	-0.0146	(0.0137)	0.0146	(0.0509)
<i>Race/ethnicity (White)</i>						
Black	-0.590**	(0.279)	-0.425*	(0.244)	-0.877	(1.023)
Hispanic	-0.676**	(0.312)	-1.007***	(0.302)	-2.133***	(0.785)
Other race	-0.655	(0.602)	-0.365	(0.564)	-0.665	(1.820)
<i>Education (Less than HS)</i>						
HS graduate	-0.501	(0.441)	0.787**	(0.314)	1.207	(1.221)
Some college	-0.549	(0.469)	0.955***	(0.321)	1.254	(1.153)
College Grad or more	0.296	(0.465)	1.356***	(0.385)	2.534*	(1.444)
<i>Household composition</i>						

Variables	Parent reads to child Ages 3–9		Organized activities Ages 6–17		Screen time Ages 3–17	
	Coef	SE	Coef	SE	Coef	SE
	Logistic, clustered SE		Logistic, clustered SE		OLS, clustered SE	
Number of adults	-0.421	(0.265)	0.0312	(0.163)	-0.203	(0.555)
Number of children	-0.185*	(0.112)	-0.190**	(0.0939)	-0.420	(0.325)
Decile of income	0.0658	(0.0475)	0.0343	(0.0536)	0.0268	(0.146)
Constant	2.395**	(1.159)	-0.112	(0.795)	9.209***	(2.417)
Observations	483		613		846	

\*\*\*  $p < 0.01$ ,

\*\*  $p < 0.05$ ,

\*  $p < 0.1$ .



**Appendix A**

Bivariate probit and treatment regression results

	Read to child		Organized activities		Screen time	
	b	se	b	se	b	se
<i>Stage 1</i>						
Homeownership						
Tract characteristics						
Homeownership	1.421**	0.549	0.494	0.559	0.836*	0.360
Population density	0.000	0.000	0.000	0.000	0.000	0.000
Housing cost ratio	-0.003	0.002	-0.001	0.001	-0.002*	0.001
Individual characteristics						
Age	0.015	0.011	0.013	0.009	0.015*	0.007
Male	0.814***	0.174	0.350*	0.155	0.466***	0.127
Race (White)						
Black	-0.414	0.221	-0.589**	0.181	-0.550***	0.138
Hispanic	0.235	0.220	0.136	0.215	0.102	0.170
Other	-0.123	0.352	-0.488	0.286	-0.470	0.334
Education (no HS)						
HS graduate	-0.362	0.302	-0.279	0.260	-0.200	0.192
Some college	-0.225	0.348	-0.191	0.279	-0.207	0.196
BA or more	0.078	0.371	0.126	0.281	0.074	0.233
Household characteristics						
Number of adults	-0.360*	0.146	-0.121	0.083	-0.168	0.087
Number of children	0.025	0.082	0.022	0.075	0.044	0.062
Decile of income	0.270***	0.039	0.249***	0.030	0.261***	0.026
Constant	-0.912	0.699	-0.535	0.726	-0.829	0.496
<i>Stage 2</i>						
Homeownership (from above)						
	-0.973	0.698	0.237	1.297	-2.281	2.322
Child characteristics						
Boy	0.025	0.122	0.004	0.114	0.528	0.573
Age	-0.114***	0.033	0.057**	0.020	0.178*	0.084

	Read to child			Organized activities			Screen time		
	b	se		b	se		b	se	
Hours cared for by non-parent	-0.011*	0.005	0.000	0.000	0.005	0.074**	0.026		
Financial characteristics									
Own a checking account	0.099	0.244	-0.299	0.215	0.950	1.120			
Own a credit card	0.076	0.166	0.014	0.145	0.300	0.737			
Own a savings account	-0.169	0.163	0.303*	0.123	0.039	0.713			
Employed	0.173	0.206	-0.143	0.166	-0.066	0.890			
Visited by collection agency	0.002	0.151	0.054	0.122	0.034	0.667			
Ever bankrupt	-0.007	0.304	0.278	0.354	4.142**	1.591			
Took a payday loan	-0.521*	0.260	0.180	0.211	1.094	1.187			
Individual characteristics									
Single	-0.226	0.224	-0.275	0.184	-0.340	0.953			
Male	0.138	0.207	0.055	0.195	0.863	0.741			
Age	0.025*	0.012	-0.008	0.009	0.013	0.046			
Race (White)									
Black	-0.424*	0.203	-0.297	0.263	-0.777	0.887			
Hispanic	-0.387*	0.189	-0.599***	0.180	-2.140*	0.864			
Other	-0.414	0.362	-0.252	0.377	-0.594	1.709			
Education (No HS)									
HS Graduate	-0.313	0.270	0.465*	0.223	1.242	1.083			
Some College	-0.334	0.285	0.565**	0.209	1.283	1.110			
BA or more	0.183	0.273	0.802***	0.222	2.537*	1.223			
Household characteristics									
Number of adults	-0.285	0.176	0.017	0.116	-0.174	0.564			
Number of children	-0.107	0.068	-0.104	0.057	-0.425	0.318			
Decile of income	0.067	0.052	0.033	0.090	-0.010	0.196			
Constant	1.527*	0.714	-0.073	0.687	9.032***	2.532			
Rho	0.256		0.106		-0.04				
P-value	0.5591		0.8881		0.793				