2009 V37 2: pp. 279–303
DOI: 10.1111/j.1540-6229.2009.00243.x
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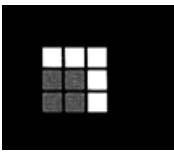

Homeownership and Child Welfare

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Recent studies have concluded that homeownership is beneficial to children. This result is important because it is used to justify large government subsidies that encourage homeownership. We reexamine the results of two of the most prominent of these studies using the Panel Study of Income Dynamics, Public Use Microsample, and National Longitudinal Survey of Youth data. We extend this research by controlling for residential mobility, wealth, dwelling type and vehicle ownership, as well as by using a "differences in differences" methodology to deal with possible treatment effects bias. We find that the beneficial effects of homeownership previously measured are substantially reduced or eliminated by controlling for these factors. We confirm these results using data from the Early Childhood Longitudinal Study.

The relative merits of rented versus owned housing have long been debated. Owner-occupied housing has been praised for promoting independence, stability and other virtues. Rental housing also has advantages, including flexibility and low cost. Among policy makers in the United States, however, there is an overwhelming consensus in favor of homeownership. Tax benefits and other subsidies for homeowners exceed $100 billion annually. In addition, government programs and regulators have encouraged greater availability of mortgage credit. Partly as a result of these government actions, homeownership in the United States reached a record level of 69% in 2004.[1]

In recent months the goal of maximizing homeownership has been questioned as a result of high foreclosure rates on mortgages made to borrowers with limited financial means and poor credit quality. These foreclosures have the potential to cause macroeconomic disruption as well as problems for families losing their homes. It is possible, therefore, that the marginal costs of increasing homeownership currently exceed the marginal benefits. As a result, it is

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[1] Painter and Redfearn (2002) present evidence that the increase in homeownership from 1995 to 2004 was not the result of declining interest rates. Chambers, Garriga and Schlagenhauf (2007) find that reductions in downpayment requirements were an important factor.

important to verify and quantify the various benefits that have been claimed for homeownership. In this article, we focus on evaluating the evidence that children benefit from their parents' homeownership, a prominent argument that has been made in favor of current policies.[2]

The earliest academic work we are aware of that examines the effect of homeownership on children is Thernstrom (1964), a study of children in 19th-century Newburyport, Massachusetts. It found that homeownership was associated with lower upward occupational mobility for the sons of laborers, presumably because saving enough to buy a house required reductions in other expenditures such as education. A similar study of Boston found no discernable effect of homeownership on mobility independent of other factors (Thernstrom 1973).

An extensive literature has developed about the effects of homeownership on the mental health of families and children, but the results are complex and inconclusive. Early studies looked at the effect of dwelling type on families. Richman (1974) and Ineichen and Hooper (1974), for example, found no differences in the mental health of mothers living in high-rise apartments and those living in houses. More recently, Cairney (2005) found that the prevalence of depression was relatively constant in children of renters from ages 12 to 19, but children of owners had lower rates of depression than children of renters from ages 12 to 14 and higher rates than children of renters from ages 15 to 19.

Essen, Fogelman and Head (1978) analyzed the effect of housing conditions on U.K. childrens' reading and math test scores. Housing tenure had a statistically significant effect on scores, although much of the effect appears to be due to residence in public housing. Differences between private renters and owners were considerably smaller than those between residents of public and nonpublic housing, and it is not clear from the paper whether these differences were significant, either statistically or in magnitude.

Several more recent papers have examined the effect of homeownership on families generally, although not on children specifically. Oswald (1996, 1999) suggested that homeownership might increase the natural rate of unemployment, because homeowners are less mobile than renters. The majority of subsequent research, however, has not supported Oswald's hypothesis.[3] DiPasquale and Glaeser (1999) found that homeowners are more likely to vote and be

[2] See, for example, National Association of Realtors (2006), Economic Report of the President (2005, p. 119) and Habitat for Humanity (2007).

[3] Flatau, Forbes and Hendershott (2003) find evidence against the Oswald hypothesis for men, but women who own homes appear to have longer periods of unemployment. Munch, Rosholm and Svarer (2003) find that homeowners are more likely to find local jobs but are less able to move to find nonlocal employment.

otherwise involved in their communities. The financial benefits of homeownership for low-income families have been questioned in some recent studies. Retsinas and Belsky (2002) argue that the financial returns to homeownership depend crucially on how long buyers are able to maintain ownership. Home buyers who sell after a short period of time often lose financially (Belsky and Duda 2002). Reverting back to renting after purchasing a home is common for low-income homeowners, increasing the chances of financial loss (Goetzmann and Spiegel 2002, Boehm and Scholottman 2004, Reid 2004).

Rohe, Van Zandt and McCarthy (2001) and Dietz and Haurin (2003) survey the literature on the social effects of homeownership, including the effects on children. Rohe, Van Zandt and McCarthy (2001) find evidence that homeowners are more satisfied with their homes, are more politically active and move less often than renters. They also find, however, that there are psychological costs of owning that might offset the increased home satisfaction that some find and that decreased mobility has costs as well as benefits. They also find that evidence of many of the supposed benefits of homeownership is weak. Dietz and Haurin (2003, p. 401) summarize the literature by saying, "There is substantial evidence that homeownership has important effects on some household behaviors and outcomes. However, we find that much of the past 30-year's literature on consequences of homeowning is deficient from a theoretical or econometric perspective."

The two most prominent papers that find benefits to children in homeowning families are Green and White (1997) and Haurin, Parcel and Haurin (2002). Green and White (1997) examine high school dropout rates for families that rent and that own their homes. Families with a 17-year-old member are selected from the data and a probit analysis is run, with the dependent variable indicating whether the 17-year-old is still in school. Independent variables include income, family structure, educational background of parents, employment and race. A dummy variable indicating whether the family owns or rents is found to be statistically significant using both Panel Study of Income Dynamics (PSID) data and U.S. Census Public Use Micro Sample (PUMS) data. The analysis using the PUMS data also includes an independent variable measuring length of residence at the family's current location.[4]

The results of Green and White (1997) are modified by Aaronson (2000), who finds that adding variables related to mobility reduces, but does not eliminate, the effects of homeownership. Aaronson (2000) also investigates the possibility

[4] A similar study, Boehm and Schlottman (1999), using PSID data but with children's eventual income as the outcome variable, also finds an effect of parents' homeownership. Harkness and Newman (2002), also using PSID data, find that the effect of homeownership on high school graduation is independent of neighborhood effects.

that homeownership and mobility are endogenous. If this were the case, then in addition to direct effect of homeownership on high school attendance, homeownership might reduce mobility, indirectly increasing high school attendance. Aaronson (2000) does not find evidence of endogeneity, suggesting that it is appropriate to include mobility variables as controls in a regression of outcomes on homeownership.[5]

Haurin, Parcel and Haurin (2002) use the National Longitudinal Survey of Youth (NLSY) panel data, which contains the results of surveys taken regularly since 1979. They find that, even after correcting for possible treatment effect bias, homeownership improves children's test scores, behavior and home environment.

Several recent papers have found effects of family wealth on children, a factor that was not controlled for in Green and White (1997). Haurin, Parcel and Haurin (2002) do not find a statistically significant effect of wealth on test scores or home environments. An early paper in this area is Haveman and Wolfe (1994), which found that financial assets and mobility have strong effects on children. Conley (2001) finds that family wealth was far more important in predicting college attendance than a four-year average of family income. Zhan and Sherraden (2003) find that parental assets such as savings have a stronger effect on the welfare of children than income, but that homeownership does not independently improve high school graduation rates. They find that homeownership is associated with improved high school grades, but that this effect is only barely statistically significant after controlling for parental expectations. Zhan (2006) finds results similar to those of Conley (2001) with children's test scores. Williams Shanks (2007) finds wealth to be a better predictor of test scores and behavior problems than homeownership, although this part of the analysis does not include controls other than household financial characteristics.

In this article, we again examine PSID, PUMS and NLSY data, looking for effects of homeownership on child outcomes.[6] We use a different technique to deal with treatment effects bias, and we examine the robustness of the homeownership result to different model specifications. We confirm our results using data from the Early Childhood Longitudinal Study (ECLS).

[5] It is difficult to believe that homeownership is beneficial because it restricts the ability of families to move. Reduced mobility can make it difficult to look for distant work following the loss of a job, or to change schools if a student and a school are not well matched. Some discussion of the complex effects of mobility can be found in Alexander, Entwisle and Dauber (1996) and Hanushek, Kain and Rivkin (2004).

[6] Green and White (1997) also use data from the High School and Beyond survey of the National Center for Education Statistics. The High School and Beyond data did not include extensive information on wealth, mobility, vehicle ownership or other variables we used to extend the analysis of other data sources, so we did not use data from this survey.

In the next three sections we reexamine the two most cited academic papers in this area, Green and White (1997) and Haurin, Parcel and Haurin (2002). In the fifth section, we report our results using data from the ECLS. The sixth section concludes the article.

PSID Data

Green and White (1997) find a strong homeownership effect using the PSID data. Their results imply that, at average income levels, children of homeowners are 3–4% more likely than children of renters to be in school at age 17. At the lowest income level, the difference is 9%. The homeownership effect is statistically significant at the 1% level. Our attempt to replicate these results is reported in column 1 of Table 1, and we are able to obtain results that are similar to those of Green and White (1997).[7] The homeowner variable is statistically significant at a 3.7% level of confidence, and the parameter estimates imply[8] that children of homeowners are 5.1% more likely than children of renters to be in school at age 17, which is similar to the result of Green and White (1997). Tables 1 and 2 show the effect of adding dwelling type, urban location, mobility, vehicle ownership and wealth to the logistic regression. In Table 1 these variables are added cumulatively, and in Table 2 they are added individually. In every model specification that includes any of these additional variables, the homeownership effect becomes statistically insignificant at the 5% level. Adding these variables individually does not dramatically change the parameter estimate of the homeownership effect, but it does increase the standard error of the estimate. Adding these variables cumulatively both increases the standard error and decreases the parameter estimate.[9]

[7] Green and White (1997) report probit estimation results while we report logistic regression results. Homeowners greatly outnumber renters and several of our explanatory variables have wide ranges, so logistic regression may be more appropriate than probit (Greene 1997). Probit regressions using our model specifications, however, produce results that are very similar to the logistic regression results.

[8] At the means of the explanatory variables.

[9] We also allow the homeownership effect to differ between families living in single-family homes and multi-family structures. The effect remains strong for occupants of single-family homes but statistically insignificant for occupants of multi-family structures. If it is homeownership and not some other variable that causes 17-year-olds to stay in school, it should not matter what type of dwelling the family lives in. The type of dwelling itself, however, appears to have no effect on high school dropout rates. If the homeownership effect is real, then this finding has implications for housing policy, because current programs designed to increase homeownership are increasing the number of condominium purchases and conversions. The ownership rate for single-family dwellings is now nearly 90%, so it is unlikely that government programs will significantly increase this percentage. If the effect of homeownership promotion programs is to turn apartment renters into condominium owners, these results do not support the hypothesis that the programs will improve high school dropout rates.

Table 1 ■ PSID logit results: 17-year olds in school.

Variable	1	2	3	4	5	6
Intercept	0.229	0.199	0.339	0.918*	0.764*	0.587
	(0.434)	(0.500)	(0.265)	(0.006)	(0.028)	(0.113)
Homeowner	0.314*	0.289	0.256	0.100	0.052	−0.029
	(0.037)	(0.062)	(0.100)	(0.531)	(0.75)	(0.868)
Single-family house		0.097	0.088	0.054	0.054	0.043
		(0.484)	(0.526)	(0.698)	(0.699)	(0.772)
Lives in urban area			−0.291	−0.299*	−0.286	−0.175
			(0.052)	(0.047)	(0.058)	(0.275)
Moved within two years				−0.322*	−0.319*	−0.307
				(0.035)	(0.037)	(0.060)
Moved within ten years				−0.54*	−0.539*	−0.525*
				(0.003)	(0.003)	(0.006)
Owns vehicle					0.284	0.418*
					(0.114)	(0.027)
Net worth						0.004*
						(0.011)
Black	0.306*	0.308*	0.366*	0.300	0.345*	0.429*
	(0.041)	(0.039)	(0.016)	(0.051)	(0.028)	(0.011)
Young parents	−0.575*	−0.574*	−0.558*	−0.455*	−0.461*	−0.434*
	(0.003)	(0.003)	(0.004)	(0.021)	(0.019)	(0.043)
Family income	0.019*	0.019*	0.02*	0.02*	0.019*	0.012
	(0.001)	(0.001)	(<.001)	(0.001)	(0.001)	(0.051)
Parent H.S. graduate	0.863*	0.861*	0.875*	0.843*	0.843*	0.851*
	(<.001)	(<.001)	(<.001)	(<.001)	(<.001)	(<.001)
Parent some college	1.048*	1.04*	1.076*	1.086*	1.096*	1.059*
	(<.001)	(<.001)	(<.001)	(<.001)	(<.001)	(<.001)
Parent college graduate	1.241*	1.239*	1.263*	1.284*	1.31*	1.232*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)
Female head	−0.052	−0.054	−0.017	−0.006	0.045	0.076
	(0.774)	(0.767)	(0.924)	(0.973)	(0.81)	(0.699)
Parents divorced	0.052	0.051	0.077	0.118	0.097	0.052
	(0.805)	(0.806)	(0.716)	(0.575)	(0.647)	(0.815)
Family size	0.093*	0.091*	0.094*	0.102*	0.100*	0.121*
	(0.019)	(0.022)	(0.018)	(0.011)	(0.013)	(0.006)
Parent worked in last year	0.284	0.284	0.245	0.291	0.231	0.211
	(0.101)	(0.101)	(0.16)	(0.098)	(0.201)	(0.275)
N	2420	2420	2420	2420	2420	2252
% Concordant	71.0	71.1	72.3	72.5	72.7	74.3

Note: p-values are in parentheses; * indicates significant at the 5% level.

Our mobility variables differ somewhat from those used in Aaronson (2000). Aaronson (2000) geocoded addresses from the PSID data to identify the number of moves during a child's life between the ages of 7 and 16. Other independent variables are also averages over the child's life. This approach has the

Table 2 ■ PSID logit results: 17-year olds in school.

Variable	1	2	3	4	5	6
Intercept	0.199	0.367	0.475	0.711*	0.068	0.158
	(0.500)	(0.223)	(0.116)	(0.026)	(0.825)	(0.612)
Homeowner	0.289	0.279	0.193	0.207	0.255	0.213
	(0.062)	(0.065)	(0.214)	(0.173)	(0.100)	(0.194)
Single-family house	0.097					
	(0.484)					
Lives in urban area		−0.294*				
		(0.050)				
Moved within two years			−0.489*			
			(0.001)			
Moved within ten years				−0.651*		
				(<.001)		
Owns vehicle					0.313	
					(0.082)	
Net worth						0.005*
						(0.002)
Black	0.308*	0.364*	0.266	0.252	0.357*	0.397*
	(0.039)	(0.017)	(0.078)	(0.093)	(0.02)	(0.013)
Young parents	−0.574*	−0.559*	−0.513*	−0.501*	−0.579*	−0.529*
	(0.003)	(0.004)	(0.009)	(0.01)	(0.003)	(0.012)
Family income	0.019*	0.021*	0.018*	0.018*	0.018*	0.012*
	(0.001)	(<.001)	(0.001)	(0.001)	(0.001)	(0.046)
Parent H.S. graduate	0.861*	0.877*	0.825*	0.854*	0.864*	0.865*
	(<.001)	(<.001)	(<.001)	(<.001)	(<.001)	(<.001)
Parent some college	1.04*	1.084*	1.037*	1.067*	1.058*	1.001*
	(<.001)	(<.001)	(<.001)	(<.001)	(<.001)	(<.001)
Parent college graduate	1.239*	1.265*	1.240*	1.267*	1.269*	1.104*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.005)
Female head	−0.054	−0.015	−0.073	−0.021	0.008	−0.033
	(0.767)	(0.933)	(0.686)	(0.907)	(0.967)	(0.864)
Parents divorced	0.051	0.077	0.084	0.076	0.026	0.026
	(0.806)	(0.713)	(0.692)	(0.717)	(0.903)	(0.906)
Family size	0.091*	0.096*	0.089*	0.107*	0.092*	0.117*
	(0.022)	(0.016)	(0.025)	(0.008)	(0.021)	(0.007)
Parent worked in last year	0.284	0.245	0.312	0.319	0.216	0.296
	(0.101)	(0.161)	(0.073)	(0.067)	(0.225)	(0.109)
N	2420	2420	2420	2420	2420	2252
% Concordant	71.1	71.2	71.5	72.0	71.3	72.9

Note: p-values are in parentheses; * indicates significant at the 5% level.

disadvantage of treating events early in a child's life as equivalent to more recent events. We constructed two mobility variables; one indicating whether the child's family had moved within the past two years and another indicating a move within the past ten years.

Column 4 of Table 1 displays the result of adding mobility variables to the model. A move within the past two or ten years is found to have a negative effect on high school enrollment, and the magnitude of the homeownership effect is reduced by over 60% and becomes statistically insignificant. Columns 3 and 4 of Table 2 show that adding these variables individually and without dwelling type or urban location also significantly reduces the magnitude of the homeownership effect.

Column 5 of Table 1 and column 5 of Table 2 show the results of controlling for vehicle ownership. The magnitude of the homeownership effect is reduced, and the coefficient on vehicle ownership is larger than the coefficient on homeownership. Vehicle ownership is statistically significant in the full version of the model shown in column 5 of Table 1, although it is not statistically significant in models that do not control for family net worth.[10] There are several possible interpretations of this result. It is possible that lack of a vehicle directly creates hardships for families that are more significant than the inability to own a home. Raphael and Stoll (2001) and Raphael and Rice (2002) find substantial effects of vehicle ownership on employment. While the papers do not discuss effects on children, it seems reasonable to suppose that parental unemployment might have a negative effect on school performance and high school enrollment. Another possibility is that vehicle ownership is a proxy for unobserved variables. Of course, this is also a possibility for homeownership, and if it is the case then perhaps neither vehicle ownership nor homeownership influence child outcomes, but only indicate other factors that do have an influence.[11]

Column 6 of Table 1 and column 6 of Table 2 add the net worth of the family. The effect of net worth is statistically significant at a high level of confidence, and the homeownership effect is reduced. In the full model shown in column 6 of Table 1, the homeownership effect is estimated to be negative. In other words, controlling for net worth and other factors, homeownership appears to increase the probability that children will drop out of high school, although the magnitude of the effect is very small and is statistically insignificant.[12, 13]

[10] The magnitude of this effect is similar in urban and rural areas and in different city sizes.

[11] If it is the case that the effect of vehicle ownership is greater than the effect of homeownership, and if subsidies to homeowners are paid in part by higher taxes for renters, then it will be more difficult for renters to afford a vehicle, and the net effect of homeowner subsidies could be to raise high school dropout rates.

[12] We also performed the estimation including a variable for whether the family lived in public housing. Living in public housing appears to increase the high school dropout rate and including the variable further lowers the estimate of the homeownership effect.

[13] We tested for multicollinearity between the independent variables, and our results are negative.

Green and White (1997) also test the possibility that the apparent effect of homeownership on child outcomes is due to selection bias; in other words that homeowning parents have different characteristics than renting parents and that these characteristics are responsible for the different child outcomes, not homeownership. They hypothesize that the homeownership effect is a result of learning by doing. Under this hypothesis, when individuals own their home they invest time and effort in the property and in the process learn home management skills which ultimately make them better parents. Of course, individuals who already possess these skills will be more confident in their ability to maintain such a large asset and, *ceteris paribus*, more likely to choose ownership in the first place. This point is captured succinctly in Glaeser and Shapiro (2002, p. 55):

> Of course, multivariate regressions can control for observable characteristics that are correlated with homeownership. More problematic are the characteristics (*e.g.*, responsibility or patience) that are likely to both generate homeownership and influence socially beneficial activities. The biases created by omitted variables are likely to be severe and make pretty much all estimation of this type somewhat dubious.

Green and White (1997) test for selection bias using a bivariate probit (endogenous switching) model, which can be defined as follows:

$$I^* = \boldsymbol{\gamma}'\mathbf{Z} + \alpha P + \mu$$

$$J_0^* = \boldsymbol{\beta}_0' X + \varepsilon_0 \; if \; I = 0$$

$$J_1^* = \boldsymbol{\beta}_1' X + \varepsilon_1 \; if \; I = 1$$

$$I = \begin{cases} 1 & if \; I^* > 0 \\ 0 & if \; I^* \leq 0 \end{cases}$$

$$J_i = \begin{cases} 1 & if \; J_i^* > 0 \\ 0 & if \; J_i^* \leq 0, \end{cases}$$

where X is a vector of variables affecting a child's decision to stay in school conditional on the parent's tenure choice, I^* is a measure of the parents' propensity to own housing, $\boldsymbol{\gamma}$ is a vector of parameters, $\mathbf{Z}$ is a vector of demographic variables that affects parents' tenure choice, α is a parameter, P is an instrument that captures the relative economic costs of owning versus renting and μ is a residual term. When $I^* > 0$ the parents choose to own their, home, and when $I^* \leq 0$ they decide to rent. Similarly, the variables J_0^* and J_1^* measure the respective propensities of renters' and owners' children to stay in school. $\boldsymbol{\beta}_0$ and $\boldsymbol{\beta}_1$ are vectors of parameters, and ε_0 and ε_1 are the residual terms for renters and owners, respectively. We cannot observe I^*, J_0^* and J_1^* directly, we can only observe the outcome of the indicator variables I, J_0 and J_1.

The residual terms μ and ε_0 may be correlated, and the residual terms μ and ε_1 may also be correlated. Estimating a model of the stay-in-school decision without taking this problem into account could produce biased parameter estimates. Because it is never the case that J_0 and J_1 are observed at the same time we cannot directly measure the correlation between their residual terms. However, we can estimate the correlation between μ and ε_0 and the correlation between μ and ε_1 using FIML.[14]

Green and White (1997) argue that the residual term u is due to unobservable personality characteristics because the economic factors driving the household's tenure decision have already been controlled for with their instrument. Green and White (1997) find that Corr(μ, ε_0) and Corr(μ, ε_1) are both statistically insignificant; in other words, they are indistinguishable from zero. Hence, they conclude that selection bias is not a problem in their sample.

The instrument used in Green and White (1997), however, may not capture the full economic costs that a family faces when choosing to own or rent. Green and White (1997) constructed their instrument by taking the value of the housing CPI in the year the family last moved and dividing it by the national average 30-year mortgage rate in that year. This does help to account for moves that occurred in years where interest rates were low, but it does not reflect local conditions, such as housing quality, expected house price appreciation and local taxes, which also govern the family's tenure decision. Thus, a portion of the residual in the tenure choice model will be due to purely economic factors that are unrelated to individual personality traits, possibly lowering the measured correlation of the residual terms.

We were unable to replicate the results reported in Table 5 of Green and White (1997). Green and White (1997) report regression coefficients of 14.2 and 14.4 for renters and homeowners (with standard errors of 2.0) on their instrument. Given that probit coefficients can be interpreted as z-scores, this effect seems implausibly large. In the renter and owner sub-samples we find coefficients on the instrument of -0.2559 and -0.2558 and error correlations of -0.41 and -0.49, respectively. Both results are statistically significant at the 5% level. (The p-value for owners is 0.0525.)[15,16] These results (shown in Table 3) agree with those of Haurin, Parcel and Haurin (2002), who find evidence of selection bias in NLSY data.

[14] See Maddala (1983, pp. 278–280) for a discussion of this method.

[15] Estimation results in this table are probit regression results.

[16] We also ran this regression with the additional variables in column 6 of Table 1. The results were similar and we do not report them.

Table 3 ■ Bivariate probit model explaining children's stay-in-school decision and parents' tenure choice (PSID).

Variable	Own Housing (Homeowner) (1)	Stay in School (Homeowner) (2)	Own Housing (Renter) (3)	Stay in School (Renter) (4)
Intercept	0.7947*	0.6999*	0.7651*	0.9354*
	(0.0081)	(0.0085)	(0.0114)	(0.0074)
Relative housing cost	−0.2558*		−0.2559*	
	(<0.0001)		(<0.0001)	
Black	−0.4882*	0.3109*	−0.4985*	0.2118
	(<0.0001)	(0.0395)	(<0.0001)	(0.2053)
Family income	0.0313*	0.0043	0.0320*	−0.0023
	(<0.0001)	(0.3332)	(<0.0001)	(0.6735)
Parent H.S. graduate	−0.1387	0.4881*	−0.1468	0.1261
	(0.1354)	(0.0011)	(0.1142)	(0.4265)
Parent some college	−0.0582	0.6520*	−0.0934	0.4300
	(0.6660)	(0.0032)	(0.4894)	(0.0626)
Parent college graduate	0.0872	0.9946*	0.0976	0.1485
	(0.6454)	(0.0018)	(0.6094)	(0.7188)
Parents divorced	−0.2558*		−0.1916	
	(0.0370)		(0.1061)	
Family size	0.0330	0.0592	0.03719	−0.0433
	(0.1228)	(0.1728)	(0.0811)	(0.2319)
Parent worked in last year	0.01473*		0.0146*	
	(<0.0001)		(<0.0001)	
Correlation coefficient		−0.4912		−0.4085
		(0.0525)		(0.0187)
N	1348	836	1348	512

Note: p-values are in parentheses; * indicates significant at the 5% level.

The results of our selection bias test indicate a potentially serious problem with research that has found evidence of benefits of homeownership. If homeowners tend to embody a set of personality traits that influence childhood outcomes, then researchers may incorrectly attribute the effect of these unobservable traits to homeownership. This situation is equivalent to omitting a relevant variable from our regression and will lead to biased coefficient estimates (Heckman 1979).

PUMS Data

Green and White (1997) also examine the PUMS data from the United States Census. They use the one-in-thousand sample from the 1980 Census, while we use the one-in-twenty sample from the 2000 Census. Green and White (1997) have 3,249 families with 17-year olds in their sample, while we have 205,690.

Green and White (1997) find that the homeownership effect is statistically significant even after including a variable for length of tenure. They state that the effects of homeownership and tenure length interact, so that the homeownership effect is mitigated for longer tenures, but they do not report these results. In Table 4, the first column labeled "Full sample" shows the results for a model similar to that reported in Green and White (1997). Our results are similar, but the larger sample size increases the statistical significance of the results. In the second column labeled "Full sample" we find the homeownership effect to be statistically significant for detached and attached houses, apartments and mobile homes, although the size of the effect is approximately 25% smaller for attached houses and apartments.

The effect of dwelling type itself on high school attendance has varying signs and statistical significance between models. A grandparent, a single parent or a young person as head of the household is associated with higher dropout rates. Holding constant the fact that there is a single parent, a female head of household is associated with lower dropout rates. The number of years in the current dwelling is reported by category in the PUMS. Our variable labeled "Years in dwelling" is equal to the midpoint of the range of years for each category, and our results indicate that dropout rates are higher in households that have recently moved. More living space per person, more education of parents, higher income and more owned vehicles all predict lower dropout rates. Holding all other factors constant, racial minorities are more likely to stay in school, a finding also reported in Green and White (1997) and discussed in Haveman and Wolfe (1994). Female 17-year olds are more likely to stay in school than males, while 17-year olds who are parents or have been married are less likely to stay in school. English speakers are more likely to stay in school. Seventeen-year olds with mental or physical handicaps are less likely to stay in school, while those with sensory handicaps are more likely to be in school.

We next restrict the sample to households that have lived in their current dwelling for more than five years. For those living in detached houses, the ownership effect remains statistically significant, but the magnitude of the effect is reduced by approximately one half. For other dwelling types the ownership effect is not statistically significant, and the estimated parameter is negative for attached houses. When we restrict the sample to households that have not moved for more than ten years, in other words because the 17-years old was in early elementary school, then the homeownership effect is statistically insignificant for all dwelling types. The estimated coefficient is negative for apartments and attached houses.

The result that the homeownership effect declines with length of stay in a dwelling is robust to several specifications, including separate estimation for

Table 4 ■ PUMS logit results: 17-year-olds in school.

Variable	Full Sample	Full Sample	In Dwelling >5 yrs	In Dwelling >10 yrs
Intercept	−3.4112*	−3.3996*	−2.2348*	−1.5717*
	(<.0001)	(<.0001)	(<.0001)	(<.0001)
Homeowner	0.3792*			
	(<.0001)			
Own detached hs.		0.4033*	0.2255*	0.1080
		(<.0001)	(<.0001)	(0.1204)
Own attached hs.		0.2750*	−0.1118	−0.1866
		(<.0001)	(0.178)	(0.0876)
Own apt.		0.3071*	0.0400	−0.0145
		(<.0001)	(0.6887)	(0.9111)
Own mobile hm.		0.3972*	0.1228	0.0958
		(<.0001)	(0.3503)	(0.6562)
Detached house	0.0749*	0.0449	−0.1540*	−0.1635
	(0.0017)	(0.1099)	(0.0100)	(0.0714)
Mobile hm.	−0.3191*	−0.3443*	−0.3252*	−0.3693
	(<.0001)	(<.0001)	(0.0127)	(0.0867)
R.V.	−0.9462*	−0.7316*	−0.7548	−0.8257
	(0.0015)	(0.0129)	(0.2057)	(0.3274)
Grandparent	−0.7081*	−0.7086*	−0.3026*	−0.1636*
	(<.0001)	(<.0001)	(<.0001)	(0.0135)
Female head	0.3472*	0.3467*	0.2176*	0.2115*
	(<.0001)	(<.0001)	(<.0001)	(0.0013)
Single parent	−0.4160*	−0.4156*	−0.3902*	−0.3979*
	(<.0001)	(<.0001)	(<.0001)	(<.0001)
Max age	0.0134*	0.0135*	−0.00313*	−0.00675*
	(<.0001)	(<.0001)	(0.0394)	(0.0004)
Years in dwelling	0.0192*	0.0191*	0.00259	−0.00985*
	(<.0001)	(<.0001)	(0.1784)	(0.002)
Crowded	−0.1198*	−0.1204*	−0.1724*	−0.2203*
	(<.0001)	(<.0001)	(<.0001)	(<.0001)
Max education	0.2081*	0.2080*	0.2499*	0.2722*
	(<.0001)	(<.0001)	(<.0001)	(<.0001)
Income	0.0215*	0.0214*	0.0137*	0.0121*
	(<.0001)	(<.0001)	(<.0001)	(0.0034)
Vehicles	0.0976*	0.0975*	0.1276*	0.1398*
	(<.0001)	(<.0001)	(<.0001)	(<.0001)
Urban	0.0445*	0.0446*	0.0364	0.0544
	(0.0342)	(0.0336)	(0.2457)	(0.1705)
Black	0.4125*	0.4130*	0.2467*	0.2277*
	(<.0001)	(<.0001)	(<.0001)	(<.0001)
Asian	0.7501*	0.7510*	0.5491*	0.4137*
	(<.0001)	(<.0001)	(<.0001)	(0.0008)
Hispanic	0.0165*	0.0165*	0.0192*	0.0223*
	(<.0001)	(<.0001)	(<.0001)	(<.0001)

Table 4 ■ continued

Variable	Full Sample	Full Sample	In Dwelling >5 yrs	In Dwelling >10 yrs
Native American	−0.2100*	−0.2092*	−0.1854*	−0.2248*
	(<.0001)	(<.0001)	(0.0137)	(0.0162)
Female	0.2199*	0.2201*	0.2669*	0.2326*
	(<.0001)	(<.0001)	(<.0001)	(<.0001)
Never married	1.3451*	1.3440*	1.6966*	1.7652*
	(<.0001)	(<.0001)	(<.0001)	(<.0001)
Parent	−0.6444*	−0.6455*	−0.5263*	−0.6869*
	(<.0001)	(<.0001)	(0.0016)	(0.0027)
English	1.1045*	1.1045*	0.5979*	0.2210*
	(<.0001)	(<.0001)	(<.0001)	(0.0074)
Sensory handicap	0.1525*	0.1538*	0.2539*	0.1586
	(0.0349)	(0.0334)	(0.0299)	(0.2935)
Physical handicap	−0.3538*	−0.3536*	−0.5504*	−0.5875*
	(<.0001)	(<.0001)	(<.0001)	(<.0001)
Mental handicap	−0.1759*	−0.1755*	−0.3421*	−0.3661*
	(<.0001)	(<.0001)	(<.0001)	(<.0001)
N	205690	205690	119273	77354
% Concordant	76.1	76.1	72.6	73.1

Note: p-values are in parentheses; * indicates significant at the 5% level.

each category of length of stay inclusion of the product of ownership and length of stay and different combinations of dwelling types.

A possible explanation for the strength of the homeownership effect for families that have recently moved is that moving can be the result of positive or negative family events. For example, a family might move because a parent has found a better job or inherited money or because a single parent has married. In these cases, the family is likely to purchase a house or apartment. In contrast, if a family moves because a parent has lost a job or gotten divorced, they are likely to move into rental housing. To the extent that these events are not fully reflected in the other dependent variables, the homeowner variable will pick them up and appear to be statistically significant when the unobserved variables are actually responsible. The lack of benefit of homeownership for families that have not recently moved suggests that homeownership by itself might not be an important factor in high school dropout rates.

Table 5 shows the sample sizes in the PUMS data for households that include a 17-years old for various dwelling types and lengths of stay. There are substantial numbers in our sample of both homeowners and renters in different dwelling types with a variety of lengths of stay. For example, there are 15,380 renters

Table 5 ■ Tenure by housing type and years in dwelling: PUMS 5% sample, households with 17-year olds.

Type	Tenure	1	2–5	6–10	11–20	21–30	31+
Detached house	Renters	6,681	8,462	3,745	2,461	635	332
	Owners	8,941	29,413	29,358	41,797	16,510	4,749
Attached house	Renters	1,228	1,602	655	393	83	52
	Owners	619	1,459	1,046	1,325	519	273
Apartment	Renters	9,019	8,988	3,407	2,171	610	198
	Owners	451	949	684	900	382	224
Mobile home	Renters	1,460	1,112	390	191	41	9
	Owners	1,746	4,240	2,626	2,670	685	131
R.V.	Renters	13	5	4	2	0	1
	Owners	14	15	4	7	0	3

who have lived in their current dwelling for longer than five years, including 8,207 who are not in detached houses, and 7,179 renters who have not moved for longer than ten years, including 3,751 who are not in detached houses.

Our results are supportive of Green and White (1997) in that we do find an association between homeownership and high school attendance. Unfortunately, the PUMS data do not include information on household net worth. The PSID results above demonstrate the potential importance of wealth, and so our inability to control for wealth in these regressions means that the evidence supporting an effect of homeownership cannot be considered definitive.

NLSY Data

Haurin, Parcel and Haurin (2002) use data from the NLSY to investigate the effects of homeownership on home environment, cognitive ability and behavioral problems. They find that homeownership has a statistically significant effect on these measures, but they acknowledge that the results may be biased by "treatment effects" or the possibility that unobserved factors are correlated with both homeownership and child welfare, and might be causes of both, leading to the incorrect conclusion that homeownership improves child welfare. To deal with this problem, Haurin, Parcel and Haurin (2002) use instrumental variables to construct a prediction of tenure choice for each household in the sample, and they then regress child assessment measures on this prediction and other variables. The instrumental variable with by far the most explanatory power is a binary variable indicating whether the household is downpayment constrained, equal to one if the household's wealth is less than 10% of the value of a house that they would be likely to purchase, given their demographic characteristics.

While wealth is included in the child outcome regressions, downpayment constraint is not. If the effect of wealth on childhood outcomes is nonlinear, then particularly low wealth, as measured by the downpayment constraint variable, may affect child outcomes independently of wealth itself. If this is the case, then predicted homeownership may appear to influence child outcomes when it is actually the case that low levels of wealth are the important factor, even if other included instruments are valid.

Using the instrumental variables approach, Haurin, Parcel and Haurin (2002) find the homeownership effect to be statistically significant (p-values > 0.001 and 0.013) for measures of the quality of the home environment, but not for behavioral problems (p-value $= 0.424$). For math and reading scores the effect had marginal statistical significance ($p = 0.089$). They also find the indirect homeownership effect, the effect of homeownership on mobility and then the effect of mobility on child welfare measures, to be much lower than the direct effects. They find stronger results using duration of homeownership, but these results are questionable because they do not control for the length of time that renters have lived at their current location.

Another approach to the treatment effects problem is the "differences in differences" method, also known as the "natural experiment approach" (Ashenfelter 1978, Ashenfelter and Card 1985, Buckley and Shang 2003). In our case we examine changes in child assessments only in families that changed from renters to owners or owners to renters. Children of homeowners have, on average, higher test scores than children of renters, but this may be because of other differences between families that are correlated with homeownership. If there is truly an independent effect of homeownership, then test scores of children in families that move from renting to owning should improve and test scores of children in families that move from owning to renting should decline, holding any changes in the situations of the families constant.

The NLSY79 data consist of repeated surveys of the same families over time. Out of all of the families surveyed, we identified those who switched from homeowning to renting or from renting to homeowning over a four-year interval. Data are available every two years from 1986 to 2004, so we looked at every possible four-year interval, such as 1986-1990, 1988-1992, *etc.* to find families that changed tenure.

Table 6 shows the results of regressing the change in six different child assessments on dummy variables indicating a change from owning to renting and renting to owning, along with changes in wage and nonwage income, change in family structure and mobility. In no case is the effect of change of tenure statistically significant.

Table 6 ■ Regression results: Charge in child welfare.

Variable	Emotional Home Env.	Cognitive	Behavior	Math	Reading Recog.	Reading Comp.
Rent to own	0.738	6.768	0.163	0.885	1.181	0.323
	(0.930)	(0.347)	(0.841)	(0.328)	(0.172)	(0.74)
Own to rent	−0.247	−7.424	−2.283	0.656	−0.228	−0.449
	(0.984)	(0.492)	(0.055)	(0.614)	(0.854)	(0.744)
Wage chg.	−0.012	0.078*	0.012	−0.001	−0.005	−0.029
	(0.77)	(0.026)	(0.121)	(0.936)	(0.754)	(0.103)
Nonwage chg.	0.011	0.008	−0.001	<.001	<.001	<.001
	(0.111)	(0.175)	(0.170)	(0.514)	(0.880)	(0.715)
Divorce	−98.752*	−27.855*	1.061	−0.28	−0.272	−2.037*
	(<.001)	(<.001)	(0.052)	(0.626)	(0.622)	(0.001)
Death	−96.872*	−52.911*	5.186*	−3.41	−5.557*	−8.284*
	(0.001)	(0.026)	(0.030)	(0.190)	(0.030)	(0.003)
Hsng. type worse	5.509	1.604	−0.206	−1.327*	−3.524*	−4.765*
	(0.298)	(0.728)	(0.696)	(0.023)	(<.001)	(<.001)
Hsng. type better	2.819	6.803*	0.623*	1.009*	−0.077	−3.006*
	(0.412)	(0.020)	(0.038)	(0.001)	(0.794)	(<.001)
Move	3.167	0.116	−0.073	0.726*	−0.414	−3.899*
	(0.267)	(0.962)	(0.768)	(0.005)	(0.092)	(<.001)
N	9850	10852	7598	6491	6448	6396
R^2	0.029	0.004	0.003	0.005	0.009	0.090
Rent-to-own cases	440	469	271	215	202	199
Own-to-rent cases	189	207	129	98	99	100

Note: p-values are in parentheses; * indicates significant at the 5% level.

Divorce and death of a parent have a very large negative effect on the measured home emotional and cognitive environment. These events also negatively affect behavior problems (note that a higher level of behavior problems results in a higher number for the dependent variable) and reading scores, although they do not appear to affect math scores.

Changes in wage and nonwage income have mixed effects, as does a variable indicating a change of residence, indicated by a change in region or a change between urban and rural locations. "Hsng type worse" indicates movement from a family's own dwelling to that of a parent or another living arrangement. This type of movement has little effect on the measured home environment, but it has important negative effects on test scores.

Our results regarding tenure should be interpreted with caution, because there are relatively few cases where tenure is changed, and our four-year time horizon

may be too short to identify longer-term effects of homeownership. The fact that tenure changes have such a weak effect in the cases we are able to identify, however, casts doubt on previous results showing a strong effect of tenure on child assessment measures.

ECLS Data

Fryer and Levitt (2004) use data from the ECLS to examine the gap in average test scores between black and white children. Many past studies have found that the gap persists even after controlling for a wide variety of factors, but Fryer and Levitt (2004) find that the gap disappears after controlling for a small number of factors. We find that the gap in test scores between children of homeowners and renters also disappears after controlling for these same factors.

Data from the ECLS has only recently been made available. The study was conducted by the U.S. Department of Education and includes information from surveys of parents and teachers of over 20,000 children. Data are currently available on these children from their entry into school up to fifth grade, but information on housing ownership is only available for the times the children were in first grade and third grade.

Table 7 shows the mean reading and math test scores for first graders and third graders whose parents are renters and owners. Table 8 shows the mean

Table 7 ■ Means of test scores by homeownership.

	First Grade		Third Grade	
	Reading	Math	Reading	Math
Owner	77.34	62.61	125.97	98.48
Renter	68.50	54.82	113.29	86.93
Other	68.81	56.53	115.28	90.10
Range	16–142	8–108	42–149	30–121
Total standard deviation	21.74	16.60	23.24	20.37

Table 8 ■ Means of improvement in test scores from first to third grade by homeownership.

	Reading	Math
Owned both times	48.70	35.94
Rented both times	44.80	32.62
Owned, then rented	44.55	33.31
Rented, then owned	46.03	33.67
Other	44.54	33.48
Total standard deviation	16.98	13.17

increase in scores between first grade and third grade for children who were in owner-occupied housing at both times, rental housing at both times, rental housing in first grade and owner-occupied housing in third grade and owner-occupied housing in first grade and rental housing in third grade. "Other" includes families that exchange services for housing, do not pay for their housing, live in temporary housing or have other arrangements. Of the first graders, 79.14% lived in owner-occupied housing and 18.5% lived in rental housing. Of the third graders, 81.8% lived in owner-occupied housing and 16.8% lived in rental housing.

Before controlling for other factors, children of homeowners consistently score higher than children of renters, and children who move from rental to owner-occupied housing improve more than children who move in the other direction.

Table 9 shows the results of regressing the level of test scores on a dummy variable indicating homeownership. For fifth grade scores, only families that

Table 9 ■ Regression results: Test scores.

	First Grade		Third Grade		Fifth Grade	
Variable	Reading	Math	Reading	Math	Reading	Math
Owner	−1.912*	−1.780	0.280	1.328	2.079	1.885
	−0.037	−0.149	−0.820	−0.341	−0.103	−0.171
Parent math	0.480*	0.312	0.786*	0.500*	0.611*	0.529*
	−0.009	−0.208	(<0.001)	−0.047	−0.004	−0.020
Child age	2.245*	2.175*	1.635*	1.765*	0.892*	1.186*
	(<.001)	(<.001)	(<.001)	(<.001)	(<.001)	(<.001)
Income	0.995*	0.957*	0.936*	0.859*	1.132*	0.927*
	(<.001)	(<.001)	(<.001)	(<.001)	(<.001)	(<.001)
Income chg.	0.029	0.438	−0.395	−0.171	−0.760*	−0.330
	−0.889	−0.115	−0.079	−0.501	−0.001	−0.187
Minority pop.	0.223	0.474	0.110	−0.346	0.201	−0.082
	−0.385	−0.171	−0.723	−0.324	−0.494	−0.796
Parent grades	−0.316	−0.273	−0.807*	−0.541*	−0.754*	−0.800*
	−0.068	−0.242	(<0.001)	−0.024	(<0.001)	(<0.001)
Parent education	2.596*	2.311*	3.313*	3.435*	2.780*	3.027*
	−0.002	−0.038	−0.001	−0.002	−0.004	−0.003
Free lunch pop.	−0.011	−0.066*	−0.016	−0.057*	0.001	−0.061*
	−0.421	(<0.001)	−0.334	−0.002	−0.928	(<0.001)
Parent prestige	0.078*	0.082*	0.074*	0.094*	0.068*	0.075*
	(<.001)	−0.0004	(<.001)	(<.001)	(<.001)	(<.001)
Freq. of moves	−0.552	0.163	−0.745*	−0.276	−0.336	−0.245
	−0.066	−0.688	−0.037	−0.493	−0.336	−0.516
Black	−6.366*	−0.102	−10.675*	−5.885*	−11.516*	−8.442*
	(<.001)	−0.956	(<.001)	−0.002	(<.001)	(<.001)
Hispanic	−2.610*	−0.561	−3.657*	−0.620	−2.071	−1.072
	−0.008	−0.672	−0.002	−0.646	−0.070	−0.384

Table 9 ■ continued

	First Grade		Third Grade		Fifth Grade	
Variable	Reading	Math	Reading	Math	Reading	Math
Asian	2.887*	12.332*	4.101*	3.671	4.664*	2.427
	−0.035	(<.001)	−0.015	−0.054	−0.003	−0.154
Native American	−6.059*	−4.698	−8.259*	−10.829*	−6.505*	−6.665*
	(<.001)	−0.053	(<.001)	(<.001)	−0.002	−0.003
Multi-racial	−1.058	3.178	−3.86	−0.424	−4.129*	−2.954
	−0.549	−0.182	−0.075	−0.862	−0.041	−0.176
Mother age	0.092	0.189*	0.191*	0.388*	0.266*	0.342*
	−0.116	−0.016	−0.007	(<.001)	(<.001)	(<.001)
Birth weight	0.637*	0.078	0.833*	−0.466	0.838*	0.069
	−0.002	−0.783	−0.001	−0.106	−0.001	−0.791
English at home	−2.641*	−3.617*	−1.699	−3.264	−2.471	−3.533*
	−0.029	−0.027	−0.251	−0.051	−0.080	−0.021
Adopted	−1.472	1.908	−17.627	−22.05	8.869	5.824
	−0.92	−0.923	−0.155	−0.115	−0.583	−0.738
Attend P.T.A.	4.338*	5.480*	4.830*	5.226*	3.951*	4.231*
	(<.001)	(<.001)	(<.001)	(<.001)	(<.001)	(<.001)
Number of books	0.003*	0.006*	0.004	0.007*	0.004*	0.005*
	−0.029	−0.005	−0.066	−0.008	−0.028	−0.003
Disability	−6.544*	−10.285*	−8.456*	−12.442*	−7.770*	−10.570*
	(<.001)	(<.001)	(<.001)	(<.001)	(<.001)	(<.001)
N	3281	3281	3151	3144	3023	3023
R^2	0.188	0.155	0.197	0.203	0.204	0.22

Note: p-values are in parentheses; * indicates significant at the 5% level.

indicated that they had not moved during the previous two years were included, and homeownership at the time the child was in third grade is used to construct the dummy variable. Homeownership is a statistically significant factor only once, for first grade reading scores, and the coefficient is negative, indicating that homeownership lowers test scores. Coefficients on other variables in the regressions generally have the expected signs.

Table 10 shows the results of regressing the improvement in test scores from first to third grade on dummy variables indicating whether the family lived in owner-occupied housing when the child was in first grade, whether it moved from owner-occupied to rental housing, whether it moved from rental to owner-occupied housing and whether it was in owner-occupied housing during first grade. Ownership is not statistically significant for either reading or math test score improvement, and the coefficient has opposite signs in the two regressions. Only the child's age, race and disability status are statistically significant in both regressions. Older children have higher scores, but they improve less rapidly.

Table 10 ■ Regression results: Improvement in test scores.

Variable	Reading	Math
Owner	0.192	−0.809
	(0.882)	(0.414)
Own-to-rent	−3.85	0.437
	(0.166)	(0.837)
Rent-to-own	−1.461	−1.236
	(0.344)	(0.296)
Parent math	0.153	0.274
	(0.474)	(0.094)
Child age	−0.461*	−0.584*
	(0.035)	(0.001)
Income	0.222	0.446*
	(0.255)	(0.003)
Income chg.	−0.143	0.116
	(0.508)	(0.484)
Minority pop.	−0.965*	−0.182
	(0.001)	(0.425)
Parent grades	−0.317	−0.453*
	(0.118)	(0.004)
Parent education	0.941	0.588
	(0.324)	(0.421)
Free lunch pop.	0.013	<0.001
	(0.409)	(0.976)
Parent prestige	0.007	−0.007
	(0.723)	(0.625)
Freq. of moves	−0.365	−0.223
	(0.288)	(0.397)
Black	−6.088*	−4.469*
	(<0.001)	(<0.001)
Hispanic	0.071	−0.960
	(0.951)	(0.273)
Asian	−8.576*	1.514
	(<.001)	(0.221)
Native American	−6.36*	−2.027
	(0.003)	(0.205)
Multi-racial	−3.651	−2.659
	(0.079)	(0.095)
Mother age	0.162*	0.068
	(0.017)	(0.190)
Birth weight	−0.570*	0.237
	(0.020)	(0.207)
English at home	0.453	1.245
	(0.749)	(0.253)
Adopted	−4.789	−9.495
	(0.687)	(0.297)
Attend P.T.A.	−0.361	0.404
	(0.624)	(0.474)

Table 10 ■ continued

Variable	Reading	Math
Number of books	0.003	0.003
	(0.095)	(0.105)
Disability	−2.454*	−1.942*
	(0.005)	(0.003)
N	3140	3147
R^2	0.05	0.043

Note: p-values are in parentheses; * indicates significant at the 5% level.

Black children improve less than nonblack children, and children with learning disabilities improve less than other children.

The only pattern in the results that could be interpreted as supportive of a positive effect of homeownership on test scores is the fact that the coefficient on homeownership is higher for higher grade levels. The coefficients on math and reading scores is negative for first graders and positive for third and fifth graders. The statistical significance of the coefficient is higher for fifth graders than for third graders, but it still falls short of even a 10% level of confidence.

Conclusion

We have reviewed the effects of homeownership on several measures of child welfare. Using the PSID data we find that after controlling for dwelling type, residential mobility, vehicle ownership, wealth or subsets of these factors, there is no evidence of an effect of homeownership on high school dropout rates. We also find evidence of selection effects that might bias regression results toward showing effects of homeownership. Using the PUMS data, we find that the homeownership effect is weaker for apartments and mobile homes than for houses, calling into question the idea that it is ownership itself that has an effect. We also find that for families that have not recently moved, homeownership has no statistically significant effect on high school dropout rates. Using the NLSY79 data, we find that, controlling for treatment effects, there is no statistically significant evidence of a homeownership effect. Using a new source of data, the ECLS, we do not find evidence that homeownership improves reading and math test scores.

Tax incentives and subsidies to promote homeownership amount to over $100 billion per year in the United States. This level of subsidy can be justified if homeownership produces positive externalities, such as higher levels of welfare

for children. Of course, subsidies of this kind result from a political system that shifts resources to groups, like homeowners, with political influence, not objective consideration of overall welfare. Nevertheless, the findings of social scientists can be important rhetorical tools in political campaigns, so research results can affect policy outcomes. It is therefore important that these results be carefully reviewed. Our findings indicate that evidence of a relationship between homeownership and several indicators of the well-being of children is weaker than previous researchers have found. Studies that have come to different conclusions have been cited prominently in support of policies that favor homeownership. The results of our article suggest a reevaluation of the costs and benefits of these policies.

We thank Mark Obrinsky, Jack Goodman, Michael Hollar, Anthony Yezer and other participants at the Mid-Year Meeting of the American Real Estate and Urban Economics Association and the Research Forum of the National Multi-Housing Council for many helpful comments. We are particularly grateful to Richard Green for his comments. The views expressed in this article are those of the authors and should not be interpreted as those of the Congressional Budget Office.

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