

# Individual Payoffs and the Effect of Homeownership on Social Capital Investment

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Eric Fesselmeyer<sup>a,\*</sup>, Kiat Ying Seah<sup>b</sup>, Roland Cheo<sup>c</sup>

<sup>a</sup>*Department of Economics and IRES, National University of Singapore*

<sup>b</sup>*Department of Real Estate and IRES, National University of Singapore*

<sup>c</sup>*Center for Economic Research, Shandong University, China*

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## Abstract

Are all social capital investments equal in the eyes of homeowners and renters? Presumably, social capital investments that lead to increases in home values provide stronger incentives for homeowners than renters. In contrast, for social capital investments that do not directly impact home values, one would not expect homeowners and renters to differ in their investment rates. In this paper, we test this hypothesis using confidential and detailed individual-level panel data from Los Angeles county. We estimate the effect of homeownership on social capital investment, i.e., participation in social-capital creating activities, using a bivariate probit model and fixed effects models that control for individual-specific, time-constant heterogeneity that would otherwise cause omitted variable bias. Each model addresses the endogeneity of homeownership differently with identification arising from different sources. We find strong evidence that homeownership increases the rate of participation in block meetings, a social capital investment that should affect property values, and find no homeownership effect on three other social capital creating activities that likely do not: volunteerism, participation in a local political organization, and participation in a civic group. The results suggest that the effect of homeownership on social capital investment depends on whether the returns to such investments accrue solely to homeowners.

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\*Corresponding author

*Email address:* [ecsef@nus.edu.sg](mailto:ecsef@nus.edu.sg) Tel: (65) 6516 4873 Fax: (65) 6775 2646 (Eric Fesselmeyer)

## 1. Introduction

A popular argument in support of widespread homeownership is that homeownership generates positive externalities. For example, homeownership is argued to increase participation in social-capital creating activities, or *investment in social capital*. Implicit in such an argument is that homeownership changes an individual's behavior by increasing the incentives to invest. That is, just as a homeowner chooses to improve her property if she reaps some individual benefit, a homeowner is more likely to invest in social capital that, say, improves her community when the returns to such investment is expected to be recouped through a higher home value. In contrast, a renter would lack this monetary incentive and would be relatively less likely to invest in such social capital since any pecuniary payoff from community-specific investments accrues only to landlords. Consequently, we expect participation rates in social capital activities to differ the most between homeowners and renters for those activities that have direct bearing on property values.<sup>1</sup>

A natural way to test whether homeowners invest more in a particular form of social capital than do renters is to compare the social capital investment rates of homeowners and renters. This approach, however, is plagued by a particular difficulty: homeownership is likely an endogenous variable since the qualities that make an individual invest in social capital may be

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<sup>1</sup>Readers interested in the theoretical model of social capital investment and homeownership from which this intuition is derived should refer to DiPasquale and Glaeser (1999). A more general model of social capital investment can be found in Glaeser, Laibson, and Sacerdote (2002).

the same qualities that determine homeownership. Endogeneity could potentially be addressed using instrumental variable estimation or with access to panel data, either of which is a rare empirical luxury. Consequently, the causal effect homeownership has on social capital investment is still an open question.

In this paper we use a confidential dataset, the Los Angeles Family and Neighborhood Survey (L.A.FANS), to test the hypothesis that relative to renters, homeowners invest more in social capital when there are higher individual payoffs to homeowners. Because of the structure of our data, we can use both instrumental variable estimation and panel data methods. This allows us to identify the relationship between social capital investment and homeownership from two very different, and what we believe to be, credible sources of variation. We estimate a bivariate probit model that identifies the homeownership effect using the exogenous variation of anticipated changes in real wages. We then estimate two fixed effects models – the logit fixed effects model and the linear fixed effects model – to identify the homeownership effect by measuring how social capital investment changed over time in response to changes in homeownership status conditional on individual-specific time-constant unobserved heterogeneity.

The L.A. FANS dataset contains four different activities: participation in block or neighborhood meetings, volunteerism in a local organization, participation in a business or civic group, and participation in a local or state political organization. Of these, only participation in block or neighborhood meetings directly affects neighborhood and community quality and thus property values. Finding that homeownership encourages participation in block

or neighborhood meetings but not these three other activities is therefore consistent with our hypothesis that social capital investment is like most economic activities in which payoffs matter.

We do in fact find strong evidence for a positive, large effect of homeownership on the rate of participation in block meetings in both the bivariate probit model and the fixed effects models. The bivariate probit model estimates that a homeowner is 32 percentage points more likely than a renter to participate in a block meeting, and the linear fixed effects model estimates the effect to be about 15 percentage points. The logit fixed effects model estimates the direction of the effect to be positive and significant. We find no significant homeownership effect on the three other participation variables. This suggests that, unlike participation in a block meeting, the payoffs to participating in these three social capital creating activities do not differ between owner and renter.

The paper is organized as follows. The next section discusses the relevant literature. Section 3 contains the model and estimation approach, Section 4 contains a description of the data, and Section 5 discusses the results. We conclude in Section 6.

## **2. Literature Review**

The concept of social capital has its origin in sociology. Portes and Landolt (1996) attribute the genesis of the concept to the early sociological works in the nineteenth-century. The term social capital was first used by sociologist Bourdieu (1986) to refer to access to resources that accrue to people through membership in certain communities. Following Putnam (1993)'s

finding of a positive correlation between civic engagement and government quality, there was a surge in empirical research estimating the *effects* of social capital on socio-economic outcomes. These early studies seemingly found a positive relationship between social capital and economic or labor outcomes (for example, see Furstenberg and Hughes (1995) and Knack and Keefer (1997)). However, many of these studies suffer from identification problems that arise due to endogeneity issues. Durlauf (2002), in his persuasive and insightful critique, discusses the identification pitfalls contained in many of these oft cited studies.

Another strand of literature apart from the empirical studies on the *effects* of social capital seeks to identify the *mechanisms* behind the creation of social capital. Some early papers include Rossi and Weber (1996) and Rohe and Stegman (1994). Rossi and Weber (1996), using data from the General Social Survey (GSS), find that homeowners are more “consistently engaged” in local politics and are more likely to vote in national elections.<sup>2</sup> Rohe and Stegman (1994) find that homeowners are more likely to participate in neighborhood and block associations but are not that different from renters in terms of church, school and political organizations involvement.

These papers suffer a similar identification problem; unobservables may determine homeownership and social capital investment simultaneously.<sup>3</sup> For instance, individuals who have a taste for homeownership may also have a predilection for being politically active or forming social ties within their

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<sup>2</sup>For a review of voting behavior and homeownership, see Herbert and Belsky (2006).

<sup>3</sup>See Dietz and Haurin (2003) for a comprehensive review of this problem along with an extensive discussion of the social benefits and costs of homeownership.

communities. That is, homeownership is likely an endogenous variable which creates both an omitted variable problem and selection bias, rendering inconsistent estimates.

More recent studies on social capital and homeownership are more conscious of the problem of omitted variables bias and selection effects. However, their results, seen as a whole, are largely inconclusive. For example, DiPasquale and Glaeser (1999) find that in the United States homeownership has a positive effect on participation in *all* social capital activities in their data, perhaps because the identification of their model comes from using average homeownership rates within an income quartile, race and state – an instrument that they admit is “less than perfect.”<sup>4</sup> Engelhardt et al. (2010) make use of exogenous variation arising from a program that subsidized saving for home purchases that was randomly made available to a group of low-income households in Tulsa, Oklahoma. For some activities, they find evidence of no effect or a negative effect of homeownership; for other activities, their results are not conclusive, perhaps because of their small sample size or their use of a weak instrument. Hilber (2010), exploring the link between housing supply and social capital, finds that homeowners in more built-up areas have a greater incentive to invest in social capital.

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<sup>4</sup>DiPasquale and Glaeser (1999) also use a German panel dataset to test whether an individual become better citizens after he or she had become a homeowner. They find that the effect of homeownership is weak.

### 3. Models and Estimation

Our data comes from a confidential version of the Los Angeles Family and Neighborhood Survey (L.A.FANS) which contains household-level panel data from 65 census tracts in Los Angeles County. The panel data allows us to estimate two different types of models: a bivariate probit model and fixed effects models. Each model approaches the endogeneity of homeownership differently with identification arising from different sources. The benefit of taking two different approaches to estimation is credibility of the results. If the results share a similar interpretation, as ours do, the conclusions should be more convincing. We now discuss the details of the two types of model.

The bivariate probit model accounts for endogeneity of homeownership by specifying a second equation which models the relationship between homeownership and an exogenous source of variation. In other words, identification of the effect of homeownership on social capital investment arises from an exogenous instrument that affects social capital investment only through homeownership. The challenge, of course, is to find a believable source of exogenous variation, which in many cases proves challenging.

The second type of model we estimate are fixed effects models. The logit fixed effects model and the linear fixed effects model identify the effect of homeownership on social capital investment with an entirely different identification approach than the bivariate probit. Instead of using the exogenous variation of an instrument, fixed effects models control for endogeneity by removing person-specific, time-constant unobserved heterogeneity that is correlated with homeownership. Estimation and identification of the model arises from how the dependent variable changes in response to changes in

explanatory variables. This approach relies on fewer parametric assumptions than the bivariate probit model, and allows for more general forms of endogeneity.

### 3.1. Bivariate Probit Model

The bivariate probit model allows instrumenting of the endogenous homeownership, a discrete variable, in a probit model by specifying an additional equation that is analogous to the first stage of the two stage least squares.

As such, the bivariate probit model comprises two components: a social capital equation and a homeownership equation. Formally, we specify the latent propensity to own,  $I^*$ , as

$$I^* = \gamma Z + \epsilon$$

where  $Z$  is a vector of observable variables,  $\gamma$  is a vector of parameters, and  $\epsilon$  is an error term. A person is a homeowner ( $I = 1$ ) if  $I^* > 0$ , and a renter ( $I = 0$ ) otherwise.

Further, assume that a person's latent propensity to participate in a particular social capital creating activity is  $y^* = \delta I + \beta X + \nu$ , where  $I$  is the observed indicator variable of homeownership,  $X$  is a vector of observable variables,  $\beta$  is a vector of parameters, and  $\nu$  is an error term. A homeowner participates in the activity if  $y^* > 0$ . We can write the model succinctly as:

$$\begin{aligned} I^* &= \gamma Z + \epsilon, & I &= 1 \text{ iff } I^* > 0, & I &= 0 \text{ otherwise} \\ y^* &= \delta I + \beta X + \nu, & y &= 1 \text{ iff } y^* > 0, & y &= 0 \text{ otherwise} \end{aligned} \tag{1}$$

The error terms  $\epsilon$  and  $\nu$  are normally distributed with means zero and variances normalized to 1, and the correlation between  $\epsilon$  and  $\nu$  is denoted as

$\rho$ . Even though the model is identified by non-linearity, the results are more believable if an instrument for  $I$  is included in  $Z$ . We discuss our instrument, future change in real wages, below in the data section.

For each activity, the log-likelihood function is

$$\begin{aligned} \ln L = \sum_{i=1}^N \left\{ (1 - I_i) \cdot (1 - y_i) \cdot \ln \Phi(\gamma Z_i, \beta X_i, \rho) \right. \\ \left. + (1 - y_i) I_i \cdot \ln \Phi(-\gamma Z_i, \delta + \beta X_i, -\rho) \right. \\ \left. + y_i (1 - I_i) \cdot \ln \Phi(\gamma Z_i, -\beta X_i, -\rho) \right. \\ \left. + I_i \cdot y_i \cdot \ln \Phi(-\gamma Z_i, -\delta - \beta X_i, \rho) \right\} \end{aligned} \quad (2)$$

The maximum likelihood estimators are consistent and asymptotically normally distributed.

The marginal effect of ownership is the effect ownership has on the probability of participation. For the bivariate probit model in (1), the marginal effect of homeownership for a person with characteristics  $X$  is the difference between the probability of participation of the person as an owner and as a renter:

$$\begin{aligned} \text{marginal effect} &= P(y = 1 \mid I = 1, X) - P(y = 1 \mid I = 0, X) \\ &= \Phi(\delta + \beta X) - \Phi(\beta X). \end{aligned} \quad (3)$$

### 3.2. Fixed Effects Models

We estimate two fixed effects models: the fixed effects logit model and the linear fixed effects model. Both models control for individual-specific, time-constant heterogeneity, eliminating common causes of omitted variable bias

such as a time-constant predilection for social participation. We estimate both models as each have positive and negative aspects. However, as our discussion in the results section below will show, both models produce similar results.

Fixed effects logit is appealing because it explicitly accounts for the discreteness of homeownership. Though discreteness of the dependent variable does not violate the assumptions of the linear regression model, it does cause some well-known and undesirable properties such as prediction outside the unit interval. A strength of the fixed effects logit is also a limitation: allowing unobserved heterogeneity to be arbitrarily related to the explanatory variables means that only the sign of the homeownership effect is identified, and not the magnitude, in contrast to the linear model in which both are identified.

Fixed effects logit removes any time-constant heterogeneity with a clever transformation. Let the probability of individual  $i$ 's participation in a particular activity be:

$$P(y_{it} = 1 | I_{it}, X_{it}, c_i) = \Lambda(\delta I_{it} + \beta X_{it} + c_i), \quad (4)$$

where  $\Lambda(\cdot)$  is the logistic function and  $c_i$  is unobserved heterogeneity. The transformation to the model removes  $c_i$  and results in the likelihood function below. For  $T = 2$  periods of data:

$$\ln L = \sum_{i=1}^N n_i \left\{ w_i \cdot \ln \Lambda \{ \delta (I_{i2} - I_{i1}) + \beta (X_{i2} - X_{i1}) \} \right. \\ \left. + (1 - w_i) \cdot (1 - \ln \Lambda \{ \delta (I_{i2} - I_{i1}) + \beta (X_{i2} - X_{i1}) \}) \right\}, \quad (5)$$

where  $w_i = 1$  if  $\Delta y_i = y_{i2} - y_{i1} = 1$  and  $w_i = 0$  if  $\Delta y_i = y_{i2} - y_{i1} = -1$ . The

term  $n_i = 1$  if  $\Delta y_i \neq 0$  and zero otherwise. That is,  $n_i = 1$  if there was a change in participation from period 1 to 2.

By the presence of  $n_i$  and  $I_{i2} - I_{i1}$  in (5) (and in the sum of squared residuals of the linear fixed effects model), one can see that  $\delta$  is identified by whether and in which direction participation changes when the homeownership status changes. Consequently, only individuals who switch participation status - those that participated in the first period and did not participate in the second period, or, vice versa - contribute to the estimation. The intuition is straightforward. If participation changed when homeownership status did not, homeownership was not a contributing factor. If the change in participation was often in the same direction as the change in homeownership status, then the estimate of effect of homeownership on social capital investment is positive.

Maximum likelihood estimators of (5) are consistent and are asymptotically normally distributed. For further details of the transformation and estimation, see Wooldridge (2010).

#### 4. Data

The Los Angeles Family and Neighborhood Survey (L.A.FANS) collected longitudinal data on neighborhoods, families, children, and on residential choice and neighborhood change from 65 census tracts in Los Angeles County. Wave 1 of the data was collected from April 2000 to January 2002. Wave 2 was collected from the fall of 2006 to November 2008.<sup>5</sup> The confidential

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<sup>5</sup>See Peterson et al. (2004) for a full description of the survey.

version of the dataset that we use identifies each household's census tract, which allows us to include important neighborhood information such as median house values and population density. We include working adults between the age of 25 and 65 who were sampled in both waves. In total, our sample consists of 728 observations of 364 individuals.

Table 1 contains summary statistics for the full sample, for owners, and for renters. Our participation variables are in the first five rows: 21% of the sample volunteered in a local organization (*volunteer*), 14% participated in a neighborhood or block meeting (*block meeting*), 8% participated in a business or civic group (*civic group*), and 7% participated in a local or state political organization (*political organization*). About 50% of the sample are homeowners. Owners are more likely to be married, older, and have higher (real) wages and (real) non-housing wealth and education levels. Finally, in our sample, homeowners live in census tracts with a median house value about \$19,000 higher than the median house value in the renters' census tracts and the tracts are 0.5% less dense.

The (unconditional) marginal effect of homeownership on the participation variables and the standard deviation are reported in Table 2. These values are the differences between the participation rates of owners and of renters in the sample. One can see that for each of the participation variables, homeowners are more likely to participate than renters, in some cases by a large margin, and all results are significant at the 1% level. For instance, the rate of volunteerism of homeowners is 19.9 percentage points higher than renters. Homeowners are more likely than renters to attend block meetings by 15.2 percentage points. We do not see as great a difference in the rela-

tive likelihood of participation in a civic group or in a political organization, though this is not too surprising since the aggregate participation rate of each of these activities is low. Relative to renters, owners are 7.7 percentage points more likely to participate in a civic group and 5.0 percentage points more likely to participate in a political organization. The models estimated below will determine whether these effects persist after including control variables and accounting for selection into ownership.

#### *4.1. Instrumental Variable in the Bivariate Probit Model*

To address the endogeneity of homeownership in the bivariate probit model, we instrument using *change in real wage* from wave 1 to wave 2 of the survey. This variable is meant to capture anticipated changes in earnings, which should in turn affect current homeownership. For example, consider two individuals with identical characteristics, including current wage, except that one anticipates an increase in wage in the future and the other expects no change in wage. The former individual is more likely to own today than the latter.<sup>6</sup> As long as anticipated future earnings does not affect the current decision to participate, the instrument is valid.

One possible mechanism that would void exogeneity is the following. Suppose that individuals work more hours currently with the hope of increasing wages in the future. If the extra work crowds out participation, then our instrument is not valid. In unreported regressions, we find that, in fact, the number of hours worked in the first wave has no relationship to change in real wages. Moreover, as a robustness check we included hours worked as an

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<sup>6</sup>See Olsen (1987) which discusses the importance of future earnings on housing choices.

additional covariate in the bivariate probit model, and the results did not change.

Besides endogeneity of homeownership, one might also worry that a social-minded individual may choose to live in neighborhoods (or census tracts) conducive to social interaction and that also tend to have high homeownership rates such as suburban neighborhoods. Following Brueckner and Largey (2008), who find that lower population density encourages social participation, we include the natural log of population density of the census tract as a control variable to account for such sorting.

Finally, a concern discussed in DiPasquale and Kahn (1999) is that renters may choose neighborhoods with higher quality than owners. If this is the case, then our estimate of the homeownership effect can be treated as a lower bound under the reasonable assumption that social capital and unobserved neighborhood quality are positively correlated. Moreover, any bias should be relatively small since we have included neighborhood level explanatory variables, including median house value, that should control somewhat for unobserved neighborhood quality. (DiPasquale and Kahn (1999) find that house value is correlated with many of their measures of neighborhood quality.)

## **5. Results**

In this section, we first provide descriptive results from a probit model with homeownership as the dependent variable and probit models of participation in various social capital activities, treating homeownership as an exogenous covariate. These models allow us to contrast the results with our

preferred models, the bivariate probit model, which instruments for homeownership, and fixed effects models that control for individual-specific, time-constant heterogeneity that is correlated with homeownership. Even though the identification approach of these two types of models differ, we will see that they lead us to the same conclusion: homeownership has a significant effect only on participation in a block or neighborhood meeting, the social capital investment with the most direct impact on house values.

### *5.1. Homeownership and Participation Probit Regressions*

Table 3 contains estimates of a probit model of ownership. The model is estimated using the first wave of the sample data to correspond with the wave used to estimate the bivariate probit. This model is analogous to the first stage of a two-stage least squares regression, and is a consistent quasi-maximum likelihood estimator of the homeownership equations of the bivariate probit models we estimate later (see Avery et al. (1983)).

The signs of the estimates are as expected, and most of the estimates are significant. Being married, being older, having more children, earning a higher wage, having greater wealth, and more education all have positive and significant effects on homeownership. Higher median house value and density are associated with decreased ownership. Our instrument, change in the real wage, has the expected positive sign and is statistically significant at the 5% level, indicating that, all else equal, individuals who expect an increase in wages in the future are more likely to own.<sup>7</sup>

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<sup>7</sup>While there exists a clear rule of thumb to gauge whether an instrument is weak in a linear model (Stock and Yogo, 2005), we are not aware of any similar guide for non-linear

Table 4 contains estimates of participation probit models. We estimate univariate probits using wave 1 data as well as random effects probit. Since homeownership is the variable of interest here, we compute the marginal effect of ownership for all participation variables, presented in the last row. For all the participation variables, we see that adding control variables to the analysis reduces the estimated marginal effects below the unconditional estimates in Table 2. The marginal effect of homeownership on *volunteer* for both probit models is 0.11. For *block meeting*, the simple probit estimates a marginal effect of 0.15, slightly above the 0.13 estimate from the random effects probit model. All these marginal effects are statistically significant. The marginal effects of homeownership on the other two participation variables are positive but close to zero and not statistically significant. This is not completely unexpected since the overall rate of participation in *civic group* and *political organization* is small, and any homeownership effect is likely small, if not zero, and it may be difficult to accurately estimate the effect given the relatively small sample size.

Bearing in mind that we are not yet controlling for endogeneity of homeownership, the estimates in Table 4 nonetheless indicates some patterns. For example, having more education has a positive and significant effect on social capital investment. Older people are more likely to participative in block or neighborhood meetings, and wages have a positive effect on *volunteer* and *civic group*.

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models such as the bivariate probit.

### 5.2. Bivariate Probit

Table 5 contains the estimates of the bivariate probit model. The estimates of the homeownership equation are similar to those found in Table 3, as expected. The more interesting results are found in the participation equation. We see that for three of the participation variables, *volunteer*, *civic group*, and *political organization*, ownership has no effect. In contrast, the marginal effect of ownership on *block meeting* is positive, large, and statistically significant at the 5% level. The results indicate that an owner is 32 percentage points more likely to participate in a block or neighborhood meeting than a renter. Moreover, the results tell us that when selection into homeownership is accounted for, the positive effect of homeownership on *volunteer* goes away.

These results suggest that homeownership effects are only present for an activity that is most directly linked to a homeowner's self interest as renters are less likely to invest their time attending block meetings since any improvements of the community or neighborhood potentially results in higher property values and such appreciation only accrues to the landlords, the homeowners.

### 5.3. Fixed Effects Models

Tables 6 and 7 contain the estimates of the logit fixed effects models and the linear fixed effects model. For each participation variable, two specifications were estimated, one with ownership alone and one with additional time

varying explanatory variables.<sup>8</sup> The linear fixed effects model is estimated with 728 observations. Due to the nature of the transformation, and the necessity for switches in participation across waves, there are many fewer observations for estimation of the logit fixed effects model (82 for *volunteer*, 72 for *block meeting*, 36 for *civic group*, and 42 for *political organization*). Nonetheless the estimated effect of homeownership in both models is similar to that found in the bivariate probit model. Ownership has a positive and significant effect on *block meeting*. Further, we see from the linear model that the magnitude of the homeownership effect on *block meeting* is estimated to be about 15 percentage points. That is, an owner is about 15 percentage points more likely to participate in a block or neighborhood meeting than a renter. The effect of homeownership on the other three participation variables is not statistically significant. Since the model is identified by the response of participation to switches in homeownership status, the estimates indicate that such switches in the data are positively correlated to switches in *block meeting*, while the other three participation variables are either not responsive to homeownership switches or move in opposing directions or both. Moreover, finding that *block meeting* responded to homeownership switches that the other participation variables did not respond to could indicate that, even if there is a positive effect of homeownership on these three activities that we are not able to tease out in this dataset, the effect must be less important than the effect we find on *block meeting*.

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<sup>8</sup>Time-invariant explanatory variables are removed with the transformation to remove time-invariant heterogeneity. Further, we drop variables that change infrequently such as education level and age bins.

## 6. Conclusion

In this paper, we test the relationship between homeownership and social capital with two types of models, a bivariate probit and fixed effects models, using individual-level data on participation in social-capital creating activities within Los Angeles county. The advantage of using two types of models is that each deals with unobserved heterogeneity in a different way, providing different identification schemes of the the effect of homeownership on social capital investment. We find that both types of models tell a similar story. Homeownership encourages participation in block and neighborhood meetings, but there is no significant effect on three other participation variables: volunteering, participation in a civic group, and participation in a local political organization. These results are consistent with the hypothesis that homeowners are more incentivized to invest in social capital that directly affects neighborhood quality and, consequently, their property values, than renters are. The payoffs to participating in the three other social capital activities seemingly do not differ by owner and renter.

## References

- AVERY, R.B., HANSEN, L.P., AND V.J. HOTZ (1983): "Multiperiod Probit Models and Orthogonality Condition Estimation," *International Economic Review*, 24, 21-35.
- BOURDIEU, P. (1986): "Forms of Capital," in John G. Richardson (ed.), *Handbook of Theory and Research for the Sociology of Education*, Westport, CT: Greenwood Press.
- BRUECKNER, J.K. AND LARGEY, A.G. (2008): "Social Interaction and Urban Sprawl," *Journal of Urban Economics*, 64, 18-34.
- DIETZ, R.D. AND D.R. HAURIN (2003): "The Social and Private Micro-level Consequences of Homeownership," *Journal of Urban Economics*, 54, 401-450.
- DIPASQUALE, D. AND E.L. GLAESER (1999): "Incentives and Social Capital: Are Homeowners Better Citizens?," *Journal of Urban Economics*, 45, 354-384.
- DIPASQUALE, D. AND M.E. KAHN (1999): "Measuring Neighborhood Investments: An Examination of Community Choice," *Real Estate Economics*, 27(3), 389-424.
- DURLAUF, S.N. (2002): "Bowling Alone: A Review Essay," *Journal of Economic Behavior and Organization*, 47(3), 259-273.
- ENGELHARDT, G.V., M.D. ERIKSEN, W.G. GALE, AND G.B. MILLS (2010): "What Are the Social Benefits of Homeownership? Experimental Evidence for Low-Income Households," *Journal of Urban Economics*, 67, 249-258.
- FURSTENBERG, F. AND M. HUGHES (1995): "Social Capital and Successful Development Among At-risk Youth," *Journal of Marriage and the Family*, 57, 580-592.

- GLAESER, E.L., LAIBSON, D., AND B. SACERDOTE (2002): “An Economic Approach to Social Capital,” *The Economic Journal*, 112, 437–458.
- HAURIN, D.R., PARCEL, T.L., AND R.J. HAURIN (2002): “Does Homeownership Affect Child Outcomes?,” *Real Estate Economics*, 30, 635-666.
- HILBER, C.A. (2010): “New Housing Supply and the Dilution of Social Capital,” *Journal of Urban Economics*, 2010, Vol. 67, No. 3, 419-437.
- HILBER, C.A. (2015): “The Economic Implications of House Price Capitalization: A Synthesis,” *Real Estate Economics*, *forthcoming*
- HERBERT, C.E. AND E.S. BELSKY (2006): *The Homeownership Experience of Low-Income and Minority Families: A Review and Synthesis of the Literature*. Washington, DC: U.S. Department of Housing and Urban Development, Office of Policy Development and Research.
- KNACK, S. AND P. KEEFER (1997): “Does Social Capital Have an Economic Payoff? A Cross-Country Investigation,” *The Quarterly Journal of Economics*, 112(4), 1251-1288.
- MYERS, D., CALNAN, R., JACOBSEN, A. AND J. WHEELER (2012): *California Roller Coaster. Income and Housing in Boom and Bust, 1990-2010*. USC Sol Price School of Public Policy, Population Dynamics Research Group.
- OLSEN, E.O. (1987): “The Demand and Supply of Housing Service: A Critical Survey of the Empirical Literature,” in E.S. Mills (ed.), *Handbook of Regional and Urban Economics, Volume II*, Amsterdam: North-Holland.
- PETERSON, C.E., SASTRY, N., PEBLEY, A.R., GHOSH-DASTIDAR, B., WILLIAMSON, S., AND S. LARA-CINISOMO (2004): “The Los Angeles Family and Neighborhood Survey Codebook,” working paper.
- PORTES, A. AND P. LANDOLT (1996): “The Downside of Social Capital,” *The American Prospect*, no. 26, 94, 18–21.

- PUTNAM, R. D. (1993): *Making Democracy Work: Civic Traditions in Modern Italy*. Princeton: Princeton University Press.
- ROHE, W. AND W. STEGMAN (1994): “The Impact of Homeownership on the Social and Political Involvement of Low-Income People,” *Urban Affairs Quarterly*, 30, 28–50.
- ROSSI, P.H. AND E. WEBER (1996): “The Social Benefits of Homeownership: Empirical Evidence from National Surveys,” *Housing Policy Debate*, 7, 1–35.
- SOBEL, J. (2002): “Can We Trust Social Capital?,” *Journal of Public Economics*, March, Vol. XL, 139–154.
- STOCK, J.H. AND M.M. WATSON (2012): *Introduction to Econometrics*. Essex, England: Pearson.
- STOCK, J.H. AND M. YOGO (2005): “Testing for Weak Instruments in Linear IV Regression,” Chapter 5 in *Identification and Inference in Econometric Models: Essays in Honor of Thomas J. Rothenberg*, edited by D.W.K. Andrews and J.H. Stock. Cambridge: Cambridge University Press.
- WOOLDRIDGE, J.M. (2010): *Econometric Analysis of Cross Section and Panel Data*. Cambridge, Massachusetts: The MIT Press.

	Full Sample		Owners		Renters	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Volunteer	0.212	0.409	0.311	0.464	0.112	0.316
Block meeting	0.136	0.343	0.212	0.409	0.060	0.238
Civic group	0.077	0.267	0.116	0.320	0.038	0.192
Political organization	0.071	0.258	0.096	0.296	0.047	0.211
Own	0.499	0.500	1.000	0.000	0.000	0.000
Education						
High school or less	0.427	0.495	0.298	0.457	0.556	0.497
Some college	0.295	0.457	0.350	0.478	0.241	0.428
College	0.169	0.375	0.196	0.397	0.142	0.350
Prof. School	0.109	0.311	0.157	0.364	0.060	0.238
Latino	0.538	0.499	0.408	0.492	0.668	0.471
Married	0.604	0.489	0.719	0.450	0.490	0.501
Number of children	1.415	1.215	1.413	1.248	1.416	1.182
Age						
25 - 30	0.095	0.293	0.036	0.186	0.153	0.361
30 - 40	0.353	0.478	0.287	0.453	0.419	0.494
40 - 50	0.367	0.482	0.441	0.497	0.293	0.456
50+	0.185	0.389	0.237	0.425	0.134	0.341
Real wage (\$1000's)	31.85	25.66	40.65	28.13	23.09	19.33
Real non-housing wealth (\$1000's)	114.49	248.46	186.22	304.90	43.15	143.56
Ln(Census-tract median house value)	12.20	0.45	12.25	0.47	12.16	0.41
Ln(Census-tract density)	9.09	1.08	8.71	1.13	9.46	0.87
Wave 2	0.500	0.500	0.562	0.497	0.438	0.497
Change in real wage	3.073	19.582	2.344	23.849	3.639	15.526
Number of observations	728		363		365	

Table 1: Summary Statistics

	<u>Mean</u>	<u>Std. Dev.</u>
Volunteer	0.199 ***	0.030
Block meeting	0.152 ***	0.025
Civic group	0.077 ***	0.020
Political organization	0.050 ***	0.019

Table 2: Unconditional Marginal Effect of Homeownership on Participation

	Ownership	
	Coef.	Std. Err.
Change in real wage	0.01 **	0.00
Some college	0.49 **	0.21
College	0.30	0.27
Prof. School	0.51	0.35
Latino	0.12	0.20
Married	0.29 *	0.17
Number of children	0.16 **	0.08
Age 30 - 40	0.36	0.25
Age 40 - 50	0.96 ***	0.25
Age 50+	1.48 ***	0.33
Real wage	0.03 ***	0.01
Real non-housing wealth	0.00 **	0.00
Ln(median house value)	-0.92 ***	0.27
Ln(density)	-0.38 ***	0.09
Constant	12.13 ***	3.34

Table 3: Ownership Probit Regressions

	Volunteer				Block meeting				Civic group				Political organization			
	Wave 1 Probit		Random Effects Probit		Wave 1 Probit		Random Effects Probit		Wave 1 Probit		Random Effects Probit		Wave 1 Probit		Random Effects Probit	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Own	0.50 **	0.20	0.56 ***	0.17	0.80 ***	0.22	0.86 ***	0.21	0.44	0.30	0.42	0.27	0.04	0.30	0.12	0.21
Some college	0.52 **	0.24	0.76 ***	0.21	0.44 *	0.26	0.27	0.22	0.48	0.35	0.26	0.32	0.96 **	0.47	0.72 ***	0.28
College	0.65 **	0.29	0.94 ***	0.26	0.66 **	0.30	0.62 **	0.27	0.61	0.40	0.65	0.40	1.16 **	0.51	0.77 **	0.33
Prof. School	1.25 ***	0.34	1.19 ***	0.29	0.36	0.37	0.16	0.32	0.54	0.47	0.37	0.45	1.47 ***	0.53	1.23 ***	0.35
Latino	-0.46 **	0.21	-0.45 **	0.19	-0.14	0.23	0.02	0.20	0.06	0.28	-0.26	0.28	0.15	0.31	0.02	0.22
Married	-0.07	0.19	-0.14	0.16	-0.29	0.20	-0.19	0.17	-0.23	0.27	-0.31	0.25	0.21	0.29	0.17	0.20
Number of children	0.03	0.08	0.10	0.07	0.08	0.08	0.02	0.07	0.15	0.10	0.16	0.10	0.04	0.12	-0.11	0.09
Age 30 - 40	0.16	0.28	0.36	0.26	0.75 *	0.44	0.73 **	0.35	0.13	0.52	-0.27	0.40	0.02	0.43	0.06	0.31
Age 40 - 50	0.08	0.29	0.32	0.27	1.03 **	0.44	0.87 **	0.35	0.79	0.50	0.12	0.39	0.02	0.45	-0.03	0.31
Age 50+	0.13	0.38	0.29	0.30	1.02 **	0.49	0.68 *	0.37	0.20	0.66	0.10	0.44	0.49	0.52	0.24	0.34
Real wage	0.01 *	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01 ***	0.00	0.01 ***	0.00	0.00	0.00	0.00	0.00
Real non-housing wealth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ln(median house value)	-0.24	0.24	0.27	0.19	-0.06	0.25	-0.04	0.21	-0.22	0.32	-0.20	0.28	0.28	0.34	0.15	0.23
Ln(density)	0.11	0.09	0.13	0.08	0.11	0.10	0.10	0.08	0.08	0.13	-0.04	0.11	0.08	0.15	0.00	0.09
Wave 2			0.14	0.14			-0.31 **	0.15			-0.01	0.20			0.20	0.18
Constant	0.11	2.98	-6.77 ***	2.55	-2.97	3.13	-3.18	2.68	-1.31	3.90	-0.12	3.56	-7.22	4.59	-4.36	3.07
Own marginal effect	0.11 **	0.04	0.11 ***	0.03	0.15 ***	0.04	0.13 ***	0.03	0.04	0.03	0.02	0.02	0.00	0.03	0.01	0.02

Table 4: Participation Probit Regressions

	Volunteer				Block meeting				Civic group				Political organization			
	Participation		Own		Participation		Own		Participation		Own		Participation		Own	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Own	-0.22	0.80			1.63 **	0.75			0.84	0.74			0.11	0.73		
Change in real wage			0.01 **	0.00			0.01 *	0.00			0.01 **	0.00			0.01 **	0.00
Some college	0.60 **	0.24	0.50 **	0.21	0.31	0.29	0.52 **	0.21	0.41	0.37	0.49 **	0.21	0.95 **	0.48	0.49 **	0.21
College	0.69 **	0.28	0.32	0.27	0.54 *	0.33	0.32	0.27	0.56	0.41	0.29	0.27	1.15 **	0.51	0.30	0.27
Prof. School	1.30 ***	0.33	0.47	0.34	0.23	0.38	0.55	0.34	0.49	0.48	0.51	0.35	1.45 ***	0.54	0.50	0.35
Latino	-0.44 **	0.21	0.16	0.20	-0.12	0.22	0.13	0.20	0.06	0.28	0.10	0.20	0.15	0.31	0.12	0.20
Married	0.01	0.20	0.28	0.17	-0.35 *	0.20	0.30 *	0.17	-0.27	0.27	0.29 *	0.17	0.20	0.29	0.29 *	0.17
Number of children	0.06	0.08	0.15 *	0.08	0.06	0.09	0.16 **	0.08	0.14	0.10	0.17 **	0.08	0.04	0.12	0.16 **	0.08
Age 30 - 40	0.26	0.29	0.37	0.24	0.65	0.43	0.38	0.25	0.07	0.52	0.35	0.25	0.01	0.44	0.36	0.25
Age 40 - 50	0.29	0.36	0.94 ***	0.25	0.78	0.49	0.99 ***	0.25	0.66	0.55	0.95 ***	0.26	-0.01	0.50	0.96 ***	0.26
Age 50+	0.44	0.49	1.48 ***	0.33	0.68	0.57	1.49 ***	0.33	0.04	0.70	1.48 ***	0.33	0.46	0.60	1.48 ***	0.33
Real wage	0.01 **	0.01	0.03 ***	0.01	0.00	0.01	0.03 ***	0.01	0.01 *	0.01	0.03 ***	0.01	0.00	0.01	0.03 ***	0.01
Real non-housing wealth	0.00	0.00	0.00 **	0.00	0.00	0.00	0.00 **	0.00	0.00	0.00	0.00 **	0.00	0.00	0.00	0.00 **	0.00
Ln(median house value)	-0.35	0.26	-0.87 ***	0.27	0.08	0.27	-0.92 ***	0.27	-0.15	0.34	-0.90 ***	0.27	0.28	0.35	-0.92 ***	0.27
Ln(density)	0.03	0.12	-0.37 ***	0.09	0.18 *	0.11	-0.38 ***	0.09	0.11	0.14	-0.37 ***	0.09	0.09	0.16	-0.38 ***	0.09
Constant	2.14	3.62	11.45 ***	3.39	-5.20	3.58	12.15 ***	3.32	-2.40	4.33	11.89 ***	3.37	-7.32	4.90	12.12 ***	3.34
Rho	0.43	0.44			-0.55	0.44			-0.26	0.60			-0.05	0.91		
Own marginal effect	-0.05	0.18			0.32 **	0.16			0.09	0.10			0.01	0.07		

Table 5: Bivariate Probit Regressions

	Volunteer				Block meeting				Civic group				Political Organization			
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Own	0.37	0.58	0.40	0.65	1.95 ***	0.68	2.04 ***	0.80	0.81	0.85	-0.10	1.36	-0.14	0.82	-0.42	0.91
Married			-0.30	0.64			-0.09	0.77			-0.73	1.27			0.90	0.78
Number of children			0.32	0.25			0.24	0.26			1.39 ***	0.61			0.11	0.35
Real wage			0.01	0.01			0.03 *	0.02			0.00	0.03			0.00	0.01
Real non-housing wealth			0.00	0.00			0.00	0.00			0.00	0.00			0.00	0.00
Ln(median house value)			-0.53	1.27			-1.70	1.74			-1.03	2.34			-0.54	1.73
Ln(density)			0.23	0.53			-0.57	0.52			0.65	0.65			-0.55	0.78
Constant	0.45 *	0.24	0.55 **	0.26	-0.55 **	0.27	-0.64 **	0.32	0.28	0.35	1.12 *	0.62	0.61 *	0.34	0.66 *	0.38

Table 6: Logit Fixed Effects Regressions

	Volunteer				Block meeting				Civic group				Political organization			
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Own	0.07	0.06	0.07	0.06	0.15 ***	0.05	0.14 ***	0.05	0.04	0.04	0.04	0.04	0.01	0.04	0.01	0.04
Married			-0.03	0.06			-0.03	0.06			-0.02	0.04			0.07	0.04
Number of children			0.02	0.02			0.02	0.02			0.03 **	0.01			-0.01	0.02
Real wage			0.00	0.00			0.00	0.00			0.00	0.00			0.00	0.00
Real non-housing wealth			0.00	0.00			0.00	0.00			0.00	0.00			0.00	0.00
Ln(median house value)			-0.10	0.11			-0.20 ***	0.10			-0.17 **	0.07			-0.01	0.08
Ln(density)			0.02	0.04			-0.01	0.04			0.02	0.03			0.00	0.03
Constant	0.18 ***	0.03	1.23	1.50	0.06 **	0.03	2.57 *	1.39	0.06 ***	0.02	1.80 *	0.98	0.06 ***	0.02	0.12	1.07

Table 7: Linear Fixed Effects Regressions