The American Dream and Support for the Social Safety Net

Evidence from Experiment and Survey Data

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Abstract

In this paper I contest the claim that housing wealth reduces support for social insurance. Instead, guided by mental accounting theory and prospect theory, I hypothesize that housing wealth increases preference for status quo arrangements with respect to Social Security. Evidence from two studies support the status quo preference hypothesis. A survey experiment finds homeowners informed about hight historical home price appreciation (HPA) are about 8 percentage points more likely to prefer existing Social Security arrangements to a privatized Social Security scheme, compared to those informed about low historical HPA. Observational data from the 2000-2004 ANES panel show that homeowners who experience the lowest HPA are about 12 percentage points less likely to be satisfied with status quo levels of spending on Social Security than all other homeowners. No significant HPA effects are observed among renters, and for other domains of social insurance among homeowners. The evidence suggests that claims about housing wealth's conservatizing effect may be overstated.

1 Introduction

Do rising home values reduce support for social insurance among homeowners? Homeownership has long been part of the American Dream.[1] Although homeownership may have positive benefits for households and communities—homes are vehicles for wealth accumulation, and homeownership is positively associated with greater community involvement (DiPasquale and Glaeser, 1999)—some scholars worry that rising homeownership rates undermine support for the social safety net (Kemeny, 1981; Conley and Gifford, 2006; Malpass, 2008). It is argued that housing wealth, as a form of private insurance or financial buffer, substitutes for social insurance (Ansell, 2014). Homeowners who rely on housing wealth for retirement or view their home as a private rainy day fund may become less supportive of social safety nets as their own housing wealth increases (Hacker, Rehm and Schlesinger, 2013).

Call the argument that housing wealth reduces support for social insurance the *housing wealth hypothesis*. Ansell (2014) finds evidence for this claim, by drawing on panel data from the American National Election Study (ANES) and British Household Panel Survey (BHPS). The ANES data demonstrate that, conditional on covariates, homeowners who experience a larger increase in house prices from 2000 to 2004 are less likely to desire more government spending on Social Security. Similarly, the BHPS data show that homeowners who experience higher home price appreciation (HPA) are less likely to support full employment policies. The relationship between home values and attitudes toward social insurance leads Ansell to conjecture that "housing booms during the 1990s and 2000s... potentially reduced support for social insurance" (p. 401).

Existing research provides reasons to consider this claim cautiously. It is known that the effects of material self-interest on policy preferences are cognitively narrow (Sears and Funk, 1990). That is, self-interested preferences in one policy domain do not tend to spill over into other

[1] In a September 2013 poll conducted by the Washington Post and the Miller Center at the University of Virginia, 61% of respondents said that owning a home "is very much what [they] understand the American Dream to mean." 79% of respondents in a March 2013 CNBC poll said that "Owning a home is an essential part of the American Dream." 73% of respondents in a September 2014 Fox News survey said that owning a home was either very or extremely important for achieving the American Dream. The survey results reported here were obtained from searches of the iPOLL Databank and other resources provided by the Roper Center for Public Opinion Research.

domains or predict general ideological dispositions. Doherty, Gerber and Green (2006) implement a quasi-experimental design to examine the effect of wealth on policy preferences, by studying the random assignment of wealth to lottery winners. They show that although the amount of winnings predicts lottery winners' opposition to the estate tax, it is uncorrelated with attitudes toward income redistribution and the role of government in meeting citizens' social welfare needs. Bagues and Esteve-Volart (2016) also exploit the random assignment of wealth through lotteries, and find in the Spanish setting that a temporary increase in wealth has no effects on voters' assessments of the government or the opposition. Studies that exploit quasi-experimental variation in wealth do not find an effect of wealth on preferences over social insurance policies in particular or political attitudes in general.

In addition, housing wealth is an expensive form of financial buffer. Gorea and Midrigan (2017) estimate that about 75% of U.S. households are liquidity-constrained, meaning that they would be better off if they held more liquid assets (such as cash and deposits). In 2001, among homeowners in the bottom 80% of the wealth distribution, the median holding of liquid assets was about $4200.[2] Housing wealth accounted for 87% of the wealth of the median household in this group. Yet relatively few households choose to extract home equity in order to maintain a higher pool of liquid assets.[3] Gorea and Midrigan (2017) show that the high cost of refinancing makes it prohibitive for households to tap home equity to respond to negative income shocks. Housing wealth is thus a poor substitute for social insurance, particularly for unexpected shocks like unemployment or illnesses.

I offer an amendment to the housing wealth hypothesis that builds upon two theories in behavioral economics, mental accounting theory and prospect theory. Mental accounting posits that individuals do not perceive their wealth as being fungible. Rather, they categorize their assets into different accounts, such as a consumption account, a rainy day fund, a retirement account, or a bequest account. A wealth shock in one account affects only preferences relevant to that account. I argue that because home equity is most closely associated with other retirement assets, housing wealth

[2]Gorea and Midrigan (2017), based on analysis of the 2001 Survey of Consumer Finance.

[3]Bhutta and Keys (2016) draw on a large dataset of consumer credit records to document that about 12.5% of mortgage borrowers withdrew home equity in 2001.

shocks primarily affect public policy preferences related to retirement income. How do these preferences change in response to housing wealth shocks? Prospect theory suggests that wealth shocks have heterogeneous effects that depend on whether the shock leaves an individual facing a shortfall relative to a target. Individuals who face a shortfall are more likely to prefer deviations from the status quo compared to those whose wealth exceeds their targeted level. I hypothesize that homeowners who expect or experience higher home price appreciation exhibit higher rates of status quo preference with respect to public policies that affect retirement assets, compared to those who expect or experience lower HPA.

In this paper, I present results from two studies that contribute to the debate on the housing wealth hypothesis. The first study, a survey experiment involving about 2000 Amazon Mechanical Turk subjects, randomly assigns different types of information about historical home price appreciation to respondents. The second study combines responses from the ANES 2000-2004 Panel Study with fine-grained zip-code level HPA and economic data. The results from both studies are consistent with my amended housing wealth hypothesis. In the first study, homeowners informed that historical HPA has been high are about 8 percentage points more likely to prefer staying with the existing Social Security system instead of switching to privatized retirement accounts, compared to those informed that historical HPA has been low. The second study uses the panel structure of the survey data to control for individual-level unobserved heterogeneity. I find that among homeowners, local HPA is positively associated with support for maintaining federal spending on Social Security at the status quo level. A series of placebo tests indicate no effects of HPA on preferences over federal spending in other policy areas. I also document that HPA has no effects on federal spending preferences for renters.

The findings in this paper make a number of contributions to the understanding of how individuals update their preferences over social insurance policies. The paper relates to research on preference formation based on information about macroeconomic conditions (e.g. Durr, 1993; Erikson, Mackuen and Stimson, 2002; Kam and Nam, 2007). Barabas (2006) finds that sharp declines in stock market indices are associated with increased opposition to Social Security privatization, and

theorizes that when equity returns are strong, individuals look to stocks as an alternative to Social Security; conversely, during market downturns, Social Security's annuity-like payouts become more attractive compared to stocks. This paper highlights how, among those who have direct exposure to home prices, housing markets can also affect Social Security privatization attitudes alongside fluctuations in the stock market.

In its experimental approach, this paper provides a novel test of the housing wealth hypothesis that goes beyond macro-level comparisons and observational survey data. A large body of research in political science and sociology examines the relationship between homeownership, housing wealth, and the welfare state, in particular the argument that widespread homeownership undermines support for social insurance programs (Kemeny, 1981; Castles, 1998; Conley and Gifford, 2006). For instance, Malpass (2008) argues that welfare state retrenchment "relies on the existence of substantial amounts of quite widely distributed housing wealth in order to secure political acceptance of changes in service provision" (p. 8). This line of research draw mostly on case studies or small-n cross-country comparisons. A related body of research investigates the causal effect of homeownership on political attitudes and partisan preferences using survey data, and have generally found null effects for homeownership (Lowery and Sigelman, 1981; Kingston, Thompson and Eichar, 1984; Kingston and Fries, 1994; Gilderbloom and Markham, 1995; Huberty, 2011). This paper is most closely related to work that frames financial and housing wealth as private insurance (Hacker, Rehm and Schlesinger, 2013; Ansell, 2014). It complements existing research through an experimental design that mitigate inferential issues due to confounders.

This paper adds to a growing set of studies that explore the effects of randomized information treatments on preferences over public policy and vote choice. Recent studies that randomize the provision of information about income inequality to survey respondents find that such information has no effects on preferences over top tax rates, minimum wage, food stamps, and demands for income redistribution (Kuziemko et al., 2015; Trump, 2017). Alt, Lassen and Marshall (2015) randomly assign information about unemployment rate forecasts to a group of Danish survey respondents. They show that information treatments affect vote intentions by way of voters' unemployment

expectations, but only among politically sophisticated voters and when the information is assessed to be credible. These studies are consistent with the claim that the average voter does not tend to situate economic information in a political context, except in specific settings. Findings from this paper suggest that among homeowners, Social Security may be one such setting in which information about home prices is incorporated.

Finally, this paper is related to research in psychology and behavioral economics on how wealth and prior gains are integrated into decision-making over risky choices (Shefrin and Thaler, 1988; Thaler and Johnson, 1990; Thaler, 1999). Risk averse individuals who experience prior gains will exhibit reduced risk-seeking behavior with gains in wealth, because of diminishing marginal returns to wealth. But Thaler and Johnson (1990) highlight that economic behavior given prior gains depends on how prior gains are encoded. This paper highlights the fruitful ways in which findings from psychology and behavioral economics, in particular narrow framing, mental accounting, and prospect theory, can be incorporated into research questions of theoretical and practical interest to political science.

The paper proceeds as follows. Section 2 elaborates on the theory. Section 3 presents the design and findings from the survey experiment. Section 4 describes the ANES and home price data and reports estimates from a number of model specifications. Section 5 organizes findings from the empirical studies and offers directions for future work.

2 Mental Accounts and Prospect Theory

The central claim in this paper is that home price appreciation has a limited and local effect on homeowners' social insurance preferences. Specifically, among homeowners, a positive shock to home prices increases a preference for the status quo with respect to programs that affect retirement income. The argument rests on two premises. First, households do not think of their wealth as fungible. A household's assets are categorized in different accounts, such as a consumption account, a rainy day fund, and a retirement account. A wealth shock in one account primarily affects preferences relevant to that account. Second, individuals evaluate outcomes in terms of gains or

losses relative to a reference point, and are more sensitive to losses than gains. Individuals are more likely to prefer deviations from the status quo when they face a shortfall relative to a target, such as an aspirational level of retirement wealth.

Mental Accounts

Existing research finds that the effect of narrow economic self-interest on political attitudes is limited and local. Doherty, Gerber and Green (2006) exploit quasi-experimentation variation in wealth shocks to lottery winners. They show that among lottery winners, the size of winnings is positively associated with opposition to the estate tax, but does not predict attitudes toward redistribution and social welfare policies. Chong, Citrin and Conley (2001) document that homeownership predicts support for the mortgage interest deduction, but is not associated with support for other types of public policies. Citizens, and economic agents in general, tend to frame the choices they have to make in a narrow way (Barberis, Huang and Thaler, 2006). Kahneman (2003) argues that narrow frames are so prevalent in economic decision-making because some attributes of a problem are more accessible than others, a theory that has been advanced by scholars of political behavior (Zaller, 1992). These findings suggest that economic self-interest only shapes political attitudes when individuals identify a clear nexus between a particular economic consideration and a policy issue or proposal.

An important economic consideration for any household is the amount of wealth that it owns. Individuals tend not to think of their wealth as a monolithic whole. Rather, individuals mentally categorize their income and assets into different buckets, or "mental accounts" (Shefrin and Thaler, 1988). The theory that individuals maintain mental accounts is motivated by the observation that an individual who experiences a wealth shock changes her economic behavior depending on the form of the shock. Experiments show that individuals change their consumption patterns differently in response to a wealth shock, such as a bonus, depending on whether the bonus is paid out today, in the future, or in installments over time, holding the value of the shock constant. Likewise, an increase in the value of an individual's retirement assets has a different effect on her economic and political behavior compared to an equivalent present-valued increase in her wages.

The concept of mental accounts is important in understanding the effect of home price appreciation on social insurance preferences, because it means that shocks to housing wealth propagate weakly (if at all) to other wealth accounts, such as a consumption account or a precautionary savings account. Thaler (1999) suggests that home equity and retirement savings are perceived differently from current wealth, in terms of households' propensity to spend out of each type of account. Following the theory of mental accounts, and building on narrow framing, I conjecture that the grouping together of home equity and retirement savings as "future" sources of funds means that housing wealth shapes how individuals think about policies and programs that affect their retirement income, such as Social Security. However, housing wealth does not affect individuals' judgments about other types of social insurance programs.

Prospect Theory and Reference Points

Suppose home prices appreciate at a slower rate than homeowners expect. How might the expected shortfall in housing wealth affect decisions that homeowners make about retirement savings? Prospect theory proposes that individuals evaluate outcomes in terms of gains or losses relative to a reference point, and that losses are felt more keenly than gains (Kahneman and Tversky, 1979). I conjecture that individuals have in mind the amount of wealth they aspire to in retirement; that is, they have a reference point for retirement wealth. Prospect theory predicts that individuals who expect their retirement wealth to fall short of the aspirational level will tend to be more risk-seeking. Thaler and Johnson (1990) show that experiment subjects who suffer prior losses are more likely to take bets that would allow them to break even (at the risk of an even worse loss), over a certain gain that would still leave them with an overall loss, a phenomenon the authors call the "break even effect". On the other hand, individuals who are in a gain position tend to prefer certainty than to take a risky gamble for an even greater gain.

Prospect theory thus implies that an individual who perceives herself as facing a potential shortfall in her retirement wealth due to weak returns to her housing asset is more likely to prefer deviations from the status quo. Such deviations could take the form of more private risk-taking, as in the break even effect, or demands for more government spending on Social Security. At the same

time, beneficiaries of a housing boom will tend to prefer certainty with respect to their retirement income. They are less likely to demand changes to social insurance programs to the extent that such changes introduce uncertainty to the income they expect in retirement. In other words, higher than expected HPA is predicted to increase preference for status quo policies that affect housing and retirement wealth. This heightened status quo preference should not be interpreted as reduced support for social insurance: indeed, we should observe greater efforts by homeowners to defend tax privileges related to housing (e.g. the mortgage interest deduction) and status quo levels of Social Security spending.

In sum, my two-step argument, which pairs mental accounting theory with prospect theory, makes the following predictions. First, among homeowners, higher HPA predicts increased support for the status quo with respect to Social Security. Second, among homeowners, HPA is not associated with attitudes toward other social insurance policies and income redistribution. Third, among non-homeowners, HPA is not associated with support for Social Security as well as attitudes toward other social insurance policies and income redistribution. The following sections document empirical tests of these predictions.

3 Information Treatments and Support for Social Insurance

Efforts to estimate the causal effect of an economic variable on political attitudes confront the challenge of unobserved confounding. Home price appreciation is correlated with a large set of demographic and economic characteristics at the individual and local level, any of which could affect preferences over social insurance policies. There are several methods to address this issue. One way to address individual-level unobserved heterogeneity is to use panel data to control for individual characteristics. The next section describes an exercise that adopts this approach. In this section, I describe an experiment that uses a randomized information treatment to manipulate respondents' expectations of future home price appreciation.

The experiment exploits a known behavioral bias in which individuals use readily available information to inform their beliefs about an unknown quantity, a phenemenon known as anchoring.

I provide respondents with information about historical home price appreciation, but randomly vary the type of information across respondents. I show that this information affects respondents' expectations of future HPA. I then measure respondents' preferences on a set of four policy questions related to Social Security and income redistribution. The housing wealth hypothesis predicts that homeowners primed with information about high historical HPA should report lower levels of support for social insurance programs and income redistribution than those primed with information about low historical HPA. By contrast, the amended hypothesis predicts that homeowners in the high HPA condition should report, on average, higher rates of status quo preference with respect to Social Security arrangements. They should be no different, on average, from homeowners in the low HPA condition in terms of attitudes toward other social insurance policies and income redistribution.

3.1 Experiment and Survey Design

3.1.1 Information Treatments

The design of this experiment rests on the premise that many people neither have precise knowledge about local housing market conditions, nor have strong predictions about future HPA. Individuals rely on mental shortcuts, or heuristics, when asked to estimate quantities about which they have limited insight. One such heuristic is adjustment-and-anchoring (Tversky and Kahneman, 1974). When asked to estimate an unknown quantity, people start from some initial value and make adjustments to yield the final answer. The initial value may be suggested by the formulation of the problem, or it may simply be information that is most readily available. In experimental settings, researchers have found that subjects frequently use information provided to them as an anchor.[4] Likewise, I expect information provided to respondents about historical housing market conditions to shape their perceptions of current conditions and forecasts of future housing market conditions.

In this study, I randomly assign information about historical HPA to survey respondents. I refer to information that HPA *in the past year was 5.7%* as the *high* HPA treatment, and information that annualized HPA *over the last ten years was 0.4% per year* as the *low* HPA treatment. These figures

[4]See, for example, Alt, Lassen and Marshall (2015), discussed in the introduction.

are obtained from the Federal Housing Finance Agency (FHFA), and were factually accurate at the time of the experiment. I also include a pure control condition in which respondents are given no information about historical HPA. In addition to information about historical HPA, respondents are given information about the projected values of their homes (or a typical home in their neighborhood, if they are not homeowners) in five years' time. These projections are extrapolated from respondents' own estimates of current home values, using the randomly assigned information as the annualized rate of home price increase.

In summary, the low and high information treatments differ in two ways. First, the historical HPA and lookback periods provided to respondents in the low and high HPA treatment groups are numerically different, although the language is otherwise the same. Second, respondents in the high treatment group observe projected home values that are systematically higher than those observed by respondents in the low treatment group.

3.1.2 Survey Flow

The survey instrument begins with three items on the respondent's age, housing tenure (whether the respondent rents, owns a home with a mortgage, owns a home free and clear, lives with a family member, or has some other living arrangement), and party identification. Respondents are grouped into eight strata, based on whether or not they are older than 40, own their homes, and identify as a Republican (including those who report leaning Republican). Information treatments are randomly assigned within each stratum.

After answering these questions, respondents are asked for their zip code. They are then asked to provide their best guess of the value of either their home, if they are a homeowner, or a typical home in their zip code, if they are not. Next, respondents are told to think about the future value of either their home or a typical home in their zip code. Respondents in the high and low information treatment groups are presented with the following prompt:

> Over the last [year / 10 years], house prices in the United States increased by [5.7% / 0.4% per year], on average. At that rate, (your home / a typical home in your zip code)

would be worth about $X 5 years from today.

Just your best guess: What do you think the value of (your home / a typical home in your zip code) will be, 5 years from today?

Please keep this number in mind, as we may come back to it later.

The value of X in the prompt is calculated based on each respondent's estimate of home values today. Respondents in the pure control group are not provided with any information about historical HPA, and only asked about their estimates of home values five years hence. Respondents' implied HPA expectations are derived by comparing their estimates of current home values and their five-year forecasts.

I collect data on four outcome variables: (i) whether the respondent would invest some Social Security contributions in stocks and mutual funds if given the option, or remain in the current system, (ii) whether the Social Security deficit should be balanced by decreasing benefits or increasing taxes, (iii) proportion of local property taxes that should be retained by the local community, (iv) the role of government in ensuring a job and a decent standard of living.[5] I briefly discuss the survey items here; Table 7 in the Appendix presents the full text of the questions as well as the choices available to respondents.

I randomize the order in which the four questions about policy preferences are presented to respondents, so as to mitigate the effects of question ordering on responses. These four questions are chosen to tap different elements of a complex of attitudes toward redistribution and social insurance, in particular attitudes that may plausibly be shaped by housing wealth. First, support for social insurance can refer to a relative preference for a specific government-run social insurance program over private insurance or self-insurance – such as a preference for status quo Social Security arrangements, over privatized retirement accounts. Second, support for social insurance can take the form of sustaining a social insurance program by raising taxes, rather than cutting benefits. Third, support for social insurance may be expressed as a preference for geographical risk pooling,

[5] I also ask respondents about their attributional beliefs, that is, their view about why some people are financially secure and others are not. As this outcome is not central to this paper, I do not discuss it here.

i.e. raising property taxes to fund services in neighboring communities. Fourth, support for social insurance can be articulated as a preference for a larger role for government in guaranteeing a social minimum, for example by ensuring employment for labor force participants or a decent minimum standard of living for all citizens. Estimating the effect of HPA on each of these specific manifestations of attitudes toward social insurance will shed light on whether and how housing wealth shapes support for social insurance.

The survey instrument concludes with a short battery of questions on respondent demographics, specifically gender, race, education, and income.

3.1.3 Data

A pilot study with 508 respondents, recruited through Amazon Mechanical Turk (MTurk), was conducted between June 23 and July 1, 2016. Based on results from the pilot, the sample size for this study was calibrated, and questions on privatized Social Security and local property taxes were added to the survey instrument to investigate other dimensions of support for social insurance. For the actual study, 2023 respondents were recruited through MTurk between August 4 and September 7, 2016. Respondents were paid $0.60 each to complete the survey, and the median time taken to complete the survey was around 5 minutes. 39 cases were dropped because technical problems encountered during survey administration prevented treatment from being assigned. After pre-processing, 1984 cases were available for analysis. Table 1 presents summary statistics for the dataset.

3.2 Effects of Information Treatments

3.2.1 Effects of Information Treatments on House Price Expectations

Figure 1 plots the distribution of five-year cumulative HPA expectations for each treatment group. For comparison, the figure also plots forecasts from a survey of economists and real estate professionals sponsored by Zillow, a real estate website. The figure shows clear differences in the distribution of HPA expectations across treatment groups, with the sample mean of expected HPA

in the control group falling between those in the low and high HPA treatment groups.[6] On average, respondents given the high HPA treatment report five-year cumulative expected HPA that is 15.6 percentage points (s.e. 0.8) higher than those given the low HPA treatment.[7] Table 2 summarizes respondents' estimated present and expected home values. In dollar terms, the median five-year forward expected home value in the high treatment group is $30000 more than that in the low treatment group.

Among respondents in the pure control group, mean cumulative HPA expectations over five years is 14.4%. For comparison, the expert panel (surveyed in late July and early August 2016 by Zillow) has a mean five-year cumulative HPA forecast of 18.7%.[8]

3.2.2 Effects of Information Treatments on Support for Privatized Social Security

I now turn to the effects of the information treatments on various measures of support for social insurance. For comparability, all outcome variables have been rescaled so that the minimum and maximum values are 0 and 1 respectively. Figure 2 presents the main results of this study. Consistent with my mental accounting and prospect theory argument, the high HPA information treatment increases preference among homeowners for the current Social Security program.[9] By contrast, treatment does not have a substantive nor statistically significant effect on support for other policies among owners. In addition, no significant treatment effects are observed among non-owners. The following discussion elaborates on these results.

For the Social Security privatization outcome, respondents are asked, supposing the Social Security program was changed such that they could invest part of their Social Security taxes in stocks or mutual funds, whether they would choose (a) to invest some Social Security money in

[6]The information treatment might be expected to have a smaller effect on older respondents' HPA expectations because of their housing market experience. Figures 7 and 8 (Appendix) document that treatment has a smaller effect among older non-owners compared to young non-owners. Treatment also has a smaller effect among owners, compared to non-owners. The data support the conjecture that housing market experience attenuates the effect of the information treatment on HPA expectations.

[7]Table 8 (Appendix) reports summary statistics for each group.

[8]Data available at http://www.zillow.com/research/data/#additional-data. Note that experts were asked to forecast national home prices, while survey respondents were asked about HPA in their neighborhoods, which partly explains why survey responses are more dispersed compared to forecasts from the expert panel.

[9]The negative treatment effect documented in the figure (top row, right column) indicates that treatment reduces preference among homeowners for a change to a privatized scheme.

stocks or mutual funds, or (b) stay within the current system. Respondents are told that if they chose to invest some money, "depending on the performance of your investments, you could end up with more or less than the regular Social Security benefit." 53 percent of respondents indicate that they would invest part of their Social Security contributions in stocks or mutual funds.[10]

Among homeowners, the high HPA information treatment reduces preference for a change to a privatized Social Security scheme by 8.1 percentage points (p = 0.06). 57 percent of respondents in the low HPA group prefer to invest their own Social Security contributions, so the effect of the high HPA treatment represents a 14 percent decrease in preference for privatized Social Security. A similar treatment effect is observed when the high information treatment group is compared to pure control (-8.8 percentage points, p = 0.05). Among non-homeowners, those in the high HPA group are on average more likely to indicate a preference for investing some of their Social Security contributions compared to respondents in the low treatment group, although the effect is statistically indistinguishable from zero (5.6 percentage points, p = 0.12).

Figures 3 and 4 allow us to explore these results in more detail. Because age has been shown to be a strong predictor of attitudes toward Social Security reform (Chong, Citrin and Conley, 2001), I plot support for privatized Social Security against respondent age. Support for Social Security privatization decreases with age, as expected (Figure 3). Since the p-value of the treatment effect for homeowners falls just short of the conventional level for statistical significance, I disaggregate treatment effects by age groups to examine if the estimates can be attributed to anomalies in the data. The left panel in Figure 4 shows heterogeneous treatment effects among age groups for non-owners. The absence of a clear age-varying pattern weakens the argument for a treatment effect among non-owners, although the average effect is substantively large. By contrast, among homeowners, four out of five age groups – all age groups except for the 30 and below group – report average treatment effects of larger than negative 10 percentage points.

To estimate the probability that the observed pattern of treatment effects for homeowners could

[10]For comparison, Barabas (2006) analyzes 96 surveys on Social Security privatization conducted between the second quarter of 1996 and the second quarter of 2004, and report a long-run average support for Social Security privatization of 54 percent.

have occurred by chance, I permute the treatment vector 1000 times within treatment assignment strata (that is, I randomly re-assign treatment by age-party affiliation strata, as described in Section 3.1.2). For each permutation, I compute difference-in-means between high and low treatment groups by age groups, and count the number of age groups (out of five) that have a difference-in-means of at least negative 10 percentage points. In 1000 permutations, only 1 simulation had 4 (or more) age groups with differences as large as or larger than negative 10 percentage points; only 27 had 3 or more age groups with differences of this magnitude. The observed pattern of negative average treatment effects across age groups is striking because, as this robustness check shows, it is highly unlikely to have occurred by chance if the information treatment truly had no effect.

3.2.3 Effects of Information Treatments on Support for Social Insurance Policies

The question on allocating Social Security contributions to stocks and mutual funds explores whether respondents would choose to bear privately the risk of retirement income shortfalls. The results are inconsistent with the hypothesis that individuals' preference for self-insurance increases with their housing wealth. Homeowners in the high historical HPA information treatment group are on average less likely to report a preference to invest their Social Security contributions in stocks and mutual funds.

However, support for social insurance may mean something different than a preference for self-insurance. Individuals can be risk-averse and yet opposed to redistribution and social insurance in several other ways. First, opposition to social insurance may take the form of opposing an increase in the size of tax-payer funded social insurance programs. Second, it may take the form of an opposition to geographical redistribution of property tax receipts; that is, a belief that local taxes should pay for local services. Third, opposition to social insurance may be expressed as a rejection of the principle that government should ensure a social minimum for citizens.

The survey instrument includes three questions that tap these attitudes. First, respondents are informed that the Social Security program is currently incurring a deficit. They are then asked if they think the deficit should be balanced by reducing Social Security benefits or raising Social Security

taxes. Second, respondents are informed that in most states, local property taxes are an important source of money to pay for public schools, parks, and other social services. They are then asked to indicate how much money out of every $100 collected in local property taxes should be spent locally, with the remainder redistributed to neighboring towns and cities. Third, borrowing from the American National Election Studies, I ask respondents to place themselves on a seven-point scale of whether the government should guarantee jobs and income, or let people get ahead on their own.

As reported in Figure 2, the HPA information treatment has no significant effect on any of the preferences and attitudes described above.[11] These results are consistent with predictions from prospect theory with mental accounting. Respondents exposed to different HPA information do not differ, on average, on issues that do not directly affect their retirement assets. It also turns out that respondents do not differ on how they think Social Security should be reformed. Rather, homeowners who are primed with information about a strong housing market demonstrate a stronger preference for keeping Social Security the way it is today.

3.3 Summary

Table 3 summarizes the findings from this study. The data are subset to respondents who received either the high or the low HPA treatment (omitting those in the control group), to obtain effects for the high HPA treatment relative to the low HPA treatment. Each outcome variable is regressed against a dummy variable indicating whether a respondent received the high HPA treatment. The treatment variable is interacted with ownership status to obtain different treatment effects for homeowners and non-owners. I also enter age and age-squared into the models to improve precision of the estimates.

Taken together, data from the survey experiment suggest that contrary to the housing wealth hypothesis, information treatments have no effect on various measures of support for social insurance, with one exception. Homeowners in the high HPA treatment group are 8 percentage points less likely to participate in a privatized Social Security scheme, and more likely to prefer the status

[11] The Appendix contains plots that disaggregate outcome measures and treatment effects by age groups, as in Figures 3 and 4.

quo, than those in the low HPA treatment (column 2). I find null effects of treatment on three other measures of support for social insurance, namely support for tax increases to balance the Social Security deficit, support for geographical redistribution of property tax receipts, and agreement with the view that government should ensure a social minimum.

The finding that the high HPA treatment increases preference for the status quo Social Security system can be interpreted in two ways. Respondents may like certain features of the current Social Security system; or they may prefer it for the reason that it is the status quo. If the former interpretation were correct, then we might expect to observe the high HPA treatment inducing a preference to raise Social Security taxes to preserve existing benefits. Yet we observe no such effects (Figure 2 and Table 3 column 3).

While this study provides evidence in support of the amended housing wealth hypothesis, it raises two questions. First, this study randomly assigns information about historical HPA; we might wonder if the actual experience of home price appreciation would have the same effect on status quo preference. Second, because this study only measures status quo preference in one issue area, we might wonder if the effect of HPA on status quo preference applies only to Social Security or has a broader basis. The following study addresses these questions.

4 Home Prices and Status Quo Preference

Results from the survey experiment show that when given a choice between the current Social Security system and one in which they can invest their own Social Security contributions, homeowners primed with information about high historical HPA are more likely to prefer the existing system, compared to those primed with information about about low historical HPA or those not given any information. These results lend themselves to two possible (mutually non-exclusive) interpretations: a preference for the existing system could indicate a preference for some features of the existing system, or it could indicate a preference for the status quo independent of its features.[12]

[12] Another interpretation of the findings from the survey experiment is that the high HPA treatment primes respondents about housing market volatility over a boom and bust cycle, and preference for the Social Security status quo stems from risk aversion rather than higher expected housing wealth. Because the study described in this section uses a survey

The study described in this section focuses on the status quo hypothesis: an increase in home values increases the probability that homeowners prefer status quo Social Security arrangements. It complements the survey experiment by estimating the effect of actual changes in local home prices, rather than information about historical HPA. Using actual HPA addresses the concern that the information manipulations in the survey experiment may be too weak to produce detectable effects. However, a key drawback in using observational data is that individuals who live in high HPA areas may be systematically different from those in low HPA areas in ways that affect their preference for the status quo. In this study, I make use of panel data to account for inferential issues related to unobserved individual-level heterogeneity. I follow Ansell (2014) in drawing on the ANES 2000-2004 Panel Study and using the panel structure of the data for statistical inference. The key conceptual difference between Ansell (2014) and the present analysis is that whereas Ansell examines changes in the degree of support for Social Security spending, I focus on preference for the status quo. I discuss other substantive differences in the analyses later in this section.

4.1 Model and Data

4.1.1 Model and Estimation Approach

Let $Y_{it} \in \{0, 1\}$ denote respondent i's reported preference for the status quo option in time t. Specifically, in this study, the status quo option refers to the choice that federal spending on a given issue should "stay the same", as opposed to increase or decrease. Let π_{it} denote the probability that Y_{it} is equal to 1, i.e. $\Pr(Y_{it} = 1) = \mathbb{E}[Y_{it}] = \pi_{it}$. We consider the following model,

$$\pi_{it} = g(\eta_i + \beta \log(W_{it}) + X_{it}^{\top}\gamma),$$

where η_i represents the respondent's baseline preference for the status quo, W_{it} is the respondent's home price in period t, and X_{it} is a vector of other covariates. g is a function such as the identity function (in which case we estimate a linear probability model) or the logistic function. The quantity of interest is β, which allows us to compute the marginal effect of a change on home prices on

that predates the 2007-8 housing market downturn, it isolates the effects of housing wealth from perceived volatility in home prices.

preference for the status quo. The amended housing wealth hypothesis predicts that status quo preference is positively associated with W, i.e. $\beta > 0$.

If we define respondent i's baseline preference as $\alpha_i = \eta_i + \beta \log(W_{i1})$, then we can rewrite preference for the status quo in terms of home price appreciation relative to period 1, i.e.

$$\pi_{it} = g\left(\alpha_i + \beta \log\left(\frac{W_{it}}{W_{i1}}\right) + X_{it}^{\top}\gamma\right).$$

The following section presents variations of this model and parameter estimates using a variety of methods and assumptions.

4.1.2 Data and Outcome Measures

I use data from the 2000-2004 ANES Panel Study. 840 respondents were interviewed in the fall of 2000 and re-interviewed in the fall of 2004. I delete 3 respondents from the dataset because of missing data on their homeownership status. I requested additional restricted data on respondents' zip code and county, not available in the public dataset, from the ANES. HPA data are sourced from the Federal Housing Finance Agency (FHFA) and Zillow.[13] I include county-level wage growth as a measure of local economic conditions. Wage data are obtained from the Bureau of Labor Statistics' Quarterly Census of Employment and Wages. Wage growth is calculated as the difference in logged average weekly wages between the third quarters of 2000 and 2004. Table 4 reports summary statistics for HPA and wage growth.

In both the 2000 and 2004 waves of the ANES Panel Study, respondents are asked if they think that federal spending should increase, decrease, or stay the same for each of four policy issue areas: Social Security, aid to poor people, foreign aid, and the environment. Figure 5 summarizes responses to the survey item on Social Security spending. In the figure, responses are disaggregated by homeownership and responses in 2000. Within each panel, the bars show responses to the

[13]FHFA data are used where they are available for respondents' zip codes; otherwise Zillow data are used where they are available for respondents' zip codes, after adjustment for systematic differences between Zillow and FHFA data. If an exact match for the respondent's zip code cannot be found in either FHFA or Zillow datasets, the nearest available zip code within a 30-mile radius is used. Zip-code level HPA is unavailable for 163 respondents. If both FHFA and Zillow do not have HPA data for a respondent's zip code or a neighboring zip code within 30 miles, HPA is imputed using the FHFA's county-level HPA, and if unavailable, state-level HPA.

same question in 2004, conditional on HPA quartile. For example, among homeowners who responded that the amount of spending should "Stay the same" in 2000 (left column, middle row), 60 individuals experienced HPA in the lowest quartile (sum of the left-most bars in each group). 30 of these homeowners reported in 2004 that they preferred spending on Social Security to stay the same, or 50 percent of the group. By contrast, 43 homeowners, or 70 percent of those in the highest HPA quartile, preferred spending on Social Security to stay the same. In other words, among homeowners who preferred the status quo in 2000, a higher proportion of homeowners who experienced the highest HPA maintained the same preference in 2004 compared to those who experienced the lowest HPA. The following section presents a more formal analysis of the data.

4.2 Results

4.2.1 Homeowners' Preference for the Status Quo on Social Security Spending

Because we are interested in the effect of housing wealth on citizens' attitudes toward social insurance, I begin this section by focusing on homeowners and their responses to the survey item on Social Security. I first estimate a more restrictive specification before relaxing assumptions on unobserved heterogeneity across individuals. I assume that all respondents who did not prefer the status quo in period 1 (year 2000) have the same baseline status quo preference, i.e. $\alpha_i = \alpha_0$ for all i where $Y_{i1} = 0$, and all respondents who preferred the status quo also have identical baseline status quo preference, i.e. $\alpha_i = \alpha_0 + \delta$ for all i where $Y_{i1} = 1$. We can then estimate

$$\pi_{i2} = g(\alpha_0 + \delta \mathbb{1}[Y_{i1} = 1] + \beta \Delta W_i + X_{it}^{'} \gamma),$$

where ΔW_i is a shorthand for $\log\left(\frac{W_{i2}}{W_{i1}}\right)$, or home price appreciation between 2000 and 2004. I enter a set of covariates X including three categories for the respondent's household income (Low, defined as below $35,000; Middle, between $35,000 and $85,000; and High, $85,000 or above), wage growth in the respondent's county between 2000 and 2004, and dummies for the respondent's state. Unless otherwise stated, I estimate linear probability models, i.e. g is the identity function.

The first column in Table 5, estimated without state dummies, reports an estimate for the

HPA coefficient of 0.35. That is, a 10 percentage point increase in HPA is associated with a 3.5 percentage point increase in a homeowner's preference for the status quo. The estimate is statistically distinguishable from zero at the 95% confidence level. Once state dummies are included in the model, the estimate for the HPA coefficient decreases to 0.12 (second column) and is no longer statistically significant.

In the third specification, I relax the assumption of linearity in the relationship between status quo preference and HPA, and estimate

$$\pi_{i2} = g(\alpha_0 + \delta \mathbb{1}[Y_{i1} = 1] + \beta_{k[i]} + X_{it}^{'}\gamma),$$

where $k[i] \in \{1, 2, 3, 4\}$ represents the HPA quartile (reported in Table 4) for respondent i. In this specification, a respondent's expected status quo preference is not constrained to vary linearly with HPA; each HPA quartile can have a different effect on the respondent's preference. I set the second quartile as the base category, fixing β_2 at zero. The third column in Table 5 provides evidence of non-linearity in the effect of HPA on status quo preference. Holding all other covariates constant, a homeowner with HPA in the lowest quartile is 11.4 percentage points less likely to prefer the status quo on Social Security spending compared to a homeowner in the second quartile. The estimate is statistically significant at the 90% confidence level. However, the expected status quo preference of a homeowner with HPA in the third or fourth quartile is not statistically distinguishable from that of a homeowner in the second quartile.[14]

In the next set of results, I continue using the discretized HPA variable to allow for non-linearity in the relationship between HPA and status quo preference in Social Security spending. I relax the constraint that all homeowners who preferred the status quo in 2000 have the same baseline status quo preference (and likewise for those who did not prefer the status quo), to allow for individual-varying baseline preferences, parameterized by α_i in the model.

[14]Estimates from a logistic regression are reported in the fourth column of Table 5, and yield substantially similar marginal effects. For instance, a middle income homeowner, in a county with mean 2000-2004 wage growth, who preferred the status quo choice in 2000, and located in California has a predicted probability of 0.79 of preferring the status quo option if her HPA is in the second quartile, compared to a predicted probability of 0.66 if her HPA is in the lowest quartile, a decrease of 13 percentage points (16 percent).

Table 6 reports results from different models used to estimate the effect of HPA quartiles while accounting for unobserved heterogeneity across individuals. The first column presents estimates from a linear mixed effects model in which it is assumed that individual effects are distributed normally and uncorrelated with covariates. The second column presents estimates from a panel linear model in which individual effects are allowed to correlate arbitrarily with covariates (i.e. individual fixed effects). These two approaches yield estimates of lowest quartile HPA effects similar to those in Table 5. Compared to homeowners who experience HPA in the second quartile, those who experience HPA in the lowest quartile are 11 to 14 percentage points less likely to prefer the status quo on average. On the other hand, we cannot reject the hypothesis that homeowners in the third and fourth HPA quartiles have on average the same status quo preference as those in the second quartile, conditional on covariates.

The third column from Table 6 presents estimates from a conditional (fixed effects) logit model, which only considers individuals who changed their status quo preference (from "Stay to same" to "Increase" or "Decrease", or *vice versa*) between 2000 and 2004. The magnitude of the estimated effect of the lowest HPA quartile is large: those in the lowest quartile were 0.4 times (=exp(-0.937)) as likely to prefer the status quo as those in the second quartile.

Finally, I estimate a logistic mixed effects model fitted via Markov chain Monte Carlo sampling (Table 6, fourth column). Figure 6 plots the posterior densities of mean status quo preferences over all homeowners for each HPA quartile, based on these estimates. Using the posterior distribution of the model parameters, I generate predictions for the probability of preferring the status quo for Social Security spending in 2004. For every homeowner, I generate predictions supposing that the homeowner experienced HPA in each of the four quartiles. The median predicted probability of preferring the status quo, supposing that a homeowner experienced HPA in the second quartile, is 0.43. The median difference in the mean outcomes between the first and second quartile is -12 percentage points, with a 95% credible interval of [-0.22, -0.02]. Again, homeowners in the lowest HPA quartiles are less likely to prefer status quo spending than those in the second quartile.

The estimates from this analysis are substantively similar to those reported in Ansell (2014),

which also examines data from the 2000-2004 ANES Panel Study for the survey item on Social Security spending. The re-analysis presented here uses different model specifications, different approaches to model estimation, different control variables, and more importantly, finer-grained home price and economic data (at the zip-code level, compared to Metropolitan Statistical Area data available in the publicly released ANES dataset used in Ansell). Despite these differences, my numerical estimates of the HPA effect are comparable to those in Ansell (2014). For example, Ansell estimates that a homeowner who experiences HPA of 10% has a 0.66 probability of preferring an increase in Social Security spending, whereas a homeowner who experiences HPA of 50% has a 0.53 probability of preferring an increase (p. 388). Given that very few respondents prefer a decrease in Social Security spending, the results are approximately equivalent to an increase in HPA from 10% to 50% being associated with an increase in the probability of preferring the status quo from 0.34 to 0.47, similar to results presented above and in Figure 6. However, I show that the HPA effect on Social Security preferences is non-linear. Homeowners in the lowest HPA quartile are less likely to prefer the status quo than those in higher HPA quartiles, but there is no evidence that those in the highest quartile have different preferences than those in the middle quartiles. More importantly, whereas Ansell concludes that "house price appreciation has a negative effect on support for social insurance" (ibid.), I argue that the results do not demonstrate a negative effect of HPA on support for Social Security spending. Housing wealth induces satisfaction with the status quo, rather than reducing support for social insurance.

4.2.2 Placebo Tests: Renters' Preferences on Social Security and Owners' Preferences on Other Issue Areas

HPA is correlated with changes in other social and economic variables at the local level, so the effect of HPA on homeowners' preferences over Social Security spending may be due to factors other than changes to housing wealth. To explore this possibility, I estimate the model in the first column of Table 6 but subset the data to renters rather than homeowners. I find that conditional on covariates, renters residing in areas in the second HPA quartile do not have statistically distinguishable Social

Security spending preferences compared to those residing in areas in higher or lower HPA quartiles.[15] Being in the lowest HPA quartile only has an effect on the preferences of homeowners but not renters. The results suggest that the effect of HPA works through housing wealth.

Finally, returning to homeowners, I study whether HPA is associated with status quo preference in other policy areas. Mental accounting theory predicts that housing wealth should not affect homeowners' attitudes toward policies not directly related to their home or their income in retirement. I regress preference for the status quo as to spending on help to the poor, foreign aid, and the environment. None of the estimates for HPA quartiles is statistically distinguishable from zero.[16] In particular, the null results for spending on helping the poor argue for a more cautious interpretation of the effect observed for Social Security spending. The data do not support the conclusion that homeowners who experience higher HPA are less (or more) likely to support an expansion of redistributive social programs in general, compared to those who experience low HPA. The data do suggest that, conditional on covariates, homeowners in areas where HPA has lagged are more dissatisfied specifically with levels of Social Security spending. These results are consistent with mental accounting theory: when citizens are asked for their preferences on policies related to retirement income, they take stock of their retirement wealth. Variations in retirement wealth engender differences in preferences for the status quo. On the other hand, retirement wealth is not a salient consideration with respect to help for the poor or general attitudes toward social insurance. Consequently, we observe no effect of housing wealth on such attitudes.

4.3 Summary

Analysis of the ANES panel data yields three conclusions. First, homeowners who experience HPA in the lowest quartile are about 12 percentage points less likely to be satisfied with the status quo on Social Security spending than all other homeowners. However, status quo preference is not linearly increasing in HPA: homeowners who experience HPA in the highest quartile are neither more nor

[15] See first column of Table 9 (Appendix). It should be noted that the null effects are imprecisely estimated, due to the relatively small number of renters in the dataset.

[16] See second to fourth columns of Table 9 (Appendix).

less likely to support status quo spending on Social Security than those in the middle quartiles. Second, the negative association between HPA and status quo preference is not observed among renters, suggesting that the relationship between HPA and Social Security status quo preference observed among homeowners can be attributed to changes in housing wealth rather than changes in the local economic environment. Third, no relationship between HPA and other federal spending preferences – such as spending on help to the poor, foreign aid, or the environment – is observed. The effects of housing wealth on political attitudes are limited and specific.

5 Discussion

This paper studies the hypothesis that rising home values reduce support for social insurance among homeowners. Drawing on a survey experiment and observational survey and economic data, it finds no evidence for this hypothesis. I offer an alternative theory based on mental accounting and prospect theory, and hypothesize that homeowners who expect or experience higher home price appreciation exhibit more status quo preference with respect to public policies that affect retirement assets, compared to those who expect or experience lower HPA. I find evidence in support of this hypothesis. Information about high historical HPA increases homeowners' preference for remaining in the existing Social Security program, over switching into a privatized scheme. Compared to individuals in a low HPA treatment group and a control group, those in the high HPA treatment group are about 8 percentage points more likely to prefer staying in the existing Social Security system, over a baseline status quo preference of about 43 percent. I also find that homeowners residing in areas that experience higher (second to fourth quartile) HPA in the 2000 to 2004 period are about 12 percentage points more likely to prefer the status quo level than those in the lowest HPA quartile. Together, the two studies suggest that homeowners who experience or expect housing wealth gains are more likely to support the status quo when it comes to Social Security. A housing market boom may have reduced support for *expanding* old age insurance programs, and increased support for the status quo, but it is unlikely to have reduced support for social insurance. The effects of real or perceived HPA are limited: neither HPA information treatments nor actual HPA have

effects on other measures of support for social insurance policies. Whether home values affect support for social insurance policies depend on exactly what these policies are.

Previous studies find that housing wealth and the size of a household's financial buffer are negatively associated with support for social insurance policies (Hacker, Rehm and Schlesinger, 2013; Ansell, 2014). In this study, I find no effects of housing wealth on support for social insurance in general. On the contrary, information about high historical HPA increases support for status quo Social Security arrangements compared to a privatized Social Security scheme. That siad, I suggest previous findings are not irreconciliable with results from this study. Hacker, Rehm and Schlesinger (2013) show that the amount of liquid financial resources available to a household is negatively associated with feelings of financial insecurity, which are in turn associated with support for various social insurance programs. However, as I noted in the introduction, it is costly to extract liquidity from housing wealth, and relatively few homeowners monetize housing wealth for precautionary purposes. Because an increase in home values does not result in a corresponding increase in liquid resources for a homeowning household, results from Hacker, Rehm and Schlesinger (2013) are consistent with the findings from this study that housing wealth has no effects on support for social insurance in general.[17] Finally, as discussed in the previous section, my analysis of the ANES data yield estimates that are comparable to results from Ansell (2014). By placing these estimates in the context of prospect theory and the results from the survey experiment, I argue that the results are more consistent with status quo preference than an erosion of support for social insurance. If my argument is correct, then the housing boom in the United States in the early 2000s, rather than reducing support for social insurance, may have stymied efforts to reform Social Security by introducing private retirement savings options.

Indeed, the argument that rising housing wealth increases preference for the status quo is suited to explaining another episode in American politics that happened almost forty years ago. Rising home values and a corresponding increase in property taxes precipitated the tax revolt of the late

[17]In addition, the authors find that while having more financial resources is associated with support for a greater government role in guaranteeing employment and healthcare, it is not associated with support for government-guaranteed retirement income. These findings are consistent with a theory of mental accounts, in which a rainy day fund or precautionary savings account is distinct from other accounts, such as a consumption or retirement account.

1970s, which introduced tax limitation laws that had the effect of circumscribing revenues available for public social spending; see, for example, Sears and Citrin (1985). While the tax revolt may seem to support the housing wealth hypothesis, a recent account of the tax revolt argues that its origins can be traced to "a progressive movement for social protection from the market" (Martin, 2008, p. 22). Homeowners who experienced rising home values did not want to undermine social insurance. Rather, they were seeking to defend the tax privileges that had prevented their property taxes from rising proportionately with their home values – in other words, "tax privileges that would provide social insurance for homeowners" (p. 97).

It therefore would not be wrong to claim that housing wealth does have a conservatizing effect, in the sense that it induces a bias for the way things currently are. The evidence from both the survey experiment and the ANES study are consistent with the claim that homeowners draw cognitive linkages between home values and retirement income, and growth in the former increases satisfaction with status quo arrangements for the latter. Furthermore, preference for the de jure status quo may lead to a de facto erosion of social protection through the process of policy drift (Hacker, 2004). But such conservatizing effects, if they exist, appear to be relatively limited and specific. Future work may wish to explore the effects of home values on domains other than social insurance. For instance, rising home values may increase homeowners' opposition to new residential development in their neighborhoods, even if such development is potentially economically advantageous to homeowners. Status quo preference suggests the hypothesis that homeowners who experience high HPA will prefer to preserve the way things currently are, over taking a bet on whether the neighborhood will be improved by new development. Such preferences have social welfare outcomes if they prevent newcomers from moving to areas of opportunity.

Another open question is how the reference point is determined. Analysis of the ANES data suggests that status quo preference does not vary linearly with HPA. In this dataset, the inflection point appears to be around 13-18% cumulative HPA over four years. Homeowners who experience HPA below this level are more likely to demand changes to Social Security spending compared to those who experience this level of HPA or above. Further research is needed to evaluate if there

is any significance to these numbers in particular, or if the reference point is a function of the distribution of HPA. In other words, we might hypothesize that status quo preference depends not on the level of home price appreciation that a homeowner experiences, but where the homeowner stands relative to other homeowners.

Ansell (2014) is correct to observe that examining changes in income and employment alone is insufficient to explain change and continuity in the mass public's attitudes toward redistribution and social insurance. Wealth and asset ownership are also key factors in shaping such attitudes. Housing wealth is particularly salient given that capital's growing share of the economic pie over the second half of the 20th century in advanced industrialized economies can be attributed largely to returns to housing assets (Rognlie, 2015). In addition to social insurance, housing wealth may also affect other dimensions of public policies that have a direct impact on households' economic welfare. For instance, it is argued that in the United States, local land use regulations restrict housing supply and decrease housing affordability, and that such regulations are supported by homeowners who wish to protect their home values (Fischel, 2001; Gyourko and Molloy, 2015, and references therein; but see Gerber and Phillips, 2003, for a counterpoint). Housing wealth has potentially far-reaching effects on public support for policies that mitigate or exacerbate economic inequality.

This paper shows that the effect of housing wealth on support for social insurance is nuanced and complex. It argues for the need to incorporate findings from the well-developed literature on wealth effects in behavioral economics into theories about how wealth shapes political beliefs and attitudes. Future work should seek to replicate the results from this study using different subject pools, and pin down interpretations of and causal mechanisms for treatment effects. Such work will usefully augment existing research in political behavior and behavioral economics.

Figures and Tables

TABLE 1: Summary Statistics

	All respondents	Non-owners	Owners
Observations	1984	1202	782
Mean Age	35.7	32.6	40.4
Below 30	0.35	0.48	0.16
30-39	0.35	0.32	0.39
40-49	0.16	0.12	0.23
50-59	0.10	0.06	0.15
60 and above	0.04	0.03	0.07
Female	0.48	0.44	0.55
White	0.76	0.72	0.82
Black	0.06	0.08	0.04
Asian	0.07	0.08	0.07
Hispanic	0.05	0.06	0.03
Income > 60000	0.40	0.29	0.57
College	0.50	0.45	0.57
Republican	0.27	0.21	0.35
Democrat	0.61	0.65	0.54
Median Zillow Home Value Index	199500	208150	182800
Median Reported Home Prices	180000	180000	175000

Note: Non-owners include all respondents who do not report owning their homes; they may include respondents living with family members who are homeowners. Median Zillow Home Value Index reports zip-code level homes values estimated by Zillow, and using respondents' zip codes. Median Reported Home Prices is based on respondents' self-reported estimates of their home values (for homeowners) or the value of a typical home in respondents' neighborhoods (for non-homeowners).

FIGURE 1: Density plot of 5-year Cumulative HPA Expectations

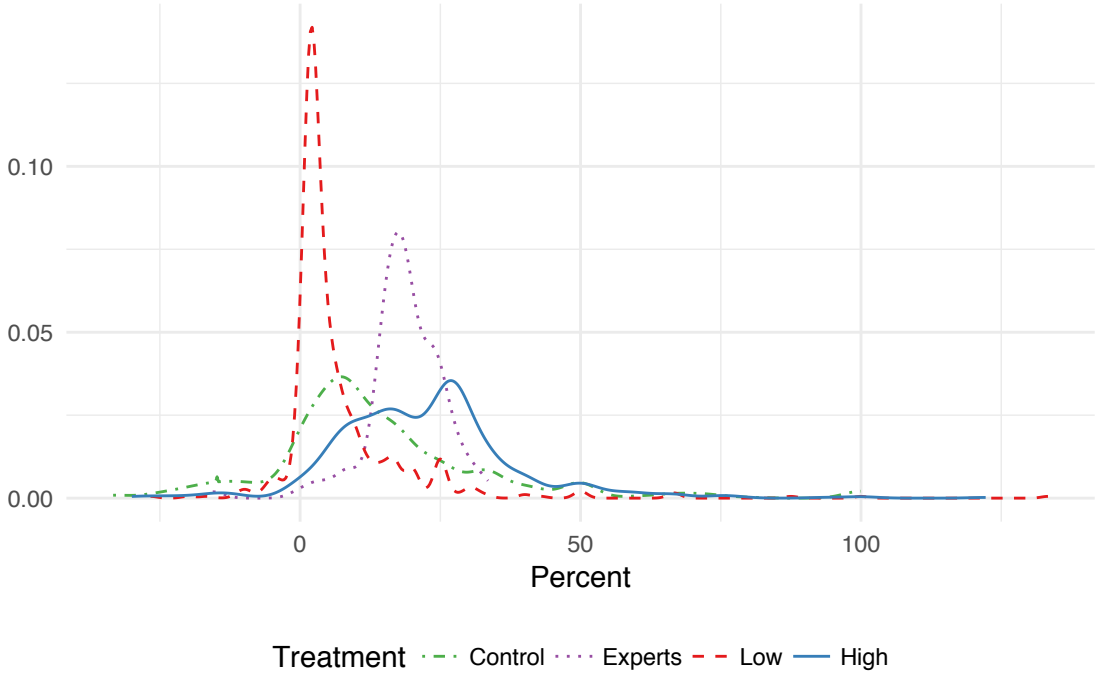
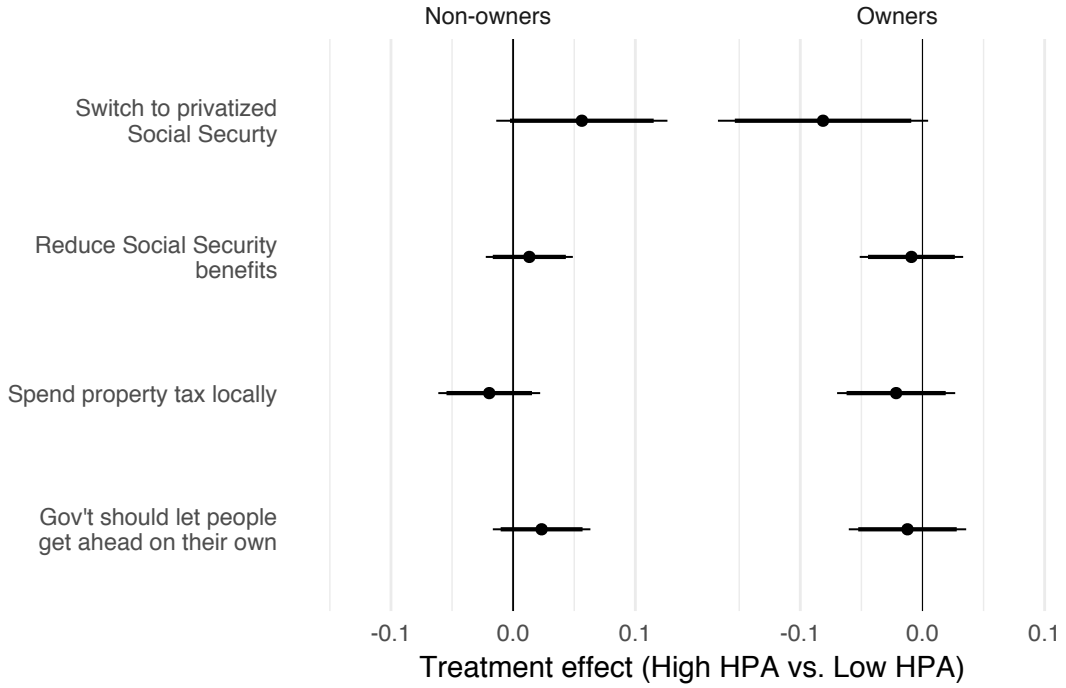


FIGURE 2: Treatment Effects on Support for Social Insurance



Note: Points represent difference in means of the outcome variable (HPA expectations) between high and low HPA information treatment groups. Thick and thin lines represent 95 and 90 percent confidence intervals, respectively.

FIGURE 3: Preference for Privatized Social Security

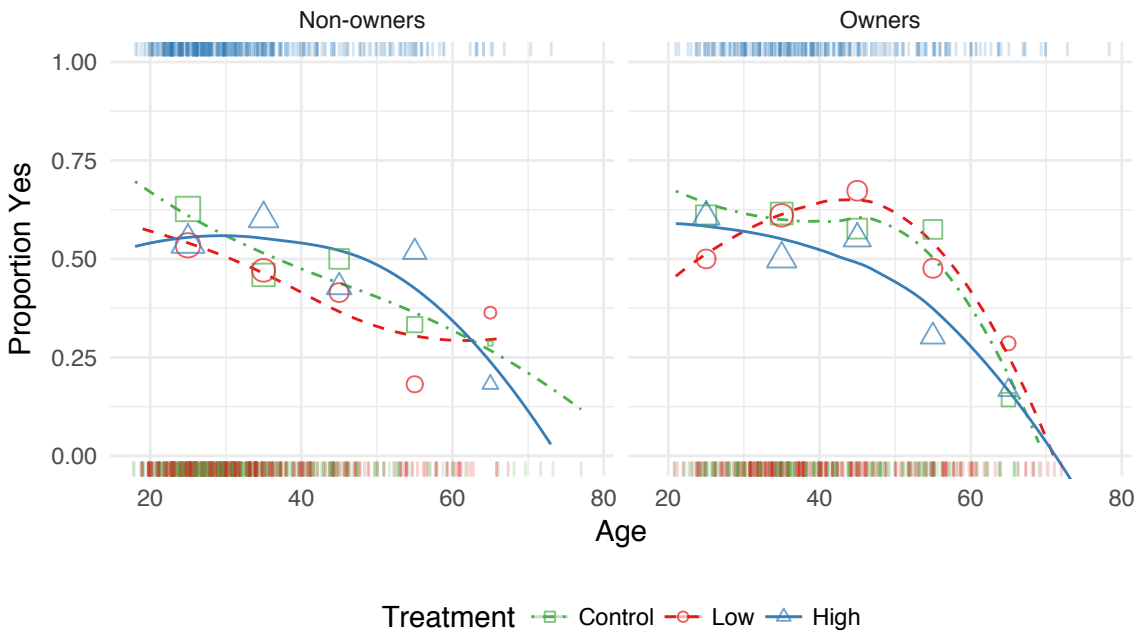


FIGURE 4: High HPA Treatment Reduces Preference for Privatized Social Security Among Homeowners

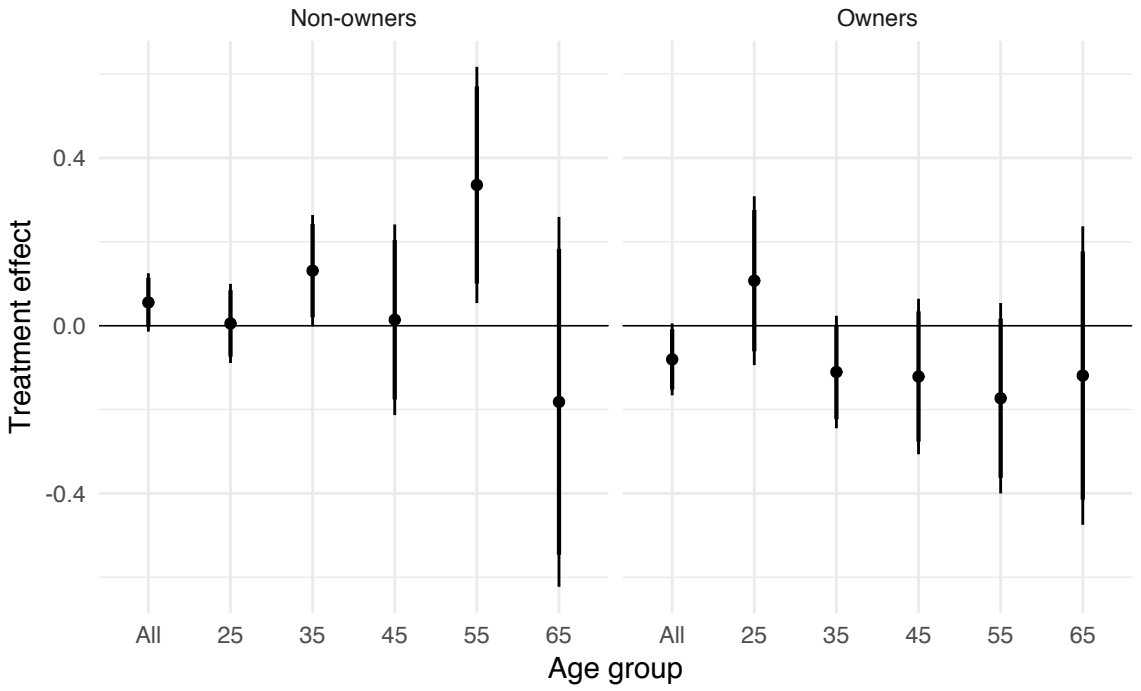
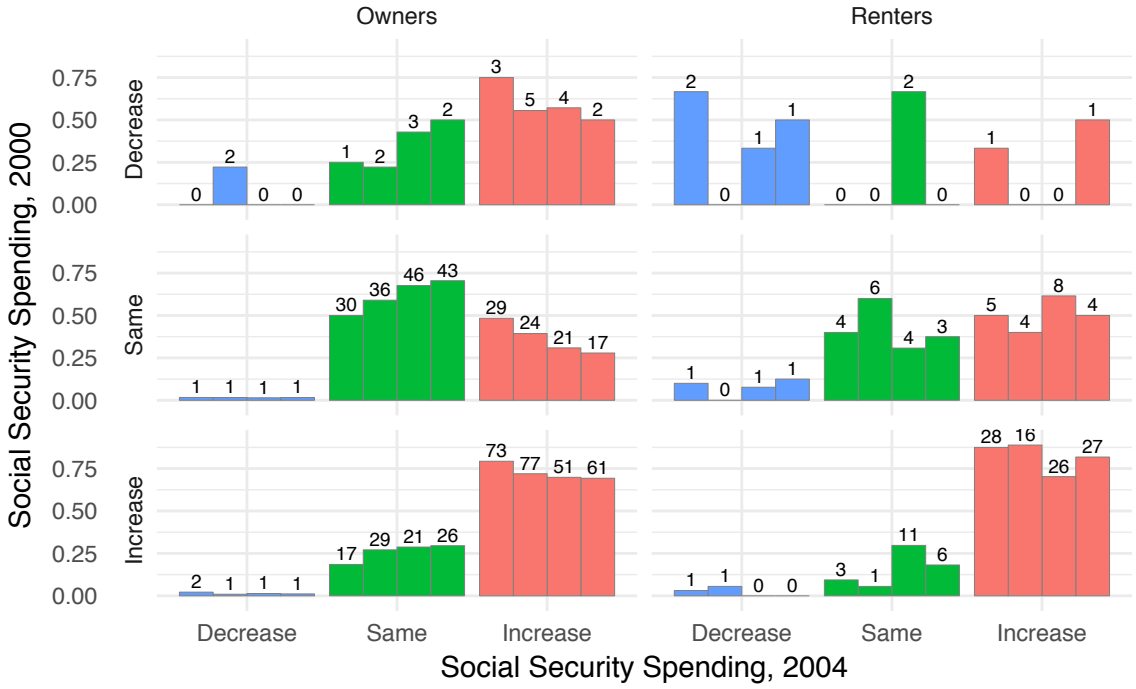
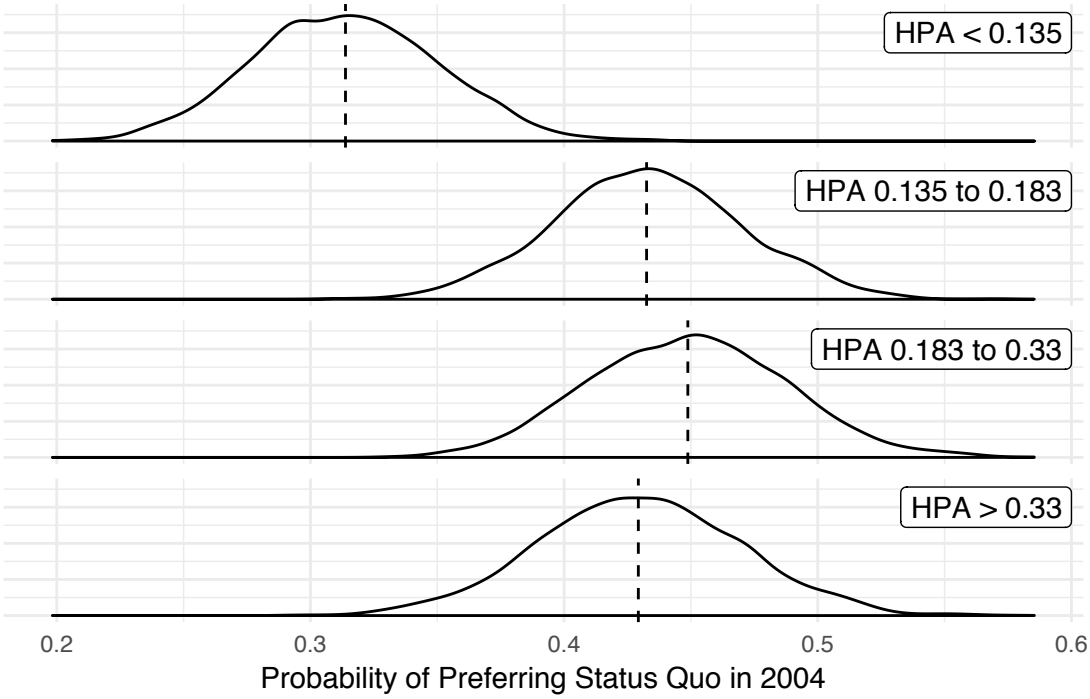


FIGURE 5: Conditional Distributions of Policy Preferences over Social Security Spending



Note: Each panel in this figure shows the distribution of responses to the survey item in 2004, conditional on HPA quartile (horizontal axis), and conditioning on homeownership and responses to the same question in 2000. Numeric labels on each bar represent number of responses, and the height of the bars represent proportion. For example, among homeowners who responded that the amount of spending should 'Stay the same' in 2000 (left column, middle row), those with HPA in the highest quartile were less likely to respond 'Increase' in 2004, and more likely to say 'Stay the same', compared to those with HPA in the lowest quartile. The same is true for homeowners who responded 'Increase' spending in 2000 (left column, bottom row).

FIGURE 6: Posterior Density of Predicted Probabilities.



Note: Each panel in this figure shows, for each HPA quartile, the density of mean predicted probabilities of preferring the status quo for Social Security spending in 2004 among homeowners. Predicted probabilities are generated using the posterior distribution of the model parameters, using observed data except for HPA quartile, which are manipulated. The dotted lines represent the medians of the posterior distributions. The differences between the median of the distribution in the first quartile and those in other quartiles are about 12-13 percentage points.

TABLE 2: Present and Expected Home Values by Treatment Group

Treatment	Median Present value	Median Expected value in 5 years
Control	175000	200000
Low	180000	190000
High	185000	220000

Notes: Home values based on respondents' self-reported estimates and forecasts of their home values (for homeowners) or the value of a typical home in respondents' neighborhoods (for non-homeowners).

TABLE 3: Linear Model Estimates

	Dependent variable:				
	HPA Expectations	SS Privatization	SS Reform	Property Taxes	Govt. Welfare
	(1)	(2)	(3)	(4)	(5)
High Treatment	17.947	0.056	0.040	−1.404	0.149
	(1.048)	(0.035)	(0.053)	(2.110)	(0.121)
Treatment × Owner	−5.817	−0.134	−0.070	−0.835	−0.230
	(1.517)	(0.055)	(0.083)	(3.207)	(0.190)
Age	−0.028	−0.005	−0.015	0.258	0.003
	(0.058)	(0.002)	(0.003)	(0.114)	(0.007)
Age^2	−0.005	−0.0001	−0.00000	−0.018	−0.0005
	(0.003)	(0.0001)	(0.0002)	(0.008)	(0.0004)
Owner	−0.246	0.006	0.005	0.299	0.003
	(0.114)	(0.004)	(0.006)	(0.208)	(0.013)
Age × Owner	0.014	−0.0003	−0.0001	0.006	0.0002
	(0.005)	(0.0002)	(0.0003)	(0.011)	(0.001)
Age^2× Owner	−1.439	0.151	0.134	3.739	0.705
	(1.098)	(0.044)	(0.068)	(2.667)	(0.154)
Constant	7.645	0.477	2.170	60.796	3.661
	(0.858)	(0.030)	(0.045)	(1.850)	(0.107)
Treatment effects on owners, p-value	0.00	0.07	0.64	0.38	0.59
Observations	1,298	1,318	1,315	1,316	1,305

Notes: Robust standard errors in parentheses. Baseline value for treatment is the low HPA treatment. Observations from the pure control group have been omitted to ease interpretation of the results. Age has been de-meaned, so estimates for constant show the mean value of the dependent variable for a non-owner in the low information treatment group at the mean age of around 36 years. The second to last row presents p-values for a test of the null hypothesis that treatment has no effects on homeowners.

TABLE 4: Summary Table for ANES Study

Variable	All	Owners	Renters
Respondents	837	665	172
HPA			
Min.	-0.07	-0.07	-0.07
1st Quartile	0.13	0.14	0.13
Median	0.18	0.18	0.19
3rd Quartile	0.33	0.33	0.33
Max.	0.67	0.67	0.66
Wage growth			
Min.	-0.15	-0.15	-0.15
1st Quartile	0.11	0.11	0.11
Median	0.13	0.13	0.13
3rd Quartile	0.16	0.16	0.16
Max.	0.30	0.30	0.22
Region			
Northeast	0.18	0.17	0.21
Midwest	0.28	0.30	0.19
South	0.34	0.34	0.35
West	0.21	0.20	0.24

Note: This table reports quartiles for the distribution of home price appreciation (HPA) and county-level wage growth between 2000-2004, for respondents in the dataset used. It also reports the proportion of respondents in each Census region.

TABLE 5: Regression Estimates from Cross-Sectional Data

	Preference for Status Quo on Soc. Sec. Spending			
	OLS			*logistic*
	(1)	(2)	(3)	(4)
HPA	0.352	0.119		
	(0.137)	(0.253)		
HPA: (-0.0775,0.135]			−0.114	−0.643
			(0.062)	(0.325)
HPA: (0.183,0.33]			0.066	0.344
			(0.068)	(0.346)
HPA: (0.33,0.676]			−0.031	−0.149
			(0.086)	(0.437)
Middle Income	0.057	0.071	0.067	0.371
	(0.046)	(0.048)	(0.048)	(0.253)
High Income	0.117	0.133	0.126	0.645
	(0.051)	(0.055)	(0.055)	(0.280)
County wage growth 2000-4	−0.599	−0.274	−0.229	−0.853
	(0.431)	(0.534)	(0.530)	(2.699)
Soc. Sec. pref 2000	0.345	0.355	0.354	1.714
	(0.038)	(0.040)	(0.040)	(0.207)
Intercept	0.210	0.245	0.324	−0.811
	(0.077)	(0.141)	(0.146)	(0.725)
State FE	No	Yes	Yes	Yes
Observations	601	601	601	601

Note: Columns 1 and 2 report estimates where HPA is a continuous variable. Columns 3 and 4 report estimates where HPA is discretized by quartiles; the base category is the second quartile. Robust standard errors reported in parentheses.

TABLE 6: Regression Estimates from Panel Data

	Preference for Status Quo on Soc. Sec. Spending			
	linear mixed-effects	*panel linear*	*conditional logistic*	*generalized linear mixed-effects*
	(1)	(2)	(3)	(4)
HPA: (-0.0775,0.135]	−0.115	−0.141	−0.937	−0.939
	(0.055)	(0.067)	(0.455)	(0.402)
HPA: (0.183,0.33]	0.016	0.002	−0.011	0.128
	(0.057)	(0.070)	(0.452)	(0.390)
HPA: (0.33,0.676]	−0.007	−0.013	−0.089	−0.017
	(0.060)	(0.069)	(0.460)	(0.403)
Middle Income	0.068	0.011	0.041	0.513
	(0.038)	(0.070)	(0.418)	(0.282)
High Income	0.149	−0.030	−0.225	1.067
	(0.044)	(0.085)	(0.625)	(0.332)
County wage growth 2000-4	−0.592	−0.141	0.053	−3.975
	(0.462)	(0.577)	(3.585)	(3.182)
Year = 2004	0.006	−0.064	−0.580	−0.091
	(0.075)	(0.088)	(0.615)	(0.518)
Intercept	0.353			−0.474
	(0.115)			(0.581)
State FE	Yes	N.A.	N.A.	Yes
Individual Effects	Random	Fixed	Fixed	Random
Individuals/Events	643	643	462	643
Observations	1,151	1,151	1,151	1,151

Note: Column 1 reports estimates assuming random individual effects. Column 2 reports estimates using the within estimator, assuming fixed individual effects. Column 3 reports estimates from a conditional logit model. Column 4 reports estimates from a generalized linear mixed-effects model estimated via MCMC. Robust standard errors reported in parentheses.

A Appendix

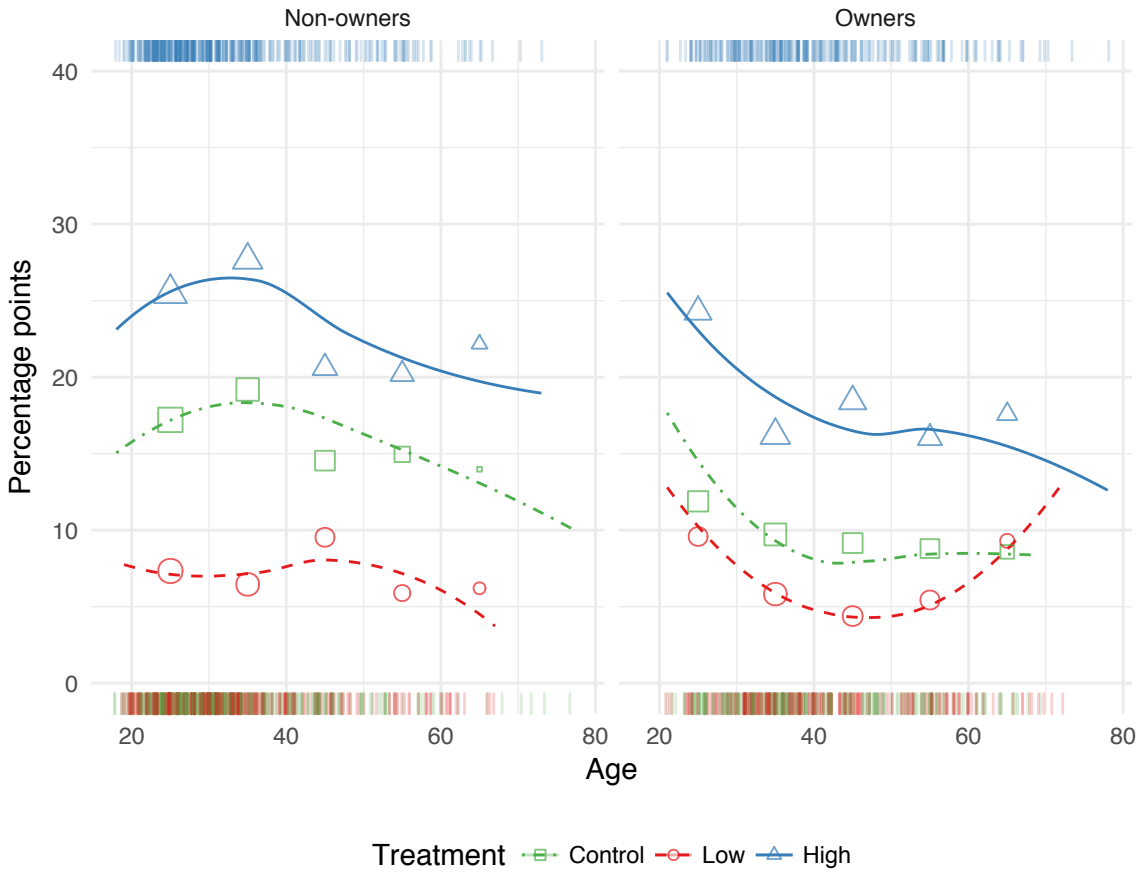
TABLE 7: Text of Questions for Outcome Variables

Question	Choices
Some Americans say that they do not feel financially secure. They worry that they may lose their jobs and not be able to find work that pay as well, or that they are just about able to cover their bills each month. People have different opinions about what matters most to be financially secure in America today. In your opinion, how important is each of the following for being financially secure? Please rank these factors from the most important (at the top) to the least important (at the bottom).	- A good education - Hard work - Saving and smart spending decisions - Knowing the right people - Coming from a wealthy family - Natural ability - Good luck
As you may know, many different proposals have been considered to change Social Security from what it is today. In one plan, you could invest part of your Social Security taxes in stocks or mutual funds. Depending on the performance of your investments, you could end up with more or less than the regular Social Security benefit. If Social Security changes into a system where individuals could choose to invest some of their own Social Security tax contributions themselves, do you think you would choose to invest some Social Security money in stocks or mutual funds, or would you choose to stay within the current system?	- Invest some Social Security money in stocks or mutual funds - Stay within the current system
Currently, the government pays out more each year in Social Security benefits than it receives in Social Security taxes. There is a lot of discussion about the possible ways to change Social Security to make sure that all people who retire can get their Social Security benefits. Some people think the government should reduce the benefits paid, for example by raising the retirement age, or reducing monthly payments to retired people. Other people think the government should keep the amount of money paid to retired people the same as it is now, but increase Social Security taxes for people who are currently working. Which of the following best describes how you think?	- Change Social Security only by reducing benefits - Change Social Security mostly by reducing benefits - Change Social Security mostly by increasing taxes - Change Social Security only by increasing taxes

TABLE 7: Text of Questions for Outcome Variables

Question	Choices
Local property taxes are an important source of money to pay for public schools, parks, and other social services in most states. Some people think that local property tax money should only be spent on schools, parks, and social services in the community where the tax is raised, because people living in places where home values have gone up should not have to pay more in property taxes for the benefit of other communities. Others think that property tax money should be spread out across the state to pay for schools, parks, and social services in all communities, so that less well-off communities can have services about as good as those in wealthy communities. Imagine that citizens in your state are being asked to decide how local property tax money should be spent. Out of every $100 collected in local property taxes, how much money do you think should be spent locally? For example, if you choose $100, it means that every town or city will keep all the property tax money it collects and only spend it on its own community. If you choose $0, it means that all the property tax money collected in the state will be spread out across all towns and cities.	- Slider from 0 to 100 (integer values)
Some people feel the government in Washington should see to it that every person has a job and a decent standard of living. Suppose these people are at one end of a scale, at point 1. Others think the government should just let each person get ahead on their own. Suppose these people are at the other end, at point 7. And of course, some other people have opinions somewhere in between. Where would you place yourself on this scale?	- Slider from 1 to 7 (integer values)

FIGURE 7: HPA Expectations by Age and Treatment Group



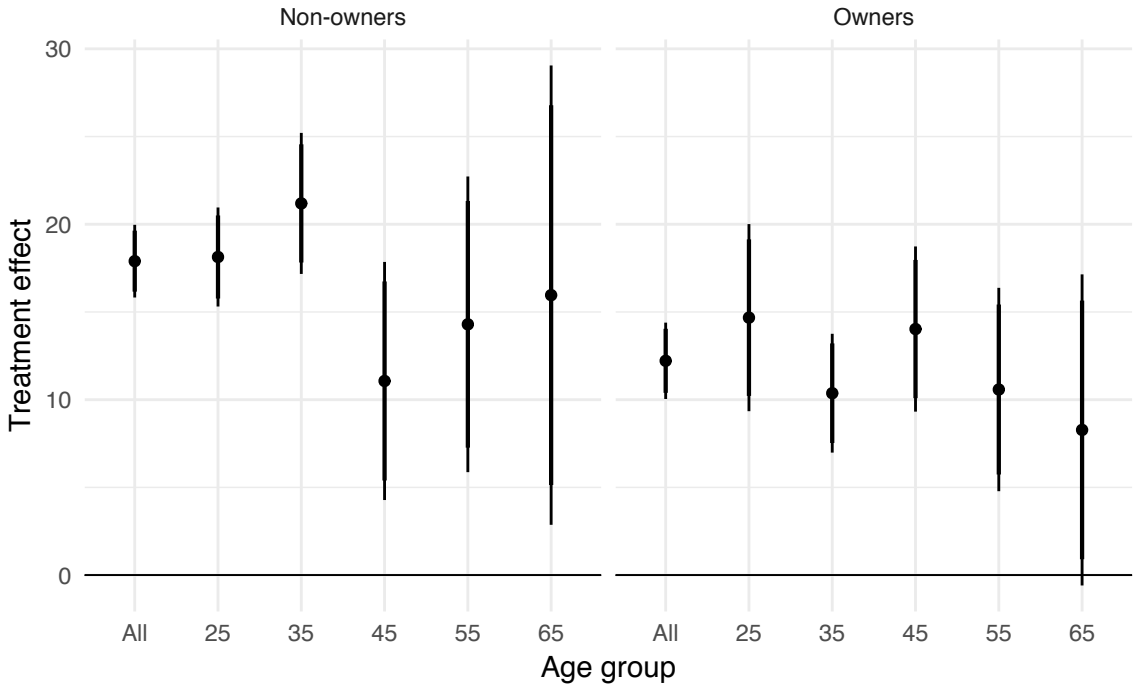
Note: The lines in this plot are smoothed Loess lines based on individual observations. Points represent binned means of HPA expectations for each treatment group, where respondents are binned by their ages: below 30, 30-39, 40-49, 50-59, and 60 or above. The size of each point is proportionate to the log number of observations in each sub-group. Information on the distribution of respondents is also given by the rug plots at the top and bottom of each plot, which represent the density of observations at each age.

TABLE 8: HPA Expectations by Treatment Groups — Five-year Cumulative HPA, Percent

	Control	Low	High	Experts
Observations	641	648	650	105
Mean	14.4	6.8	22.4	18.7
Standard Deviation	20.3	11.7	16.2	6.8

Note: "Experts" are not part of this study. Data for experts come from a survey of economists and real estate professionals conducted in late July and early August 2016 by Zillow, a real estate website.

FIGURE 8: High HPA Treatment Increases HPA Expectations Compared to Low HPA Treatment



Note: Points represent difference in means of the outcome variable (HPA expectations) between high and low HPA information treatment groups. Thick and thin lines represent 95 and 90 percent confidence intervals, respectively. The left-most point and line in the left and right panel show difference in means for all non-owners and owners, respectively; other points and lines report statistics by age bin.

FIGURE 9: Preferences over Ways to Balance Social Security Deficit

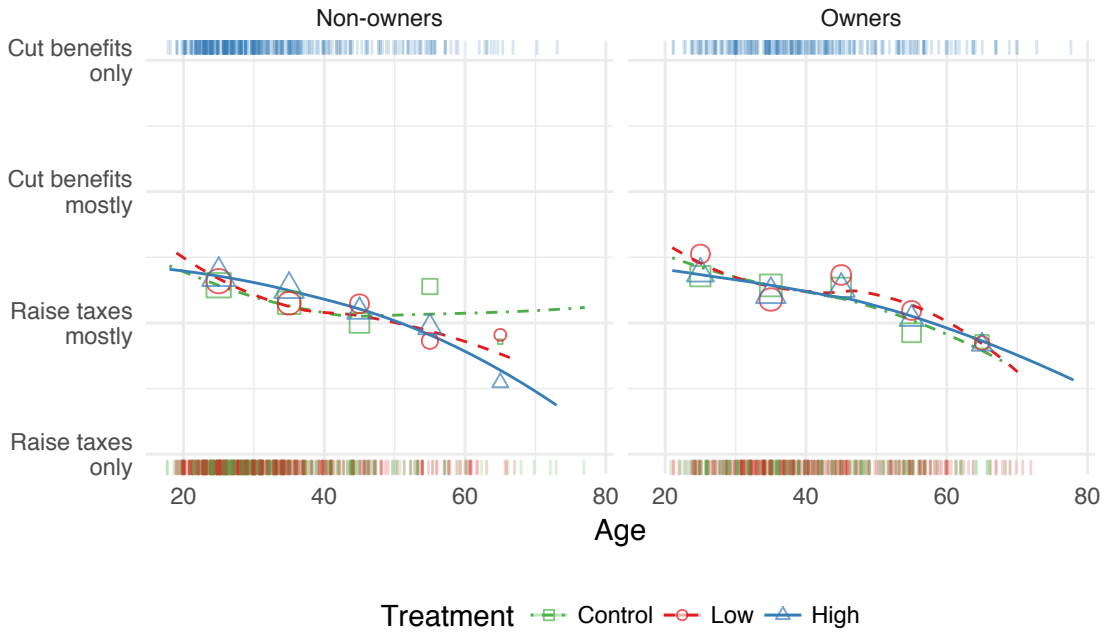


FIGURE 10: HPA Treatment Has No Effect on Preferences over Ways to Balance Social Security Deficit

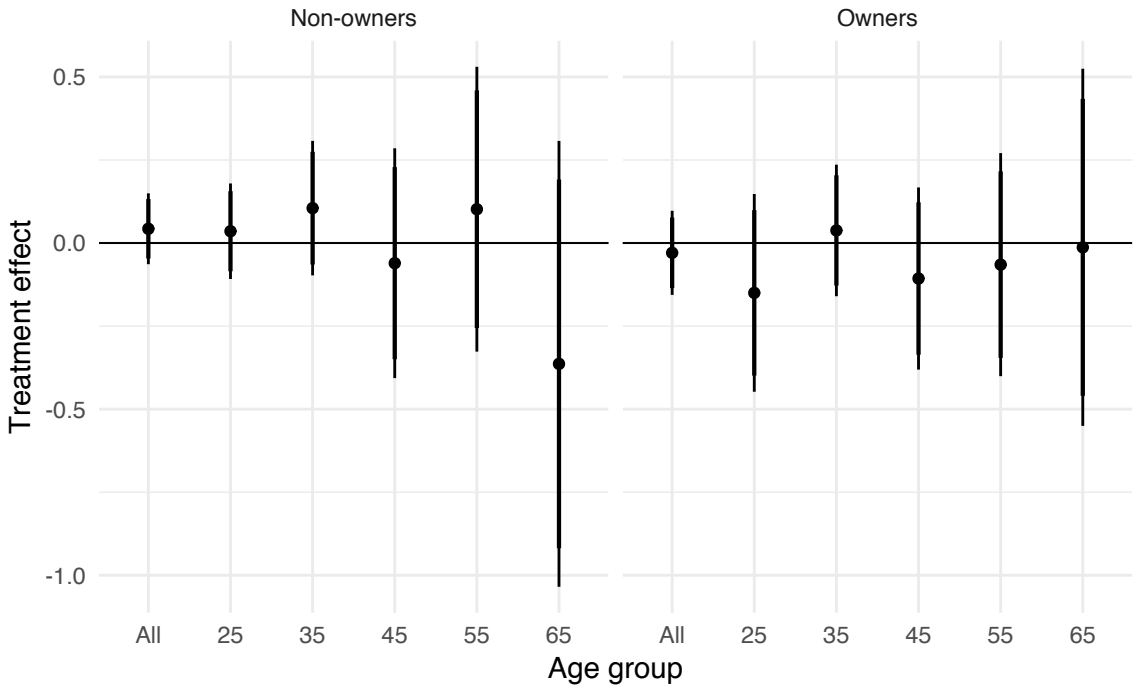


FIGURE 11: Preferences over Spending of Local Property Taxes

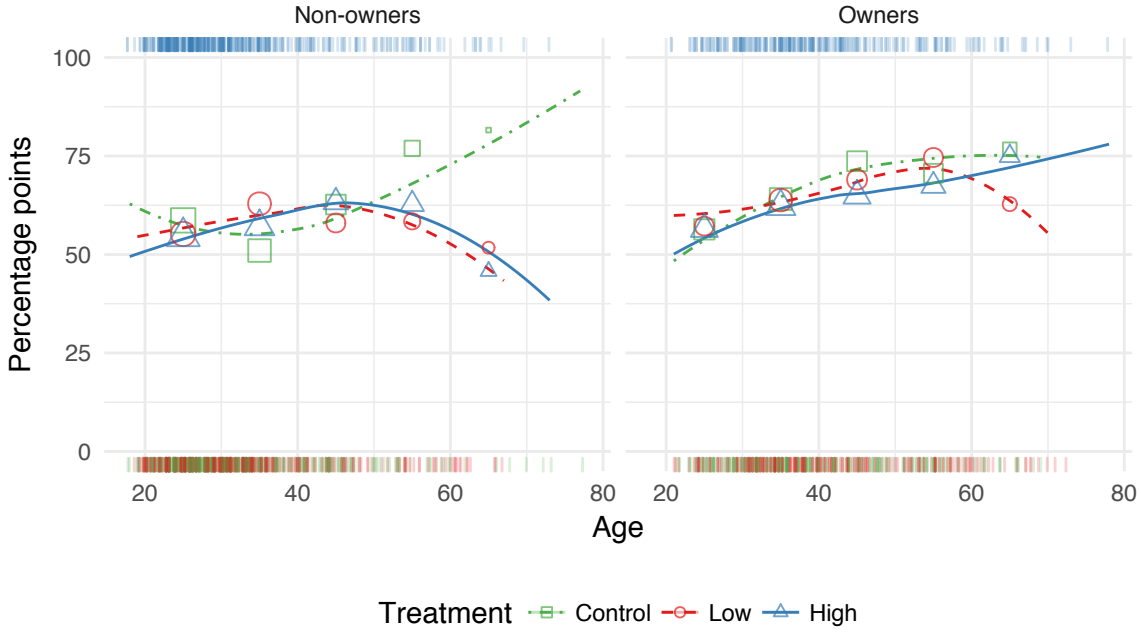


FIGURE 12: HPA Treatment Has No Effect on Preferences over Spending of Local Property Taxes

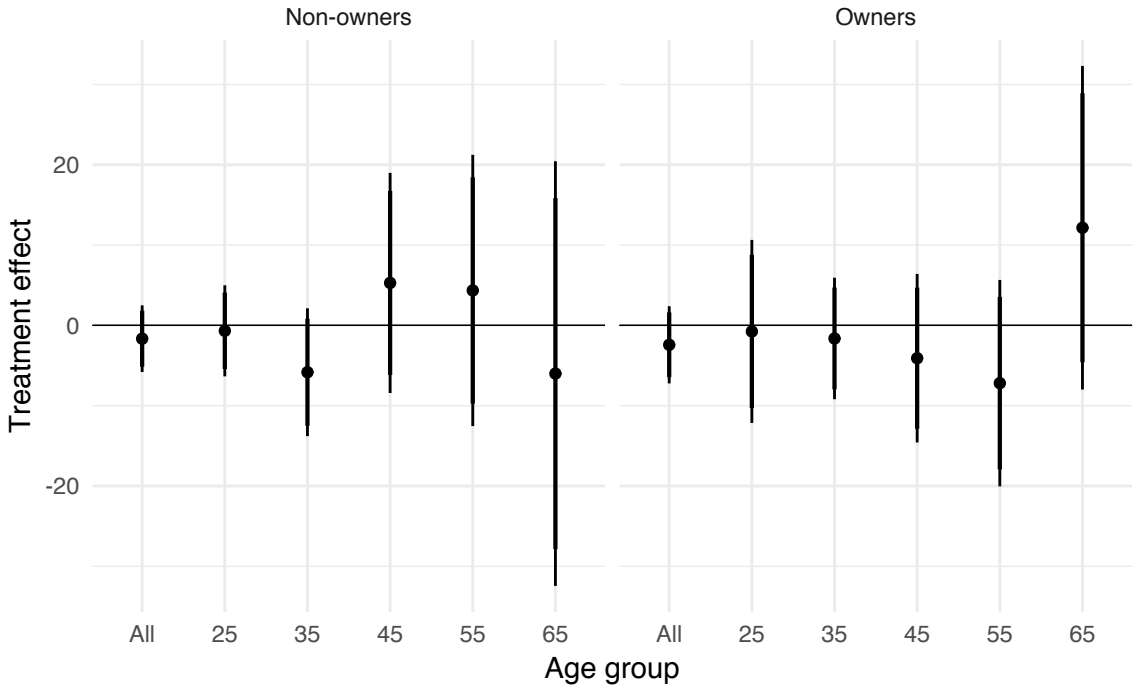


FIGURE 13: Preferences over Role of Government in Welfare Provision

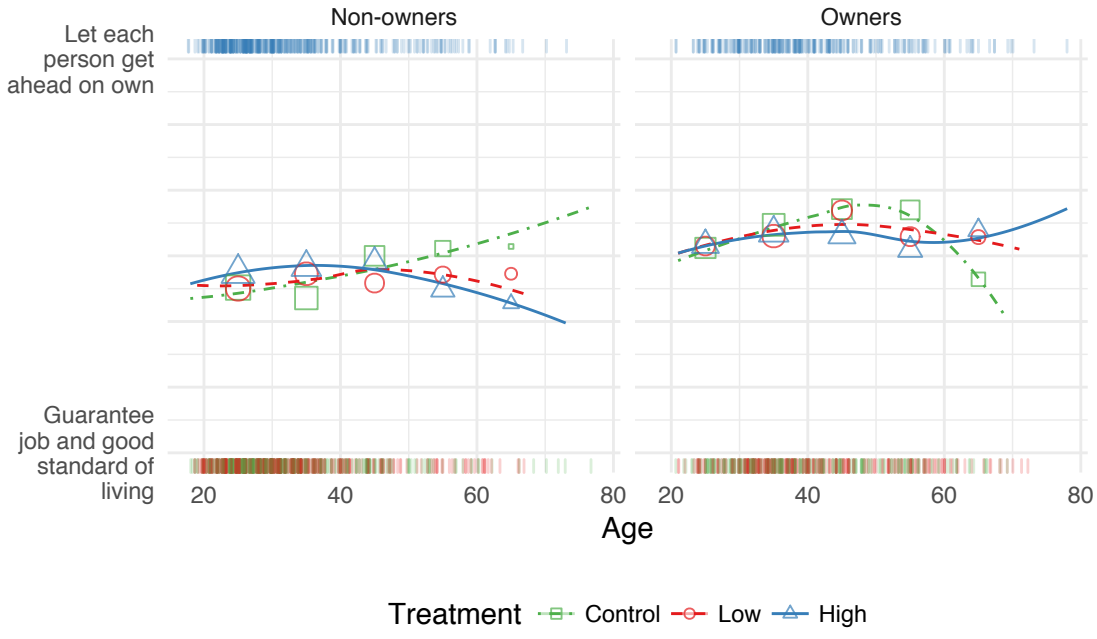


FIGURE 14: HPA Treatment Has No Effect on Preferences over Role of Government in Welfare Provision

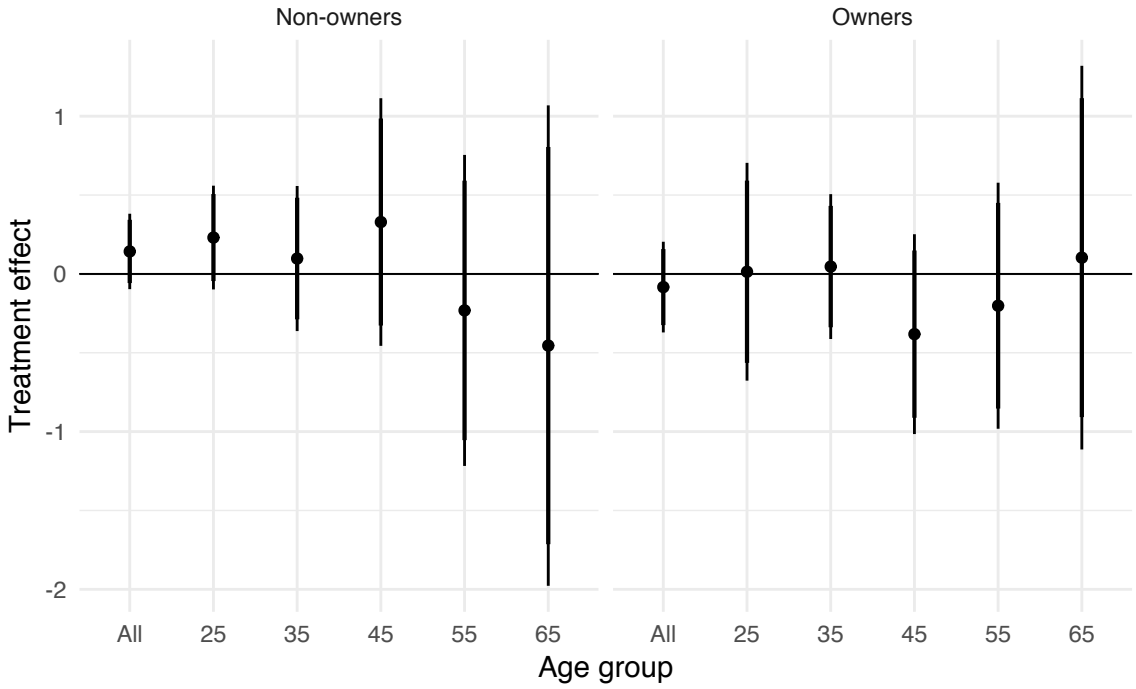


TABLE 9: Regression Estimates from Panel Data

	Preference for Status Quo			
	Soc. Sec.	Poor	For. Aid	Enviro.
	(1)	(2)	(3)	(4)
HPA: (-0.0775,0.135]	0.026	−0.011	−0.015	0.008
	(0.115)	(0.058)	(0.059)	(0.057)
HPA: (0.183,0.33]	0.066	−0.007	0.031	0.027
	(0.109)	(0.060)	(0.061)	(0.059)
HPA: (0.33,0.676]	−0.018	0.007	−0.090	−0.061
	(0.118)	(0.063)	(0.064)	(0.061)
Middle Income	0.020	0.180	−0.0001	0.008
	(0.059)	(0.038)	(0.038)	(0.039)
High Income	0.230	0.183	−0.002	0.054
	(0.092)	(0.045)	(0.044)	(0.045)
County wage growth 2000-4	0.273	−0.514	−0.595	1.172
	(0.729)	(0.487)	(0.494)	(0.475)
Year = 2004	−0.061	0.069	0.092	−0.041
	(0.118)	(0.079)	(0.081)	(0.077)
Intercept	0.353	0.409	0.554	0.347
	(0.170)	(0.114)	(0.113)	(0.116)
Subset	Renters	Owners	Owners	Owners
State FE	Yes	Yes	Yes	Yes
Individual Effects	Random	Random	Random	Random
Individuals	168	646	648	647
Observations	311	1,160	1,160	1,164

Notes: All models are estimated with a linear mixed-effect specification.

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