

The American Dream?

The Private and External Benefits of Homeownership[†]

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This Version: Feb 2008

[Preliminary Version – Comments Welcomed]

Abstract: Using a unique data set that links up well-being and housing consumption, this paper sets out to measure systematic differences between homeowners and renters, in term of moment-to-moment emotions, life satisfaction, joy and pain derived from domains of life including home and neighbourhood, family life and time use. A remarkable similarity between homeowners and renters is found. Controlling for demographics and income, homeowners do not report higher levels of well-being by any measure in this data set. In fact, they report to be less healthy, derive less joy from love and relationships, spend less time with friends and on active leisure, and also experience less positive affect during time spent with friends. Their time use patterns reveal little evidence of them being "better citizens". Due to self-selection in the housing tenure choice, these results are likely to represent upper bounds of the causal benefits of homeownership. Homeowners who live in ZIP code areas with higher rates of homeownership report more positive attitudes only if other owners are similar to them in socio-economic terms, lending some support to the idea of beneficial social interaction among owners.

[†] I am indebted to Alan Krueger for allowing me to use the DRM data set. I thank Joe Gyourko, Janet Pack and Todd Sinai for helpful comments. Yijia Gu and Blake Willmarth provided excellent research assistance.

1. Introduction

Homeownership is central to the notion of the American Dream in the public imagination. In a national survey, 65 percent of the respondents cited the “dream” as a major reason to buy a home. (Fannie Mae 2003) It helps justify the mortgage interest tax deduction, housing programs and policy platforms for politicians from either sides of the aisle.¹ This romantic view of homeownership alludes to important private and external benefits of homeownership, separate from the benefits of housing consumption on its own. Using a new data set that provides information on housing consumption, well-being and time use for about eight hundred women in Columbus, OH, this paper explores three themes: the relationship between homeownership, well-being and family life; civic participation of homeowners; and the role of cross-sectional differences in neighborhood homeownership rates.

The literature on the private benefits of homeownership is inconclusive despite the well-referenced but rarely measured “pride of homeownership”. Rossi and Weber (1996) find that homeowners are happier using the NSFH but not the GSS. In Rohe and Stegman (1994) and Rohe and Basolo (1997), renters who became owners reported to be more satisfied than continuing renters. Galster (1987) and other studies, however, point out the ownership-happiness link might well be the result of data limitation and the relationship between hard-to-measure neighborhood or personal characteristics and homeownership. So far the evidence concerning the exact homeownership-well-being mechanisms remain inconclusive. (Rohe, Van Zandt and McCarthy 2001)

One contribution of this paper is to assess the systematic differences by ownership status in not only the satisfaction measures, but also in various other indicators that have been proposed to be channels through which homeownership promotes well-being: self-esteem, health, and joy

and pain from related domains of life (e.g., neighborhood, family, home). Another main contribution is the new evidence on the time use patterns and moment-to-moment emotions of homeowners in relation to their leisure, family and social lives. Compared to the literature, this is a much more comprehensive study on the both the well-being and behavior of homeowners. My results shed light on the black box of the private benefits of homeownership. It is also worth pointing out that housing and neighborhood characteristics at the household level are controlled for, as well as a wide range of personal characteristics. This helps isolate the effect of homeownership alone.

Previous work on the external benefits of homeownership focuses on social capital generation and child outcomes.ⁱⁱ Attempts to measure the social capital related to homeownership have produced different results. The most notable piece of evidence suggests that homeowners are more active and involved citizens (DiPasquale and Glaeser 1999). Haurin, Parcel and Haurin (2001) identify better child outcome for homeowners, potentially through more emotion supportive and favorable home environments. This paper builds on the existing literature and offers new evidence on time spent with children and the emotions during those activities, volunteering, well-being measures related to community activities and politics.

To build on the broader literature of spatial spillovers and social interaction, this paper investigates the impact of neighborhood homeownership rates on the civic participation of homeowners.ⁱⁱⁱ In the one of the strongest studies on this topic, Ellen et al. (2001) find that two New York City homeownership programs cause price increases in surrounding neighborhoods in the same ZIP code but provide no direct evidence on the mechanism. This paper fills in the gap by offering analysis on the civic participation indicators themselves. To explore the potential role of social interaction and coordination among homeowners, I matched to each homeowner

observation the homeownership rates both for the entire ZIP code and for six different subgroups by socio-economic status (SES).

An interesting portrait of homeowners emerges from my analysis. I find little evidence that homeowners are happier by any of the following definitions: life satisfaction, overall mood, overall feeling, general moment-to-moment emotions (i.e., affect) and affect at home. Several factors might be at work: homeowners derive more pain (but no more joy) from both their home and their neighborhood. They are also more likely to be 12 pounds heavier^{iv}, report lower a lower health status and poorer sleep quality. They tend to spend less time on active leisure or with friends. The average homeowner reports less joy from love and relationships. She is also less likely to consider herself to enjoy being with people. Contrary to popular belief, I do not find significant differences in family-related time use patterns, family-related affect, number of normal work hours, indicators of stress or measures of self-esteem and perceived control of life by homeownership. My findings suggest that unadjusted differences along these dimensions might have played a role in establishing the related popular beliefs. Overall, these results point to negative feelings (pain) and lifestyle choices related to homeownership, although less healthy individuals might have self-selected to be homeowners. The results are robust after controlling for reported financial stress. If there exists strong heterogeneity in the enjoyment of homeownership and households who are more likely to derive more happiness from homeownership in fact self-select to become homeowners, my estimates of the well-being differences from a cross-sectional comparison can be seen as upper bounds of the true positive differences.

Not only does homeownership status not relate to well-being indicators and time use related to children in the household, it is also not significantly related to the civic participation

measures available in the data set. On the other hand, there is suggestive evidence that the amount of reported pain from the neighborhood, from community activities and from politics all decrease with SES-specific ZIP code-level homeownership rates, though not with the overall ZIP code-level homeownership rate. This suggests that the externalities of homeownership arise from an agglomeration and interaction of homeowners of similar SES backgrounds. My findings are in line with the conclusion of Kahn, Cummings and DiPasquale (2001) that homeownership programs have no significant benefit spillovers when there is a lack of interaction between homeowners and the greater community.

One important feature of the data sample is worth keeping in mind while interpreting the results: because Franklin County, OH, is very similar to the national average, it is more useful to think about the implications of the results for the median household rather than subgroups of the population. These results are not easily generalized to an assessment of low-income or minority housing policies. Another feature is that my sample contains women only; it is conceivable that the well-being implications of homeownership might vary by gender.

The rest of the paper is organized as follows: Section 2 describes the data; Sections 3 to 6 present and discuss the empirical evidence; Section 7 concludes.

2. Data

This paper makes use of three separate data sets: the Day Reconstruction Method (DRM) Survey, the property tax records and the 2000 United States Census.

All well-being, demographic and time use variables are derived from the DRM Survey.^v It is a survey of 809 women in Columbus, OH, in 2005. Reliability of the data is analyzed by Krueger and Schkade (2005). It has been shown that the DRM method yields similar results to the gold standard, the experience sampling technique. (Kahneman et al. 2004a)

First information on moment-to-moment emotions (affect) is collected. Respondents were asked to divide the previous day (“reference day”) into episodes that lasted for between 20 minutes and 2 hours. They were to start a new episode whenever there was a significant change in what they were doing, whom they were interacting with or their emotions. Respondents described each episode by indicating: (1) when the episode began and ended; (2) what they were doing, by checking as many activities that applied from a list of 16 possible activities (plus other) that included working, watching television, socializing, etc.; (3) where they were; (4) whom they were interacting with, if anyone (co-workers, friends, spouse, children, etc.). Respondents next reported the intensity of 10 affective dimensions during each episode (Impatient, Competent/Confident, Tense/ Stressed, Happy, Depressed/Blue, Interested/Focused, Affectionate/ Friendly, Calm/ Relaxed, Irritated/ Angry), using a scale from 0 (not at all) to 6 (very much). The reported intensity of these 10 emotions is used to describe the affective experience of each episode.^{vi} I constructed a net affect measure, subtracting the average intensity of the negative emotions (impatient, stressed, depressed, angry) from the average intensity of the positive emotions (happy, affectionate, calm) at the episode level. Weighed by the episode duration, the episode-level net affect indicator is collapsed to a net affect measure at the respondent-level for the entire day, for specific activities and for specific social interaction. Similarly, I create an “unpleasant” indicator that equals to one if the strongest affect during an episode is negative. This is called the U-index (Kahneman et al. 2004b). Although it is a cruder affect measure, it has an advantage over net affect measures in that it does not depend on the comparability of various affect measures. Weighed by the episode duration, the U-index is collapsed to the respondent-level.

Aside from the episode level data, respondents were also asked about an array of global satisfaction questions that are not meant to be situational or attached to any specific moment of time. There are two types of global satisfaction questions. First, respondents were asked how satisfied they were these days with their lives as a whole. They could choose one of the following: Not At All Satisfied (1), Not Very Satisfied (2), Satisfied (3) or Very Satisfied (4). They were also asked the five-item instrument that produces the Satisfaction with Life Scale (SWLS), which measures global cognitive judgments of satisfaction with one's life. (Diener et al. 1985) Second, they were given a list of various domains of life and asked how much pleasure and joy they get from each of them. The more relevant domains of life include their neighborhood, their house and home, children, family, activities in community etc. Respondents reported on the amount of joy using a scale of 1 (little or none) to 3 (a lot).

My analysis focuses on the individual-level net affect measures and the general satisfaction indicators. To facilitate the interpretation of the empirical findings, I have re-scaled all categorical well-being variables by dividing by their standard deviations across the sample. An extensive set of demographic characteristics are used as control variables.

An important set of housing-related variables came from the tax records of actual home sales from the tax auditor. Using home addresses of the respondents, the tax records were linked to the DRM survey data. The tax records offer a description of the structure, along with details of the most recent sales transaction. Using a hedonic regression, I predict the log home value for 556 single-family homes in the data set, including 68 rental homes, in 2005 prices (Appendix Table A1). This serves as a measure of the quality of housing consumption.

ZIP code-level homeownership rates (overall and by SES), education, household income and housing price averages are obtained from the 2000 Census.

Table 1 shows a comparison of owners and renters in single-family homes in my sample. It is reassuring to see that they do not show significant differences in whether their reference day happened during the weekend, the numbers of episodes they reported at home and outside home, and how typical the reference day was.^{vii} This means the owners and renters are likely to have been randomly chosen to participate in the survey and to have interpreted the survey questions in similar ways. It is interesting to note that the amount of time spent at home does not differ by homeownership. On the other hand, the rest of the indicators do show a systematic difference between owners and renters: they tend to be older, with a higher household income and education level, living with a spouse/ partner or children, less likely to be living with their parents and living in a more expensive house and a ZIP code with higher SES averages. These are confounding factors that will be controlled for in the analysis.^{viii} Appendix Table A2 shows that averages in Franklin County, OH, are very similar to the United States averages.

3. Are Homeowners Happier?

The link between homeownership and the American Dream presumably at least partly derives from a perception of higher levels of well-being for homeowners. To investigate this homeownership-well-being link, I perform the following analysis on owners and renters living in single-family homes:

$$(1) \quad W_i = \alpha + \beta * O_i + \mu * X_i + \varepsilon_i.$$

W_i refers to one of the twelve well-being indicators for person i , X_i a set of control variables, ε_i an error term. β therefore represents the average difference by ownership status in each of the well-being indicators, conditional on the control variables. Throughout the paper I make use of three separate control sets X_i : (1) includes log household income, predicted log home value and self-reported health status; (2) includes all variables in (1) *plus* education

and indicators for living with a spouse or significant other, with children and with parents; and (3) all variables in (2) *plus* a dummy for reporting “a lot” of pain from financial security, an interaction term between income and living with children, and the ZIP code median household income, median home value and percentage of college-educated residents of age over 25. It is important to note that the variables in the control sets might not be control variables per se, rather they can serve as a channel through which homeownership affects well-being. For example, if the enhancement of mental health is the main channel of homeownership benefits then one expects β to become insignificant once health status is controlled for. Unadjusted differences between owners and renters (an empty control set) are shown along with differences adjusted for the three control sets.

Table 2 reports the coefficient estimates for the homeownership indicator. A column represents four different regressions, each with a different control set, for a well-being measure. The unadjusted differences on the first row reveal that homeowners on average report to be more satisfied with their lives and also with their neighborhoods and homes. This type of unadjusted evidence might have fuelled the public imagination of happy homeowners. Interestingly, on an unadjusted basis they also report more pain derived from their house and home, in magnitude and significance similar to the higher level of joy derived from their house and home (Columns 4 and 6). Although they spend less time in a bad mood by 3.6 percentage points, there is no other evidence that they experience more positive affect, both in general (Columns 8 to 11) or at home (Column 12). Note that Columns 7 to 10 use respondents’ own estimates of their overall mood in a typical day, while Columns 11 and 12 represent duration-weighted affect during episodes throughout the reference day. Both sets of affect indicators show little differences in affect by homeownership status.

More strikingly, once the analyses adjust for the basic demographic variables (control set 1 – income, housing value, health), there is little evidence that homeowners are happier. Moving down the table as more demographic and neighborhood variables are controlled for, it becomes clear that homeowners are not happier – in fact, they derive more pain from their neighborhoods and from homes (Columns 5 and 6). Note that these positive pain differentials remain robust and very similar in magnitude after controlling for a self-reported measure of financial insecurity in control set 3, which has so far been cited in the literature as the main negative of homeownership. This suggests that the increased pain is not mainly due to increased financial stress.

An alternative way to measure the amount of satisfaction from one's house and home is take individual differences in the amount of satisfaction from aspects of life outside home into account. This alleviates concerns about comparability of owners and renters along unobserved dimensions. A comparison of this type between owners and renters assumes, however, that outside-home satisfaction does not vary by homeownership. In the Appendix, I experiment with this approach. The affective experience at home is measured against that outside home for each respondent and the at home-outside home difference is compared by homeownership status. I do not find that the net at-home affect varies significantly by homeownership.

4. Why Are Homeowners Not Happier?

Given the limited role of financial stress in the well-being analysis in the previous section, I explore the systematic differences by homeownership in other domains of life.^{ix} Using the framework under equation (1) above, I assess homeowners' self-esteem, stress, health status, time use and quality of family lives. Again I focus on β , the coefficient of the homeownership dummy. Results using three different control sets (as before) are presented; in the health

(financial stress)-related regressions, health status (pain from financial security) is omitted as a control.

It has been theorized that homeownership promotes well-being and mental health through a higher social status and more freedom, which potentially translate to higher self-esteem and a sense of perceived control (Doling and Stafford 1989). Evidence in the literature has so far been scant and inconclusive (see Rohe, Van Zandt and McCarthy 2001 for a survey). On the other hand, it has also been proposed that stress, especially financial stress, can be a significant negative for homeowners. There is no direct evidence on this link. In Table 3, I explore four indicators that proxy for self-esteem and perceived control (Columns 1 to 4) and four others that indicate different aspects of stress.

If we for one moment focus on the unadjusted differences, again homeowners seem to be much better off. They report more joy and less pain concerning respect from others, self-assess to be less worrying or depressed, and also report less pain from financial (in)securities. These unadjusted differences by homeownership amount to between 15 percent to almost half of a standard error. Once the basic demographics, including income, home value and health status, are controlled for, however, these differences become statistically insignificant and in some cases much smaller in magnitude. Resonating results in Rohe and Stegman (1994), I do not find any evidence for a link between homeownership and self-esteem and perceived control. More surprisingly, at least on average homeowners turn out not to be more or less stressed than renters.

Next I turn to the more objective and easy-to-report indicators concerning health status. A sense of stability and social status due to homeownership can be reflected in better psychological health; any relationship between homeownership and health can also be due to self-selection. Surprisingly, not only do homeowners in my sample report to be less satisfied with their health,

they also weigh more (Table 4). The Control Sets do not change the point estimates much. Evaluated at the average height of an American woman (5 ft 4 in), the estimated difference in the body-mass index (BMI) translates to a 12-pound difference in weight. Although homeowners do not report to sleep less (or more), they report a lower sleep quality. Note that the self-reported health status has been included in all three control sets in the previous section; if poor health were the main explanation of why homeowners are not happier, one expects to see a more positive well-being difference between owners and renters once health is controlled for. This is opposite to what Table 2 shows. Therefore, despite other unobserved health differences can contribute to a lower level of well-being for homeowners, differences in health status are unlikely to fully explain why homeowners are not happier.

To measure time use patterns, for each respondent I calculate the percentage of the awake day spent on each of the following seven focal activities: active leisure, passive leisure, eating, talking, compulsory activities (such as food preparation, housework, grooming, healthcare), work and commute, and others. The first six categories are chosen based on their prominence in terms of the amount of time respondents reported spending on them (eight to twenty-seven percent of the awake day on average). The last category, which includes all activities that were not well-defined in the survey, is included in my analysis to make sure owners and renters do not leave certain activities out and label them “others” in different ways. I also make use of reports of the typical number of work hours per week and the typical commute. In Table 5, Columns 2 to 9 show that owners do not have a vastly different time use pattern, even on an unadjusted basis. Notably, owners do not spend more time on compulsory activities or work more (Columns 5 to 7) despite the investment aspect of a home purchase. They seem to spend slightly less time on

commuting (Column 8). Reassuringly, they do not seem to have grouped more of their activities into the undefined “others” category (Column 9).

The main difference that stands out is that owners do on average spend less time on active leisure by around five percentage points (Column 1). Compared to the average respondent in the sample who spends 13.4% of her awake time on active leisure, this is a substantial reduction. Since active leisure has been revealed in other studies to be among the most enjoyable and interesting affective experiences and work/ commute the least, results in Table 5 is consistent with the observation in the previous section that homeowners are not happier than renters. Granted, global satisfaction measures used in the previous section are meant to complement affects by describing different dimensions of a person’s well-being, the fact that homeowners spend less time on enjoyable activities nonetheless helps us understand why homeowners might report lower levels of satisfaction than we otherwise expect.

5. Homeownership and Family/ Social Lives

Although homeownership does not seem to improve either general well-being (Section 3) or the health status (Section 4), it might have a positive impact on certain aspects of life. This section focuses on the relationship between homeownership and social interactions. I investigate the amount of time spent with family and friends by homeownership, and also the reported joy or pain derived from those relationships.

Using the same framework as before, I find that homeowners on average spend around six percent less of their awake time interacting with friends and neighbors (Table 6). This estimates difference does not vary significantly by the choice of the control variable set and it amounts to about half of the sample average (13.3 percent). What’s more, homeowners experience less positive net affect during time spent with friends or neighbours, by 35 percent of

a standard deviation. This is interesting since time spent with friends has been found to be one of the most positive affective experiences (Krueger 2007). It is also worth pointing out that homeowners do not spend more time with their family or relatives, nor do they experience significantly different net affects during those episodes.^x Because the validity of net affect measures depend on the comparability of the ten affect measures, I show in Appendix Table A4 that the percentage of time spent with family and friends in a negative emotion state (defined as the strongest affect out the ten reported being negative) does not vary by homeownership status.^{xi} So far my results are contrary to the intuition that homeownership fosters more involved or better family lives.

Next I turn to the reported amount of joy and pain derived from family and friends. Table 7 shows the results on the joy indicators. Surprisingly, not only do homeowners report a lower level of joy from their love and relationships, they are also less likely to consider themselves to enjoy being with people. These results remain stable and robust when detailed demographic and neighborhood variables are controlled for. On the other hand, Table 8 shows that there are no significant differences in the amount of pain derived from family and friends.

In conclusion, these results point to generally similar time use patterns and affect experiences concerning family and friends by homeownership status. Any significant differences, in time use, affective experience or amount of derived joy, point to the differential by homeownership to be negative.

6. Homeownership, Civic Participation and Social Interaction

So far the evidence on the private benefits paints a picture at odds with the perception of happy homeowners. This section investigates if there are significant externalities arising from

homeownership. First I study observed and reported behaviour related to civic participation; next I examine the role of ZIP code-level ownership rates.

Comparing the available indicators related to civic participation – namely, volunteer work, joy and pain from activities in the community and pain from politics – we see no significant differences by homeownership status (Table 10).^{xii} In results not reported, I find little evidence that homeowners differ from renters in terms of engagement in religious activities or satisfaction derived from them.

It is perceivable, however, that civic participation depends not only on one's own homeownership status but also the homeownership rate in one's neighborhood. It is through the interaction among homeowners that social capital is created. To investigate this link, I perform analysis of this form for the sub-sample of homeowners only:

$$(2) \quad C_i = \alpha + \Omega * Z_i + \mu * X_i + \varepsilon_i.$$

C_i contains an indicator related to civic participation as detailed earlier and Z_i represents a log ZIP code-level ownership rate. Aside from using the overall ZIP code-level ownership rate, I also match each respondent by her demographic characteristics to a ZIP code-level ownership rate specific to a socio-economic group that she belongs to. For example, if a respondent is aged 26, I assign to her the ownership rate for the age group 25-34 only in her ZIP code area. I experiment with SES-status groupings below: age, marital status, marital status X age, marital status X children, tenure, and finally household income. Ω represents the change in the civic participation indicator for a homeowner, given a one percent change in the ZIP code-level neighborhood ownership rate. I focus on owners because owner-renter interaction can be entirely different due to different stakes and objectives in the community.

Tables 10 to 12 highlight the more interesting results on three indicators: pain from neighbourhood, pain from activities in the community and pain from politics in the country. Although the overall ownership rate at the ZIP code level is not significantly related to any of these indicators, I find suggestive evidence that a higher ownership rate in their own marital status and household income groups correspond to lower reported level of the pain indicators.

The power of this analysis is undermined by two factors. First, the true neighborhood or community that affects a person's decision concerning civic activities is likely not well defined by the ZIP code. This means the ZIP code-level ownership rates I used in my analysis are at best proxies for homeownership in the community that the respondents belong to. Second, the homeownership rates are derived from the 2000 Census. To the extent that neighborhoods have changed during the five years between the Census and the DRM Survey (possibly at different rates), the homeownership indicators are likely to deviate from the 2005 homeownership rates.

Nevertheless, it is interesting to see that neighborhood ownership rates matter, and to find supportive evidence that the way homeownership promotes civic participation is through interaction of similar socio-economic groups (Kahn, Cummings and DiPasquale 2001). These results have important implications for homeownership programs.

7. Conclusion

Are homeowners happier or better off? In the 2003 Fannie Mae National Survey, 74 percent of the respondents believe that homeownership provides the feeling of “owning something of your very own”, alluding to what economists call “the pride of ownership”. 81 percent of homeowners report homeownership being a very positive experience, while only 31% of renters report renting being so.

This paper conducts an in-depth analysis of the well-being, time use, family life and civic participation of homeowners. By using a wide array of well-being indicators as well as information on housing consumption, neighborhood characteristics and demographics, I am able to examine the well-being of homeowners from different angles while controlling for confounding factors to isolate the effect of homeownership.

The findings in this paper are striking. Homeowners are happier on average only on an unadjusted basis. Once household income, housing quality and health are controlled for, they are no happier than renters. What's more, they report to derive more pain from both the neighborhood and their house and home. This positive pain gap remains stable and robust when health, neighborhood characteristics and financial stress are controlled for.

As for the most frequently cited channels of a positive impact by homeownership, namely self-esteem, stress, health and family life, again there is very little supporting evidence in my data. In fact, less healthy women might have self-selected as homeowners. Homeowners are less stressed on an unadjusted basis only. Whether I look at the time use patterns, affective experience or global satisfaction related to family lives, I see no sign that homeowners are behaving in a significantly different way. On the other hand, homeowners spend less time on active leisure activities or with friends, which have been documented as some of the most enjoyable affective experiences.

Two tentative conclusions can be reached from my findings on private benefits of homeownership. First, the American Dream notion of homeownership might at least be partly fueled by observed differences in the levels of well-being by homeownership on an unadjusted basis. Second, once we explore the actual time allocation, affect and satisfaction related to specific activities and social interactions, the intuitive link between homeownership and well-

being breaks down. Insofar as homeowners self-select into homeownership, one might expect them to choose a state that yields more satisfaction. This implies the results from the cross-sectional comparisons in this paper can be viewed as upper bounds of private benefits of homeownership.

As for the external benefits of homeownership, my analysis offers little support for the notion that homeowners are better citizens. However, I do find suggestive evidence that homeowners view their neighborhood, community activities and politics in a more positive way if there is a larger share of homeowners in their own SES group. This is consistent with the theory that social capital is created when homeowners interact and coordinate – presumably homeowners of similar SES backgrounds either interact more or create more social capital for a given amount of interaction. These results help reconcile the mixed results in the social capital literature; they suggest that interaction among homeowners, rather than homeownership in itself, are more likely to be responsible for the positive social outcomes.

Appendix – Episode level evidence

A within-person comparison, making use of the multiple episodes for each respondent, is useful because it circumvents the issue of comparability. Because each respondent was interviewed only once, the relationship between homeownership status and affect is not well identified in a within-person comparison. The episode-structure of the DRM data, however, allows me to measure the differential of net at-home affect impact by homeownership. I regress at the episode level:

$$(1) \text{ AFFECT}_{it} = \alpha + \beta * H_{it} + \beta_2 * (H_{it} * O_i) + \Omega_1 * AM_t + \Omega_2 * PM_t + \Omega_3 * EVE_t + I_i + \gamma * A_{it} + \theta * X_{it} + \varepsilon_{it}.$$

where AFFECT_{it} is the intensity of an affect for a respondent i during episode t , H_{it} indicates an episode that took place at home, AM, PM and EVE denote the time of the day (morning, afternoon, evening), I_i is a person fixed effect, A_{it} an activity fixed effect, X_{it} a social interaction fixed effect and ε_{it} an error term. While H_{it} measure the within-person, at-home versus outside-home affect difference, the interaction term $(H_{it} * O_i)$ informs us the differential on this difference by ownership status. Because homeownership might well increase affect both at home and outside home, β_2 can be seen as a lower bound on the overall affect increase because of homeownership. Appendix Table A3 report the estimates of β and β_2 (shaded rows).

There is very little evidence that the net at-home affect differs significantly by homeownership status; Column 11 shows that owners tend to be *less* calm and relaxed at home versus outside home.

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Endnotes

ⁱ For example, see The American Dream Downpayment Act 2003. Fannie Mae claims to be in the American Dream business, helping Americans “realize their American Dream of owning a home”.

ⁱⁱ Obviously, child outcomes also yield private benefits so related results are discussed along with other private benefits of homeownership.

ⁱⁱⁱ Because the interaction among homeowners can be entirely different from that between homeowners and renters, I focus on the former for exposing potential social benefits of homeownership through social interaction and coordination.

^{iv} Based on the differences on BMI and the average height of American women. Please see Section 3 for more details.

^v See Kahneman, et al. (2004) for a discussion and evaluation of the Day Reconstruction Method. The questionnaires and related documentation are available upon request.

^{vi} These emotions were chosen to represent points along the Russell (1980) circumplex. See Krueger (2007).

^{vii} A higher proportion of owners reported the reference day to be much worse than the typical day, but this accounts for a small fraction of the sample (7% owners and 1% renters). Moreover, the bulk of my findings relies on global satisfaction measures, which are meant to measure well-being in a broader context rather than tied to the reference day.

^{viii} In results not shown, owners and renters report similar levels of tiredness as long as sleeping quality and demographics are controlled for. This indicates that conditional on demographics, owners and renters interpret the survey and the scales similarly.

^{ix} In results not shown, four proxies for stress – levels of agreement with: “often worries for nothing”, “a bit depressed”, “tense and uncomfortable”; amount of pain derived from financial (in)security – are studied and they show no relationship to the homeownership status.

^x For validity, I restrict the sample to those in cohabitation when comparing time spent with spouses or significant others and to those with children when comparing time spent with children.

^{xi} See Section 2 for a description of the unpleasant indicator. Similar results are obtained using net affect measures.

^{xii} Less than 20 percent of the women in the sample regularly do volunteer or charity work, so the power of the related analysis is limited.

Table 1 - Summary Statistics for Owners and Renters Living in Single-Family Homes

| Variable | Owners Living in Single-Family Homes | | | Renters Living in Single-Family Homes | | |
|---|--------------------------------------|---------|-----------|---------------------------------------|---------|-----------|
| | Obs | Mean | Std. Dev. | Obs | Mean | Std. Dev. |
| Proportion of time spent at Home | 492 | 0.55 | 0.24 | 71 | 0.53 | 0.25 |
| Weekend dummy | 492 | 0.34 | 0.47 | 71 | 0.44 | 0.50 |
| Total episodes at home | 492 | 7.74 | 4.22 | 71 | 6.75 | 4.54 |
| Total episodes outside home | 492 | 6.18 | 3.96 | 71 | 5.99 | 3.71 |
| Reference day in survey much worse than typical | 491 | 0.07 | 0.25 | 71 | 0.01 | 0.12 |
| Reference day in survey somewhat worse than typical | 491 | 0.17 | 0.37 | 71 | 0.17 | 0.38 |
| Reference day in survey pretty typical | 491 | 0.53 | 0.50 | 71 | 0.62 | 0.49 |
| Reference day in survey somewhat better than typical | 491 | 0.17 | 0.38 | 71 | 0.16 | 0.36 |
| Reference day in survey much better than typical | 491 | 0.06 | 0.24 | 71 | 0.04 | 0.20 |
| Number of years since move-in | 476 | 10.09 | 8.06 | 19 | 5.97 | 6.84 |
| Log predicted home value | 485 | 12.01 | 0.44 | 68 | 11.60 | 0.52 |
| Single Family Home dummy | 492 | 1.00 | 0.00 | 71 | 1.00 | 0.00 |
| Log Household Income | 490 | 11.16 | 0.58 | 70 | 10.17 | 0.98 |
| Age | 492 | 46.33 | 9.16 | 70 | 34.97 | 10.80 |
| Education | 492 | 16.02 | 2.69 | 71 | 14.09 | 2.69 |
| Cohabitation dummy | 492 | 0.83 | 0.38 | 71 | 0.49 | 0.50 |
| Living with Children dummy | 492 | 0.64 | 0.48 | 71 | 0.62 | 0.49 |
| Living with Parents dummy | 492 | 0.02 | 0.13 | 71 | 0.25 | 0.44 |
| Zip Code-level Median Household Income | 491 | 51,479 | 15,024 | 71 | 40,590 | 14,555 |
| % of Pop Over Age 25 with a HS degree or higher in Zipcode | 491 | 0.89 | 0.091 | 71 | 0.81 | 0.12 |
| % of Pop Over Age 25 with a Bachelor's degree or higher in Zipcode | 491 | 0.38 | 0.184 | 71 | 0.26 | 0.18 |
| Median House Value in Zipcode: Specified Owner Occupied Housing units | 491 | 134,533 | 44,204 | 71 | 103,534 | 37,137 |
| 25th %tile House Value in Zipcode: Specified Owner Occupied Housing units | 491 | 103,929 | 29,723 | 71 | 81,154 | 27,977 |
| 75th %tile House Value in Zipcode: Specified Owner Occupied Housing units | 491 | 178,977 | 69,339 | 71 | 135,445 | 53,194 |

Table 2 - Are Homeowners Happier?

| | Dependent Variables | | | | | | | | | | | |
|---------------|---------------------------|----------------------------------|----------------------------|-----------------------------|----------------------------|------------------------------|--|--|--|--------------------------|------------------------------------|--|
| | Life Satisfaction (1) | Satisfaction With Life Scale (2) | Joy from neighborhood (3) | Joy from house and home (4) | Pain from neighborhood (5) | Pain from house and home (6) | Overall mood, % time in a bad mood (7) | Overall mood, % time in a very good mood (8) | Overall % of time in a positive mood (9) | Net overall feeling (10) | Duration-weighted net feeling (11) | Duration-weighted net feeling at home (12) |
| Unadjusted | 0.210** (0.092) | 0.585*** (0.176) | 0.263*** (0.085) | 0.137* (0.077) | -0.116 (0.073) | 0.144* (0.079) | -3.610*** (0.989) | -2.479 (3.592) | 3.963 (2.237) | 0.170 (0.274) | -0.094 (0.207) | -0.108 (0.222) |
| Observations | 563 | 563 | 562 | 561 | 562 | 562 | 557 | 557 | 557 | 561 | 563 | 563 |
| R-squared | 0.009 | 0.019 | 0.017 | 0.006 | 0.005 | 0.006 | 0.024 | 0.001 | 0.006 | 0.001 | 0.000 | 0.000 |
| Control Set 1 | -0.018 (0.132) | 0.190 (0.182) | 0.218 (0.138) | 0.063 (0.140) | 0.164 (0.128) | 0.345** (0.139) | -2.070* (1.079) | -4.157 (4.107) | 1.504 (2.451) | 0.006 (0.138) | -0.099 (0.137) | -0.100 (0.140) |
| Observations | 550 | 550 | 549 | 548 | 549 | 549 | 544 | 544 | 544 | 548 | 550 | 550 |
| R-squared | 0.195 | 0.224 | 0.069 | 0.055 | 0.137 | 0.054 | 0.117 | 0.047 | 0.119 | 0.076 | 0.077 | 0.064 |
| Control Set 2 | -0.054 (0.147) | 0.124 (0.202) | 0.117 (0.154) | 0.018 (0.153) | 0.320** (0.142) | 0.339** (0.154) | -0.525 (1.179) | -3.905 (4.538) | -1.161 (2.674) | -0.119 (0.152) | -0.155 (0.153) | -0.084 (0.154) |
| Observations | 549 | 549 | 548 | 547 | 548 | 548 | 543 | 543 | 543 | 547 | 549 | 549 |
| R-squared | 0.195 | 0.230 | 0.080 | 0.092 | 0.164 | 0.082 | 0.138 | 0.056 | 0.136 | 0.092 | 0.098 | 0.103 |
| Control Set 3 | -0.041 (0.141) | 0.133 (0.195) | 0.140 (0.153) | 0.024 (0.152) | 0.320** (0.141) | 0.350** (0.149) | -0.586 (1.168) | -4.206 (4.546) | -1.192 (2.631) | -0.142 (0.149) | -0.168 (0.151) | -0.090 (0.154) |
| Observations | 548 | 548 | 547 | 546 | 547 | 547 | 542 | 542 | 542 | 546 | 548 | 548 |
| R-squared | 0.275 | 0.302 | 0.113 | 0.112 | 0.193 | 0.148 | 0.170 | 0.073 | 0.182 | 0.148 | 0.137 | 0.126 |

Note: Coefficients of the Homeownership Dummy reported (standard errors in parentheses).

***=Significant at 1%; **=Significant at 5%; *=Significant at 10%

Control Set (1) includes log household income, predicted log home value and self-reported health status; (2) includes all variables in (1) plus age, education and indicators for living with a spouse or significant other, with children and with parents; and (3) all variables in (2) plus a dummy for reporting “a lot” of pain from financial security, an interaction term between income and living with children, and the ZIP code median household income, median home value and percentage of college-educated residents of age over 25.

Table 3 - Self-esteem, Perceived Control and Stress Levels for Homeowners

| | <u>Dependent Variables: Self Esteem and Perceived Control</u> | | | | <u>Dependent Variables: Stress</u> | | | |
|---------------|---|--|---|--|---|--|--|---|
| | Joy from the respect you get from others (1) | Pain from the respect you get from others (2) | Agree: 'What is important to me is being who I always wished I would be' (3) | Agree: 'Happiness is difficult to reach and keep but it is a goal worth pursuing' (4) | Self-assessment: compared to others, I often worry for nothing (5) | Self-assessment: compared to others, I am a bit depressed (6) | Self-assessment: Compared to others, I am tense and uncomfortable (7) | Pain from financial (in)security (8) |
| Unadjusted | 0.208*** (0.077) | -0.152* (0.081) | -0.208* (0.110) | -0.162 (0.124) | -0.480** (0.227) | -0.438*** (0.209) | -0.072 (0.183) | -0.240*** (0.090) |
| Observations | 561 | 562 | 561 | 562 | 561 | 562 | 562 | 562 |
| R-squared | 0.013 | 0.006 | 0.006 | 0.003 | 0.008 | 0.008 | 0.000 | 0.013 |
| Control Set 1 | 0.228 (0.143) | -0.203 (0.143) | -0.141 (0.150) | -0.026 (0.148) | -0.214 (0.142) | -0.101 (0.136) | 0.046 (0.139) | 0.004 (0.143) |
| Observations | 548 | 549 | 548 | 549 | 549 | 549 | 549 | 549 |
| R-squared | 0.040 | 0.034 | 0.018 | 0.028 | 0.036 | 0.096 | 0.051 | 0.098 |
| Control Set 2 | 0.044 (0.158) | -0.137 (0.160) | -0.103 (0.166) | 0.000 (0.165) | -0.050 (0.157) | -0.015 (0.153) | 0.131 (0.156) | 0.053 (0.160) |
| Observations | 547 | 548 | 547 | 548 | 548 | 548 | 548 | 548 |
| R-squared | 0.072 | 0.048 | 0.037 | 0.045 | 0.059 | 0.102 | 0.060 | 0.109 |
| Control Set 3 | 0.029 (0.159) | -0.157 (0.159) | -0.121 (0.166) | 0.040 (0.165) | -0.055 (0.159) | -0.037 (0.153) | 0.125 (0.157) | 0.034 (0.161) |
| Observations | 546 | 547 | 546 | 547 | 547 | 547 | 547 | 547 |
| R-squared | 0.079 | 0.072 | 0.053 | 0.060 | 0.063 | 0.112 | 0.069 | 0.117 |

Note: standard errors shown in parentheses

***=Significant at 1%; **=Significant at 5%; *=Significant at 10%

Control Set (1) includes log household income, predicted log home value and self-reported health status; (2) includes all variables in (1) plus age, education and indicators for living with a spouse or significant other, with children and with parents; and (3) all variables in (2) plus a dummy for reporting “a lot” of pain from financial security, an interaction term between income and living with children, and the ZIP code median household income, median home value and percentage of college-educated residents of age over 25. For the Stress regressions, the financial pain indicator is left out of the Control Set (3).

Table 4 - Homeownership and Health

| | Dependent Variables | | | | | |
|---------------|----------------------------|----------------------------|-----------------------------|--------------------------|---|--|
| | Satisfaction with health | BMI: kilo/m2 | Joy from health | Pain from health | Sleep quality during the previous month | Avg hours of sleep during the previous month |
| Control Set 1 | -0.322** (0.142) | 2.733*** (0.976) | -0.364*** (0.141) | 0.246* (0.146) | -0.233 (0.145) | -0.049 (0.180) |
| Observations | 550 | 550 | 548 | 548 | 549 | 550 |
| R-squared | 0.091 | 0.089 | 0.059 | 0.024 | 0.037 | 0.035 |
| Control Set 2 | -0.341** (0.157) | 2.154** (1.086) | -0.376** (0.157) | 0.159 (0.164) | -0.340** (0.162) | 0.113 (0.199) |
| Observations | 549 | 549 | 547 | 547 | 548 | 549 |
| R-squared | 0.116 | 0.110 | 0.079 | 0.036 | 0.050 | 0.067 |
| Control Set 3 | -0.352** (0.155) | 2.155** (1.077) | -0.386** (0.156) | 0.147 (0.160) | -0.322** (0.159) | 0.150 (0.196) |
| Observations | 548 | 548 | 546 | 546 | 547 | 548 |
| R-squared | 0.158 | 0.142 | 0.109 | 0.097 | 0.100 | 0.109 |

Note: standard errors shown in parentheses

***=Significant at 1%; **=Significant at 5%; *=Significant at 10%

Control Set (1) includes log household income and predicted log home value; (2) includes all variables in (1) plus age, education and indicators for living with a spouse or significant other, with children and with parents; and (3) all variables in (2) plus a dummy for reporting “a lot” of pain from financial security, an interaction term between income and living with children, and the ZIP code median household income, median home value and percentage of college-educated residents of age over 25.

Table 5 - Homeownership and Time Use Patterns by Activities

| | Dependent Variables | | | | | | | | |
|------------------------|------------------------------------|-----------------------------|-----------------------------|-------------------------------------|---|----------------------------------|---|---------------------------------------|----------------------------|
| | % time spent on active leisure (1) | % time spent on eating (2) | % time spent on talking (3) | % time spent on passive leisure (4) | % time spent on compulsory activities (5) | % time spent on work/commute (6) | No. of work hours during a typical week (7) | Typical commute to work (minutes) (8) | % time spent on others (9) |
| Unadjusted Differences | -0.035** (0.016) | -0.028*** (0.010) | -0.006 (0.020) | -0.009 (0.015) | 0.027 (0.024) | 0.036 (0.032) | -2.222 (2.183) | -3.164** (1.651) | -0.011 (0.023) |
| Observations | 332 | 285 | 343 | 319 | 511 | 363 | 437 | 396 | 324 |
| R-squared | 0.015 | 0.025 | 0.000 | 0.001 | 0.003 | 0.003 | 0.002 | 0.037 | 0.017 |
| Control Set 1 | -0.023 (0.018) | -0.029** (0.012) | -0.000 (0.023) | 0.005 (0.017) | 0.035 (0.028) | 0.015 (0.036) | -3.660 (2.473) | -3.617* (1.850) | -0.016 (0.027) |
| Observations | 332 | 280 | 333 | 314 | 499 | 355 | 428 | 396 | 324 |
| R-squared | 0.022 | 0.032 | 0.006 | 0.027 | 0.030 | 0.041 | 0.023 | 0.015 | 0.003 |
| Control Set 2 | -0.053** (0.021) | -0.019 (0.013) | -0.002 (0.027) | 0.001 (0.019) | 0.044 (0.029) | 0.013 (0.040) | -2.811 (2.527) | -3.054 (1.989) | -0.043 (0.031) |
| Observations | 332 | 280 | 332 | 313 | 498 | 354 | 428 | 396 | 324 |
| R-squared | 0.054 | 0.059 | 0.020 | 0.035 | 0.126 | 0.101 | 0.126 | 0.037 | 0.017 |
| Control Set 3 | -0.054*** (0.021) | -0.018 (0.013) | 0.000 (0.027) | 0.002 (0.019) | 0.044 (0.030) | 0.008 (0.040) | -2.821 (2.513) | -3.423* (1.944) | -0.037 (0.031) |
| Observations | 331 | 279 | 331 | 312 | 497 | 353 | 427 | 396 | 324 |
| R-squared | 0.089 | 0.066 | 0.030 | 0.057 | 0.137 | 0.109 | 0.152 | 0.099 | 0.030 |

Note: standard errors shown in parentheses

***=Significant at 1%; **=Significant at 5%; *=Significant at 10%

Control Set (1) includes log household income, predicted log home value and self-reported health status; (2) includes all variables in (1) plus age, education and indicators for living with a spouse or significant other, with children and with parents; and (3) all variables in (2) plus a dummy for reporting “a lot” of pain from financial security, an interaction term between income and living with children, and the ZIP code median household income, median home value and percentage of college-educated residents of age over 25.

Table 6 - Time Use Patterns by Social Interaction and the Related Affective Experiences

| | <u>Dependent Variables: Time Use</u> | | | | <u>Dependent Variables: Net Affect During Interactions</u> | | | |
|---------------|---|----------------------------|--|--------------------------------------|---|--|--|--|
| | % time spent with spouse/ significant other | % time spent with children | % time spent with parents/ other relatives | % time spent with friends/ neighbors | Net affect during time spent with spouse/ significant other | Net affect during time spent with children | Net affect during time spent with parents/ other relatives | Net affect during time spent with friends/ neighbors |
| Control Set 1 | -0.042 (0.050) | -0.048 (0.081) | -0.114*** (0.027) | -0.064*** (0.024) | -0.073 (0.190) | -0.436 (0.304) | 0.002 (0.204) | -0.278 (0.183) |
| Observations | 434 | 128 | 550 | 550 | 413 | 113 | 242 | 297 |
| R-squared | 0.018 | 0.0208 | 0.047 | 0.040 | 0.069 | 0.122 | 0.052 | 0.026 |
| Control Set 2 | -0.064 (0.052) | 0.006 (0.086) | -0.044 (0.029) | -0.063** (0.027) | -0.145 (0.195) | -0.387 (0.333) | 0.040 (0.239) | -0.356* (0.204) |
| Observations | 433 | 128 | 549 | 549 | 412 | 113 | 242 | 296 |
| R-squared | 0.035 | 0.0386 | 0.121 | 0.049 | 0.086 | 0.143 | 0.070 | 0.066 |
| Control Set 3 | -0.072 (0.052) | 0.006 (0.086) | -0.043 (0.029) | -0.060** (0.027) | -0.187 (0.194) | -0.253 (0.315) | 0.008 (0.243) | -0.353* (0.206) |
| Observations | 433 | 128 | 548 | 548 | 412 | 113 | 242 | 296 |
| R-squared | 0.048 | 0.1738 | 0.122 | 0.058 | 0.116 | 0.283 | 0.083 | 0.079 |

Note: standard errors shown in parentheses

***=Significant at 1%; **=Significant at 5%; *=Significant at 10%

Control Set (1) includes log household income, predicted log home value and self-reported health status; (2) includes all variables in (1) plus age, education and indicators for living with a spouse or significant other, with children and with parents; and (3) all variables in (2) plus a dummy for reporting “a lot” of pain from financial security, an interaction term between income and living with children, and the ZIP code median household income, median home value and percentage of college-educated residents of age over 25.

† Regressions concerning time use or affect related to spouses/ significant others or children are limited to sub-samples of those living with spouses/ significant others or children only.

Table 7 - Homeownership and Reported Joy from Domains of Life

| | Dependent Variables | | | | | | |
|---------------|---------------------|-------------------|-------------------|-----------------------------------|--|-----------------------------------|-----------------------------------|
| | Joy from children | Joy from family | Joy from friends | Joy from love and relationships | Joy from regular activities with friends | Joy from regular family occasions | Enjoys being with people? |
| Control Set 1 | 0.080 (0.136) | -0.182 (0.146) | -0.198 (0.144) | -0.285** (0.141) | -0.184 (0.143) | -0.143 (0.141) | -0.242* (0.145) |
| Observations | 535 | 549 | 545 | 547 | 549 | 550 | 550 |
| R-squared | 0.023 | 0.009 | 0.026 | 0.063 | 0.033 | 0.032 | 0.011 |
| Control Set 2 | -0.168 (0.142) | -0.078 (0.163) | -0.203 (0.159) | -0.326** (0.152) | -0.093 (0.157) | -0.089 (0.157) | -0.358** (0.161) |
| Observations | 534 | 548 | 544 | 546 | 548 | 549 | 549 |
| R-squared | 0.157 | 0.021 | 0.035 | 0.139 | 0.065 | 0.037 | 0.033 |
| Control Set 3 | -0.178 (0.138) | -0.092 (0.163) | -0.211 (0.161) | -0.328** (0.152) | -0.098 (0.158) | -0.119 (0.157) | -0.364** (0.162) |
| Observations | 533 | 547 | 543 | 545 | 547 | 548 | 548 |
| R-squared | 0.210 | 0.033 | 0.039 | 0.164 | 0.074 | 0.055 | 0.049 |

Note: standard errors shown in parentheses

***=Significant at 1%; **=Significant at 5%; *=Significant at 10%

Control Set (1) includes log household income, predicted log home value and self-reported health status; (2) includes all variables in (1) plus age, education and indicators for living with a spouse or significant other, with children and with parents; and (3) all variables in (2) plus a dummy for reporting “a lot” of pain from financial security, an interaction term between income and living with children, and the ZIP code median household income, median home value and percentage of college-educated residents of age over 25.

Table 8 - Homeownership and Reported Pain from Domains of Life

| | Dependent Variables | | | | | |
|---------------|--------------------------|------------------|---------------------------|----------------------------------|---|------------------------------------|
| | Pain from children | Pain from family | Pain from friends | Pain from love and relationships | Pain from regular activities with friends | Pain from regular family occasions |
| Control Set 1 | 0.269* (0.148) | 0.059 (0.144) | -0.247* (0.143) | 0.100 (0.142) | -0.113 (0.129) | 0.063 (0.141) |
| Observations | 537 | 548 | 548 | 548 | 549 | 549 |
| R-squared | 0.034 | 0.040 | 0.025 | 0.050 | 0.057 | 0.042 |
| Control Set 2 | 0.104 (0.161) | 0.118 (0.162) | -0.184 (0.160) | 0.130 (0.157) | -0.164 (0.144) | 0.010 (0.158) |
| Observations | 536 | 547 | 547 | 547 | 548 | 548 |
| R-squared | 0.090 | 0.049 | 0.041 | 0.080 | 0.067 | 0.050 |
| Control Set 3 | 0.102 (0.158) | 0.146 (0.162) | -0.180 (0.161) | 0.132 (0.156) | -0.197 (0.144) | 0.027 (0.158) |
| Observations | 535 | 546 | 546 | 546 | 547 | 547 |
| R-squared | 0.134 | 0.070 | 0.047 | 0.106 | 0.088 | 0.078 |

Note: standard errors shown in parentheses

***=Significant at 1%; **=Significant at 5%; *=Significant at 10%

Control Set (1) includes log household income, predicted log home value and self-reported health status; (2) includes all variables in (1) plus age, education and indicators for living with a spouse or significant other, with children and with parents; and (3) all variables in (2) plus a dummy for reporting “a lot” of pain from financial security, an interaction term between income and living with children, and the ZIP code median household income, median home value and percentage of college-educated residents of age over 25.

Table 9 - Homeownership and Civic Activities

| | Dependent Variables | | | |
|---------------|--|------------------------------------|-------------------------------------|---------------------------------------|
| | Hours per week doing volunteer or chairty work | Joy from activity in the community | Pain from activity in the community | Pain from the politics of the country |
| Control Set 1 | 0.018 (0.383) | 0.001 (0.146) | 0.089 (0.141) | 0.050 (0.145) |
| Observations | 550 | 548 | 548 | 548 |
| R-squared | 0.000 | 0.041 | 0.041 | 0.006 |
| Control Set 2 | -0.069 (0.426) | -0.068 (0.162) | -0.046 (0.156) | -0.076 (0.162) |
| Observations | 549 | 547 | 547 | 547 |
| R-squared | 0.023 | 0.061 | 0.064 | 0.018 |
| Control Set 3 | -0.123 (0.429) | -0.066 (0.162) | -0.038 (0.157) | -0.057 (0.161) |
| Observations | 548 | 546 | 546 | 546 |
| R-squared | 0.032 | 0.081 | 0.076 | 0.050 |

Note: standard errors shown in parentheses

***=Significant at 1%; **=Significant at 5%; *=Significant at 10%

Control Set (1) includes log household income, predicted log home value and self-reported health status; (2) includes all variables in (1) plus age, education and indicators for living with a spouse or significant other, with children and with parents; and (3) all variables in (2) plus a dummy for reporting “a lot” of pain from financial security, an interaction term between income and living with children, and the ZIP code median household income, median home value and percentage of college-educated residents of age over 25.

Table 10 - Neighborhood Level Ownership Rates and Reported Pain from Neighborhood

| Dependent Variable: Pain From Neighborhood | Log Zipcode Ownership Measures | | | | | | |
|--|--------------------------------|-------------------|--------------------------------|---------------------------------------|--|---------------------|----------------------------------|
| | Overall | Age-Specific | Marital Status- Specific | Marital Status and Age-Specific | Marital Status and Children- Specific | Tenure- Specific | Household Income- Specific |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| Control Set 1 | -0.148 (0.491) | -0.037 (0.604) | -0.030 (0.393) | -0.375* (0.193) | -0.437 (0.387) | 0.335 (0.297) | -1.694* (1.029) |
| Control Set 2 | -0.247 (0.490) | 0.095 (0.671) | 0.058 (0.393) | -0.322* (0.208) | -0.794* (0.439) | 0.494 (0.312) | -1.974* (1.028) |
| Control Set 3 | 0.588 (0.815) | 0.888 (0.954) | 0.203 (0.480) | -0.348* (0.215) | -0.445 (0.507) | 0.854** (0.353) | -1.496 (1.109) |
| Observations | 481 | 383 | 481 | 478 | 481 | 466 | 481 |

Note: standard errors shown in parentheses

***=Significant at 1%; **=Significant at 5%; *=Significant at 10%

Control Set (1) includes log household income, predicted log home value and self-reported health status; (2) includes all variables in (1) plus age, education and indicators for living with a spouse or significant other, with children and with parents; and (3) all variables in (2) plus a dummy for reporting “a lot” of pain from financial security, an interaction term between income and living with children, and the ZIP code median household income, median home value and percentage of college-educated residents of age over 25.

Table 11 - Neighborhood Level Ownership Rates and Reported Pain from Activities in the Community

| Dependent Variable: Pain from Activities in the Community | Log Zipcode Ownership Measures | | | | | | |
|---|--------------------------------|----------------------|--------------------------------|---------------------------------------|--|---------------------|----------------------------------|
| | Overall | Age-Specific | Marital Status- Specific | Marital Status and Age-Specific | Marital Status and Children- Specific | Tenure- Specific | Household Income- Specific |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| Control Set 1 | -0.865 (0.543) | -0.860 (0.626) | -0.425 (0.436) | -0.286 (0.214) | 0.105 (0.431) | -0.119 (0.327) | -1.944* (1.141) |
| Control Set 2 | -0.755 (0.548) | -1.821*** (0.694) | -0.362 (0.441) | -0.550** (0.232) | -0.135 (0.493) | -0.430 (0.347) | -2.108* (1.152) |
| Control Set 3 | -0.133 (0.925) | -1.491 (1.003) | -0.453 (0.545) | -0.513** (0.243) | 0.432 (0.575) | -0.174 (0.400) | -1.728 (1.257) |
| Observations | 480 | 382 | 480 | 477 | 480 | 465 | 480 |

Note: standard errors shown in parentheses

***=Significant at 1%; **=Significant at 5%; *=Significant at 10%

Control Set (1) includes log household income, predicted log home value and self-reported health status; (2) includes all variables in (1) plus age, education and indicators for living with a spouse or significant other, with children and with parents; and (3) all variables in (2) plus a dummy for reporting “a lot” of pain from financial security, an interaction term between income and living with children, and the ZIP code median household income, median home value and percentage of college-educated residents of age over 25.

Table 12 - Neighborhood Level Ownership Rates and Reported Pain from Politics

| Dependent Variable: Pain from Politics | Log Zipcode Ownership Measures | | | | | | |
|---|--------------------------------|-------------------|-------------------------|---------------------------------|--------------------------------------|----------------------|---------------------------|
| | Overall | Age-Specific | Marital Status-Specific | Marital Status and Age-Specific | Marital Status and Children-Specific | Tenure-Specific | Household Income-Specific |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| Control Set 1 | -0.797 (0.558) | -0.351 (0.659) | -0.435 (0.450) | -0.100 (0.220) | -0.367 (0.441) | -0.787** (0.335) | -2.569** (1.170) |
| Control Set 2 | -0.696 (0.563) | -0.376 (0.738) | -0.427 (0.453) | -0.178 (0.239) | -0.548 (0.509) | -0.944*** (0.355) | -2.517** (1.181) |
| Control Set 3 | 0.283 (0.941) | -0.141 (1.060) | -0.151 (0.557) | -0.161 (0.248) | 0.125 (0.589) | -0.798** (0.405) | -1.841 (1.280) |
| Observations | 480 | 382 | 480 | 477 | 480 | 465 | 480 |

Note: standard errors shown in parentheses

***=Significant at 1%; **=Significant at 5%; *=Significant at 10%

Control Set (1) includes log household income, predicted log home value and self-reported health status; (2) includes all variables in (1) plus age, education and indicators for living with a spouse or significant other, with children and with parents; and (3) all variables in (2) plus a dummy for reporting “a lot” of pain from financial security, an interaction term between income and living with children, and the ZIP code median household income, median home value and percentage of college-educated residents of age over 25.

Appendix Table A1: Hedonic Price Model

| | Dependent Variable: Log Sales Price |
|---|--|
| Log total finished living area | 0.571*** (0.076) |
| Log building age | -0.031** (0.015) |
| No. of bedrooms | -0.008 (0.029) |
| No. of family rooms | -0.041 (0.033) |
| No. of dining rooms | 0.060* (0.035) |
| No. of half baths | 0.059 (0.036) |
| No. of full baths | 0.027 (0.036) |
| Attic dummy | 0.038 (0.053) |
| Air-conditioning dummy | 0.042 (0.050) |
| Fireplace dummy | 0.037 (0.033) |
| Remodelled dummy | 0.019 (0.038) |
| Neighborhood desirability: fair | 0.206 (0.410) |
| Neighborhood desirability: average | 0.296 (0.414) |
| Neighborhood desirability: good | 0.345 (0.415) |
| Neighborhood desirability: very good | 0.497 (0.416) |
| One Garage dummy | 0.033 (0.056) |
| 2+ Garage dummy | 0.147*** (0.054) |
| <i>Types of exterior wall (base group=wood/ Al)</i> | |
| Stucco | 0.092 (0.065) |
| Stone | -0.033 (0.061) |
| Masonry | 0.072** (0.031) |
| <i>Building conditions (base group=average)</i> | |
| Fair | 0.312*** (0.106) |
| Good | 0.374*** (0.108) |
| Very good | 0.450*** (0.148) |
| Zipcode fixed effects | Yes |
| Year fixed effects | Yes |
| Observations | 416 |
| R-squared | 0.855 |

* significant at 10%; ** significant at 5%; *** significant at 1%

Regression is performed using all available home sales of single-family homes. Log sales values are predicted for all single-family homes in the sample with the year of transaction adjusted to 2005.

Appendix Table A2: Comparing Franklin County, OH with the Country Average

2005 American Community Survey (percentages excepted when noted)

| <u>General Characteristics</u> | Franklin County, OH | U.S. |
|---|---------------------|-------|
| Male | 0.49 | 0.49 |
| Female | 0.51 | 0.51 |
| Median age (years) | 34.10 | 36.40 |
| Under 5 years | 0.08 | 0.07 |
| 18 years and over | 0.74 | 0.75 |
| 65 years and over | 0.10 | 0.12 |
| One race | 0.98 | 0.98 |
| White | 0.73 | 0.75 |
| Black or African American | 0.20 | 0.12 |
| American Indian and Alaska Native | 0.00 | 0.01 |
| Asian | 0.04 | 0.04 |
| Native Hawaiian and Other Pacific Islander | 0.00 | 0.00 |
| Some other race | 0.01 | 0.06 |
| Two or more races | 0.02 | 0.02 |
| Hispanic or Latino (of any race) | 0.03 | 0.15 |
| Average household size | 2.39 | 2.60 |
| Average family size | 3.02 | 3.18 |
| <u>Social Characteristics</u> | | |
| High school graduate or higher | 0.88 | 0.84 |
| Bachelor's degree or higher | 0.34 | 0.27 |
| Civilian veterans (civilian population 18 years+) | 0.10 | 0.11 |
| Disability status (population 5 years+) | 0.14 | 0.15 |
| Foreign born | 0.08 | 0.12 |
| Male, Now married, except separated (population 15 years+) | 0.51 | 0.56 |
| Female, Now married, except separated (population 15 years+) | 0.47 | 0.51 |
| Speak a language other than English at home (population 5 years+) | 0.11 | 0.19 |

2000 Census (percentages excepted when noted)

| <u>Economic Characteristics</u> | Franklin County, OH | U.S. |
|---|---------------------|---------|
| In labor force (population 16 years and over) | 0.71 | 0.64 |
| Mean travel time to work in minutes (workers 16 years and over) | 21.9 | 25.5 |
| Median household income in 1999 (dollars) | 42,734 | 41,994 |
| Median family income in 1999 (dollars) | 53,905 | 50,046 |
| Per capita income in 1999 (dollars) | 23,059 | 21,587 |
| Families below poverty level | 0.08 | 0.09 |
| Individuals below poverty level | 0.12 | 0.12 |
| <u>Housing Characteristics</u> | | |
| Owner-occupied homes: median value (dollars) | 116,200 | 119,600 |
| Median owners' costs: with a mortgage (dollars) | 1,077 | 1,088 |
| Median owners' costs: : not mortgaged (dollars) | 326 | 295 |

Appendix Table A3 - Homeownership and At-home Net Affect

Dependent Variables

| | | Impatient for it to end | Competent/ Confident | Tense/ Stressed | Happy | Depressed/Blue | Interested/ Focused | Affectionate/ Friendly | Calm/ Relaxed | Irritated/ Angry | Tired | Net Feeling |
|---|---------------------------------|-----------------------------|-----------------------------|-----------------------------|--------------------------|---------------------------|-----------------------------|---------------------------|----------------------------|-----------------------------|----------------------------|----------------------------|
| [1] Time of the Day Fixed Effects | At home (dummy) | -0.780*** (0.109) | -0.382*** (0.117) | -0.380*** (0.105) | 0.189* (0.101) | 0.172 (0.106) | -0.214** (0.097) | -0.166 (0.112) | 0.436*** (0.100) | -0.141 (0.091) | 0.353*** (0.129) | 0.435*** (0.150) |
| | At home dummy * Ownership dummy | 0.008 (0.111) | 0.265** (0.133) | -0.009 (0.114) | -0.147 (0.113) | -0.209* (0.113) | -0.056 (0.111) | -0.142 (0.125) | -0.178 (0.111) | -0.059 (0.095) | -0.051 (0.146) | -0.087 (0.166) |
| | Observations | 10,241 | 10,252 | 10,252 | 10,247 | 10,225 | 10,260 | 10,235 | 10,265 | 10,234 | 10,247 | 10,248 |
| | R-squared | 0.046 | 0.008 | 0.026 | 0.008 | 0.006 | 0.008 | 0.011 | 0.022 | 0.007 | 0.047 | 0.020 |
| [2] = [1] + Person Fixed Effects | At home (dummy) | -0.847*** (0.130) | -0.211*** (0.078) | -0.398*** (0.090) | 0.114 (0.078) | -0.087 (0.068) | -0.270*** (0.083) | -0.174* (0.095) | 0.408*** (0.078) | -0.247*** (0.079) | 0.546*** (0.105) | 0.512*** (0.117) |
| | At home dummy * Ownership dummy | 0.147 (0.147) | 0.011 (0.089) | 0.088 (0.107) | -0.127 (0.090) | 0.109 (0.073) | -0.101 (0.094) | -0.124 (0.107) | -0.203** (0.094) | 0.152* (0.091) | 0.054 (0.117) | -0.271* (0.139) |
| | Observations | 10,241 | 10,252 | 10,252 | 10,247 | 10,225 | 10,260 | 10,235 | 10,265 | 10,234 | 10,247 | 10,248 |
| | R-squared | 0.339 | 0.569 | 0.447 | 0.529 | 0.636 | 0.446 | 0.452 | 0.456 | 0.445 | 0.627 | 0.503 |
| [3] = [2] + Activity Fixed Effects | At home (dummy) | -0.324*** (0.124) | -0.147* (0.084) | -0.091 (0.096) | 0.031 (0.075) | -0.052 (0.071) | -0.044 (0.092) | -0.136 (0.092) | 0.154* (0.087) | -0.049 (0.084) | 0.419*** (0.112) | 0.149 (0.116) |
| | At home dummy * Ownership dummy | 0.079 (0.133) | -0.003 (0.090) | 0.065 (0.101) | -0.114 (0.086) | 0.103 (0.072) | -0.115 (0.096) | -0.128 (0.097) | -0.182** (0.091) | 0.148* (0.086) | 0.081 (0.116) | -0.234* (0.123) |
| | Observations | 10,241 | 10,252 | 10,252 | 10,247 | 10,225 | 10,260 | 10,235 | 10,265 | 10,234 | 10,247 | 10,248 |
| | R-squared | 0.408 | 0.586 | 0.483 | 0.555 | 0.639 | 0.485 | 0.519 | 0.484 | 0.463 | 0.644 | 0.546 |
| [4] = [3] + Social Interaction Fixed Effects | At home (dummy) | -0.281** (0.124) | -0.162* (0.085) | -0.102 (0.094) | 0.032 (0.076) | -0.058 (0.070) | -0.036 (0.089) | -0.109 (0.089) | 0.148* (0.087) | -0.066 (0.083) | 0.390*** (0.114) | 0.154 (0.116) |
| | At home dummy * Ownership dummy | 0.077 (0.131) | 0.005 (0.090) | 0.056 (0.099) | -0.093 (0.085) | 0.098 (0.071) | -0.108 (0.095) | -0.079 (0.094) | -0.175* (0.091) | 0.136 (0.086) | 0.052 (0.115) | -0.200 (0.122) |
| | Observations | 10,241 | 10,252 | 10,252 | 10,247 | 10,225 | 10,260 | 10,235 | 10,265 | 10,234 | 10,247 | 10,248 |
| | R-squared | 0.411 | 0.589 | 0.488 | 0.559 | 0.640 | 0.489 | 0.540 | 0.488 | 0.466 | 0.645 | 0.551 |

Note: standard errors shown in parentheses

***=Significant at 1%; **=Significant at 5%; *=Significant at 10%

Appendix Table A4 - Unpleasant Episodes During Time Spent with Family and Friends

| | Dependent Variables | | | |
|---------------|---|---|--|--|
| | % time spent with spouse/significant other when the strongest emotion is negative | % time spent with children when the strongest emotion is negative | % time spent with parents/other relatives when the strongest emotion is negative | % time spent with friends/neighbors when the strongest emotion is negative |
| Control Set 1 | -0.018 (0.047) | 0.040 (0.051) | 0.007 (0.062) | 0.028 (0.046) |
| Observations | 441 | 380 | 242 | 297 |
| R-squared | 0.054 | 0.063 | 0.025 | 0.003 |
| Control Set 2 | -0.041 (0.052) | 0.023 (0.054) | -0.038 (0.073) | 0.044 (0.052) |
| Observations | 440 | 379 | 242 | 296 |
| R-squared | 0.080 | 0.085 | 0.033 | 0.015 |
| Control Set 3 | -0.035 (0.052) | 0.009 (0.054) | -0.022 (0.074) | 0.047 (0.052) |
| Observations | 439 | 379 | 242 | 296 |
| R-squared | 0.093 | 0.107 | 0.056 | 0.043 |

Note: standard errors shown in parentheses

***=Significant at 1%; **=Significant at 5%; *=Significant at 10%

Control Set (1) includes log household income, predicted log home value and self-reported health status; (2) includes all variables in (1) plus age, education and indicators for living with a spouse or significant other, with children and with parents; and (3) all variables in (2) plus a dummy for reporting “a lot” of pain from financial security, an interaction term between income and living with children, and the ZIP code median household income, median home value and percentage of college-educated residents of age over 25.

† Regressions concerning time use or affect related to spouses/ significant others or children are limited to sub-samples of those living with spouses/ significant others or children only.