

**Joint Center for Housing Studies  
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**Post-Recession Drivers of Preferences for Homeownership**

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**Abstract:**

The analysis presented in this paper tests for associations between views on homeownership and experiences with recent housing market distress. Using data from Fannie Mae's National Housing Survey collected in 2010 and 2011, this analysis finds little evidence to suggest that individuals' preferences for owning versus renting a home have been fundamentally altered by their exposure to house price declines and loan delinquency rates, or by knowing others in their neighborhood who have defaulted on their mortgages. The exceptions are underwater owners, who are less likely to expect that they will own in the future, and owners who know a strategic defaulter, who are less likely to view owning as financially preferable to renting. Instead, this analysis finds that individual characteristics, and in particular whether one is already an owner or renter, to be the strongest predictors of post-recession demand for homeownership.

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## **1. Introduction**

Though long viewed as the American Dream, homeownership in the U.S. has recently been more of a nightmare. According to the S&P/Case-Shiller Home Price Index, since 2006, house prices have fallen by more than 30 percent nationally and by as much as 60 percent in some metropolitan areas. Home equity has similarly declined, wiping out \$8.2 trillion in wealth held by individual households. Delinquency and foreclosure rates on home mortgages, meanwhile, have reached levels not seen since the Great Depression. Under the weight of the recession and several million completed foreclosures in recent years, the national homeownership rate declined from its 2004 peak of 69 percent to under 66 percent in 2011—a level not reached since the early years of the housing boom (Joint Center for Housing Studies, 2012).

The severity of the housing crash has raised important questions about the short- and long-term impacts of this experience on the demand for homeownership. With such a substantial and widespread loss of housing equity and millions of foreclosures, will American households find homeownership less appealing? Will homeownership demand rebound when the economy and housing market conditions improve, or is a more fundamental shift occurring where more households will opt to rent even after markets have recovered? Such a shift in preferences would have important implications for both housing policy and the housing industry, affecting the mix of new housing built, the type of financing sought, and the nature of demand for investments in the existing housing stock.

This paper seeks to address the question of whether there is any evidence of a fundamental shift away from homeownership as a consequence of the housing bust by evaluating recent survey data on stated preferences for owning versus renting. Though data are unavailable to assess such preferences before and after the recession, we can compare individuals across market areas that experienced different degrees of housing market distress. Controlling for a number of individual and household characteristics, we test whether measures of exposure to housing market distress are associated with differences in views on homeownership. In so doing, we may infer whether and for whom the recent crisis in housing markets has had an impact on tenure preferences.

We begin this paper by discussing what is known and presumed about the traditional drivers of homeownership preferences, particularly the role of financial considerations versus demand for housing as a consumption good, in determining whether owning or renting is preferred. An understanding of the drivers of the preferences for owning helps shed light on how we might expect recent events in housing markets to affect these preferences. We then review recent studies that have examined the effect of market conditions on attitudes about homeownership and plans to buy or rent housing in the future, noting the limitations of these prior studies. Next we describe the data used in our analyses of tenure preferences and what they suggest about recent attitudes on owning and renting. Finally, we develop a model that estimates how different indicators of exposure to housing market distress are associated with two particular perspectives on housing tenure: whether respondents expect to own in the future, and whether they consider owning or renting to make more sense as a financial decision. We conclude with some implications suggested by our findings for how recent events in housing markets may affect preferences for homeownership in the short and long term, and what these changes may mean for policymakers and the housing industry.

## **2. Determinants of Homeownership Preferences**

In the economics literature, financial aspects of homeownership play a central role in the determination of homeownership preferences. The demand for homeownership is generally viewed as combining the demand for two distinct goods: housing as a consumption good and housing as an investment in residential real estate (Henderson and Ioannides, 1983 and 1987; Ioannides and Rosenthal, 1994). As a consumption good, economists conceive of a home as producing a stream of housing services, which are the benefits that are derived from living in a home of a given type, size, and quality, and from associated public services tied to the home. The demand for housing services is driven by household characteristics, including the number of people, the presence of children, household income and wealth, and tastes and preferences for housing generally. The demand for investments in residential real estate, on the other hand, relates to the household's overall demand for financial investments, its desire to create a portfolio of investments based on the returns expected from different types of investments (including housing), the correlation of returns among these options, and the degree of risk involved. In this conceptualization of the demand for homeownership, if the amount of housing a household wishes to consume is greater than the amount of housing they wish to invest in, then they are likely to choose to rent. If instead the ideal amount of investment in residential real estate is equal to or exceeds the amount they wish to consume, the household is likely to own.

The economics literature also puts significant weight on the relative costs of renting and owning in the formulation of homeownership demand, giving further emphasis to financial aspects. The costs of owning are defined in terms of a user cost, which incorporates ongoing costs such as taxes, insurance, maintenance, and the costs of borrowing, with these costs offset by the positive returns from expected appreciation in the value of the home (Rosen, 1979; Hendershott, 1980). These costs are compared to costs of renting a comparable housing unit, including the foregone financial returns from investing housing equity in an alternative investment and the risk of future rent increases (Sinai and Souleles, 2005). As developed in this literature, the user cost also incorporates tax considerations, which are an important factor driving a wedge between the costs of owning and renting. Owner occupancy is favored by both the deductibility of mortgage interest and property taxes, the exclusion of most capital gains on the home from taxes, and the fact that the value of the housing services obtained from living in the home (referred to as imputed rent) is not taxed as income.

Given this view of the drivers of preferences for owner-occupied housing, how might we expect the recent turmoil in housing markets to have affected demand for owned and rented housing? On the one hand, the dramatic fall in house values may have tarnished the impression of housing as a safe investment and lowered expectations for future returns on residential real estate assets, reducing the appeal of housing as an investment and thus the demand for choosing to own a home. On the other hand, the recession has also led to historically low mortgage rates that have reduced owner costs. Furthermore, while house values have fallen substantially, rental costs have not—and have even begun to rise in some markets as rental demand has increased (Joint Center for Housing Studies, 2012). In addition, the available returns on risk-free alternative investments for renters have also fallen, reducing the opportunity costs of investments other than housing. In all, despite lower expectations about home price appreciation, the relative cost of owning compared to renting may not have increased during the recession, and may have actually decreased. These offsetting impacts thus make it unclear whether we would expect the distressed

housing market conditions alone to have a negative or positive effect on individual preferences for homeownership and demand for owning and renting.

Of course, financial considerations are not the only factors that drive preferences for owner-occupied housing. Economists certainly take into account the role of household characteristics in determining housing consumption, including the important influences of age and household size and composition on the amount and type of housing that is preferred. However, analyses of tenure choice from other academic disciplines generally give more emphasis to these non-financial factors. As noted in a seminal work by Clark and Dieleman (1996, page 81), “it has been an article of faith among geographers, demographers, planners and sociologists that the step from renting to owning is much more than a simple decision of investment or consumption, and that it is directly linked to positions and change in the family life cycle.” According to this life cycle view, the demand for quantity, quality, type of housing, and interest in being able to move freely evolve as people move through key stages of life, including changes in employment, marital status, and parenthood. Importantly for tenure choice, as people reach the child rearing phase of life they are more interested in staying in one place for a longer period of time and becoming part of a community. They also tend to have increased demand for the quality and amount of housing they want to consume and more interest in outdoor space and privacy. All of these factors are thought to increase preferences to own a home.

This list of desired housing characteristics highlights several additional considerations that are intertwined with the choice of tenure. Perhaps most importantly, ownership is associated with greater security of tenure, allowing occupants to stay in their homes as long as they wish to (assuming they are able to meet their financial obligations to lenders and local taxing authorities), whereas renters are subject to changes in property owners’ decisions regarding the amount of rent to charge and how to use the property (Belsky and Drew, 2008). Ownership also provides much greater control over the living environment, giving occupants the right to maintain and modify the home to best meet their needs and tastes (and the incentive to make these improvements as they will be able to recoup at least some portion of these investments when they sell the home).<sup>1</sup> Finally, the decision to own or rent is also heavily influenced by individuals’ values and goals. That is, owning is often viewed as being associated with higher social status, representing a significant achievement, and enhancing self-esteem. Personal values and goals and other non-financial reasons for owning have been found to be significant predictors of a preference for owning (Coolen, Boelhouwer, and Van Driel, 2002; Ben-Shahar, 2007).

The choice to own a home is also interrelated with the choice of housing type. In fact, many of the housing characteristics associated with owning—greater size, more outdoor space, and privacy—are merely characteristics of single-family detached housing, which can be obtained in either the for-sale or rental markets. In practice, however, the markets for rented and owner-occupied homes are somewhat segregated by structure type. In particular, single-family detached housing is much more likely to be available for sale than it is to be rented. According to the 2010

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<sup>1</sup> It is important to note that not all owners have complete control over their units; zoning restrictions, homeowner and condo associations, and historical commissions can and often do place restrictions on the kinds of modifications homeowners can make and the purposes for which they can use their homes (Apgar, 2004).

American Community Survey, as of 2010 only 16 percent of all single-family units nationally were rented, meaning the vast majority were primarily available in the for-sale market. The share of single-family homes available for rent may also be lower in higher-income communities where the tax advantages of owner-occupancy will be greater. One study of preferences for homeownership in Holland has found a very strong association between the preference to own and the preference for single-family housing, indicating the intertwined nature of these choices (Andersen, 2010).

In assessing the impact of the housing crash on preferences for homeownership, therefore, another question is what impact the experience of the last few years may have had on how households view the non-financial factors that have been part of homeownership's appeal. High levels of foreclosures could undermine the view that owning a home provides greater security of tenure. Meanwhile, the substantial shift of single-family homes into the rental market may expand the range of housing choices available in the for-rent market. The distress in the homeowner market may also have tarnished the view of homeownership as conferring higher social status. On the other hand, the greater ability and incentive to modify the home to meet owners' tastes should not have been affected much.

In addition to the potential impact on the preference to own, the housing crash has also affected the ability to own. Given the high cost of housing relative to household incomes, the vast majority of homebuyers rely on substantial debt financing in order to purchase a home, placing a significant financial constraint on a household's ability to act on a preference to own. The income, wealth, and credit factors that are used in approving mortgages are a substantial barrier for many households who might otherwise prefer to own (Savage, 2009). The importance of income and wealth in predicting the likelihood of homeownership in a cross section of the population thus reflects not just the association of these factors with homeownership preferences, but also with their importance in determining whether a household can meet the requirements to qualify for a mortgage. With the severe recession having greatly reduced household incomes, eroded savings, and taken a toll on credit scores, many households today face more significant financial barriers to attaining homeownership. This situation would be reflected in an increase in the share of households who report that they are unlikely to own in the future, even if they would otherwise prefer owning to renting.

### **3. Studies Examining Impact of Housing Crash on Homeownership Preferences**

Most of the existing literature on tenure choice focuses on *revealed* preferences—that is, whether the household has actually opted to own a home. Given our concern with the question of whether there has been a change in preferences for homeownership that might be expected to influence future tenure choices, our focus is on *stated* preferences for homeownership, that is, whether households express an intention to buy or state a view that owning is preferred to renting. As Jansen et al. (2011) explain, while the two concepts are often discussed simultaneously and interchangeably in housing research, stated preferences are in reality an expression of the relative attractiveness of different housing options, and thus can exist independent of whether a choice is being made. Said another way, stated preferences refer to what a household wants to consume, absent any restrictions on their choice set, while actual choices—or revealed preferences—reflect what a household actually consumes given individual budget and financing limitations, housing market conditions, and governmental incentives and regulations (Jansen et al., 2011). If these



restrictions on choice are considerable, which in the case of housing is likely, observed tenure choices might be quite different from stated tenure preferences.

There have been two recent studies that have looked at very similar questions of stated preferences following the recession. Collins and Choi (2010) analyzed results from a 2008 web-based survey of 400 renters in the San Francisco Bay area with incomes under \$75,000 about their intentions to buy a home in the near future and their assessment of the risks and benefits of homeownership. These responses were regressed against zip-code level indicators of neighborhood and housing market conditions as well as personal characteristics. The authors found that only the age and income of renters were positively associated with intent to buy a home in the next three years, while differences in house price appreciation and foreclosure rates had no association with these intentions. The study also did not find any association between house price changes and foreclosure rates with respondents' assessments of the relative benefits and risks of home ownership. Minority respondents, however, were generally more likely than whites to think the risks outweighed the benefits, while households with higher incomes were more likely to see the benefits as outweighing the costs. The results did show a correlation between greater exposure to foreclosures and increased expectations about lower future price growth and higher foreclosure rates. But these expectations for greater future risks of homeownership were not reflected in lower preference to buy or in lower estimation of the benefit-cost ratio of owning.

The other recent study is by Bracha and Jamison (2011), who examined a nationally representative sample of about 1,000 individuals as part of the Michigan Survey of Consumers from the summer of 2011. This study asks whether respondents view owning a home as better financially than renting given their experiences during the housing market crash. Specifically, the authors use two measures of exposure to the housing crash: the magnitude of house price declines in the zip code where respondents lived in 2008 and whether they or someone close to them experienced a foreclosure or lost a lot of money in the real estate market in the past five years. In their initial specification, the authors found no association between having a favorable view of the financial appeal of homeownership and either measure of exposure to the housing bust during the recession. The main factors predicting a positive attitude toward owning were being male, married, and minority, while renters were much less likely to view owning favorably.

The authors also ran separate models for younger (under 58 years old) and older respondents, and found that declines in house prices were associated with lower desirability of homeownership in the younger sample, but more desirability among older respondents. They infer from this finding that views of the risks of homeownership are more malleable among younger households who have had less experience with housing markets, particularly as a long-term investment, while older respondents may still have accumulated substantial housing wealth despite the downturn, which deepens their appreciation for homeownership's financial benefits. However, the small sample size and the methodology used to find the age cutoff (successive models run using different age cutoffs until a statistically significant difference was found) raise questions about the robustness of this finding.

These two studies both ask questions similar to those posed in this paper and assessed in the analytical discussion below, though their data, methods, and ways of measuring exposure to housing market distress differ considerably. The data used in the present analysis includes a richer set of both explanatory and control variables, largely informed by the literature discussed above, as well as a longer time frame and larger sample sizes from which more nuanced findings can be drawn about the drivers of views on owning and renting. The inclusion of two different dependent variables, one on the perceptions of owning as an investment decision and another on expected future tenure choices, also distinguishes this research from prior analyses.

#### **4. Data and Descriptive Statistics**

Our analysis of views on homeownership is based on data from Fannie Mae's National Housing Survey (NHS). The NHS is a monthly survey that since June 2010<sup>2</sup> has asked respondents about "their attitudes toward owning and renting a home, mortgage rates, homeownership distress, the economy, household finances, and overall consumer confidence" (Fannie Mae, 2011), as well as personal and household level characteristics. Respondents are contacted through random digit dialing of phone numbers, 25 percent of which are cell phones, to generate a nationally-representative sample of adults who are primarily responsible for their own financial decisions. For the analysis discussed in this paper, we used data collected from 19,030 respondents surveyed between June 2010 and October 2011.<sup>3</sup>

The NHS asks a wide range of questions that relate to attitudes toward homeownership, though there is no single question that asks simply whether the respondent would prefer to own or rent. Given this paper's focus on the impact of the housing bust on homeownership preferences, one particularly relevant question focuses specifically on financial aspects of the tenure choice, asking "Which is closer to your view?" with possible responses: "Renting makes more sense because it protects you against house price declines and is actually a better deal than owning," "Owning makes more sense because you're protected against rent increases and owning is a good investment over the long term," and "Don't know." There are no similar questions that probe whether owning or renting is preferred either for non-financial reasons or overall, however, so it is not possible to assess the relative importance of these financial and non-financial factors in overall tenure preferences.<sup>4</sup> Still, the question about the financial aspects of owning versus renting does provide some insight into this key dimension of homeownership preferences. Figure 1 shows the response frequencies to this question by respondent characteristics.

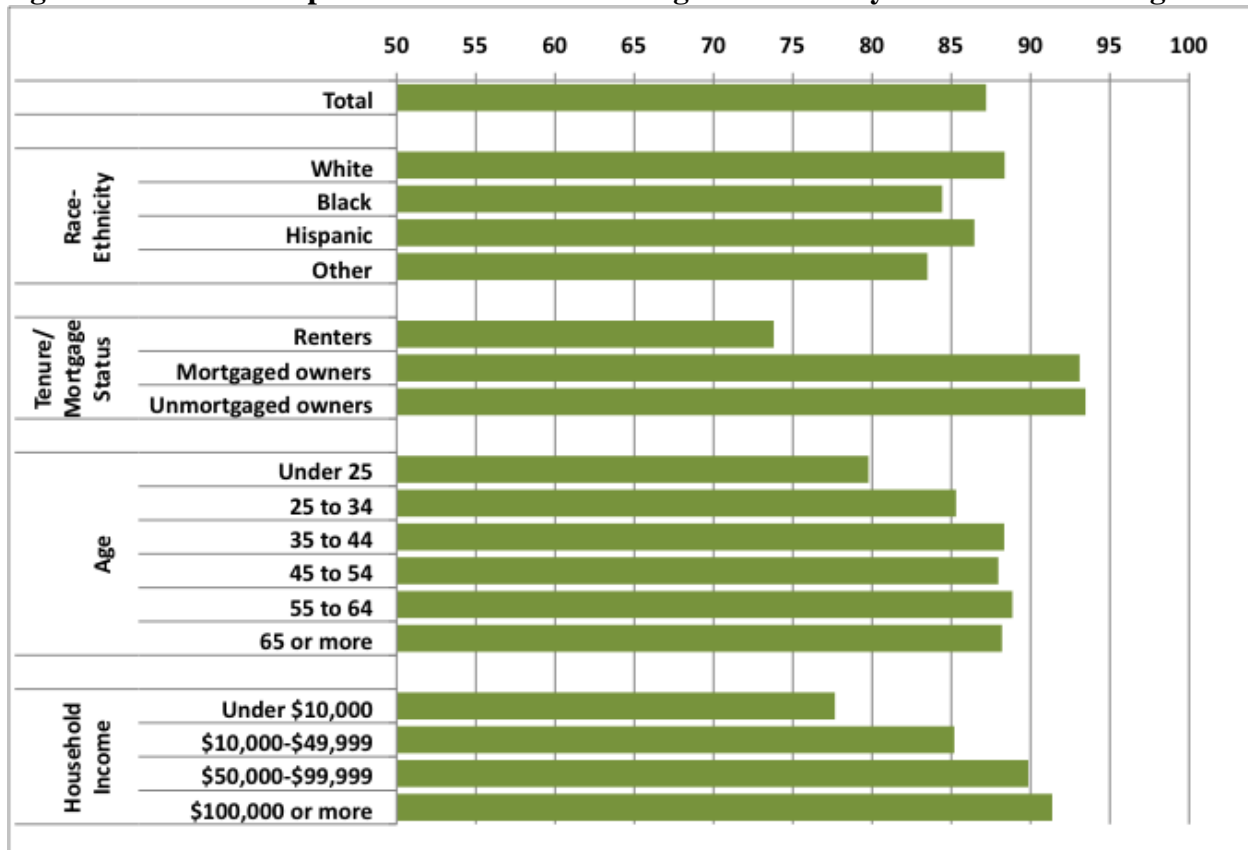
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<sup>2</sup> The June 2010 survey collected data from 3,000 respondents, with around 1,000 respondents included in each subsequent monthly survey. The NHS was also conducted in January 2010 with around 3,000 respondents, though we do not include those responses in this analysis due to changes in question wording and availability between the January and June 2010 surveys.

<sup>3</sup> We pooled the data over this time period and analyzed it as one dataset. We did not find significant variations in the variables of interest across this period, nor did the inclusion of measures of the timing of responses have a statistically significant impact on modeling results.

<sup>4</sup> Additional questions ask respondents to indicate some of the reasons they think buying a home is a good idea and offers them a list of financial and non-financial considerations from which to choose. The NHS also asks respondents whether financial or 'lifestyle' reasons generally carry more importance in the decision to buy, though not necessarily as an alternative to renting.

**Figure 1: Share of Respondents that View Owning as Financially Better than Renting**

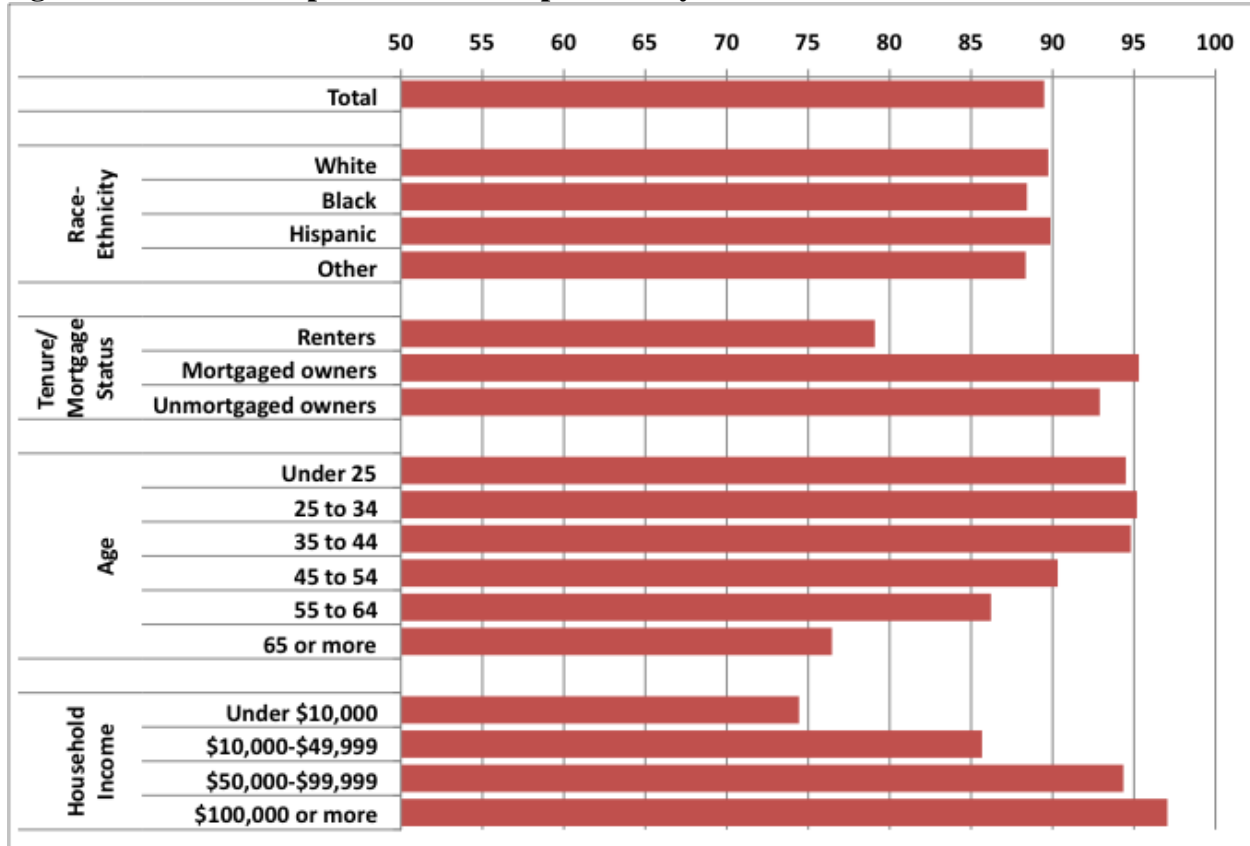


Notes: White, Black and Other race respondents are non-Hispanic. Hispanics can be of any race. Scale starts at 50% to better show variations in the responses.

Another set of questions that can be used to probe for tenure preferences gauges the long-term tenure intentions of respondents, and comes closest to providing a gauge of overall preferences for homeownership. Respondents are first asked: “If you were going to move, would you be more likely to buy or rent your next residence?” with possible responses “Buy,” “Rent,” and “Don’t know.” Respondents who say they are likely to buy at next move are then asked “In the future, are you more likely to:” with possible responses “Always own,” “Rent at some point in the future,” and “Don’t know,” while those who say they are likely to rent at next move are asked the same question with response options “Always rent,” “Buy at some point in the future,” and “Don’t know.” Based on the answers to these questions, we can construct a binary indicator of tenure intentions that groups respondents into those who expect to buy a home at some point in the future and those who expect to always rent on subsequent moves.<sup>5</sup> While respondents likely factor in their anticipated future financial status when stating their intentions for owning and renting, rather than expressing their ideal tenure absent any financial constraints, nearly 90 percent of all respondents still report that they expect to buy a home at some point in the future. Figure 2 shows the share of respondents that consider themselves potential owners by their personal characteristics.

<sup>5</sup> For this binary variable, respondents who answered “Don’t know” to either the initial screening question about buying or renting at next move, or to the question asked of expected renters about future intentions to buy or rent, are coded as missing observations.

**Figure 2: Share of Respondents that Expect to Buy a Home at Some Point in the Future**



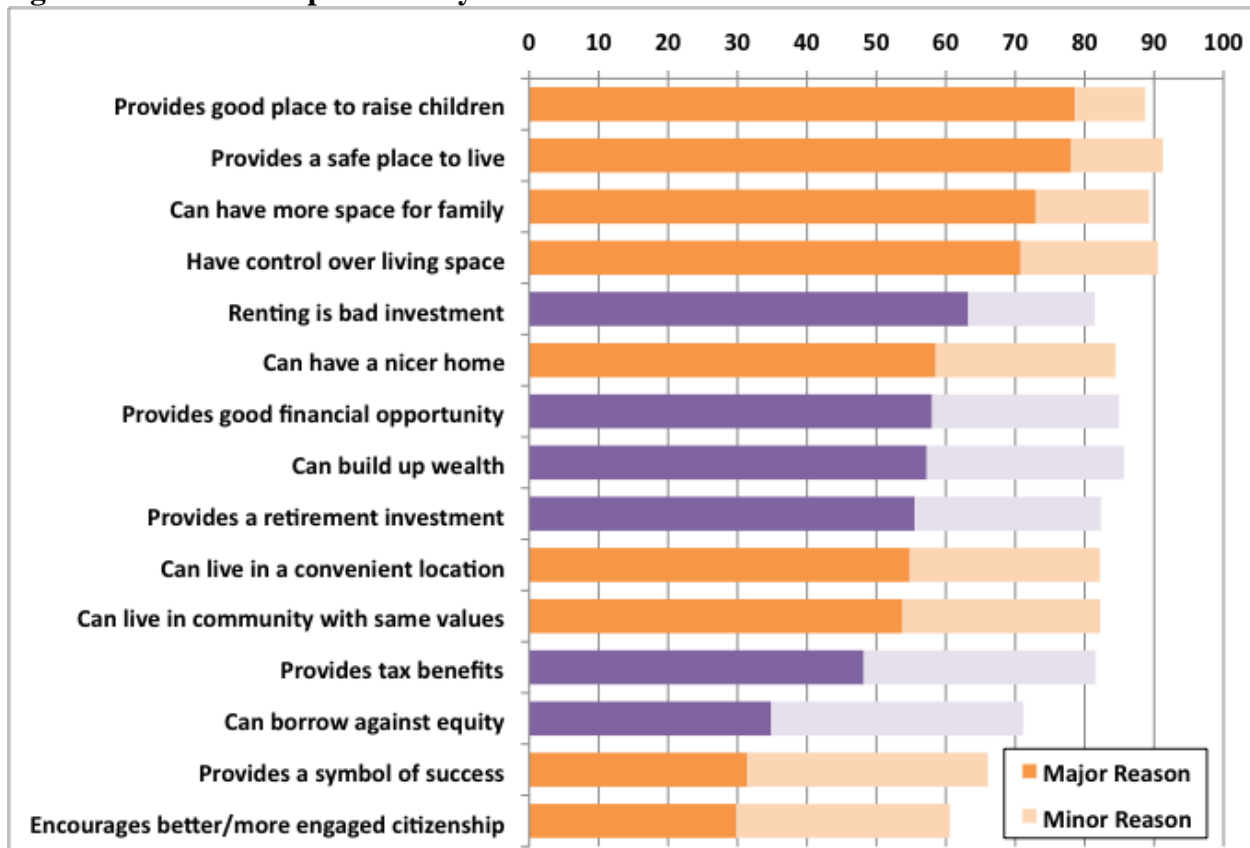
Notes: White, Black and Other race respondents are non-Hispanic. Hispanics can be of any race. Scale starts at 50% to better show variations in the responses.

It is clear from these data that the desirability of homeownership both as a financial choice and as a likely future tenure choice is strong among large swaths of the population, though some variations by respondent characteristics are worth noting. For instance, minority respondents were no more or less likely to expect to buy in the future relative to white respondents, though they were slightly less likely to view owning as financially preferable to renting. Older respondents, meanwhile, are much less likely to expect to buy in the future, while those under 25 do not value the financial aspects of owning as highly, relative to middle-aged respondents—although a majority of these young adults still find owning to be more financially attractive. The shares expressing a preference for owning on both dimensions do, however, rise with income, which may indicate some aspect of expected constraints on tenure options still factors into respondents’ stated preferences.

To better understand the differences in response frequencies to these two questions, we looked at some of the rationales that respondents give for preferring homeownership. Figure 3 shows the 15 reasons listed in the NHS for why one might want to buy a home, along with the share of respondents stating that each is a major or minor reason. The top four reasons given by respondents represent ‘lifestyle’ reasons, and in particular the advantages of owned residences for family comfort and security, as well as having autonomy over living space. Issues related to location, quality, social status, and community involvement, however, are regarded as generally

less salient lifestyle reasons for buying a home. The highest rated financial reasons given, meanwhile, relate to the longer-term investment and wealth-generating properties of homeownership. Tax advantages and the ability to borrow against equity to finance other consumption needs, which primarily benefit households in the shorter-run, are seen as less important reasons to own a home among respondents.

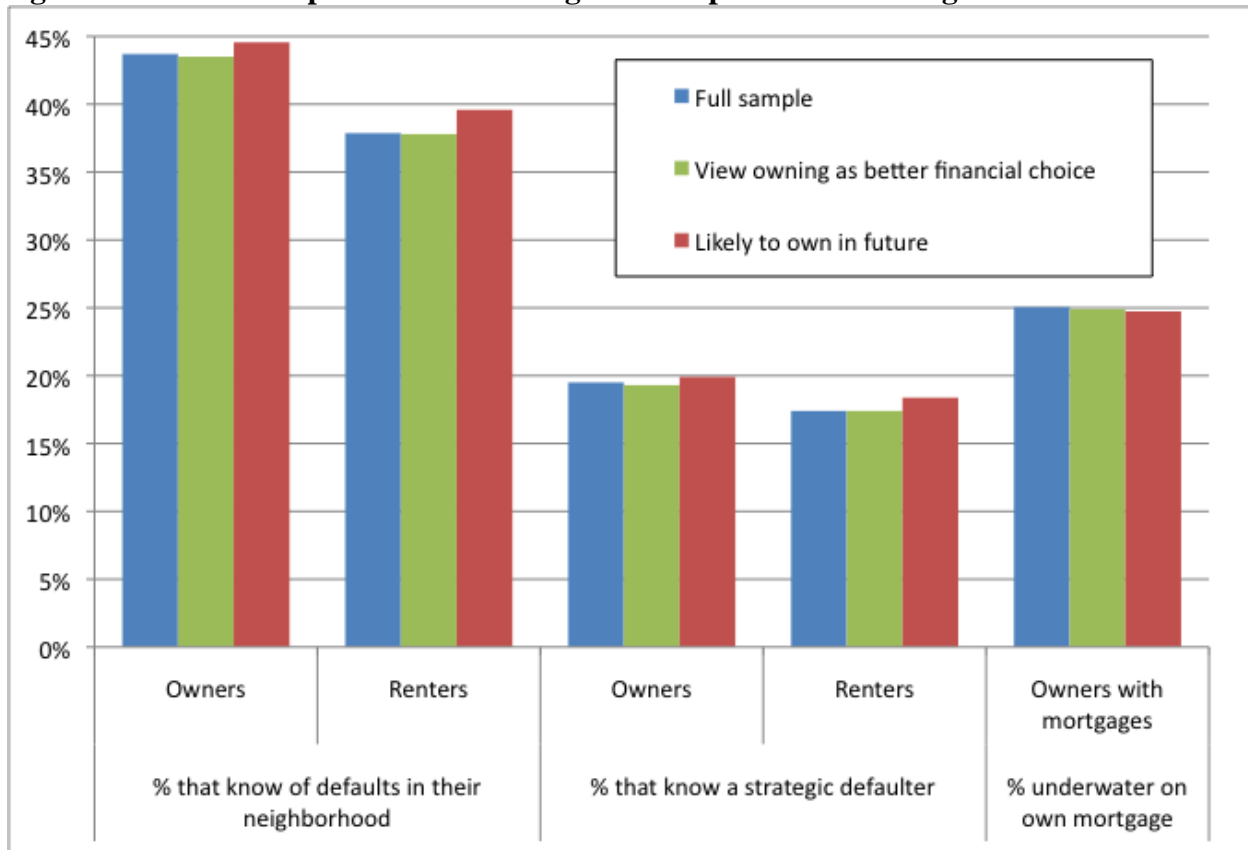
**Figure 3: Share of Respondents by Reasons to Own a Home**



Notes: Bars in orange are considered lifestyle reasons and bars in purple as financial reasons for buying a home. Reasons are listed in order of share of respondents selecting it as a major reason to buy.

One dimension of preference for homeownership that we are particularly interested in is variations across different indicators of exposure to housing market distress. Three questions in the NHS ask respondents about such exposure, including whether they know someone in default in their neighborhood, whether they know someone who strategically defaulted (i.e. walked away from their home because they thought it was a bad investment), and whether they themselves are underwater on their own mortgage (asked of owners with mortgages only). Response frequencies to these questions are shown in Figure 4, both for the whole sample and among those who reported a preference for owning, separated by tenure.

**Figure 4: Share of Respondents Indicating Some Exposure to Housing Market Distress**

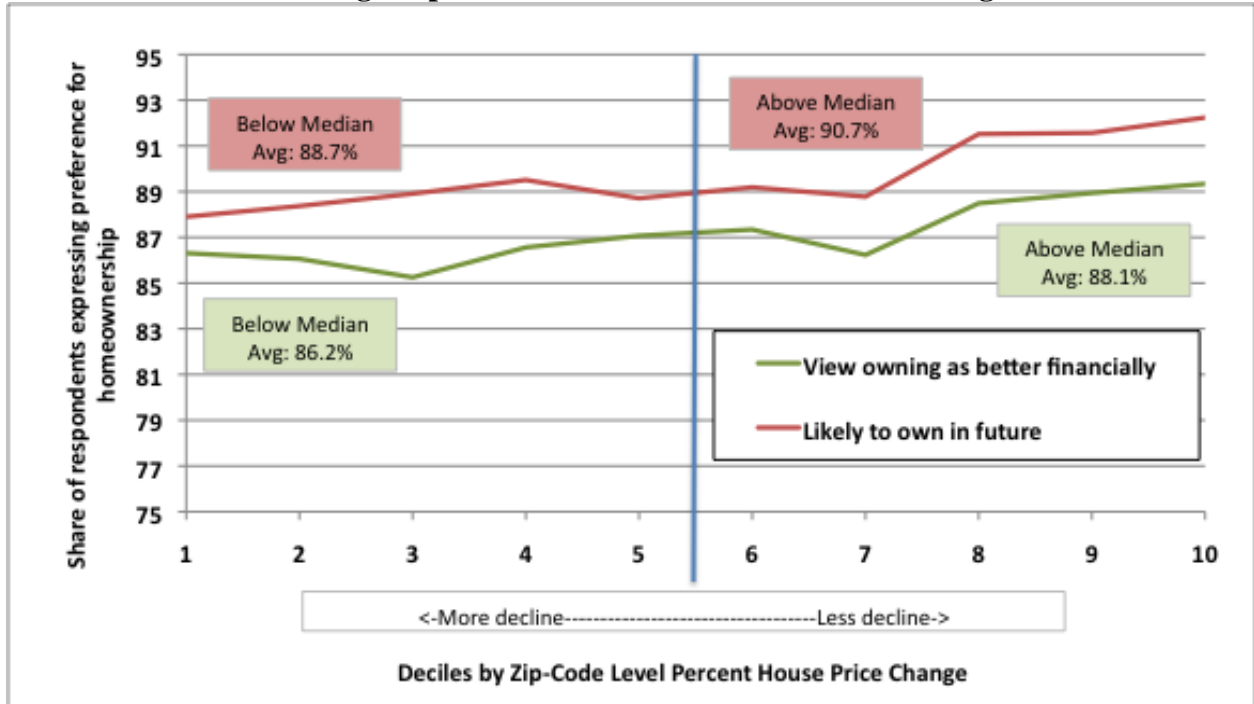


In addition to personal indicators of exposure to housing market distress, the NHS allows for geographic linking of respondents to local market conditions. Using the reported zip codes of respondents, we match each with a measure of house price changes and delinquency rates. The loan delinquency rate measure is calculated as the share of all loans by zip code at least 90 days overdue as of 2010, using data provided by CoreLogic.<sup>6</sup> House price changes, meanwhile, come from Fannie Mae’s own quarterly price series, from which we calculated the nominal percent decline from the post-2001 peak to subsequent trough<sup>7</sup> at the zip code level. Grouping respondents by deciles along these measures, we observe variations in reported preferences for owning as both an intended future tenure and as financially superior to renting (see Figures 5a and 5b); in all four cases (two measures of market conditions by two indicators of preference), t-tests show there is a statistically significant difference at the 99.9% level in reported preference among respondents above and below the mean delinquency rate and percent house price change.

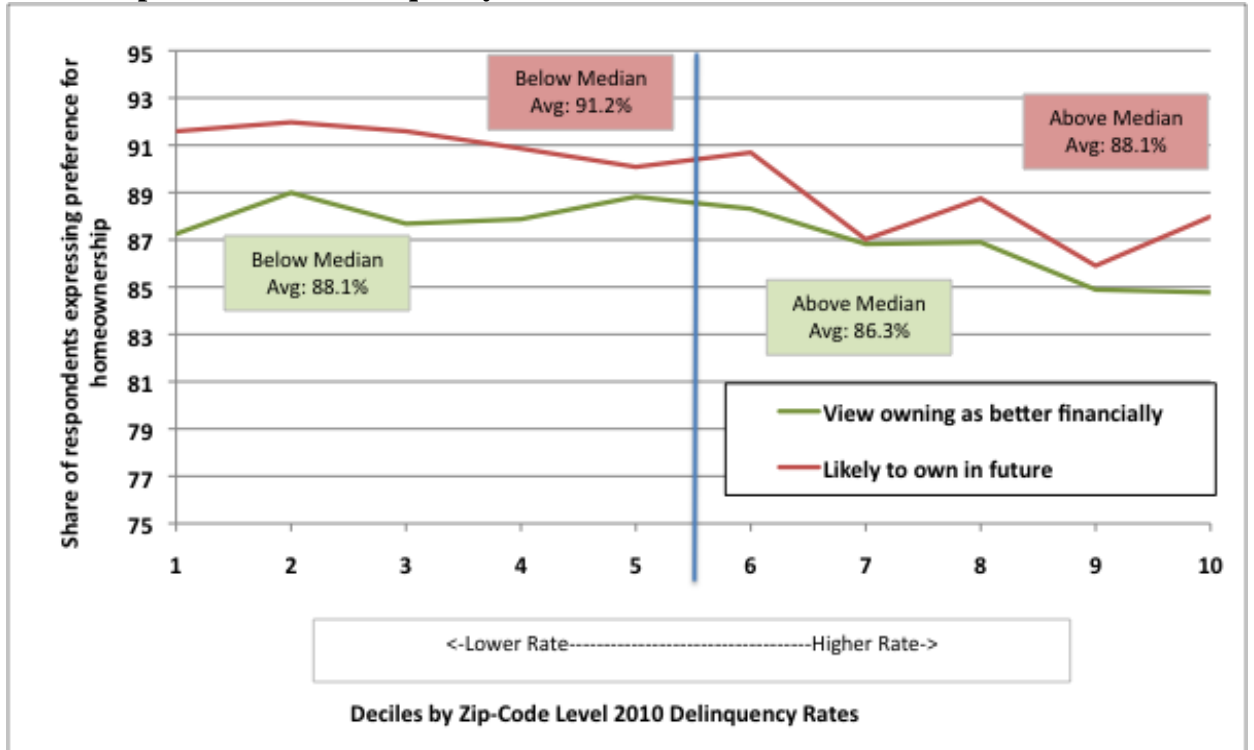
<sup>6</sup> We use 2010 delinquency rates to reflect housing market conditions in respondents’ zip codes at or close to the time they were surveyed. At the time of this analysis, 2011 delinquency rates were not available.

<sup>7</sup> We use this measure to reflect long-term trends in house prices that would be more likely to affect respondents’ views than short-term trends. The choice of 2002 as the starting year also reflects the trends in house price peaks across locations; in the 7,110 zip codes included in this data, only 44 experienced their peak price level in 2002-2004 (all of which had subsequent troughs in 2009 or later), 680 in 2005, 2,744 in 2006, 2,084 in 2007, and 750 in 2008.

**Figure 5a: Share of Respondents Expressing a Preference for Homeownership, by Deciles of Post-2001 Peak to Trough Zip-Code Level Percent House Price Changes**



**Figure 5b: Share of Respondents Expressing a Preference for Homeownership, by Deciles of 2010 Zip-Code Level Delinquency Rates**



This result suggests that exposure to housing market distress may measurably influence preferences for homeownership, even if only by a few percentage points. Furthermore, while these descriptive statistics are informative, they are incomplete assessments of the drivers of homeownership preferences among survey respondents as other respondent characteristics may also be correlated with these measures of housing market distress. In the next section, therefore, we develop a set of regression models that tests for exposure effects on preferences while controlling for individual and household characteristics.

## 5. Homeownership Preference Models

To measure preferences for homeownership with multivariate regression models, we convert the two measures described above on future home buying plans and attitudes toward the financial aspects of tenure choices into two binomial indicator variables, equal to 0 for respondents who expressed a preference for renting and 1 for those who expressed a preference for owning.<sup>8</sup> The first variable, *EVEROWN*, identifies respondents that expect to buy a home at some point in the future, and the second variable, *VIEW*, identifies respondents that view owning as a better financial choice than renting. As described above, these two variables represent different elements of tenure preferences; while the latter is an attitudinal indicator of a ‘pure’ preference for owning or renting based on financial concerns, the former reveals likely actionable preferences for buying or renting in the future, possibly constrained by respondents’ views on potential constraints on their tenure choices. These two variables are also clearly distinct in respondents’ own interpretations, as the pair-wise correlation between those who chose the buy/own response on these questions is only 0.28.<sup>9</sup> This relatively low correlation may reflect such factors as constraints on being able to buy even if it is preferred, life stage issues where older respondents think owning in general makes more financial sense but anticipate renting in the later stages of life, or cases where non-financial factors trump financial ones in deciding whether to own. Given the low correlation we thus expect that analyses of these two variables will show different characteristics and directionality of the various drivers of homeownership preferences.

The explanatory variables that are central to our assessment of how homeownership preferences may have been affected by the foreclosure crisis are the measures of exposure to housing market distress described above. The three questions about personal experiences are converted to categorical dummy variables corresponding to the three responses given to each (“yes,” “no,” and “don’t know”), while the locational variables are retained as continuous measures of housing market conditions. Control variables reflecting some of the individual and household level characteristics known to be associated with tenure preferences are also added to the model, with similar categorical dummy transformations to account for “don’t know” responses. These characteristics include reported respondent race and ethnicity, five age categories, three ranges of household income, employment status, gender, educational attainment, marital status, presence

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<sup>8</sup> For simplicity, we excluded from the models observations that answered “don’t know” to the question used to define the dependent variable. To check for potential bias from this omission, multinomial logic models were estimated including this response category but no significant differences were found in coefficients for the ‘own’ response.

<sup>9</sup> Interestingly, 8.6 percent of the sample responded that renting makes more financial sense than owning but still expected to own in the future, indicating that non-financial factors do, at least in some cases, trump financial concerns in determining choice of tenure.



of children in the household, and, among renters, whether the respondent thinks owning would require considerable financial sacrifice.

In addition to including indicators of current tenure and mortgage status in the models for both dependent variables, we also generated subsets of the sample with just mortgaged owners, unmortgaged owners, and renters, to check for preference variations associated with explanatory and control variables within these groups of respondents. Table 1 shows some summary statistics on these subsamples.

**Table 1: Summary Statistics on Data with Sub Samples by Tenure and Mortgage Status**

	<b>Owners with a Mortgage</b>	<b>Owners without a Mortgage</b>	<b>Renters</b>	<b>Total</b>
Total	8,083	4,982	5,965	19,030
Percent of total (%)	42	26	31	100
<b>Percent of Sample (%)</b>				
<b>Race/Ethnicity</b>				
White*	69	71	48	63
Black	9	9	19	12
Hispanic	14	13	24	17
Other	7	7	9	7
<b>Age</b>				
Under 35*	19	8	43	24
35 to 44	27	9	18	19
45 to 54	26	18	16	21
55 to 64	17	22	11	16
65 or more	10	40	9	18
<b>Education</b>				
No college degree*	43	57	67	54
College degree	52	38	29	41
<b>Income</b>				
Under \$50,000*	27	45	68	44
\$50,000-\$100,000	36	24	16	27
\$100,000 or more	23	12	4	14
<b>Other Characteristics</b>				
Female	51	55	55	53
Married	73	58	35	57
<b>Exposure to Market Distress</b>				
Know a defaulter	47	38	38	42
Know a strategic defaulter	22	16	17	19
Underwater on own mortgage	25	NA	NA	NA

Notes: White, Black and Other race respondents are non-Hispanic. Hispanics can be of any race. Income categories are lower bound inclusive. Shares may not sum to 100 percent due to ‘don’t know’ responses on some categorical variables. Variables indicated with an asterisk are treated as reference categories and thus excluded from the regression models.

The reasons for these subsamples are two-fold: first, as shown in Figures 1 and 2, current mortgage and tenure status are strongly associated with respondent views on owning and renting. Given that tenure is strongly associated with other demographic characteristics, it is worth examining whether observed differences in views on homeownership are being driven solely by tenure and mortgage status. Second, we might expect renters and owners both with and without mortgages to have different reactions to housing market distress. Declines in home values and equity losses, for example, are likely to have harmed mortgaged owners, particularly those with small equity cushions, more than owners without mortgages who are better insulated from the effects of price declines. Renters, meanwhile, may see falling house prices as a positive sign of improved affordability of home buying. Running additional instances of these models on both dependent variables with these three subsamples, therefore, may show whether these different experiences are related to different views on owning as financially better than renting and as a future tenure preference. And indeed, post-estimation likelihood ratio Chow tests confirm that, for both dependent variables, separate models based on tenure and mortgage status subsamples are appropriate. Including the full sample models with tenure and mortgage status dummy variables, therefore, we end up with a total of eight models based on four samples and two dependent variables.

With binary dependent variables, we use a logit regression model to estimate the probabilistic odds of respondents with particular characteristics expecting to own in the future or viewing owning as financially superior to renting. The odds ratios reported for each of the categorical explanatory variables indicate the odds that a respondent with that characteristic sees buying/owning as preferable to renting, relative to the excluded reference category for that characteristic. Subtracting 1 from the odds ratio gives the estimated percent difference in the odds of selecting the buy/own response; odds ratios greater than 1 thus suggest a higher propensity for selecting the buy/own response, and ratios less than 1 suggest a lower propensity. For continuous variables, the interpretation of the odds ratios is the estimated increase in the odds of selecting the buy/own response associated with a 1-unit change in the continuous variable, e.g. how much more (less) likely a respondent is to prefer owning if they live in a zip code with a one percentage-point higher (lower) loan delinquency rate in 2010.

We initially ran the eight logit models with the control variables and only the personal level explanatory variables on exposure to housing market distress. Only variables with statistically significant regression coefficients are discussed here; full results are shown in Appendix A. The first notable finding from these results is that in the full sample (pooling both owner and renter respondents) the odds of preferring the own/buy responses are substantially higher among owners relative to renters (Models 1 and 2). Moreover, owners without mortgages are more likely than those with mortgages to view owning favorably. This lends support to our running subsequent models with respondents sub-sampled by tenure and mortgage status. Indeed, a quick glance at the results from models with the owner-only samples on the question of the financial superiority of owning and renting (Models 4 and 6) shows only a small number of statistically significant control variables, suggesting that variations in the full sample on this question are largely explained by current tenure status.

The model results also reveal some interesting findings about tenure preferences by respondent demographics. Black and Hispanic renters, for example, have higher odds (relative to the omitted

category of white renters) of both expecting to own in the future and of viewing owning as financially superior to renting (Models 7 and 8). These findings suggest that aspirations for homeownership remain intact among minority renters. On the other hand, black owners without a mortgage have lower odds (relative to the omitted category of white owners) of expecting to own in the future (Model 5), while Hispanic owners with a mortgage are less likely to view owning as financially favorable (Model 4). This latter result may reflect the disparate impacts of recent housing market distress on some minority homeowners with outstanding loans, as these groups have experienced higher foreclosure rates and have a higher share of underwater borrowers than among white homeowners (Bocian et al., 2010).

Some views on homeownership appear to vary predictably by age of survey respondents in the logit models. For example, expectations of owning in the future are highest among the youngest respondents (i.e., in the omitted category of under- 35 year olds) and decline progressively among older age groups (Model 1). Given that higher shares of older respondents are current homeowners, however, this finding is not so much indicative of lower preferences for owning in general, but rather their intentions to rent in the future as they approach or reach their retirement years. With respect to views on owning and renting as a financial choice, middle age and senior respondents also tend to have lower odds of favoring homeownership relative to under- 35 year olds (Model 2), though the differences across the age groups are neither as great nor consistently declining as with expectations for future tenure. In the models run on just owners, only those with a mortgage demonstrate any statistically significant downward trend by age in their expectations for owning in the future (Model 3).

We know from prior studies of tenure preferences that family households have generally greater penchants for owning their housing (e.g. Clark et al., 1994). The logit models confirm this, with higher odds of expecting to own in the future and of viewing owning as financially superior to renting (Models 1 and 2) observed among married respondents and those with children in their household. These findings are not greatly affected by tenure and mortgage status, though the results from owner-only models on the *VIEW* dependent variable (Models 4 and 6) are insignificant. Being employed also corresponds with higher odds of preferring homeownership, though only respondents with full time jobs (in the full sample and among owners with no mortgage) are more likely to view owning as financially better than renting, relative to respondents without a job (i.e. the omitted category).

Based on the model results, there is a statistically significant and positive relationship between higher incomes (compared to the omitted category of under \$50,000) and the likelihood of a respondent expecting to own in the future, though no statistically significant association between incomes and whether owning is viewed as a better financial choice.<sup>10</sup> The lack of clear relationship between these views and income levels might at first appear contradictory to what we already know about strong associations between income and tenure choices; recall, however, that income is often as much a constraining factor in determining an individual's ability to own or rent their housing as it is a driver of preferences for tenure (Savage, 2009). Indeed, as shown in Figures 1 and 2 above, expressed preferences for owning as a financial choice are high across the four income groups considered here, though they are slightly more stratified with respect to

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<sup>10</sup> The one exception to this pattern is a higher likelihood among mortgaged owners with incomes above \$100,000 for viewing owning as the better financial choice.

the likelihood of owning in the future, which suggests lower-income households may have comparable preferences for owning but expect to be more constrained in acting on those preferences due to affordability and mortgage qualifying criteria.

Additional binary control variables in the logit models capture educational attainment and gender variations in views on homeownership. Having a college education is not a significant predictor of expecting to own in the future, but is associated with lower odds of viewing owning as the better financial choice, particularly among renters. Female respondents, meanwhile, have lower odds of expecting to own in the future, but higher odds among owners (relative to similar male respondents) of viewing owning as financially superior to renting. Lastly, the likelihood among renters of preferring homeownership, both as their potential future tenure and as a financial decision, is considerably lower among those who believe owning would require financial sacrifice on their part. This suggests that some respondents may still be factoring affordability constraints into their tenure preferences, with higher perceived barriers to buying reducing their penchant for homeownership.

The model results in Appendix A also report odds ratios for the three personal-level explanatory variables relating to exposure to housing market distress. Respondents who know of defaults in their neighborhood do not exhibit any statistically significant variations in their preferences for homeownership, either as their expected future tenure or as a financial choice, relative to those who do not have defaults in their neighborhood. Respondents who report knowing a strategic defaulter, meanwhile, do have 14 percent lower odds of viewing owning as the better financial choice relative to those who do not know strategic defaulters, with much of this effect derived from a 31 percent lower odds among owners without mortgages (with no significant difference among mortgaged owners or renters). No significant associations between knowing a strategic defaulter and expecting to own in the future, however, were found among any of the samples.

Among owners with a mortgage only, those who report being underwater on their mortgage are 21 percent less likely to expect to own in the future. This result may well reflect the financial challenge that these owners expect to face if they tried to buy another home, since there is no difference in their views of whether owning makes more financial sense than renting compared to other mortgaged owners. With recent studies suggesting as many as 20 percent of owners owe more on their mortgages than their homes are worth (Joint Center for Housing Studies, 2012), this finding may suggest some important long-term effects on tenure preferences stemming from recent housing market distress; whether their future tenure expectations change when housing markets improve and they are no longer underwater remains to be seen. Overall, however, these findings suggest only limited associations between exposure to the effects of housing market distress and views on homeownership, with most of the variation in these views related to personal characteristics and housing tenure status.

To consider the potential effect on preferences for homeownership from environmental exposure to housing market distress, we re-ran the eight logit models with our geographically-linked measures of house price change and delinquency rates. First, we added a measure of local changes in house prices from Fannie Mae's proprietary quarterly repeat sales house price index (HPI). This measure is the percent decline in nominal house prices from the post-2001 peak price

to subsequent trough, evaluated by zip code.<sup>11</sup> When added to the logit models, we found that zip code level price changes were not statistically significant in any of the tenure preference models<sup>12</sup> (see Appendix B for model results). Thus, despite lower expectations of owning in the future expressed by underwater owners, simply living in an area that has been hard hit by house price declines does not appear to have had a measurable impact on reducing preferences for homeownership.

In addition to house price changes, we also tested whether exposure to high loan delinquency rates in a respondent's zip code was associated with different views on homeownership. For this measure we used CoreLogic's reported share of all loans in each zip code that were at least 90 days past due in 2010<sup>13</sup> (see Appendix C for model results). When included in our eight logit models of homeownership preferences, zip code delinquency rates were statistically significant only among the full sample and non-mortgaged owners in the models that assess views on owning as a financial choice (Models 2 and 6). In both cases, the odds ratios were as expected, with lower odds of viewing owning as financially superior to renting reported among respondents in areas with high delinquency rates. Specifically, for every one percentage point increase in local delinquency rates, the odds of respondents viewing owning as the better financial choice were 0.83 percent lower among the full sample and 2.16 percent lower among non-mortgaged owners only. As with the house price measures discussed above, the odds ratios for control variables in these models are largely similar to those in the baseline models, suggesting little impact on views about homeownership related to specific characteristics of respondents by their zip code delinquency rate.

## **6. Discussion and Implications**

The results from our homeownership preference models above suggest some important conclusions about the drivers of individual views on owning and renting in a time of housing market distress. First, we note that several personal and household level characteristics exhibit strong associations with stated preferences for owning, with current housing tenure in particular explaining a significant portion of the variation in these preferences across the population. Even within subsets of the population by tenure and mortgage status, however, variations in individual views are still apparent by race/ethnicity and age. For example, black and Hispanic renters are more likely than similar whites to expect to own in the future and to view owning as financially superior to renting, though the opposite is true among minority owners. Middle-age and senior renters and owners with mortgages are much less likely than those under age 35 to expect to own in the future, while those without mortgages did not express statistically significant variations in such intentions. As a financial choice, however, homeownership is viewed more favorably by middle age renters, relative to similar young renters.

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<sup>11</sup> The Fannie Mae HPI included price series for 7,110 out of the 9,109 viable zip codes reported in the NHS. Series for the remaining 1,999 zip codes were not available due to small numbers of sales per quarter, though 1,613 of those zip codes were proxied for with county-level series.

<sup>12</sup> We also ran the logit models using house price changes calculated in this way at the county and metro level, and at all three geographic levels calculated by post-2005 peak to Q4 2011 price changes; in all cases, the price change variable was insignificant in all models.

<sup>13</sup> CoreLogic delinquency rates were available for 9,047 of the 9,109 valid zip codes reported in the NHS.

Second, in comparison with these personal characteristics, measures of individual exposure to the effects of housing market distress show much weaker associations with views on housing tenure. Indeed, only two statistically significant findings from our models suggest links between recent personal experiences with housing markets and preferences for homeownership: lower odds among owners with mortgages who are underwater on their loans for expecting to own in the future, and among non-mortgaged owners who know a strategic defaulter for viewing owning as the better financial choice. No such associations were observed among renters' views on whether they expect to own in the future or see owning as the superior financial choice, given their exposure to housing market distress. Thus we conclude that while owners who have been more directly impacted by the recent collapse of the housing market express a lower likelihood of buying in the future, simply knowing others who have faced delinquency is not a sufficient condition to alter broader perceptions about the appeal of owning over renting.

Finally, our linked geographic indicators of housing market distress also show almost no associations between preferences for homeownership and local house price changes or mortgage delinquency rates. Among renters and owners with mortgages, neither measure was statistically significantly related to their expected likelihood of owning in the future or for viewing owning as financially superior to renting. Owners without mortgages that were exposed to higher delinquency rates, meanwhile, did express less favorable views on the financial aspects of owning, though no difference from those in markets with lower delinquency rates on their expectations for owning in the future.

Linking these findings back to our original discussion of the drivers of homeownership preferences, it appears that financial considerations related to market conditions may be less predictive of individual preferences for owning and renting than suggested by much of the economics literature. These results do, however, lend some support to the life-cycle view of tenure preferences as determined by life stage and housing needs, which are assumed to favor owning as individuals enter middle age, marry and start families, and seek more space and autonomy in their housing. In particular, the observed associations between views on homeownership and respondents' current tenure/mortgage status imply that the personal decisions individuals make about their housing in the past guide their expectations for the future more than external events. This is not to say that the recent distress in housing markets has had no impact on the demand for owning and renting, but rather that other considerations tend to outweigh short-term conditions in long-run preferences and expectations about homeownership.

The implications for these findings for policymakers and the housing industry are important, and possibly reassuring. The absence of strong evidence to suggest fundamental shifts in preferences for homeownership following the housing bust should assuage concerns that the American Dream has irreversibly changed in the last few years. As housing markets, the economy, and individual circumstances improve, demand for homeownership should be expected to rebound among most potential homebuyers. Whether conditions in the mortgage market and availability of mortgage credit also improve under this scenario, however, is unknown and beyond the scope of this study to speculate, though such outcomes will be strongly determinant of whether individuals are able to act on their renewed preferences for owning by qualifying for mortgages to purchase homes.

## 7. Conclusion

The foregoing analysis provides some insight into the drivers of tenure preferences expressed by individuals following the Great Recession of 2007-2009, and suggests that, despite record poor housing market performance over the last few years, the appeal of homeownership remains strong. Indeed, nearly all the variation in views on home owning among survey respondents is explained by their personal characteristics rather than their level of exposure to the recent effects of the housing market downturn. While respondents who are underwater on their mortgage are less likely to expect to own in the future, current tenure status, age, race/ethnicity, household income, marital status, and presence of children are the most indicative of preferences for owning and renting as a financial choice.

Some limitations of this analysis should be noted. First, given the time frame covered in the survey data used, it is not possible to fully capture differences in views on homeownership from before and after the end of the housing boom. We use variations in reported experiences with mortgage default and geographically-linked measures of market conditions to proxy for how much effect recent events in housing markets have had on individuals, with the assumption that those respondents with little exposure will have not changed their perceptions of the benefits and desirability of homeownership since the start of the recession, though there are arguable flaws in this assumption. Certainly, media coverage of the foreclosure crisis and its impact on households and communities across the country has been widespread, and may have skewed impressions of homeownership as a safe investment and/or lifestyle choice regardless of conditions in the zip code in which an individual lives. While the high shares of respondents to the NHS indicating positive feelings about homeownership do not appear to support this supposition, the fact that owners' and renters' preferences vary systematically, even after controlling for other variables, suggests that tenure may influence the lens through which the downturn was viewed based on national coverage.

A second limitation derives from the questions asked in the NHS and used in this analysis to infer preferences for owning and renting. As discussed above, respondent expectations about their future tenure likely incorporate both their preferences and their anticipated constraints on their tenure choices, and thus are not an accurate representation of their perceived desirability of owning and renting. The question about which tenure provides the better financial opportunity, meanwhile, is closer to reflecting pure preferences of respondents absent any constraints on their tenure options, but only asks about one aspect of the homeownership decision, and does not capture any drivers of tenure choices related to lifestyle and non-financial considerations.

Finally, this survey data reflects the views of respondents in the short term only, which do not necessarily suggest longer-term trends. We infer from these responses that fundamental preferences for housing tenure are not substantially impacted by market conditions, though we cannot know for sure how durable such preferences really are. Indeed, if the housing downturn were to drag on for several more years, with high foreclosure rates and stagnant returns on house values, individual perceptions about the desirability of owning may become less optimistic with time. Low house prices and mortgage rates, along with rising rents in many markets, do appear to be stirring a revival in demand for homeownership, though it remains to be seen how this trend will play out over the coming months and years. For now, however, it does appear that the American Dream of homeownership remains alive and well for most Americans.

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**Appendix A: Odds Ratios on Tenure Preferences with Sub Samples by Tenure and Mortgage Status**

Model #	1	2	3	4	5	6	7	8
DV	EVEROWN	VIEW	EVEROWN	VIEW	EVEROWN	VIEW	EVEROWN	VIEW
Sample	Full	Full	Mortgage	Mortgage	No Mortgage	No Mortgage	Renters	Renters
Number of obs	17,589	18,506	7,623	7,903	4,298	4,852	5,668	5,751
Prob > chi2	0.00	0.000	0.00	0.044	0.00	0.054	0.00	0.000
Pseudo R2	0.220	0.095	0.090	0.010	0.095	0.015	0.241	0.023
Log likelihood	-4613	-6411	-1315	-1963	-996	-1153	-2206	-3234
own_mort	5.493***	4.895***	NA	NA	NA	NA	NA	NA
own_free	9.094***	5.919***	NA	NA	NA	NA	NA	NA
black	1.592***	<del>1.072</del>	<del>1.067</del>	<del>0.823</del>	0.650**	<del>0.796</del>	2.330***	1.257***
hisp	1.143*	1.126*	<del>0.844</del>	0.744**	<del>0.884</del>	<del>1.062</del>	1.467***	1.363***
otherrace	<del>0.938</del>	0.827**	<del>0.759</del>	<del>0.810</del>	<del>0.737</del>	<del>1.070</del>	<del>1.121</del>	0.819*
married	1.547***	1.170***	1.478***	<del>1.171</del>	1.722***	<del>1.070</del>	1.389***	<del>1.118</del>
age_35to44	0.475***	<del>0.901</del>	<del>0.778</del>	<del>0.889</del>	<del>1.428</del>	<del>0.947</del>	0.445***	1.372***
age_45to54	0.232***	0.813***	0.417***	<del>1.131</del>	<del>1.162</del>	<del>0.925</del>	0.206***	1.370***
age_55to64	0.166***	0.865*	0.298***	<del>0.985</del>	<del>0.616</del>	1.586*	0.150***	<del>0.985</del>
age_65plus	0.085***	0.743***	0.190***	<del>1.045</del>	0.356***	<del>1.021</del>	0.051***	<del>0.835</del>
college	<del>1.038</del>	0.823***	<del>1.208</del>	<del>0.864</del>	<del>1.078</del>	<del>0.958</del>	<del>0.939</del>	0.757***
kids	1.549***	1.187***	1.328**	<del>1.132</del>	<del>1.199</del>	<del>0.864</del>	1.806***	1.302***
inc_50k~100k	1.563***	<del>1.041</del>	1.799***	<del>1.178</del>	1.525**	<del>1.034</del>	1.327**	<del>0.981</del>
inc_100kplus	2.279***	<del>1.014</del>	2.528***	1.263*	2.335***	<del>0.876</del>	1.964***	<del>0.782</del>
female	0.853***	<del>1.080</del>	<del>0.849</del>	1.181*	<del>0.895</del>	1.488***	0.854**	<del>0.945</del>
fulltime	1.606***	1.116*	<del>1.158</del>	<del>1.178</del>	1.946***	1.341*	1.783***	<del>1.044</del>
parttime	1.314***	<del>1.034</del>	<del>0.811</del>	<del>1.086</del>	<del>1.419</del>	<del>0.847</del>	1.524***	<del>1.033</del>
know_defaulter	<del>1.072</del>	<del>0.929</del>	<del>0.933</del>	<del>0.869</del>	<del>1.176</del>	<del>1.103</del>	<del>1.157</del>	<del>0.944</del>
know_strategic	<del>0.943</del>	0.864**	<del>0.834</del>	<del>0.894</del>	<del>0.867</del>	0.692**	<del>1.024</del>	<del>0.894</del>
underwater	NA	NA	0.793*	<del>0.889</del>	NA	NA	NA	NA
renter_sacrifice	NA	NA	NA	<del>1.181</del>	NA	NA	0.610***	0.754***

Significance levels: \*<0.1 \*\*<0.05 \*\*\*<0.01. Strikethrough=not significant. NA = variable not applicable to model.

**Appendix B: Odds Ratios on Tenure Preferences With Quarterly House Price Change Measures**

Model #	1	2	3	4	5	6	7	8
DV	EVEROWN	VIEW	EVEROWN	VIEW	EVEROWN	VIEW	EVEROWN	VIEW
Sample	Full	Full	Mortgage	Mortgage	No Mortgage	No Mortgage	Renters	Renters
Number of obs	15,626	16,381	6,793	6,992	3,729	4,157	5,104	5,159
Prob > chi2	0.00	0.00	0.00	0.03	0.00	0.13	0.00	0.00
Pseudo R2	0.226	0.101	0.093	0.012	0.104	0.016	0.244	0.027
Log likelihood	-4016	-5643	-1127	-1683	-831	-983	-1966	-2904
own_mort	5.694***	5.253***	NA	NA	NA	NA	NA	NA
own_free	9.547***	6.145***	NA	NA	NA	NA	NA	NA
black	1.607***	<del>1.105</del>	<del>1.053</del>	0.818	0.683*	<del>0.850</del>	2.283***	1.283***
hisp	<del>1.055</del>	1.130*	0.749*	0.882	<del>0.693</del>	<del>1.039</del>	1.388***	1.288***
otherrace	<del>0.923</del>	0.833*	<del>0.685</del>	0.855	<del>0.665</del>	0.933	<del>1.155</del>	0.829
married	1.553***	1.167***	1.546***	<del>1.190</del>	1.755***	<del>1.083</del>	1.391***	<del>1.113</del>
age_35to44	0.460***	<del>0.879</del> *	<del>0.705</del>	<del>0.859</del>	<del>1.923</del>	<del>0.991</del>	0.436***	<del>0.981</del>
age_45to54	0.226***	0.807***	0.418***	<del>1.218</del>	<del>1.253</del>	0.935	0.198***	0.693***
age_55to64	0.162***	<del>0.876</del>	0.282***	<del>1.006</del>	<del>0.630</del>	1.600*	0.150***	0.756**
age_65plus	0.083***	0.773***	0.192***	<del>1.070</del>	0.357***	<del>1.045</del>	0.051***	0.648***
college	<del>1.019</del>	0.800***	<del>1.163</del>	0.807**	<del>1.066</del>	0.962	<del>0.937</del>	0.747***
kids	1.615***	1.199***	1.465**	<del>1.149</del>	<del>1.204</del>	0.792	1.836***	1.332***
inc_50k~100k	1.561***	<del>1.040</del>	1.767***	<del>1.283</del> **	1.410*	0.953	1.380**	0.977
inc_100kplus	2.211***	<del>1.005</del>	2.443***	1.370**	1.894**	<del>0.848</del>	2.100***	<del>0.772</del>
female	0.882**	<del>1.080</del>	0.887	<del>1.136</del>	0.863	1.520***	0.908	0.968
fulltime	1.607***	1.144**	<del>1.156</del>	<del>1.156</del>	2.108***	<del>1.333</del>	1.754***	<del>1.096</del>
parttime	1.306***	<del>1.069</del>	0.792	<del>1.129</del>	<del>1.430</del>	0.874	1.521***	<del>1.080</del>
know_defaulter	<del>1.048</del>	0.965	0.846	0.908	<del>1.298</del>	<del>1.187</del>	<del>1.113</del>	0.964
know_strategic	<del>0.984</del>	0.876*	0.793	0.840	0.788	0.757	<del>1.170</del>	0.916
underwater	NA	NA	0.761**	0.855	NA	NA	NA	NA
renter_sacrifice	NA	NA	NA	NA	NA	NA	0.596***	0.731***
fmhpi_01peak2trough_zip	<del>1.001</del>	<del>1.001</del>	0.996	<del>1.002</del>	<del>1.002</del>	<del>1.003</del>	<del>1.002</del>	<del>1.001</del>

Significance levels: \*<0.1 \*\*<0.05 \*\*\*<0.01. Strikethrough=not significant. NA = variable not applicable to model.

**Appendix C: Odds Ratios on Tenure Preference with Zip Code Level Loan Delinquency Measure (2010 % of Loans 90+ Days Past Due)**

Model #	1	2	3	4	5	6	7	8
DV	EVEROWN	VIEW	EVEROWN	VIEW	EVEROWN	VIEW	EVEROWN	VIEW
Sample	Full	Full	Mortgage	Mortgage	No Mortgage	No Mortgage	Renters	Renters
Number of obs	15,885	16,670	6,875	7,073	3,876	4,364	5,134	5,192
Prob > chi2	0.00	0.00	0.00	0.02	0.00	0.04	0.00	0.00
Pseudo R2	0.221	0.102	0.088	0.012	0.097	0.019	0.240	0.027
Log likelihood	-4114	-5719	-1155	-1699	-887	-1023	-1986	-2927
own_mort	5.628***	5.299***	NA	NA	NA	NA	NA	NA
own_free	9.193***	6.193***	NA	NA	NA	NA	NA	NA
black	1.600***	1.145*	<del>1.047</del>	<del>0.878</del>	<del>0.725</del>	<del>0.904</del>	2.262***	1.290***
hisp	<del>1.097</del>	1.177**	<del>0.797</del>	<del>0.899</del>	<del>0.792</del>	<del>1.197</del>	1.399***	1.312***
otherrace	<del>0.915</del>	0.838*	0.672*	<del>0.830</del>	<del>0.719</del>	<del>1.016</del>	<del>1.125</del>	<del>0.828</del>
married	1.534***	1.154***	1.494***	<del>1.192</del>	1.675***	<del>1.036</del>	1.403***	<del>1.107</del>
age_35to44	0.455***	<del>0.888</del>	<del>0.742</del>	<del>0.873</del>	<del>1.327</del>	<del>1.101</del>	0.437***	<del>0.974</del>
age_45to54	0.229***	0.814***	0.459***	<del>1.231</del>	<del>0.998</del>	<del>0.974</del>	0.199***	0.695***
age_55to64	0.163***	<del>0.885</del>	0.308***	<del>0.999</del>	0.531*	1.736**	0.150***	0.757**
age_65plus	0.085***	0.771***	0.206***	<del>1.040</del>	0.309***	<del>1.145</del>	0.053***	0.639***
college	<del>1.030</del>	0.805***	<del>1.195</del>	0.820*	<del>1.089</del>	<del>0.939</del>	<del>0.936</del>	0.758***
kids	1.585***	1.206***	1.436**	<del>1.146</del>	<del>1.196</del>	<del>0.836</del>	1.800***	1.324***
inc_50k~100k	1.543***	<del>1.045</del>	1.725***	1.276*	1.489**	<del>0.998</del>	1.332**	<del>0.969</del>
inc_100kplus	2.215***	<del>1.001</del>	2.401***	1.341*	2.078**	<del>0.879</del>	2.000***	0.753*
female	0.869**	1.088*	<del>0.858</del>	<del>1.148</del>	<del>0.858</del>	1.539***	<del>0.895</del>	<del>0.970</del>
fulltime	1.595***	1.129*	<del>1.154</del>	<del>1.107</del>	2.004***	1.356*	1.745***	<del>1.089</del>
parttime	1.296***	<del>1.048</del>	<del>0.768</del>	<del>1.067</del>	<del>1.437</del>	<del>0.829</del>	1.527***	<del>1.074</del>
know_defaulter	<del>1.038</del>	<del>0.963</del>	<del>0.904</del>	<del>0.920</del>	<del>1.174</del>	<del>1.153</del>	<del>1.103</del>	<del>0.963</del>
know_strategic	<del>0.951</del>	0.856**	<del>0.788</del>	<del>0.826</del>	<del>0.799</del>	<del>0.769</del>	<del>1.097</del>	<del>0.884</del>
underwater	NA	NA	0.753**	<del>0.854</del>	NA	NA	NA	NA
renter_sacrifice	NA	NA	NA	NA	NA	NA	0.590***	0.735***
totdqpct	<del>1.000</del>	0.992**	<del>1.000</del>	<del>0.989</del>	<del>1.000</del>	0.978**	<del>1.000</del>	<del>1.000</del>

Significance levels: \*<0.1 \*\*<0.05 \*\*\*<0.01. Strikethrough=not significant. NA = variable not applicable to model.