Minority and Immigrant Homeownership Experience: Evidence from the 2009 American Housing Survey

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Abstract

Using data from the 2009 American Housing Survey and Hazard Model, this paper provides empirical evidence that the homeownership experience during the recent housing boom and housing bust was not homogenous across all groups in the U.S. The recent deterioration of underwriting practices and a boom in mortgage lending did not benefit minorities and immigrant homeownership in the U.S. Blacks experienced significantly lower increase in homeownership than the whites but highest exit from homeownership particularly if they obtained the mortgage during subprime boom period from 2004 – 2006. Hispanics, on the other hand, did not experience significant increase in homeownership and neither did they face a higher exit from homeownership compared to whites. However, Hispanic immigrants were worse off in the recent housing market than Hispanic natives. Immigrants were worse off in the recent housing market than the natives, but naturalized immigrants fared better than the non-naturalized immigrants.

Keywords: Homeownership, Exit, Subprime, Minorities, Immigrants, Citizenship, Hazard Model

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1. Introduction

In spite of an upward trend in homeownership for minorities and immigrants in the U.S., the homeownership gap for both groups still persists compared to whites and natives, respectively. According to Simmons (2001), minorities and immigrants constituted about 40 percent of the net increase in homeownership between the years 1990 and 2000 in the U.S. However, the immigrant-native homeownership gap rose from 12 percentage points in 1980 to almost 20 percentage points in 2000 (Borjas 2002; Myers and Liu 2005) and the white-black and white-Hispanic homeownership gaps in the year 2001 were roughly 26 and 30 percentage points, respectively (Gabriel and Rosenthal 2005). During 1995 – 2009 homeownership rates for Hispanics (6.7 percentage points) and for blacks (7.5 percentage points) increased more than twice that of whites (3.9 percentage points)[1]. However, according to the 2011 State of the Nation's Housing, the homeownership gap between whites and Hispanics have fallen marginally from 28.8 percentage points to 26.9 and the white – black gap has stayed the same, around 28 percentage points.

Given the existing homeownership gap and recognizing the advantages of homeownership, the U.S. Government has taken many steps towards promoting first time homeownership in the country.[2] These initiatives include President Clinton's National Home Ownership Strategy, the Campaign for Homeownership of the Neighborhood Reinvestment Corporation, the Community Reinvestment Act, and the Federal Housing Enterprise Financial Safety and Soundness Act (Wyle et al. 2001; Freeman and Hamilton 2004). The recent drive by

[1] Author's calculation from the 2010 State of Nation's Housing Outlook (Joint Center of Housing).
[2] Home ownership enhances U.S. society and neighborhoods by providing neighborhood stability and opportunities for civic involvement (Haurin et al. 2002; McCarthy et al 2001). Homeownership also leads to better integration of minorities in the U.S. neighborhoods and is crucial for immigrant assimilation in any country (*e.g.* Blanton 1994; Rosenbaum and Friedman 2007).

the quasi - state owned entities like Fannie Mae and Freddie Mac in targeting home loans through secondary mortgage market to the low income neighborhoods may be considered as an additional initiative (Frame and White 2005) in promoting homeownership for minorities and lower income households.

The aim of this paper is twofold. First, using the 2009 national sample of the American Housing Survey (AHS), this paper examines whether the widely documented homeownership gap for the immigrants and minorities improved during the recent expansion of the home loans and subprime market in the U.S. Second, using the data from the mover sample of the 2009 AHS, this paper explores whether the recent housing bust was more severe for minorities and immigrants compared to the whites and natives respectively in the U.S. There is increasing evidence that the recent housing bust and high foreclosure rates have been disproportionately tilted towards minorities – the exact group, who were meant to be served by the recent home credit expansion in realizing their homeownership dream. Because news articles and academic papers show that there were discriminatory practices followed by credit lending institutions against minorities, this research using the national sample to examine home ownership and home sustainability is very timely.[3]

This paper examines homeownership and home sustainability for both minorities and immigrants because homeownership experience for these two groups in the U. S. is very similar. Both groups have experienced an upward trend in homeownership, though they still face a significant homeownership gap. Moreover, a large proportion of minorities are immigrants in the U.S. For example, more than half of Hispanics are immigrants and, therefore, one cannot examine the experiences of Hispanics, including in the area of homeownership, without

[3] Recently Wells Fargo settled to pay $175 million in damages on charges that its independent brokers discriminated against black and Hispanic borrowers during the recent housing boom (New York Times July 12, 2012).

including their immigrant experience. Using a national sample this paper will shed some light in understanding how minorities and immigrants fared in the recent housing market compared to whites and natives, respectively. AHS collects data on citizenship for the immigrants enabling to examine (word missing?) the housing experience of Hispanic natives' v Hispanic immigrants and thus the role of the immigrants' citizenship in the recent housing boom and bust.

Section 2 offers a brief background behind the two aims of this paper and lays out the vantage point of the current paper. Section 3 explains the data and the sample used in this paper and Section 4 the proportional hazard framework. Section 5 discusses the results. Finally, the conclusion in Section 6 summarizes the findings and discusses the relevancy of the findings.

2. Background on Recent Housing Experience

2.1 *Homeownership*

In spite of the evidence that the minorities and the immigrants have experienced an upward trend in homeownership it is not clear whether the recent housing boom increased first-time homeownership significantly for the minorities and the immigrants compared to that of the whites and the natives, respectively. Using a sample of household heads from the 2009 AHS, first aim of this paper, is to examine whether the homeownership gap for the minorities and the immigrants decreased during the recent housing boom. In spite of the shift of the demographic forces towards the minorities, who traditionally have lower homeownership rates than the whites, homeownership rates in the U.S. still increased by 4.6 percentage points (Nations' Housing Outlook 2010) during the recent housing boom. Primarily this increase is due to the household income growth and low interest rates. A report from the Pew Hispanic Center showed that from

1994 onwards home ownership have also increased drastically for minorities and immigrants (Kochar et al. 2009).

2.2 *Predatory Nature of Subprime Loans*

There is increasing evidence, both from the news articles and academic research, that the home loans during the recent housing boom, particularly the subprime loans, were predatory in nature and were concentrated in minority and poor neighborhoods (Mayer and Pence 2008, Mayer et. al. 2009, Avery et al 2008, Dymski 2005, Renaurt 2004; Daglish 2009, Ho and Pennington-Cross 2006)[4]. Subprime home loans, a relatively new practice in the U.S. housing market, is part of the financial innovation in the U.S. to make housing more accessible to buyers with low credit scores who would otherwise not qualify for home loans in the prime market. This practice began in the 1980s and grew relatively rapidly during the 1990s and 2000s. Been et al. (2007) show that the higher the racial segregation in a neighborhood, the higher the likelihood that a Black or a Hispanic borrower received a subprime loan. Using Home Mortgage Disclosure Act of 1975 (HMDA) data for the year 2004, Bocian et al. (2008) find that the African-American and Latino borrowers are more likely to receive a higher priced subprime home loan than the white borrowers. There is also evidence of interest rates varying across neighborhoods; using a nationally representative single-family mortgage sample; Nothaft and Perry (2002) find that borrowers in a low-and moderate income neighborhoods usually pay 2-4 basis points more for 30-year loans. In summary the characteristics of the borrowers in the subprime market varied; however, they were disproportionately minority, lower income, older, less educated, financially less sophisticated and less likely to search for the best interest rates

[4] See, e.g., U.S. Department of Housing and Urban Development, *Unequal Burden: Income and Racial Disparities in Subprime Lending in America*, (http://www.huduser.org/Publications/pdf/unequal_full.pdf;)

when applying for a mortgage. As a result, they were unable to comprehend the complex subprime securitization market and loan instruments that accompanied the recent housing market (Lax et al. 2008; Courchane et al. 2004). [5]

2.3 *Exit from Homeownership*

The second aim of this paper is to examine home sustainability for minorities and immigrants in the recent housing market. Using the mover sample from the 2009 AHS, this paper explores whether the individuals who bought their homes during the period of widespread use of subprime lending faced higher home exit rates than the other home buyers. Increasing evidence from popular media and academic literature on mortgage financing in the recent housing market show that complex loan bundles were given to segments of the population who was unable to afford homes. In addition to the evidence of the predatory nature of the home mortgage lending institutions, it is also well known that immigrants in the U.S. face a higher housing cost burden than natives (McConnell and Akresh 2010). Turner and Smith (2009) using PSID data over the years 1970 – 2005 show that the low income households have consistently higher homeownership exit rates and that the black/white home sustainability gap have risen since 1997. However, they find that Hispanic homeownership exit rates have improved since 1997. This paper focuses on recent homeownership exit and particularly whether these home exit rates were significantly higher for minorities and immigrant homeowners.

[5] Using HMDA data and merging it with the loan performance and risk data and analyzing a sample of Adjustable Rate Mortgages Haughwout et al (2009) do not find any evidence of adverse mortgage pricing based on race, ethnicity, and gender after controlling for the risk characteristics of the mortgage and neighborhood characteristics.

3. Data and Sample Description

This paper uses data from the AHS 2009, which is a biennial national housing survey conducted by the Bureau of the Census for the Department of Housing and Urban Development (HUD).[6] The homeownership or tenure analysis is mostly for the first-time homeowners who have bought their homes recently because in the AHS 2009 almost 70% of the current blacks and Hispanic homeowners have obtained their first mortgage between the years 2000 – 2009. AHS collects detail information on the physical characteristics of the unit as well as gives rich information on the households' demographic characteristics, race, immigrant characteristics, homeowner's mortgage information and neighborhood characteristics. In the national sample we can identify the region, SMSA, and whether the unit is in the urban area or not and we will control for this level of geography. It is well known that housing affordability decreases in urban areas than other areas. Homeownership exit rates are also higher for homeowners in the urban areas. Living in the central city is often accounted for lower homeownership for immigrants and minorities.

Analysis is restricted to household heads between the ages of 25 and 65 years old. I focus on Hispanics and blacks and immigrants are identified by household head not born in the U.S. to non-American parents.[7] The Hispanic housing research have shown that the immigrant characteristics such as the length of stay in the U.S., the level of education, citizenship, and where immigrants locate in the U. S. are important determinants of their homeownership (Borjas 1992, 2002; Coulson 1999; Painter et al. 2001; Krivo 2004; Diaz McConnell and Enrico 2007). AHS not only collects data on the citizenship of the immigrants but also the year the immigrant

[6] http://www.census.gov/hhes/www/housing/ahs/ahs.html).

[7] Asians are also a significant category for understanding immigrant and minority homeownership in the U.S., but I had to leave out this group from the present analysis due to small sample size.

came to the U.S. enabling a control for immigrant assimilation.[8] AHS also collects financial characteristics of the primary mortgage as well as the year the mortgage was obtained - an important variable for this paper.

To examine the recent exit from homeownership this paper uses AHS mover group sample. AHS collects data on the recent mover group at the household level if the household head (usually the respondent) or anybody in the household has moved in the previous two years. Thus for the AHS 2009 the household head in the mover sample has moved in the years 2007 – 2008. In addition to the year of current move and current tenure, AHS also collects data on the previous homeownership status and the year of previous move enabling identification of household heads who have moved from ownership to renting. I assume that for previous homeowners, the mortgage was obtained the year they moved into their previous residence or bought their previous homes. I restrict my analysis to the group where the household head is the one who has moved and restrict the previous year of the move to be 2006 or before. [9]

Using various data sources there is an emerging consensus that the subprime loans steadily grew from 2001 onwards and showed a sharp growth in the years 2004 – 2006 followed by a large wave of defaults beginning in 2007 now known as subprime crisis (Mayer and Pence 2008; Demiyanyk 2009; Demiyanyk and Hemert 2011; Cross and Giang 2010; Kau et. al. 2011). Data on the year of previous move for the AHS mover sample enables me to test whether the homeowners who bought their homes during the peak period of subprime mortgage, between

[8] Most of the recent evidence is from the data collected from the lenders under the Home Mortgage Disclosure Act, which does not collect information on immigrants.

[9] The Movgrp variable of the AHS records how many people in the household have moved in the last two years. I restrict the value of the Movgrp variable to 1 thus including the households where the head is the one who has moved recently. The question on previous year move is asked only to the households who have moved once per household and about 20% of current owners and 30% of renters who are recent movers report that their previous move was either in the survey year or the year before. Many also report the same year for both the current move and the previous move. This is very consistent across the AHS 2007 and AHS 2005 surveys too. Hence I only include household heads whose previous move was 2008 or before and leave out household heads who report the same year for their current as well as their previous moves.

2004 – 2006, had a higher rate of exit from homeownership than the ones who bought during other periods. In particular, this paper is focused on whether this exit was relatively higher for immigrants and minorities. Due to the time period of the study this paper is focused on the exit before the Great recession.

4. Preliminary Descriptive

Examining average homeownership for various groups the preliminary descriptive given in Table 1 shows that there are significant differences. There is a significant 10 percentage point homeownership gap between immigrants and natives and whites have 18 percentage point higher homeownership than the Hispanics and 19 percentage point higher homeownership than the blacks. Table 1 also shows that there were significantly higher first homeownership mortgages given during the period when the subprime mortgage was steadily growing in the U.S. - 2004 – 2006. Looking at the mean descriptive of exit from homeownership across various groups, the scenario is reversed. Table 2 shows that immigrants have 13 percentage points higher homeownership exit than natives. However, naturalized immigrants' exit from homeownership at 46% is 25 percentage points lower than the non-naturalized immigrants. Blacks have the highest homeownership exit rate at 74%, followed by Hispanics at 59% and then the whites are the lowest at 41%. The preliminary descriptive measure also shows that significantly higher household heads who bought their homes during the years 2001 – 2006 have exited from homeownership than the ones who bought their homes in other periods.

Table 3 gives the summary information across groups on the variables loan to value, ratio of housing cost as a percentage of household income, whether the household have a home line of credit or not. These variables give some indication on which groups are more leveraged financially and more vulnerable to losing their homeownership status. Not surprisingly the loan to value and the percentage of income spent on housing is significantly higher for immigrants and blacks compared to natives and non-minority whites, respectively. However, loan to value for Hispanics is not significantly higher than that of the whites and the housing cost as a percentage of income gap is significantly lower than that for the blacks. Examining some important housing cost factors, I find that Hispanics as a group are less leveraged financially than blacks and have potentially benefitted in the booming housing market compared to blacks and suffered less when the housing market collapsed.

Table B in the Appendix gives the mean and standard deviation for all the variables in the sample for whites, Hispanics, and blacks. Whites on an average have higher income and 23% of them own assets compared to 9% for both Hispanics and blacks. Twenty three percent of whites have finished college versus only 9% Hispanics and 13% blacks. There is a higher percentage of household head with women among the blacks than the Hispanics and whites. Only 38% of whites have children compared to 58% Hispanics and 45% black. On average whites have lower housing cost burden, at 29%, than the Hispanics at 41% and blacks at 45%. Overall for the mover group 32% of whites have moved from renting to home ownership, whereas this proportion is around 17% for Hispanics and blacks. For whites 41% exited from previous homeownership and are now renting whereas 59% of Hispanics and a significantly higher 74% of Blacks exited from homeownership.

Comparing the variable means across immigrants and natives, I find that the recent drive for increased homeownership has helped more natives than immigrants during the boom, but potentially may have hurt more immigrants than the natives during the bust (see Table C in the appendix). Forty nine percent of natives are homeowners whereas only 39% of immigrants own a home. From the mover sample 45% of natives have moved from renting to owning their first home, whereas only 24% of immigrants have moved into first home ownership. Fifty-two percent of natives compared to 61% of immigrants are male. More immigrants are married and with children than the natives. Though, a lower proportion of immigrants have college degrees and fewer of them own any asset compared to the natives. In terms of racial division 19% of immigrants are white whereas 70% of natives are whites. In contrary, only 9% of natives are whites whereas 51% of immigrants are Hispanics.

5. Econometric Model: Cox Proportional Hazard Framework

To estimate the homeownership and exit from homeownership, I use survival models. For the homeownership model I define *t* as a random variable to represent renter duration and *f(t)* is the probability density function of t. The mathematical definition of hazard function h is *h(t)* = *f(t)/S(t)* where *S(t)* is the survival function. So *h(t)* is the unconditional probability of renting at time *t* scaled by the fraction renting at time *t* (or survival at time t). The hazard $h(t|X)$ is the instantaneous conditional rate of transition for individual *i* from renting to ownership and the Cox proportional hazard model is of the following form:

$$h(t, X_i) = h_0(t) exp\{X_i \beta_X\} \qquad (1)$$

The hazard is the product of a function common to all the households, the baseline hazard $h_0(t)$ and the household specific factors vector X_i $(X_{i1}, X_{i2}, \dots, X_{ik})$. The baseline hazard affects the

ownership probabilities for all the households and is not specified any parametric form and is estimated nonparametrically in the semiparametric Cox proportional hazard model (Cox 1972). In the hazard regression models what is of interest is the hazard ratio for any independent variable X_k given by e^{β_k} If the hazard ratios is greater than for variable X_k it implies that the marginal increase in the variable X_k increases the hazard of the event, whereas if it is less than one it lowers the hazard of the event. For details on the hazard model and estimation of hazard models see Hosmer et al 2008, Kalbfleisch and Prentice 2002).

The model specified in (1) is right as well as left censored hence hazard models are best suited to analyze this. The model specified in (1) is censored on the right because in the year 2009 when the analysis time stops, some households are still renting. The model is censored on the left because individuals enter the analysis when they are 25 years or older and also many immigrants enter the U.S. when they are older than 25 years. Most Americans buy homes after they complete their schooling or after they start their family, which is assumed to be 25 years of age. In model (1) the individual enters the analysis once they are 25 years however; my results are robust if I change the age of entry into the analysis from 25 to 30 or from 25 to 20.

The model specified in (1) can also be used to estimate the exit probability from homeownership for minorities and immigrants. For the homeownership exit model, I define *s* as a random variable to represent ownership duration and *g(s)* is the probability density function of *s*. The hazard $\theta(s|Z)$ is the conditional instantaneous rate of transition from ownership to renting and the proportional hazard model is of the following form:

$$\theta(s, Z_i) = \theta_0(s) exp\{Z_i \beta_z\} \qquad (2)$$

For the homeownership exit analysis the household head is a part of the mover group who has moved from ownership to renting. The individual enters the analysis the year they became homeowners (previous move) and they leave the analysis when they move during the last two years (current move) from homeownership to renting. Some previous homeowners in the mover group have moved but continued with home ownership and so the model is right censored.

The vector *X* in the homeownership model , given by equation (1) includes important homeownership determinants for immigrants and minorities as shown by the previous literature. Previous work on immigrant housing have shown that Hispanic immigrants are younger and often have lower homeownership rates than other immigrants. Generally homeownership is more prevalent if the household head is married and has children. We include household head's age, marital status, and whether they have children or not. Education is known to be an important determinant of homeownership and we control for whether the household head has completed high school, college, or college and above. Instead of personal income I include family income because for many immigrants and minority households often other household members contribute towards mortgage payments (Flippen 2001). I also include whether the household has any asset or not and different race categories as follows: White non-Hispanic, Hispanic, black only non-Hispanic, and other non-Hispanic. The vector *X* also controls for geographical region and whether the unit is in the urban area or is in the central city.

Given that the assimilation and income mobility of the Hispanic immigrants is very different from the Hispanic natives, I estimate models given by (1) and (2) for Hispanics only and control for whether the Hispanic household head is an immigrant or not (Zhou1997; Borjas 1992, 2006). Some recent work on immigrant homeownership has shown that citizenship improves the chances of immigrant homeownership (Diaz McConnell and Enrico 2007;

Amuedo-Dorantes and Mundra 2012). I estimate a homeownership as well as a homeownership exit model for immigrants only and control for whether the immigrant is a citizen or not.

The vector Z in the homeownership exit model, given by equation (2), includes all the variables in X as well as the period when the household moved previously or bought their previous home. I divide the years of previous move into meaningful sub-periods to capture whether there was a significant higher hazard of homeownership exit for immigrants and minorities if they obtained mortgage during the peak housing boom period. The sub-periods are before 1995, 1995 – 2000, 2001 – 2003, and the omitted reference group 2004 – 2006.[10] An important question is whether the homeowners who obtained their mortgage or bought homes during the period 2004-2006 show a higher chance of losing their homeownership than the other recent homeowners. From the AHS mover sample I estimate the hazard of exit from homeownership for all the previous homeowners (some of them are currently owning a home and others are renting) and estimate whether the chances of exit from homeownership were relatively higher for the ones who bought their previous home during 2004 – 2006. In another extension of model (2), I vary the previous year mortgage dummy across different ethnicities by including an interaction effect of the previous year dummy with different minority groups in a difference-in-difference model. In this model using the recent mover group I test whether the homeownership exit was relatively higher for Hispanics and blacks compared to whites who bought their previous homes during the peak subprime periods of 2004 – 2006.

The chi-square test fails to reject the null hypothesis of no proportional hazard for all cases, but for robustness purposes I compare my findings from the proportional hazard model with the Weibull parametric hazard model for all the models. The Cox-proportional hazard

[10] The results from the proportional hazard model are robust for the reference period for any other classification of the previous year's mortgage.

model imposes no parametric functional form on the baseline hazard and hence is quite flexible. However, the tradeoff is that it is less efficient than a correct functional form parametric hazard model. In the Weibull hazard model the baseline hazard is specified as $h_0(t) = pt^{p-1}exp\{\beta_0\}$ where p is the ancillary shape parameter to be estimated using the data and the scale parameter is $exp\{\beta_0\}$. Under Weibull distribution the proportional hazard assumption model given by (1) is as follows:

$$h(t, X_i) = pt^{p-1}exp\{X_i\beta_z\} \qquad (3)$$

Traditionally the time varying covariates are difficult to account for in the hazard models. Here the time varying covariate, such as the year of previous mortgage, is an external covariate and since in the Cox hazard model the baseline hazard is never estimated, the usual properties of the Cox model holds (see Kalbfleisch and Prentice 2002). The models given by 1-3 are estimated by maximum likelihood and I report the estimated hazard ratios.

6. Results

6.1 Unconditional Hazard

Before discussing the results from the hazard regression model, it is insightful to examine the unconditional hazard of homeownership and exit from homeownership for all the groups. Figures 1 and 2 present the Nelson-Meir unconditional hazard ratio for homeownership and exit, respectively. For all the groups the hazard of homeownership increases and then decreases. The hazard estimates for homeownership from Figure 1 show that the chances of homeownership are lower for blacks than whites throughout the analysis time but that is not the case for Hispanics. For the first 20 years of the analysis time, the hazard of homeownership is lower for the

Hispanics than the Whites and then the situation reverses. This depicts a greater upward mobility for Hispanics with age than compared to whites. Moreover, this also indicates that the substantial assimilation of Hispanic immigrants over time leads to greater homeownership for them. Thus it seems that in recent years the chance of first time homeownership has improved for Hispanics compared to blacks. Surprisingly, the homeownership hazard for immigrants is significantly higher than for natives, though this could possibly disappear if one controls for other factors. This is because the numerator in the hazard rate (the probability of renting) is increasing and the denominator (the proportion of survivors or household heads who continue to rent) is decreasing relatively faster at the beginning of the analysis than in the later time periods.

The hazard of exit from homeownership is unambiguously higher for immigrants and minorities as shown in Figure 2. However, the home sustainability gap for immigrants, blacks, and Hispanics have significantly narrowed for the household heads that enter the analysis in the recent time periods. The hazard of exit at the beginning of the analysis time drops and then rises – again because in the beginning clearly there are higher proportion of homeowners who continue owning their homes or there are higher survivors. These hazard illustrations are interesting in their own right and give us an indication of what one can expect in a conditional survival Cox model where we control for various demographic, economic, geographic, and time effects.

6.2 Cox-Proportional Hazard Model

The estimated hazard ratios and their respective standard errors for the home ownership model given in equation (1) in section IV are presented in Table 4. Overall I find that the housing boom did not increase homeownership for minorities or immigrants compared to that of

the whites and the natives respectively. Blacks and Hispanics have a lower hazard or chance of homeownership than whites. After controlling for other factors the unconditional hazard advantage in homeownership for immigrants versus natives disappear; immigrants have a lower hazard of first time homeownership versus natives. Homeownership disadvantage for minority and immigrants persists during the recent periods. Older, married household heads with children and a college degree and above have a higher chance of homeownership. Family income and ownership of an asset also significantly increases the chance of homeownership. As expected from earlier studies, household heads in urban areas and living in the south have a lower chance of homeownership. Given that almost 70% of first homeowners have obtained their mortgage recently, the results show that the recent relaxing of credit in the housing mortgage and the push towards more homeownership has not significantly benefited minorities and immigrants relative to whites and natives, respectively, in their first homeownership in the U.S.

The result from the estimation of the hazard model for exit from homeownership using the mover sample of AHS 2009 is given in Table 5. It is not surprising to note that the demographic and income factors that promote homeownership also lower the chances of exit from homeownership. Older, married, household heads with children, higher annual family income, and ownership of assets lowers the hazard of exit from homeownership significantly. The results from the Cox hazard exit model of previous homeowners show that blacks and immigrants have significant higher exit from homeownership than whites and natives respectively. However, the Hispanic household head does not have a significant higher hazard of exit from homeownership. I also find that the hazard ratio is significantly higher for homeowners who obtained their previous mortgage during the years of subprime boom, 2004 –

2006, compared to other years. Household heads in urban areas have higher exit from homeownership.

To further examine whether the hazard of exit from homeownership was very different for Hispanics and blacks compared to whites during the recent housing bust I use a difference-in-difference approach. The year when previous mortgage was obtained varies by different groups in the Cox hazard model and the results are given in Table 6. The hazard of exit is higher for Hispanics compared to whites in magnitude but is statistically insignificant if they bought the homes during the expansion of the subprime mortgage,. However, for Blacks the hazard of exit from homeownership is significantly higher compared to the whites if the mortgage is obtained during 2001 – 2003. For Hispanics the hazard of exit from homeownership is lower post 1995, a finding supported by earlier work.

6.2.1 Hispanic Only Sample

The findings from the full sample that Hispanics were not significantly affected by the recent bust need further examining. In this section I estimate homeownership and exit from homeownership for Hispanics only and control for an immigrant dummy. The results are given in Table 7. I find that Hispanic immigrants during the recent housing market did not have any significant higher homeownership than native Hispanics. The largest gain in homeownership is for those Hispanics who bought their previous homes during 2004 – 2006, the peak subprime lending period. Even if the Hispanics overall do not have a significant homeownership exit, I find that in spite of the small Hispanic mover sample of 264 in the 2009 AHS Hispanic immigrants have significantly higher exit from homeownership with the hazard ratio of 1.658

(significant at 1%). Old Hispanics have significantly lower homeownership, as well as lower exit if they are already homeowners. Family income for Hispanics significantly improves first time homeownership as well as lowers the hazard of exit from homeownership as the pooling of resources might be more crucial for Hispanics due to their family structure than for blacks.

6.2.2 Immigrant Only Sample

To examine the effect of naturalization on immigrant homeownership and exit from homeownership during the recent housing boom and bust I estimate homeownership and exit model for immigrants only and examine the role of citizenship. The result is given in Table 8. Immigrants who obtain U.S. citizenship have significantly higher chance of first-homeownership (hazard ratio is 1.236) in the U.S. as well as significantly lower (hazard ratio is 0.682) chance of exit from homeownership. Similar to findings from earlier papers after controlling for economic, demographic, and time in the U.S. (here I control through the use of hazard model) citizenship is a signal of immigrant adaptation as well as a signal of permanence in the U.S. Annual family income again is a very significant factor both in the higher hazard of first homeownership as well as for a lower hazard of exit from homeownership. In terms of region, immigrants living in the west and in the urban areas have a lower chance of homeownership during the recent years in the U.S. In the exit model for immigrants again the highest hazard of homeownership is for the previous homeowners who bought their homes during 2004 – 2006, the peak subprime lending period.

6.2.3 Robustness: Weibull Hazard Model

For robustness of the findings from the Cox hazard model, a parametric Weibull hazard model given by equation (3) is estimated for both homeownership and home exit. The results from parametric Weibull hazard model are reported for Tables 4-6 and the findings are similar to the results from the Cox proportional hazard model.

7. Summary and Discussion of Findings

Using the AHS 2009 data and hazard model of homeownership and home exit, this paper finds that the Hispanics and blacks had significantly lower chances of owning their first home compared to whites during the recent housing boom. Also, immigrants had a lower conditional hazard of homeownership than natives. On the other hand using the sample of household head that have moved recently I find that the hazard of exit from homeownership during the recent housing bust was significantly higher for blacks than for whites and for immigrants than for natives. Hispanics overall did not face a higher exit from homeownership than ~~the~~ whites.

Using the mover sample, households who obtained their mortgage during the years 2004 – 2006 faced a higher exit from homeownership than the ones who obtained their mortgage during other years. This holds after controlling for income and demographic differences and also across the functional form imposed on the baseline hazard. This finding supported by this paper is consistent with some evidence, both in the popular press and research articles, that there was some slack and deterioration in the underwriting practices and potential predatory lending during the peak subprime period. Similar to the overall hazard of exit from homeownership the evidence for Hispanics shows that they did not face higher exit compared to whites if they

bought homes during the peak period of subprime mortgage. However, for blacks the hazard of exit from homeownership is significantly higher compared to whites if the mortgage is obtained during 2001 - 2003.

Blacks had the lowest gain in their first-homeownership during the recent boom and the highest loss from homeownership during the recent bust. From the mover sample of AHS 2009 of all the groups who obtained their previous home mortgage during the years 2004 – 2006, blacks had the highest exit from homeownership. A couple of factors may contribute to this discouraging trend. First, as Table C depicts, blacks have the highest number of women heads of households with low levels of education and low income. As a result, this group is unable to afford decent quality despite Government policies to bridge the black-white homeownership gap. Second, the family structure for blacks in the U.S. is dominated by single mothers who might be easy targets for toxic mortgage schemes–designed to promote the American Dream as well as victims of deteriorating underwriting practices during the subprime boom.

Immigrants have a significantly higher exit from homeownership than the natives. From the immigrant only sample, I find strong evidence that U.S. citizenship helps lower exit from homeownership. Immigrants who have citizenship status are often more assimilated than immigrants without citizenship and have better job prospects and financial security in the U.S. Moreover, they might have a better knowledge of the mortgage market and are in a better position to negotiate for better loan rates. It is interesting that the Hispanic natives and Hispanic immigrants had a different experience during the recent housing boom and bust. From my Hispanics only sample, I find that Hispanic immigrants have a lower hazard of homeownership and a higher hazard of exit from homeownership than the Hispanic natives. Given that Hispanic natives may be more fluent in English and in a relative stronger financial position than their

immigrant counterparts, they were better able to understand the mortgage market and select loan vehicles with less risk that were offered during the housing boom and during the subprime periods.

This paper provides empirical evidence that the recent deterioration of underwriting practices and a boom in mortgage did not benefit minorities and immigrants relatively more than whites and natives in terms of first homeownership. However minorities and immigrants had a higher exodus from homeownership if they obtained loans during the boom period of subprime lending compared to whites and natives, respectively. This experience was worse for the blacks.

Blacks experienced significantly lower increase in homeownership than whites and highest exit from homeownership particularly if they obtained the mortgage during the subprime boom during the years 2004 – 2006. Hispanics, on the other hand, did not experience significant increase in homeownership nor did they face a higher exit from homeownership during the recent bust compared to whites. However, Hispanic immigrants were worse off in the recent housing market than Hispanic natives. Immigrants were worse off in the recent housing market than natives, both in terms of lower homeownership and higher exit although naturalized immigrants fared better than the non-naturalized immigrants. In summary this paper argues that the recent housing boom as well as the housing bust was not homogeneously experienced by all groups in the U.S.

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Figure1: Smooth Hazard Estimate of First-time Homeownership

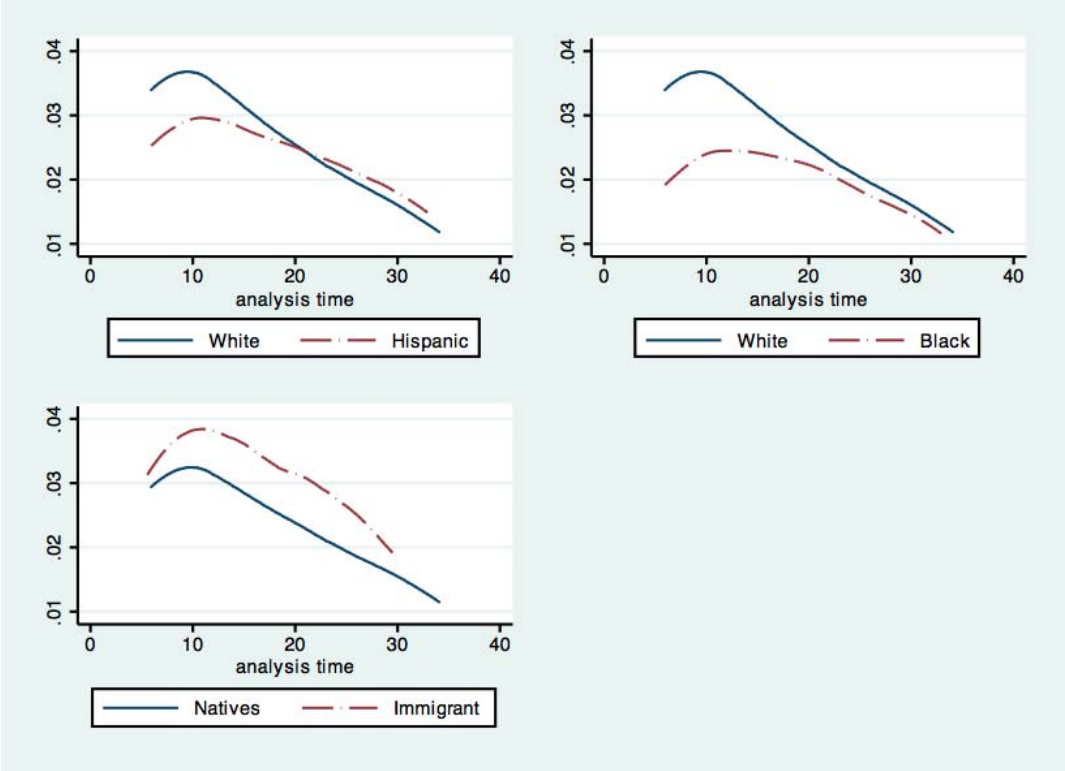

Figure 2: Smooth Hazard Estimate of Exit from Homeownership

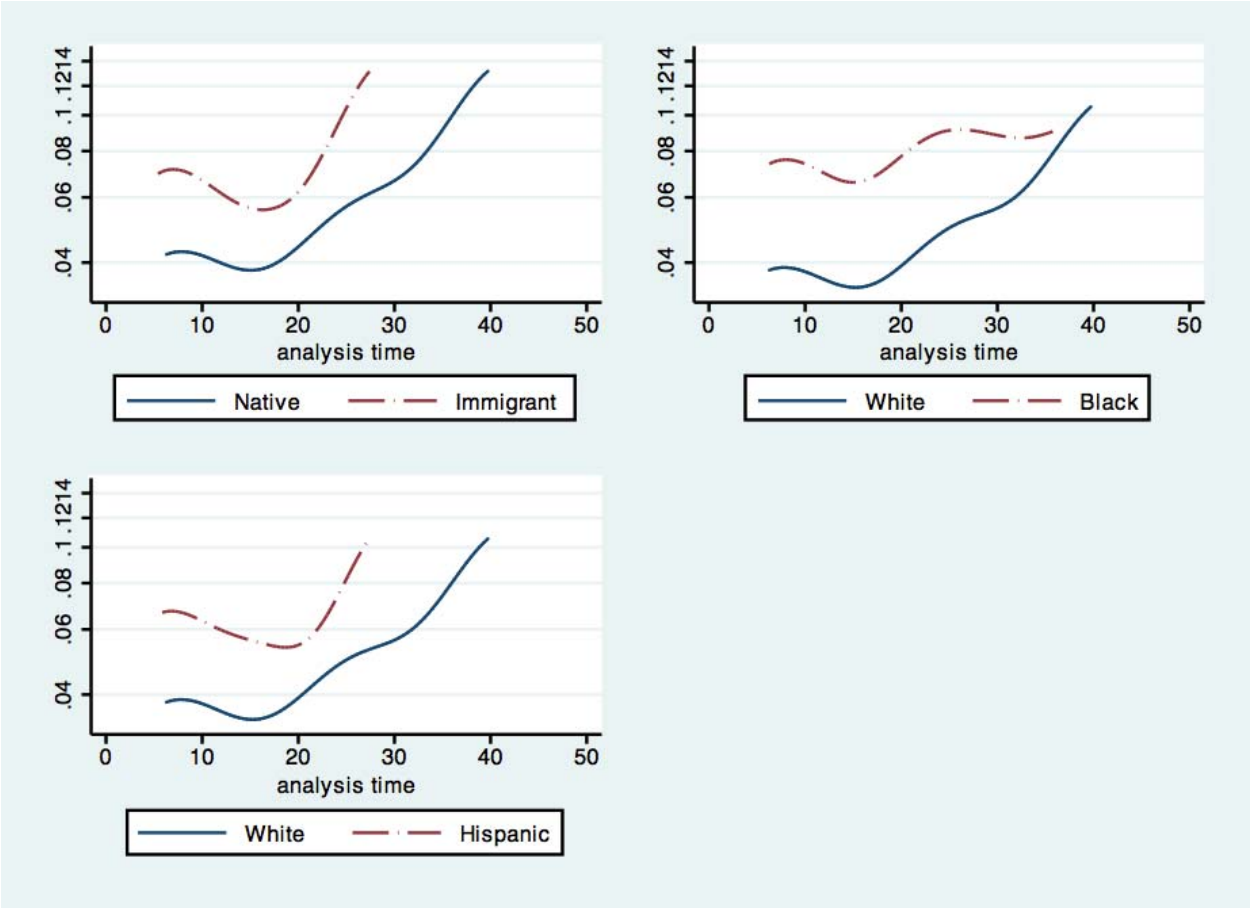

Table 1: First Time Homeownership for Different Groups

Variable	Observations	Proportion	t-statistic
Natives	19483	0.490	-
Immigrants	4577	0.389	12.599***
Naturalized Immigrants	2287	0.503	
Non-naturalized Immigrants	3164	0.280	16.936***
Non-Hispanic Whites	14335	0.533	
Hispanics	4071	0.370	18.971***
Non-Hispanic Whites	14435	0.533	
Blacks	3854	0.363	19.358***
Year Mortgage Obtained			
1995 - 2009	6394	0.973	
Otherwise	1305	0.947	4.034***
2001 - 2006	3338	0.978	
Otherwise	4361	0.962	3.924***
2004 - 2006	2098	0.976	
Otherwise	5601	0.966	2.4099***
2006 - 2007	1695	0.963	
Otherwise	6004	0.971	1.544**

Table 2: Exit from Homeownership: Mover Sample

	Observations	Proportion	t-statistic
Natives	2145	0.451	-
Immigrants	293	0.580	-4.199***
Naturalized Immigrants	151	0.457	
Non-naturalized Immigrants	142	0.711	-4.560***
Non-Hispanic Whites	1798	0.41	
Hispanics	267	0.592	-5.632***
Non-Hispanic Whites	1798	0.41	
Blacks	230	0.735	-10.349***
Previous Homeownership			
Before 1995	437	0.382	
1995 and after	2001	0.485	-3.975**
1995 - 2000	552	0.406	
Otherwise	1886	0.484	-3.279***
2001 - 2006	1449	0.515	
Otherwise	989	0.395	5.869***
2004 - 2006	938	0.554	
Otherwise	1500	0.411	6.937***

*** Significance at the 1% level, **Significance at the 5% level

Table 3: Easing of Credit Market or Aggressive Mortgage Lending for Different groups

	Observations	Proportion	t-statistic
Mortgage Refinancing			
Natives	13525	0.283	
Immigrants	1526	0.211	6.444***
Non-Hispanic Whites	12095	0.291	
Hispanic	1689	0.218	6.711***
Non-Hispanic Whites	12095	0.291	
Black non-Hispanic	1267	0.200	7.665***
Home Equity Credit			
Natives	21440	0.159	
Immigrants	2199	0.117	5.706***
Non-Hispanic Whites	19105	0.170	
Hispanic	2523	0.107	9.392***
Non-Hispanic Whites	19105	0.170	
Black non-Hispanic	2011	0.072	15.383***
Loan To Value			
Natives	9091	0.782	
Immigrants	1097	0.776	0.723
Non-Hispanic Whites	8271	0.776	
Hispanic	1149	0.790	-1.827
Non-Hispanic Whites	8271	0.776	-6.067***
Black non-Hispanic	768	0.829	
Housing Cost as a % of Family Income			
Natives	29842	0.291	
Immigrants	4141	0.380	-6.549***
Non-Hispanic Whites	25296	0.267	
Hispanic	4676	0.381	-7.485***
Non-Hispanic Whites	25296	0.267	
Black non-Hispanic	4011	0.430	-4.558***

*** Significance at the 1% level, **Significance at the 5% level

Table 4: Time to First Homeownership Proportional Hazard Models

Variables	Cox Hazard Ratio	Robust S.E.	Weibull Hazard Ratio	Robust S.E.
Age	0.967***	0.001	0.956	0.001
Male	1.103***	0.024	1.108	0.026
Some College	0.992	0.027	0.990	0.028
College Degree and above	1.150***	0.033	1.154	0.035
Married	1.712***	0.045	1.746	0.048
Have Children	1.087***	0.026	1.091	0.027
Annual Family Income (log)	1.483***	0.026	1.501	0.027
Ownership of Asset	1.393***	0.037	1.417	0.040
Hispanic	0.925**	0.033	0.922	0.034
Black only (non-Hispanic)	0.869***	0.028	0.869	0.029
Other (non-Hispanic)	0.916**	0.039	0.918	0.041
Immigrant	1.050	0.035	1.081	0.037
Northeast	1.209***	0.039	1.222	0.041
Midwest	1.522***	0.051	1.550	0.054
West	1.367***	0.043	1.383	0.046
Urban	0.768***	0.020	0.760	0.021
Sample Size	20636		20636	
Regression Fit Statistics				
Wald Chi(16)	3924.01		4288.80	
p-value	0.0000		0.0000	

*** Significance at the 1% level, **Significance at the 5% level

Table 5: Exit from Homeownership (Moving from Ownership to Renting)

Variables	Cox Hazard Ratio	Robust S.E.	Weibull Hazard Ratio	Robust S.E.
Age	0.985***	0.003	0.984***	0.003
Male	0.869**	0.051	0.853**	0.056
Some College	0.903	0.062	0.885	0.069
College and above	0.774***	0.061	0.772***	0.067
Married	0.684***	0.047	0.672***	0.051
Have Children	0.950	0.061	0.960	0.069
Annual Family Income (log)	0.776***	0.023	0.765**	0.025
Ownership of Asset	0.739***	0.056	0.723***	0.059
Hispanic	1.125	0.100	1.152	0.112
Black only (non-Hispanic)	1.441***	0.117	1.450***	0.135
Other (non-Hispanic)	0.930	0.129	0.960	0.147
Immigrant	1.325***	0.119	1.352***	0.135
Northeast	0.996	0.088	1.004	0.097
Midwest	1.008	0.073	1.006	0.081
West	1.121	0.089	1.123	0.010
Urban	1.362***	0.102	1.398***	0.116
Previous Home Ownership:				
Before 1995	0.0006***	0.0002	0.001***	0.0002
1995-2000	0.182***	0.002	0.023***	0.002
2001-2003	0.138***	0.014	0.123***	0.01
Sample Size	2398		2398	
Regression Fit Statistics				
Wald Chi(19)	2154.30		2154.30	
p-value	0.0000		0.0000	

*** Significance at the 1% level, **Significance at the 5% level

Table 6: Exit from Homeownership: Differential Effect of the Period Mortgage Obtained Across Different Groups

Variables	Cox Hazard Ratio	Robust S.E.	Weibull Hazard Ratio	Robust S.E.
Age	0.984***	0.003	0.983***	0.003
Male	0.866**	0.051	0.854**	0.056
Some College	0.905	0.064	0.893	0.070
College and above	0.783***	0.062	0.782***	0.068
Married	0.682***	0.046	0.671***	0.050
Have Children	0.959	0.062	0.963	0.068
Annual Family Income (log)	0.776***	0.024	0.765**	0.025
Ownership of Asset	0.737***	0.057	0.719***	0.059
Hispanic	1.025	0.113	1.104	0.148
Black only (non-Hispanic)	1.246*	0.150	1.333***	0.211
Other (non-Hispanic)	1.075	0.199	1.166	0.272
Immigrant	1.317***	0.119	1.339***	0.135
Northeast	1.009	0.089	1.018	0.099
Midwest	1.010	0.073	1.010	0.081
West	1.130	0.091	1.130	0.1009
Urban	1.355***	0.102	1.390***	0.115
Previous Home Ownership:				
Before 1995	0.0005***	0.0001	0.001***	0.0002
1995-2000	0.017***	0.002	0.023***	0.003
2001-2003	0.124***	0.016	0.117***	0.012
Previous Homeownership Differential by Ethnicity				
Hispanic*Before 1995	1.977***	0.499	1.836**	0.476
Hispanic*1995 - 2000	0.929	0.210	0.840	0.196
Hispanic*2001-2003	1.210	0.268	1.082	0.243
Black*Before 1995	0.970	0.224	0.887	0.235
Black*1995-2000	1.268	0.245	1.165	0.249
Black*2001 - 2003	1.700***	0.338	1.467*	0.311
Other*Before 1995	0.522**	0.200	0.495*	0.209
Other*1995-2000	0.949	0.368	0.857	0.352
Other*2001-2003	0.775	0.290	0.702	0.275
Sample Size	2398		2398	
Regression Fit Statistics				
Wald Chi(25)	1764.04		2175.72	
p-value	0.0000		0.0000	

*** Significance at the 1% level, **Significance at the 5% level

Table 7: Cox Hazard Ratio for Hispanics Only

Variables	First-time Homeownership	Robust S.E.	Homeownership Exit	Robust S.E.
Age	0.970***	0.004	0.972***	0.009
Male	1.048	0.064	0.713**	0.110
Some College	1.076	0.078	1.034	0.202
College and above	1.186**	0.1003	0.893	0.227
Married	1.832***	0.132	0.855	0.158
Have Children	1.103	0.069	1.079	0.255
Annual Family Income (log)	1.562***	0.069	0.7002***	0.056
Ownership of Asset	1.667***	0.141	0.738	0.169
Immigrant	1.015	0.063	1.658***	0.294
Northeast	0.496***	0.041	0.697	0.199
Midwest	0.950	0.088	0.643*	0.154
West	0.676***	0.045	0.858	0.156
Urban	0.765***	0.065	1.565	0.562
Previous Home Ownership:				
Before 1995			0.0016***	0.0005
1995-2000			0.0145***	0.003
2001-2003			0.0982***	0.010
Sample Size	3637		264	
Regression Fit Statistics				
Wald Chi(19)	625.27		360.79	
p-value	0.0000		0.0000	

*** Significance at the 1% level, **Significance at the 5% level

Table 8: Cox Hazard Ratio for Immigrants Only

Variables	First-time Homeownership	Robust S.E.	Homeownership Exit	Robust S.E.
Age	0.980***	0.003	0.971***	0.008
Male	0.948	0.051	0.949	0.154
Some College	0.859**	0.073	1.144	0.241
College and above	1.059	0.073	1.120	0.256
Married	1.502***	0.100	1.022	0.191
Have Children	1.221***	0.068	1.110	0.186
Annual Family Income (log)	1.657***	0.069	0.776***	0.074
Ownership of Asset	1.534***	0.1004	0.739	0.162
Hispanic	0.944	0.055	1.484**	0.265
Naturalized (U.S. Citizenship)	1.236***	0.067	0.682**	0.115
Northeast	0.613	0.043	1.333	0.309
Midwest	1.155*	0.093	1.043	0.235
West	0.692***	0.046	1.081	0.216
Urban	0.819**	0.070	0.923	0.229
Previous Home Ownership:				
Before 1995			0.002***	0.0009
1995-2000			0.020***	0.007
2001-2003			0.108***	0.029
Sample Size	4146		281	
Regression Fit Statistics				
Wald Chi(19)	676.38		312.57	
p-value	0.0000		0.0000	

*** Significance at the 1% level, **Significance at the 5% level

Appendix Tables

Table A
Variables and Definitions[1]

Variables	Definitions
Ownership	Dummy variable equal to 1 if household head owns a home
Male	Gender dummy
Age	Age of household head
High School	Dummy variable equal to 1 if completed High School or less
Some College	Dummy variable equal to 1 if completed some college
BA	Dummy variable equal to 1 if household head obtained a college degree
Graduate Education	Dummy variable equal to 1 if household head has a graduate education.
Married	Marital status dummy
Have Child	Dummy variable equal to 1 if the household head has a child.
Annual Family Income	Annual Family Income reported by the Household in 2009 US $
Ownership of Asset[2]	Dummy variable equal to 1 if the household owns an asset
Immigrant	Household heads not born in the U.S. to non-American parents
Naturalized Immigrant	Dummy variable equal to 1 for head who indicate having some asset
Time in the U.S. in years	Number of year's migrants is in the US.
White non-Hispanic	Dummy variable equal to 1 for household head who is white and not Hispanic.
Black non-Hispanic	Dummy variable equal to 1 for household head who is Black and not Hispanic
Hispanic	Dummy variable equal to 1 for household head who is Hispanic only
Other non-Hispanic	Dummy variable equal to 1 household head who is not Hispanic, not Black, not White . In AHS this group includes
Minority	Dummy variable equal to 1 for household head who is Hispanic and Black non-Hispanic.
Year Mortgage Obtained	Year current homeownership mortgage is obtained (Year unit is bought is also assumed to be the year when the mortgage was obtained)
Have Mortgage	Dummy variable equal to 1 for household head who owns a home and has a mortgage
Home equity Credit	Dummy variable equal to 1 for household head who owns a home and has a home equity credit
Monthly Housing Cost as a % of Family Income	Housing cost as a proportion of family income in the year 2009
Loan to Value at the time of purchase	Ratio of housing loan and purchase price at the time of purchase
Mortgage Refinancing	Dummy variable equal to 1 for household head who owns a home and has refinanced the mortgage
Govt. Mortgage Program	Dummy variable equal to 1 for household head who owns a home and has obtained a mortgage through subsidized government program
Urban	Dummy variable equal to 1 if the unit is in the urban area
Central City	Dummy variable equal to 1 if the unit is in the Central City
Mover Group Renter to Owner	Dummy variable equal to 1 for mover group household head who has moved from renting to ownership during the recent move
Mover Group Owner to Owner	Dummy variable equal to 1 for mover group household head who has moved from ownership to a new ownership during the recent move (not first time home buyer)
Mover Group Owner to Renter	Dummy variable equal to 1 for mover group household head who has moved from ownership to renting during recent move (head who has exited from homeownership)
Year Previous Mortgage Obtained	Year previous homeownership mortgage was obtained (Year previous unit was bought is also assumed to be the year when the mortgage was obtained)

[1]Details on the variables and the data can be obtained from the author upon request.
[2]This variable was coded as 1 if the household head received rental income or received dividends on stocks or earned interest on savings, CDs etc.

Table B
Variable Means and Standard Deviation for Whites, Hispanics, and Blacks

Variable	Whites			Hispanic			Blacks		
	Obs	**Mean**	**Std. Dev.**	**Obs**	**Mean**	**Std. Dev.**	**Obs**	**Mean**	**Std. Dev.**
Ownership	14435	0.533	0.50	4071	0.370	0.483	3854	0.363	0.481
Male	14435	0.562	0.496	4071	0.561	0.496	3854	0.405	0.491
Age	14435	43.209	11.102	4071	41.154	10.535	3854	44.277	11.017
High school	14435	0.350	0.477	4071	0.664	0.472	3854	0.487	0.500
Some College	14435	0.304	0.460	4071	0.213	0.410	3854	0.333	0.471
BA	14435	0.230	0.421	4071	0.087	0.283	3854	0.128	0.334
Graduate Education	14435	0.116	0.321	4071	0.035	0.184	3854	0.051	0.220
Married	14435	0.521	0.500	4071	0.564	0.496	3854	0.329	0.470
Have Child	14435	0.375	0.484	4071	0.580	0.494	3854	0.445	0.497
Annual Family Income	14435	65396.27	58748.59	4071	45276.060	38639.570	3854	41742.860	42672.920
Ownership of Asset	14435	0.233	0.423	4071	0.087	0.282	3854	0.084	0.277
Immigrant	14435	0.059	0.236	4071	0.568	0.495	3854	0.105	0.306
Naturalized Immigrant	4577	0.496	0.489	2311	0.298	0.458	404	0.483	0.500
Time in the US (years)	4577	19.48	14.214	2311	18.309	10.880	404	18.252	10.647
Minority									
Current Homeownership Mortgage Year									
>=1995	5218	0.828	0.378	1062	0.860	0.347	922	0.768	0.422
2001 - 2009	5218	0.653	0.476	1062	0.680	0.467	922	0.564	0.496
Have Mortgage	8055	0.701	0.458	1532	0.751	0.433	1457	0.698	0.459
Home Equity Credit	7429	0.143	0.351	1439	0.078	0.268	1347	0.056	0.229
Housing Cost as a % of Family Income	13516	0.289	0.810	3623	0.410	1.135	3341	0.454	2.446
Loan to Value	2996	0.831	0.207	621	0.817	0.250	471	0.847	0.229
Mortgage Refinancing	4796	0.278	0.448	989	0.229	0.420	824	0.200	0.400
Govt. Mortgage Program	4845	0.081	0.272	1005	0.105	0.307	826	0.119	0.324
Urban	14435	0.727	0.445	4071	0.912	0.283	3854	0.890	0.313

Central City	14435	0.269	0.443	4071	0.476	0.499	3854	0.519	0.500
Northeast	14435	0.270	0.444	4071	0.224	0.417	3854	0.227	0.419
Midwest	14435	0.284	0.451	4071	0.103	0.304	3854	0.215	0.411
South	14435	0.274	0.446	4071	0.313	0.464	3854	0.488	0.500
West	14435	0.172	0.378	4071	0.360	0.480	3854	0.069	0.254
Mover Group									
Move from renter to owner	2048	0.327	0.469	645	0.177	0.382	640	0.175	0.380
Move from owner to owner	1798	0.590	0.492	267	0.408	0.492	230	0.265	0.442
Move from owner to renter	1798	0.410	0.492	267	0.592	0.492	230	0.735	0.442
(Exit from Homeownership)									
Previous Homeownership Mortgage Year									
Before 1995	3704	0.110	0.313	882	0.076	0.265	837	0.091	0.287
1995 - 2000	3704	0.177	0.381	882	0.158	0.365	837	0.168	0.374
2001 - 2006	3704	0.714	0.452	882	0.766	0.423	837	0.741	0.438
2004 - 2006	3704	0.526	0.499	882	0.587	0.493	837	0.538	0.499

Table C
Variable Means and Standard Deviation for the Whole Sample , Natives, and Immigrants

Variables	All			Natives			Immigrants		
	Obs	**Mean**	**Std. Dev.**	**Obs**	**Mean**	**Std. Dev.**	**Obs**	**Mean**	**Std. Dev.**
Ownership	24060	0.471	0.499	19483	0.490	0.500	19483	0.389	0.488
Male	24060	0.539	0.498	19483	0.522	0.500	19483	0.614	0.487
Age	24060	42.918	11.102	19483	43.109	11.253	19483	42.105	10.399
High school	24060	0.422	0.494	19483	0.393	0.488	19483	0.545	0.498
Some College	24060	0.290	0.454	19483	0.315	0.465	19483	0.181	0.385
BA	24060	0.192	0.394	19483	0.199	0.3999	19483	0.160	0.367
Graduate Education	24060	0.097	0.296	19483	0.0939	0.291	19483	0.113	0.317
Married	24060	0.503	0.500	19483	0.4701	0.4991	19483	0.641	0.480
Have Child	24060	0.427	0.495	19483	0.399	0.490	19483	0.547	0.498
Annual Family Income	24060	58638.250	55043.970	19483	59202.6	55319.68	19483	56235.970	53794.290
Ownership of Asset	24060	0.182	0.386	19483	0.192	0.394	19483	0.137	0.344
Immigrant	24060	0.190	0.392						
Naturalized Immigrant	4577	0.397	0.489					0.397	0.489
Time in the US (years)	4577	18.157	11.493					18.157	11.493
White non-Hispanic	24060	0.600	0.490	19483	0.697	0.460	19483	0.187	0.390
Black non-Hispanic	24060	0.160	0.367	19483	0.177	0.382	19483	0.088	0.284
Hispanics	24060	0.169	0.375	19483	0.090	0.287	19483	0.505	0.500
Other non-Hispanic	24060	0.071	0.256	19483	0.036	0.185	19483	0.220	0.414
Minority	22360	0.354	0.478	18788	0.277	0.448	19483	0.760	0.427
Current Homeownership Mortgage Year									
>=1995	7699	0.830	0.375	6404	0.819	0.385	1295	0.886	0.317
2001 - 2009	7699	0.654	0.476	6404	0.644	0.479	1295	0.703	0.457
Have Mortgage	11793	0.711	0.453	9958	0.699	0.459	1835	0.778	0.416
Home Equity Credit	10897	0.123	0.328	9226	0.128	0.334	1671	0.095	0.294

Housing Cost as a % of Family Income	20480	0.337	1.281	17272	0.326	1.342	3208	0.401	0.880
Loan to Value	4088	0.831	0.217	3501	0.834	0.212	587	0.810	0.243
Mortgage Refinancing	7074	0.260	0.439	5881	0.268	0.443	1193	0.219	0.414
Govt. Mortgage Program	7148	0.087	0.282	5939	0.090	0.287	1209	0.073	0.260
Urban	24060	0.795	0.403	19483	0.763	0.425	4577	0.932	0.251
Central City	24060	0.354	0.478	19483	0.331	0.470	4577	0.456	0.498
Northeast	24060	0.254	0.435	19483	0.247	0.431	4577	0.285	0.452
Midwest	24060	0.234	0.424	19483	0.258	0.437	4577	0.135	0.342
South	24060	0.309	0.462	19483	0.179	0.383	4577	0.271	0.445
West	24060	0.203	0.403	19483	0.317	0.465	4577	0.309	0.462
Mover Group									
Move from renter to owner	3625	0.273	0.446	2884	0.281	0.449	741	0.244	0.430
Move from owner to owner	2438	0.534	0.499	2145	0.549	0.498	293	0.420	0.494
Move from owner to renter	2438	0.466	0.499	2145	0.451	0.498	293	0.580	0.494
(Exit from Homeownership)									
Previous Homeownership Mortgage Year									
Before 1995	5836	0.099	0.299	4872	0.106	0.308	964	0.063	0.244
1995 - 2000	5836	0.171	0.377	4872	0.172	0.378	964	0.165	0.371
2001 - 2006	5836	0.730	0.444	4872	0.721	0.448	964	0.772	0.420
2004 - 2006	5836	0.540	0.498	4872	0.532	0.499	964	0.582	0.493