Immigrant and Native Asset Accumulation in Housing

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Introduction

Wealth means economic security. For many people, purchasing a home is the largest expenditure they will make during their lifetime, as well as their greatest source of wealth. Further, homeownership is associated with a host of positive social behaviors from voting and political activity to community connection. The social benefits of homeownership are consistently recognized by the federal government by the number of federal programs designed to facilitate home purchases, particularly for those with lower incomes who otherwise could not enter the housing market, and by the fact that mortgage interest is an itemized deduction for federal taxes. Just as there is an earnings gap between immigrants and natives, there is also an overall homeownership gap. According to Borjas (2002) there was a 20 percentage point difference in homeownership rates in 2000. In general, however, questions about immigrant asset accumulation have remained nearly unasked in the face of hundreds of articles about immigrant assimilation. Do immigrants acquire assets at the same rate and by the same determinants as do natives? In this paper we focus on asset differences between immigrants and natives by examining the acquisition of a single asset—one's home.

Immigrants, more so than any other group, may lack access, knowledge and confidence in U.S. financial institutions. Financial institutions, in turn, may be suspicious of immigrants, particularly non-citizens, as less credit worthy applicants.[1] How do the myriad of differences in income, education, legal status, family types, race, ethnicity, and location influence homeownership? Once purchased, do homes provide the same wealth accumulation for immigrants as they do for natives? I examine the determinants of homeownership, the value of purchased homes (a measure of potential housing wealth), and the equity owned for those who

[1] I did not find any evidence that there is official discrimination by any institutions on the basis of citizenship status.

have purchased a home (a measure of actual housing wealth). While past authors have concentrated on immigrants, immigrant nativity, and residential location to explain homeownership differences, in this paper immigrants are separated into immigrant citizens and non-citizens, and income and age effects are allowed to differ for immigrants and natives. Newly recognizing the role of citizenship, the U.S. Census Bureau, in its last housing report comparing immigrants and natives, consistently reports information by citizenship status (Census Bureau, 2003a). The findings in this paper indicate that immigrant and citizenship status are, themselves, not associated with the probability of homeownership, home value, and home equity, but work through critical age and income effects .

The results of this study have important economic as well as policy implications. Given that the distribution of wealth is much more unequal than that of income, homeownership is a particularly important vehicle for reducing wealth gaps. In addition, it has been argued that homeownership is an important aspect of community participation and neighborhood stability. These implications are particularly important for immigrants and for many communities in the United States. Closer community ties through homeownership may mean that immigrants are more likely to retain steady employment, become politically integrated, improve language skills and provide better education for their children. Whether homeownership is the cause or effect of these related outcomes, it is important to understand better the factors that influence the housing decisions of immigrants.

Home Ownership Issues

Home ownership is considered a hallmark of life in the United States. The constraints to ownership are numerous and immigrants often find themselves on the wrong side of the barriers to purchasing a home. Bostic, Calem, and Wachter (2004) review the literature and identify

income, wealth, and credit constraints as the principal reasons (from the demand side) that people are unable to purchase a home. They note the declining credit quality of renters over time and say it is possible that "successive waves of immigrants have had larger proportions with credit quality below the critical threshold levels" (13). They also note that race based discrimination and predatory lending are possible explanations. In an investigation of the impact of affordable lending efforts, Robert Quercia, Roberto McCarthy and Susan Wachter (2003) identify the populations associated with such constraints as minority, low to moderate income, central city residents, and young households but do not mention immigrants specifically.

Wealth accumulation equity studies have mostly addressed differences in home ownership between African Americans and whites. There are three consistent features to this literature: a large wealth gap, the importance of household composition, and the extent to which the gap is unexplained. Francine Blau and John Graham (1990) find that after controlling for income and other characteristics, 75% of the wealth differential remains unexplained and note that differences in housing equity could result from lower rates of appreciation in African American neighborhoods—a possibility that exists for immigrant neighborhoods as well. They also found that if given the higher levels of income of whites, African Americans would over-invest in housing relative to whites.

People in minority populations and immigrants may find that the most notable barrier to home ownership may well be the decision by mortgage lenders to deny loan applications. The impact of a bias in those decisions is felt by families over the long run because of housing's unique features. It is both a consumption and asset good. Some kind of shelter is necessary and the marginal payments on a mortgage are often similar in size to rental payments. While rental payments are sufficient to acquire shelter, mortgage payments provide shelter while also acting

as savings, improving one's welfare through wealth accumulation. In a now famous study of mortgage lending, Alicia Munnell, Geoffrey Totall, Lynn Browne, and James McEaneany (1996:39) found that "even after accounting for the applicant's obligation ratios, wealth, credit history, and loan-to-value ratio, and property, neighborhood and lender characteristics, as well as the stability of income, and whether he or she received private mortgage insurance, the race of the applicant still plays an important role in the lender's decision to approve or deny the loan". Race may confound some previous findings about the homeownership differences between immigrants and natives.

For more than twenty years the literature on the economic differences between immigrant and native workers has concentrated on wages or annual earnings (see, for examples, Chiswick, B. 1978; Borjas, G. 1985; Duleep, H. and M. Regets, 1998; Kossoudji, S. and D. Cobb-Clark, 2002). While the wage/earnings gap is important, the long term implications of consistently lower earnings on immigrants' retirement and ultimate residential decisions are unknown. Many immigrants purchase property in their home country, but we have little idea what the economics are behind the location choice of homeownership. We are also only beginning to learn about the determinants of home ownership in the United States for immigrants.

A small and growing literature has begun to assess differences between native and immigrant homeownership rates. Nearly every study reveals a significant difference in homeownership rates for natives and immigrants. Coulson (1998) finds that immigrants consistently reduce the rates of homeownership of different ethnic groups by 10 to 16 percentage points. Borjas (2002) notes that the "homeownership gap" has been increasing since 1980. Coulson (1999) finds that Latino immigrants are less likely to own their own home, while the results for Asian immigrants are mixed. Painter, Gabriel and Meyers, (2001) get similarly

negative results on immigrant status, but also include several ethnicity variables that emphasize the role that ethnicity plays in housing decisions.

Several authors claim that although homeownership rates for immigrants are more similar to African American than white rates, the causes for the differential may be quite different. While discrimination in housing markets often sits squarely in the middle of the explanation of differential homeownership rates for African Americans, and may provide some explanation for immigrants, questions about immigrants' familiarity with US financial institutions, the role of time horizons, and the question of credit constraints often arise when immigrants are studied. Krivo (1995) considers potential problems with credit markets and also notes that less than fluent English may lead to difficulty negotiating contracts. She finds that the individual characteristics of immigrants are important to explain the ownership differential but may be more important in the aggregate as a "neighborhood context". She is also one of the few authors to consider housing value. She finds that the foreign born have higher valued houses, but she does not adequately control of the size of the city of residence, which plays an important role in housing values. Coulson (1998) claims that lower rates of home ownership are largely explained by being immigrants, living in large metropolitan places where homeownership rates are generally low, having less education and by being younger than the average household heads. Alba (1992) found strong support for every group for the importance of individual characteristics' effect on homeownership, especially age, household composition, and socioeconomic position. Many authors find that homeownership rates differ by nationality or broad sending region (where typically Asians and Latinos are the identified groups). There is little discussion about why those differences arise. Borjas (2002) makes several claims: that only a small part of the native/immigrant homeownership gap is a result of differences in characteristics, that the

different locations of residence of natives and immigrants are important to explain the homeownership gap, and changes in national origin, combined with lower wages for "newer" national origin groups, drive the differences. But he doesn't know if lower home ownership rates stem from discrimination against "newer" groups, or if "the way the population is self selected from each source country's population could be responsible for the remaining differences" (20).

Perhaps because immigrant housing literature is still relatively new, homeownership rates typically remain the point of analysis (with the exception of Krivo). Ownership rates and the gap in homeownership rates for immigrants and natives are important to help understand the long term economic health of the population. Why does the homeownership gap exist? Many of the characteristics that are associated with homeownership militate against immigrant homeownership. City dwellers, those with lower income, and younger adults are less likely to own homes and immigrants have a high rate of urban residence, earn less money on average than natives, and are younger on average. Immigrants, unlike most natives, are likely to have family and community connections abroad and may choose to invest in housing or other assets in the home country rather than in the U.S (find that article on housing in China). At every age, immigrants may have spent fewer years in the U.S. labor market, and so may have less money to use as a down payment on a home. Further, immigrants' lack of knowledge of financial institutions, combined with potential cultural, ethnic, or racial biases on the part of lending institutions could both act to reduce immigrant homeownership rates. But the homeownership rate, like the labor supply rate, is just the entry into the vexing question of asset accumulation differences between natives and immigrants. Like income, housing value informs us about how

well people are doing economically. Like job tenure, equity suggests how much people are investing in their homes.

The Empirical Strategy

I investigate three housing outcomes that are related to wealth: whether or not the household owns a home, because mortgage payments contribute to wealth accumulation as well as providing shelter; home value, because the long run potential wealth accumulation from housing is related to the value of the home; and home equity because it is a measure of current wealth. When I use the phrase "homeownership rates" or "homeowners", I refer, as most people do, to people who own their homes, whether or not there is a mortgage on the property.

Both value and equity are contingent on having purchased a home, which means they are estimated on a select sample. I jointly estimate two sets of bivariate equations that account for selection in home ownership. I estimate home ownership and value jointly and then estimate home ownership and equity jointly using maximum likelihood methods. The first equation in each set estimates the probability of home ownership using a probit equation whose dependent variable distinguishes between those who do and do not own a home. The estimates from this equation are used to construct a selection bias correction in the second equation, which is either the home value or the home equity equation. This procedure is now a common way to correct for selection bias. Because there is a significant selection into home ownership, the results would be biased if left uncorrected.[2]

[2] The systems are estimated using the Heckman procedure in Stata. In each set of estimates, the hypothesis that rho = 0 (or that there was no systematic selection) was rejected at any significance level. Although these sample correction procedures can be unstable as models change, they were robust through many model specifications in this case.

Data

I use the 1996 Survey of Income and Program Participation (SIPP) for the United States. The 1996 panel contains twelve waves of interviews conducted over the period from 1996 to 2000. This paper does not include a panel analysis, but utilizes information from every wave in the 1996 panel, since waves include different information. Although this data set has individual level information as well as household level information for some variables, the housing information was asked of the reference person only; the same housing information was entered into the records of all individuals in the household. Thus, data for spouses or other family members is not independent information.[3] As a result, each observation is the reference person of the household, who I will refer to as the householder.[4] Because only householders, and not the entire adult population, are used in the sample, the sample is older than the entire adult population.

The sample was restricted to householders of age 25 or older, those not living in mobile homes (because of the ambiguity of the common practice of owning the mobile home but renting the land it sits on and because mortgage information is not available for those in mobile homes), and to those not living in institutional group homes. Each householder must be in both the migration history universe and the assets universe.[5] Any biases that result from this data collection strategy are present in these analyses. The final, unweighted, sample has 24,234 natives and 3,142 immigrants.

[3] SIPP survey procedures call for the person in whose name the household is owned or rented to be designated the reference person of the household. But if a married couple jointly owns the house (or jointly signs a lease), either may become the reference person.

[4] Householder does not mean homeowner. Householders may own their own homes or rent them.

[5] A small number of people living in mobile homes were eliminated from the sample because of the nebulous ownership position of people who own the building but rent the land where it sits. Some people for whom specific important information (like whether or not the house had a mortgage) is missing were eliminated from the sample. Mobile home owners were not asked mortgage questions. Home ownership depends on the house having a value of at least $1000.

People from U.S. territories are citizens, and so may have fewer obstacles to homeownership than those born in foreign countries. However, in many cases, people from Puerto Rico, Guam, and American Samoa. are culturally and linguistically more like immigrants. In this paper, those born in U.S. territories are considered to be immigrants. Citizen immigrants, then, include immigrants who have acquired U.S. citizenship after living in the United States, and people from U.S. territories who are born citizens. Non-citizens are those immigrants who have not obtained U.S. citizenship. I argue, in this paper, that citizenship and homeownership go hand in hand. Whether citizenship is the precursor to homeownership is unknown—but both express a kind of commitment to the United States. For all immigrants, the number of years since coming to the United States is an independent variable in all equations.

I use the latest housing information from SIPP, which pertains to 1999 or 2000. Both home value and equity are measured in 1999/2000 dollars. Home equity is the total property value minus any mortgage debt. The cross-section weights of that time period are used for all predictions and descriptive statistics.

Earned income, because its level and stability are fundamental to mortgage lenders' decisions, is a variable in the regressions. Mortgage lenders rely on income in their credit scores and householders rely on it when making housing decisions. I calculate permanent earned household income as the average household earned income over all twelve waves of the panel (or waves in which that household was observed), but given the short panel of SIPP it is more appropriately called "smoothed income". The value is divided by 10 in the regressions. The square of income is also included (and divided) and both are interacted with immigrant status to ascertain whether there are differences in behavior by immigrants and natives at the same income levels, allowing for the possibility that immigrants choose to spend and invest their income

differently than natives. This is of particular interest for homeownership, since remittances to the home country are important for many immigrants, but not natives.

It has been argued that more educated individuals behave differently in the housing market than their less educated counterparts (Louis M. Segal and Daniel G. Sullivan, 1998). Dummy variables are included for householders with a high school diploma or less education, and with some college. The omitted category is householders with at least a four year college degree. Married male and female householders are included separately and are compared to all householders that are not part of a married couple (see Kossoudji and Sedo, 2005). Race categories include African American, Asian, and Native American. White is the omitted category, and because such a high percentage of self-identified Asians in the United States are immigrants, the Asian variable is for natives only.

Housing prices and the desire to own homes vary by location. Rural residents are defined as those who do not live in any of the approximately 100 identified Metropolitan Statistical Area (MSA) cities or city groups in the United States (rural or small town might be a better description). Immigrants are more likely to live in large cities that are often called gateway cities. The identified gateway cities constitute a group of fourteen large cities that have significant immigrant populations.[6] Householders who live in identified cities, but not the Gateway cities, are coded zero for rural and zero for Gateway. To control for differences in housing prices by market, we include the poverty income index (a measure of the income required to be above the poverty line for each household in each residential location), which is based on local housing and rental prices, as a variable. Following the literature, we note the age-life-cycle association with the choice of homeownership. Age and age squared are included in the home ownership

6The cities are Atlanta, Boston, Chicago, Dallas, Detroit, Miami, Los Angeles, Houston, New York, Phoenix, Philadelphia, San Francisco, Seattle, and Washington, DC.

probability equation and are interacted with natives, immigrant citizens, and immigrant non-citizens. I also include the number of children in the household since the decision to purchase a home often depends on this aspect of family structure and because mortgage lenders calculate an obligation ratio based partly on this information.

For identification purposes, the determinants of the outcomes in the jointly estimated equations must be different. The number of children in the household and the age of the householder are included in the regression on home ownership. The length of time the house has been owned and whether the house was purchased with an FHA mortgage were included in the value and equity regressions.

The length of time the house has been owned influences value through rising home prices over time and equity by mortgage pay down (the longer you own the home the more equity you have conditional on value).[7] Age may also influence value but age and the length of time of home ownership are highly correlated and could not both be in the same regression. Although age may also play a role in value (the older one is the higher value house one can purchase) it probably does so because of higher income, a variable already in the regression.

Although the existence of FHA mortgages could influence the probability of home ownership, the measured variable is whether the house was purchased with an FHA mortgage and will affect the size of the loan (and hence the value of the house). A dummy variable for people who have ever retired from a job is included in the homeownership equation (since retirement may alter preferences for ownership over renting), but not in the value or equity equations (retirement itself shouldn't influence those values). The equity equation includes an

[7] FHA mortgages come from the Federal Housing Association and represent a long standing program within the United States government to promote home ownership for first time homebuyers and traditionally underserved populations. FHA mortgages are important to this analysis because householders with poor credit histories may still qualify for an FHA mortgage and FHA mortgages require a lower down payment than commercial mortgages (thus influencing both value and equity).

instrumented variable for value (so that equity comparisons do not also include value differences).[8]

A Description of Homeownership Characteristics

Differences in homeownership rates are adequately determined by a number of characteristics of natives and immigrants. Two, though, stand out, as startlingly important. First, a relatively few authors separate immigrants into immigrant citizens and immigrant non-citizens. Citizenship, and all it proxies, matters. Non-citizen immigrants are only two-thirds as likely to own homes as immigrant citizens. When one compares citizen immigrant and natives, the homeownership differences between immigrants and natives nearly disappear. Second, every real estate agent knows the home selling mantra—location, location, location. Location matters here also, and is important because a high proportion of immigrants live in large "gateway" cities where homeownership is generally low and home values are high.

Table 1 documents the proportions of homeowners among natives, citizens and non-citizens. Like other studies, I find that 70.4 percent of native household heads are homeowners as are 54.2 percent of immigrant household heads. That is, natives are 30 percent more likely to be homeowners than immigrants. This large gap has driven much of the past discussion about asset accumulation and assimilation for immigrants. But this gap principally exists because of a dearth of homeownership among non-citizen immigrants. Natives are only 7.8 percent more likely to own homes than immigrant citizens but are 62.2 percent more likely than non-citizens to

[8] The instrumental variable for value is the predicted value from the value equation, divided by the census poverty income index for the household.

own homes. Even before standardizing on numerous characteristics, then, the "homeownership gap" has been significantly explained by simply conditioning on citizenship.[9]

Two further observations stand out in Table 1. First is that home ownership rates vary by residential location for all groups. Just under three-fourths of natives and more than three fourths of citizen immigrant householders who live in an Metropolitan Statistical Area (MSA)—but not a Gateway city—are homeowners. That is, except in the Gateway cities, immigrant citizens who live in cities are *more* likely to own their own homes than natives. About 30 percent of natives, but only 20 percent of immigrants, live in these MSAs. In Gateway cities, a higher proportion of natives are homeowners (74.0 percent) and a lower proportion of immigrant citizens are homeowners (65.3 percent) and it is important to note that while only 21.0 percent of natives live in Gateway cities, more than one-half of immigrant citizens live in these large cities. Second is that non-citizens are unlikely to own homes. Only 43.4 percent of all non-citizens (who are about one half of immigrants) are homeowners. There is a drop in homeownership for non-citizens in non-MSA areas. A non-citizen in a non-MSA area (35.5 percent) is much less likely than a non-citizen in any MSA area (54.2 percent) to be a homeowner. It may be, but this is unsubstantiated, that immigrant farm workers or other low skilled immigrants are living disproportionately in rural areas and they are unlikely to purchase homes.

Table 2 documents the characteristics of immigrant citizens, immigrant non-citizens, and natives. Immigrant homeowners, whether citizen or non-citizen, have higher value homes than natives (XXX_TEST). Larger housing values probably come from the fact that housing values are higher in the large cities where immigrants live. The equity differences are smaller than the value differences, but, again, immigrant citizens have more equity value than do natives. Non-

[9] I have not found any official banking rules or known banking practices that suggest than non-citizenship is grounds for denial of a mortgage.

citizens, have slightly less equity value than do natives. This table reveals other important differences between immigrants and natives, and between immigrant citizens and non-citizens. In particular, while immigrant citizens are older, on average, than natives, immigrant non-citizens are much younger. While immigrant citizens and natives have similar monthly household incomes, non-citizens' incomes are only three-fourths as high.

Analytical Results

Preliminary Analysis and Discussion

It has already been noted that citizenship plays a key role in determining housing outcomes. The differences in the age and income distributions for immigrants and natives also play an important role in the discussion of the home asset gap between them. While the traditional method in the literature is to identify key characteristics that influence home ownership and then include a dummy for immigrant status, the dramatic differences in age and income distributions suggest that interaction terms are important for these two critical variables. Figure 1A documents the age distribution for natives, immigrant citizens, and immigrant non-citizens while Figure 1B documents the income distribution for the same three groups. As Figure 1A shows, immigrant citizens are generally older than natives, while the distribution on non-citizens is highly skewed to younger ages. Similarly, as Figure 1B shows, immigrant citizens have slightly lower income than natives, but non-citizens have an income distribution that is dramatically different from the other two groups. Since we expect home ownership to vary by age and income, immigrant non-citizens, who are younger and poorer, may be less likely to purchase a home (conditional on time in the United States) than other immigrants and natives as a result of income and age differences, not because they are immigrants.

Because this analysis uses an atypical set of interactions, and finds atypical results, a series of preliminary analyses were conducted to make sure that the results did not stem from an unusual sample, unusual methodology, etc. A summary of these preliminary regression is in Table 3. As in past studies (with no age or income interaction), preliminary analysis shows that being an immigrant is negatively correlated with home ownership. Most past studies do not examine home value or home equity but using the immigrant variable only leads to a positive impact on home value and no significant differences between immigrants and natives in home equity (row 1). That is, using these results, the immigrant/native homeownership wealth gap is a problem of "getting one's foot in the door". The same pattern is retained when using citizen or non-citizen (the omitted category is native-row 2). But when age is interacted with immigrant status, the immigrant effect on home ownership disappears (row 3), and when income is interacted with immigrant status, the immigrant effect on value disappears (row 4). When both are interacted, there is no independent effect of immigrant status on either home ownership or home value (although non-citizens now have significantly less equity-row 5). This fifth set of regressions, with both age and income interactions, form the basis of the rest of the paper.

Homeownership

Even without the direct immigrant effect, the immigrant/native homeownership wealth gap is a problem of "getting one's foot in the door". The problem, however, is mostly associated with a lack of citizenship. Since the trend among immigrants has been that a lower percentage of permanent immigrants are applying for citizenship, this result suggests that those who believe that immigration will solve housing market problems as baby boomers age should factor this result into their calculations.

The homeownership column of Table 4 documents the full set of coefficients from the probit specification on home ownership in the bivariate regressions.[10] There are several important homeownership determinants that need to be highlighted. First, residence in a Gateway city or in a rural/small town area leads to a lower probability of home ownership than residence in a non-Gateway city. The marginal effect of location is not small[11]. Living in a Gateway city reduces home ownership probability by a marginal 3.9 percentage points and living in a rural/small town area reduces it by a marginal 4.7 percentage points. Both African Americans and Native Americans have lower probabilities of home ownership, but Asian Americans who are not immigrants do not (see Kossoudji and Sedo, 2005 for a discussion of race in home ownership). A higher percentage of immigrants is married than citizens, and married householders are more likely to be homeowners, as do those with a college education.

But the big gaps in homeownership are highlighted by the age and income interactions. As brought out in Table 3, once income and age are interacted with immigrant status, there is no longer a direct effect of being an immigrant citizen or non-citizen on the probability of home ownership. The number of years in the United States, however, continues, as expected, to be an important predictor, leading to an increase in the probability of home ownership by 8.0 percentage points for each additional decade in the United States. It is in the relationship between age and homeownership and income and home ownership that much of the observed homeownership gap between immigrants and natives is explained. As the combination of coefficients on age reveals, the age effect leads to a higher probability of home ownership at every age when native householders are compared to immigrant citizens and non-citizens. The age effect alone leads citizen and non-citizen immigrants to have a similar probability of

10 Average predicted probability is .72131.

11 The direct coefficients are reported in Table 4. It is often more intuitive to discuss the results in terms of marginals, as I do in the text.

homeownership at younger ages but the larger effect of age squared draws down the non-citizen probability at older ages, making their probability much lower. Further, the higher coefficient combination on income for immigrant citizens leads to a significantly higher probability of homeownership at every income level when compared to natives and immigrant non-citizens, who convert income into home ownership at nearly the same rate.

The overall impact of these differences are revealed in Figure 2A and Figure 2B, which show the predicted probability of homeownership by age and by income group for native, immigrant citizen and immigrant non-citizen householders.[12] As Figure 2A shows, after the effect of all characteristics has been taken into account, Native and immigrant citizen householders are predicted to have nearly identical probabilities of home ownership up until about age 44, when the immigrant citizen probability does not continue to rise like the native probability and, in fact, slightly declines at older ages. The non-citizen householders lag far behind at every age—and the predicted probabilities fall significantly at older ages, leading to a widening of the gap. As Figure 2B shows, after the effect of all characteristics has been taken into account, immigrant citizen and native householders are predicted to have almost exactly the same probability of home ownership at every income level while immigrant non-citizens lag far behind at every income level.

Home Value

A different story emerges when we consider the determinants of housing value.[13] I examine housing value because, even though many homeowners do not actually own most of

[12] These predicted probabilities take into account the influence of all characteristics. They are calculated for everyone in the sample, whether or not the householder is a homeowner.

13 Both housing value and equity may be better measured as logs for estimation purposes to reduce the impact of skewness on the results. The bivariate procedure is notoriously unstable when there are many zeros (as there are for equity) even if recoded to 1. For this reason, we directly estimated both equity values and housing values. Tests suggest that there is significant skewness in the two distributions and we must express some cautionary notes about these results. However, two-step and single equation estimations produced similar, but less precise results.

their home value, it represents people's potential long term access to wealth. However, we must be cautious when interpreting the results for housing value—and to some extent equity—because these are self-reported values. It is apparent that older householders, who have probably owned their houses for a long time, do not have an accurate assessment of their home's value. If there is an important bias by age, then the results must be interpreted carefully. Notice that the coefficient on the number of years the home has been owned is negative. Some of this negative effect may result from a lack of knowledge about a home's current value. Again, the direct impact of being an immigrant is non-existent when we consider housing value. There is no direct impact for citizens or for non-citizens. Further, there is no impact on value of the number of years in the United States. As expected, there is a large jump in value for Gateway city residents, although there is no difference in value between those in rural/small towns and those in non-Gateway MSAs. Married householders have significantly higher valued homes than non-married householders. Householders who got an FHA loan to purchase their home have lower valued homes.

The impact of income on value favors immigrant citizens dramatically. Immigrant citizens appear to put their income into higher valued houses than do non-citizen or native householders. Immigrant citizens are large investors in housing (also notice that the direct impact of being an immigrant citizen is large, positive, and hovers just under significance)

Now when we put all impacts together and examine predicted probabilities of home value (see Figures 3A and 3B), we observe predicted probabilities that show that immigrant citizens are predicted to have the highest home value by age, followed by immigrant non-citizens, with lower predicted values for natives. Immigrant citizens have homes with a $25,000 or more predicted value than do natives at every age level. Immigrant citizens and non-citizens are also

predicted to have higher home values by income. But here, the immigrant non-citizens are predicted to overtake the home values of immigrant citizens if they have high income levels. Native homeowners lag further behind.

Equity

Equity is an indicator of current wealth and represents the amount that an individual could recover from the home by selling it. The same caveat that applies to value also applies to equity. Some people who have owned their homes for a long period of time do not make a good assessment of the values of their homes. Once again, Gateway city residents have more equity (conditioning on value) than either other MSA residents or rural/small town residents. Equity is increased with the length of time of home ownership and decreased if the house was purchased with an FHA loan. Married householders have more equity and those without a college education has less.

The relationship between income and equity is only significant for native and immigrant citizen householders. Immigrant householders have a larger effect of income on equity than do native householders. Once again we find that immigrant citizens convert income into equity into higher rates than do natives but the income effect is fairly low until householders are at higher income levels but the differential impact on equity at those levels is large. This income difference might arise for several reasons. First, refinancing has undergone a boom in the United States in the past ten years, which may explain the lack of a stronger income relationship as people in all income levels refinance homes and use the money for other purposes. If immigrants are more risk averse about their homes (as some people surmise) then they are less likely to refinance and so more likely to accumulate equity than natives. Second, the same risk aversion may lead immigrants to either pay higher down payments or to pay off their houses

faster than natives. Third, if the attitude toward the consumption versus investment values of a house is tilted toward investment for immigrants, then, again, we'd expect to see higher equity levels. On the other hand, immigrant non-citizens show no relationship between income and equity. They instead, have a direct effect of a significantly lower equity of $-13,732. There is no obvious reason why there should be no relationship between income and equity for non-immigrants. It is possible, however, that many non-citizens are purchasing real estate assets in other countries if they do not intend to reside permanently in the United States.

The combination of these effects shows up in predicted equity in Figure 4A and Figure 4B. Both immigrant citizens and immigrant non-citizens are predicted to have higher equity levels than natives—especially at lower incomes. Natives catch up to non-citizens at higher income levels but the gap between natives and immigrant citizens continues to widen. Similarly, after taking account of all effects, immigrants are predicted to have more equity than natives at all income levels

Putting It All Together

Many people ask whether immigrants will keep housing markets viable as the native population ages. Simply examining the probability of home purchasing returns a less than rosy prognosis. Immigrants are less likely to own homes in the United States than are natives. The gloomy picture is mitigated when immigrants are separated into immigrant citizens, whose home ownership probabilities approach those of natives, and immigrant non-citizens, who have low rates of home ownership whatever their other characteristics. If this pattern holds, and if the rate of citizenship continues to decline among immigrants, then high rates of immigration will not provide a panacea to housing markets that may suffer as baby boomers age and die. The problems of ownership appear to be twofold. First is that immigrant non-citizens simply have

lower probabilities of home ownership at every age and at every income level. Second is that immigrant non-citizens are significantly younger and earn less money.

The other side of the equation is also important to remember. Immigrant non-citizens who do not own their own homes may simply have less of a stake in the United States. They may prefer to invest their wealth in other countries or in other assets besides housing. On the other hand, they may not invest in housing because they do not have high enough credit scores, they may not be able to save enough money for a down payment, or they may be turned down for mortgage approval. An inability to stake a claim in housing could exacerbate problems of incorporation.

Wealth differentials represent long run disadvantages for individuals, an economic disparity that is transferred across generations. Therefore, programs that make homeownership more accessible can go a long way toward reducing differences in housing wealth. Among other efforts, an increasing accessibility to FHA mortgages and other programs that reduce liquidity constraints could provide a significant reduction in existing wealth differentials. In general, programs that push a foot through the door offer the promise of a considerable decrease in wealth inequalities.

These results offer do suggest that once immigrants have a "foot in the door", however, there is no consistent disadvantage to immigrants, whether they be citizens or not. In fact, for both home value and equity, immigrant citizens and non-citizens alike are at an advantage or at no disadvantage to natives. If immigrants choose to buy housing, or are able to buy housing, then they convert their resources into housing value at a higher rate than do natives. If this conversion is also associated with an investment in being part of the community, then important spillover effects could result from promoting immigrant home ownership.

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Table 1[14]
Proportion of Homeowners by Residential location
For Natives, Immigrant Citizens and Non-citizens
(percent of various groups in each location in parentheses)

	Natives	Immigrant Citizens	Immigrant Non-Citizens
Entire Sample	0.704	0.653	0.434
Non-MSA Residents	0.668 (48.8% of natives)	0.602 (30.0% of I citizens)	0.355 (38.7% of non-citizens)
MSA (not Gateway) Residents	0.736 (30.2% of natives)	0.781 (19.8% of I citizens)	0.542 (18.3% of non-citizens)
Gateway City Residents	0.740 (21.0% of natives)	0.653 (50.1% of I citizens)	0.457 (43.0% of non-citizens)

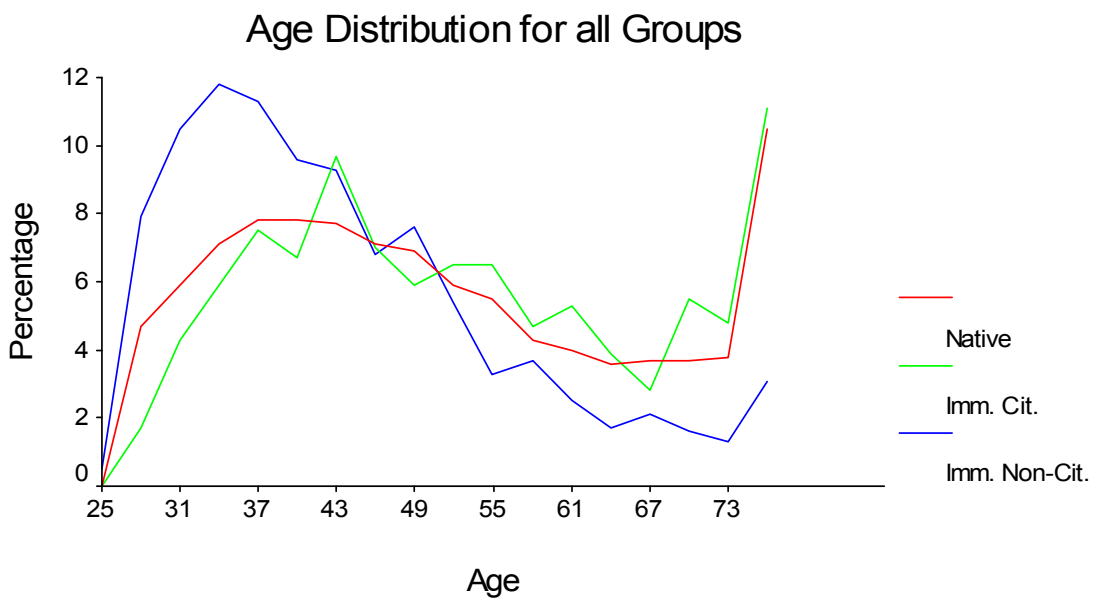
[14] Using weighted sample

Table 2[15]
Descriptive Statistics by Immigration Status
(Standard Errors in Parentheses)

	Native	Immigrant Citizens	Immigrant Non-Citizens
Property Value	$142,994 ($107,949)	$177,728 ($117,462)	$153,042 ($107,822)
Equity	$98,971 ($96,856)	$125,021 ($92.234)	$93,490 ($100,630)
FHA or VA Loan (%)	14.5 (35.2)	13.3 (34.0)	19.1 (39.3)
Years Owned Home	15.4 (14.2)	13.9 (12.7)	8.5 (9.3)
Years in the US	--	25.3 (13.3)	13.5 (9.9)
Poverty Index (Month)	$1,052 ($3,540)	$1,134 ($4,004)	$1,329 ($4,652)
Age	52.1 (15.7)	54.2 (15.2)	44.8 (12.8)
Retiree	32.8 (46.9)	35.5 (47.8)	12.8 (33.3)
Monthly HH Earnings	$4,305 ($3,510)	$4,298 ($3,711)	$3,088 ($2,740)
High School Diploma or Fewer Years of School (%)	44.9 (49.7)	48.2 (0.500)	65.4 (0.476)
Some College (%)	28.9 (45.3)	24.3 (0.429)	17.4 (37.9)
College Graduate (%)	26.2 (44.0)	27.5 (44.7)	.17.2 (37.7)
# Kids	0.7 (1.1)	0.8 (1.2)	1.4 (1.5)
MarriedWoman (%)	16.9 (37.5)	14.8 (35.5)	18.1 (38.5)
Married Man (%)	38.5 (48.7)	46.1 (49.8)	46.6 (49.9)
N (unweighted)	24,234 (88.5%)	1,553 (5.7%)	1,589 (5.8%)

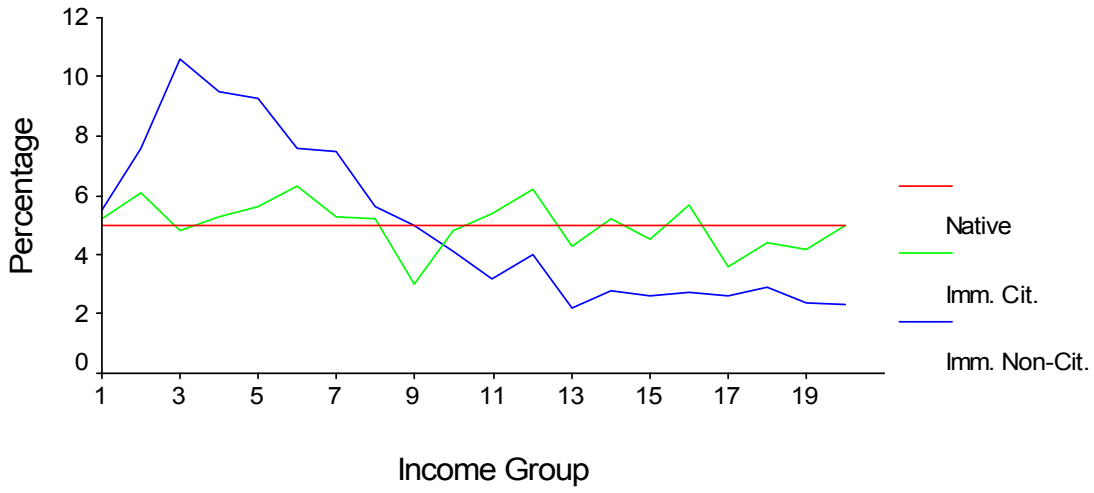
[15] Using weighted sample

Figure 1A



Using weighted sample.

Figure 1B



Income groups set so that 5% of natives are in each income group.

Using weighted sample.

Table 3

Preliminary Analysis and the Coefficients on Immigrant Status
(standard errors in parentheses)

	Home Value Equation	Home Ownership Equation	Home Equity Equation[16]
No earnings interaction No age interaction			
Immigrant	11,327* (4,496)	-0.809* (0.046)	3,827 (4,276)
No earnings interaction No age interaction			
Immigrant Citizen	12,990* (5,679)	-0.604* (0.061)	4,753 (5,401)
Immigrant Non-Citizen	10,047* (4,746)	-0.854* (0.047)	2,916 (4,515)
No earnings interaction Age interacted with Immigrant Citizen and Non-Citizen			
Immigrant Citizen	12,671* (5,676)	0.724 (0.458)	4,484 (5,398)
Immigrant Non-Citizen	9,600* (4,746)	0.489 (0.415)	2,542 (4,511)
Earnings interacted with Immigrant Citizen and Non-Citizen No age interaction			
Immigrant Citizen	14,169 (7,424)	-0.879* (0.083)	4,818 (7,062)
Immigrant Non-Citizen	-11,765 (7,321)	-1.005* (0.069)	-13,598 (7,025)
Earnings interacted with Immigrant Citizen and Non-Citizen Age interacted with Immigrant Citizen and Non-Citizen			
Immigrant Citizen	14,279 (7,423)	0.464 (0.480)	4,844 (7,051)
Immigrant Non-Citizen	-11,964 (7,314)	0.486 (0.416)	-13,737* (7,053)

[16] An * means significant at a standard 5%. These regressions also included all of the other variables detailed in Table 4. In no case were variables unrelated to immigrant status affected, except marginally, by these changes. These regression results are easily compared with those in the extant literature. Entire results are available from the author. The coefficients in the fifth panel come from the results specified in Table 4.

Table 4

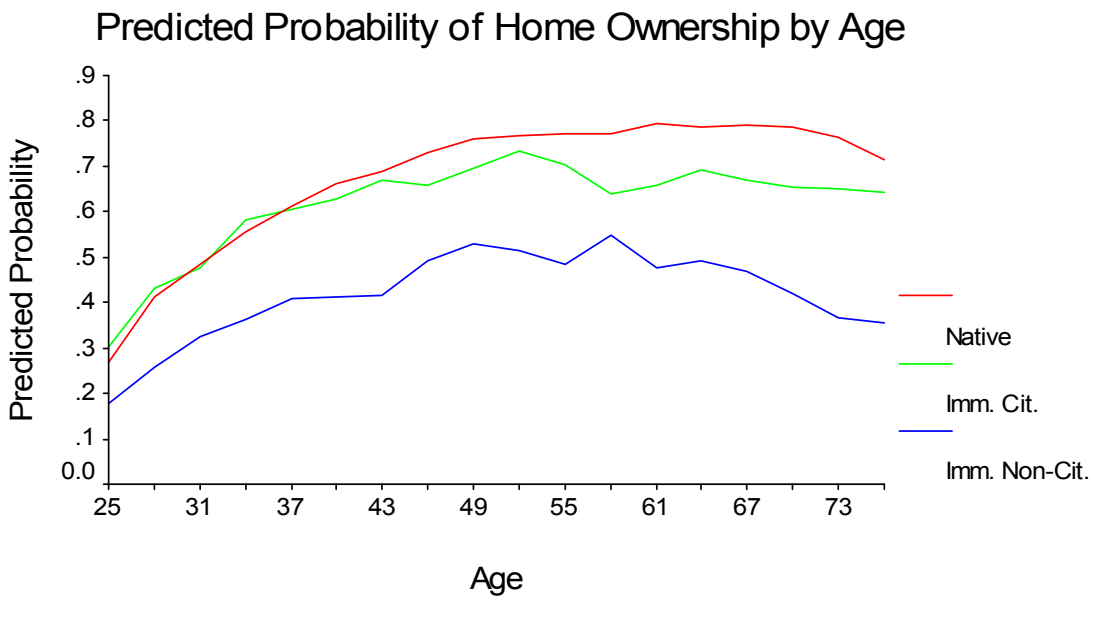
Coefficients from Bivariate Regressions
(Standard Errors in Parentheses)[17]

	Home Ownership	Home Value	Home Equity
Immigrant Citizen	0.46394	14279.21	4843.66
	(0.47961)	(7420.93)	(7059.46)
Immigrant Non-Citizen	0.48577	-11964.32	-13736.64*
	(0.41592)	(7314.16)	(7023.33)
Years in the US	0.02304*	213.91	306.30
	(0.00237)	(189.15)	(181.27)
Monthly Earnings*Native	0.00220*	35.34*	-29.07*
	(0.00007)	(3.77)	(3.68)
Monthly Earnings	-0.00006*	1.47*	2.04*
Squared*Native	(0.00000)	(0.17)	(0.17)
Monthly	0.00280*	6.68	-48.32*
Earnings*Citizen	(0.00003)	(14.80)	(14.07)
Monthly Earnings	-0.00008*	3.87*	26.05*
Squared*Citizen	(0.00001)	(0.79)	(19.06)
Monthly Earnings*Non-	0.00222*	112.23*	26.05
Citizen	(0.00023)	(19.60)	(19.06)
Monthly Earnings	-0.00007*	-1.01	0.55
Squared*Non-Citizen	(0.00001)	(0.95)	(4.00)
Age*Native	0.10174*		
	(0.00004)		
Age Squared*Native	-0.00073*		
	(0.00014)		
Age*Citizen	0.06160*		
	(-0.00048)		
Age2*Citizen	-0.00048*		
	(0.00014)		
Age*Non-Citizen	0.05901*		
	(0.01646)		
Age2*Non-Citizen	-0.00051*		
	(.00016)		
Years Owned the Home		-449.29*	622.54*
		(53.14)	(52.73)
FHA Loan		-28639.83*	-30330.06*
		(1932.90)	(2098.24)
Rural	-0.13420*	-102.85	1829.53
	(0.02367)	(1595.61)	(1518.47)
Gateway City Residence	-0.11155*	51233.03*	34508.53*
	(0.02443)	(1851.80)	(2535.74)
Price Index	0.00039*	-3.09	5.55
	(0.00004)	(2.27)	(4.00)
Kids Under 18	-0.03336*		
	(0.01210)		

[17] Significant at a standard 5% with *. Wald Chi2 equity/ownership 3030.70 (p=0.000), value/ownership 5532.12 (p=0.0000). Equity/hmeownership rho = -0.3412 . LR test of independent equations (rho = 0) = 209.67 (p = 0.0000). Value/homeownership rho = -0.3685. LR test of independent equations (rho = 0) = 242.92 (p = 0.0000).

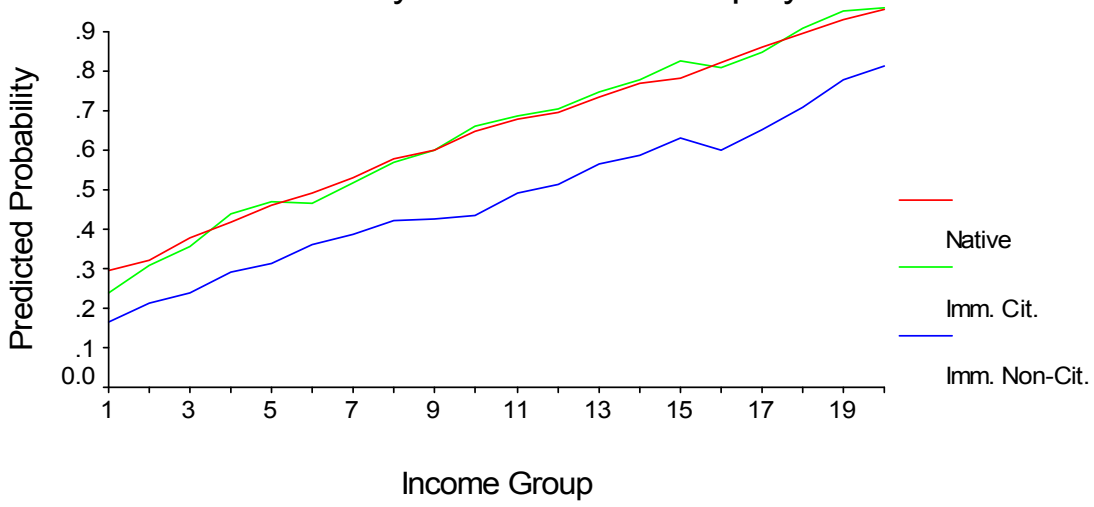
Retiree	0.70771*		
	(0.03417)		
African American	-0.26520*	-38417.10*	-23271.84*
	(0.0245)	(2233.08)	(2633.33)
Native American	-0.34215*	-16590.48*	-5426.01
	(0.07996)	(7593.34)	(7251.20)
Asian	-0.15971	36948.35*	20801.79*
	(0.10838)	(8598.11)	(8245.03)
Married Woman	0.58944*	8561.19*	8376.83*
	(0.02795)	(2162.83)	(2062.42)
Married Man	0.61139*	3656.69*	3277.18
	(0.02795)	(1808.84)	(1717.96)
High School Diploma or	-0.23915*	-53913.74*	-24252.7*
Fewer Years of School	(0.02439)	(1785.42)	(2677.33)
Some College	-0.12230*	-36790.82*	-16281.25*
	(0.02576)	(1861.77)	(2253.74)
Pedicted Value Index			186.45*
			(35.25)
Constant	-3.72340*	173915.70*	79562.80*
	(0.11740)	(3143.68)	(9992.07)

Figure 2A



Using weighted sample

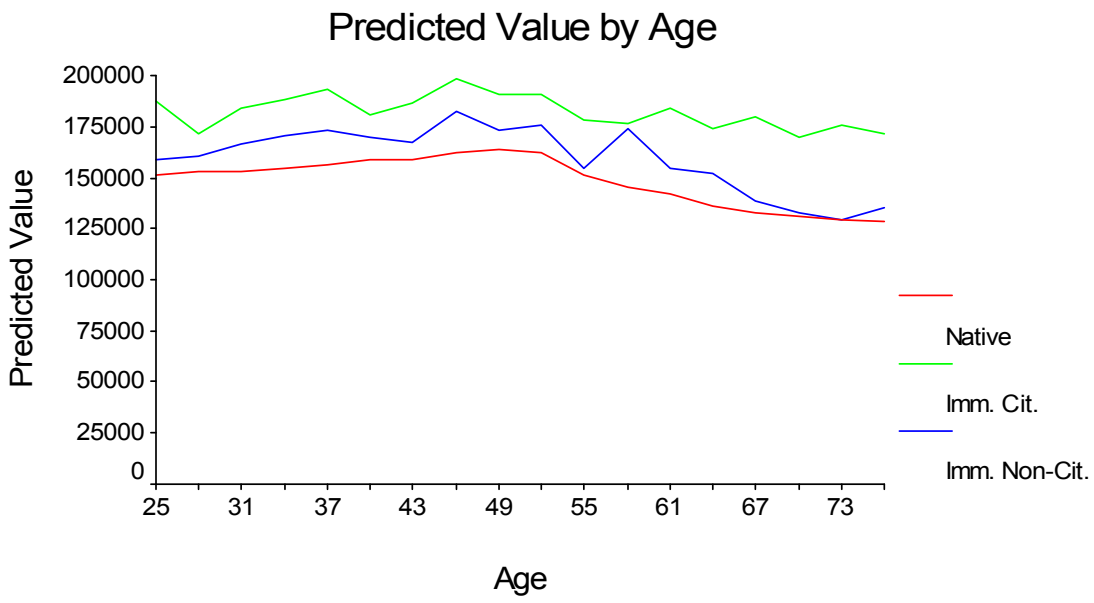
Figure 2B



Using weighted sample.

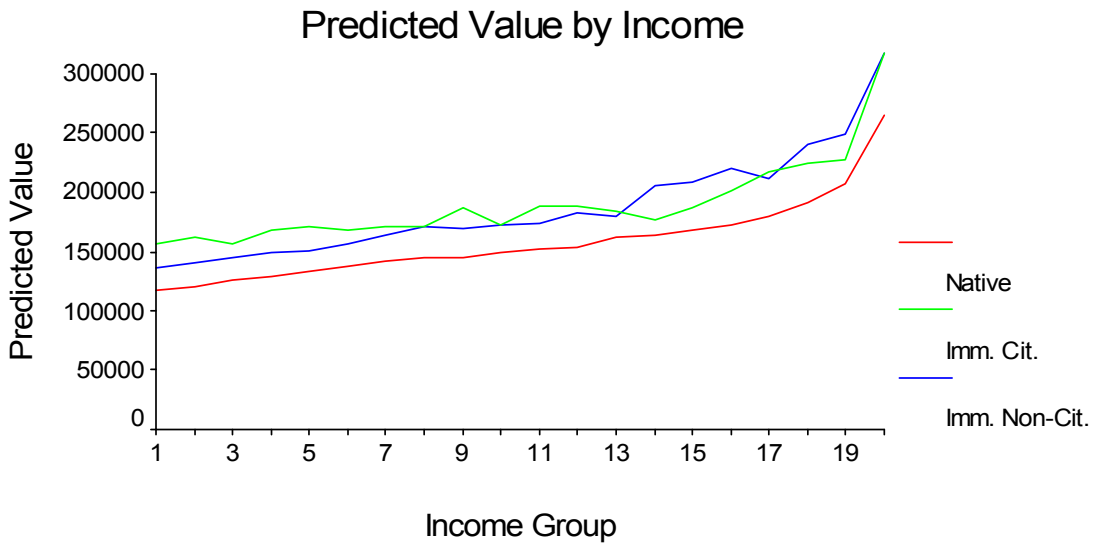
Income groups are set so that 5% of natives are in each income group

Figure 3A



Using weighted sample

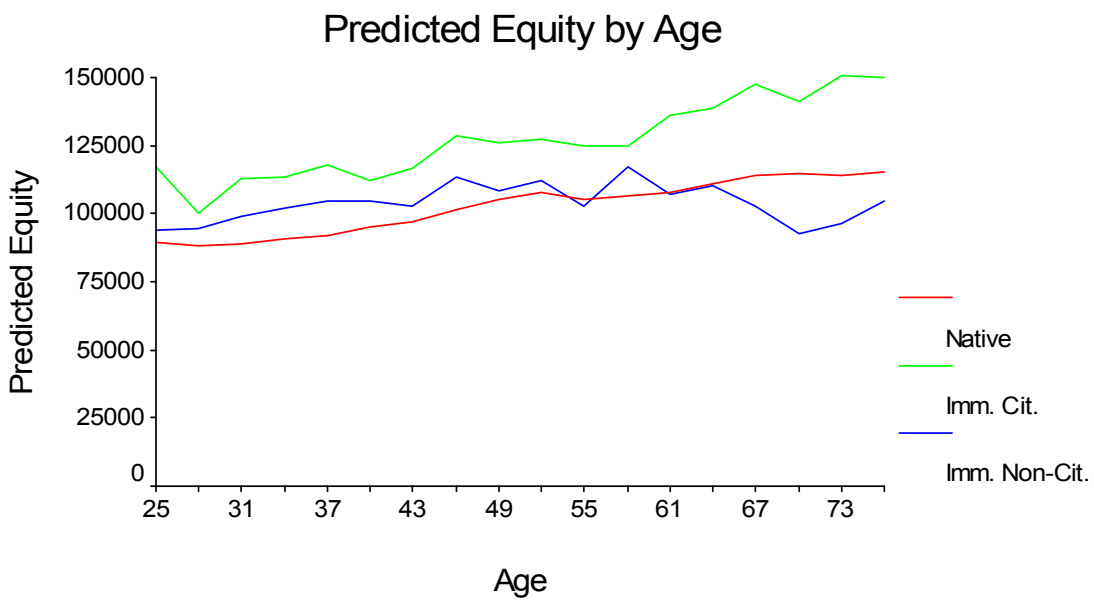
Figure 3B



Using weighted Sample

Income groups are set so that 5% of natives are in each income group

Figure 4A



Using weighted sample

Figure 4B

Using weighted sample

Income groups are set so that 5% of natives are in each income group