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Resource Article

Diversity and Disparity in Home Equity among Asian Americans

Chhandara Pech, Jenny Chhea, and Paul M. Ong

Abstract

This article uses data from the American Housing Survey to examine Asian American wealth through home equity, which is the most important asset held by many households. We also analyze ethnic variations in housing assets and the impact of the Great Recession on subgroups. Our analysis finds that non-Hispanic whites had greater equity than Asian Americans after adjusting for geographic differences; Chinese-born Asians have the highest and Philippine-born and Southeast Asians have the lowest home equity within ethnic variations; and the recession impacted all Asian subgroups, but affected Philippine-born Asians the most.

Introduction

Asian Americans have often been characterized as wealthy and educated under the model minority myth. Moving beyond this simplistic stereotype, previous research has looked at ethnic variations within this racial group in terms of education, income, welfare usage, and the criminal system. However, few scholars have looked directly at ethnic variations in wealth and assets. The purpose of this resource paper is to examine a key dimension of Asian American wealth through home equity. Home ownership is the single-largest component of net assets for many Asian Americans. Data such as the American Community Survey (ACS) provides information only on home value, but not equity—the amount after deducting mortgage debt. Consequently, we use the American Housing Survey (AHS) for our analysis because we are able to estimate home equity. Our analytical approach accounts for the high concentration of Asian Americans in major metropolitan areas. Our major foci are Asian Americans compared to non-Hispanic white (whites), ethnic group variations, and the impact of the Great Recession. Our major findings are 1) after adjusting for geographic differences, whites had higher home equity than Asians; 2) ethnic group variations in home equity exist among Asian Americans, with Philippine-born and Southeast Asians having the lowest home equity and Chinese-born Asians having the highest; and 3) the economic recession affected all Asians, but Philippine-born and Vietnamese-born Asians experienced the highest loss in home equity.

Previous Studies

Research on Asian Americans has often centered on education and income, with media hype focused on the rise of Asian Americans based on these factors (Ong and Patraporn, 2006). More recent studies have examined wealth for Asian Americans. Patraporn, Ong, and Houston (2009), for example, found that Asian Americans had a wealth status closer to that of whites in 2000, but remained behind by a net worth gap of \$30,000. Through this study, Patraporn et al. determined that the discrepancy between the higher incomes and lower wealth of Asians Americans indicated that income did not necessarily translate into housing and wealth accumulation. However, by 2005, prior to the onset of the recession, Asian Americans were able to close the wealth gap due to the high concentration of Asian Americans in areas where homes appreciated, more specifically in metropolitan areas (Patraporn, Ong, and Houston, 2009). Kochhar, Fry, and Taylor (2011) found that by 2009 Asians' net worth dropped by 54 percent, losing their place at the top of the "wealth hierarchy." More recently, the Pew Research Center's report, "The Rise of Asian Americans" (2013), indicated that Asians exceeded the average U.S. adult in median annual household income and in median household wealth. Using data from the 2008 Survey of Income and Program Participation panel, the Pew Research report found that Asians exceeded the average U.S. adult wealth by about \$15,000. These studies of Asian Americans as an aggregate group, however, led to some of the misconceptions of Asian Americans as the wealthiest group.

Looking at Asian Americans as an aggregate group is problematic because socioeconomic differences exist among different Asian ethnic groups due to their different immigration patterns and historical backgrounds. Yet few studies have examined ethnic variations in terms of wealth. An exception is that in 2014, Patraporn, Ong, and Pech used data from the American Community Survey Public Microdata Sample (ACS PUMS) to measure ethnic variations in wealth. This study found that Chinese and Asian Indians exceeded or came close to parity with overall Asians on all measures of wealth (household income, interest,

dividends and rental income, home ownership rates, and median home values). Southeast Asians groups (Cambodians, Hmong, and Laotians) fell significantly below the mean for all Asians in all measurements while Filipinos, Vietnamese, Pakistani-Bangladesh, and Thais fall in between. While suggesting that ethnic variations exist in Asian subgroups, this study nonetheless measured wealth indirectly by examining income generated from interest, dividend, and rental income.

However, to measure wealth directly, home ownership and home equity are better measurements. For many Americans, owning a home meant taking a part in the American Dream. According to Tippett et al. (2014), "homeownership is still the key driver of wealth" (4). For whites, home equity accounts for 58 percent of their net worth, while for Asians, home equity accounts for 72 percent. Thus, "disparities in home ownership rates, home values, and equity owned in housing are key factors driving the racial wealth gap" (Tippett et al., 2014, 4).

In 2007, the United States entered the housing crisis. In the 2000s, as home prices kept increasing, many viewed owning a home as a source of wealth accumulation. Borrowers, especially minority groups, obtained subprime loans with higher interest rates to buy their homes. Home owners began defaulting on their loans, and many foreclosed. As banks and investors began to lose money, a banking crisis ensued and the United States entered into a recession. Because minority groups were often the ones taking out subprime loans to buy during the boom years (Ong, Pech, and Pfeiffer, 2013), examining Asian American wealth also involves looking at the impact of the recession.

Studies on the recession indicated that Hispanics and blacks suffered the most from the economic crisis. Tippett et al. (2014), for example, found that Latinos experienced the largest drop in net worth following the recession. In 2013, Dai and Yang used the AHS to look at home ownership and home equity for 2005 and 2009 in order to examine the impact of the 2007 to 2009 economic crisis. Dai and Yang (2013) found that the turmoil hit blacks hardest in their home ownership. Asians, however experienced minimal change in homeownership rates and, according to the authors, actually increased their advantage over whites on home equity by \$4,000. This study only analyzed Asians as an aggregate group. In a preliminary study on the impact of the recession on Asian subgroups through assigning last names to ethnic subgroups, Ong, Pech, and Pfeiffer (2013) found that Filipinos, Koreans, and Cambodians in Los Angeles County were hit the hardest while Chinese and Japanese seem to have fared better off than all Asians and non-Hispanic whites during the foreclosure crisis.

This research differs from previous studies on wealth and assets. First, we use the AHS to look directly at home ownership, home values, mortgages, and equity as measurements of wealth. As home equity is the driving factor of wealth for many households, it is impossible to talk about wealth and assets without examining equity. Most research often relies on the ACS, which only records estimated home values and not total mortgages needed to calculate equity. Looking at the AHS, which records both, allows us to fill in the narrative gap on housing equity. Second, we use the AHS to examine ethnic differences closely, including how the housing crisis affected different ethnic subgroups. Few studies report Asian American ethnic variations in wealth, let alone home equity. Our research differs by examining equity differences among different Asian American groups and additionally examining how the recession impacted each group.

Data Source and Methodology

This study used the national samples of the 2005, 2007, and 2013 AHS to analyze the changes and impacts of the recession on home ownership and home equity. The AHS is funded by the U.S. Department of Housing and Urban Development (HUD) and conducted by the Bureau of Census (BOC). Collected every two years, the AHS is a national longitudinal survey that collects very detailed information on housing units and their occupants. The AHS is a reliable data source to examine housing assets because it includes questions on home ownership, total mortgage, home value, and basic demographic information such as age, race, and place of birth. One of the limitations of the AHS is that data on race are presented in aggregate form, which may obscure significant differences among subgroups. AHS data on place of birth becomes important in studying these subgroup differences.

Although the AHS has a smaller sample size than the ACS, a survey conducted every year since 2005 by the U.S. BOC, the ACS only contains information on monthly mortgages rather than the total mortgage taken, which is needed to calculate equity. For this study, 2005 AHS data represents the prerecession period, 2007 AHS indicates the start of the recession, and 2013 AHS captures the post-recession period.

We limit our analysis to the head of household or the reference person. The sample size was 43,360 for 2005 and 39,107 for 2007. The 2013 AHS had an oversampling with 60,097 observations. Asian sample sizes were 1,393, 1,339, and 2,755 for those respective years. For non-Hispanic whites, sample sizes were 31,593, 28,053, and 39,469. Home values, total mortgages, and home equity for 2005 and 2007 were adjusted to 2013

dollars using the annual average consumer price index. Home equity was calculated by subtracting the total of all mortgages from home value.

To identify Asian ethnic subgroups within the Asian racial category, we used the head of household's place of birth as a proxy. This somewhat limits the analysis because this definition only takes into account those who are foreign born, while native-born Asians are placed separately into the "U.S. and Outlying Areas" category (hereafter referred to as "U.S.-born"). Our measure is still reliable in that Asians are predominately an immigrant population (in 2013, two-thirds of Asians in the United States are foreign born). In using the place of birth method, we collapse subgroups based on sample size, locality, and similar political or socioeconomic status. We categorized respondents who reported being born in China, Hong Kong, or Taiwan as one group (hereafter referred to as "Chinese-born"). The "Southeast Asian" category includes those born in Cambodia, Laos, and Thailand. Because of their larger sample size, those born in Vietnam were left to their own category ("Vietnamese-born"). Respondents born in the "U.S. outlying areas" were grouped with "U.S.-born" Asians, mainly because of their small sample size and political ties to the United States. The U.S. outlying areas include American Samoa, Guam, the Northern Mariana Islands, Palau, and the Virgin Islands of the United States. Asians born in India ("Indian-born"), Korea ("Korean-born"), and the Philippines ("Philippines-born") were all left to their own individual groups because of their larger sample size. Japanese-born Asians do not have a separate category. Instead, they are placed into the "Other Asian" category due to their small sample size, and because a majority (roughly 60 percent) of Japanese Americans is U.S. born rather than foreign born (U.S. Census Bureau, 2013). All other Asian ethnic groups that had too small of a sample size on their own, including those born from both Asian and non-Asian countries, were placed in the "Other Asian" category.¹

Because the AHS is a sample, weights (which are provided in the data set) were applied to produce accurate universe-level estimates. We made modifications to the provided weights to adjust for the fact that Asians are more heavily concentrated in selective geographies such as Los Angeles, New York, and San Francisco where homes are much more expensive. The adjustment factor was calculated by taking the percentage of Asians in each standard metropolitan area (SMSA) over the total number of Asians in the sample, and dividing that by the percentage of non-Hispanic whites in its respective SMSA over total whites. This factor was then multiplied by the AHS weights to create a new geographic

weight. The new weights create a distribution of non-Hispanic whites that are proportionally the same as the geographic distribution of Asians thus allowing us to compare the two groups equally (see Appendix 1).

Findings

This section is divided into three parts. The first section looks at the broader comparison of home ownership and wealth (home equity) among Asians as a whole with whites; the second section examines variations within the Asian subgroups determined by place of birth; and the third section measures the impact of the recession on home ownership and wealth.

Asians Compared to Non-Hispanic Whites

Table 1 presents the distribution of home ownership rates for whites, Asians, and the total population for 2005, 2007, and 2013. Similar to previous studies, this research also found that whites had higher home ownership rates than Asians and the general population as a whole. Home ownership for whites, before adjusting for geographic differences, were more than 70 percent. Once adjusted, using the new weights, the rates for whites dropped below 70 percent, aligning closer to the rates for Asians, but remaining higher than the group overall. This drop indicates that whites would have a lower home ownership rate if their geographic distribution were proportionally the same as Asians who generally live in more expensive metropolitan areas.

Table 1: Home ownership rates 2005, 2007, and 2013

	Total	Non-Hispanic White	Asian
Unadjusted			
2005	68.8	75.8	61.6
2007	68.3	75.6	59.8
2013	65.3	73.4	57.8
Adjusted for Regional Differences			
2005	61.6	69.2	-
2007	60.9	69.0	-
2013	58.2	67.1	-

Source: AHS 2005, 2007, and 2013

Our finding is consistent with Dai and Yang (2013) who also found that Asians have higher home equity than that of other racial/ethnic groups. One primary reason for this is that, on average, Asians are highly concentrated in metropolitan areas where housing prices are high. Likewise, Asians generally purchase larger homes to account for their larger household size. For example, in 2005 the average household size for Asians was 3.1, compared to 2.4 people for whites, and 2.5 for the general population as a whole. Thus, before taking their geographic distribution into account, our study also found similar results where Asians have higher home equity than whites and the general population. Whites had about \$86,000 less in home equity than Asians in 2005, \$56,000 less in 2007, and \$35,000 less in 2013 (Table 2).

Table 2: Median home value, mortgage, and equity, 2005, 2007, and 2013

		Home Value	Mortgage	Equity
	Total, adjusted	\$334,105	\$89,970	\$178,985
2005	Non-Hispanic white, unadjusted	\$190,917	\$59,662	\$107,391
2005	Non-Hispanic white, adjusted	\$357,970	\$89,493	\$214,782
	Asian	\$417,632	\$167,053	\$193,304
	Total, adjusted	\$357,267	\$95,496	\$190,992
0007	Non-Hispanic white, unadjusted	\$207,844	\$59,545	\$112,348
2007	Non-Hispanic white, adjusted	\$393,218	\$89,878	\$224,696
	Asian	\$410,071	\$168,522	\$168,522
	Total, adjusted	\$250,000	\$99,000	\$100,000
0040	Non-Hispanic white, unadjusted	\$170,000	\$61,777	\$75,000
2013	Non-Hispanic white, adjusted	\$285,000	\$96,000	\$130,000
	Asian	\$300,000	\$158,000	\$110,000

Source: AHS 2005, 2007, and 2013

However, after adjusting for geographic distribution, the results shifted. Instead, whites had higher home equity than Asians by about \$21,000, \$56,000, and \$20,000 in 2005, 2007, and 2013, respectively.

Asians' median home equities were \$193,000, \$169,000, and \$110,000 for these years (Table 2). Compared to the general population as a whole, however, Asians still had higher home equity with the exception of 2007. In 2005, Asians had about \$14,000 more in home equity and \$10,000 more in 2013 but \$22,000 less in 2007.

One possibility as to why Asians have less equity than whites, after adjusting for geographic differences, is because of mortgages. Although Asian home values tend to be higher, Asians take out larger loans than whites, and thus their equity is lower. For example, in 2005, Asian median home values were \$60,000 greater than home values for non-Hispanic whites (adjusted). However, they borrowed about \$78,000 more in mortgages than whites. Similarly, in 2007, Asian median home values were \$17,000 greater than the median for whites but they also took out on average \$79,000 more in mortgages. Thus, equity for Asians is lower.

Because the general trend shows that Asians generally have higher home equity than the total population, it is often misconstrued that all Asians fare better than other racial groups. It is hence important to also look at ethnic variations among Asians.

Variations within Asian Subgroups

Although the data show that Asians as a whole generally fare better than the total population, looking at certain ethnic subgroups highlights that variations exist within Asians, and not all are well off. For example, large differences exist in terms of home ownership rates. In 2013, Vietnamese-born Asians had the highest rate of home ownership across all groups (nearly 70 percent are home owners), eleven percentage points higher than the average for Asians. Chinese- and Philippineborn Asians also had rates higher than the Asian average (60 percent and 59 percent, respectively). Southeast Asians had a rate that was on par with all Asians. Indian- and Korean-born Asians, by contrast, had the lowest home ownership rates among the subgroups, each at 52 percent. By examining home ownership alone, we see huge differences among the subgroups. It is important to note again that because we are using "place of birth" as a proxy to determine the ethnicity of the respondent, the figures do not take into account native-born Asians who are placed in a separate category ("U.S.-born").2

Table 3 reports the 2013 median home equity by Asian ethnic subgroups. Just like home ownership rates, we also see ethnic variations in equity. In 2013, the median home equity for all Asians was \$110,000. The

groups that had a higher home equity than this were Chinese- and U.S.-born Asians (\$200,000 and \$130,000, respectively). Korean-born Asians had a median home equity on par with that of all Asians (\$110,000), while the median equity for all other subgroups fell below this figure. Despite having a home ownership rate mirroring that of the average for all Asians in 2013, the Southeast Asian subgroup had one of the lowest home equities (\$189,000). Philippine-born Asians, whose home ownership rate was higher than the average for all Asians, had the lowest home equity among all of the subgroups. Their median home equity stood at \$50,000, which is less than half of all Asians as a whole. Thus, for median home equity, we see a huge difference between those born in China, Hong Kong, and Taiwan on the high end and those born in Cambodia, Laos, Thailand, and the Philippines on the low end.

Table 3: Median home value, mortgage, equity, and mean household size by Asian subgroups, 2013

	Home Value (× 1,000)	Mortgage (× 1,000)	Equity (× 1,000)	Mean Household Size
Asian	\$300	\$158	\$110	3.0
United States, Outlying Areas	\$320	\$150	\$130	2.4
Chinaª	\$340	\$120	\$200	2.6
India	\$375	\$260	\$100	3.1
Korea	\$300	\$215	\$110	2.7
Philippines	\$300	\$180	\$50	3.2
Southeast Asiab	\$189	\$87	\$80	3.5
Vietnam	\$210	\$106	\$100	3.4
Other	\$300	\$150	\$83	3.1

Source: AHS 2005, 2007, and 2013 alncludes China, Hong Kong, and Taiwan

bIncludes Cambodia, Laos, and Thailand

To explain the variations in home equity, we analyzed further the factors that affect it: home value and mortgages. Chinese- and U.S.-born Asians have a higher home value than the median for Asians, but lower mortgages, which in turn accounts for their higher equity. Indianborn Asians had the highest median home value among the subgroups but because of their higher mortgage, their equity falls slightly below the median equity for all Asians. As previously mentioned, Southeast Asians and Philippine-born Asians had among the lowest home equity in 2013. For Philippine-born Asians, the median home value was on

par with that of all Asians, but because of their higher mortgage, their equity was significantly lower.

Southeast Asians had the lowest median home value among the subgroups. In 2013, their home value was \$111,000 less than that of the median for Asians. They also borrowed some of the lowest mortgages but also had highest mean household size compared to all other Asians. For example, in 2013, their mean household size was 3.5 people compared to 3.0 for all Asians (Table 3). Despite their larger household size, the findings suggest that these groups could only afford smaller and cheaper homes, resulting in their lower equity. These findings further contradict the notion that all Asians are wealthy.

Impacts of the Recession

Our findings determined that there has been noticeable negative impact of the recession on Asians' home ownership and home equity. We measure the impact of the recession by examining the changes in home ownership and home equity at the beginning of the recession, 2007, and post-recession, 2013. Home ownership rates among Asians fell two percentage points from 60 percent in 2007 to 58 percent in 2013. The impact on home equity was more prominent. From 2007 to 2013, Asians lost a total of about \$58,000 in median home equity. One possible reason for this loss in equity is because of the decline in housing value. Asians were geographically concentrated in areas, such as California, that were hit hardest by the housing downturn (Kochhar et al., 2011). Between 2007 and 2013, median home values dropped a dramatic \$110,000, from \$410,000 in 2007 to \$300,000 in 2013. The median home value for Asians is much lower now than even during the pre-recession period. This is evident in Figure 1, which plots the median home value, mortgage, and equity in 2005, 2007, and 2013 for Asians. Figure 1 shows that despite this drop in home values, median mortgage values stayed relatively the same from 2005 to 2013. The amount that Asians borrowed stayed roughly the same, although their home values declined dramatically, which led to a decrease in equity.

The recession affected various Asian subgroups differently. Home ownership was at its highest levels for some groups prior to the recession, as many began buying homes during the boom period. However, by the start of the recession, home owners had already begun losing their homes. As indicated in Table 4, Chinese-born Asians experienced the greatest loss in home ownership during the pre-recession period, with a six percentage point decline from 66 percent in 2005 to 60 per-

cent in 2007. Certain subgroups experienced a greater loss following the recession. Asians born in India, the Philippines, and Cambodia, Laos, and Thailand all experienced a decline in home ownership that was two or more times greater than the overall loss for Asians (-2 percent) from 2007 to 2013. U.S.-born Asians experienced smaller decreases in home ownership, followed by a two percentage point loss in home ownership for Korean-born Asians. Rates for Vietnamese-born Asians stayed relatively the same throughout the three years.

\$450,000 \$400,000 \$350,000 \$300,000 - - Home Value \$250,000 – Mortgage \$200,000 \$150,000 Equity \$100,000 \$50,000 \$0 2005 2007 2013

Figure 1: Median home value, mortgage, and equity, Asians, 2005, 2007, and 2013

Source: AHS 2005, 2007, and 2013

Table 4: Home ownership by Asian ethnic subgroups 2005, 2007, and 2013

	2005	2007	2013	Δ (2007–13)
Asian	62%	60%	58%	-2%
United States, Outlying Areas	63%	60%	61%	1%
Chinaª	66%	60%	59%	-1%
India	60%	58%	52%	-6%
Korea	54%	54%	52%	-2%
Philippines	65%	65%	60%	-5%
Southeast Asiab	62%	63%	58%	-5%
Vietnam	69%	70%	69%	-1%
Other	51%	53%	52%	-1%

Source: AHS 2005, 2007, and 2013 alncludes China, Hong Kong, and Taiwan blncludes Cambodia, Laos, and Thailand

As seen in Table 5, all groups experienced significant loss in home equity following the recession, but the magnitude varied across groups. More than a third of all Asians lost equity but Philippine-born Asians experienced the most dramatic loss in equity, nearly \$175,000 or 77 percent of their equity. From having one of the highest median home equities in 2007, Philippine-born Asians fell to the lowest among the ethnic subgroups to \$50,000 in 2013. Despite their stable home ownership rate, Vietnamese had the second highest loss, losing almost half of their equity, followed by Indian-born and Southeast Asians. All other groups fell below the median loss by all Asians, with Chinese-born Asians losing the least amount of equity.

Table 5: Median home equity (x 1,000)

	2005	2007	2013	% Loss of Equity (2007–13)
Asian	\$193	\$169	\$110	-35%
United States, Outlying Areas	\$239	\$165	\$130	-21%
Chinaª	\$203	\$236	\$200	-15%
India	\$173	\$169	\$100	-41%
Korea	\$209	\$146	\$110	-25%
Philippines	\$255	\$225	\$50	-78%
Southeast Asiab	\$119	\$135	\$80	-41%
Vietnam	\$176	\$197	\$100	-49%
Other	\$124	\$124	\$83	-33%

Source: AHS 2005, 2007, and 2013 alncludes China, Hong Kong, and Taiwan blncludes Cambodia, Laos, and Thailand

Conclusion and Implications

The model minority myth is a stereotype that generalizes Asian Americans as self-sufficient, well-educated, hardworking, and upwardly mobile. Such generalizations do not account for the tremendous diversity among Asian Americans, or, for that matter, the differences in socioeconomic status, access to resources, and immigration histories that characterize various Asian American ethnic groups. This often leads to the invisibility of Asian Americans, particularly disadvantaged ethnic groups, in policy consideration, services, and programs. The results of this research contradict the model minority myth by highlighting the

disparities in housing assets among ethnic groups as determined by place of birth. From this study, we see that Asian Americans are heterogeneous and not all are wealthy or doing better. One of the strengths of this study is the disaggregation of Asian subgroups by nationality, which does, in fact, reveal substantial variations in asset accumulation.

Compared to whites, who are generally considered the dominant group because of their political and economic power over other racial/ethnic groups, Asians are doing worse off in terms of home ownership and wealth accumulation after adjusting for differences in geographic distribution. Likewise, differences exist among the various ethnic groups with certain groups faring better than other groups. For example, Chinese-born Asians have some of the highest home ownership rates and equity, and were least affected by the economic recession. Southeast Asians had on average lower home values, which is partly due to their inability to afford bigger and more expensive homes despite having a larger household size. This lower home value translates to a lower equity for the group, which was only compounded by the recession that wiped out more than 40 percent of their assets. Philippine-born Asians were hit hardest by the recession. In the years prior to the recession, they had one of the highest rates of home ownership and equity, but by the end of the recession, they had lost this standing, resulting with an equity value two times less than the average for Asians.

Much more is needed in terms of data collection and empirical analyses of wealth accumulation by Asian ethnic groups. Using AHS, we found some major limitations to the data set. For example, the AHS does not collect information on ethnicity for Asians but instead collects nationality, which we used as a proxy. This method of assigning ethnicity does not take into account the diversity of the country of origin of the individual, which could possibly consist of innumerable distinct ethnic groups. One recommendation to improving the AHS is to have both HUD, which provides funding for the AHS, and the BOC, which conducts it, to include a question on the respondent's ethnicity regardless of where they were born. Additionally, native-born respondents will also be included in their respective ethnic group. One suggestion is that the AHS should have race and ethnicity questions that parallel the ACS questions on race and ethnicity, which offer categories for different Asian subgroups. Our current analysis places together all native-born Asians, regardless of ethnicity, into their own separate group. Including an ethnicity question will help assign more accurately the ethnicity of those being examined regardless of place of birth.

Another problem that we encountered with the AHS is sample sizes of some ethnic groups. To resolve this issue, we aggregated certain ethnic groups together. The small sample size limits the ability to generate power to detect statistical significance. One way HUD and the BOC can address this problem is to oversample Asian Americans by subgroups. Oversampling can be done through spatial targeting of areas with high Asian American concentration or by using internal Census decennial data to oversample housing units occupied by Asian Americans. This can provide more representative and reliable estimates. The sampling should recognize the wide range of demographic characteristic and socioeconomic status among Asian American subgroups.

Another limitation of this study is that it only covers a partial indicator of wealth by examining home ownership and home equity. Housing is the single-largest source of wealth, but there are other sources of wealth such as cars, retirement funds, stocks, or saving accounts.

This study provides key findings for policy decisions. Policies designed to help minorities often exclude Asians because of the misguided belief that all Asians are faring well. However, as the study shows, certain ethnic subgroups, such as Southeast Asians, have some of the lowest home equity, and thus, some of the lowest wealth. To the best of our knowledge, groups that are most disadvantaged in the housing market tend to be those who have fewer resources available to them. Policies ought to address this inequality of wealth, and Asians should not be excluded from accessing essential financial and social service resources.

Notes

- 1. Because of data limitation, it is impossible to know precisely the ethnicity of the AHS respondents; nonetheless, we use the more common terminology denoting ethnic membership (e.g. Chinese-born, Vietnamese-born) rather than nationality (e.g., China-born, Vietnam-born). There should be a very high correlation between ethnicity and nationality among the foreign born. Moreover, it would make more sense to refer to those from China, Taiwan, and Hong Kong as Chinese born because many are of Chinese ancestry, rather than referring to them in country-specific terms such as "China-Taiwan-Hong Kong born." The same is true for the Southeast Asian group, which in our study is comprised of those born in Cambodia, Thailand, and Laos.
- 2. Rates of home ownership are generally lower when native-born figures are taken into account. For example, the average home ownership for Cambodian, Laotian, and Thais together was 55 percent and 64.8 percent for Vietnamese (U.S. Census Bureau, 2013).

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Appendix

Values for this study are weighted using a final weight based off on the 1990 Census geography. However, additional weights were created using a geographic weight distribution that models an age mortality distribution. In looking at health indicators such as birth rates and mortality rates, studies often use an age-adjusted distribution because age is prime factor in mortality. For exam-

ple, counties with a higher percentage of older people will have a higher rate of deaths due to the elder population having more chronic illnesses, while a county with a younger population will have a smaller mortality rate. To eliminate the bias in age, one method that the National Center for Health Statistics and the Centers for Disease Control and Prevention use is a method of indirect standardization (Curtin and Klein, 1995).

Accordingly, a standard set of age-specific death rates are assumed to apply to the observed population. This technique yields an "expected" number of deaths in a population. An indirect adjusted death rate can be computed from the expected number of deaths, most often using the ratio of the expected to the actual observed number of deaths (called the standardized mortality ratio, or SMR). This SMR is multiplied by the crude death rate for the standard population, giving the indirect adjusted death rate (Figure A1).

Figure A1: Indirect standardize for age-adjusted death rate

	Age Standard Population		Population A
	0-34 years	60	20
# of deaths	35–64 years	120	120
	65+	240	360
Adjustment factor (SMR) =	0-34 years	1	3
# of standard deaths / # of observed deaths	35–64 years	1	1
	65+	1	0.67
Adjusted # of deaths =	0-34 years	60	60
SMR × # of deaths	SMR × # of deaths 35–64 years 65+		120
			240

Source: Tabulations made by authors using "standard population" example from National Center for Health Statistic's "Direct Standardization" (Curtin and Klein, 1995)

Modeling this indirect standardization method, we created new geographic weights to take into account that Asians live more in metropolitan areas with higher median home values. For example, in 2007 about 2.81 percent of Asians lived in Honolulu, Hawaii, compared to 0.08 percent of non-Hispanic whites; while 1.59 percent of non-Hispanic whites lived in Detroit, Michigan, compared to only 0.71 percent of Asians. However, the median home value in Honolulu in 2007 was about \$494,000 compared to Detroit's \$169,000. To take this geographic bias into account, we thus also use an indirect standardization method. We created adjustment factors within each SMSA variable, the variable that accounts for different metropolitan areas, by taking the percentage of Asians in each

SMSA over the total number of Asians and dividing it by the percentage of non-Hispanic whites in its respective SMSA over the total number of non-Hispanic whites (Figure A2). In this way, we used Asians as the standard population. These adjustment factors were then multiplied to the 1990 Census weights to create adjusted geographic weights. Adjusted data for both non-Hispanic whites and total population were calculated using these new geographic weights.

Figure A2: Indirect standardization for geographic adjustment, 2007

	SMSA	Asians	Non-Hispanic Whites
% of total racial population	Honolulu, HI	2.81%	0.1%
	Detroit, MI	0.71%	1.6%
Adjustment factor = % of Asians / % of non-Hispanic whites	Honolulu, HI	1	33.3
	Detroit, MI	1	0.4
Adjusted % of racial population	Honolulu, HI	2.81%	0.0
	Detroit, MI	0.71%	0.0

Source: AHS 2007

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