

# **Housing Tenure Choice of Taiwanese Immigrants: A Different Path to Residential Assimilation**

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## **Abstract**

Traditional assimilation theory predicts immigrant adaptation into society as a function of catching up to status of U.S.-born non-Hispanic white households. Recent Taiwanese immigrants, rather than climbing socioeconomic ladders overtime, may have surpassed the socioeconomic status of whites soon after arrivals, as measured by their homeownership attainment (Painter, Yang, and Yu 2003). This paper extends this research and specifically examines Taiwanese immigrants' high homeownership attainment. It reveals that (1) compared with native-born whites, all Chinese subgroups have higher predicted homeownership rates; (2) homeownership gaps between Taiwanese and other Chinese immigrants are quite large among newcomers, converging somewhat over time; (3) Taiwanese, who contributed to the surge in homeownership during the 1980s, were more likely to be young, highly educated, and new immigrant households with incomes lower than the median level; and (4) Taiwanese stand in contrast to other immigrants as English proficiency, an indicator of assimilation, does not play a significant role in their homeownership attainment. These outcomes may be an aggregate effect of a large influx of well-off Taiwanese, family support, and cultural affinity for homeownership. Further research is necessary on factors such as locational choice and informal resources in immigrants' tenure choice.

**Keyword:** Housing Tenure Choice; Immigrant Status; Residential Assimilation

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## Introduction

Recent years have witnessed a large increase in academic research and policy debate on housing tenure choice. This is appropriate given residential real estate's significance within a portfolio of household assets and importance in the national economy. In addition, many researchers have found that homeownership has intrinsic social values and positive economic benefits (see, for example, Rohe and Stewart 1996; Green and White 1997). As one of the major focuses of the federal housing policy, the United States government has been incessantly promoting homeownership by offering tax incentives and government-sponsored financial support to homeowners (McCarthy, Van Zandt, and Rohe 2000).

Despite a wide array of public policies promoting homeownership opportunities for minority households, minority groups as a whole is still experiencing negative discrepancies in homeownership, even after adjusting for their socioeconomic status (Bianchi, Reynolds, and Spain 1982; Wachter and Megbolugbe 1992). An equally fascinating phenomenon is the recent surge in immigrants<sup>1</sup> from Latin America and Asia. The precipitous growth in minority population led by immigration, coupled with homeownership deficits among them, has the potential to adversely impact the national homeownership agenda. In the recently released agenda, the Bush Administration has regarded promoting homeownership of minorities as the top priority of the federal housing policy (The Bush Administration 2002).

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<sup>1</sup> In this paper, "immigrant" and "foreign-born" are used interchangeably, although the foreign-born population may include temporary foreign visitors, such as international students and temporary workers, in addition to immigrants.

Meanwhile, economic assimilation is not evenly observed in the immigrant population. It is documented that Asian immigrants quickly caught up to socioeconomic status comparable to U.S.-born households some time after arrivals, while Latino immigrants moved up the socioeconomic ladder steadily over time from initially very low levels (Myers and Lee 1998). Chinese immigrants in general, and Taiwanese immigrants in particular, stand out from the gloomy picture of immigrants' homeownership deficits. In contrast to traditional assimilation theories, they may have even surpassed the socioeconomic status of U.S.-born non-Hispanic whites at their first footsteps on the new land (Painter et al. 2003). It is less clear, however, what factors have contributed to their high homeownership.

Homeownership attainment has been widely used in the literature as a measure of immigrants' assimilation and socioeconomic well being, because of its symbolic value and policy significance (see for instance, Krivo 1995; Rosenbaum 1996; Borjas 2002). Homeownership attainment has a special meaning to immigrants, since it has been well recognized as the symbol of the American Dream, the commitment to the host society, and an important milestone of immigrants in their social and economic adaptation to the host society (Rosow 1948; Alba and Logan 1992; Rossi and Weber 1996).

Understanding tenure choice of immigrants becomes particularly relevant given the fact that the country is currently undergoing tremendous demographic shifts. In particular, about 44 percent of all foreign-born residents arrived here in the 1990's (The Bureau of Census 2001). Asian American populations have increased

by about 76 percent over the past decade.<sup>2</sup> More specifically, foreign-born Chinese have well exceeded two million, surpassing Filipino and becoming the largest Asian immigrant group in the United States (The Bureau of Census 2001).

In this era of significant demographic shifts, the Chinese population in the U.S. has experienced significant changes in composition regarding to national origin and causes of immigration. For example, immigration from Taiwan and Hong Kong was largely motivated by concerns over economic security and heavily influenced by the relationship with mainland China, while most Chinese immigrants born in Vietnam came to the U.S. unprepared as refugees after the Vietnam War (Wachman 1994; Tseng 1995; Li 1998; Ng 1998). The characteristics of Taiwanese immigrants are of particular interests as they represent a group of economically better-prepared immigrants. As a sub-group of Chinese, Taiwanese immigrants have been considered as high achievers with a large proportion of professionals and executives (Chen 1992; Zhou 1992; Tseng 1995). In addition, Taiwanese population in the Los Angeles metropolitan area had increased by more than four folds over the 1980s.

Unlike concerns over the homeownership gaps between whites<sup>3</sup> and African Americans (Bianchi et al. 1982; Wachter and Megbolugbe 1992), recent research suggests that Chinese households in general, and Taiwanese households in particular, were much more likely to be homeowners than were comparable whites and Asians other than Chinese (Painter, Gabriel, and Myers 2001; Painter et al. 2003). In Los Angeles metropolitan area, for instance, homeownership rate of Taiwanese immigrants was about 76 percent in 1990, more than 15 percentage

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<sup>2</sup> References to Latino refer to persons of Hispanic origin, who may be of any race.

<sup>3</sup> References to whites refer to persons of non-Hispanic whites.

points higher than that of white households in the same year or reflecting an 18 percentage point jump over the rate in 1980. As a contrast to the large rise in Taiwanese homeownership rate, the overall homeownership rate of Latino declined slightly over the 1980s. This finding is startling to the traditional assimilation theories, as that theory is oriented toward explaining the process of immigrant adaptation into society as a function of catching up to status of U.S.-born non-Hispanic households. Instead of dragging down the overall homeownership rate of Taiwanese, the large influx of Taiwanese immigrants in the 1980s has unexpectedly elevated the homeownership rate of Taiwanese.

This article's main objectives are to identify how Taiwanese immigrants have achieved their homeownership attainment, using Public Use Microdata Samples (PUMS) of the U.S. Census in Los Angeles Consolidated Metropolitan Statistical Area (CMSA). First, this paper examines factors that contribute to the surge in Taiwanese homeownership rates in the 1980s, with particular focuses on household characteristics such as age, education, income, language proficiency, and immigrant status<sup>4</sup>. Second, this study investigates to what extent that Taiwanese immigrants are different from other Chinese subgroups with respect to housing tenure decisions. Third, this study specifically estimates tenure choice among groups stratified by age, income, education, and immigrant status. This enables me to test whether, for example, the influx of highly educated Taiwanese immigrants have similar impacts on their overall homeownership rates when compared to white households, as do households of lower education levels. Finally, the paper examine the role of

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<sup>4</sup> With the forthcoming Public Use Microdata Samples from Census 2000, it will be possible to specifically track cohort progress of Taiwanese immigrants toward homeownership in the 1990s, separating effects of aging and assimilation.

language proficiency, as an indicator of assimilation, in enabling households to own a home (Alba and Logan 1992; Myers and Lee 1998).

## **Theories and Recent Studies**

### *Residential assimilation*

A large body of research on immigrants' differences in homeownership has undertaken within a sociological framework, concerning what happens once immigrants arrive at their destinations and how they adapt to the host society. The dominant interpretation of this process is known as assimilation, which usually involves with learning, sharing and adapting to alternate, different cultures, values and lifestyles (Gordon 1964). Assimilation leads to a reduction in ethnic difference and eventual conformity to the mainstream cultural standard (Alba and Nee 1999). Assimilation theories arose as a powerful conception derived from the experience of earlier European immigration, suggesting that such an inevitable process should be as well generalizable to the successive immigrant groups.

In stark contrast to the prospect of assimilation and convergence over time, researchers have recently discovered a phenomenon of "segmented assimilation" (Zhou 1997; Rumbaut 2000). Instead of forming a unified group, many recent immigrants have experienced their distinctive adaptation processes, and sometimes even, shown a pattern of perpetual ethnic differences relative to their U.S.-born counterparts. Recent research, on spatial assimilation of foreign-born population in large metropolitans, has found that urban settlement patterns have become more multifaceted over the past decade. For instance, some new immigrants have

bypassed the ethnic enclave stage and directly settled in the suburbs upon arrivals (Alba et al. 1999; Frey and Liaw 1999; Frey 2001).

Assimilation is manifested in many socioeconomic characteristics, such as the cultural norms, beliefs, and behavior patterns. In practice, English proficiency has been widely used as an indicator of the assimilation (e.g., Alba and Logan 1992; Krivo 1995; Myers and Lee 1998). Assimilation theory suggests that immigrants with higher English language ability are able to adapt better to the host society. English language ability is also a necessary skill for communicating with other people and negotiating the transactions necessary for purchasing a home. Consequently, English language ability should be positively associated with assimilation, socioeconomic well being, and homeownership attainment (Krivo 1995; Alba et al. 1999; Fang and Brown 1999; Park 1999; Carliner 2000; Fong and Kumiko 2000).

#### *Housing tenure choice*

Another important dimension to the assimilation literature pertains housing tenure choice, concerning to what extent that immigrants are different from U.S.-born households and how such differences have fared over time.<sup>5</sup> One key question is how the changes in immigrants' characteristics have impacted their housing tenure choice over time.

Much study on homeownership attainment documents that immigrants have lower homeownership attainment than U.S.-born white, non-Hispanic households

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<sup>5</sup> Cohort analysis is particularly relevant to the study of residential assimilation. However, the huge influx of Chinese immigrants is very much a recent phenomena. The small number of observations and high residential mobility of many immigrant cohorts may prevent detailed analysis of sub Chinese groups such as Taiwanese. The forthcoming Census 2000 PUMS data may be able to mitigate these data concerns.

(Alba and Logan 1992; Krivo 1995; Rosenbaum 1996). In other words, immigrants in general have negative unexplained homeownership gap with white households, after accounting for their socioeconomic differences. The policy concern is that immigrants may be facing unique hardships in their residential assimilation and in achieving upward mobility. It has been suggested that new immigrants are more likely to face challenges in access to homeownership. The possible barriers include language difficulties, low prior endowment, short credit history, and unfamiliarity with the financial institutions in the United States. Immigrants, as emerging minority groups, may also suffer from discrimination. Persistent racial and ethnic segregation observed in large metropolitans may have limited their access to the housing market and constrained their housing choices (Rosenbaum and Schill 1999; Toussaint-Comeau and Rhine 2000). On the other hand, being a self-selected group of people, immigrants are more likely to make commitment to the host society by attaining homeownership. If this is the case and immigrants have adjusted homeownership rates comparable to or higher than the rates of U.S.-born residents, their homeownership rates will eventually reach the level of U.S.-born residents as long as their socioeconomic conditions improve with their duration of residence in the United States.

Recently, Borjas (2002) finds that homeownership gap between native and immigrant households has widened substantially over the past two decades. Even with the inclusion of the metropolitan fixed effects, immigrants from Asia have lower adjusted homeownership rates than the native population. In addition, Coulson (2001) claims that Asian immigrants from places like Taiwan and Hong Kong, who



are usually known for their significant wealth accumulation prior to immigration, still have lower adjusted homeownership rates than white households.

In contrast, urban historians and researchers from outside housing economics have observed that immigrants are keen to establish their roots in the host country through attaining homeownership. It is found that, by relying on family support and ethnic network, immigrants are likely to gain informal resources that are otherwise unavailable (Zhou and Logan 1991; Portes and Rumbaut 1996). It is also documented that many immigrants achieve their homeownership desires through great thrift and sacrifice of the physical amenities of the purchased housing (Kirk and Gordon W. Kirk 1981; Ferrie 1999).

Myers and Lee (1998) study homeownership attainment of Latino and Asian immigrants in southern California in the 1980s, suggesting that the homeownership trajectory of Asian immigrants is likely to elevate them to a level of homeownership similar to their native-born counterparts. Bourassa (1994) undertakes a systematic study of immigrants' tenure choice in Australia revealing that, after adjusting for endowments, most immigrants have homeownership rates comparable to Australian-born residents. In addition, recent studies reveal that, although Latinos and Asians have homeownership rates lower than U.S.-born, non-Hispanic whites, such disparities can be explained fully by differences in economic endowments and by immigrant status (Painter et al. 2001). Chinese immigrants are more likely to own their homes than non-Hispanic white households (Painter et al. 2003). The key difference between the contrary studies is that the latter ones focus on metropolitan areas with substantial presence of immigrants and explicitly control for factors such as household mobility and cohort variations. It is found that their unsettledness in

the adaptation process and large concentration in the gateway metropolitans, not simply status as immigrants led to lower homeownership.

While a large number of studies have investigated immigrants as disadvantaged groups (e.g. Zsembik and Llanes 1996; Hirschman 2001), few studies have focused on the prospect of well-prepared immigrant groups such as Taiwanese. The unique adaptation experience of Taiwanese immigrants provides an additional testing case for this intellectual debate on immigrants' homeownership attainment. Furthermore, recent Taiwanese immigrants may have skipped the initial stage of accumulative upward mobility, providing an example for the "segmented assimilation" hypothesis (Zhou 1997).

#### *Taiwanese identity*

Starting from the mid-1800s, Chinese have been intermittently immigrating to the United States. Chinese as a race category did not show up in the U.S. census until 1870, politically followed by the Chinese exclusion act of 1882 (Sung 1971). Later on, Japanese, Filipino, Hindu, and Korean categories were added in response to successive immigration waves and distinguishing other Asian immigrants from the Chinese. With the passage of the 1965 immigrant law, Chinese were, for the first time in the U.S. history, allowed to immigrate to this country legally in a substantial number. Many Chinese, primarily from Hong Kong and Taiwan, came to the United States as students and then achieved their permanent residency after completing their advanced training (Zhou 1992; Brown and Pannell 2000). Hence, Chinese immigrants in general have a high level of education (Li 1998).

As socially constructed and politically contested identity, Taiwanese<sup>6</sup> have been a topic of an ongoing discussion (McKeown 1997). The Taiwanese identity is fluid, evolving, and heavily influenced by the relationship with mainland China (Wachman 1994; Ng 1998). Alongside the identity recognition process in Taiwan (Baum and Sherry 1999), the uniqueness of Taiwanese immigrants in the U.S. has recently attracted more attention in academic research (see, for example, Chen 1992; Tseng 1995; Tsai 2001). An important issue is how and to what extent Taiwanese immigrants are different from other Chinese groups. These questions have been repeatedly asked in both academic research and political debates (Ng 1998).

### **Data and Research Settings**

Three sets of analyses are introduced in the following sections. The first one looks at tenure choice of Taiwanese in 1980, 1990 and 2000, and examines the contributing factors to their high homeownership rates across time. The second one, including additional controls for local housing market conditions (housing price and rent) and migration (origin and history), focuses on the changes in the 1980s. A decomposition technique is used to separate external factors from household factors that contribute to the surge of homeownership in Taiwanese households. It is also sought to investigate how much differences there are between Taiwanese and other Chinese groups with respect to tenure choice, and whether different diasporaic

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<sup>6</sup> The category of Chinese, accommodating a diverse population regarding their places of birth and paths of immigration, is officially designated by the Office of Management and Budget (OMB) for the purpose of budgeting and social programs. There is no option of Taiwanese on the census form. Sporadically, people started to write in Taiwanese as their race choice in the 1990 census. Because the number is very small, it is unclear whether their characteristics are representative of those who consider themselves as Taiwanese.

Chinese groups exhibit a similar preference for homeownership after their reestablishment in the United States. The third set of analyses, further controlling for language proficiency (whether householder speak English well) and dividend income as an additional account for wealth, provides robustness checks of the main research findings. Additional variables are added in the following three sections:

Section 1—the basic estimation of housing tenure choice with independent variables of age, marital status, education attainment, household type, income, race-ethnicity and Chinese of different birthplace, and immigrant status;

Section 2—adds to Section 1 housing market conditions and migration history; and

Section 3—adds to Section 2 English proficiency, dividend and interest income.

This research primarily uses two datasets which are the 5 percent Public Use Microdata Sample (PUMS) in the 1990 and 1980 United States decennial censuses. In addition, the recently released Census 2000 Supplementary Survey (C2SS)<sup>7</sup> sample data will also be used to provide an early preview of the changes in tenure decision of Taiwanese immigrants in the 1990s, prior to the full release of the Census 2000 PUMS data.

There are three reasons for this research setting. First, these three surveys were conducted at the height of the economic boom, making them relatively comparable over the time period. Second, the 1980s had witnessed major policy shifts in both Taiwan and the United States, which provided more freedom of

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<sup>7</sup> The C2SS was conducted concurrent with the 2000 Census. The main objective of the C2SS is to test the differences between the Census long form data and the American Community Survey (ACS) in an attempt to replace the Census long form with the American Community Survey in the year 2010. The microdata sample size of the C2SS in LA CMSA is more than thirty times smaller than the Census 2000 PUMS, which may not be sufficient enough to study small groups of population.

migration between the two areas. In addition to the economic prosperities in Taiwan, the political tensions along Taiwan Straits set the stage for a large emigration to the United States in the 1980s. Hence, the 1980 and 1990 data samples provide snapshots of homeownership before and after important policy changes which may have affected their homeownership attainment. The third advantage is the data quality of the census, providing the possibility of consistent and periodic check-ups. The PUMS data is arguably the most comprehensive public data source in the United States by which homeownership attainment of Taiwanese immigrants can be specifically investigated.

This study employs a standard tenure choice model, following a multivariate setting and comparing homeownership rates of different groups while controlling for both household characteristics and housing market factors that are relevant to tenure decision. Any significant unexplained differences remaining after all other independent variables have been controlled for can be attributable to preferential differences, unequal access to the housing market, or some parameters overlooked (see, for example, Wachter and Megbolugbe 1992; Painter et al. 2001).

This analysis is applied to Chinese households in Los Angeles Consolidated Metropolitan Statistical Area (CMSA), which comprises four individual Primary Metropolitan Statistical Areas (PMSA). The four PMSAs include Los Angeles–Long Beach PMSA, Anaheim–Santa Ana PMSA, Riverside–San Bernardino PMSA, and Oxnard–Ventura PMSA. Based on places of birth, Chinese are divided into specific groups. Taiwanese immigrants are defined as those people who were born in

Taiwan and chose Chinese or Taiwanese as their race on the U.S. census form.<sup>8</sup> Chinese immigrants are divided into four groups, which are those born in Taiwan, Hong Kong and Macau, mainland China, and other places. In addition, U.S.-born Chinese, Asian other than Chinese, and non-Hispanic white households are also included as the reference groups. These data are sufficiently numerous to identify marginal effects for the interested populations.<sup>9</sup>

In 1990, the Los Angeles metropolitan area accommodated over one third of all foreign-born Chinese in the U.S. The Los Angeles region is also characterized by high housing prices relative to the rest of the United States, which dampens the homeownership of all households.

The sample in each year includes all households that either own or rent their primary residence, excluding persons who reside in group quarters. The samples are limited to those household heads that are aged between 18 and 64. As a whole, Chinese households have maintained higher homeownership rates than whites and

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<sup>8</sup> Tseng (1995) argues that, by relying on birthplace in the 1990 census, one would underestimate Taiwanese immigrants. She suggests that country of last residence is a better way to define Taiwanese immigrants. Unfortunately, the U.S. census does not provide such information. In addition, only less than 15 percent of all the residents in Taiwan were in-migrants from mainland China after the Second World War. The vast majority of people who were born in Taiwan were decedents of the “local people” who moved from the mainland China couple centuries ago (benshengren) (Ng 1998). In this sense, the likelihood of someone was born in mainland China and emigrated from Taiwan is not large. The characteristics of immigrants who were born in Taiwan should be representative of that of Taiwanese. Moreover, Taiwanese identity is socially constructed and deeply rooted in socioeconomic and political evolution of the island. It is not immediately clear whether the majority of those who were born in mainland China and later immigrated to the United States would consider themselves as Taiwanese.

<sup>9</sup> The Current Population Survey (CPS), as well as the American Housing Survey (AHS), suffers from the problem of insufficient sample size. In addition, these datasets do not have specific information on migration histories and detailed race categories among Asians. In other words, one cannot readily identify Korean, Chinese, and Japanese from the CPS data. Using place of birth in the CPS data to identify race can be problematic as it is likely to mis-categorize membership of certain Asian ethnic groups who were born in a different country from the majority of their ethnicity. For example, the 1990 census shows that over one third of all the Vietnam-born population in Los Angeles PMSA is Chinese by race instead of Vietnamese. This issue may concern the tenure choice study based on the CPS data.

all other Asian groups (Painter et al. 2003).

Table 1 shows that the total number of Taiwanese households in Los Angeles CMSA increased by almost two-fold in the 1980s, while Chinese households as a whole grew by almost fifty thousand in each of the past two decades. Figure 1 presents that the Los Angeles region experienced a huge influx of new Chinese immigrants in the 1980s. Meanwhile, the Los Angeles region not only achieved a large net gain in new Taiwanese immigrants from overseas but also attracted established ones from outside the Los Angeles region.

[Figure 1. About here]

[Table 1. About here]

Table 2 shows that all Chinese groups had experienced increases in homeownership rates between 1980 and 1990. Taiwanese immigrants have 75 percent homeownership rate in 1990, reflecting a jump of 16 percentage points from 59 percent in 1980. Over 70 percent of Chinese households from mainland China own their homes in 1990, while Chinese from other places have 51 percent homeownership rate, the lowest level in Chinese immigrants in 1990.<sup>10</sup>

[Table 2. About here]

This study implements the procedures used in previous research to adjust household income to better reflect household affordability (see, for example, Goodman and Kawai 1982; Wachter and Megbolugbe 1992; Painter et al. 2001). Instead of simply using one aggregate household income, the procedures are to

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<sup>10</sup> The homeownership of immigrants from Hong Kong and Macau is 91.6 percent, which may be due to the small sample size of the C2SS microdata samples.

capture both permanent and transitory status of the household income.<sup>11</sup> Both 1979 and 1999 incomes are adjusted to 1989 dollars using the consumer price index for Urban Wage Earners and Clerical Workers in Los Angeles region.<sup>12</sup> Household income instead of personal income is employed, since previous study shows that the aggregate income of the whole household is a better determinant of the household affordability (Alba and Logan 1992; Krivo 1995). Dividend income and interest income are included in the third set of analyses to provide an additional account for household wealth.

Figure 2 presents the mean values of permanent incomes of each Chinese groups plus whites in Los Angeles. Real incomes have been rising steadily in all the groups in the sample from 1980 to 2000. U.S.-born Chinese and whites have the highest level of incomes in all the three years. Unexpectedly, Chinese immigrants from mainland China have incomes higher than Taiwanese in all the three years, despite wide acknowledgment that Taiwanese have a higher proportion of professionals and executives (Chen 1992; Tseng 1995; Ng 1998). Appendix 1 shows that Taiwanese have a higher average wage income per worker than do mainland Chinese households. At the same time, aggregate household income of Taiwanese is lower than those from mainland China, since Taiwanese in general have far fewer workers per household. This seemingly surprising observation does not contradict to the fact that Taiwanese immigrants in general are a well-prepared

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<sup>11</sup> Permanent income, as described in Goodman and Kawai (1982), is the predicted value of a regression of household income on a series of socioeconomic and family variables. It is regarded as a better measure for household affordability, since it is the earning that a household expects to receive over its lifetime (Mayo 1981). Transitory income, other the other hand, is calculated as the residual of observed household income and predicted income. Because of the high cost associated with home purchase, transitory income usually plays a less important role in achieving homeownership (Dynarski and Sheffrin 1985; Goodman 1990).

<sup>12</sup> The results of these estimations are available from the author upon request.



group.

[Figure 2. About here]

In addition to the income variables, household factors, such as age, gender, marital status and race-ethnicity of the householder, are also included as independent variables in the tenure choice model. Age is connected with the expected mobility and prospective earnings of the household (Artle and Varaiya 1978; Pitkin 1990). Age is important since most purchasers take time to accumulate enough wealth to overcome downpayment constraints, particularly to young and first-home buyers. In this analysis, age of the householder is controlled for in a nonlinear fashion using a set of dummy variables for selected age groups. Gender, marital status and race-ethnicity as the manifestations of the existing social structure are important indicators of life-cycle (Spain 1990; Green 1996; Skaburskis 1997). Educational attainment is also included in the housing demand model as a proxy to indicate the future earning potential as well as the wealth of the household (Alba and Logan 1992; Wachter and Megbolugbe 1992). Other household factors of importance include size of the family, number of people, workers, and children in the household (Kendig 1990).

With respect to immigrants, the analysis emphasizes immigrant status, national origin, duration of their stay in the U.S., and age at arrival. These are important determinants in immigrants' tenure choice (Krivo 1995; Myers and Lee 1996; Rosenbaum 1996; Borjas 2002). English proficiency has also been widely used as an indicator of assimilation to the host society. Previous studies show that inclusion of English proficiency helps explain a sizable difference in homeownership rates between native and immigrant households (Alba and Logan 1992; Krivo 1995).

English language abilities<sup>13</sup> and related interaction effects are included in the third set of analyses as robustness checks.

### **Tenure Choice Estimations in 1980, 1990, and 2000**

The first set of multivariate analysis employs a probit specification to investigate the relative importance of factors in tenure choice in 1980, 1990 and 2000. To make the parameter estimates consistent, tenure choice model only includes variables that are consistently available in all the three datasets.

Table 3 presents basic variable summary statistics from 1980 to 2000. The table reports full sample, Taiwanese-only sample, and whites-only sample respectively. Compared with non-Hispanic whites, Taiwanese have a smaller share of not married households and a larger share of householders with at least college degrees. The table also shows a list of variables, which will be used in the analysis. As with the standard formulation, the model assumes that there exists a latent variable *OWN* that measures the propensity to own. The latent variable is regressed on a vector of demographic, economic and other factors affecting the housing tenure decision.

[Table 3. About here]

In the probit estimation, the reference household is chosen to be white, married, aged 25-34, with a high school diploma, and a non-immigrant. Regression coefficients and their standard errors in the three years are reported in Table 4.

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<sup>13</sup> Although English ability has been repeatedly found to have positive association with homeownership attainment (see, for instance, Alba and Logan 1992; Krivo 1995), it is not immediately clear about the causal relationship between the two. Thus, English proficiency is not included in the second set of analyses.

$dF/dx$  reports the marginal effects of the changes in explanatory variables. Overall, the coefficients have the expected signs. Higher ages, being married, higher education, higher permanent and transitory incomes, more people, and fewer workers all lead to higher homeownership rates, although a college degree or better education does not seem to further elevate homeownership rates than a high school diploma or a college dip. The positive coefficient values of immigrant status suggest that the likelihood of one household owning a home increases with the duration of stay in the United States. This result is consistent with previous studies.

[Table 4. About here]

After controlling for other variables, Taiwanese have a very high homeownership propensity. Figure 3 presents the marginal differences in predicted homeownership rates with white households as the reference group<sup>14</sup>. Taiwanese in all the cases have a much higher homeownership propensity than both other Chinese groups and non-Hispanic white households. U.S.-born Chinese and Chinese came from other places have a relatively low propensity for homeownership. All the Chinese groups indicated a jump in their propensity for homeownership in the 1980s. Natural questions are how much difference there is between Taiwanese and other Chinese immigrants regarding tenure choice.

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<sup>14</sup> To provide a more straightforward way to compare the homeownership attainment across groups, a decomposition technique is introduced. This technique is commonly used in the studies of labor market discrimination (Blinder 1973; Oaxaca 1973), homeownership attainment (Wachter and Megbolugbe 1992; Bostic and Surette 2001; Painter et al. 2001), and intra-metropolitan location choice (Gabriel and Rosenthal 1989). More specifically, this method attributes the socio-demographic characteristics of the full sample to households in each of the concerned race/ethnic and immigrant groups. For example, in the sample of white households, we use the coefficients of the white household, attribute them to the full sample, and predict average homeownership rate of whites. Then, we compare the predicted results of Chinese subgroups with the predicted results of the white sample. The differences in predicted homeownership rates are reported in the figures.

[Figure 3. About here]

Table 5 reports the probit estimates with Chinese-only sample in both 1980 and 1990. The reference household is changed to mainland Chinese with same household characteristics as the white households in the previous estimations. Since the number of observations is rather small, many parameter estimates are no longer statistically significant.

[Table 5. About here]

There are considerable changes in coefficient estimates of many factors from the full sample to the Chinese-only sample. The biggest change in probit coefficients between the full sample and the Chinese-only sample is in those age coefficients. In the Chinese-only sample, it is predicted that the probability of homeownership among householders older than age 45, relative to householders aged between 25 and 34, is much lower than that in the full sample. This suggests that the accumulative effect of homeownership attainment among Chinese is not as straightforward as that presented in the full sample. Moreover, marital status and immigrant status become less important, while the results on birthplace remain comparable. Income and education are slightly stronger predictors of homeownership attainment. After controlling for all the socioeconomic and household variables, Taiwanese immigrants still indicate a stronger homeownership propensity than other Chinese immigrants.

Figure 4 shows that the differences in homeownership rates between Taiwanese and other Chinese immigrants become much smaller among immigrants who came in 10 years ago. Relative to new immigrants, the ownership gaps shrink by about 20 percentage points among established immigrants. Figure 5 suggests

that homeownership gaps between Taiwanese and other Chinese immigrants are less significant after adjusting for endowments, which include education, income, marital status, immigrant status, age, and the relative housing prices they face. Compared with recent immigrants, the gaps in predicted homeownership also tend to converge somewhat among the established Chinese immigrants.<sup>15</sup>

[Figure 4. About here]

[Figure 5. About here]

### **Trends from 1980 to 2000**

Thus far, it has been observed that homeownership rates increased overall and across all Chinese groups from 1980 to 1990. It is quite plausible that new Chinese immigrants, particularly of those from Taiwan who came within last decade, may have contributed to their higher homeownership attainment. Natural questions arise as to what extent these trends are due to observable changes in time, and how much of these trends are due to external factors such as new immigration. Therefore an indirect measure is introduced to capture the dynamics in the housing market.

This second set of analyses, including additional controls for local housing market conditions (housing price and rent) and migration (origin and history), uses a decomposition technique to track the changes in homeownership attainment in

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<sup>15</sup> It deserves extra cautions when interpreting coefficient estimates of cross-sectional model longitudinally, because of the possible variations in the successive immigrant cohorts. Such variations are likely to yield biased estimation, because investigating the longitudinal phenomenon of housing tenure choice with a snap shot observation may be an elusion of either the declining quality of immigrants over time or the changes in the composition mix of the immigrants. In addition to the aging effect experienced by native-borns, immigrants experience period effect and cohort effect. With the Census 2000 PUMS data, it may be possible to track progress of Taiwanese immigrants within a cohort framework.

different types of households. The procedure first calculates fitted homeownership rates, based on the probit estimates, for each type of household in the year 1980 and 1990. Then it determines how the predicted homeownership rates of each type of households would change assuming that the 1980 coefficients remained constant, but allowing the demographic distribution of the study area to change as it in fact did between 1980 and 1990. Household income is held constant at its 1989 level, so that the changes in predicted homeownership rates can be separated into two parts: (1) changes due to the time period<sup>16</sup> and (2) changes due to external factors<sup>17</sup>. The decomposition technique was originally developed by Oaxaca (1973) and Blinder (1973) for the study of discriminations and inequality in the labor market. This technique has been recently applied to the study of household types choice and housing tenure decisions over time (Green 1996; Bostic and Surette 2001). In the following section, households are separately grouped by age, immigrant status, education, and household income. This is to specifically look at how the changes in different types of households have contributed to the high homeownership attainment of Taiwanese in 1990. Bifurcations are evident in recent Chinese immigrants, who are clustered at both ends of the socioeconomic spectrum (Chang 1988; Cheng and Yang 1996; Li 1998; Zhou and Gatewood 2000). These separate sets of estimation are to highlight the differences that exist with respect to one socioeconomic outcome, namely homeownership, and the role played different initial socioeconomic status and different timing of immigration.

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<sup>16</sup> This part reports the changes in predicted homeownership rates that are due to the change in time, assuming that the relative importance of factors in tenure decisions remains unchanged through the period. This is to account for the changes in all household characteristics over time.

<sup>17</sup> This part reports the changes in predicted homeownership rates that are due to factors outside of the households. In other words, what are the residual differences in the predicted homeownership rates at the end of the period, that are not due to the changes in time.

The full model is reported in Section I of Table 6<sup>18</sup>, which shows that the marginal differences in homeownership increased from 1980 to 1990 for all Chinese groups, with non-Hispanic white households as the reference group. The gaps of predicted homeownership rates between Chinese and whites widened during the 1980s. Such enlarged gap is more pronounced between Taiwanese immigrants and white households.

With the 1980 coefficients and the 1990 demographic data, the model would predict a smaller homeownership gaps between Chinese and whites than those in 1980 (See column 2). Said alternatively, had tenure choice remained the same between 1980 and 1990, the Chinese-whites gaps in predicted homeownership rates would have shrank by about 0.6 to 3.1 percentage points. However, the actual changes presented in column 4 indicate the predicted homeownership differences between Chinese and whites range from 1.5 to 3.7 percentage points. Therefore, external factors have substantial impacts on the changes in homeownership attainment. Although several external factors such as new immigrants and changes in housing market conditions may have influenced the changes in predicted homeownership of Chinese, new immigrants are likely to be the dominant external force due to their huge size and paramount impacts. More specifically, external factors have contributed to a 6.8 percentage point gain in homeownership rates of

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<sup>18</sup> Column 1 reports the marginal differences in predicted homeownership rates in 1980. Column 2 reports the marginal differences in predicted homeownership rates in 1990, assuming that the relative importance of factors in tenure decisions remains unchanged between 1980 and 1990. Column 3 reports the actual marginal differences in predicted homeownership rates in 1990. Column 4 reports the total changes in the marginal differences in predicted homeownerships between 1980 and 1990. Column 5 reports the changes to due to time. Most of the numbers reported in this column are negative which suggests that, if the relative importance in tenure decisions had remained unchanged between 1980 and 1990, the homeownership gaps between Chinese and whites would have become smaller in the 1980s. Changes due to external factors are reported in the column 6.

Taiwanese relative to white households. Most of the numbers reported in column 6 are positive which suggest that factors outside the households have contributed mostly to the enlarged gaps between Chinese and white households.

Estimation in the section II and III separates established immigrants from new immigrants. Relative to the full sample, there is a 2.4 percentage point increase in the marginal predicted homeownership rates of new Taiwanese immigrants. This indicates that recent Taiwanese immigrants were more likely to contribute to the large increase in Taiwanese homeownership attainment in the 1980s.

Alternatively, section IV and V look at householders younger than 45 and older than 44 respectively. The advantage contributed by external factors is more pronounced in Taiwanese households younger than 45, which indicates a 1.2 percentage point increase than the estimate in the full sample. Therefore, young Taiwanese households aged between 18 and 44 were more likely to contribute to the increase in Taiwanese homeownership propensity in the 1980s.

Section VI and VII divide the data into two groups based on the level of education, depending whether the householders have at least college degrees or not. The effects of external factors are more pronounced in Taiwanese householders achieved college degree, which indicates a 3.1 percentage point increase relative to the estimates in the full sample. Thus, Taiwanese households with college education or better were more likely to contribute to the increase in Taiwanese homeownership propensity in the 1980s.

Section VIII and IV separate the data into two groups depending on whether the household incomes are higher than the median level or not. Section VIII reports



that Taiwanese experienced a 2.3 percentage point increase in the marginal predicted homeownership rates due to external effects. Therefore, Taiwanese households with income below the median level had had much higher homeownership rates otherwise expected and largely contributed to the increase in the marginal differences in the predicted homeownership rates.

[Table 6. About here]

### **Robustness Checks**

There are two possible reasons for Taiwanese unexplained advantage in homeownership attainment. First, Taiwanese may have stronger preferences for homeownership than others. Second, there may be omitted variables in the estimation. In this third section, language proficiencies (householders' English ability), a set of interactions of English proficiency with Chinese groups, dividend and interest incomes (additional controls for wealth), are included in the tenure choice model to address the possibility of omitting variables in the tenure choice model. This section is also used as robustness checks and sees if these new estimations significantly alter the main results. Including language proficiency helps test the relationship between assimilation and homeownership attainment among Taiwanese immigrants.

Omitting wealth effect may have contributed to the large increase in the marginal differences in the predicted homeownership attainment in 1990. Household wealth affects housing demand, particularly to young household and first-time homebuyers who are more likely to experience wealth constraints in downpayment (Linneman and Wachter 1989; Boehm 1993). The pooling of wealth within families

may help them overcome wealth constraints (Mulder and Smits 1999). Parental wealth has a positive relationship with their children's home ownership attainment (Henretta 1984). Coming from diverse socioeconomic backgrounds, Chinese immigrants may have different mechanism of sharing wealth among family members as well as different levels of wealth accumulation prior to immigration. Although permanent and transitory captures some wealth effects, it is possible that the tenure choice model in the first set of analysis has not fully accounted for wealth.

Probit estimates of the extended model, controlling for dividend income and English proficiency, are reported in Table 7. The model estimation suggests that dividend and interest income are statistically significant, but only explain a tiny portion of the marginal differences in the predicted homeownership gaps. This is suggestive that there is unaccounted wealth effect and Taiwanese immigrants may have wealth or resources connected to their original countries, which cannot be captured by the available dataset. Informal resources such as ethnic network, family support, and peer influences may also have played an important role in their high homeownership propensity. Additional research is necessary.

[Table 7. About here]

As expected, everything else kept constant, English proficiency is positively associated with homeownership attainment.  $dF/dx$  reports that that, relative to those who speak English well or speak English only, householders who do not speak English well would have a 12.8 percentage point deficiency in homeownership rates. However, the negative interaction estimate indicates that Taiwanese who speak English well have homeownership rates 15.4 percentage points lower than those

who do not speak English well. When combining these two effects together, English proficiency is no longer a principal determinant of homeownership among Taiwanese immigrants. As Alba and Logan (1992) note, English ability is an important measure of assimilation. Therefore, many Taiwanese have achieved their homeownership without experiencing much of the traditional assimilation.

The variables of English proficiency, dividend and interest income are statistically significant. But the inclusions of these additional measures do not alter the main conclusions in any significant way, which also suggests that the estimation in the previous sections is reliable.

### **Concluding Remarks**

This study investigated the determinants of homeownership of Taiwanese, a group of well-prepared immigrants. The procedures used in the analysis not only take account for tenure choice in any individual year, but also track the changes over time. The robustness checks, employing additional controls for wealth and language proficiency, substantiate the main research findings.

Homeownership attainment represents serious commitments of immigrants to the host society. Empirical evidence presented here suggests that Taiwanese immigrants have achieved residential assimilation in a unique fashion, as they have homeownership rates not only higher than other immigrant households but also higher than U.S.-born, non-Hispanic white households. After taking socioeconomic differences into consideration, the unexplained gaps in predicted homeownership rates become even larger. Such sizable unexplained differences were more pronounced in 1990, a time saw a huge influx of Taiwanese immigrants. This trend,

persisting in all households, is more significant among recent immigrants, which indicate a possible compositional shift in recent Taiwanese immigrants. Instead of climbing up the ladder of homeownership attainment through the assimilation process as most other immigrant groups have experienced, many Taiwanese immigrants purchase their homes at their first footstep on the new land.

Taiwanese households, who contributed to the large increases, are more likely to be new, young, and highly educated Taiwanese immigrants with household incomes below the median level. In addition, English proficiency as an indicator of assimilation does not seem to play an important role in Taiwanese homeownership attainment. Taiwanese experiences in homeownership attainment are different from those documented in both the classical assimilation perspective and the permanent divide perspective, as they achieve the status of native-born residents without the gradual assimilation process.

The preview of the trends in the 1990s through the analysis of the recently released C2SS microdata reveals that the marginal differences in predicted homeownership rates between Taiwanese and whites have shrunk somewhat over time (See figure 3). This finding tends to suggest that the surge of Taiwanese homeownership in 1990 was likely to be an unusual case.

While the ownership gaps between Taiwanese and other Chinese immigrant are quite large at the beginning of their immigration, the differences persist but tend to converge somewhat as their length of stay in the U.S. extends. Compared with non-Hispanic white and other Asian households, Chinese of different birthplace indicate a more similar mechanism in housing tenure choice within themselves.

An aggregate effect of policy shifts in both Taiwan and the United States, economic prosperity of the island, political tensions along the Taiwan Straits may have contributed to the surge in 1990. The research finding is inline with the findings reported in Tseng (1995). It was documented that many Taiwanese immigrants have educated themselves before departure, which may have contributed to their well preparedness and subsequent homeownership achievement soon upon arrivals.

A topic not discussed in this research is whether higher homeownership observed among Taiwanese households is a good thing for the community and the individual households. It has been suggested that homeownership can have negative impacts under certain circumstances. Such possibility is more pronounced among new immigrant households, as they are more likely to have low income and high mobility than native-born households. To low-income households, homeowning is more vulnerable to the idiosyncratic risk in real estate market, because housing usually consists the largest portion in their investment portfolio (McCarthy et al. 2000). Homeownership may also limit household mobility, since the cost associated with moving for homeowners is much higher than renters (Quigley and Weinberg 1977). New immigrants are usually less settled in their adaptation process and more responsive to the shifts in the labor market (Borjas 2001). Therefore, homeowning for new immigrants may not always be the optimal choice. Future research should explore the impact that elevated homeownership plays on these other outcomes.

Further research may use the forthcoming 2000 Census data to more specifically investigate how the bulge of Taiwanese immigrants came in the 1980s have fared over the 1990s, and specifically decipher aging and assimilation effects over the past decade from a cohort longitudinal perspective. Previous research has

documented that many Taiwanese immigrants directly settle into middle-class neighborhood without going through ethnic neighborhood or enclaves. Locational choice of Taiwanese immigrants is therefore a possible topic for further study. The key question is as to what extent that locational choice has influenced their homeownership attainment. It is possible that, with the support of ethnic network, Taiwanese concentration in the suburb have a positive relationship with their homeownership attainment. Hence, another topic of further study is how the influx of well-off immigrants such as Taiwanese has influenced the local housing market. Moreover, wealth is a factor deserving extra attention. The high homeownership rates among young Taiwanese couples suggest that inter-generational transfer of wealth may have played an important role in their homeownership attainment, so do ethnic networks and other informal resources.

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**Table 1. Chinese Households by Place of Birth, Los Angeles CMSA, 1980-2000**

Number of Households	1980	1990	2000
All	32,080	80,203	131,019
Chinese born in			
Taiwan	4,440	21,200	
Mainland China	13,940	24,149	
Hong Kong and Macau	2,800	7,712	
U.S.	6,300	9,947	
Other places	4,600	17,195	

*Note:* The number of households represents householders aged between 18 and 64. Data is not fully available for 2000 at time of writing. Chinese immigrants from other places refer to foreign-born Chinese who were not born in Taiwan, mainland China, Hong Kong, or Macau. Because of small sample size in the C2SS, the number of Chinese households is only reported as the aggregate level.

Source: 5% Public Use Microdata Samples of the US Census, 1980, 1990; the Summary File 3 of the US Census, 2000.

**Table 2. Homeownership Rates by Race and Place of Birth, Los Angeles CMSA, 1980-2000**

Homeownership Rates	1980	1990	2000
White	0.582	0.614	0.633
Chinese born in			
Taiwan	0.586	0.750	
Mainland China	0.687	0.707	
Hong Kong and Macau	0.550	0.637	
U.S.	0.610	0.674	
Other places	0.465	0.514	

*Note:* The homeownership rate in one ethnic group is the ratio of homeowners to the total households within that group. Because of small sample size in the C2SS, the homeownership rate of Chinese households is only reported as the aggregate level.

Source: 5% Public Use Microdata Samples of the US Census, 1980, 1990; Public Use Microdata Samples of Census 2000 Supplementary Survey.

**Table 3. Variable Summary Statistics, Los Angeles CMSA, 1980, 1990, and 2000**

Variable	1980						1990						2000					
	Full Sample		Taiwanese		Whites		Full Sample		Taiwanese		Whites		Full Sample		Taiwanese		Whites	
	Mean	Std Dev.	Mean	Std Dev.	Mean	Std Dev.	Mean	Std Dev.	Mean	Std Dev.	Mean	Std Dev.	Mean	Std Dev.	Mean	Std Dev.	Mean	Std Dev.
Ownership Rate	0.583	0.493	0.587	0.493	0.587	0.492	0.611	0.487	0.767	0.423	0.615	0.486	0.622	0.485	0.743	0.443	0.633	0.482
Age 18-24	0.088	0.284	0.094	0.293	0.090	0.286	0.047	0.211	0.054	0.227	0.047	0.213	0.044	0.205	0.029	0.169	0.043	0.202
Age 25-34	0.277	0.448	0.448	0.498	0.274	0.446	0.261	0.439	0.276	0.447	0.261	0.439	0.186	0.389	0.171	0.382	0.180	0.384
Age 35-44	0.224	0.417	0.305	0.461	0.220	0.414	0.292	0.454	0.412	0.492	0.286	0.452	0.279	0.448	0.171	0.382	0.275	0.447
Age 45-54	0.203	0.402	0.112	0.316	0.203	0.402	0.219	0.414	0.193	0.395	0.217	0.412	0.292	0.455	0.486	0.507	0.290	0.454
Age 55-64	0.207	0.405	0.040	0.197	0.213	0.409	0.182	0.386	0.065	0.246	0.188	0.391	0.199	0.399	0.143	0.355	0.212	0.409
Not Married, Male Head Of	0.192	0.394	0.135	0.342	0.194	0.395	0.191	0.393	0.124	0.330	0.199	0.400	0.197	0.398	0.200	0.406	0.210	0.408
Not Married, Female Head	0.219	0.414	0.166	0.373	0.223	0.416	0.217	0.412	0.142	0.349	0.225	0.418	0.248	0.432	0.114	0.323	0.259	0.438
No High School Diploma	0.135	0.342	0.067	0.251	0.136	0.342	0.093	0.290	0.059	0.236	0.088	0.283	0.051	0.219	0.000	0.000	0.043	0.204
High School Dip. W/ College	0.581	0.493	0.305	0.461	0.590	0.492	0.445	0.497	0.234	0.423	0.464	0.499	0.413	0.492	0.286	0.458	0.436	0.496
College Degree Or Better	0.284	0.451	0.628	0.484	0.274	0.446	0.462	0.499	0.707	0.455	0.448	0.497	0.536	0.499	0.714	0.458	0.521	0.500
Number Of People In Household	2.685	1.467	3.413	1.853	2.640	1.424	2.782	1.484	3.395	1.480	2.665	1.390	2.652	1.470	2.800	1.208	2.536	1.406
Number Of Workers In Household	1.605	0.889	1.619	1.045	1.596	0.878	1.723	0.903	1.609	0.937	1.699	0.866	1.641	0.900	1.371	0.973	1.599	0.847
Permanent Income (1000s)	46.703	18.835	40.397	20.794	46.938	18.628	57.819	22.569	48.701	24.955	58.675	21.997	63.474	28.045	52.197	29.922	64.589	27.201
Transitory Income (1000s)	0.175	28.517	-1.387	33.514	0.170	28.703	0.000	39.802	3.221	45.528	0.000	40.261	-1.596	55.093	7.477	56.234	-1.157	56.561
Chinese - Taiwan	0.002	0.043	1.000	0.000			0.008	0.091	1.000	0.000			0.012	0.109	1.000	0.000		
Chinese - Mainland China	0.006	0.076					0.010	0.099					0.004	0.060				
Chinese - Hong Kong and Macau	0.001	0.034					0.003	0.055					0.011	0.102				
Chinese - U.S.	0.003	0.052					0.007	0.082					0.009	0.096				
Chinese - Other places	0.002	0.043					0.004	0.065					0.008	0.090				
Asian except Chinese	0.053	0.224					0.093	0.291					0.134	0.341				
White	0.934	0.248			1.000	0.000	0.875	0.331			1.000	0.000	0.822	0.382			1.000	0.000
Moved Within Last 5 Years	0.801	0.399	0.969	0.175	0.797	0.402	0.578	0.494	0.767	0.423	0.567	0.495	0.155	0.362	0.171	0.382	0.155	0.362
Immigrant	0.122	0.327	1.000	0.000	0.083	0.276	0.185	0.388	1.000	0.000	0.093	0.291	0.232	0.422	1.000	0.000	0.110	0.313
Came To U.S. In The Past 5 Yrs.	0.032	0.176	0.529	0.500	0.014	0.118	0.033	0.179	0.251	0.434	0.015	0.120	0.027	0.163	0.257	0.443	0.011	0.104
Came To U.S 5-10 Years Ago	0.018	0.132	0.314	0.465	0.007	0.082	0.042	0.202	0.370	0.483	0.013	0.115	0.033	0.178	0.114	0.323	0.015	0.120
Came To U.S 10-15 Years Ago	0.015	0.123	0.143	0.351	0.009	0.096	0.037	0.189	0.229	0.420	0.015	0.123	0.039	0.194	0.200	0.406	0.019	0.138
Came To U.S 15-20 Years Ago	0.015	0.123	0.009	0.094	0.013	0.115	0.020	0.140	0.088	0.283	0.007	0.086	0.043	0.203	0.229	0.426	0.013	0.114
Came To U.S 20-30 Years Ago	0.026	0.160	0.004	0.067	0.024	0.154	0.029	0.168	0.050	0.217	0.021	0.142	0.054	0.227	0.171	0.382	0.024	0.153
Came To U.S More Than 30 Years	0.015	0.122	0.000	0.000	0.015	0.120	0.023	0.149	0.007	0.081	0.022	0.146	0.035	0.185	0.029	0.169	0.028	0.166
Number of Observations	121,705		223		113,670		124,631		1,049		109,003		3,316		35		2,727	

Note: All dollar figures are in 1989 dollars.

Source: Author's calculations based on the 5% Public Use Microdata Samples of the US Census, 1980, 1990; Public Use Microdata Samples of Census 2000 Supplementary Survey.

**Table 4. Probit Estimates: Chinese Groups Pooled with Other Asian and U.S.-born Whites, Los Angeles CMSA, 1980, 1990, and 2000**

Variable	1980			1990			2000		
	Coeff.	dF/dx	Robust Std. Error	Coeff.	dF/dx	Robust Std. Error	Coeff.	dF/dx	Robust Std. Error
Intercept	-0.858**		0.027	-0.659**		0.025	-0.578**		0.128
Age 18-24	-0.552**	-0.217	0.020	-0.477**	-0.186	0.024	-0.462**	-0.179	0.156
Omitted: Age 25-34									
Age 35-44	0.333**	0.123	0.013	0.346**	0.124	0.012	0.475**	0.164	0.074
Age 45-54	0.491**	0.177	0.016	0.640**	0.215	0.014	0.682**	0.230	0.077
Age 55-64	0.660**	0.232	0.016	0.923**	0.287	0.015	1.145**	0.334	0.091
Not Married, Male Head Of	-0.689**	-0.269	0.014	-0.580**	-0.223	0.014	-0.625**	-0.239	0.083
Not Married, Female Head	-0.420**	-0.164	0.018	-0.413**	-0.158	0.016	-0.401**	-0.151	0.090
Omitted: Married									
No High School Diploma	-0.129**	-0.050	0.014	-0.200**	-0.076	0.015	-0.351**	-0.135	0.121
Omitted: High School Dip. W/ College									
College Degree Or Better	-0.086**	-0.033	0.017	-0.017	-0.006	0.014	-0.021	-0.008	0.102
Number Of People In Household	0.125**	0.048	0.004	0.060**	0.022	0.004	0.084**	0.031	0.025
Number Of Workers In Household	-0.268**	-0.103	0.013	-0.172**	-0.064	0.010	-0.118	-0.043	0.063
Permanent Income (1000s)	0.027**	0.010	0.001	0.018**	0.007	0.001	0.009**	0.003	0.002
Transitory Income (1000s)	0.012**	0.005	0.000	0.010**	0.004	0.000	0.006**	0.002	0.001
Chinese Born in									
Taiwan	0.740**	0.236	0.106	1.120**	0.286	0.059	0.718*	0.211	0.326
Mainland China	0.378**	0.134	0.062	0.431**	0.143	0.047	-0.118	-0.044	0.279
Hong Kong and Macau	0.571**	0.192	0.141	0.645**	0.199	0.087	0.873	0.240	0.789
U.S.	0.301**	0.109	0.084	0.388**	0.131	0.068	0.069	0.025	0.261
Other places	0.105**	0.039	0.111	0.239**	0.084	0.053	-0.014	-0.005	0.265
Asian except Chinese	-0.024**	-0.009	0.023	0.041**	0.015	0.019	-0.172	-0.064	0.096
Omitted: White									
Immigrant	-0.816**	-0.316	0.032	-0.986**	-0.377	0.030	-1.177**	-0.442	0.247
Omitted: Non-Immigrant									
Came To U.S 5-10 Years Ago	0.606**	0.203	0.041	0.590**	0.188	0.032	0.835**	0.238	0.264
Came To U.S 10-15 Years Ago	0.810**	0.253	0.044	0.960**	0.268	0.034	0.983**	0.266	0.257
Came To U.S 15-20 Years Ago	0.901**	0.273	0.045	1.030**	0.276	0.040	1.380**	0.319	0.262
Came To U.S 20-30 Years Ago	0.936**	0.282	0.040	1.138**	0.295	0.038	1.522**	0.337	0.261
Came To U.S More Than 30 Years	0.844**	0.261	0.049	1.166**	0.296	0.042	1.350**	0.313	0.280
Omitted: Came To U.S. In The Past 5									
Log Likelihood		-59,711			-63,597			-1,683	
Pseudo R2		0.278			0.236			0.235	
Number of Observations		121,705			124,646			3,316	

\*: significant at 5% confidence level

\*\*: significant at 1% confidence level

*Note:* dF/dx reports the change in the probability for an infinitesimal change in each independent continuous variable or the discrete change in the probability for dummy variables.

Source: Author's calculations based on the 5% Public Use Microdata Samples of the US Census, 1980, 1990; Public Use Microdata Samples of Census 2000 Supplementary Survey.

**Table 5. Probit Estimates: Chinese Immigrants Only Sample, 1980, 1990**

Variable	1980			1990		
	Coeff.	dF/dx	Robust Std. Error	Coeff.	dF/dx	Robust Std. Error
Intercept	-0.750**		0.246	-0.753**		0.145
Age 18-24	-0.350	-0.132	0.175	-0.082	-0.026	0.134
Omitted: Age 25-34						
Age 35-44	0.181	0.063	0.117	0.160*	0.049	0.069
Age 45-54	-0.070	-0.025	0.143	0.225**	0.066	0.087
Age 55-64	0.112	0.039	0.166	0.197*	0.057	0.096
Not Married, Male Head Of Household	-0.699**	-0.266	0.135	-0.232**	-0.075	0.085
Not Married, Female Head	-0.306	-0.114	0.184	-0.063	-0.020	0.105
Omitted: Married						
No High School Diploma	-0.271	-0.100	0.140	-0.406**	-0.136	0.079
Omitted: High School Dip. W/ College Degree or Better	0.075	0.027	0.152	-0.071	-0.022	0.089
Number Of People In Household	0.128**	0.046	0.030	0.062**	0.019	0.017
Number Of Workers In Household	-0.167	-0.059	0.118	-0.136*	-0.042	0.054
Permanent Income (1000s)	0.029**	0.010	0.009	0.026**	0.008	0.004
Transitory Income (1000s)	0.018**	0.006	0.003	0.017**	0.005	0.002
Chinese Born in						
Taiwan	0.114	0.040	0.126	0.401**	0.114	0.073
Omitted: Mainland China						
Hong Kong and Macau	-0.115	-0.042	0.153	-0.107	-0.034	0.094
Other places	-0.361**	-0.135	0.123	-0.354**	-0.116	0.070
Immigrant	-0.425*	-0.141	0.171	-0.239*	-0.069	0.122
Omitted: Non-Immigrant						
Came To U.S. 5-10 Years Ago	0.435**	0.143	0.117	0.331**	0.096	0.071
Came To U.S. 10-15 Years Ago	0.545**	0.172	0.149	0.524**	0.141	0.087
Came To U.S. 15-20 Years Ago	1.150**	0.284	0.223	0.539**	0.138	0.112
Came To U.S. 20-30 Years Ago	0.422*	0.135	0.171	0.677**	0.165	0.122
Came To U.S. More Than 30 Years Ago	0.935**	0.251	0.226	1.009**	0.201	0.201
Omitted: Came To U.S. In The Past 5 Yrs.						
Log Likelihood		-707			-1,834	
Pseudo R2		0.341			0.269	
Number of Observations		1,609			3,992	

\*: significant at 5% confidence level

\*\*: significant at 1% confidence level

*Note:* dF/dx reports the change in the probability for an infinitesimal change in each independent continuous variable or the discrete change in the probability for dummy variables.

Source: Author's calculations based on the 5% Public Use Microdata Samples of the US Census, 1980, 1990.

**Table 6. Decomposed Trends of the Marginal Differences in Predicted Homeownership Rates 1980-1990**

	Estimated Marginal Differences in 1980 (1)	Estimated Marginal Differences in 1980 1990 (2)	Estimated Marginal Differences in 1990 (3)	Total Change (4)	Change Due to Time (5)	Change Due to Others (6)
Model	1980	1980	1990	(3)-(1)	(2)-(1)	(3)-(2)
Household Characteristics	1980	1990	1990			
(I). Full Sample:						
Chinese born in						
Taiwan	0.207	0.176	0.245	0.037	-0.031	<b>0.068</b>
Mainland China	0.095	0.082	0.124	0.029	-0.013	0.042
Hong Kong and Macau	0.140	0.120	0.155	0.015	-0.020	0.035
U.S.	0.086	0.075	0.112	0.026	-0.011	0.038
Other places	0.049	0.043	0.064	0.015	-0.006	0.021
(II). Excluding immigrants who arrived more than 10 years ago:						
Chinese born in						
Taiwan	0.214	0.184	0.276	0.062	-0.030	<b>0.093</b>
Mainland China	0.100	0.087	0.123	0.024	-0.013	0.037
Hong Kong and Macau	0.154	0.134	0.215	0.061	-0.021	0.081
U.S.	0.086	0.075	0.112	0.026	-0.011	0.037
Other places	0.086	0.075	0.067	-0.019	-0.011	-0.008
(III). Excluding immigrants who arrived in last 10 years:						
Chinese born in						
Taiwan	0.146	0.124	0.167	0.021	-0.022	<b>0.043</b>
Mainland China	0.094	0.080	0.125	0.031	-0.013	0.044
Hong Kong and Macau	0.126	0.107	0.115	-0.011	-0.019	0.007
U.S.	0.087	0.074	0.115	0.029	-0.012	0.041
Other places	-0.039	-0.034	0.075	0.113	0.005	0.109
(IV). Excluding householders younger than 45:						
Chinese born in						
Taiwan	0.143	0.122	0.177	0.034	-0.021	<b>0.055</b>
Mainland China	0.028	0.024	0.089	0.060	-0.004	0.064
Hong Kong and Macau	0.022	0.019	0.146	0.124	-0.003	0.127
U.S.	0.019	0.016	0.026	0.007	-0.003	0.010
Other places	-0.079	-0.068	-0.008	0.071	0.011	0.060
(V). Excluding householders older than 44:						
Chinese born in						
Taiwan	0.235	0.198	0.278	0.043	-0.038	<b>0.081</b>
Mainland China	0.148	0.127	0.187	0.039	-0.021	0.060
Hong Kong and Macau	0.148	0.127	0.157	0.008	-0.021	0.030
U.S.	0.116	0.101	0.152	0.036	-0.016	0.052
Other places	0.123	0.106	0.095	-0.029	-0.017	-0.012

(VI). Excluding householders who do not have college degree:

Chinese born in						
Taiwan	0.174	0.126	0.225	0.052	-0.048	<b>0.100</b>
Mainland China	0.145	0.106	0.142	-0.003	-0.039	0.035
Hong Kong and Macau	0.148	0.108	0.152	0.004	-0.040	0.043
U.S.	0.073	0.055	0.097	0.024	-0.018	0.042
Other places	0.120	0.089	0.126	0.006	-0.031	0.037

(VII). Excluding householders who have college degree or better:

Chinese born in						
Taiwan	0.249	0.227	0.253	0.004	-0.022	<b>0.026</b>
Mainland China	0.050	0.046	0.108	0.058	-0.004	0.062
Hong Kong and Macau	0.114	0.105	0.157	0.043	-0.009	0.052
U.S.	0.107	0.098	0.142	0.035	-0.008	0.044
Other places	-0.002	-0.002	0.034	0.037	0.000	0.036

(VIII). Household permanent income above the median level:

Chinese born in						
Taiwan	0.154	0.115	0.168	0.014	-0.039	<b>0.053</b>
Mainland China	0.122	0.092	0.115	-0.007	-0.030	0.023
Hong Kong and Macau	0.129	0.097	0.107	-0.022	-0.032	0.010
U.S.	0.040	0.031	0.096	0.056	-0.009	0.065
Other places	0.015	0.011	0.101	0.086	-0.003	0.090

(IV). Household permanent income below the median level:

Chinese born in						
Taiwan	0.272	0.244	0.336	0.064	-0.028	<b>0.092</b>
Mainland China	0.054	0.050	0.140	0.086	-0.003	0.089
Hong Kong and Macau	0.127	0.117	0.205	0.077	-0.010	0.087
U.S.	0.168	0.154	0.136	-0.032	-0.014	-0.017
Other places	0.073	0.068	0.046	-0.027	-0.005	-0.022

*Note:* The reference group is U.S.-born non-Hispanic white households. Column 1 shows the marginal differences in homeownership rates between Chinese immigrants and the reference group, calculated using 1980 parameter estimates applied to the 1980 sample. Column 2 shows estimated 1990 marginal differences in homeownership rates using the 1980 parameter estimates applied to the 1990 sample. Column 3 shows estimated 1990 marginal differences in homeownership rates, using a homeownership model based on 1990 characteristics applied to the 1990 sample. The total change is the difference between the estimated homeownership rates in column 1 and 3. This total change is decomposed into component parts in the two subsequent columns. Change due to time is reported in column 5 which is the differences between column 1 and 2. Changed due to others is reported in column 6 which is the differences between column 2 and 3.

Source: Author's calculations based on the 5% Public Use Microdata Samples of the US Census, 1980, 1990.



**Table 7. Probit Estimates with Additional Controls for Language Proficiency and Wealth Effect, 1990**

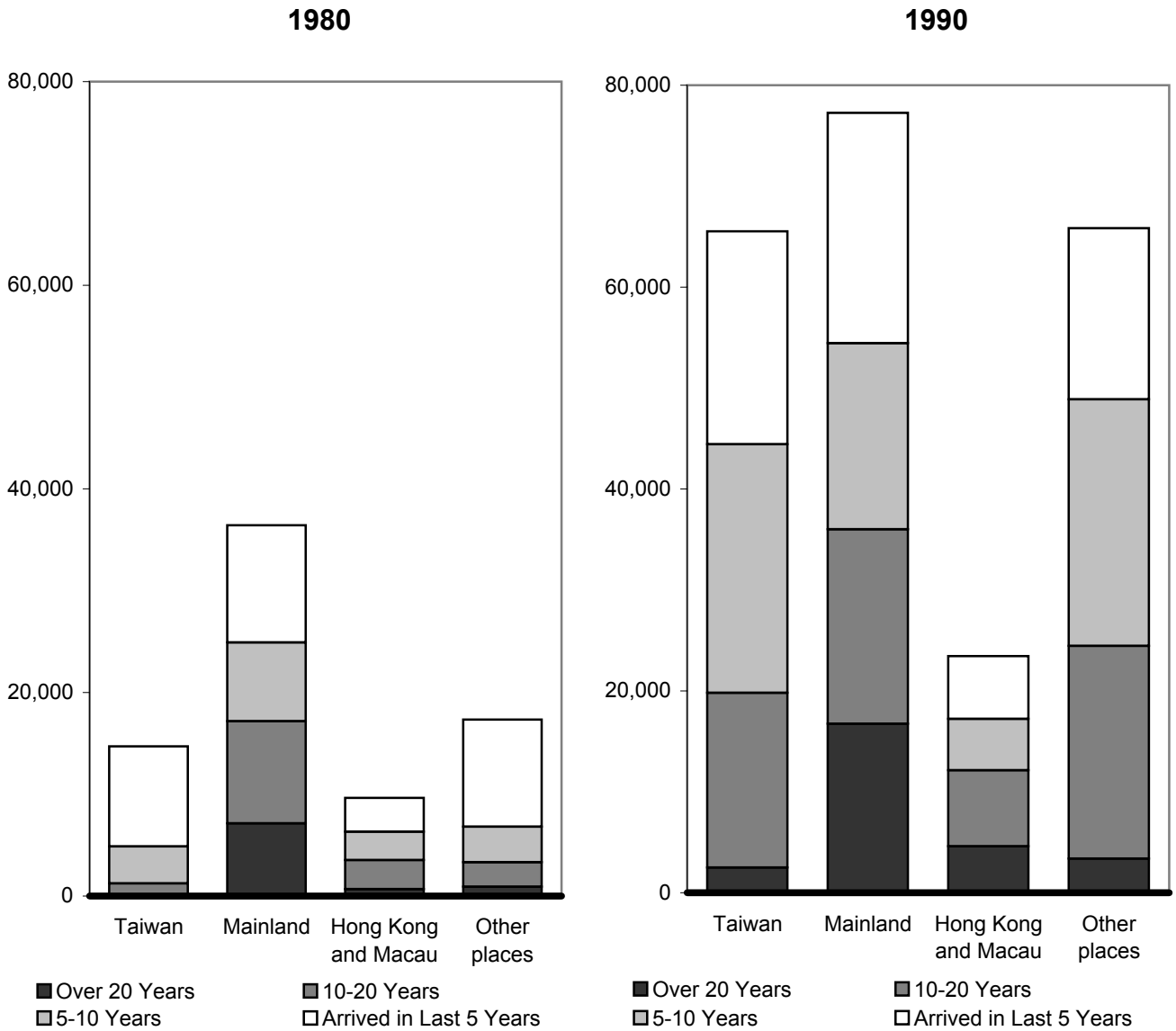
Variable	Coeff.	dF/dx	Robust Std. Error
Intercept	2.163**		0.147
Age 18-24	-0.434**	-0.168	0.025
Omitted: Age 25-34			
Age 35-44	0.292**	0.104	0.012
Age 45-54	0.549**	0.186	0.014
Age 55-64	0.807**	0.255	0.015
Not Married, Male Head Of Household	-0.541**	-0.208	0.014
Not Married, Female Head	-0.357**	-0.136	0.017
Omitted: Married			
No High School Diploma	-0.181**	-0.068	0.016
Omitted: High School Dip. W/ College			
College Degree Of Better	0.047**	0.017	0.015
Number Of People In Household	0.033**	0.012	0.004
Number Of Workers In Household	-0.195**	-0.072	0.010
Permanent Income (1000s)	0.020**	0.008	0.001
Transitory Income (1000s)	0.011**	0.004	0.000
Dividend and Interest Income (1000s)	0.015**	0.005	0.001
The 25th Percentile Housing Price (Log)	-0.967**	-0.356	0.016
Puma Median Rent(Log)	1.369**	0.504	0.032
English Language Proficiency:			
English not Spoken Well	-0.346**	-0.128	0.033
Interaction between Birthplace and English not Spoken Well:			
Taiwan	0.418**	0.154	0.137
Mainland China	0.110	0.040	0.100
Hong Kong and Macau	0.001	0.000	0.318
the U.S.	0.050	0.018	0.367
Other places	-0.433**	-0.168	0.116
Omitted: Native English Speaker or English Spoken Well			
Chinese Born in			
Taiwan	1.016**	0.268	0.068
Mainland China	0.523**	0.167	0.060
Hong Kong and Macau	0.600**	0.186	0.094
the U.S.	0.444**	0.145	0.072
Other places	0.452**	0.148	0.065
Asian except Chinese	0.026	0.009	0.019
Omitted: White			
Moved From Within California	-0.416**	-0.161	0.019
Moved From Within U.S.	-0.901**	-0.347	0.016
Moved From A Foreign Country	-0.756**	-0.294	0.038
Omitted: Moved From Within LA CMSA			
Immigrant	-0.245**	-0.092	0.042
Omitted: Non-Immigrant			
Came To U.S. 5-10 Years Ago	0.041	0.015	0.043
Came To U.S. 10-15 Years Ago	0.375**	0.126	0.045
Came To U.S. 15-20 Years Ago	0.407**	0.136	0.049
Came To U.S. 20-30 Years Ago	0.457**	0.150	0.048
Came To U.S. More Than 30 Years Ago	0.460**	0.151	0.051
Omitted: Came To U.S. In The Past 5 Yrs.			
Log Likelihood		-59,073	
Pseudo R2		0.291	
Number of Observations		124,646	

\*: significant at 5% confidence level

\*\*: significant at 1% confidence level

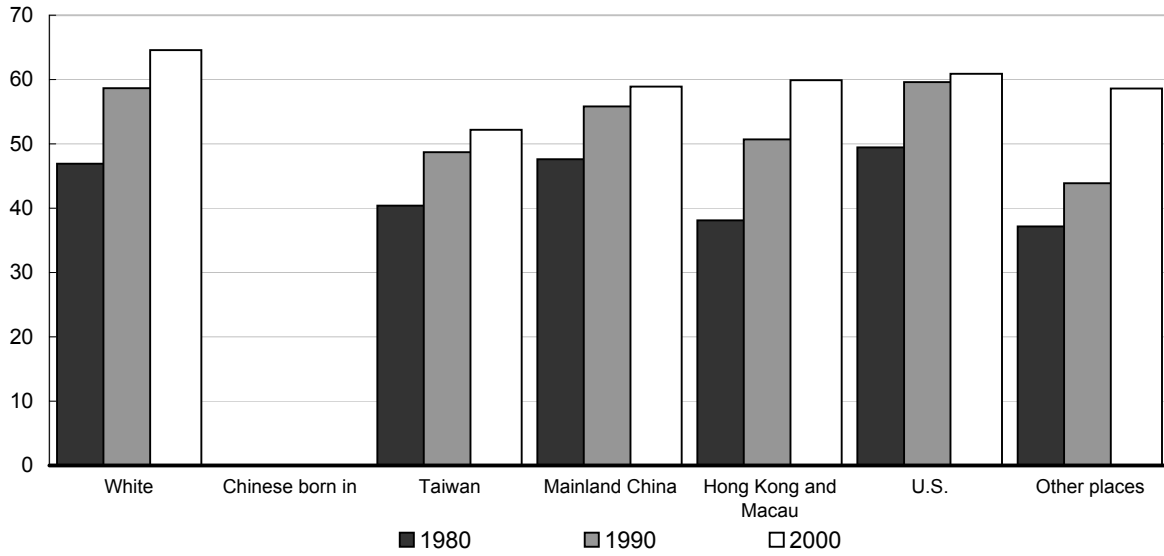
Source: Author's calculations based on the 5% Public Use Microdata Samples of the US Census, 1980, 1990.

**Figure 1. Foreign Born Chinese Population by Immigrant Status and Birthplace, Los Angeles CMSA, 1980-1990**



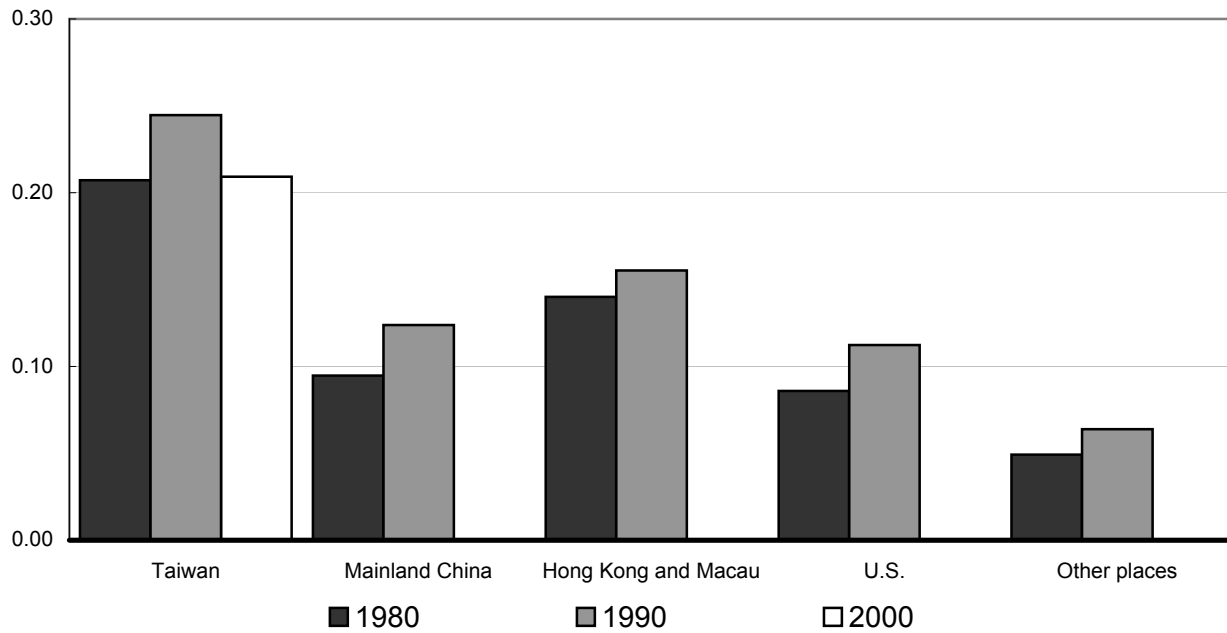
*Note:* Population refers to the total number of people who are not in group quarters. Chinese immigrants from other places refer to foreign-born Chinese who were not born in Taiwan, mainland China, Hong Kong, or Macau.

**Figure 2. Permanent Household Income of Each Group in LA CMSA, 1980, 1990, and 2000**



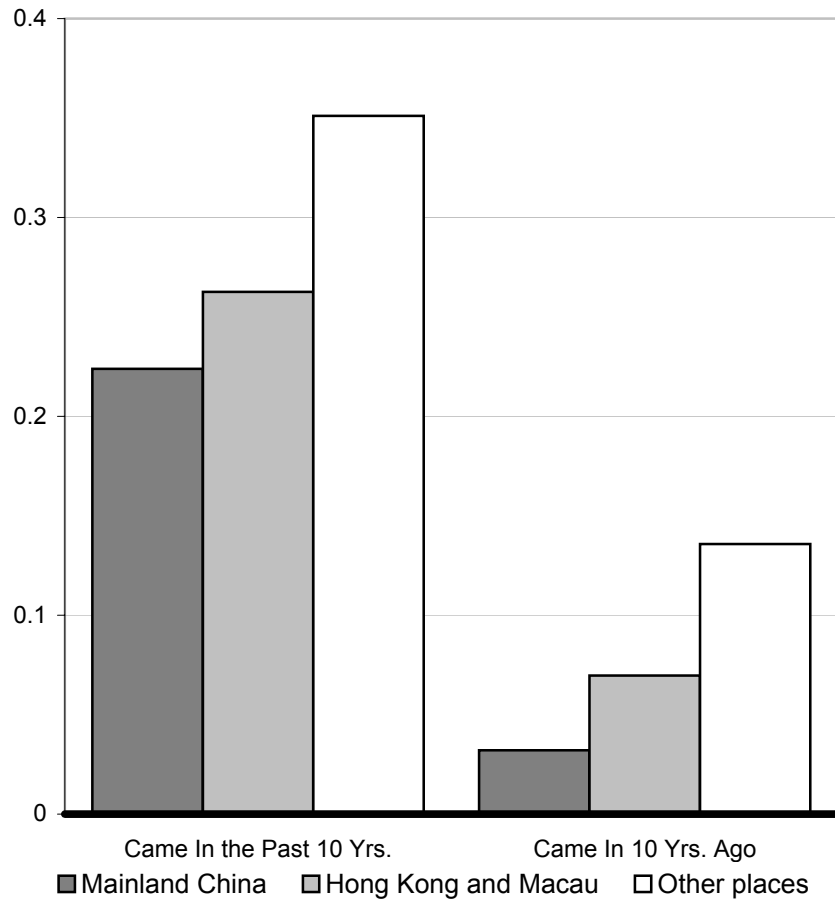
*Note:* The vertical axis shows the mean value of permanent income in 1000s. All dollar figures are in 1989 dollars.

**Figure 3. Marginal Differences in Predicted Homeownership for Each Chinese Group in LA CMSA, 1980-1990\***

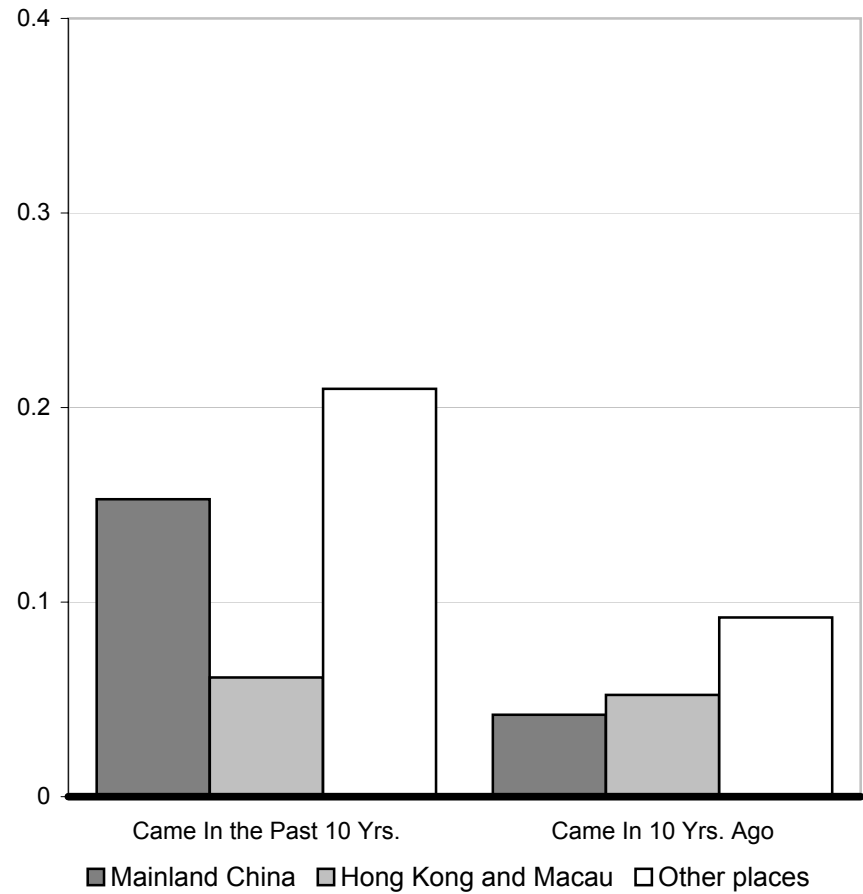


*Note:* The reference group is the probability of homeownership of white households. The  $dp/dx$  value for each birthplace variable is computed from the estimation of the whole sample in the three years by controlling other socioeconomic factors. Only Taiwanese is reported in 2000, since that is the only statistically significant birthplace variable in Chinese.

**Figure 4. Differences in Homeownership Rates between Taiwanese and Other Chinese Immigrants in 1990**



**Figure 5. Differences in Predicted Homeownership Rates between Taiwanese and Other Chinese Immigrants in 1990**



**Appendix 1. Average Wage Income per Worker and Number of Wokers per Household, Los Angeles CMSA, 1990**

	Average Wage Income per Worker (in 1,000 dollars)	Number of Wokers per Household
Non-Hispanic Whites	30.22	1.70
Chinese born in		
Taiwan	25.82	1.61
Mainland China	22.70	2.05
Hong Kong and Macau	27.87	1.79
U.S.	32.26	1.73
Other places	20.08	1.90

Source: 5% Public Use Microdata Samples of the US Census, 1990.