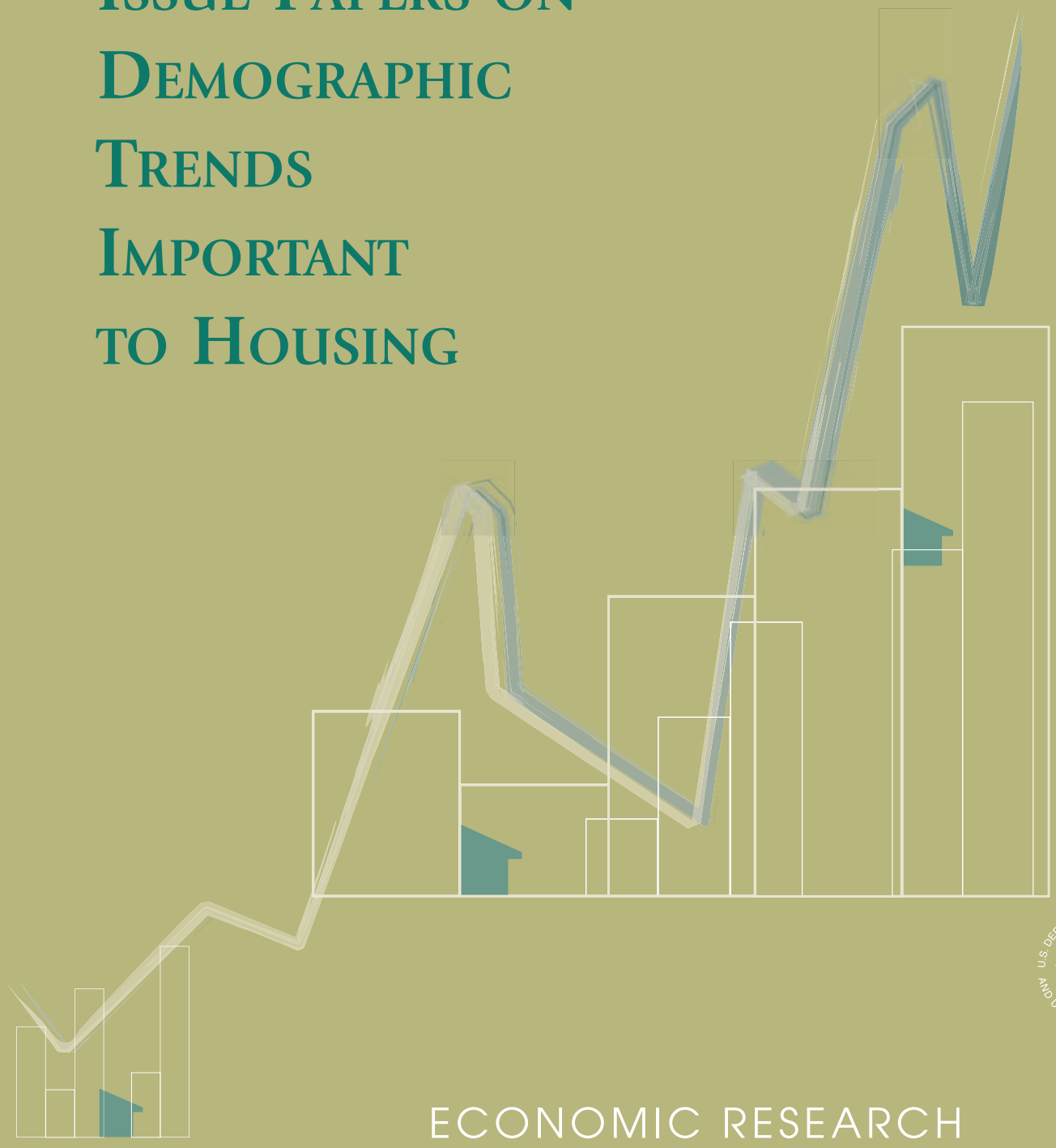
POLICY DEVELOPMENT & RESEARCH

Issue Papers on Demographic Trends Important to Housing



U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

ECONOMIC RESEARCH

ISSUE PAPERS ON DEMOGRAPHIC TRENDS IMPORTANT TO HOUSING

Prepared for:
U.S. Department of Housing and Urban Development
Office of Policy Development and Research

February 2003

Table of Contents

Overview of Issue Papers on Demographic Trends Important to Housing v
Jennifer Johnson and Jessica Cigna

Issue Paper on the Impact of Immigration for Housing 1
Barry Chiswick and Paul Miller

Projections of U.S. Households by Race/Hispanic Origin, Age, Family Type, and Tenure to 2020: A Sensitivity Analysis 79
George S. Masnick and Zhu Xiao Di

How Changes in the Nation's Age and Household Structure will Reshape Housing Demand in the 21st Century 125
Martha Farnsworth Riche

Overview of Issue Papers on Demographic Trends Important to Housing

Jennifer Johnson
Jessica Cigna

The U.S. Department of Housing and Urban Development has commissioned three papers on demographic trends important to housing in order to better understand how these trends will shape both housing demand and supply over the coming decades: *Issue Paper on the Impact of Immigration for Housing,* by Barry Chiswick and Paul Miller*; Projections of U.S. Households by Race/Hispanic Origin, Age, Family Type, and Tenure to 2020: A Sensitivity Analysis,* by George Masnick and Zhu Xiao Di; *How Changes in the Nation's Age and Household Structure will Reshape Housing Demand in the 21st Century*, by Martha Farnsworth Riche. These papers review past immigration patterns, how assumptions about future immigration can influence population predictions, and current and future trends in households' age and minority compositions, respectively. When reviewed together, a reader cannot only draw conclusions as to the scope of demographic effects on housing but can also pinpoint areas where uncertainty as to the future effects may require more research. This overview provides a general review of the papers, a brief summary of each paper, and concludes with a brief sketch of how these three papers could be used as a blueprint for a future research agenda that could look more closely at specific demographic trends of interest.

Collectively, these three papers illustrate that the current demographic profile of the typical American household can be expected to change dramatically over the coming decades. Looking at the population as a whole, Riche finds that for the first time in history, the population will be roughly evenly distributed among different age cohorts, instead of the typical 'pyramid' structure that has typified our population distribution in the past. As the existing population ages and preferences for fewer children prevails, a greater proportion of majority households will be without children. This implies that non-Hispanic white households will be of a smaller size than ever before, and a growing proportion of these households will be elderly. Because of both differences in fertility and immigration, a greater number of younger, more family-structured households will be minority households.

Past immigration has increased the number of minority households and will continue to influence the relative proportion of minorities as the children grow and create families of their own. In fact, these papers maintain that not only will the minority population grow, but certain

racial/ethnic groups—such as the Hispanic population—also will increase their population proportions to new levels. And, as language and country of origin are important indicators of geographic clustering, changes in the overall nationwide distribution of the population may result in an increase in concentration of some groups. However, Masnick and Di note that a large part of future minority growth is among Hispanic households currently in residence in this country. Chiswick and Miller illustrate that, as duration of residency increases, minority 'foreign-born' households mimic native-born households. Thus one could speculate that this growing Hispanic population group already residing in the United States may in fact have more locational stability, larger dwelling sizes, and a greater proportion of homeowners, like native households.

Although the authors seem to agree on potential changes in population, they all maintain a degree of uncertainty exists in how to interpret the effects of these demographic changes on the housing market. These discrepancies can be categorized as: 1) economic uncertainties; and 2) preference uncertainties. The future housing market is dependent, in part, on the strength of the economy. A future recessionary period could lead to a different tenure choice (i.e., homeowner versus renter choice) than may have been made in more stable economic times. And those populations expected to increase—elderly and minority households—are more susceptible to changes in the economy due to their relatively lower incomes. Regional differences in economics could lead to disparities in local housing and labor markets that may cause new geographic concentrations of minority populations and their housing demand.

As the number of households who are married with no children, minority with children, and elderly households continue to grow proportionally, housing industry participants must analyze their true preferences rather than rely on past assumptions of housing demand. For instance, minority households have larger families that sometimes include multiple generations of relations. Assuming that their housing needs are the same as non-Hispanic white family households would be imprudent. Likewise, elderly households are not showing the same preferences for smaller homes and group care as in the past. Thus the housing industry cannot assume that the retiring baby boomers will desire smaller housing or group housing, as many elderly households have preferred in the past. Instead, the housing market must analyze preferences of these emerging households to ensure that supply can indeed adequately meet demand.

Issue Paper on the Impact of Immigration for Housing

Barry Chiswick and Paul Miller look at the differences between immigrant and native-born household locations, variations between groups in their housing market participation, and the likely impact of future immigration on the demand for housing in the first paper. Using 1990 census data, the authors find that past immigrants have concentrated geographically—six states account for over three quarters of all immigrants as of 1990. Chiswick and Miller cite several factors that can influence the settlement patterns of new immigrants: language, location (central city, urban, rural), and proximity to country of origin. For example, 57 percent of Spanish speaking immigrants chose to reside in California or Texas, whereas only 24 percent of English speaking immigrants locate in these states. Over time, the internal mobility of immigrant households varies. More recent immigrants tend to have a higher rate of movement than native-born and immigrants with longer resident duration. Immigrants who have resided in this country for a longer period of time tend to more closely mirror the lower mobility rate of native-born households. The authors contend that other characteristics that seem to influence internal mobility are the household's initial choice of location, language, and employment opportunities. More information is needed to analyze geographic concentration by modeling this concentration as a utility maximizing function, or as a function of groups of variables that indicate the immigrant group's level of adjustment to the new country, attitudes, and education. Likewise, the internal migration of immigrants also needs more study using gross flows analysis that looks at the current residence of immigrants and where they resided 5 years ago. This analysis will allow researchers to isolate local and regional intra-state movement, as well as the impact of family, ethnic, and labor market characteristics on this movement.

Looking at the housing market participation of immigrants, Chiswick and Miller find that native-born households are more likely to own homes than immigrant households. However, as an immigrant's duration of residency increases, their tenure choice more closely resembles native-born households. Education and country of origin are also correlated with tenure. Those families who are better educated are more likely to own their own home. Likewise, those households emigrating from Canada, the UK, Ireland, and other European countries are more likely to own their own homes than those emigrating from Mexico and South and Central America. The typical home owned by a native-born household is very similar in size to the typical immigrant household home, yet immigrant households' homes have higher values. Renting immigrant households also are likely to pay higher rents. Regional variation is key to understanding these price differences—the authors provide an analysis of California tenure choice, which illustrates how a state-by-state analysis can clarify some of these cost issues. Chiswick and Miller suggest a more thorough examination of tenure choice should be completed,

stratified by state or MSA, to determine if characteristics of the individual or the group influenced the choice. The link between tenure choice and labor market outcomes should also be analyzed. Additionally, the type of homes and prices paid by immigrant groups should be modeled using hedonic regression methodology. Indicators of housing stress and how immigration affects the housing stock prices and rents should be examined.

The authors conclude the report with a discussion of how these past trends can inform the possible future effects of immigrant households on housing demand. Immigrant households will continue to reside primarily in six states (California, Texas, New York, Florida, Illinois, and New Jersey) and urban areas. However, more immigrants will locate in a greater variety of states and suburban areas as their numbers grow. Additionally, the size of immigrant households' homes will increase, as well as the percent that are homeowners. However, with proper analysis, this influx of immigrants need not cause a housing shortage as long as the factors determining their demand for housing are understood and the appropriate planning is undertaken, the authors argue.

Projections of U.S. Households by Race/Hispanic Origin, Age, Family Type, and Tenure to 2020: A Sensitivity Analysis

This paper reviews the potential for growth in the number of households, owners, and renters, including the contribution of past and future immigration to these projections. George Masnick and Zhu Xiao Di employ the Potential Housing Demand (PHD) model—developed by researchers at the Joint Center for Housing Studies—to project the number of households and their tenure choice over the next 20 years. Masnick and Di find that significant growth in the number of households will occur, and over two-thirds of this expected escalation will be due to minority population growth. This population growth is predicted to occur in conjunction with an anticipated decline in the total rate of immigration. Hispanic household growth will outpace all other minority groups, comprising over a third of all minority household growth. However, this Hispanic household growth will be primarily due to new household formation by U.S. residents as of 1998—only one-third of the growth in the Hispanic population will be due to new immigration. In contrast, over two-thirds of the growth in the Asian/other populations will be due to immigration. The authors also conduct a sensitivity analysis to determine the stability of their estimations. Using higher and lower immigration projections, Masnick and Di predict that new household formation will be fairly stable, regardless of the actual levels of new immigration in the future.

Greater uncertainty lies in the author's projections of renter and homeowner rates. Masnick and Di use two different time periods in the 1990s to simulate high, middle, and low homeownership rates, and they apply these rates using the PHD model to the household

projections. These projections show that using high and low homeownership rates produced a gap in estimated homeownership that widens as time passes, which reminds the reader of the uncertainty about future trends in macro-economic and housing market variables and their impact on homeownership rates. A middle series projection (averaging the high and low rates) shows a growth in homeownership of 22.2 million between 2000 and 2020 and a modest renter household increase of only 1.6 million households. Masnick and Di also explore how different racial/ethnic groups' homeownership rates may be affected by a simple aging of the population. This analysis shows that aging will increase homeownership rates for all groups, and when the middle series projection is used, homeownership is increased at an even higher rate for each group. The authors point out that it is difficult to examine how different levels of immigration may affect predicted homeownership rates; such a study would require an intensive analysis that models the interactions between immigration assumptions and homeownership trends. In fact, immigration causes various economic pressures on both rental and owner stock. For example, lower immigration than predicted could relax market demand on rental housing, causing a decrease in rental prices, which could then reduce homeownership rates. Yet the authors point out that lower immigration may tend to increase aggregate homeownership rates as the composition of the population shifts toward native-born and longer duration immigrants, who have higher homeownership rates. How these sometimes competing trends will offset each other is open to speculation and cannot be used to predict future homeownership due to immigration with any certainty.

How Changes in the Nation's Age and Household Structure will Reshape Housing Demand in the 21st Century

In the final paper, Martha Farnsworth Riche discusses the aging population, the growing prevalence of minority households, and the effect these trends may have on housing demand. Household size is shrinking, while the number of households will continue to grow. Instead of the continuation of a trend where the youngest of the population accounts for the majority of the population, all population age groups are and will be more equivalent in proportion. The author explains that the increase in the elderly population due to the aging of the relatively large baby boomer segment of the population is only a temporary phenomenon. However, the consistent expansion of the population in the post-childrearing age groups is becoming the norm. This trend is due, in part, to the increasing health profile of the population, which is leading to longer life expectancies. Likewise, families have continued their preference for one or two children. These two developments will combine to increase the time households spend without resident children. Therefore, the landscape of traditional households no longer will be married couples

with children—instead, households without children will be the more frequent household types, comprising nearly 40 percent of the population by 2025.

Another major demographic change that will occur is that the nation's racial composition will become increasingly minority due to differences in fertility and immigration trends. Minority households tend to have different household compositions—they have a greater number of people in the households and are more likely to have children. Additionally, since the minority population is generally younger, they will comprise a relatively larger percentage of the traditional married-with-children family as the majority population ages. Housing analysts need to recognize and understand the sometimes different housing needs of these minority households. For instance, Riche points out that the "greater prevalence of multigenerational households among minority populations contradicts the nuclear family assumption of designers and builders, and challenges them to think beyond a norm that is largely northern European in origin."

Income, which influences housing preferences, also varies by age and racial group. Those households with the higher incomes are typically those that have completed their child rearing but are not yet of retirement age. A large income disparity exists between this group of households and those young families with children, minority households, and even more dramatically, older households. These income trends have important implications for housing policy needed to house the changing population. For instance, the author points out that traditionally the housing market has assumed that households that are post-childrearing and pre-retirement would relocate to a smaller home and free up housing stock for new families. However, anecdotal evidence suggests this is not in fact occurring and that these households are in fact purchasing more lavish homes. Understanding how income and preferences among age and racial groups interplay is important for understanding future housing demand.

Based on these key findings, Riche recommends three areas for further research to determine if indeed the housing market can accommodate the future population. First, the author suggests more investigation is needed as to what different household segments want from their housing. More research is also needed into the household composition and housing preference of different minority groups. As these populations continue to expand, Riche contends that housing professionals must not assume their housing needs are the same as those of non-Hispanic white households. Finally, the housing market must scrutinize the dynamic relationships between income, household composition, life stage, and race/ethnicity to evaluate how changes to the housing supply can better serve the changing composition of our population.

Future Research Agenda

All papers point to different research topics that build upon each other and can better inform housing market analysts and practitioners on the impact of demographic changes in housing:

- More in-depth analysis of past immigration trends, using 2000 census data. Chiswick and Miller cite several more in-depth studies that could be conducted to better understand the motivations and causes of immigrant households' geographic concentration and mobility. For example, these authors refer to an extended behavioral model looking at what determines locational choice among immigrants and gross flow analysis that looks at households' locations 5 years ago compared to their current location and each location's characteristics. As immigration continues in this country, it is important for housing professionals to understand where concentrations have occurred.

- An application of the findings from geographic concentration and mobility studies to the population projections and sensitivity analysis conducted by Masnick and Di. If the findings regarding geographic location can be applied to the projections conducted by Masnick and Di, a detailed picture can be sketched of potentially increasing concentrations or new locational patterns. These types of studies can assist the housing market plan for future population growth.

- Studies that investigate the housing preferences of different household groups. Riche proposes that housing industry participants should not make assumptions about the housing desires for groups of people based on past preferences. Rather, as population groups grow and change, the housing industry should conduct more studies to pinpoint the future needs of households, as predicted for the coming decades using the two groups of studies conducted above. These studies can assist housing professionals to increase or change housing stock that will be desired and needed by a growing number of older households and minority households.

Issue Paper on The Impact of Immigration for Housing

Barry R. Chiswick
Paul W. Miller

The authors acknowledge the helpful comments they received on an earlier draft from the Urban Institute and the U.S. Department of Housing and Urban Development. The views expressed are solely those of the authors and are not necessarily those of their institutional affiliations or the project sponsors.

EXECUTIVE SUMMARY

This issue paper is concerned with developing approaches to studying the impact of immigration on the housing market. Immigration has grown sharply in the last few decades. Currently the annual number of immigrants is about 1 million per year, and the stock of the foreign born is over 10 percent of the population. There is every reason to believe that immigration will continue at about the current level in the foreseeable future.

The statistical material presented in this report is drawn from the 1990 census. Immigrants live in a specific location at a specific point in time, and the internal U.S. mobility of immigrants is a salient characteristic. Chapter 2 focuses on where immigrants live. It examines the residential location of the foreign-born population (overall and by whether they speak only English, Spanish, or another language at home) in comparison to the native born. The foreign born are disproportionately urban dwellers (94 percent) living in the central city of metropolitan areas (40 percent). The distribution of residence varies by country of origin. Whereas nearly 60 percent of the Mexican immigrants live in California and 1 percent live in New York, among Caribbean immigrants about 35 percent live in New York with only 4 percent in California.

The pattern of internal mobility of immigrants with time in the United States varies systematically (Chapter 3). Immigrants have higher rates of internal mobility than the native born. Immigrants initially settle near ports of entry and where earlier waves of immigrants from their origin live. With duration these two factors are of lesser importance. Strong employment opportunities are an initial and continuing important determinant of immigrant location and become relatively more important as other factors diminish.

The dwelling places of immigrants, given their area of residence, differ from those of the native born and vary by duration in the United States (Chapter 4). The longer the duration of

residence, the closer the pattern is to that of the native born. Overall, 55 percent of the foreign born age 25 and older own their own home (74 percent among those in the United States 20 or more years) compared to 74 percent among the native born. Homeownership increases with educational attainment (wealth) and varies by country of birth (lowest among Central and South American immigrants).

Immigrants are less likely to live in detached houses (75 percent vs. 83 percent for the native born) and are more likely to live in apartments (13 percent vs. 4 percent); their dwelling size (measured by the number of rooms) increases with duration but never reaches the level of the native born. On the other hand, they have higher valued homes. These patterns may be reflecting the regional variations in the market value and rental price of residences and the different regional distribution of the foreign born compared with the native born.

This report closes (Chapter 5) with an assessment of the likely impact of immigration on the demand for housing over the coming decades. In the coming decades we can expect:

- An increasing share of immigrants in the population as a result of continued high levels of immigration.
- Immigrants will become more common in areas of the country that have so far seen few immigrants, but the share of immigrants living in the Big 6 states, and especially in California, Texas, and Florida, will continue to increase. Immigrants will increasingly spill over into states neighboring the Big 6.
- While there will be an increased immigrant presence outside of metropolitan areas, the share of immigrants living within metropolitan areas will increase.
- The geographic concentration of immigrants living within metropolitan areas will change, with a smaller proportion living in the central city and a larger proportion living in suburbs and smaller cities in the metropolitan areas.
- As a result, the size of dwelling places of immigrant families will increase, and there will be a smaller proportion living in apartments and a larger proportion living in detached houses.
- The longer immigrants live in the United States and among those with more generations born in this country, the greater the similarity of their housing patterns to those of the native born.
- There is no reason for the high level of immigration to create a housing crisis in the United States as long as the factors determining their demand for housing are understood and the appropriate planning is undertaken.

1. INTRODUCTION

The market for housing is influenced by many factors. These include the demographic characteristics of the population (such as age structure, patterns of family relationships, and the spatial distribution of the population), as well as economic determinants (such as incomes and the prices of land, dwellings/structures, transportation, and other factors) and institutional constraints (such as zoning restrictions).

One of the dimensions of the determinants of housing demand that has received scant attention is the impact of immigration. Immigration has become an important part of the American landscape. Immigration has increased in every decade since the nadir in the decade of the 1930s (Table 1.1). The recorded annual inflow of immigrants was about 53,000 in the 1930s; it increased to about 330,000 in the 1960s and to nearly 1 million per year in the 1990s. The foreign-born proportion of the population increased from a 20th century low of 4.7 percent in 1970 to just over 10 percent of the population in 2000. That is, more than 1 in every 10 persons currently living in the United States was born in another country.

There is every reason to believe that the current rate of net immigration of nearly 1 million persons per year, including illegal immigration, is likely to continue for the foreseeable future. In spite of the current, rather mild recession, the United States is still a most attractive destination whether measured by high incomes, low unemployment, or personal and political freedoms. The cost of transportation, communication, and information continues to decline in real terms, making it that much easier for those living elsewhere to learn about the United States.

Table 1.1
Immigration and Proportion Foreign Born in the United States, 1931–1998

Period	Number	**Immigration Rate[a]**	**Percent Foreign Born[b]**
1991–98	7,605,680[c]	3.7	10.0
1981–90	7,338,062[c]	3.2	8.0
1971–80	4,493,314	2.2	6.2
1961–70	3,321,677	1.9	4.7
1951–60	2,515,479	1.7	5.4
1941–50	1,035,039	0.8	6.9
1931–40	528,431	0.4	8.8

[a] Annual immigration in the period per 1,000 of the population in the census year preceding the period.

[b] Percent of the U.S. population that is foreign born (excluding those born abroad of American parents) at the end of the period.

[c] Includes 1,329,209 former illegal aliens who received permanent resident alien status from 1991 through 1998 and 1,359,184 former illegal aliens who received permanent resident alien status in 1989 and 1990 under the Immigration Reform and Control Act of 1986. Some may have come to the United States to stay in an earlier decade.

Source: Barry R. Chiswick and Teresa A. Sullivan, "USA: The New Immigrants" in Ralph Rotte and Peter Stein, eds. *Migration Policy and the Economy: International Experiences*, Munich: Hanns Seidel Stiftung, 2002, pp. 20.

The process of the globalization of the world economy has not only brought information about the United States to the far corners of the globe, it has also resulted in the emergence of English

as the primary international language. This is likely to continue as the world wide spread of the vast array of information on the Internet becomes available at low cost. With English serving as the primary language of the Internet, English proficiency among those with other mother tongues will increase, facilitating the process of immigration to the English-speaking developed countries, and in particular, the United States.

Immigrants, as do other residents of the United States, do not live in the abstract, but rather in a specific place at a specific point in time. Moreover, immigrants are not distributed across the country in the same manner as the native-born population. Thus, an understanding of the impact of immigrants on housing depends on a whole host of issues, including their distribution across space and how this changes with their duration in the United States, and given their geographic location, their demand for housing. This demand itself is determined by prices as well as by their demographic (age, family structure) and economic (income, value of time, education) circumstances, among other factors.

The purpose of this issue paper is to develop insights and methodologies that would be beneficial for a deeper understanding of the interaction of immigration and housing. The empirical material that is presented is based on data from the 1990 Census of Population Microdata files, 1 percent sample.[1] It is not intended to be definitive research but rather to present ideas for the development of more definitive research projects. The 1990 census microdata file has the advantage of having a very large sample, permitting detailed small area and small group analyses, but it has the disadvantage of being 12 years old. The microdata files from the 2000 census are not yet available for analysis.

Chapter 2 is entitled *Where Immigrants Settle*. It examines the spatial distribution of the foreign born in contrast to the native born in the United States. Particular attention is given to differences among the foreign born by state of residence, size of place, and immigrant characteristics, such as country/region of birth and period of immigration.

Chapter 3 is entitled *Internal U.S. Mobility*. This chapter focuses on the post-immigration mobility within the United States of immigrants. For purposes of exposition, the location in 1985 and in 1990 of the foreign born is considered. Particular attention is given to those who live in the "Big 6" immigrant receiving states of California, Florida, Illinois, New Jersey, New York, and Texas. It is in this chapter that issues regarding the differences between initial and subsequent location are explored.

[1] The analysis is done for the foreign born and the native born, excluding persons born in Puerto Rico or another outlying area of the United States and those born abroad of American parents.

The next chapter, Chapter 4, *Immigrant Demand for Housing*, treats immigrant location as given but explores the nature of the dwelling places of the foreign born. Immigrant housing is considered by period of arrival and is contrasted with that of the native born. As a way of controlling for permanent income, the discussion is presented by level of education. Type of homeownership is considered (*e.g.*, mobile home, detached home, apartment, etc.), as are size of dwelling place (*i.e.*, number of rooms) and value of dwellings for owners. Because of the special relevance of California in the immigrant population and the sharp regional differences in housing characteristics and value, this chapter presents separate analyses for California to demonstrate the sharp regional distinctions.

This report closes (Chapter 5) with *Implications for the Future*. Qualitative rather than quantitative predictions are offered. The expected continued high level of immigration will result in a larger number of immigrants in nontraditional states and metropolitan areas, but the proportion living in the Big 6 states (and neighboring states) and in the traditional immigrant intensive metropolitan areas will increase. Within metropolitan areas, the proportion in central cities will decrease while the proportion in smaller cities and in the suburbs will increase. This will affect the size of dwelling places and the types of structures in which immigrants live.

2. WHERE IMMIGRANTS SETTLE

2.1 INTRODUCTION

A common characteristic of immigrants in various destinations and in various time periods is that they tend to be geographically concentrated.[2] Immigrants from a particular origin tend to live in areas where others from the same origin live, rather than distributing themselves across the regions of the destination in the same proportion as the native-born population. The result of this tendency to settle among others from their country of origin is the formation of ethnic enclaves.

There are consequences of these geographic concentrations (see, for example, Case and Katz, 1991; Chiswick and Miller, 1995, 2000; Goddard, Sparkes, and Haydon, 1985; Le, 1999; and Veltman, 1983). The geographic concentration appears to have adverse effects on immigrants acquiring destination language skills, but they may have favorable effects on immigrant groups maintaining and passing their mother tongue and ethnic culture to their children. Enclaves may facilitate immigrant entrepreneurship, although they appear to depress the nominal earnings of immigrants. Enclaves have an effect on the demand for "ethnic goods," as well as on the demand for publicly provided goods and services.[3] Moreover, enclaves may affect the political strength of immigrant groups at local and national levels. Finally, these enclaves affect the demand for housing among immigrants and are sometimes associated with slum or ghetto neighborhoods.

What has been subject to less study is why immigrant groups tend to form concentrations or enclaves. The purpose of this chapter is to present some facts (descriptive statistics) on immigrant concentrations in the United States and to outline a framework for the analysis of the determinants of these concentrations.[4]

[2] For economic analyses of the location choice of immigrants see Bartel (1989); Chiswick, Lee, and Miller (2001); Funkhouser (2000); and Zavodny (1999).

[3] "Ethnic goods" are market and nonmarket goods and services consumed by members of an immigrant or ethnic group that are not consumed, or not consumed in the same manner or to the same extent, by members of other groups. These include ethnic churches and marriage markets, as well as food, clothing, and festivals specific to immigrant or ethnic groups. For an application of this concept, see Chiswick and Miller (2000).

[4] Part of this chapter is based on the Chiswick, Lee, and Miller (2001) analysis of immigrant concentrations in Australia.

2.2 DISTRIBUTION ACROSS STATES

Perhaps the easiest way of illustrating the way immigrants are geographically concentrated in the United States is to consider their distribution across the states. One of the factors that research has shown as being important in influencing the settlement pattern of immigrants is language spoken at home. The Spanish language is so dominant among the languages other than English spoken at home in the United States that it is analyzed separately from all other languages (see, for example, Chiswick and Miller, 1996, Table 2).

In 1990, about 80 percent of the foreign-born population in the United States spoke a language other than or in addition to English at home (Table 2.1). Of those who did so, nearly half spoke Spanish and are primarily immigrants from Mexico, Central and South America, and the Caribbean. The next most frequently spoken language was French, but it constitutes only about 5 percent of the non-English-speaking immigrants. The French speakers had a variety of origins: Quebec, Haiti, France, North Africa, etc. In contrast, only about 7 percent of the adult population born in the United States spoke another language at home.

Table 2.1
State of Residence of Persons Aged 5 and Over by Nativity and Language Spoken at Home, 1990 U.S. Census, Percent Distribution[a]

	Native Born[b]	Foreign Born			
State	Total	Only English	Spanish	Other	Total
Alabama	1.8	0.5	0.0	0.3	0.2
Alaska	0.2	0.2	0.1	0.2	0.1
Arizona	1.5	1.4	2.1	0.7	1.4
Arkansas	1.0	0.2	0.1	0.1	0.1
California	10.2	19.2	43.5	29.8	32.8
Colorado	1.4	1.0	0.6	0.7	0.7
Connecticut	1.3	2.2	0.3	2.1	1.4
Delaware	0.1	0.0	0.0	0.0	0.0
Dist. Columbia	0.2	0.4	0.3	0.2	0.3
Florida	5.0	10.1	11.9	4.5	8.5
Georgia	2.8	1.2	0.4	1.1	0.8
Hawaii	0.4	0.6	0.0	1.6	0.8
Idaho	0.4	0.2	0.2	0.1	0.1
Illinois	4.6	3.4	4.6	5.7	4.8
Indiana	2.4	0.7	0.2	0.5	0.4
Iowa	1.1	0.3	0.1	0.3	0.2
Kansas	1.1	0.4	0.2	0.4	0.3
Kentucky	1.6	0.2	0.0	0.2	0.1
Louisiana	1.8	0.5	0.4	0.4	0.4
Maine	0.5	0.4	0.0	0.2	0.2
Maryland	1.9	2.0	0.8	2.0	1.6
Massachusetts	2.4	4.1	0.9	4.1	2.9
Michigan	4.0	3.2	0.3	2.5	1.8
Minnesota	1.8	0.9	0.1	0.8	0.5

Mississippi	1.1	0.2	0.0	0.2	0.1
Missouri	2.3	0.7	0.1	0.5	0.4
Montana	0.3	0.2	0.0	0.1	0.1
Nebraska	0.7	0.2	0.1	0.1	0.1
Nevada	0.5	0.5	0.7	0.4	0.5
New Hampshire	0.4	0.4	0.0	0.3	0.2
New Jersey	2.9	5.3	3.7	6.0	5.0
New Mexico	0.6	0.3	0.8	0.2	0.5
New York	6.5	19.7	9.7	16.3	14.5
North Carolina	2.9	1.0	0.2	0.7	0.6
North Dakota	0.2	0.1	0.0	0.0	0.0
Ohio	4.6	1.9	0.2	2.0	1.3
Oklahoma	1.4	0.4	0.2	0.4	0.3
Oregon	1.2	1.0	0.5	0.8	0.7
Pennsylvania	5.1	3.1	0.4	2.8	1.9
Rhode Island	0.4	0.4	0.2	0.6	0.4
South Carolina	1.5	0.5	0.1	0.3	0.3
South Dakota	0.3	0.1	0.0	0.1	0.0
Tennessee	2.1	0.4	0.0	0.4	0.3
Texas	6.8	4.4	13.9	3.7	7.7
Utah	0.7	0.5	0.2	0.4	0.3
Vermont	0.2	0.1	0.0	0.1	0.1
Virginia	2.6	1.7	0.9	2.1	1.6
Washington	2.0	2.8	0.7	2.0	1.7
West Virginia	0.6	0.1	0.0	0.1	0.1
Wisconsin	2.1	0.9	0.2	0.9	0.6
Wyoming	0.2	0.1	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0
% of Foreign Born	-	20.85	37.77	41.37	100.0

[a] Information on the language spoken at home is available only for individuals aged 5 and over.

[b] Among the native born, 92.6 percent speak only English, 4.3 percent speak Spanish, and 3.0 percent speak other languages.

Source: 1990 U.S. Census Public Use Microdata 1% Sample.

Table 2.1 lists the distribution of the native born and the foreign born across the states. For the foreign born there are three sub-groups: those who speak only English at home, those who speak Spanish at home, and those who speak a language other than English or Spanish at home. Totals for the foreign born are also presented.

The distribution of the native born across states serves as the benchmark against which concentrations of the foreign born may be assessed. It is seen that, according to the 1990 census, 10.2 percent of the native born live in California, 6.8 percent in Texas, 6.5 percent in New York, and close to 5 percent in each of Florida, Illinois, and Pennsylvania. A total of 36 percent of the native born live in these six states. In comparison, almost one-third of the foreign born live in California (32.8 percent), 14.5 percent live in New York, 7.7 percent in Texas, and 8.5 percent in Florida. These four states are thus home to 64 percent of the foreign born. A further 5 percent of the foreign born live in New Jersey and 4.8 percent in Illinois. Thus the six states with the largest number of the foreign born account for close to three quarters (74 percent) of all foreign-

born residents in the U.S. in 1990. Hence, *the first fact to emerge from this analysis is that immigrants are geographically concentrated by state*. Moreover, they are concentrated in or near the major international airports for entry into the United States (New York, Los Angeles, San Francisco, Chicago, and Miami).

It is also known that the Big 6 immigrant states, California, Texas, New York, Florida, Illinois, and New Jersey, have high concentrations of foreign language speakers. Chiswick and Miller (1996, Table 3), for example, show that these states account for almost three-fourths of native-born Spanish speakers. It is therefore of interest to assess the extent of the geographic concentration of the foreign born according to the language spoken at home. This may show whether the geographic concentration at the aggregate level is simply a "gateway" effect, that is, where those who speak only English are as geographically concentrated as those who speak other languages at home. Or, whether the geographic concentration is more likely to have its origin in the geographic concentration of foreign language speakers, that is, where the geographic concentration of immigrants who speak only English is less intense than for those who speak other languages at home. Approximately 21 percent of the foreign born speak only English, 38 percent speak Spanish at home, and 41 percent speak another language at home.

The data in Table 2.1, column 2, for the foreign born who speak only English at home, show that while there is a high degree of geographic concentration among this group of the foreign born, it is less intense than for foreign language speakers (columns 2 and 3). For example, 62 percent of immigrants who speak only English live in the Big 6 immigrant states, compared to around 74 percent for all the foreign born and 36 percent for the native born. Fully 87 percent of the foreign born who speak Spanish at home are located in these states. For the immigrants who speak a language other than English or Spanish at home, 66 percent are located in the above six states. Clearly, *both gateway and language factors are important in determining the location of immigrants.*

Yet these data also show that the states differ in importance as destinations for the foreign born according to their language usage. For example, whereas 57 percent of immigrant Spanish speakers live in California and Texas, only 24 percent of the monolingual English speaking immigrants and 17 percent of the native born live in these two states. Whereas 10 percent of foreign-born Spanish speakers live in New York, and a further 4 percent in New Jersey, 20 percent of the foreign born who speak only English live in New York, and a further 5 percent live in New Jersey. For the foreign born who speak a language other than English or Spanish at home, 16 percent live in New York and 6 percent in New Jersey. Similarly, Florida has high proportions of immigrants who speak either only English (10 percent of the U.S. population of this group) or Spanish (12 percent) but relatively low proportions of the foreign born who speak another language at home. Both New York and New Jersey have relatively high proportions of

the native born who speak languages other than English or Spanish at home, suggesting that *knowledge of the language mix of all residents in a location is required in order to understand the location decisions of immigrants.*[5]

2.3 RURAL-URBAN DISTINCTION

Immigrants' choice of location will extend over regional dimensions other than state. There will also be the related choices of whether to live in rural or urban areas and, if in an urban area, which part of the city. Table 2.2 lists data on the distribution of immigrants by location defined by urban, rural-farm, and rural-nonfarm.

Table 2.2

Rural/Urban Location of Residence of Persons Aged 5 and Over by Nativity and Language Spoken at Home, 1990 U.S. Census, Percent Distribution[a]

	Native Born[b]	Foreign Born			
Location	Total	Only English	Spanish	Other	Total
Urban	74.0	90.4	94.6	95.4	94.1
Rural-farm	1.7	0.3	0.4	0.2	0.3
Rural-nonfarm	24.3	9.2	5.0	4.3	5.6
Total	100.0	100.0	100.0	100.0	100.0
% of Foreign Born	-	20.85	37.77	41.37	100.0

[a]Information on the language spoken at home is available only for individuals aged 5 and over.

[b]Among the native born, 92.6 percent speak only English, 4.3 percent speak Spanish, and 3.0 percent speak other languages.

Source: 1990 U.S. Census Public Use Microdata 1% Sample.

The Census Bureau defined "urban" in the 1990 census as comprising all territory, population, and housing units in urbanized areas and in places of 2,500 or more persons outside urbanized areas. Rural-farm areas comprise all rural households and housing units on farms (places from which $1,000 or more of agricultural produces were sold in 1989). "Rural-nonfarm" comprises the remaining rural units.

According to the data presented in Table 2.2, 74 percent of the native-born population aged 5 or more lived in urban areas in 1990. Only around 2 percent lived on farms, with the remaining 24 percent living in rural-nonfarm areas. In comparison, the foreign born are much

[5] This has been the basis of research on the effects of immigrant concentrations on dominant language skills (see Chiswick and Miller 2000). In this research, a key focus is on the impact of minority language concentrations, sometimes defined as the percentage of the population aged 18 to 64 in the state in which they live who report the same non-English language as the respondent. It would appear that the same type of factor would be useful in the analysis of where immigrants locate.

more likely to live in an urban area. Fully 94 percent of the total foreign born live in urban areas. This higher degree of urbanization is observed for each of the three subgroups of the foreign born identified by language spoken in the home in the table. Thus, 90 percent of immigrants who speak only English live in urban areas, as do around 95 percent of those who speak other languages at home. The higher degree of urbanization or concentration of the foreign born who speak languages other than English at home supports the view that immigrants choose their location partly on the basis of the presence of those with whom they share a mother tongue. Concentrations of those from the same origin are much more likely to be found in urban areas. Hence, Table 2.2 shows that *there is a higher degree of urbanization among the foreign born, and this tendency to concentrate in urban areas is more intense among those who speak a language other than English at home*.

2.4 THE ROLE OF TYPE OF AREA

It is apparent that the measured degree of geographic concentration of immigrants varies according to the concept of region upon which the analysis is based. When the state is the unit of analysis, quite high degrees of geographic concentration are recorded. Even higher degrees of concentration are recorded with simple measures of urbanization. The census provides additional information on the type of area in which individuals live, and this information can be used to explore further the idea that immigrants are geographically concentrated.

One of the areas identified in the census is the Metropolitan Area (MA), which is defined as a large population nucleus, together with adjacent communities that have a high degree of economic and social integration with that nucleus. The territory, population, and housing units in MAs are referred to as “metropolitan.” The metropolitan category is subdivided into “inside central city” and “outside central city.” The territory, population, and housing outside the MAs are referred to as “nonmetropolitan.” MAs are composed of counties in all regions other than New England; in New England they are composed of cities and towns. These data permit the following areas to be distinguished: Central City; MA Outside Central City; Independent City or New England Town; Other Areas. Table 2.3 lists data on the distribution of the native born and the foreign born by type of area.

Table 2.3

Area of Residence of Persons Aged 5 and Over by Nativity and Language Spoken at Home, 1990 U.S. Census, Percent Distribution[a]

	Native Born[b]	Foreign Born			
Type or Area	Total	Only English	Spanish	Other	Total
Central City[c]	17.0	31.9	45.0	39.3	39.9
Outside Central City[d]	48.4	54.3	45.5	51.3	49.7
Independent City[e]	7.9	4.4	3.7	3.8	3.9
Other Areas	26.6	9.4	5.8	5.6	6.5
Total	100.0	100.0	100.0	100.0	100.0
% of Foreign Born	-	20.85	37.77	41.37	100.0

[a]Information on the language spoken at home is available only for individuals aged 5 and over.

[b]Among the native born, 92.6 percent speak only English, 4.3 percent speak Spanish, and 3.0 percent speak other languages.

[c]Includes whole or part "Central City" areas.

[d]Includes whole or part "Outside Central City" areas and entire MSAs.

[e]Includes Independent Cities or New England towns.

Source: 1990 U.S. Census Public Use Microdata 1% Sample.

Table 2.3 reveals that 17 percent of the native born live in central city areas, 48 percent in metropolitan areas outside the central city, 8 percent in independent cities, and 27 percent in other areas. In comparison, *the foreign born are more likely to cluster in central city areas* (40 percent), though they are just as likely as the native born to live in metropolitan areas outside the central city (50 percent). This tendency towards clustering in the central city areas is more intense among the foreign born who speak a language other than English at home, with 45 percent of those who speak Spanish at home and 39 percent of those who speak a language other than English or Spanish at home living in central city areas, compared to only 32 percent for English only speakers.

These data show, therefore, that immigrants are concentrated over a range of geographic dimensions. The concentrations are most intense in the central cities of metropolitan areas in the Big 6 states with the intensity being greater for those who speak a language other than English at home.

2.5 LOCATION AND DURATION OF RESIDENCE OF THE FOREIGN BORN

In empirical research on the integration of immigrants into the U.S. economy, duration of residence in the United States is generally used as a yardstick for the degree of assimilation (Chiswick, 1978). The longer the immigrants have lived in the United States, the more

assimilated, or like the native born, they generally become. This is particularly the case when measures of economic success such as earnings or occupational status are examined. It is of interest, therefore, to see if the length of residence is related to the degree of regional concentration of the foreign born. The data for this analysis are presented in Table 2.4. Only the six states with the largest number of the foreign born are separately identified in this table. Five categories of arrival years are distinguished for the foreign born. It is seen that almost one-quarter of the foreign born arrived in the United States in the period 1985–90. The proportions in three other 5-year intervals of 1980–85, 1975–79 and 1970–74 are 19 percent, 14 percent, and 11 percent, respectively. The remaining immigrants (32 percent) arrived before 1970.[6]

Table 2.4

State of Residence of Persons Aged 5 and Over by Nativity and Duration of Residence, 1990 U.S. Census, Percent Distribution

	Native Born	Foreign Born: Arrival Year					
State	Total	1985-1990	1980-1985	1975-1979	1970-1974	Before 1970	Total
California	10.2	37.7	37.9	40.1	32.1	23.0	32.8
Florida	5.0	7.0	8.6	5.8	8.2	10.8	8.5
Illinois	4.6	4.5	4.1	5.0	5.8	5.0	4.8
New Jersey	2.9	4.7	4.5	4.0	5.8	5.6	5.0
New York	6.5	13.9	13.3	11.7	15.8	16.5	14.5
Texas	6.8	6.8	9.9	10.0	8.4	5.8	7.7
Other States	64.0	25.4	21.6	23.5	23.8	33.3	26.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
% of Foreign Born	-	23.91	19.39	13.95	10.87	31.89	100.0

Source: 1990 U.S. Census Public Use Microdata 1% Sample.

As noted in Section 2.2, whereas one-third of the native born live in the six states separately identified in Table 2.4, almost three-quarters of the foreign born live in these states. While there is some variation in the proportion of the foreign born living in the six states for each of the arrival cohorts in Table 2.4, the proportion is relatively high for each group, ranging from 78 percent for the 1980–85 cohort through to 67 percent for the Before 1970 cohort.

Examination of the proportion of the foreign born in each of the six major immigrant-receiving states for each of the arrival cohorts shows two main patterns. The first pattern is that *there has been a slight decline in the percentage of immigrants locating in Florida or New York/New Jersey between the "Before 1970" arrival cohort and other arrival cohorts.* The

[6] These data summarize the more extensive information on year of entry available in the 1990 U.S. Census Microdata files. Ten year-of-arrival categories are available: 1987–1990; 1985–1986; 1982–1984; 1980–1981; 1975–1979; 1970–1974; 1965–1969; 1960–1964; 1950–1959; before 1950.

second pattern is that *there has been a rise in the proportion of immigrants locating in California since before 1970.*

These patterns could be due to a number of factors. First, economic conditions in the states may have varied over time so that California was a relatively more prosperous state, and hence a more popular destination for the foreign born, in the 1970s to 1990s than before 1970. Second, modes of transport have changed. Whereas many immigrants would have arrived by sea before 1970, most will have arrived by air in the 1980s. Major seaports, especially New York Harbor, will therefore have declined in relative importance as a location for immigrants. Third, the patterns may be a consequence of variations across states and across time in the relative availability of public infrastructure and in the affordability of housing. Fourth, the data may be a reflection of internal migration. That is, immigrants may move from their state of initial settlement. For example, this may reflect the movement of the pre-1970 immigrants to Florida on their retirement. Patterns of internal migration are explored in Chapter 3. Fifth, and perhaps most importantly, the country of origins of the immigrants to the United States have changed in recent years (see Chiswick and Sullivan, 1995 for a discussion).

Some data on the birthplace mix of the immigrants are presented in Table 2.5. Immigrants in the "Before 1970" cohort are mostly from Other Europe (39 percent), the British Isles (8 percent), Canada (9 percent) and Mexico (13 percent).[7] *The 1970s and 1980s and into the 1990s have seen a strong growth in the importance of Asia, Mexico, and South and Central America as immigrant source regions, and a decrease in the relative importance of immigrants from the UK and Ireland, Canada, and Other Europe.* Among the immigrants who arrived over the period 1985–1990, 31 percent were from Asia (compared to 11 percent in the Before 1970 cohort), 26 percent from Mexico (13 percent in the Before 1970 cohort) and 15 percent from South and Central America (6 percent in the Before 1970 cohort). Only 9 percent of this arrival cohort were from Other Europe (compared to 39 percent for the Before 1970 cohort), 2 percent from the UK and Ireland (8 percent in the Before 1970 cohort), and 1.6 percent from Canada (9 percent in the Before 1970 cohort).

[7] The main turning point in the countries of origin of immigrants is the Immigration and Nationality Act of 1965, which abolished discriminatory "national origins" restrictions on migration, particularly from Asia.

Table 2.5
Distribution of Foreign-born Persons by Period of Immigration and Major Birthplace Region, 1990 U.S. Census

Country or Region	Arrival Cohort					Total Foreign Born[b]
	1985-1990	1985-1990	1975-1979	1970-1975	Before 1970	
UK & Ireland	2.3	2.0	2.3	2.3	8.1	4.1
Canada	1.6	1.2	1.8	2.1	8.7	3.8
Mexico	26.1	23.4	27.9	26.3	13.3	21.8
Other Europe[a]	8.7	6.3	8.7	12.5	38.5	18.0
Asia	31.3	33.3	34.7	26.0	10.5	25.0
S & C America	14.8	15.5	10.2	10.7	5.9	11.1
Caribbean	7.5	10.9	7.8	13.9	10.6	9.8
Other	7.7	7.4	6.7	6.3	4.6	6.4
Total	100.0	100.0	100.0	100.0	100.0	100.0

[a] Other Europe excludes UK and Ireland.

[b] The population for this Table is the same as Table 2.1.

Source: 1990 U.S. Census Public Use Microdata 1% Sample.

2.6 LOCATION AND BIRTHPLACE

Given the size of these shifts in the country of origins of the immigrants, it is possible that the birthplace mix could impact on the data presented in Table 2.4. Table 2.6 reports the distribution of the state of residence of the foreign born by the immigrants' birthplace. Only the eight birthplace regions identified in Table 2.5 are considered: the census, however, contains very detailed information on place of birth that would facilitate study of specific country groups. The state detail is limited to the six states identified above as the destination for three-quarters of all immigrants, plus all other states combined.

Table 2.6
State of Residence of Immigrants by Birthplace, 1990 U.S. Census, Percent Distribution

State	Birthplace							
	UK & Ireland	Canada	Mexico	Other Europe[a]	Asia	S & C America	Caribbean	Other[b]
California	19.9	20.0	57.8	14.9	40.7	31.9	4.1	29.5
Florida	8.5	11.0	1.5	6.7	2.2	13.8	37.2	6.8
Illinois	3.7	1.9	6.5	7.8	4.6	2.5	1.2	3.8
New Jersey	5.9	1.6	0.2	8.1	4.4	7.8	8.2	5.9
New York	15.6	7.7	1.1	20.9	11.3	20.7	34.7	16.3
Texas	3.8	3.7	21.0	2.1	4.9	6.0	1.4	6.8
Other States	42.6	54.0	12.0	39.5	31.9	17.3	13.2	30.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
% of Foreign Born	4.11	3.85	21.63	18.07	25.03	11.08	9.90	6.33

[a] Other Europe excludes UK and Ireland.

[b] The population for this table is the same as Table 2.1.

Source: 1990 U.S. Census Public Use Microdata 1% Sample.

It is apparent from Table 2.6 that the extent of geographic concentration by state varies by birthplace group. At the most aggregate level, the concentration among immigrants from the British Isles and Canada is quite low, with 43 percent of immigrants from the UK and Ireland living outside the Big 6 states, and 54 percent of immigrants from Canada living in states other than these six. In comparison, only 12 percent of immigrants from Mexico, 13 percent of those from the Caribbean, and 17 percent of those from South and Central America live in states other than the Big 6 immigrant destinations.

Consider immigrants from Mexico. Almost 60 percent live in California. A further 21 percent live in Texas. This clustering involves factors other than just proximity to the border with Mexico, though obviously this proximity is very important. The other two states that border Mexico (Arizona and New Mexico) are, respectively, home to only 3.3 percent and 1.3 percent of immigrants from Mexico (1.5 percent of the native born live in Arizona and 0.6 percent in New Mexico). However, 83 percent of immigrants from Mexico are found in the four states that border Mexico. This compares with just 19 percent of the native-born population.

Among immigrants from the Caribbean, 37 percent live in Florida, while 43 percent live in the other eastern seaboard states in the Table 2.6, New York and New Jersey. Only 4 percent live in California. Immigrants from South and Central America are concentrated in California (32 percent), New York (21 percent), and Florida (14 percent). It is interesting to note that the Asian immigrants, who have dominated recent immigration flows, are also heavily concentrated in California (41 percent are located there).

The physical distance between the country of origin and the states in the United States is important to immigrants' location decisions.

2.7 DISCUSSION

It will be apparent from the information presented above that the 1990 census, as will the 2000 census, contains a wealth of information on where immigrants settle. In order to use this information further there appear to be two requirements:

- Given the amount of information available, summary measures of the extent of geographic concentration are needed.
- There needs to be a framework within which the behavioral influences on immigrant settlement patterns and the extent of geographic concentration can be understood.

2.7.A Measures of Geographic Concentration

The degree of geographic concentration can be measured in a number of ways. One of these is the coefficient of geographic association (G) (see Haggett, Cliff, and Frey, 1977; Bartel, 1989). It is computed as $G = \sum_{i=1}^{n} \text{Max}([g_{io} - g_{ip}], 0)$, where g_{io} is the percentage representation of the specific birthplace group in the i^{th} geographic area, g_{ip} is the percentage representation of the total population in the i^{th} geographic area, and n is the number of geographic areas. Note that the benchmark is the total population and not those born in United States. G is interpreted as the percentage of the specific overseas born group that would need to shift, together with a similar number of members of other groups in the population, to achieve the same geographic distribution as the total population. Allowing members of the other groups to replace members of the specific birthplace group ensures the overall population distribution is unaltered.

The G index is similar in construction to the Index of Dissimilarity (Duncan and Duncan, 1955) that has been used on a regular basis in labor economics research. This is defined as $D = 0.5 \times \sum_{i=1}^{n} |g_{io} - g_{in}|$, where g_{io} is the percentage representation of the specific overseas born birthplace group in the i^{th} geographic area, and g_{in} is the percentage representation of the native born in the same geographic area. This index can be interpreted as the percentage of a birthplace group (either the native born or the specific overseas born group) that would have to shift across regions for the geographic distributions of the two birthplace groups to be the same. Replacement of the group that moves by members of other birthplace groups is not required with this measure, which means the geographic distribution of the total population would change.

A further index is the Herfindahl index $H = \sum_{i=1}^{n} (g_{io})^2$, which is often used to measure industrial concentration. This measure of geographic concentration has been used by Bartel (1989).

These indices can be computed for various groups to assess whether one is more geographically concentrated than the other. For example, they could be applied to the groups in Table 2.1 to provide summary measures of the extent of geographic concentration. Further disaggregation would be possible. For example, each of the groups in Table 2.1 could be disaggregated according to level of education, English proficiency (*e.g.*, speaks only English or speaks another language and speaks English very well, well, not well, or not at all) or by other characteristics (*e*.g., gender, birthplace) and indices calculated to assess which groups have the

highest degree of geographic concentration. By relating the size of the measures for the subgroups to the characteristics of the subgroups (*e.g.*, level of education, English proficiency, gender), information on the likely causes of geographic concentration at the aggregate level can be obtained. Similar information can be obtained from the approaches to behavioral modeling outlined below.

2.7.B Modeling Geographic Concentration and Immigrant Settlement Patterns

Chiswick, Lee, and Miller (2001) show that variations in the indices of geographic concentration computed for birthplace groups can be modeled using information on the characteristics of those birthplace groups. They propose that the variations in the measure of geographic concentration across birthplace groups that seem to be the focal point of much of the public discussion can be thought of as being a function of three groups of variables, as follows:[8]

$$G_j = f(\text{Adjustment}_j,\ \text{Attitudes}_j,\ \text{Environment}_j).$$

English language skill is a factor, which has been interpreted in the literature as an indicator of immigrant adjustment (see, for example, McManus, Gould, and Welsh, 1983; Chiswick and Miller, 1995). Higher levels of adjustment are argued to be associated with both greater proficiency in English and with a greater shift to English as the language spoken at home. Immigrants proficient in English presumably have a much wider range of job, consumption, and housing opportunities than their counterparts with limited English skills, and they may therefore have less incentive to live among others from the same country of origin.

Another variable, which has been highlighted in the immigrant adjustment literature, that may impact on geographic concentration is educational attainment. Educational attainment is a key variable in understanding immigrant economic adjustment, and the correlates with economic adjustment, such as dominant language fluency. The better educated will have higher levels of earnings than their less well educated counterparts and yet may have the same fixed costs of internal migration. This results in a tendency for there to be a national labor market for highly educated workers but much more of a tendency towards local labor markets for those with little education. For this reason, the better educated are expected to be more likely to move from a place of initial settlement to regions where the dominant attraction is employment opportunities rather than concentrations of immigrants from their own origins.

[8] Empirical counterparts can be constructed for components of this conceptual equation, such as in the Chiswick, Lee, and Miller (2001) application to Australia.

A final factor that has obvious links to immigrant adjustment is the likelihood of return migration. It has been argued that the probability of return migration is lower (and thus the incentive for immigrant adjustment more intense) when the costs associated with it are higher (Chiswick and Miller, 2001). This will be the case the greater the physical distance between the origin and destination countries. The greater distance also increases the favorable selectivity of immigrants for a successful adjustment in the destination in the initial migration stream, and immigrants who are more favorably selected are likely to have a lower propensity to return to their country of origin. Hence, extending the arguments above, it would be expected that the degree of geographic concentration would be higher in a community that expects to be transient (that is, it has a relatively high expected propensity for return migration). This will tend to occur where the distances between the countries of origin and the United States are shorter.

Age at migration, marital status, and gender are characteristics of immigrants that may impact on the settlement pattern. Chiswick and Miller (1995) have established that the younger the age at migration, the greater the adaptability of an immigrant to the host country. In particular, the younger the age at migration, the greater the likelihood that an immigrant will learn English. Presumably other indices of the process of adjustment are similarly affected, including adjusting to the local culture. Accordingly, it might be expected that those who migrate at an early age will have a reduced tendency toward geographic concentration.

Similarly, as marriage among immigrants is likely to be to a person of the same birthplace group, there might be a positive relationship between the proportion of the immigrant group married and the degree of geographic concentration for purely mechanical reasons. Working against this is the possibility that the support of a partner may substitute for the support that others from the same origins might offer.

The percentage of an immigrant group that is female may also influence the degree of geographic concentration if the strength or relevance of kinship varies by gender.

There are various ways that the environment can influence the settlement pattern. Many ethnic groups have a well-established “ethnic infrastructure,” comprising ethnic media, ethnic organizations, places of worship, and ethnic shops. The existence of such an infrastructure can be taken as a general indicator of clustering among the particular ethnic group. Hence, the more well developed the ethnic infrastructure, the more intense the expected degree of geographic concentration.

A second approach to behavioral modeling involves the use of information on individuals. The standard approach is to view the individual as attempting to maximize utility through their choice of location. Bartel (1989) presents a utility maximization model adapted to

a multinominal logit framework. In Bartel's model, each individual is argued to have a set of N possible location choices, and there is a given level of utility U_{ij} for each individual *i* at location *j*. This utility measure records the total net benefits to the individual from the particular location, including those from labor market activities (*e.g.*, job prospects, the wage rate), public infrastructure (*e.g.*, availability of parks, libraries, roads etc.), the affordability of housing, the generosity of the welfare system (*e.g.*, eligibility and payment levels), and community factors such as living amongst family, friends or individuals from the same country of origin. In this situation, the individual will choose to live in the location that yields the greatest level of utility.

The probability that individual *i* chooses location *j* (P_{ij}) is given by:

$$P_{ij} = P(U_{ij} = Max[U_{i1}, U_{i2,}..., U_{iN}]) .$$

The utility level in each location is held to be a linear function of a set of location characteristics (L_{ij}) and a set of personal characteristics (X_{ij}):

$$U_{ij} = \alpha L_{ij} + \beta X_{ij} + \varepsilon_{ij}$$

where α and β are vectors of weights that determine the relative importance of each component of L_{ij} and X_{ij} in generating utility.

Bartel (1989) considered 29 possible locations: the 25 largest SMSAs plus four regional groupings of all the remaining SMSAs in the 1980 census. The factors that were argued to affect utility levels for immigrants were:

Location Characteristics: L_{ij}

- Percentage of the particular ethnic population that resides in location j. The rationale for this inclusion is similar to the arguments above over the role of the use at home of languages other than English. It is a characteristic that can bind the people together, and hence the presence of an ethnic population is expected to draw additional members of the ethnic group to the area. As ethnic groups (*e.g.*, Asians) are not homogeneous with respect to language, this variable may be more informative if defined with respect to language. It could also be the case that there is a role for both ethnic and language variables, with one capturing more global issues, like the presence of stores selling ethnic goods, and the other issues associated more with the ability to communicate in one's mother tongue.

- Distance from the country of origin. The distance from the country of origin is argued to be "correlated with the financial, psychic, and information-gathering costs of relocating

in a new country" (Bartel, 1989, p. 380). It is also likely to be associated with the probability of return migration.

- Population size. The size of the location can provide a proxy for job opportunities and general economic activity.

- Wage rates, unemployment rates, welfare benefits. These are factors that can affect the immigrant's expected income in the location and thus affect the standard of living. This set of variables could be augmented by regional price indices and measures of housing affordability if these were available for the geographic units used as the basis of the analysis. It could also be augmented by a variable for self-employment opportunities in the particular regions.

Individual Characteristics: X_{ij}

- Ethnicity. Ethnic groups may differ in their response to the location variables. For example, Asians may differ from Hispanics in the weight they attach to the various components of L_{ij}. This can be incorporated into the discrete choice model employed by Bartel (1989) through the use of interaction terms or by estimating separate models for each ethnic group.

- Level of education. The level of utility gained from any set of location characteristics may differ according to the characteristics of the individual. For example, the better educated may be more successful in job search and so place less emphasis on area unemployment rates when making location decisions. Other characteristics that may be important are age at migration and gender. Immigrants who enter the United States at a relatively young age will presumably be more adaptable than those who migrate when older and are therefore likely to be more dispersed than those who immigrate at an older age. It is also possible that the links between location characteristics and utility levels differ for males and females. While the analysis is complicated by tied mover behavior, study of the location choices of female immigrants and the joint decisionmaking is important.[9]

- Duration of residence in the United States. Duration of residence, as argued above, can serve as an indicator of immigrant adjustment. As duration lengthens, immigrants may

[9] The analysis in Bartel (1989) is limited to male immigrants. For analyses of family migration decisions see Mincer (1978).

become more dispersed as their attachment to ethnic enclaves weakens and they are attracted to a wider set of regions though job opportunities better suited to their skills. Information on these job opportunities may only become available after the immigrant has resided in the United States for some time.

2.8 ISSUES REQUIRING RESEARCH

The review above draws attention to several key issues requiring further research. First, there is a need for further summary information, using detailed geographic information, on the way that geographic concentration varies across groups of immigrants defined with respect to country of origin, level of education, duration of residence, ethnicity, and gender. Such summary information can be obtained using the indices outlined in Section 2.6, and they can be analyzed in depth using the approach to behavioral modeling outlined above. This work has the potential to show the nature of the links that bind immigrants together and lead to the formation of concentrations of individuals from the same birthplace, ethnic group, or language group in distinct locations.

Second, Bartel's (1989) important work was based on 1980 census data. This work yielded many key findings, including the result that the percentage of the particular ethnic population that resides in a given location was the most important determinant of the location choice of immigrants. There is a clear need to update this work and to explore additional behavioral determinants of location choice—for example, the language used at home by the immigrants. Moreover, Bartel (1989) did not address why some areas have virtually no members of particular ethnic groups that are well represented elsewhere. This is clearly important in terms of establishing the likely demands on local services as a result of immigrant location decisions.

3. INTERNAL U.S. MOBILITY

3.1 INTRODUCTION

It is well known that immigrants adjust to the circumstances of the U.S. economy the longer they have lived in the United States. This immigrant adjustment has generally been measured using information on earnings, occupational status, or employment, and the changes in these measures with duration of residence have been intensively researched, with the major issues being outlined in Chiswick (1978, 1980, 1982). Comparatively less is known, however, of the other adjustments that immigrants might make, such as in the location of their residence, and their housing circumstances (*e.g.*, rent, buying, own). Yet these types of adjustment may be as important as the earnings and occupation measures generally studied. Massey (1981, p. 67) argues, "An important aspect of assimilation is the degree to which immigrant groups are spatially isolated from the mainstream of U.S. society. Residential segregation is not only important as an indicator of assimilation in its own right but also has implications for other dimensions of sociocultural integration that are highly related to propinquity—*e.g.*, intermarriage".

Knowledge of the pattern of internal U.S. mobility of immigrants (and also of the native born) is important for a number of reasons. If immigrants relocate from the initial place of settlement, there will be implications for planning for public infrastructure and other amenities. This internal mobility will also have implications for the demand for housing, and the demand for goods more generally, as it will for the labor market, perhaps most obviously in terms of labor supply, but also in terms of the demand for labor, given that this is a derived demand. There may also be implications for the wages and unemployment outcomes for immigrants (as well as for natives) who move, as well as for members of local labor markets who do not move. These effects may vary across types of workers and are expected to be more intense for the less skilled than for skilled workers. The unskilled, having low incomes, inferior housing conditions, and often unstable employment, are less likely to be in a position to cope with these changes. Accordingly, documentation of the impacts of internal mobility is important for public policy formation.

Tendencies towards relocation will also be important in terms of understanding the importance of concentrations of immigrants, the so-called ethnic or language ghettos referred to in the previous chapter. If immigrants tend to disperse with duration in the United States, then any geographic concentrations observed at a point in time will be less of an issue. Moreover, if any tendency for immigrants to become less geographically concentrated with duration in the United States varies by immigrant group, then this has implications for immigration policy and also for settlement policy. For example, the immigrants who are better educated or more

proficient in English may be more mobile than less educated immigrants or those without English proficiency. Immigrants who have a greater attachment to the labor market may similarly be more mobile than immigrants with a lesser attachment. In such cases, encouragement towards the acquisition of post-migration education and English language skills, and ensuing labor market success, can lead to greater mobility among immigrants and less geographic concentration.

3.2 IMMIGRANT MOBILITY: A CROSS-SECTIONAL ANALYSIS

Mobility and immigrant adjustment may be assessed in a number of ways. The method employed in much of the research on immigrant adjustment to date has involved comparison of immigrants who have lived in the United States for varying periods of time. For example, the outcomes (income, unemployment, location) at a specific point in time (*e.g.*, 1990) of recent arrivals who entered the United States between 1985 and 1990 can be compared with the same outcomes at a point in time (*i.e.*, 1990) with immigrants who entered the United States between 1980 and 1984. The differences in outcomes of arrival cohorts can be attributed to having lived in the United States for, on average, around 5 additional years.

In Chapter 2, data on the location of immigrants was presented according to arrival cohort. These data, presented for only the six main immigrant-receiving states and the aggregate for the other states, are repeated in Table 3.1.

Table 3.1
State of Residence of Persons Aged 5 and Over by Nativity and Duration of Residence, 1990 U.S. Census, Percent Distribution

	Native Born	Foreign Born: Arrival Year					
State	Total	1985-1990	1980-1984	1975-1979	1970-1974	Before 1970	Total
California	10.2	37.7	37.9	40.1	32.1	23.0	32.8
Florida	5.0	7.0	8.6	5.8	8.2	10.8	8.5
Illinois	4.6	4.5	4.1	5.0	5.8	5.0	4.8
New Jersey	2.9	4.7	4.5	4.0	5.8	5.6	5.0
New York	6.5	13.9	13.3	11.7	15.8	16.5	14.5
Texas	6.8	6.8	9.9	10.0	8.4	5.8	7.7
Other States	64.0	25.4	21.6	23.5	23.8	33.3	26.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
% of Foreign Born	-	23.91	19.39	13.95	10.87	31.89	100.0

Source: 1990 U.S. Census Public Use Microdata 1% Sample.

Immigrant mobility and hence adjustment is inferred from the data in Table 3.1 by comparing the distributions of immigrants reading from left-to-right in the table. Thus, interpreting the table this way, it is observed that between 38 and 40 percent of immigrants

reside in California for the first 15 years or residence in the United States. After this period (which corresponds to the year at which immigrants typically catch up to the native born in terms of their earnings in cross-sectional studies, see for example Chiswick's (1978) study of this "cross-over" concept), immigrants are less likely to live in California. There are U-shaped patterns with duration of residence in the percentage of immigrants who live in Florida and New York and an inverted U-shaped pattern with duration of residence for the percentage of immigrants who live in Texas. However, *the cross-sectional patterns of internal mobility of immigrants in Table 3.1 are quite irregular*. Bartel and Koch (1991) also conduct an analysis along these lines and conclude (p.124) "…the evidence…gives only limited support for the hypothesis that, as time elapses in the United States, the immigrants will become more dispersed throughout the country."

The absence of systematic patterns of immigrant mobility in Table 3.1 may be due to deficiencies in the cross-sectional data for the study of mobility patterns. This issue is addressed in the following section.

3.3 IMMIGRANT MOBILITY: A LONGITUDINAL ANALYSIS

Inferring immigrant adjustment from cross-sectional data may result in misleading conclusions because the composition of the immigrant groups in each of the arrival cohorts may differ. These differences can be due to obvious factors, such as the changes in the birthplace mix of recent immigrants addressed in the previous chapter. They could also be due to less obvious, but equally important, factors, such as selective emigration and the difficulty of disentangling the changes associated with different economic and social conditions at the time of entry into the United States from the longitudinal changes that the analysis is attempting to quantify.

Given these problems with the study of cross-sectional data, analyses of immigrant adjustment using longitudinal data may have much to offer. Chiswick (1979) attempted to overcome the biases inherent in the use of cross-sectional data in a study of occupational attainment of immigrants by using the retrospective information on occupation collected in the 1970 census.[10] A similar approach can be used in the study of immigrant mobility. The 1990 census (as did the soon to be released 2000 census) collected information on the place of residence of each individual 5 years before the census. This information is used in this section in a longitudinal data approach to the analysis of internal migration among immigrants in the United States.

[10] This was the one and only census to ask occupation five years ago, in addition to the standard question on current occupation.

Table 3.2 presents information on the state of residence of persons aged 5 years and over in 1985 and in 1990. Note that this is the actual state of residence in 1990 for each individual, and the retrospective account of the state of residence in 1985. While the data may be subject to recall error, it would be expected that for such an obvious issue as state of residence, the extent of recall error would be slight. These data are presented for the native born and for the foreign born. As in previous presentations, the state information is restricted to the main immigrant-receiving states. It is quite clear that the distributions across these states of the native born are stable over the 5-year period. The only point of note is a drift to Florida. The data for the foreign born listed in Table 3.2 are also characterized by a high degree of stability: there is some evidence of a shift out of New York and Texas, and to a lesser extent Illinois and New Jersey, and a shift into California and Florida. Hence, *the aggregate longitudinal data analysis reveals a high degree of stability in the distributions across states of both immigrants and the native born*.

Table 3.2
State of Residence of Persons Aged 5 and Over by Nativity and Duration of Residence, 1990 U.S. Census, Percent Distribution

	Native Born		Foreign Born[a]	
State	Location in 1985	Location in 1990	Location in 1985	Location in 1990
California	10.1	10.2	30.8	31.2
Florida	4.5	5.0	8.0	9.0
Illinois	4.7	4.6	5.2	4.9
New Jersey	3.0	2.9	5.1	5.1
New York	6.8	6.5	15.6	14.7
Texas	6.9	6.8	8.2	8.0
Other States	64.0	64.0	27.1	27.2
Total	100.0	100.0	100.0	100.0

[a] The foreign born is restricted to those who arrived before 1985.

Source: 1990 U.S. Census Public Use Microdata 1% Sample.

Table 3.3
State of Residence of Persons Aged 5 and Over by Nativity and Duration of Residence, 1990 U.S. Census, Percent Distribution

State	Arrival Cohort					
	1980-1984		1975-1979		1970-1974	
	Location in 1985	Location in 1990	Location in 1985	Location in 1990	Location in 1985	Location in 1990
California	37.2	37.9	39.4	40.1	31.9	32.1
Florida	8.1	8.6	5.0	5.8	7.3	8.2
Illinois	4.3	4.1	5.3	5.0	6.1	5.8
New Jersey	4.3	4.5	3.9	4.0	5.9	5.8
New York	14.0	13.3	12.4	11.7	16.7	15.8
Texas	10.5	9.9	10.3	10.0	8.7	8.4
Other States	21.6	21.6	23.6	23.5	23.4	23.8
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: 1990 U.S. Census Public Use Microdata 1% Sample.

Table 3.3 lists data on the state of residence in 1990 and 1985 for three arrival cohorts among the foreign born: those who arrived during 1980–1984, 1975–1979 and 1970–1974. There are two main features of these data. First, at this more refined level, there is less evidence of a shift of immigrants towards California, though the evidence for the shift towards Florida and away from New York and Texas is as strong as in Table 3.2. Second, *there are no major changes across arrival cohorts in mobility patterns. There are, however, quite distinct changes across cohorts in location patterns*. In other words, the data in Table 3.1, which shows, for example, a major difference in the proportions of immigrants residing in California among post- and pre-1975 arrival cohorts, is driven by the initial location decisions of immigrants rather than by internal mobility.

While the data presented in Tables 3.2 and 3.3 are far more informative than those presented in 3.1, they are, nevertheless, the net outcomes of gross flows into and out of areas. One can think of the population movements as follows. Each region has a stock of public infrastructure, housing, and other amenities at a point in time. These attributes can be thought of as growing at a reasonably uniform rate across the regions over the reasonably short period of time (5 years) analyzed. What is perhaps more important is understanding the mix of constituents in each area. This requires information on the flows into and out of each area. For example, it may be that a particular area has a stable share of the immigrants in an arrival cohort, but over time this is progressively being made up of, say, older immigrants and less skilled immigrants. The demands that these people have on public and community services, and the types of housing they demand now and are likely to seek in the immediate future, may differ from those of younger and better-educated immigrants. These issues are best addressed through a gross-flows analysis.

3.4 IMMIGRANT MOBILITY: GROSS FLOWS

The gross flows analysis presented in this section informs on mobility patterns by cross-tabulating the current area of residence and the area of residence 5 years ago. This provides information on (i) the way that residents of a particular area 5 years ago disperse; (ii) the areas (5 years ago) from which the current members of a particular region originated; (iii) differences across immigrants of different backgrounds (*e.g.*, language, ethnicity, and skills) in the tendencies towards concentration.

Table 3.4
Mobility Rates 1985–1990 by Nativity and Duration of Residence, Persons Aged 25 and Over, 1990 U.S. Census, Percent Distribution[a]

Mobility Status	Native Born	Foreign Born: Arrival Year				
		1980–84	1975–79	1970–74	Before 1970	Total
Did not move house	57.9	32.2	42.7	54.5	67.9	54.6
Moved house but not State	33.2	55.9	48.3	38.0	25.9	37.4
Moved State	8.9	11.9	9.1	7.5	6.2	8.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

[a] The foreign born is restricted to those who arrived before 1985.

Source: 1990 U.S. Census Public Use Microdata 1% Sample.

Consider Table 3.4. This presents information on the proportions of the various groups who moved over the 5-year period to 1990. Three categories are distinguished: those who did not move house, those who moved house within the same state, and those who moved state.[11] In order to abstract from the issues associated with teenagers and school children leaving home for the first time[12], the analyses in this section are restricted to those aged 25 or more.

Among the native born aged 25 and over, around 60 percent did not move house over the 5-year period 1985–90. Around 33 percent moved house within their existing state, and 9 percent moved inter-state. *The mobility patterns for the total foreign born are similar to those for the native born*, with around 55 percent not moving house, 37 percent moving intra-state and 8 percent moving inter-state. It is important to recognize the magnitudes of the movements of people that these percentage figures represent. Thus, these data indicate that some 51 million people in the 25 and over age group moved intra-state within the 5-year period studied. Of these,

[11] The census identifies people who lived in the same house in 1985 and 1990 (non-movers) and provides information on the state of residence for all people in 1990 and for those who did not live in the same house in 1985 and 1990 (movers). Intra-state and inter-state mobility is determined through comparison of the state of residence in 1985 and 1990 of movers.

[12] The housing and other demands of youth are likely to be quite different from those old adults. These differences will involve higher incidence of group living and higher housing turnover.

46 million were native born and 5 million were foreign born. These data also indicate that around 13 million people aged 25 and over moved inter-state within the 5-year period (12 million native born and 1 million foreign born). In other words, there are about 10 million people moving homes intra-state each year, and 2.5 million people moving inter-state. And this is only for the 25-years-and-over age bracket. *The internal mobility within the United States is of a massive scale*. Knowledge of the patterns and consequences of this internal mobility is therefore of obvious importance.

Analysis of the degree of mobility by arrival cohorts reveals an interesting pattern. The percentage of an arrival cohort that did not move house over the 5-year period before the census increases the older the arrival cohort. It is 32 percent among immigrants who arrived in 1980–84, and 68 percent among immigrants who arrived before 1970. Similarly, the percent of an arrival cohort that moved intra-state, or inter-state, decreases among the older arrival cohorts. These intra-state and inter-state mobility rates are about half the size among the more established cohort that arrived before 1970 than for the more recent group of arrivals (1980–84) recorded in the Table. *It is of interest to note that the mobility rates of the foreign born who arrived around 1970 closely resemble those of the native born. In the language of the immigration assimilation literature, this implies immigrant catch-up after around 20 years, which is only a few years after the catch-up recorded in studies of earnings.*

Again, it is instructive to consider the numbers of people involved in these movements. Consider the most recent cohort of immigrant arrivals in the table, those who arrived during 1980–84. There are 2.5 million aged 25 and over in this cohort. Thus the Table 3.4 data indicate that of the 2.5 million recent arrivals aged 25 and over, 1.4 million moved intra-state, and .3 million moved inter-state over the period 1985–90. The movements of recent immigrants are on a relative scale that is even greater than that of the native born or the longer-term immigrants.

Tables 3.5 to 3.8 examine the inter-state mobility patterns as an illustration of the types of detailed analyses that can be conducted using these data.[13] Table 3.5 presents information on the state of residence in 1990 of the native born who lived in the selected states listed across the top of the table in 1985. The table should be read by reading down the columns to find where the individuals living in each of the states in 1985 were living in 1990. Consider the column for the residents of California in 1985. The figures in this column show that 92 percent of those who lived in California in 1985 also lived in California in 1990. The approximately 8 percent of 1985 residents of California (about 1.1 million people in the 25 years and over age group) who left the state disbursed over a wide range of states, although there are minor concentrations in Florida

[13] More detailed analysis of gross flows can be conducted using the data on Metropolitan Statistical Areas (MSAs). This work requires the detailed information on place of residence in 1985 that is presented in the public use samples of the 1990 U.S. census, which is coded to the Public Use Micro-Sample Area (PUMA) level, to be mapped into MSA codes. See Card (2001, p. 59) for details.

and Texas. The remainder of the data should be read in a similar manner (although the greater percentage of non-movers in the final column for the "Other" group of states should be recognized as a result of the level of aggregation in these data). These data reveal a relatively high rate of movement out of New York and New Jersey to Florida, which may be simply a post-retirement phenomenon. However, the major features of the gross flows between states are the small variations in the percentage that remain within the state over the period 1985–90, and the wide spread across states of those who move interstate.

Table 3.5
State of Residence in 1990 by State of Residence in 1985, Native-Born Persons Aged 25 and Over, 1990 U.S. Census, Percent Distribution[a]

State of Residence in 1990	State of Residence in 1985						
	California	Florida	Illinois	New Jersey	New York	Texas	Other States
California	92.3	0.6	1.0	0.5	0.7	1.1	0.9
Florida	0.4	90.5	0.9	2.0	2.2	0.7	1.0
Illinois	0.2	0.3	91.4	0.1	0.1	0.3	0.3
New Jersey	0.1	0.3	0.1	90.3	1.2	0.1	0.2
New York	0.3	0.6	0.2	1.3	91.2	0.2	0.3
Texas	0.6	0.4	0.4	0.3	0.2	91.0	0.5
Other States	6.2	7.3	5.9	5.5	4.4	6.4	96.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[a]The foreign born population is restricted to those who arrived before 1985.
Source: 1990 U.S. Census Public Use Microdata 1% Sample.

Table 3.6
State of Residence in 1990 by State of Residence in 1985, Foreign-Born Persons Aged 25 and Over, 1990 U.S. Census, Percent Distribution[a]

State of Residence in 1990	State of Residence in 1985						
	California	Florida	Illinois	New Jersey	New York	Texas	Other States
California	96.4	0.7	2.2	0.7	0.9	2.6	2.8
Florida	0.4	95.3	1.3	3.6	3.0	0.9	1.6
Illinois	0.2	0.1	91.7	0.0	0.1	0.4	0.3
New Jersey	0.1	0.2	0.1	90.9	2.0	0.4	0.4
New York	0.3	0.8	0.5	1.8	91.2	0.4	0.7
Texas	0.4	0.3	0.8	0.2	0.2	91.2	0.9
Other States	2.2	2.5	3.5	2.7	2.5	4.2	93.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[a] The foreign born population is restricted to those who entered the United States before 1985.
Source: 1990 U.S. Census Public Use Microdata 1% Sample.

Table 3.6 presents data on the state of residence in 1990 of the foreign born who lived in selected states in 1985. These data are restricted to those who entered the United States before

1985. They have two patterns of note. First, the proportion of immigrants who lived in either California or Florida in 1985 who did not move inter-state is greater than the corresponding figures for the native born (see Table 3.5). This lower degree of inter-state mobility among the foreign born does not extend to the other states listed in the Table. *That is, not only do California and Florida have drawing power in terms of the location of new immigrants (see Chapter 2), but they also retain relatively more of their immigrants than other states. Second, California and Florida are more likely to be destinations for immigrants who moved from other states than they are to be destinations for the native born who move from other states*.

Tables 3.7 and 3.8 present gross flows data for two arrival cohorts of the foreign born, namely those who arrived in the United States during the 1980–84 period, and those who arrived a decade earlier, 1970–74. *These data show that among each arrival cohort, residents of California and Florida are less likely than the residents of other states to move inter-state. They also show that the flows into California and Florida are more pronounced among the groups of more recent arrivals (Table 3.7) than among the immigrants who have resided in the United States for longer (Table 3.8). California and Florida appear as magnet states in these analyses.*

Table 3.7
State of Residence in 1990 by State of Residence in 1985, Foreign-Born Persons Aged 25 and Over Who Arrived in the United States 1980–84, 1990 U.S. Census, Percent Distribution

State of Residence in 1990	State of Residence in 1985						
	California	Florida	Illinois	New Jersey	New York	Texas	Other States
California	95.6	1.4	5.0	1.3	1.3	4.4	6.2
Florida	0.4	92.8	0.2	3.4	3.0	0.9	1.6
Illinois	0.3	0.2	86.6	0.1	0.2	0.5	0.9
New Jersey	0.2	0.3	0.4	87.2	3.7	0.4	1.0
New York	0.5	1.4	1.4	3.4	87.7	0.9	1.8
Texas	0.5	0.6	1.2	0.7	0.4	87.0	1.7
Other States	2.5	3.4	5.2	3.9	3.5	5.9	86.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: 1990 U.S. Census Public Use Microdata 1% Sample.

Table 3.8
State of Residence in 1990 by State of Residence in 1985, Foreign-Born Persons Aged 25 and Over Who Arrived in the United States 1970–74, 1990 U.S. Census, Percent Distribution

State of Residence in 1990	State of Residence in 1985						
	California	Florida	Illinois	New Jersey	New York	Texas	Other States
California	96.4	0.6	2.0	0.6	1.3	1.8	3.0
Florida	0.4	95.4	1.5	4.2	2.8	1.2	1.4
Illinois	0.3	0.1	93.0	0.1	0.1	0.4	0.2
New Jersey	0.1	0.2	0.1	91.9	2.0	0.5	0.5
New York	0.2	1.0	0.6	1.8	91.2	0.4	0.5
Texas	0.5	0.5	0.7	0.3	0.2	92.1	0.9
Other States	2.1	2.1	2.1	1.1	2.4	3.7	93.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: 1990 U.S. Census Public Use Microdata 1% Sample

An alternative way of using these gross flows data is to ask the question "From which states did the people who moved into a particular state during 1985–90 come?" Table 3.9 illustrates the data that could be compiled to answer this type of question.

Table 3.9
State of Residence in 1985 by State of Residence in 1990, Native-Born Persons Aged 25 and Over, 1990 U.S. Census, Percent Distribution

State of Residence in 1985	State of Residence in 1990						
	California	Florida	Illinois	New Jersey	New York	Texas	Other States
California	92.1	0.7	0.5	0.3	0.4	0.9	1.0
Florida	0.3	81.9	0.4	0.5	0.4	0.3	0.5
Illinois	0.4	0.8	93.7	0.2	0.1	0.3	0.4
New Jersey	0.2	1.2	0.1	92.2	0.6	0.1	0.3
New York	0.5	2.8	0.2	2.7	95.5	0.2	0.5
Texas	0.7	0.9	0.5	0.2	0.2	92.8	0.7
Other States	5.8	11.7	4.6	3.8	2.7	5.4	96.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: 1990 U.S. Census Public Use Microdata 1% Sample.

Table 3.9 shows that the "inter-state movers" who reside in each state in 1990 have reasonably diverse origins. For example, for California, the largest figure in the off-diagonal cells of the Table is the 0.7 for Texas. While this figure seems small, in the context of a relevant population of about 14 million, it represents almost 100,000 movers.

Finally, the gross flows data can be analyzed by sub-groups. The groups that are of most interest are: (i) skill levels, as indexed by level of educational attainment; (ii) language and/or birthplace groups; (iii) gender. To illustrate, Tables 3.10 to 3.12 consider the gross flows for the foreign-born persons aged 25 and over who arrived in the United States between 1980 and 1984 (see Table 3.7) for the three languages groups considered in Chapter 2, namely those who speak only English at home, those who speak Spanish at home, and those who speak a language other than English or Spanish at home.

Table 3.10
State of Residence in 1990 by State of Residence in 1985, Foreign-Born Persons Aged 25 and Over Who Arrived in the United States 1980–84, Who Speak English Only, 1990 U.S. Census, Percent Distribution

State of Residence in 1990	State of Residence in 1985						
	California	Florida	Illinois	New Jersey	New York	Texas	Other States
California	92.4	0.7	3.6	1.0	0.5	2.0	2.7
Florida	0.6	84.0	0.0	0.0	0.3	2.6	1.3
Illinois	0.4	0.0	82.2	0.7	0.6	0.7	2.2
New Jersey	0.3	1.2	0.0	84.4	0.7	0.5	1.6
New York	2.1	10.9	0.0	12.0	94.3	1.3	4.2
Texas	0.9	0.9	5.4	0.7	0.5	85.9	2.8
Other States	3.4	2.2	8.8	1.2	3.2	7.0	85.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: 1990 U.S. Census Public Use Microdata 1% Sample.

Table 3.11
State of Residence in 1990 by State of Residence in 1985, Foreign-Born Persons Aged 25 and Over Who Arrived in the United States 1980–84, Who Speak Spanish at Home, 1990 U.S. Census, Percent Distribution

State of Residence in 1990	State of Residence in 1985						
	California	Florida	Illinois	New Jersey	New York	Texas	Other States
California	97.4	2.0	3.9	1.7	0.8	1.9	6.6
Florida	0.3	88.9	0.9	1.3	0.9	0.3	2.4
Illinois	0.2	0.0	90.3	0.0	0.0	0.5	0.3
New Jersey	0.0	2.3	0.0	89.4	0.7	0.1	0.3
New York	0.2	2.6	0.9	6.2	95.3	0.5	1.2
Texas	0.7	1.1	1.9	0.6	1.1	94.6	5.1
Other States	1.2	3.2	2.1	0.8	1.3	2.1	84.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: 1990 U.S. Census Public Use Microdata 1% Sample.

Table 3.12
State of Residence in 1990 by State of Residence in 1985, Foreign-Born Persons Aged 25 and Over Who Arrived in the United States 1980–84, Who Speak a Language Other than English or Spanish at Home, 1990 U.S. Census, Percent Distribution

State of Residence in 1990	State of Residence in 1985						
	California	Florida	Illinois	New Jersey	New York	Texas	Other States
California	89.6	1.2	1.9	1.3	2.2	1.5	3.3
Florida	0.3	83.8	0.0	0.0	1.1	0.3	0.9
Illinois	1.0	0.4	90.5	0.5	0.7	0.6	1.0
New Jersey	0.3	0.9	0.1	75.0	1.6	1.2	0.9
New York	0.7	5.9	0.9	14.2	90.3	0.6	2.4
Texas	1.7	1.0	0.1	1.1	0.4	87.2	1.7
Other States	6.4	6.8	6.4	7.9	3.7	8.6	89.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: 1990 U.S. Census Public Use Microdata 1% Sample.

These data have a number of patterns. Recent immigrants who speak Spanish at home are less likely to move interstate, particularly if they have initially settled in California. Indeed, 97 percent of the Spanish-speaking immigrants who settled in California in the 1980–84 period remained in California over the period 1985–90. This compares with only 90 percent of the immigrants from the same arrival cohort who speak a language at home other than English or Spanish. *The choice of initial location and the immigrant's language background both obviously impact on internal mobility.* It is also apparent that New York is a major destination for monolingual English speakers who move interstate.

3.5 DISCUSSION

The data presented and discussed in the previous section highlight the numerical importance of internal migration in the United States. Internal migration is important for the foreign born and for the native born. It is a characteristic of each state examined. Movements of people of the magnitude outlined above are important to understand. What motivates people to move? What are the consequences for the individuals concerned? What are the consequences for other individuals who do not move but may be affected by either the outflows from their area of residence or by an inflow of people into that area?

Immigrant mobility has been formally modeled by Bartel and Koch (1991). They draw upon the seminal work of Sjaastad (1962) by arguing that an individual will move within the United States when the discounted benefits from moving exceed the costs. This model may be motivated as follows:

Express the net discounted benefits from moving (G_t) as:

$$G_t = Y_t^a - Y_t^c - C_t + \mu_t$$

where Y_t^a is the expected real income stream if the individual changes location at time t, Y_t^c is the expected real income stream in the current location at time t, C_t is the costs of changing location, and μ_t is an error term that captures other influences on the discounted benefits from moving (*e.g.*, the monetary equivalent of any gains in non-monetary benefits from the change in location).

In some empirical work, there will be attempts to relate G to factors that affect the benefits and costs rather than incorporate benefits and costs directly in the net benefit function. For an example of this approach, see Bartel and Koch (1991). For an example of an approach that attempts to incorporate monetary magnitudes into the net benefit function, see Robinson and Tomes (1982). In other words, it will often be necessary to work with a reduced form in order to have an empirically tractable model. In this case, G can be expressed as:

$$G_t = \alpha X_t + \mu_t$$

where X_t is a set of variables that affect the net discounted benefits from moving location within the United States and α is a set of weights that indicate how important each of these variables is in determining the monetary value of the move.

Define a binary index "MOVE," which equals one where the individual moves over a given time interval. The index is set equal to zero in cases where the individual does not move. Then the probability that the individual moves can be expressed as:

$$\text{Prob(MOVE = 1)} = \text{Prob}\,(G_t > 0) = \text{Prob}(\mu_t > -\alpha X_t) = F(\alpha X_t)$$

where F is a cumulative distribution function.

This model can be estimated by specifying the variables that enter into X_t. Bartel and Koch (1991) consider both characteristics of the individual and characteristics of the initial location. Their reasoning is summarized below:

Individual Characteristics:

- Age: Age is expected to have a negative impact on internal migration since the period over which the returns to migration can be recouped is less for those moving at an older age.
- Education: The level of education is expected to have a positive effect on internal mobility, as the better educated are presumably better able to adapt to new locations and have greater efficiency in job search.

- English proficiency: A positive association between proficiency in English and internal mobility is expected to arise from the superior information on job opportunities of those who can speak English, and also the greater adaptability to new locations of those who are proficient in English.

- Family size: Robinson and Tomes (1982) argue that the presence of school-age children reduces the level of internal mobility, due to the impact on C_t associated with the costs (monetary and psychic) incurred when schools have to be changed.

- Marital status: Marital status can impact on mobility through the income differentials in the various locations. When a person moves as part of a larger family unit, there will be a need to take account of the change in incomes of other family movers. This suggests that mobility will be less among members of family units with multiple income earners.

- Religion and place of birth of parents: Robinson and Tomes (1992) suggest that religion and the birthplace of parents, along with language, are important indicators of cultural ties and information costs.

Characteristics of the Original Location:

- Total population: The total population of the original location is argued to provide a measure of job opportunities and general economic activity. The better performing the original location is, the less incentive there should be for an immigrant to move.

- Unemployment rate: The area unemployment rate provides a further indicator of economic conditions in the original location. Immigrants are expected to move from relatively depressed areas to more prosperous regions.

- Average wage: The average wage of employed persons in the original location provides information on the quality of the jobs available. Job quality is a desirable feature of locations that Bartel and Koch (1991) argued would make the current destination more attractive.

- Level of welfare benefits: As argued above, immigrants are expected to move to regions with high expected income. Expected income will depend on the probability of finding a job, proxied by the unemployment rate; the wage if employed, proxied by the average wage; and the benefits received if unemployed. More generous welfare benefits are therefore expected to reduce internal mobility.

- Proportion of the area's population that is foreign born and of the same ethnicity as the immigrant: On the basis that immigrants prefer to live among their compatriots, the greater the proportion of the area's population that is foreign born of the same ethnicity as the immigrant, the less likely it should be that the immigrant will move to another location. Moreover, Bartel and Koch (1991) argue that this effect should vary systematically with arrival cohort; being less negative the longer the immigrant has lived in the United States.

- Urban location: Robinson and Tomes (1982) use location variables as a factor that can affect the earnings outcomes.

This list might be expanded to consider a richer range of family variables (for example, the number and age structure of children, age of youngest child, number of adults in the household), and to include additional characteristics of the destinations (*e.g.*, affordability of housing, structure of housing).

There are other issues that might be addressed. For example, Bartel and Koch (1991) examined whether mobility has any impact on the individual's wage rate. This study was based on a conventional human capital earnings function (which related earnings to, primarily, educational attainment and level of labor market experience) augmented with a variable (MOVE) that recorded whether the individual had moved in the past 5 years. More elaborate specifications of the MOVE variable were also employed that enabled Bartel and Koch (1991) to address the issue of whether it mattered if the individual was moving into, or out of, areas characterized by concentrations of their compatriots. The wage differential associated with internal mobility could vary according to this characteristic due to crowding effects and (negative) compensating differentials associated with living in an area associated with a favorable amenity such as a high concentration of those from one's ethnic group (Chiswick and Miller, 2002).

This approach to the impact of internal mobility on individual outcomes can be extended to aggregate-level outcomes. Card (2001), for example, examines the links between inflows of recent immigrants of particular skill levels (indexed by occupation) into local areas on the flows out of these areas of earlier cohorts of immigrants and the native born. He shows that the latter two flows are reasonably insensitive to the inflow of new immigrants.[14] The links between the inflow of immigrants and employment rates and wages in the local labor market was also examined by Card using data from the 1990 U.S. census in an econometric study. Both occupation-specific wages and employment rates were found to be lower in cities with higher relative supplies of workers, generated by immigrant inflows, in a given occupation.

3.6 ISSUES REQUIRING RESEARCH

Around 60 percent of people live in the same house in 1990 that they lived in 1985. Of the approximately 40 percent of people who move, most are classified as intrastate movers. Knowing where these people, some 51 million people in the 25 and over age group, move to, and what motivates their decisions to move, is obviously of considerable importance for understanding the spatial distribution of the demand for housing.

The one-fifth of movers who are interstate movers are also numerically important: they amount to around 12 million native-born persons aged 25 or more and 1 million foreign-born persons in the same age group. This group, while numerically smaller than the intrastate movers, may in some circumstances have more impact than intrastate movers, as they represent a net increase/decrease in the demand for goods and services, as well as housing, within a state.

Research is needed on three issues. First, it is clear from the analyses presented in this chapter that study of internal mobility is best conducted using gross flows data. It is also evident that mobility is of three broad types. The one broad type of mobility is the intrastate mobility that takes place at a very local level (within a particular city), and is unlikely to have much impact on the demands for local services or local labor or housing markets. A second type of mobility that should be distinguished because of the different impact it might have is the intrastate mobility that involves moving cities, or moving considerable distances within a particular city. This type of mobility can be as important for the local communities as interstate mobility. The third type is the interstate mobility that accounts for about one-fifth of all moves. Distinguishing the two types of intrastate mobility requires geographic identifiers at a local level.

[14] Filer (1992), on the other hand, finds a significant outmigration of the native born in response to the migration into a state of immigrants.

In conducting this type of work, there needs to be a greater emphasis on family characteristics than in the research to date. In other words, rather than having the individual be the unit of analysis, the unit of analysis could be the family unit. Are large families more likely to move than small families? Are families with young children more likely to move than childless families or families with only older children? Does it matter for internal mobility if there is more than one labor force participant in the family? Do these characteristics of mobility patterns across family units vary according to country of birth, duration in the United States, citizenship, ethnicity, and language background?

This research should also analyze whether the ethnic characteristics of the region are important to understanding internal mobility. This theme has been a major focus in recent research on immigrant assimilation (see, for example, Chiswick and Miller, 2002; Lazear, 1999). Hence, the research on internal mobility could study the movements of people into and out of communities according to the match between the characteristics of the individual and the characteristics of the community. For example, do Hispanics move to areas of Hispanic concentration? Do individuals who are not Hispanic tend to move out of areas of growing Hispanic concentration?

Second, the impact of moving on the circumstances of the individual needs to be studied in depth. Bartel and Koch's (1991) work offers a framework. This research can show whether movers are characterized by higher wages and lower unemployment rates following their move, as might be expected where better economic prospects were an incentive for moving. This framework can also be used to ascertain whether these wage and unemployment effects vary according to the characteristics of the receiving community (*e.g.*, the extent to language enclaves). This is a promising area for further research, given the importance that has been given to language enclaves in recent research (*e.g.*, Chiswick and Miller, 2002; Lazear, 1999).

Third, the impacts of movements of people, particularly recent immigrants, on the wages and unemployment of non-movers, are a topic that requires further study. Chiswick, Chiswick, and Miller (1985) and Card (2001) provide frameworks within which such study can be conducted based on aggregate production functions.

There has appeared in the literature a series of studies in which a measure of the earnings of native-born workers are regressed on a measure of the number or proportion of immigrants in the state or metropolitan area in which they live. This methodology cannot be used as a framework for impact studies for several reasons.[15] The methodology assumes that the units of observations are closed economies and that immigrant location is exogenous. The endogeneity

[15] For a critique of this methodology see Chiswick (1993).

of immigrant location, and the subsequent movement of native and immigrant labor, capital and goods, and services in response to wage and price changes, means that local area impacts are distributed across the country. The impacts are not revealed in differences across areas. The appearance of no immigrant impacts may be a demonstration of market efficiency and factor-price and wage equalization.

4. IMMIGRANT DEMAND FOR HOUSING

4.1 INTRODUCTION

When immigrants arrive in a country, one of the first things they must do is find somewhere to live, if only temporarily. Many may live with family and friends until they find suitable permanent accommodation. But eventually the great majority of immigrants will establish their own homes. Both immigrants who have been in the United States for some time and the native born who move either intrastate or interstate face the same decisions.

What types of homes do immigrants demand? Do they seek to live in large homes? Or small homes? How many own their homes outright? What is the value of the homes immigrants own or are buying? Do they rent? How much rent do they pay, on average? Do the answers to these questions differ for immigrants compared to the native born? Do they differ across immigrant groups according to the skill levels of the groups, and perhaps even according to other visible indicators, such as ethnicity or language background?

Answers to these questions are essential to understanding the dimensions of the immigrant demand for housing.[16] The information on the housing circumstances of immigrants can also provide insights into the important issue of immigrant assimilation. Do the types of homes that immigrants live in vary with duration of residence? Where homeownership is viewed as an index of immigrant assimilation, in the same way that earnings, employment, and occupational status have been (see, for example, Chiswick 1977, 1978, 1980, 1982), it would be expected that as the immigrants spend more time in the United States, the characteristics of their housing circumstances would converge to those of the native born.

The 1990 U.S. census (as will the 2000 census) contains a rich array of information on the housing circumstances of individuals. This is used below in a variety of ways to construct a profile of immigrants' demand for housing.

4.2 OWNING VERSUS RENTING

The 1990 census provides information on the type of ownership of the individuals' accommodations. Four categories are distinguished: (i) owned with mortgage; (ii) owned outright; (iii) rented for cash rent; and (iv) no cash rent. The latter category is intended to capture cases where the accommodation is renter occupied, but no rent is charged, perhaps in compensation for work done (*e.g.*, caretaker) or as an unrequited income transfer (*e.g.*, letting a

[16] For assessment of the research on the demand for housing see, for example, Arnott (1987), Olsen (1987) and Sheppard (1999).

relative live rent free). It is relevant to the current analyses as migration flows based on kinship often involve the immigrants living with friends or relatives when they first enter the country. This may be on a rent-free basis. Of most interest in these data, however, is the distinction between owning and renting (for cash rent), as these may form two housing markets. By analyzing the characteristics of the constituents of each of these markets, information can be obtained on whether the markets are indeed distinct or integrated.

The data reported in this chapter are from the one percent 1990 census, Public Use Microdata Sample, limited to persons age 25 years and older. For the foreign born, the data are presented by arrival cohort, a procedure that will assist with the analysis of immigrant adjustment with duration of residence in the United States.

Table 4.1 presents data on the distributions of the native born and immigrants across types of ownership. Around one-quarter of the native born aged 25 or more years own their homes outright. A further 47 percent own but have a mortgage. The remaining one-quarter of the population are renting. In comparison, only around 15 percent of immigrants aged 25 or more years own their homes outright. Slightly more than 40 percent of immigrants have a mortgage on the units in which they lived in 1990, while almost 45 percent of immigrants were living in rented accommodation.

Table 4.1
Type of Homeownership by Nativity and Duration of Residence, Persons Aged 25 and Over, 1990 U.S. Census

Type of Ownership	Native Born	Arrival Cohort					Total Foreign Born
		1985-1990	1980-1984	1975-1979	1970-1974	Before 1970	
Owned Outright	26.5	3.6	4.4	6.3	8.8	28.7	14.7
Owned with Mortgage	47.2	21.9	35.0	46.6	53.7	45.3	40.7
Rented for Cash Rent	24.6	72.7	59.0	45.6	36.1	24.7	43.1
Rented, No Cash Rent	1.8	1.8	1.6	1.5	1.3	1.3	1.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: 1990 U.S. Census Public Use Microdata 1% Sample.

Whether a person should own or rent depends on a range of circumstances, including the length of time they expect to live in the particular location, the rate at which they can borrow money, and the amount of equity they have.[17] Owning is not the optimal decision for everyone.

[17] The issues involved in the "own versus rent" decision are outlined in Anstie, Findlay, and Harper (1983).

The data in Table 4.1 clearly show that *the typical native-born person is more likely to own (whether outright or with a mortgage) in the housing market than the typical foreign-born person.*

The data in Table 4.1 by arrival cohort (or length of residence in the United States) reveals an interesting pattern. The percentage of the arrival cohort that owns their homes outright rises with duration of residence. Indeed, the percentage of the group that owns their homes outright is higher among the "before 1970" arrival cohort than it is among the native born. *If homeownership is taken as an indicator of assimilation, these data show that immigrants catchup with the native born after several decades of residence in the United States.* Similarly, the percentage of the arrival cohort that owns with a mortgage rises with duration of residence. Conversely, the percentage of the group that rents falls sharply with duration of residence, from around 75 percent among the most recent arrival cohort (1985–90), to only 25 percent among the oldest arrival cohort (pre-1970 arrivals).[18]

The tendencies towards homeownership may vary according to the characteristics of the individuals. One characteristic that is a very good indicator of success is the level of education. It is well known that the better educated tend to have higher levels of income, lower rates of unemployment, higher occupational prestige, and better English language skills than their less-educated counterparts. Education can be used as a proxy for the individual's permanent earnings or income that will be a major determinant of their demand for housing. Education may be superior to current incomes, which are subject to transitory influences (such as a period of unemployment), as a measure of permanent income.[19]

Tables 4.2 and 4.3 display information on homeownership for individuals who have relatively high levels of education (Table 4.2) and relatively low levels of education (Table 4.3). The threshold level of education used in this presentation is high school graduation: individuals up to and including high school graduates are categorized as having a low level of education; all those above this level are categorized as having a high level of education. Fifty-three percent of the native born are in the less educated group under this algorithm, as are 61 percent of the foreign born.[20]

[18] This pattern of change in immigrants' housing tenure choice with duration of residence in the United States is remarkably similar to that for Australia reported by Junankar *et al*. (1993).

[19] Studies such as by Painter, Gabriel, and Myers (2001), however, include variables for both education and income in multivariate models of tenure choice.

[20] Alternative classifications that recognize additional skill divisions are possible. The dichotomy used in this section is sufficient to illustrate the types of patterns in the data.

Table 4.2
Type of Homeownership by Nativity and Duration of Residence, Highly Educated Persons Aged 25 and Over, 1990 U.S. Census[a]

Type of Ownership	Native Born	Arrival Cohort					Total Foreign Born
		1985-1990	1980-1984	1975-1979	1970-1974	Before 1970	
Owned Outright	17.6	3.1	3.5	4.7	5.7	19.0	9.6
Owned with Mortgage	57.0	25.1	46.0	59.6	65.4	58.4	50.9
Rented for Cash Rent	23.9	70.3	49.2	34.5	28.1	21.5	38.3
Rented, No Cash Rent	1.5	1.5	1.3	1.2	0.9	1.1	1.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[a]Highly educated refers to at least some education beyond high school graduation.
Source: 1990 U.S. Census Public Use Microdata 1% Sample.

Table 4.3
Type of Homeownership by Nativity and Duration of Residence, Less Well Educated Persons Aged 25 and Over, 1990 U.S. Census[a]

Type of Ownership	Native Born	Arrival Cohort					Total Foreign Born
		1985-1990	1980-1984	1975-1979	1970-1974	Before 1970	
Owned Outright	34.2	4.0	5.1	7.4	10.8	34.3	18.0
Owned with Mortgage	38.6	19.5	27.9	37.5	46.4	37.7	34.2
Rented for Cash Rent	25.2	74.5	65.3	53.5	41.2	26.6	46.2
Rented, No Cash Rent	2.0	2.0	1.7	1.7	1.6	1.4	1.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[a]Less well educated refers to those with only a high school diploma or less educated.
Source: 1990 U.S. Census Public Use Microdata 1% Sample.

The better educated are less likely than the less well educated to own their own homes outright (Tables 4.2 and 4.3). This is the case for both the native born and the foreign born. However, more of the highly educated than of the less well educated own their homes with a mortgage. The proportions are 57 percent among the native born for the better educated compared to 39 percent for the less well educated and 51 percent among the foreign born for the better educated compared to 34 percent for the less well educated. *Consequently, among the native born, the less educated are more likely to rent than the highly educated (27.2 percent renting compared to 25.4 percent). Among the foreign born, considerably more of the less educated are renting than is the case among the highly educated (47.8 percent compared to 39.5 percent).*

The changes in homeownership with duration of residence in the United States described for the total foreign born in Table 4.1 carry over to the separate analyses undertaken for the highly educated and the less educated groups. Thus, homeownership rises with duration of residence, and the incidence of renting declines with duration of residence. In both cases, immigrants in the oldest arrival cohort in the tables have patterns of homeownership comparable to those of the native born. In the case of the better educated, the data reveal slightly higher levels of homeownership (owned outright, owned with mortgage) among the foreign born longer term residents than among the native born. *In other words, among the foreign born, the changes with duration of residence in homeownership are slightly steeper for the better educated than for the less educated.*

There are many other characteristics that could be used to distinguish members of the rental and owner-occupied housing markets. To illustrate these, the data on homeownership for the foreign born are presented by region of origin. Table 4.4 lists these data. Only the birthplace regions considered in Chapter 2 are identified in this presentation.[21]

Table 4.4
Type of Homeownership of Foreign Born by Region of Origin, Persons Aged 25 and Over, 1990 U.S. Census

	Birthplace							
Type of Ownership	UK & Ireland	Canada	Mexico	Other Europe	Asia	S & C America	Caribbean	Other
Owned Outright	23.4	29.7	13.0	31.3	6.5	4.3	6.1	9.6
Owned with Mortgage	46.6	43.9	30.8	40.6	51.1	32.8	41.4	35.5
Rented for Cash Rent	28.2	24.9	54.1	26.7	41.2	61.8	51.7	53.1
Rented, No Cash Rent	1.8	1.5	2.2	1.4	1.2	1.1	0.8	1.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
% of Foreign Born Aged 25+	4.67	4.44	18.54	21.21	24.41	10.49	10.39	5.85

Source: 1990 U.S. Census Public Use Microdata 1% Sample.

Country of birth is clearly highly correlated with the outcome of the "own versus rent" decision. The birthplace groups who are more likely to own their homes outright are from Canada, the UK and Ireland, and Other Europe. These groups also have sizeable proportions with mortgages. Consequently, they have quite low percentages that rent (between 26 and 30 percent). In comparison, immigrants from Mexico and South and Central America have lower

[21] Painter, Gabriel, and Myers (2001), for example, relate tenure choice to age, marital status, education level, the number of people in the household, the number of workers in the household, incomes, previous location, immigrant status, duration of residence in the United States, and ethnicity.

percentages in the "owned outright" and "owned with mortgage" categories and very high percentages in the "renting" categories (see also Coulson, 1999). Almost 63 percent of the immigrants from South and Central America are renting their accommodation. Immigrants from Asia have a distribution across the types of ownership categories that differs from the other birthplace regions. Very few Asian immigrants own their homes outright (6.5 percent compared to 14.7 percent for the total foreign born). However, 51 percent have a mortgage on their homes (compared to 41 percent of the total foreign born), and 41 percent are renting (compared to 43 percent for the total foreign born). This may be a reflection of this group having a relatively short duration of residence in the United States (see Chapter 2).

Both the owner housing market and the rental housing market are sizeable. The data presented above show that while some groups (*e.g.*, the native born and immigrants who have resided in the United States for a long time) are relatively more likely to own their homes, most groups have sizeable proportions in the other ownership categories. The owner-occupied and rental housing markets can obviously be distinguished using characteristics such as birthplace and duration of residence in the United States of the foreign born. Further distinctions may be developed in terms of the nature of the homes that the groups own or rent (*e.g.*, large rather than small homes, high value rather than low value). The following sections examine these issues.

4.3 OWNER-OCCUPIERS: WHAT DO THEY OWN?

Homeownership may imply different things for different people. For some people it may mean they own a large, detached house. For other people it may mean owning a small apartment in a high-rise complex. This section presents information on the characteristics of the dwellings that immigrants and the native born own.

Table 4.5 reports data on the type of homes that immigrants and the native born own. These data have been prepared to distinguish five broad types of housing: (i) mobile homes or trailers; (ii) detached houses; (iii) attached houses; (iv) a unit in a small block of apartments (defined as 1 to 9 apartments); and (v) a unit in a large block of apartments (defined as 10 or more apartments).[22] There is also a small category listed as "other" in the table. These comprise accommodations such as a group of rooms or a single room occupied as separate living quarters. While these types of homes can be viewed as separate markets, they will obviously be related in practice to the extent that conditions in one market (*e.g.*, excess demand, shifts in supply that affect price) will impact on other markets.

[22] The census microdata files permit finer categorization of apartments into (a) two apartments; (b) 3–4 apartments; (c) 5–9 apartments; (d) 10–19 apartments; (e) 20–49 apartments; (f) 50 or more apartments. The categorization adopted offers a parsimonious representation of the data that enables the main patterns to be documented clearly.

The overwhelming majority of the native born (83 percent) live in detached houses. Fully 7 percent live in mobile homes or trailers, around 5 percent in attached houses, and only 4 percent live in apartments. In comparison, 75 percent of the foreign born live in attached houses, 3 percent in mobile home or trailers, 8 percent in attached houses, and 13 percent in apartments. *Hence, the main distinction between the native born and the foreign born is that proportionately more of foreign born owner-occupiers live in apartments, and proportionately fewer live in detached houses or mobile homes/trailers.*

Table 4.5
Type of Building of Homeowners by Nativity and Duration of Residence, Persons Aged 25 and Over, 1990 U.S. Census

Type of Building[(a)]	Native Born	Arrival Cohort					Total Foreign Born
		1985-1990	1980-1984	1975-1979	1970-1974	Before 1970	
Mobile Home or Trailer	7.3	3.2	3.5	2.8	2.5	3.4	3.2
Detached Home	83.3	70.8	72.2	75.7	75.2	76.0	75.0
Attached Home	4.6	11.5	10.5	8.5	8.0	6.5	7.8
Unit in Small Block of Apartments	2.9	8.5	9.2	8.3	9.8	9.4	9.2
Unit in Large Block of Apartments	1.4	4.4	3.4	3.5	2.8	3.9	3.7
Other	0.6	1.4	1.2	1.4	1.5	0.8	1.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[a] Small block of apartments is defined as between 1 and 9 apartments; large is defined as 10 or more apartments.

Source: 1990 U.S. Census Public Use Microdata 1% Sample.

Examination of the data by duration of residence reveals one major pattern. As duration of residence in the United States lengthens, slightly more of the foreign born live in detached houses (from 71 percent for those who arrived in 1985–90 to 76 percent for the pre-1970 arrival cohort). A corresponding smaller proportion live in attached houses as duration increases (from 11.5 percent to 6.5 percent). There is little change with duration of residence in the percentage living in apartments or mobile homes. While the distribution of the older cohorts of the foreign born across types of homes is more like that of the native born than is the distribution of the recent arrivals, there is still a marked difference in the types of homes occupied by the owners in each broad birthplace group.

Table 4.6 lists data on the size of the homes owned by the native born and the foreign born. In each case, the median size category is shaded, and the mean number of rooms for each group is listed in the final row.[23]

[23] To compute the mean, a value of 12 has been assigned to the open-ended upper category of 9 or more rooms.

Table 4.6
Size of Home of Homeowners by Nativity and Duration of Residence, Persons Aged 25 and Over, 1990 U.S. Census

Number of Rooms in Residence	Native Born	Arrival Cohort					Total Foreign Born
		1985-1990	1980-1984	1975-1979	1970-1974	Before 1970	
One or Two	0.6	5.0	5.0	4.2	4.0	1.9	3.1
Three	2.1	13.3	14.1	12.2	10.2	6.0	8.9
Four	9.3	14.0	15.0	13.8	12.4	11.1	12.3
Five	21.8	**18.1**	**18.6**	18.3	19.0	20.7	19.7
Six	**25.2**	17.7	19.1	**19.3**	**19.6**	**22.4**	**20.8**
Seven	18.0	13.0	12.4	13.6	14.1	16.1	14.8
Eight	11.6	8.1	8.4	9.7	10.0	10.7	10.0
Nine +	11.4	11.0	7.3	8.8	10.8	11.2	10.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mean Number of Rooms	6.56	5.88	5.61	5.87	6.08	6.36	6.13

Source: 1990 U.S. Census Public Use Microdata 1% Sample.

These data show that the typical home owned by a native-born person has six rooms (median of six; mean of 6.6). The typical home owned by a foreign-born person also has six rooms (median of six, mean of 6.1). The lower mean for the foreign born arises because they are more likely than the native born to own homes that have between one and four rooms and less likely to own larger homes. However, *the main feature of the data is the similarity of the sizes of the homes owned and occupied by the foreign-born and native-born populations; the homes of the foreign born are only slightly smaller than those of the native born.*

The presentation of data by arrival cohort shows that members of the older arrival cohorts are more likely to own large homes than is the case of members of the more recent arrival cohorts. Thus, the median size of home owned by the foreign born is five rooms for those who have resided in the United States for up to 10 years, and six rooms for those who have lived in the United States for 10 or more years. *Even among the immigrants who arrived in the United States before 1970, however, the typical home that is owned is slightly smaller than that owned by the average native born person.*

Information on the value of the homes owned by native-born and foreign-born persons is presented in Table 4.7.[24] Value in this instance is the respondents' estimate of how much the

[24] The census microdata files present information on home value in 25 categories. This has been aggregated into the seven categories listed in Table 4.7 for expositional reasons.

property (house and lot) would sell if it were for sale now. This table identifies the median value category by bolded numbers and lists the mean in the final row of the table.[25]

The median home value for the native born in 1990 is in the $75,000 to $99,000 category. Fully 28 percent of the native born own homes valued at less than $50,000, while 12 percent live in homes valued at $200,000 or more. In comparison, the median home value for the foreign born is $100,000 to $149,000. Only 15 percent of the foreign born own homes valued at less than $50,000, and 29 percent own homes valued at $200,000 or more. The mean values of the homes owned by the native born and the foreign born are $107,000 and $163,000, respectively.[26]

Table 4.7
Value of Home of Homeowners by Nativity and Duration of Residence, Persons Aged 25 and Over, 1990 U.S. Census

Value of Residence ($'000)	Native Born	Arrival Cohort					Total Foreign Born
		1985-1990	1980-1984	1975-1979	1970-1974	Before 1970	
Less than $25	9.9	5.3	5.7	4.8	4.4	4.1	4.5
$25-49	18.5	8.1	9.1	9.2	9.4	10.1	9.6
$50-74	21.1	11.2	12.2	12.4	12.4	14.8	13.5
$75-99	**15.0**	10.2	11.6	10.0	10.9	12.9	11.9
$100-149	14.5	**18.3**	**16.0**	**17.0**	**17.9**	**16.4**	**16.8**
$150-199	8.6	16.2	16.0	15.7	16.1	14.3	15.1
$200+	12.4	30.8	29.4	31.0	28.9	27.4	28.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mean Value $'000	107.1	171.9	163.0	170.3	164.8	160.0	163.3

Source: 1990 U.S. Census Public Use Microdata 1% Sample.

Thus despite owning slightly smaller homes and being more likely to own an apartment rather than a house, the foreign born own, on average, higher valued homes than the native born.

There are at least two main reasons why this pattern might arise. The first is that home values rise over time. Individuals who have recently purchased their homes are more likely to have a higher estimate of the current value of their home than individuals who purchased their homes many years ago, and so must estimate (and most likely undervalue) the current value. Hence, the higher value of the homes owned by the foreign born may simply reflect more accurate reporting by virtue of the fact that more of them will have recently purchased their homes. This proposition can be examined in two ways: (i) through use of data on arrival cohorts among the foreign born and (ii) through use of data on the length of tenure in the current home.

[25] The mean has been computed by assigning mid-points to the 24 closed value intervals recorded in the census microdata file and a value of $500,000 for the open-ended upper interval of $400,000 or more.

[26] As the mean is greater than the median, the distribution of home values is positively skewed.

The information that may be gained from this presentation might be limited, however, by the changes in tenure choice with duration of residence: an implication of the data on tenure choice by arrival cohort among the foreign born presented in Table 4.1 is that the older arrival cohorts of immigrants will in 1990 contain many individuals who have only recently purchased their home.

Information on home values by duration of residence among the foreign born is presented in Table 4.7. These data show that while the values of the homes owned by more recent arrivals exceed those of the older arrival cohorts, which is consistent with the reporting error proposition, even among the older arrival cohorts the typical home owned by the foreign born is of much higher value than that owned by the native born.

A second way of examining the proposition that the difference between the native born and the foreign born in Table 4.7 is due to more accurate reporting among those who have purchased their homes more recently is to restrict the sample to individuals who had moved into their current homes in the past 5 years.[27] Study of this subset of the population reveals distributions across types of buildings for the foreign born and native born that are broadly the same as those listed in Table 4.7. In particular, the median home price for the native born is in the $75,000 to $99,000 category, and for the foreign born it is in the $100,000 to $149,000 category.

The second reason why the aggregated data for the foreign born may show a higher mean value of owner-occupied dwellings than for the native born is associated with the geographic concentration of the foreign born. Chapter 2 established that the foreign born are heavily concentrated in just six states (California, New York, New Jersey, Illinois, Texas, and Florida). While these six states account for close to three-quarters of all foreign-born residents in the United States in 1990, only 36 percent of the native born live in these six states. Since home prices vary across states, this geographic concentration will impact on the aggregate level data presented in Table 4.7. Accordingly, the cross-tabulations of Tables 4.5–4.7 were re-computed for several states separately. Tables 4.8–4.10 present the information for the largest immigrant-receiving state, California.

Table 4.8 lists information on the type of buildings for owner-occupied dwellings in California. The distribution of the native born in California across the types of buildings is broadly similar to the information for the entire native born population presented in Table 4.5. However, the distribution of the foreign born who have taken up residence in California differs from that for the total foreign born (Table 4.5). In particular, the foreign born residents of

[27] Painter, Gabriel, and Myer (2001) use this restriction in their study of tenure choice.

California are more likely than the foreign born who live elsewhere in the country to live in detached houses and are less likely to live in apartments. *The distribution of the foreign born residents of California across type of buildings is remarkably similar to that of the native born.* As was the case with the aggregate data (Table 4.5), there is little variation across arrival cohorts in the percentages owning apartments. However, as duration in the United States lengthens for the foreign-born residents of California, there is a switch away from attached homes to detached homes. This is also a characteristic of the data for all the foreign born examined above (see Table 4.5).

Table 4.8
Type of Building of Homeowners by Nativity and Duration of Residence, Persons Aged 25 and Over Living in California, 1990 U.S. Census

Type of Building[a]	Native Born	Arrival Cohort					Total Foreign Born
		1985-1990	1980-1984	1975-1979	1970-1974	Before 1970	
Mobile Home or Trailer	6.6	2.0	2.3	1.9	2.1	4.1	3.0
Detached Home	82.8	78.3	78.9	80.3	84.1	83.1	81.6
Attached Home	6.1	11.9	10.5	10.3	7.9	6.8	8.6
Unit in Small Block of Apartments	2.3	4.0	5.0	3.9	3.1	3.5	3.8
Unit in Large Block of Apartments	1.4	2.3	2.2	1.9	1.5	1.7	1.8
Other	0.7	1.4	1.2	1.6	1.4	0.8	1.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[a]Small block of apartments is defined as between 1 and 9 apartments; Large is defined as 10 or more apartments.

Source: 1990 U.S. Census Public Use Microdata 1% Sample.

The typical home in California is slightly smaller than elsewhere in the country (compare Tables 4.9 and 4.6). The average home size for the native born in California is 6.33 rooms, compared to 6.56 rooms for the entire native born (Table 4.6). For the foreign born, the difference in size of home in California compared to elsewhere in the country is greater: 5.52 rooms in California compared to 6.13 rooms for all the foreign born. However, *the basic patterns established for the total foreign born in relation to the size of the homes carry over to California.* Thus, the foreign born own, on average, smaller homes than the native born (5.52 rooms compared to 6.33 rooms), and there is a positive relationship between the mean size of the home and length of residence in the United States. In addition, the larger-sized home of the most recent arrival cohort (1985–90) compared to the adjacent arrival cohort (1980–84) is also a feature of the data in Table 4.9 on the size of homes of homeowners in California.[28]

[28] A number of recent studies have drawn attention to the better economic performance of the 1985–90 cohort compared to the 1980–84 cohort. See, for example, Borjas (1995). This housing pattern may also be a consequence of greater doubling up among the most recent immigrant cohort.

Table 4.9
Size of Home of Homeowners by Nativity and Duration of Residence, Persons Aged 25 and Over Living in California, 1990 U.S. Census

Number of Rooms in Residence	Native Born	Arrival Cohort					Total Foreign Born
		1985-1990	1980-1984	1975-1979	1970-1974	Before 1970	
One or Two	1.2	6.8	6.5	5.8	6.2	2.8	4.8
Three	3.3	17.1	18.6	17.9	15.6	8.9	13.7
Four	9.3	17.6	18.4	17.0	16.2	12.7	15.3
Five	22.6	**17.4**	**17.1**	**17.4**	**19.9**	21.9	**19.6**
Six	**26.5**	17.5	18.2	17.9	17.0	**22.0**	19.5
Seven	18.2	11.9	11.0	12.2	12.4	16.5	13.8
Eight	10.6	5.7	6.4	7.2	7.3	8.7	7.6
Nine +	8.3	6.0	3.9	4.5	5.4	6.6	5.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mean Number of Rooms	6.33	5.27	5.11	5.25	5.35	5.88	5.52

Source: 1990 U.S. Census Public Use Microdata 1% Sample.

Information on the value of the homes owned by homeowners in California is presented in Table 4.10. There are two main features of these data. First, the mean home value for the foreign born ($230,000) is greater than that of the native born ($219,000). However, *the difference between the values of the homes of the native born and foreign born in California is not as great as that for all the country as a whole. This suggests that the regional concentration of immigrants is a major contributor to the large differences in home values by nativity evident in Table 4.7.*[29]

Table 4.10
Value of Home of Homeowners by Nativity and Duration of Residence, Persons Aged 25 and Over Living in California, 1990 U.S. Census

Value of Residence ($'000)	Native Born	Arrival Cohort					Total Foreign Born
		1985-1990	1980-1984	1975-1979	1970-1974	Before 1970	
Less than $25	2.2	3.9	2.6	1.7	1.2	1.7	2.0
$25-49	3.5	3.3	3.5	2.6	3.5	3.1	3.1
$50-74	6.6	3.3	3.3	4.1	5.7	5.8	4.8
$75-99	8.4	5.7	4.4	4.5	6.5	6.4	5.7
$100-149	16.7	15.4	15.4	17.4	17.8	14.7	15.8
$150-199	**16.8**	**20.3**	20.7	19.5	**20.4**	17.6	**19.1**
$200+	45.8	48.1	**50.1**	**50.2**	44.8	**50.8**	49.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mean Value $'000	219.3	223.8	226.7	231.8	219.1	235.8	230.1

Source: 1990 U.S. Census Public Use Microdata 1% Sample.

[29] For New York, another major immigrant-receiving state, the mean home value for the foreign born is $208,000 and for the native born $156,000. This difference of $52,000 is only slightly less than the gap in home values for the entire country given in Table 4.7.

Second, there tends to be a positive relationship between home value and duration of residence in California. This suggests that the somewhat erratic behavior of mean home values across arrival cohorts for all the United States in Table 4.7 might be associated with changes over time in the relative attractiveness of states as destinations for immigrants. This issue was addressed in Chapter 2 (Table 2.4).[30]

These analyses show that knowledge of the location of immigrants is clearly important to understanding aggregate-level data on housing characteristics.

Finally, it is of interest to examine the links between personal/demographic factors and the characteristics of the homes of owner-occupiers. In order to abstract from the impact of the geographic concentration discussed above, this presentation is for California only. As this state is the major immigrant-receiving state, it is possible to conduct disaggregated analyses of the immigrants in California. [31]

Tables 4.11–4.14 list data on the size and value of owner-occupiers' homes in California for the highly educated and less-well educated subsets of the population. As might be expected, the better educated in California own larger homes than the less well educated (6.64 rooms compared to 5.83 rooms for the native born; 5.93 rooms compared to 5.15 rooms for the foreign born). The mean size of the home owned by the better educated increases more with duration of residence in the United States than is the case of the mean size of home among the less-well educated.

Similarly, the mean and median values of the homes owned by the better educated in California are considerably greater than those of the homes owned by the less-well educated. This is true of both the native born and the foreign born, and among the foreign born for each arrival cohort. There is little difference across arrival cohorts for the less-well educated in the mean values of the homes, whereas for the better educated there is a difference of around $26,000 (or 10 percent) between the mean value of the homes owned by members of the most recent (1985–90) and most distant (before 1970) arrival cohorts.

[30] However, study of mean home values of the foreign born in New York by arrival cohort reveals an irregularity similar to that in Table 4.7. Analysis of the historical circumstances of each state may be necessary if these patterns are to be explained.

[31] There appears to be merit to conducting separate analyses for the main immigrant-receiving states. Using the 5-percent sample of the foreign born, and perhaps even pooling this with the foreign born from the 1-percent sample of the population, would facilitate such analysis for most major immigrant-receiving states. For states with smaller immigrant populations, however, the small number of immigrants in the microdata files may preclude many statistical analyses that would otherwise be useful at the state level.

Table 4.11
Size of Home of Homeowners by Nativity and Duration of Residence, Highly Educated Persons Aged 25 and Over Living in California, 1990 U.S. Census

Number of Rooms in Residence	Native Born	Arrival Cohort					Total Foreign Born
		1985-1990	1980-1984	1975-1979	1970-1974	Before 1970	
One or Two	0.9	4.0	4.8	3.6	3.1	1.9	3.1
Three	2.7	14.8	17.7	15.7	10.6	5.6	11.2
Four	7.5	18.2	18.3	17.8	14.5	10.1	14.4
Five	19.4	**17.1**	**14.7**	**15.1**	17.4	18.1	16.7
Six	**25.6**	18.7	19.3	17.2	**17.4**	**22.3**	**19.8**
Seven	20.3	13.4	12.8	15.6	16.2	19.5	16.5
Eight	12.9	6.6	7.7	9.1	12.0	12.0	10.2
Nine +	10.7	7.1	4.7	5.8	8.8	10.5	8.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mean Number of Rooms	6.64	5.55	5.32	5.56	6.02	6.44	5.93

Source: 1990 U.S. Census Public Use Microdata 1% Sample.

Table 4.12
Size of Home of Homeowners by Nativity and Duration of Residence, Less Well Educated Persons Aged 25 and Over Living in California, 1990 U.S. Census

Number of Rooms in Residence	Native Born	Arrival Cohort					Total Foreign Born
		1985-1990	1980-1984	1975-1979	1970-1974	Before 1970	
One or Two	1.8	9.3	8.4	8.0	8.6	3.5	6.2
Three	4.3	19.2	19.7	20.2	19.4	11.4	15.9
Four	12.0	17.1	18.5	16.2	17.6	14.7	16.1
Five	27.7	**17.6**	**19.8**	**19.8**	**21.8**	**24.9**	**22.2**
Six	**28.0**	16.4	16.9	18.5	16.7	21.7	19.3
Seven	15.0	10.5	9.0	8.8	9.4	14.1	11.5
Eight	6.8	4.8	4.8	5.2	3.7	6.1	5.3
Nine +	4.3	5.0	2.9	3.2	2.7	3.6	3.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mean Number of Rooms	5.83	5.03	4.86	4.93	4.83	5.45	5.15

Source: 1990 U.S. Census Public Use Microdata 1% Sample.

Table 4.13
Value of Home of Homeowners by Nativity and Duration of Residence, Highly Educated Persons Aged 25 and Over Living in California, 1990 U.S. Census

Value of Residence ($'000)	Native Born	Arrival Cohort					Total Foreign Born
		1985-1990	1980-1984	1975-1979	1970-1974	Before 1970	
Less than $25	1.2	2.4	2.3	1.4	0.5	0.9	1.3
$25-49	1.9	2.8	3.5	2.1	1.7	1.7	2.2
$50-74	4.3	2.8	1.8	2.1	3.2	3.2	2.7
$75-99	6.3	2.6	3.2	2.7	2.9	3.9	3.3
$100-149	15.2	11.4	11.3	11.8	11.4	10.8	11.2
$150-199	16.3	17.9	18.2	15.0	16.4	15.0	16.0
$200+	**54.7**	**60.3**	**59.7**	**65.0**	**63.8**	**64.7**	**63.3**
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mean Value $'000	248.2	254.0	251.2	270.9	272.9	279.9	269.6

Source: 1990 U.S. Census Public Use Microdata 1% Sample.

Table 4.14
Value of Home of Homeowners by Nativity and Duration of Residence, Less Well Educated Persons Aged 25 and Over Living in California, 1990 U.S. Census

Value of Residence ($'000)	Native Born	Arrival Cohort					Total Foreign Born
		1985-1990	1980-1984	1975-1979	1970-1974	Before 1970	
Less than $25	3.9	5.2	2.9	2.1	1.8	2.4	2.6
$25-49	6.0	3.7	3.5	3.1	4.9	4.2	4.0
$50-74	10.2	3.8	5.0	6.0	7.6	7.8	6.7
$75-99	11.7	8.5	5.9	6.3	9.3	8.3	7.8
$100-149	**19.2**	19.0	20.0	23.1	22.8	17.7	19.8
$150-199	17.6	**22.5**	**23.6**	**24.1**	**23.5**	**19.7**	**21.8**
$200+	31.4	37.3	39.0	35.4	30.1	40.0	37.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mean Value $'000	172.5	196.9	198.5	192.2	177.3	201.5	195.5

Source: 1990 U.S. Census Public Use Microdata 1% Sample.

These data show, therefore, that factors that are associated with economic success in the United States are associated with larger homes and higher valued homes. *Knowledge of demographic and economic characteristics is important to an understanding of the immigrant demand for housing.*

4.4 RENTERS: WHAT DO THEY RENT?

Individuals will rent accommodation for a variety of reasons. For some it is a stepping-stone to homeownership. For others their expected length of stay in a particular location may not be long enough to justify incurring the fixed costs associated with the purchase of a home. Others still may not have sufficient capital to purchase a home even with a mortgage. Finally, others may live in areas where the rental market is thicker.

Individuals rent a variety of types of homes. Table 4.15 lists information on the type of residence that was rented by persons aged 25 and over at the time of the 1990 census. These data show that most of the individuals who rent are renting an apartment. Among the native born renters, around 60 percent are in apartments, with slightly more rental units in small blocks of apartments than in large blocks of apartments. Around 35 percent are renting houses, and most of these are in the category of "detached houses."

Table 4.15
Type of Building of Renters by Nativity and Duration of Residence, Persons Aged 25 and Over, 1990 U.S. Census

Type of Building[a]	Native Born	Arrival Cohort					Total Foreign Born
		1985-1990	1980-1984	1975-1979	1970-1974	Before 1970	
Mobile Home or Trailer	3.3	0.9	1.0	1.0	1.3	0.9	1.0
Detached Home	29.8	13.9	15.9	19.3	19.6	16.6	16.4
Attached Home	6.2	6.8	7.2	7.9	7.6	5.4	6.8
Unit in Small Block of Apartments	32.7	35.8	35.4	34.8	33.2	31.6	34.3
Unit in Large Block of Apartments	26.8	41.4	39.2	35.8	37.1	43.9	40.2
Other	1.2	1.2	1.2	1.2	1.2	1.7	1.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[a]Small block of apartments is defined as between 1 and 9 apartments; large is defined as 10 or more apartments.

Source: 1990 U.S. Census Public Use Microdata 1% Sample.

Among the foreign born who rent, 75 percent are in apartments, and the majority of these are renting units in a large block of apartments. Only 23 percent are renting houses, and most of these are detached houses. *Hence, these data show that the foreign born renters are more likely than native born renters to rent apartments. They are also relatively more likely to be renting a unit in a large block of apartments than in a small block of apartments.*

Examination of the data reveals there are only minor variations in the distribution of renters across types of buildings among the various immigrant arrival cohorts. Table 4.16 presents information on the size of the home occupied by renters. Comparison of the data in this table with Table 4.6 shows that rental accommodation is, on average, smaller than owner-occupied accommodation (4.49 rooms for rental properties among the native born compared to 6.56 rooms for owner-occupied properties; 3.55 rooms for rental properties among the foreign born compared to 6.13 rooms for owner-occupied properties). This is linked to the greater prevalence of apartments in the rental market.

Table 4.16
Size of Home of Renters by Nativity and Duration of Residence, Persons Aged 25 and Over, 1990 U.S. Census

Number of Rooms in Residence	Native Born	Arrival Cohort					Total Foreign Born
		1985-1990	1980-1984	1975-1979	1970-1974	Before 1970	
One or Two	8.4	31.0	30.5	26.8	24.0	19.2	26.9
Three	17.7	**24.0**	**23.3**	21.8	21.9	25.2	**23.6**
Four	**29.1**	23.7	25.4	**26.8**	**26.7**	**26.1**	25.4
Five	22.9	12.1	12.8	15.2	15.7	16.5	14.1
Six	12.9	5.6	5.4	6.0	8.0	8.5	6.4
Seven	5.1	1.8	1.6	2.2	2.2	2.7	2.0
Eight	2.3	0.9	0.7	0.8	1.0	1.0	0.8
Nine +	1.5	0.9	0.4	0.5	0.5	0.8	0.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mean Number of Rooms	4.49	3.42	3.39	3.56	3.68	3.82	3.55

Source: 1990 U.S. Census Public Use Microdata 1% Sample.

Comparison of the number of rooms in rental properties for the native born and foreign born reveal that the native born rent, on average, properties with one extra room compared to the foreign born (median of four rooms and mean of 4.49 for the native born; median of three rooms and mean of 3.55 for the foreign born). This difference is also linked to the greater prevalence of apartments compared to houses in the rental market for the foreign born compared to the native born.

Examination of the data on home size by arrival cohorts reveals a tendency for the mean size of home of the foreign born to increase with duration of residence in the United States. Even among the cohort of immigrants who arrived in the United States before 1970, however, the mean size of rental accommodation is smaller than that of the native born. Interpretation of these data from the perspective of immigrant adjustment is complicated by the pronounced switch between rental accommodation and owner-occupied accommodation displayed in Table 4.1. The pattern with duration of residence shown in Table 4.1 is the most pronounced reported in this descriptive analysis of immigrant housing, and the implications it has for separate analyses of the rental and owner-occupied housing markets is an important topic for future study.

Table 4.17 displays information on the monthly rent paid by renters by nativity and, for the foreign born, by duration of residence in the United States. The median monthly rent paid by the native born is $300-399 (mean of $433), and for the foreign born it is $400–499 (mean of

$524).[32] Recent arrivals and immigrants who have been in the United States for 20 or more years pay the highest rent, around $580 per month on average.

Table 4.17
Monthly Rent Paid by Renters by Nativity and Duration of Residence, Persons Aged 25 and Over, 1990 U.S. Census

Monthly Rent Paid	Native Born	Arrival Cohort					Total Foreign Born
		1985-1990	1980-1984	1975-1979	1970-1974	Before 1970	
Less than $199	16.3	4.1	6.1	6.9	7.7	13.4	7.5
$200–299	17.5	9.6	11.9	12.3	13.5	12.5	11.6
$300–399	**19.9**	15.8	18.7	18.7	19.5	18.7	17.9
$400–499	16.1	17.2	**18.0**	**18.5**	**18.4**	**17.3**	**17.7**
$500–699	18.3	**29.7**	27.9	27.3	26.0	23.1	27.1
$700+	11.8	23.6	17.4	16.2	14.9	15.0	18.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mean Rent	432.7	582.3	517.8	511.2	493.0	579.6	524.3

Source: 1990 U.S. Census Public Use Microdata 1% Sample.

On the surface, the Table 4.16 and Table 4.17 data tell an alarming story: on average across the United States immigrants rent smaller homes than those rented by the native born and pay much higher rents. Further analysis of these data by state of residence provides key insights into why this pattern emerges in the aggregate-level data.

Tables 4.18–4.20 list data on the accommodation of renters in California. There are few differences between the types of buildings of native-born renters in California and the rest of the country. The foreign born who rent in California, however, are less likely to rent units in a large block of apartments and are more likely to rent detached houses than the foreign born who live elsewhere in the United States (compare Tables 4.18 and 4.15). *The data presented in Table 4.18 for the foreign-born residents of California disaggregated by arrival cohort exhibit a clear pattern: as duration in the United States increases, proportionately more of the foreign born who rent are in detached houses, and proportionately fewer rent units in large blocks of apartments. This pattern associated with duration of residence was not evident in the Table 4.15 data for all the foreign born, suggesting a clear advantage in this instance to the study of the data on a state-by-state basis.*[33]

[32] As the mean is greater than the median, the distribution of rents paid is positively skewed.

[33] In comparison, for New York, the proportion of immigrants who rent and who rent units in large blocks of apartments increases with duration of residence.

Table 4.18
Type of Building of Renters by Nativity and Duration of Residence, Persons Aged 25 and Over Living in California, 1990 U.S. Census

Type of Building[a]	Native Born	Arrival Cohort					Total Foreign Born
		1985-1990	1980-1984	1975-1979	1970-1974	Before 1970	
Mobile Home or Trailer	1.7	0.8	1.0	0.7	1.4	1.3	1.0
Detached Home	33.1	18.7	21.7	25.9	27.9	28.4	23.3
Attached Home	7.0	7.9	8.9	10.5	11.3	7.9	9.0
Unit in Small Block of Apartments	28.8	32.3	35.0	33.5	31.0	30.0	32.7
Unit in Large Block of Apartments	28.4	39.3	32.3	28.5	27.0	31.0	32.9
Other	1.0	1.0	1.1	0.9	1.5	1.4	1.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[a] Small block of apartments is defined as between 1 and 9 apartments; large is defined as 10 or more apartments.

Source: 1990 U.S. Census Public Use Microdata 1% Sample

Table 4.19
Size of Home of Renters by Nativity and Duration of Residence, Persons Aged 25 and Over Living in California, 1990 U.S. Census

Number of Rooms in Residence	Native Born	Arrival Cohort					Total Foreign Born
		1985-1990	1980-1984	1975-1979	1970-1974	Before 1970	
One or Two	12.3	39.1	38.6	34.7	31.8	25.6	35.2
Three	18.8	**23.5**	**22.5**	**21.2**	**22.8**	21.4	**22.4**
Four	**29.7**	22.1	23.5	24.6	25.7	**25.4**	23.8
Five	21.2	9.3	9.8	12.2	10.6	15.4	11.1
Six	11.3	4.3	3.7	4.6	6.5	8.3	5.1
Seven	4.4	1.1	1.1	2.0	1.5	2.7	1.6
Eight	1.5	0.3	0.4	0.5	0.8	0.7	0.5
Nine +	0.8	0.3	0.3	0.3	0.4	0.7	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mean Number of Rooms	4.23	3.08	3.10	3.28	3.37	3.67	3.25

Source: 1990 U.S. Census Public Use Microdata 1% Sample.

Table 4.20
Monthly Rent Paid by Renters by Nativity and Duration of Residence, Persons Aged 25 and Over Living in California, 1990 U.S. Census

Monthly Rent Paid	Native Born	Arrival Cohort					Total Foreign Born
		1985-1990	1980-1984	1975-1979	1970-1974	Before 1970	
Less than $199	4.2	2.3	3.0	3.7	4.5	6.7	3.7
$200–299	5.3	4.4	6.7	6.3	7.9	8.9	6.4
$300–399	10.0	10.3	13.0	12.8	13.5	13.2	12.3
$400–499	14.2	15.5	16.8	18.5	18.2	15.8	16.7
$500–699	**31.0**	**37.7**	**36.9**	**34.6**	**33.3**	**30.1**	**35.2**
$700+	35.2	29.9	23.5	24.2	22.6	25.3	25.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mean Rent	667.7	643.8	588.9	592.1	570.2	587.2	603.4

Source: 1990 U.S. Census Public Use Microdata 1% Sample.

The mean size of homes of renters in California is less than for the United States as a whole (compare Tables 4.16 and 4.19). Moreover, as with the aggregate-level data, immigrants in California rent smaller homes than the native born (mean of 3.25 for the foreign born compared to 4.23 for the native born). The mean size of homes rented by the foreign-born residents of California increases with duration of residence in the United States from 3.08 rooms among recent arrivals to 3.67 rooms among those who arrived in the United States before 1970.[34] However, the mean size of homes for the foreign-born residents of California who have lived in the United States for 20 or more years (3.67 rooms) is less than for the native born (4.23 rooms). This is also a feature of the aggregate-level data reviewed in Table 4.16. While it suggests that immigrants do not "catch up" with the native born, there is a need for caution in this interpretation due to the strong tendency for immigrants to switch from "renter" to "owner" status as their stay in the United States lengthens.

Information on the mean rent paid by renters in California is displayed in Table 4.20. These data show that the native born pay, on average, $668 per month in rent. The foreign born pay, on average, $603 per month. In other words, the foreign born pay around 10 percent less in rent than the native born, which contrasts sharply with the aggregate-level data of Table 4.17.[35] The Table 4.20 data do not reveal any relationship between the mean rent paid and duration of residence in the United States for the foreign-born residents of California. This may be due to the other changes that occur as duration increases, specifically, the switch into owner-occupied dwellings and a switch into larger homes.

[34] The data for the mean size of residence of renters in New York show that these increase with duration of residence in the United States for the foreign born, but even among the longer term residents, the foreign born tend to live in smaller rented homes than the native born.

[35] In New York, however, the foreign born pay, on average, almost 10 percent more in rent than the typical native-born person. A state-by-state analysis of these issues would therefore be appropriate where possible.

Thus, the differences between the data for California presented in Tables 4.18–4.20 and for all states presented in Tables 4.15-4.17 suggest that a state-by-state analysis of housing issues would be appropriate where possible.

The final issue that will be examined in this section is the links between the level of permanent income and the characteristics of the homes that people rent. Tables 4.21 to 4.24 present information on the size of homes of renters and on the rent paid for the highly educated and less well educated subsets of the population of California. Restricting the analysis to California will provide standardization for the location factors discussed above. However, further work will be needed to establish whether the patterns noted below carry across to other states. Where the patterns do not carry across to other states, the reasons for this would need to be investigated.

Table 4.21
Size of Home of Renters by Nativity and Duration of Residence, Highly Educated Persons Aged 25 and Over Living in California, 1990 U.S. Census

Number of Rooms in Residence	Native Born	Arrival Cohort					Total Foreign Born
		1985-1990	1980-1984	1975-1979	1970-1974	Before 1970	
One or Two	11.8	37.0	36.5	33.7	26.8	22.0	32.8
Three	18.6	**22.9**	**23.3**	**20.8**	**24.4**	20.5	**22.3**
Four	**28.9**	22.2	22.4	23.2	23.0	**23.5**	22.7
Five	21.3	10.2	10.3	13.2	13.3	17.0	12.2
Six	11.5	5.7	5.4	5.1	7.6	10.0	6.5
Seven	5.1	1.3	1.2	3.0	2.8	4.7	2.3
Eight	1.8	0.4	0.5	0.7	1.0	1.0	0.6
Nine +	1.0	0.4	0.3	0.3	1.2	1.3	0.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mean Number of Rooms	4.30	3.21	3.21	3.38	3.65	3.94	3.40

Source: 1990 U.S. Census Public Use Microdata 1% Sample.

Table 4.22

Monthly Rent Paid by Renters by Nativity and Duration of Residence, Highly Educated Persons Aged 25 and Over Living in California, 1990 U.S. Census

		Arrival Cohort					Total
Monthly Rent Paid	Native Born	1985-1990	1980-1984	1975-1979	1970-1974	Before 1970	Foreign Born
Less than $199	2.1	0.9	1.3	1.5	3.4	3.0	1.7
$200–299	3.4	2.9	5.0	2.9	2.7	4.3	3.6
$300–399	7.4	7.1	7.5	7.4	7.8	10.0	7.8
$400–499	12.6	13.4	14.0	13.6	15.4	13.2	13.7
$500–699	**31.4**	**33.8**	**36.5**	**36.1**	**29.2**	**30.6**	**33.9**
$700+	43.1	41.9	35.8	38.5	41.5	38.8	39.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mean Rent	738.2	737.5	677.6	705.2	704.7	710.3	710.2

Source: 1990 U.S. Census Public Use Microdata 1% Sample.

Table 4.23

Size of Home of Renters by Nativity and Duration of Residence, Less Well Educated Persons Aged 25 and Over Living in California, 1990 U.S. Census

		Arrival Cohort					Total
Number of Rooms in Residence	Native Born	1985-1990	1980-1984	1975-1979	1970-1974	Before 1970	Foreign Born
One or Two	12.9	40.2	39.4	35.0	33.3	27.3	36.2
Three	19.2	**23.8**	**22.2**	**21.3**	**22.3**	21.8	**22.4**
Four	**30.7**	22.1	23.9	25.1	26.5	**26.3**	24.3
Five	21.1	8.9	9.7	11.9	9.8	14.6	10.7
Six	11.0	3.6	3.1	4.4	6.1	7.4	4.5
Seven	3.4	1.0	1.0	1.6	1.1	1.7	1.3
Eight	1.1	0.3	0.4	0.4	0.8	0.5	0.4
Nine +	0.6	0.2	0.2	0.3	0.1	0.4	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mean Number of Rooms	4.14	3.02	3.05	3.25	3.28	3.53	3.18

Source: 1990 U.S. Census Public Use Microdata 1% Sample.

Table 4.24

Monthly Rent Paid by Renters by Nativity and Duration of Residence, Less Well Educated Persons Aged 25 and Over Living in California, 1990 U.S. Census

		Arrival Cohort					Total
Monthly Rent Paid	Native Born	1985-1990	1980-1984	1975-1979	1970-1974	Before 1970	Foreign Born
Less than $199	6.9	3.0	3.7	4.4	4.9	8.4	4.5
$200–299	7.9	5.2	7.4	7.5	9.4	11.1	7.6
$300–399	13.3	12.0	15.1	14.6	15.3	14.8	14.1
$400–499	16.4	16.5	18.0	20.1	19.0	**17.0**	18.0
$500–699	**30.3**	**39.6**	**37.1**	**34.1**	**34.5**	29.9	**35.8**
$700+	25.2	23.7	18.7	19.3	16.8	18.8	20.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mean Rent	577.4	596.3	554.2	554.0	528.7	527.5	558.8

Source: 1990 U.S. Census Public Use Microdata 1% Sample.

Table 4.21 lists information on the size of homes of highly educated renters, and Table 4.23 presents similar information for less well educated renters. There are three main features of these tables. First, the less well educated rent, on average, slightly smaller homes than the better educated. The differences in home size are similar for the native born (4.30 rooms for the highly educated; 4.14 rooms for the less well educated) and for the foreign born (3.40 rooms for the highly educated; 3.18 rooms for the less well educated).

Second, the home size of renters rises with duration of residence, and the increases are greater for the better educated than for the less well educated. Third, for both the better educated and less well educated foreign born, despite the increase in size of homes of renters with duration of residence in the United States, the foreign born who have resided in the United States for 20 or more years rent smaller homes than the native born. This pattern of the data following standardization for level of education is also a feature of the other tabulations of the size of homes of renters by arrival cohort (see Tables 4.16 for all the foreign born and Table 4.19 for all the foreign born in California).

Table 4.22 presents information on the mean monthly rent paid by the highly educated residents of California, while Table 4.24 presents similar information for the less well educated residents of California. These data show that the better educated pay higher rents, on average, than the less well educated ($738 per month compared to $577 per month for the native born; $710 per month compared to $559 per month for the foreign born). The tables also show that the foreign born pay slightly smaller rents than the native born, both among the highly educated and the less well educated. The difference between birthplace groups is, however, only around $20 for each level of education. This compares with a difference of around $65 for the data for California aggregated across levels of education. Presumably analysis which uses finer categorizations of level of education would result in further erosion of the differential in the mean rents paid by the native born and the foreign born evident in the aggregate-level data.

These analyses suggest that multivariate analysis of the main dimensions of the immigrant housing market, along the lines of the analyses conventionally undertaken for labor market outcomes, would provide a superior basis for examination of the relative positions of the foreign born and native born in the housing market. Where possible, these analyses should be undertaken separately for each of the main immigrant-receiving states.

4.5 DISCUSSION

Williams (1984) argues that, in the long run, a nation's stock of housing is determined primarily by demographic factors and income. One of the main ways that the demographic profile of a nation can be altered is through international migration. The demographic profile of a particular location can also be altered through both intrastate and interstate migration. Given this, and given the obvious importance of housing issues to the well-being of immigrants, it is surprising that housing issues have received so little attention in the immigration literature. Studies such as Junankar *et al.* (1993); Coulson (1999); and Painter, Gabriel, and Myers (2001) provide useful guidance on the way that some of the issues addressed above may be modeled more formally.

Junankar *et al.* (1993) argue that immigrants' demand for housing will be affected largely by:

- Visa entry categories: This institutional detail is related to the immigrants' wealth and likely labor market success, and hence provides information on the kind of housing that immigrants are likely to demand. Refugees, for example, will have few monetary assets upon arrival and, due to their skills not being fully transferable to the U.S. labor market, generally experience relatively inferior labor market outcomes during the first few years in the United States. Economic immigrants, in comparison, often arrive with substantial monetary assets, and enjoy considerable labor market success. Consequently, economic immigrants will be more likely to be owners than renters and will tend to own (or rent) houses of higher value than refugees (or family reunification immigrants).

- Country of birth: Country of birth is known to affect settlement patterns and also is related to the assets that immigrants arrive with, and their expected labor market outcomes. For these reasons, it is expected that country of birth will impact on most dimensions of the housing market. Country of birth is also linked to chain migration effects, which can affect household formation and hence the housing market.

- Demographic composition: The extent to which a given level of immigration affects the demand for housing depends on the extent to which that immigration is associated with the formation of new households. This implies that what is needed is information on the reasons for the migration, specifically, whether it is to join existing households or to form new households. Immigrants to the United States who join an existing household will have a different impact on the housing market than other immigrants. In other words, the demographic composition of a given level of immigration can provide insights on the

number of additional dwellings required per 1,000 immigrants and on the demand for larger rather than smaller units.

- Age profile: The age at arrival of immigrants will have its primary effect on the type of housing that is demanded. It will also affect other dimensions of the housing market, such as tenure choice.

- Marital status: Marital status will impact on the demand for housing through the propensity to form households. Aspects of marriage, such as fertility patterns and inter-marriage with the native born, will also impact on the size of units demanded and the propensity to form new households.

- Assets, income, and employment: These help shape the types of housing that immigrants can afford. To this extent, success in the labor market will impact on "success" in the housing market, where "success" might be defined as owning rather than renting and owning higher valued homes. As duration of residence impacts on income and employment, it will have an indirect influence on the housing market.

Junankar *et al*. (1993) did not undertake any formal modeling of the immigrant demand for housing. Painter, Gabriel, and Myers (2001), however, provide an excellent example of a specific model of immigrant demand for housing. They examine housing tenure choice in the United States using microdata from the 1980 and 1990 censuses. Many of the variables referenced by Junankar *et al.* (1993) are incorporated into the model proposed by Painter *et al*. (2001). Hence Painter *et al*. (2001) relate the "own versus rent" decision to age, marital status, education, household size, income, immigrant status, duration in the United States, and race/ethnicity, among other variables.[36]

There are a number of issues in the modeling of housing tenure choice raised by Painter, Gabriel, and Myers (2001) that are of interest. These are methodological matters that will need to be considered in future research. First, Painter *et al*. (2001) stratify their analyses by race and ethnicity. This flexible specification was consistent with the underlying patterns in the data. It is a practice commonly adopted in labor market research and it has the potential to provide more detailed information on the links between demographic characteristics and tenure choice for the various race/ethnicity groups.

[36] Coulson (1999), who based his analysis of tenure choice on the March 1996 Current Population Survey, included variables for the state-specific ratio of asset prices to annual rents as a measure of the user cost of owned housing, vacancy rates, and citizenship status. For a study which contains a more detailed analysis of mobility and tenure choice decisions, though not for international migration, see Boehm, Herzog, and Schlottmann (1991).

Second, they restrict their sample to recent movers (see also Boehm, Herzog, and Schlottmann, 1991. Painter *et al.* (2001) argue that without this restriction the analysis will focus on the cumulative attainment of homeownership among a sample of existing households. This would provide information on the lagged effects of past choices and not on the current choices that are the appropriate focus of policy. By restricting the study to the tenure decisions of recent movers, the analysis may more closely reflect equilibrium conditions relevant to the current housing market. While the restriction to recent movers used by Painter *et al*. (1991) means they analyze a non-random sample, they are able to accommodate potential sample selection bias using sample selection correction methods along the lines of Heckman (1979). Specifically, Painter *et al*. (2001) estimate a bivariate probit model with sample selectivity, where the first equation in the model is for the probability that the person is a recent mover, and the second equation is for tenure choice.[37]

Third, the Painter *et al*. (2001) study is restricted to Los Angeles County (the Los Angeles-Long Beach PMSA). The analyses presented in the previous two sections, which draw attention to the differences across states, suggest there is considerable merit to this approach. In contrast, recent studies such as Coulson (1999) have been conducted for the entire United States. Where there is a focus on states, however, the examination should extend to all the major immigrant-receiving states, and the findings for the various states should be compared.

Finally, Painter *et al.* (2001) restrict their study to household heads aged 18-64. A separate study of older household heads is warranted, as the types of housing they demand is likely to be quite different from that of the 18–64 year age group.

[37] For critiques of these methods see Stolzenberg and Relles (1997) and Puhani (2000).

4.6 ISSUES REQUIRING RESEARCH

There is a diverse range of issues on immigrant housing where further research is needed. One is the "own versus rent" decision, including changes in immigrants' tenure type with duration of residence. While this type of study is best conducted using longitudinal data, study of cross-sectional data sets will yield valuable information, if the findings from research into labor market outcomes are a guide. The work by Coulson (1999) and Painter, Gabriel, and Myers (2001) provides an excellent starting point. Separate analysis for the major immigrant-receiving states needs to be undertaken (note that Painter, Gabriel, and Myers (2001) restrict their study to Los Angeles), and findings for the various states or MSAs need to be compared and any differences explained. The framework used in the wage discrimination literature, where differences between groups in outcomes are categorized according to whether they are due to characteristics of the groups (*e.g.*, native born versus immigrant) or due to the way that these characteristics affect the outcome variables, could be applied to the study of differences in housing tenure choice across subgroups of the population (see Blinder, 1973; Oaxaca, 1973). This research into tenure choice needs to pay careful attention to the changes in housing tenure with duration of residence. It should also attempt to link the findings with the reasonably vast literature on immigrant assimilation (see, for example, Chiswick,1978).

It may not be practical to conduct separate analyses for the smaller immigrant-receiving states (due to the small numbers of immigrants, particularly if restrictions such as to "recent movers" are imposed on the sample). In this case, account should be taken of differences across states using fixed effects models (that is, dummy variables for each of the states should be entered into the multivariate estimating equations). Fixed effects controls for differences across states in the intercept, but not for differences in the effects of explanatory variables.

Study of immigrants' tenure choice should pay particular attention to the differences across racial and ethnic groups. The immigrants from Asia, who comprise the most recent waves of migration to the United States, should certainly be a focus for such research. The Hispanic immigrants, who tend to be low skilled and have relatively unfavorable labor market outcomes, are another group that should provide a focus for research.

The nexus between labor market outcomes and tenure choice should also be examined. An interesting avenue for research would be to develop a concept for the immigrant housing market analogous to the "immigrant catch-up" concept that has a central place in most discussions of immigrant labor market performance (see Chiswick, 1978). Integrating labor market concepts and models of immigrant assimilation with decisions in the housing market is a promising direction for future research.

Second, the types of homes that immigrants demand can also be analyzed further. The census data contains considerable detail on the characteristics of houses. When combined with the information on home prices (for owner-occupiers), rentals (for renters), and housing characteristics, using a hedonic "price" approach it would be possible to determine the implicit prices that natives and immigrants pay for the various characteristics. Whether these prices differ between immigrants and the native born, in the ownership and in the rental markets, is of interest. The real estate literature provides a number of promising models that could be applied in this type of analysis. Junankar *et al.* (1993) contains an overview (see Appendix 2 of the Junankar *et al.* study).

Third, the study of immigrant housing might be extended to link mortgage and rent payments to household incomes. This type of approach provides insights into so-called "housing stress." Junankar *et al.* (1993), in a study of immigrant housing in Australia, define an income unit in housing stress where its gross weekly income is in the lowest 40 percent of the distribution and the housing unit's housing costs, as a proportion of income, are in the top 30 percent of the distribution. Indices of housing stress can be computed for demographic groups (defined, for example, by birthplace and skill level) and for various locations. They could also be computed for immigrants in the various arrival cohorts to examine the extent of disadvantage incurred by recent arrivals compared to longer term residents.

Fourth, the links between immigration and housing prices and rents could be studied. If time series analyses are performed, care needs to be used to model the supply of housing in response to actual or anticipated price increases, as well as the length of the run under investigation. If cross-sectional analyses are performed, while a low supply elasticity for housing can be assumed in the short run, care needs to be used to model the mobility across areas of both the native born and immigrants in response to the impact of immigration on both the labor market and the housing market, which would, in turn, affect the housing market.

5. IMPLICATIONS FOR THE FUTURE

The analyses presented in chapters 2 to 4 can provide insights into the likely impact into the future of the effects of immigration on the demand for housing in the United States.

It is reasonable to expect that over the next two decades immigration to the United States, including illegal aliens who stay permanently, will likely be over 1 million per year. This high level of immigration will persist as a consequence of the increasing globalization of the economy (Chiswick and Hatton, 2002). The costs of transportation and communication will continue to decline in real dollars, while the westernization or Americanization taking place across the globe provides greater information about the economic opportunities and personal freedoms available in the developed economies and, in particular, the United States. These factors will become even more intense as the spread of access to the Internet lowers even further the cost of information. Moreover, linguistic barriers to immigration to the United States are also declining as the English language spreads as the primary international language. Increasingly English is replacing other second (non-mother tongue) languages in schools around the world, and access to English is increasing with the rise in schooling levels. This is being intensified by English serving as the primary language of the Internet.

The "supply" of immigrants is, of course, not the only determinant of immigration as there is also a "demand" side. As this mild recession passes, one can expect the U.S. economy to return to a high level of productivity growth and low unemployment, although without the "irrational exuberance" of the 1990s. This will provide strong employment opportunities for immigrant workers at both ends of the skill spectrum. This includes the very-low-skilled immigrant workers engaged in place-specific service jobs, as well as those engaged in otherwise footloose manufacturing jobs. It also includes high-skilled workers, particularly in the science and technology areas. The latter immigration is fostered by the attractiveness of the American university system for receiving this training.

The market for immigrants is a regulated market. Yet, three pressures are operative. There is the demand for visas by industry for very-high-skilled and very-low-skilled immigrant labor, augmented by political pressures from labor unions representing low skilled workers who are in danger of shrinking memberships. There is the demand for visas by kinsmen and co-ethnics already in the United States for "family unification." Finally, there is illegal immigration and the periodic amnesties, whether large or small, formal or informal, which regularize the status of those established in this country.

There are, however, counterbalancing forces. One is the emergence of alternative destinations over the past few decades, including Europe and Japan, although both are

demonstrating increasing xenophobia. The other is the rise in incomes in the source countries. Yet, the increase in income is a two-edged sword. Rising incomes in the origin help to narrow the wage gap (a price effect), but they also provide the resources to finance the migration (a wealth effect). As increased wealth provides the resources to finance international migration, the migration may continue even as wage differentials narrow (Chiswick and Hatton, 2002).

These trends provide insights into the likely skill levels and countries of origin of immigrants. Unlike the early post-WWII period, when Europe and Canada provided over four-fifths of the immigrants, the recently observed pattern of over four-fifths of the immigrants coming from Latin America, especially Mexico and Central America, and Asia can be expected to continue. So, too, will be the bifurcation of the skills of immigrants, with a continued growth in the supply of very-low-skilled and very-high-skilled immigrants and a shrinking middle. Because of the larger growth of the low skilled, however, the average skill level of immigrants compared to the native born will decline.

Of the three primary determinants of immigrants' initial location, one will decrease in importance, but the other two will still be important. Ports of entry will be of lesser importance as a result of lower costs of transportation and information. Concentrations of persons from the same origin will still be important, although less so than before for the highest skilled immigrants. Where job opportunities are located will remain important and may, in part, continue to be determined endogenously with where immigrants settle.

These factors imply both a broader dispersion and increased concentration of immigrants. When examined by states, this means that more immigrants (measured in absolute numbers) will be found in states that currently have few immigrants. It also means that the absolute number and share of immigrants in the Big 6 immigrant destinations (California, Texas, Florida, New York, New Jersey, and Illinois) will continue to increase, especially in the west coast and along the southern perimeter. Immigrants will also spill over into the states neighboring the Big 6.

Within states, the process of immigrant concentration in metropolitan areas in contrast to nonmetropolitan areas will intensify. Although the number of immigrants in nonmetropolitan areas will increase, their share of the immigrant population will decrease.

A somewhat more complex pattern will emerge within metropolitan areas. The traditional immigrant concentrations in central cities will face increased competition from the gentrification of central cities by native-born Americans. With persistent low fertility, the continued pattern of childless couples, and the improved health and longevity of the older population, a greater percentage of the adult population will be living independently in

households without children under age 18. This will intensify as the baby boomers become empty nesters.

Commutation times to the central cities from the suburbs will increase as the suburbs spread out and as traffic density increases. The increased commutation time will encourage some firms to leave the central city, and the Internet will encourage more working at home. Moreover, the events of September 11 may encourage a rethinking of the desirability of large concentrations of workers in tall buildings. Yet, these factors are likely to merely mitigate rather than reverse the trend toward concentrations of jobs in central cities.

With the gentrification of the central cities, housing prices can be expected to increase. As a result an increasing proportion of the low-income population, whether native born or foreign born, will gravitate to outlying areas. Immigrant concentrations within metropolitan areas will become more dispersed rather than concentrated in the central cities.

Immigrant families tend to have a larger number of children than the native born as they generally come from higher fertility countries. While their fertility rates after migration tend to decline to the United States "norm," the gap generally does not close. As a result, they can be expected to have larger completed families. The larger dwelling places outside the central city (rooms per dwelling unit) will then house a larger share of the increasing immigrant population.

The move from the central cities will not only increase the size of the dwellings in which immigrants live but also alter the types of structures. The proportion residing in apartments will decrease, while the proportion residing in detached homes will increase.

As was noted above, immigrants' residential patterns are not static. With the passage of time in the United States, both incomes and Americanization increase, and the attraction of the ethnic community becomes less intense. This results in a dispersion with the passage of time away from the ethnic concentration neighborhood, metropolitan area, and state, although the degree of this dispersion varies with country of origin, skill level, and the number of generations since the immigration. The result will be a spreading out of the longer duration and second-generation immigrations.

This spreading out will be more pronounced the greater the propensity for intermarriage among immigrants across racial/ethnic and linguistic lines and intermarriage with the native-born population. Intermarriage rates will be slowed by greater immigrant flows from the same origin but will be enhanced by the effects of an increased proportion of immigrant children leaving home for college.

In summary, in the coming decades we can expect:

- An increasing share of immigrants in the population as a result of continued high levels of immigration.
- Immigrants will become more common in areas of the country that have so far seen few immigrants, but the share of immigrants living in the Big 6 states, and especially in California, Texas, and Florida, will continue to increase. Immigrants will increasingly spill over into states neighboring the Big 6.
- While there will be an increased immigrant presence outside of metropolitan areas, the share of immigrants living within metropolitan areas will increase.
- The geographic concentration of immigrants living within metropolitan areas will change, with a smaller proportion living in the central city and a larger proportion living in suburbs and smaller cities in the metropolitan areas.
- As a result, the size of dwelling places of immigrant families will increase, and there will be a smaller proportion living in apartments and a larger proportion living in detached houses.
- The longer immigrants live in the United States and among those with more generations born in this country, the greater the similarity of their housing patterns to those of the native born.
- There is no reason for the high level of immigration to create a housing crisis in the United States as long as the factors determining their demand for housing are understood and the appropriate planning is undertaken.

REFERENCES

Anstie, Roslyn, Christopher Findlay and Ian Harper, (1983). "The Impact of Inflation and Taxation on Tenure Choice and the Redistributive Effects of Home-Mortgage Interest Rate Regulation", *Economic Record*, Vol. 59, No. 165, pp.105-110.

Arnott, Richard (1987). "Economic Theory and Housing" in Edwin S. Mills, ed. *Handbook of Regional and Urban Economics*, Vol. II, Elsevier Science Publishers, pp. 959-988.

Bartel, Ann P., (1989). "Where Do the New U.S. Immigrants Live?", *Journal of Labor Economics*, Vol. 7, No. 4, October, pp.371-391.

Bartel, Ann P., and M.J. Koch, (1991). "Internal Migration of U.S. Immigrants", in John. M. Abowd and Richard B. Freeman (eds.) *Immigration, Trade and the Labor* Market, Chicago: The University of Chicago Press. pp.121-134.

Blinder, Alan S., (1973). "Wage Discrimination: Reduced Form and Structural Estimates", *Journal of Human Resources*, Vol. 8, pp.436-455.

Boehm, Thomas, P., Henry W. Herzog Jr., and Alan M. Schlottmann (1991). "Intra-Urban Mobility, Migration, and Tenure Choice", *Review of Economics and Statistics*, Vol. 73, No. 1, pp.59-68.

Borjas, George, (1995). "Assimilation and Changes in Cohort Quality Revisited: What Happened to Immigrant Earnings in the 1980s?", *Journal of Labor Economics*, Vol. 13, No. 2, April, pp.201-245.

Card, David, (2001). "Immigrant Inflows, Native Outflows, and the Local Labor Market Impacts of Higher Immigration", *Journal of Labor Economics*, Vol. 19, No. 1, January, pp.22-64.

Case, A. C. and L. F. Katz, (1991). "The Company You Keep: The Effects of Family and Neighborhood on Disadvantaged Youths", Harvard Institute of Economic Research, Discussion Paper Number 1555.

Chiswick, Barry R., (1977). "A Longitudinal Analysis of the Occupational Mobility of Immigrants", in Barbara D. Dennis, (ed.), *Proceedings of the 30th Annual Winter Meetings, Industrial Relations Research Association*, Madison, IRRA, pp. 20-27.

Chiswick, Barry R., (1978). "The Effect of Americanization on the Earnings of Foreign-Born Men", *Journal of Political Economy*, Vol. 86, No. 5, October, pp. 897-922.

Chiswick, Barry R., (1980). *An Analysis of the Economic Progress and Impact of Immigrants*, Department of Labor Monograph, NTIS No. PB80-200454, Washington, DC: National Technical Information Service.

Chiswick, Barry R., (1986). "Is the New Immigration Less Skilled Than the Old?", *Journal of Labor Economics*, Vol. 4, No. 2, April, pp.168-192.

Chiswick, Barry R., (1993). "Review of Immigration and the Work Force: Economic Consequences for the United States and Source Areas", *Journal of Economic Literature*, Vol. 31, No. 2, June, pp. 910-911.

Chiswick, Barry R., Carmel U. Chiswick, and Paul W. Miller, (1985). "Are Immigrants and Natives Perfect Substitutes in Production?", *International Migration Review*, Vol. 19, No. 4, Winter, pp.674-685.

Chiswick, Barry R. and Timothy J. Hatton (2002), "Globalization in Historical Perspective", Department of Economics , University of Illinois at Chicago, photocopied.

Chiswick, Barry R., Yew Liang Lee and Paul W. Miller (2001). "The Determinants of the Geographical Concentration Among Immigrants in Australia", *Australasian Journal of Regional Studies*, Vol. 7, No. 2, pp.125-150.

Chiswick, Barry R. and Paul W. Miller, (1995). "The Endogeneity Between Language and Earnings: An International Analysis", *Journal of Labor Economics*, Vol. 13, No. 2, April, pp.246-288.

Chiswick, Barry R. and Paul W. Miller, (1996). "The Languages of the United States: Who Speaks What and What it Means", *READ Perspectives*, Vol. 3, No. 2, 1996, pp.5-41.

Chiswick, Barry R. and Paul W. Miller, (2002). "Do Enclaves Matter in Immigrant Adjustment?", Department of Economics, The University of Illinois at Chicago, photocopied.

Chiswick, Barry R. and Teresa Sullivan (1995). "The New Immigrants" in Reynolds Farley, *State of the Union*, Vol. 2, *Social Trends*, New York, Russell Sage Foundation, pp. 211-270.

Coulson, N. Edward, (1999). "Why Are Hispanic- and Asian-American Homeownership Rates So Low?: Immigration and Other Factors", *Journal of Urban Economics*, Vol. 45, No. 2, pp. 209-227.

Cutler, David M., Edward L. Glaeser and Jacob L. Vigdor, (1999). "The Rise and Decline of the American Ghetto", *Journal of Political Economy*, Vol. 107, No. 3, June, pp. 455-506.

Duncan, Otis D. and Beverly Duncan, (1955). "A Methodological Analysis of Segregation Indexes", *American Sociological Review*, Vol. 20, No. 2, April, pp.210-217.

Filer, Randell K. (1992). "Immigrant Arrivals and the Migratory Patterns of Native Workers" in George J. Borjas and Richard B. Freeman, eds., *Immigration and the Workforce*, Chicago; University of Chicago Press.

Funkhouser, Edward (2000). "Changes in the Geographic and Location of Residence of Immigrants", *International Migration Review*, Vol. 34, No. 2, Summer, pp. 480-510.

Goddard, R. F., L. H. Sparkes and J. A. Haydon, (1985). "Demographic Consequences of Immigration", in Neville R. Norman and Kathryn F. Meikle (eds) *The Economic Effects of Immigration on Australia*, Melbourne: Committee for Economic Development of Australia, pp.47-161.

Haggett, P., A. D. Cliff and A. Frey, (1977). *Locational Analysis in Human Geography*, 2nd Edition, Vol. 2, London: Edward Arnold.

Heckman, James J., (1979). "Sample Selection Bias as a Specification Error", *Econometrica*, Vol. 47, pp.153-162.

Junankar, P.N., D. Pope, C. Kapuscinski, G. Ma and W. Mudd, (1993). *Recent Immigrants and Housing*, Canberra: Australian Government Publishing Service.

Lazear, Edward P., (1999). "Culture and Language" *Journal of Political Economy*, Vol. 107 No.6 (part 2), December, pp. S95-S126.

Le, Ahn T., (1999). "Empirical Studies of Self Employment", *Journal of Economic Surveys*, Vol. 13, No. 4, pp.381-416.

Lewis, D. E., (1985). "The Sources of Changes in the Occupational Segregation of Australian Women", *Economic Record*, Vol. 61, No. 175, pp.719-736.

Massey, Douglas, (1981). "Dimensions of the New Immigration to the United States and the Prospects for Assimilation", *Annual Review of Sociology*, Vol. 7, pp.57-85.

McManus, Walter, William Gould and Finis Welsh, (1983). "Earnings of Hispanic Men: The Role of English Language Proficiency", *Journal of Labor Economics*, Vol. 1, No. 2, January, pp.101-130.

Miller, Paul W. and Leanne Neo, (2002). "Labour Market Flexibility and Immigrant Adjustment", Department of Economics, The University of Western Australia, photocopied.

Mincer, Jacob (1978). "Family Migration Decisions", *Journal of Political Economy*, Vol. 86, No. 5, October, pp. 749-773.

Oaxaca, Ronald (1973). "Male-Female Wage Differentials in Urban Labor Markets", *International Economic Review*, Vol. 14, pp.693-709.

Olsen, Edgar O, (1987). "The Demand and Supply of Housing Service: A Critical Survey of the Empirical Literature" in Edwin S. Mills, ed. *Handbook of Regional and Urban Economics*, Vol. II, Elsevier Science Publishers, pp. 989-1022.

Painter, Gary, Stuart Gabriel and Dowell Myers, (2001). "Race, Immigrant Status, and Housing Tenure Choice", *Journal of Urban Economics*, Vol. 49, No. 1, pp.150-167.

Puhani, P.A., (2000). "The Heckman Correction fr Sample Selection and its Critique", *Journal of Economic Surveys*, Vol. 14, pp.53-68.

Robinson, Chris and Nigel Tomes, (1982). "Self Selection and Interprovincial Migration", *Canadian Journal of Economics*, Vol.15, No. 3, pp.475-502.

Rogers, Andrei and Sabine Henning, (1999). "The Internal Migration Patterns of the Foreign-Born and Native-Born Populations in the United States: 1975-80 and 1985-90", *International Migration Review*, Vol. 33, No. 2, Summer, pp. 403-429.

Sheppard, Stephen (1999). "Hedonic Analysis of Housing Markets," in E.S. Mills and P. Cheshire, eds. *Handbook of Regional and Urban Economics*, Elsevier Science Publishers, pp. 1595-1635.

Sjaastad, Larry A., (1962). "The Costs and Returns of Human Capital", *Journal of Political Economy, Supplement*, Vol. 70, Part II, *Investment in Human Beings*, October, pp. S80-S92.

Stolzenberg, R.M., and Relles, D.A., (1997). "Tools for Intuition about Sample Selection Bias and its Correction", *American Sociological Review*, Vol. 62, pp.493-507.

Veltman, C., (1983). *Language Shift in the United States*, Berlin: Moulton Publishers.

Williams, Ross A., (1984). "An Australian Housing Model", *The Economic Record*, Vol. 60, No. 169, pp.143-155.

Zavodny, Madeline (1999). "Determinants of Recent Immigrants' Locational Choices", *International Migration Review*, Vol. 33, No. 4, Winter, pp. 1014-1030.

Projections of U.S. Households by Race/Hispanic Origin, Age, Family Type, and Tenure to 2020: A Sensitivity Analysis

George S. Masnick
Zhu Xiao Di

EXECUTIVE SUMMARY

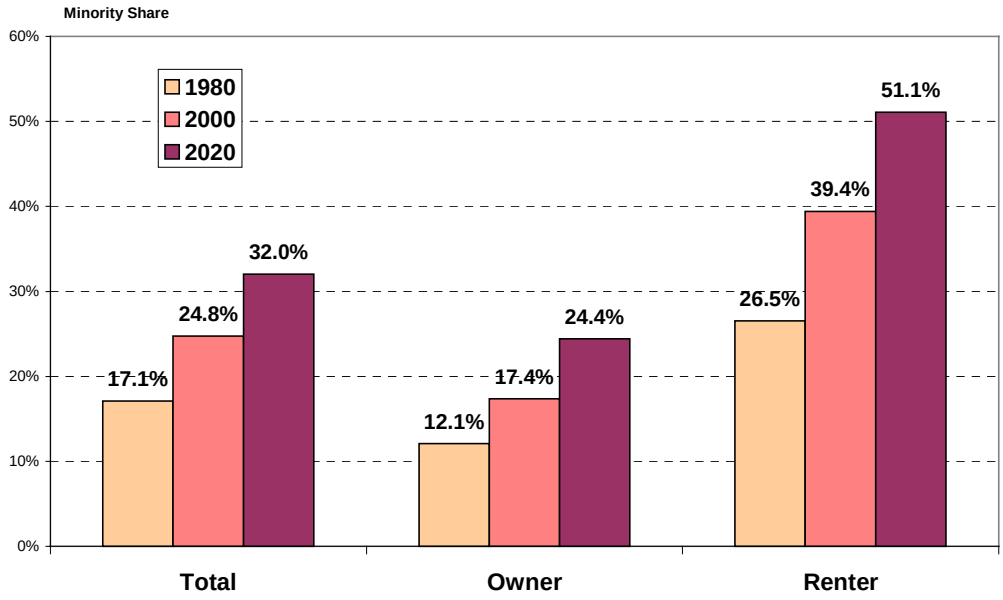
Over the past several decades the United States has experienced significant demographic change in household composition by age, family structure, and racial and ethnic makeup. During the past 8 years, homeownership rates across all household categories have increased dramatically. Looking toward the future, we would like to know the number of occupied housing units and what the composition of the nation's households will be, and how these households will be distributed between owners and renters.

For over two decades, researchers at Harvard University's Joint Center for Housing Studies have been producing household projections that have been used by public and private institutions, organizations, and businesses to assist in their long-range policy and planning activities. The Joint Center projection model tracks and extrapolates recent cohort trends in household formation by age and family type. These national projections have predicted actual aggregate household growth quite accurately for the past 20 years. Recently, the projections have been done separately for four race/Hispanic origin groups (Hispanic, non-Hispanic white, black, and Asian/other), making them more useful to inform a wider range of policy and planning decisions. The following paper provides a discussion of this latest round of household and homeownership projections.

Of particular interest is the ascendancy of minority household growth and homeownership that is currently taking place ("minority" defined as everyone other than non-Hispanic white). In 1980, minorities headed only 17 percent of all households, but between 1996 and 2001 they accounted for 58 percent of total household growth. In 2000, approximately a

quarter of all households were minorities, and by 2020 this figure should approach one-third. Minorities constitute about 17 percent of all owners today, but they should reflect almost a quarter of all owners by 2020. Minorities are projected to exceed 50 percent of all renters by 2020, up from 40 percent today (Figure 1).

Figure 1 Minority Shares of Households Increasing Rapidly



Source: Joint Center for Housing Studies of Harvard University tabulations of 1980 Census 1% PUMS files and Joint Center Middle Series household projections by race/Hispanic origin and tenure.

These differences between white and minority household growth are due to three factors: 1) differences in the age composition of white and minority populations and households; 2) the disproportionate influence of foreign immigration on minority population and household growth, and; 3) differences between white and minority rates of household formation and homeownership.

Non-Hispanic white household growth has gradually begun to slow because of their older age structures. Much more so than their minority counterparts, any gains in either renter or owner households by younger whites are being increasingly offset by household losses as white

cohorts age into the older age groups. This aging pattern will gradually accelerate over the next 20 years as the baby boom generation approaches retirement. Minorities, with their younger age structures, have fewer household losses from older cohorts that offset the new household formations contributed by young adults.

The high levels of minority foreign immigration during the late 1980s and throughout the 1990s has boosted minority household formation and set the stage for further minority household gains in the decades ahead. While the foreign born have lower than average headship and homeownership rates when they arrive in this country, they increase their independent household formation and homeownership dramatically as their duration of residence in the United States increases. Their higher than average fertility levels also guarantee that additional minority household formation is in the pipeline for the future. In addition, the native-born children of foreign immigrants form households and purchase homes at rates that equal or exceed those of the native born with native parents.

While the consequences of changing age structures are inevitable, the other two factors that have buoyed household growth and homeownership recently, namely high levels of foreign immigration and favorable macro-economic and housing market conditions, are not certain to continue unabated well into the future. Our household projections therefore reflect a somewhat conservative set of assumptions that bear on these variables. The Census Bureau's latest middle series population projections that we use to drive household formations assume that annual levels of net foreign immigration will fall between 2002 and 2010 from about 1 million per year to about 750,000 and remain near that level until 2020. Furthermore, we assume that future cohort trends in homeownership will back off from the very strong increases recorded in the past decade. We operationalize this assumption by making future ownership trends follow a schedule that averages the high-flying 1993–98 trends with the slower increases that took place between 1990 and 1995.

In addition to the Census Bureau middle series population projections that assume declining net foreign immigration, the Bureau released a set of "zero immigration" population projections that allows us to calculate the shares of our projected household growth due to future

projected immigration. Despite the assumption of a dramatic decline in Hispanic immigration (from about 450,000 annually down to 250,000 by 2010) Hispanic immigrants still contribute the largest number of projected immigrant households of the four race/Hispanic origin groups we consider. Over 2.6 million net new households will be formed by Hispanic immigrants arriving during the next two decades. This increase is slightly more than one-third of all projected future Hispanic household growth. The post-1998 immigrant component of the projected Hispanic household growth is about 40 percent of all projected household growth due to all post-1998 immigrants.

The second highest level of projected household growth from future immigrants is for the Asian/other category (at about 70 percent of the Hispanic level). Unlike Hispanics, however, the majority of the total projected Asian/other household growth is due to projected future immigrants. Whereas a little over one-third of the Hispanic projected household growth is immigrant driven, about two-thirds of the Asian/other growth is.

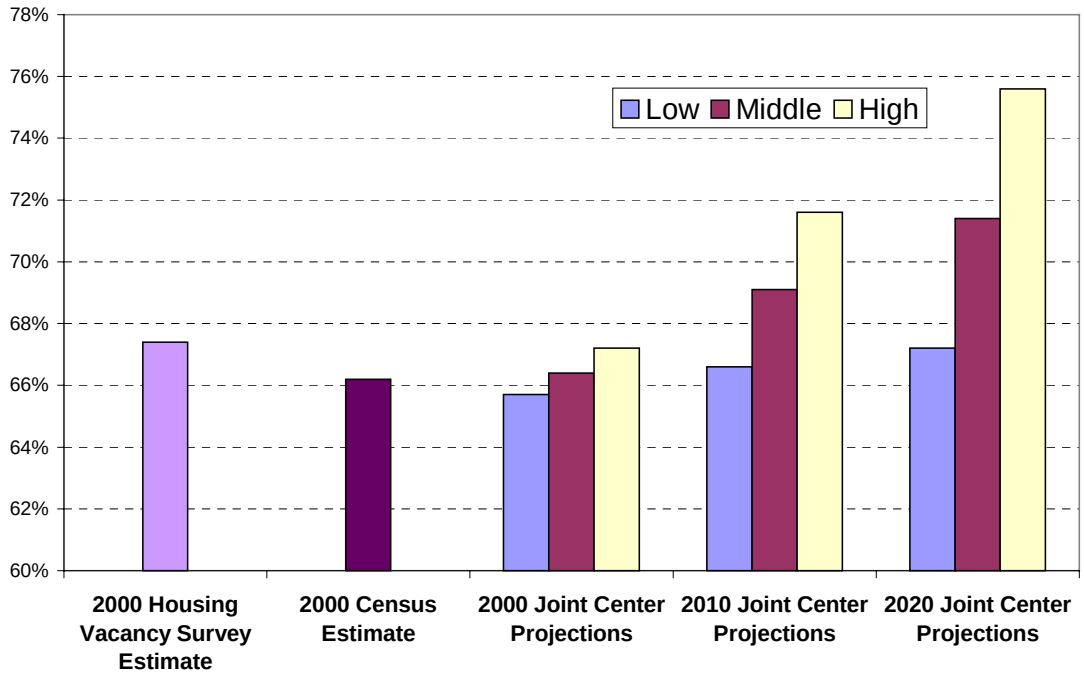
The aging of the population already resident at the start of the projection period is primarily what is driving both non-Hispanic white and non-Hispanic black future household growth. For whites, there are over five times as many net gains in households due to aging as due to projected new net immigration, and for blacks the ratio averages about 4 to 1 over the next two decades.

Overall, when combining the contributions of all four race/Hispanic origin groups, our baseline projections result in a gain of 23.8 million net new households between 2000 and 2020, 6.9 million of which are due to projected immigration. This means that 29 percent of future projected household growth will be immigrant driven. If the number of future immigrants fails to decline as the Census Bureau predicts, but instead remains at current levels of about 1 million per year, about 25.4 million net new households will be added between 2000 and 2020, of which 8.5 million (33 percent) will be headed by newly arrived immigrants. Conversely, if future immigration actually falls to 500,000 by 2010 instead of the 750,000 we assume in our baseline projections, net household growth will be 22.2 million, with 5.3 million of this (24 percent) due to post-1998 immigrants. Although future immigration levels are clearly important to future

household growth, no matter what the immigration scenario, the range of likely uncertainty we have just considered would add or subtract only 7 percent to the 23.8 million baseline projected total household growth over the next two decades. Most of our future household growth over the next two decades will come from people already resident in the United States.

Unlike our projections of household growth, in which we have enough confidence to measure the effects of alternative immigration scenarios with modest precision, homeownership projections contain a lot more uncertainty. Indeed, the level of the aggregate national homeownership rate in the year 2000 is not known with certainty. The Housing Vacancy Survey (HVS) annual estimate places the 2000 homeownership rate at 67.4 percent, while the 2000 Census estimate is 66.2 percent. Even allowing for the fact that the HVS estimate is for July 1 and the Census estimate is for April 1, this gap between these two estimates is considerable. Projected ownership rates are even more uncertain. Our middle series ownership projection is the average of a high series based on 1993–98 cohort trends in homeownership, a period when

Figure 2 **Homeownership Rate Estimates and Projections**



Source: U.S. Bureau of the Census Housing Vacancy Survey Historical Table 15; 2000 Census Table DP-1 and Joint Center for Housing Studies of Harvard University projections.

rates increased dramatically for both family and nonfamily households across all four race/Hispanic origin groups, and a low series based on 1990–95 trends when homeownership rates rose only modestly (Figure 2). While it is sensible to argue that innovations in mortgage lending and lender policies that make a special effort to reach out to groups of renters that have been historically underserved by the mortgage market will continue to boost homeownership in the future, it is also practical to argue that the extremely favorable employment conditions, real income growth and low interest rates that prevailed during the 1993–98 period are unlikely to continue indefinitely. That is why the middle series homeownership projections for each race/Hispanic origin group are offered as the more likely future scenarios. The widening gap between the low and high projected homeownership series the further into the future one looks should be taken as a measure of uncertainty of the middle series estimates. This uncertainty represented in Figure 2 for the aggregate population is even more pronounced for the three minority groups examined separately.

The three different ownership scenarios can be translated into the net number of projected owner and renter households expected to be added during the first two decades of the 21st century. Under the middle series, the number of net renter households will increase only modestly (a total of about 1.6 million between 2000 and 2020), and owner household growth will be 22.2 million, or 93 percent of the total projected 23.8 million household increase. The high series will imply the continued net losses of renter households that the HVS has estimated to be taking place in recent years as more and more households transition from renter to owner. The low ownership scenario will allow renter households to be maintained in greater numbers, but still almost three times as many owner households as renter households will be formed (Table 1).

Table 1 **Owner and Renter Net Household Growth Under Three Homeownership Trend Scenarios: 2000 to 2020**

	Low	Middle	High
Owner	17,661,557	22,238,466	28,815,376
Renter	6,141,526	1,564,616	-3,021,293
Total	23,803,083	23,803,083	23,803,083

Source: Joint Center for Housing Studies projections. Low = 1990-95 cohort ownership rate trends. High = 1993-98 cohort ownership rate trends. Middle = average of High and Low.

The influence of alternative immigration scenarios on these projected numbers of owner and renter households is difficult to evaluate in the context of the general uncertainty about future homeownership rate trends underlying our baseline household projections. A thorough consideration of the immigrant influence would require the modeling of the interactions between alternative immigration assumptions and alternative homeownership trends as determined by economic and housing market conditions. Because nativity data have only been collected by the Current Population Survey during the extremely favorable post-1994 housing boom, such an analysis can not easily be done.

Part of the large increases in owner-occupied housing we have experienced in recent years has been due to immigrant pressure on both the owner and renter housing stock. Hypothetically, a much lower level of future immigration than assumed in our baseline projections might reduce the pressure on the rental stock, which in turn might reduce homeownership rates if rents begin to soften. On the other hand, reducing the number of immigrants would tend to raise aggregate homeownership rates as the composition of the population growth shifts toward the higher ownership native born and longer duration immigrant residents. Very low immigration might be a consequence of a poorly performing economy or even lead to poor performance in sectors where immigrant labor is paramount, including the construction trades. How to weigh the immigrant influence on homeownership rates independently of the economic and housing market influences is beyond the scope of this paper.

Overview

This paper is divided into three sections. The first describes our projection model and presents results from the latest round of household projections produced at the Joint Center for Housing Studies. These projections go out to 2020 and are available by age of household head, family type, and housing tenure for non-Hispanic whites and three different broad minority groups. Our analysis allows us to provide a clearer understanding of why the minority share of household growth has been ascendant in recent years and why it is expected to continue so in the decades ahead.

Uncertainty about future trends in immigration policy and its effect on future levels of international migration following September 11 has caused increased interest in estimating the role of immigration in future household growth. In the second section we explore the contribution of future immigration to our projections. We attempt to further clarify the potential immigrant contribution to projected household growth by considering the likely range of growth that we might expect under alternative immigration assumptions that are both higher and lower than those that are already part of our baseline household projections.

In the third section we discuss alternative projected homeownership rates for the white and minority subgroups and calculate the consequences for the projected numbers of owner and renter households. We underscore the uncertainty that exists in accurately forecasting future homeownership levels.

The household projections we discuss below have been produced for four separate race/Hispanic origin groups: Hispanics, non-Hispanic whites, non-Hispanic blacks, and a residual category we call non-Hispanic Asians/others. This partition is favored over an alternative decomposition based on race alone (Hispanic is not a racial category, and Hispanics can be of any race) because Hispanics in general, and immigrant Hispanics in particular, have distinct patterns of household formation and homeownership rates compared to other groups. The importance of Hispanic/non-Hispanic differences will become apparent as our discussion proceeds.

Section I - The Baseline Household Projections

The Model

Beginning in the late 1970s, researchers at Harvard's Joint Center for Housing Studies (then named the Joint Center for Urban Studies) began to develop a cohort model of long-term household and housing projections for the United States under HUD sponsorship (Pitkin and Masnick, 1980; Pitkin and Masnick, 1981a and 1981b; Pitkin and Masnick 1983; Apgar, Brown, Masnick, and Pitkin, 1985; Pitkin and Masnick, 1986). In the late 1980s, the Joint Center began using the Potential Housing Demand (PHD) projection model developed around Joint Center methodology by the Canada Mortgage and Housing Corporation (CMHC) (Masnick, 1989a, 1989b, and 1989c). In the early 1990s, in collaboration with Roger Lewis at CMHC, Joint Center research staff suggested further modifications to the CMHC projection model to fully incorporate the Joint Center cohort methodology (Masnick, Apgar, and Brown 1992). This revamped PHD model has been since used to produce several rounds of Joint Center household projections (Masnick and McArdle, 1993; Masnick and McArdle, 1994; Masnick, McArdle, and Apgar, 1996). These cohort projections are widely used by housing analysts throughout the United States. The PHD model not only can produce a chosen "baseline" set of household projections but also allows one to readily test the sensitivity of these projections to the various alternative input assumptions. The most recent round of published projections was, for the first time, done separately by race/Hispanic origin to the year 2020 (Masnick and Di, 2000). In late 2001, housing tenure was added as a variable in these projections (see Appendices A and B; projections in full detail by age of household head available upon request).

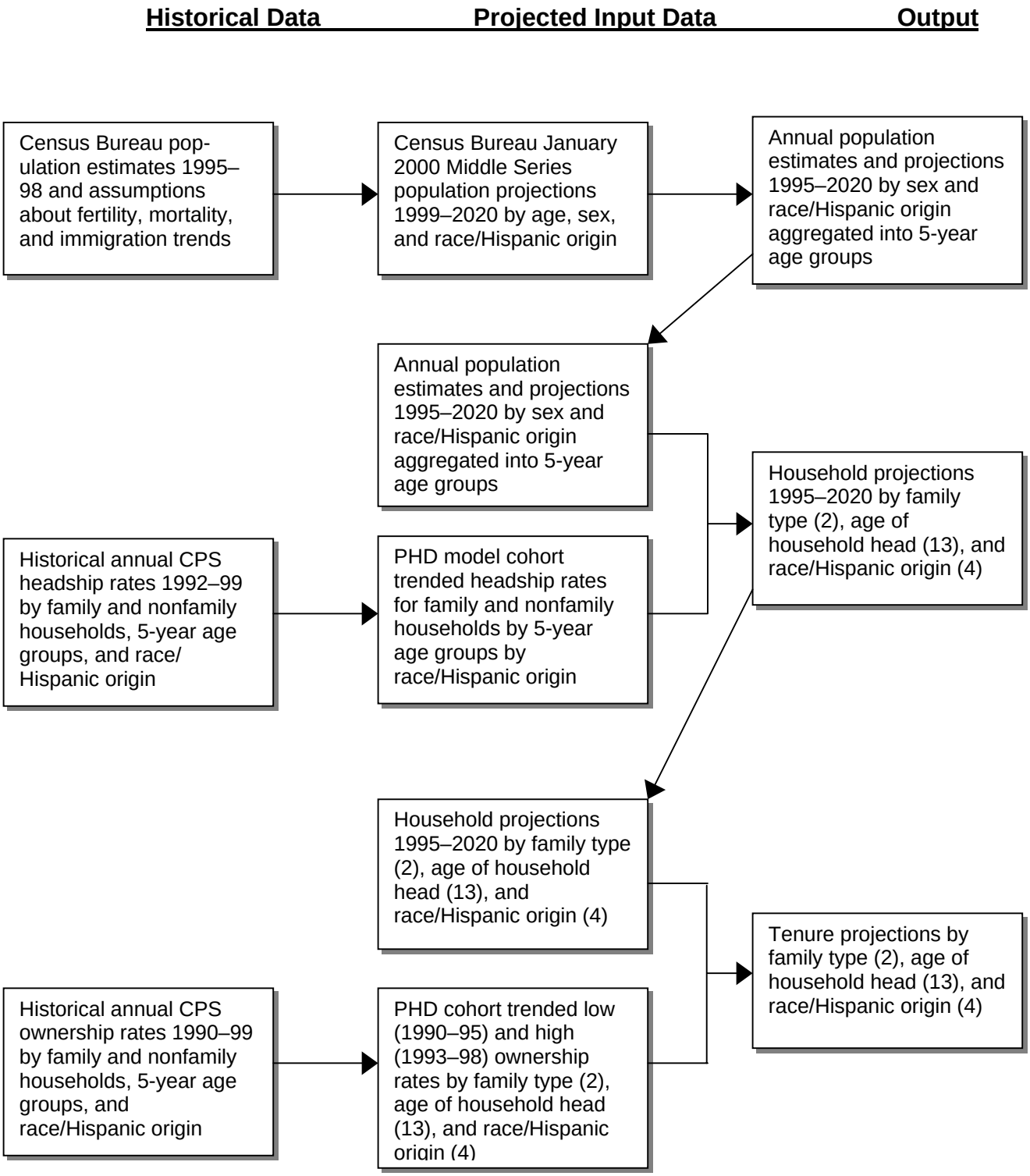
The PHD projection model accepts as input annual population estimates and projections by sex aggregated into 5-year age groups. Input to the most recent Joint Center household projections were the latest Census Bureau population projections (U.S. Bureau of the Census, 2000a and 2000b). Also input into our projection model were historical data on headship and homeownership rates by age and family type from 1990 to 1999 as measured in the Current Population Survey March supplement. The model uses these historical data to project

household formation and homeownership rates by extrapolating observed cohort trends into the future.

The headship and homeownership rates used in the PHD household and tenure submodels are for thirteen 5-year age groups (15–19, 20–24,…75+). In order to achieve maximum accuracy in calculating cohort trends, age-specific rates are averaged over several years and smoothed before being input into the PHD model (Masnick and Di, 2000). For example, the 1995 starting rates are obtained as the average of the 1991 through 1999 March CPS data. The cohort trends that are applied to starting levels are calculated within the PHD model based on trends over the 1993 to 1998 period, which are in turn derived from inputs averaging and smoothing 1992–94 CPS data for the 1993 points and 1997–99 data for the 1998 observations. The model is run separately for each of the four race/Hispanic origin groups. Output from the household submodel includes the number of family and nonfamily households by 5-year age groups projected every 5 years from 2000 to 2020.

These household projections can then serve as input to the PHD submodel that allocates the projected households between owners and renters based on cohort trended ownership rates. 1993–98 represents a period of very large increases in homeownership for cohorts, and this timeframe is used to produce a "high" projected ownership series. A set of "low" cohort changes is calculated from data input for the 1990–95 period. The "middle" series ownership projection is simply the average of the low and high series. The various inputs and outputs of the PHD model are represented in the flowchart on the following page. A further discussion of the PHD model can be found in Masnick and McArdle, 1993; Masnick, McArdle, and Apgar 1996; and Masnick and Di, 2000.

Potential Housing Demand (PHD) Projection Model



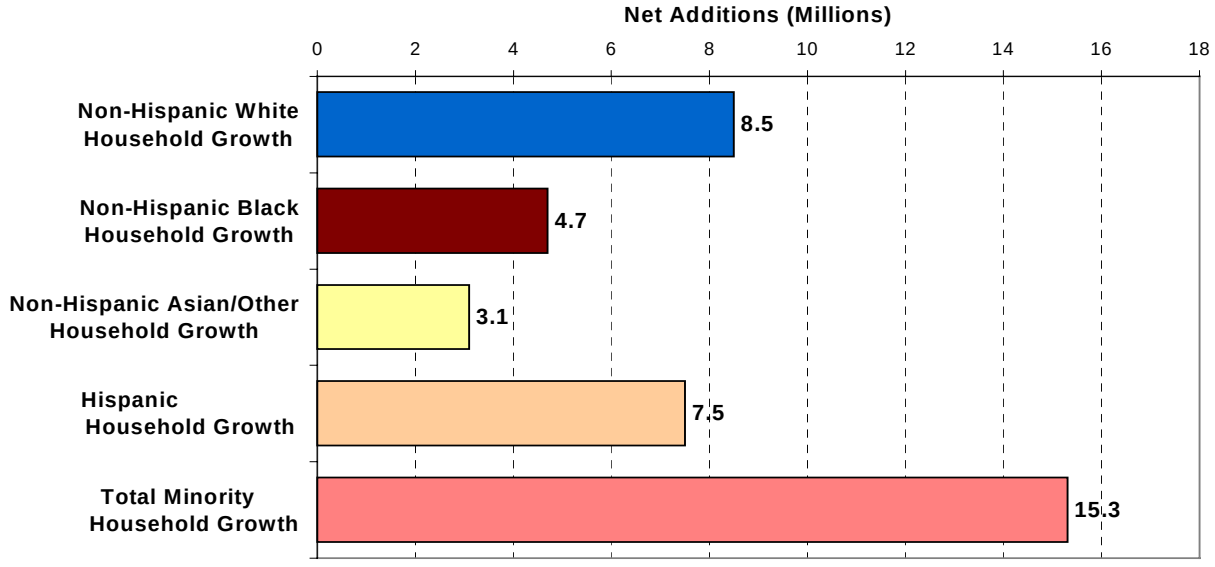
Note: A further discussion of the PHD model and its cohort trended projections can be found in Masnick and McArdle (1993), Masnick, McArdle, and Apgar (1996); and Masnick and Di (2000).

The Projections

Between 2000 and 2020, the three minority sub-groups combined are expected to add about 15.3 million net households—almost twice the 8.5 million non-Hispanic white net additions that are projected over the two decades (Figure 3). Projected non-Hispanic black and Asian/other gains are 4.7 and 3.1 million, respectively, and combined they are slightly more than the Hispanic contribution of 7.5 million. Although non-Hispanic white household additions will outstrip any of the three minority categories alone, the projected white household gains over the next two decades are just a million above the Hispanic projections.

Figure 3

Projected Household Growth 2000-2020 by Race/Hispanic Origin



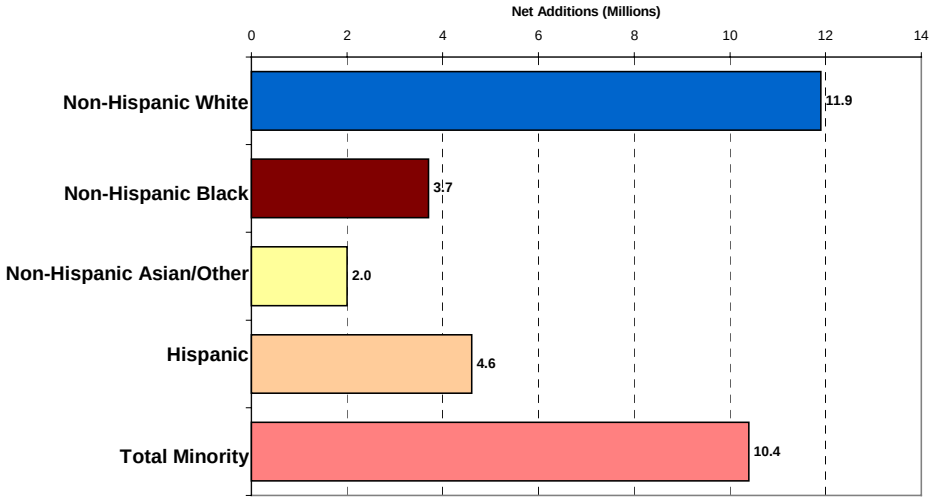
Source: Masnick and Di (2000).

When looking at projected owner and renter households separately, however, an entirely different pattern is evident. Projected non-Hispanic white owner growth will outstrip total minority growth over the next two decades by about 1.5 million households.

Projected renter growth, on the other hand, comes exclusively from minorities, while non-Hispanic white renters are projected to have a net loss of almost 3.5 million households over the next 20 years (Figures 4a and 4b). It is these white renter losses, representing a strengthening of the pattern that emerged during the late 1990s, that explains why the projected gains in total households favor minorities.

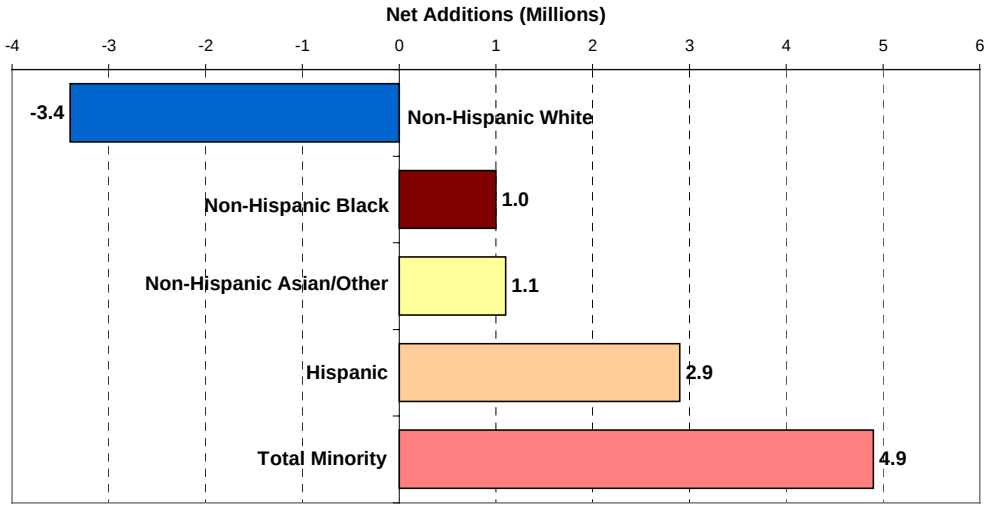
Figure 4a

Projected Owner Growth 2000-2020 by Race/Hispanic Origin



Source: Masnick and Di (2000) . Middle Series ownership assumptions.

Figure 4b Projected Renter Growth 2000-2020 by Race/Hispanic Origin

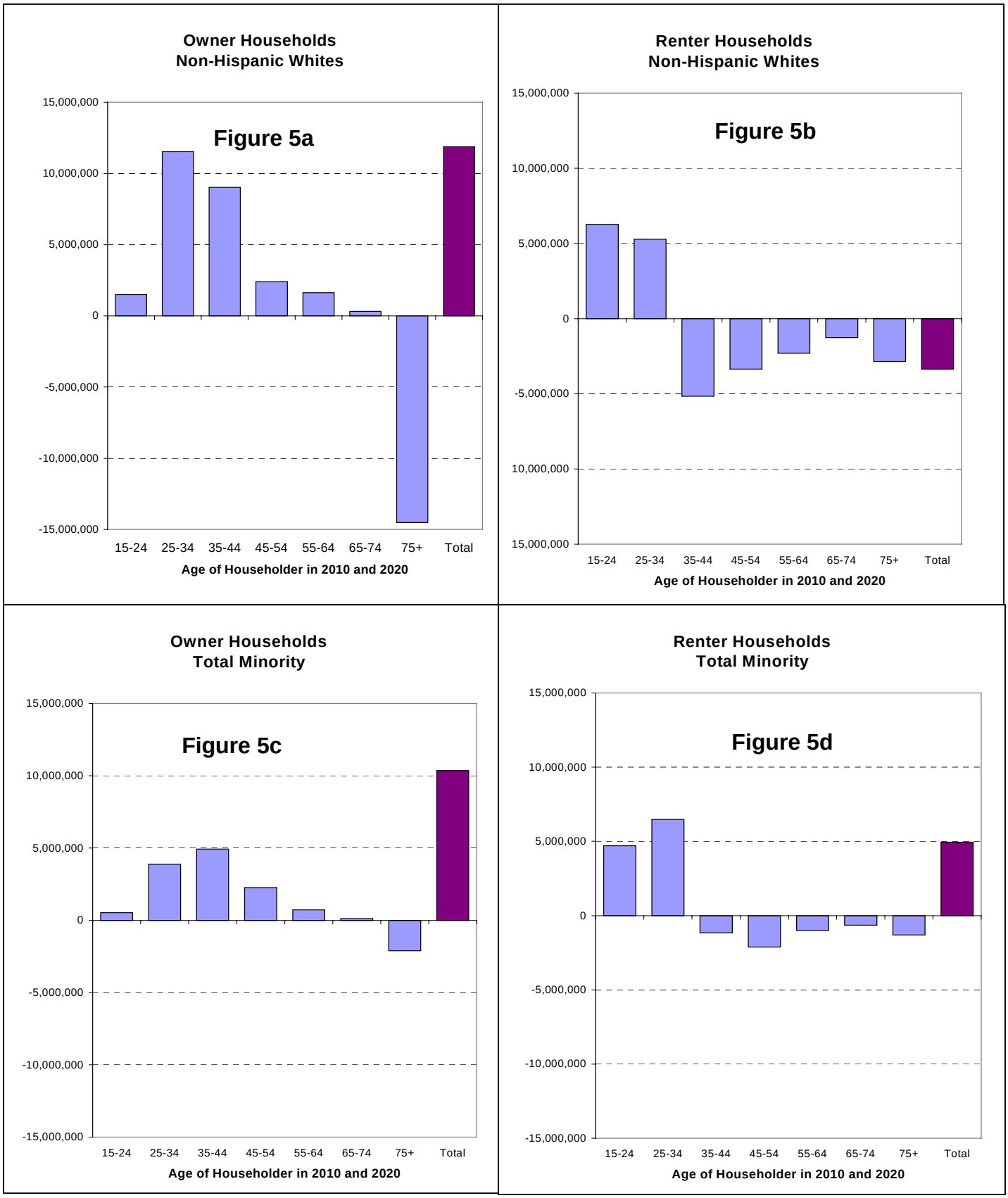


Source: Masnick and Di (2000) Middle Series ownership assumptions.

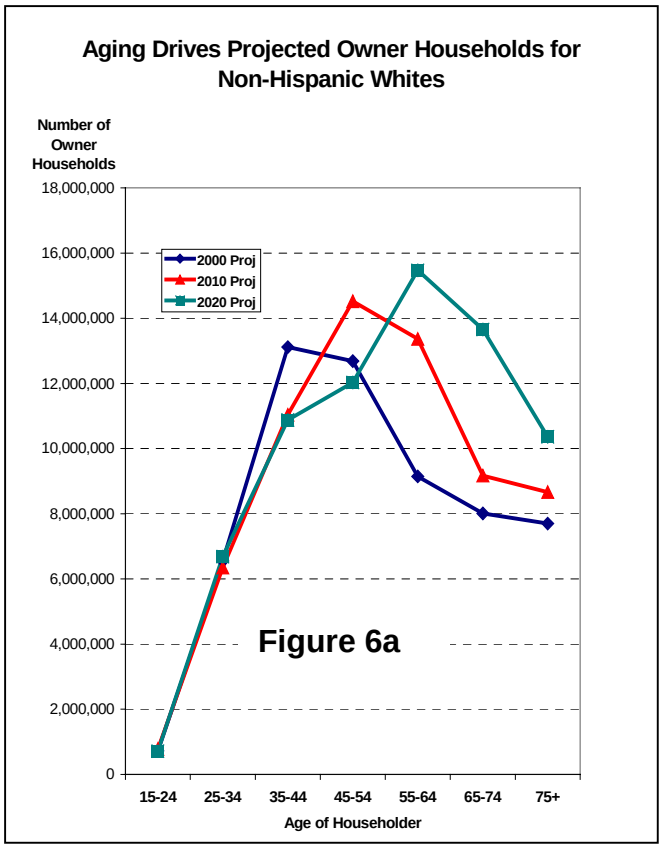
Two fundamental factors help explain these differences between white and minority net gains in owner and renter households. First, whites have an older age structure and will suffer many more household losses as households headed by those in the older age cohorts dissolve (Figures 5a and 5b). It is just a simple fact that among households headed by the elderly, most are white and most are owners, and most of these white elderly headed households will dissolve over the next 20 years. These losses will offset the gains made by the younger cohorts of whites. Minorities, with their younger age structures have fewer households (both owner and renter) headed by older persons, and consequently the gains by the younger cohorts are cumulated without as many offsetting losses (Figures 5c and 5d). Second, minorities have different patterns of household formation and homeownership. The slower movement of minorities into homeownership in young adulthood compared to whites sustains minority renter representation. Also, minorities are still forming some renter households when they are at age 35–44, partially offsetting the renter to owner transitions that typically take place in this age group, resulting in less of a net loss of renter households compared to whites (Masnick, 1998 and Masnick, 2002).

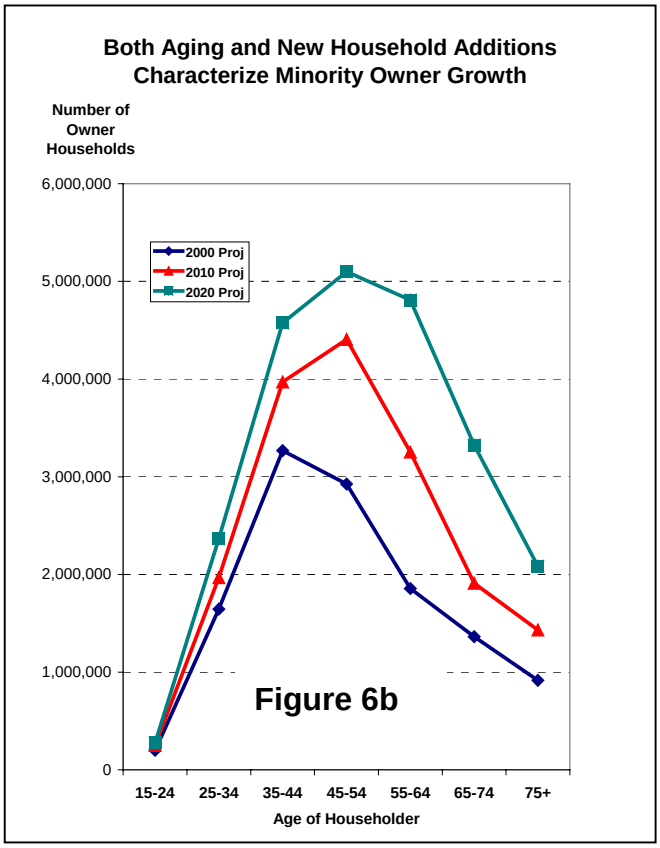
In summary, it is primarily the aging of the population that will drive future non-Hispanic white household growth. As demonstrated in Figure 6a, the projected number of white owners by age of household head in 2010 and 2020 show basically a horizontal shift toward the older ages. In contrast, Figure 6b shows that the shift for minority owners is both horizontal and vertical, reflecting the fact that minority household growth is coming from an expanded base of younger cohorts, as well as from aging.

Figure 5 Cohort Contributions to Owner and Renter Household Growth: 2000-2020



Immigration and the aging of the children of both immigrants and native-born minorities are both responsible for the expanding cohorts of young adults. The much larger share of households that are elderly whites is also evident in Figure 6. Overall, minority headed households are expected to increase from about one-quarter of all households to about one-third over the next 20 years.





Section II - Understanding the Role of Immigration in Projected Household Growth

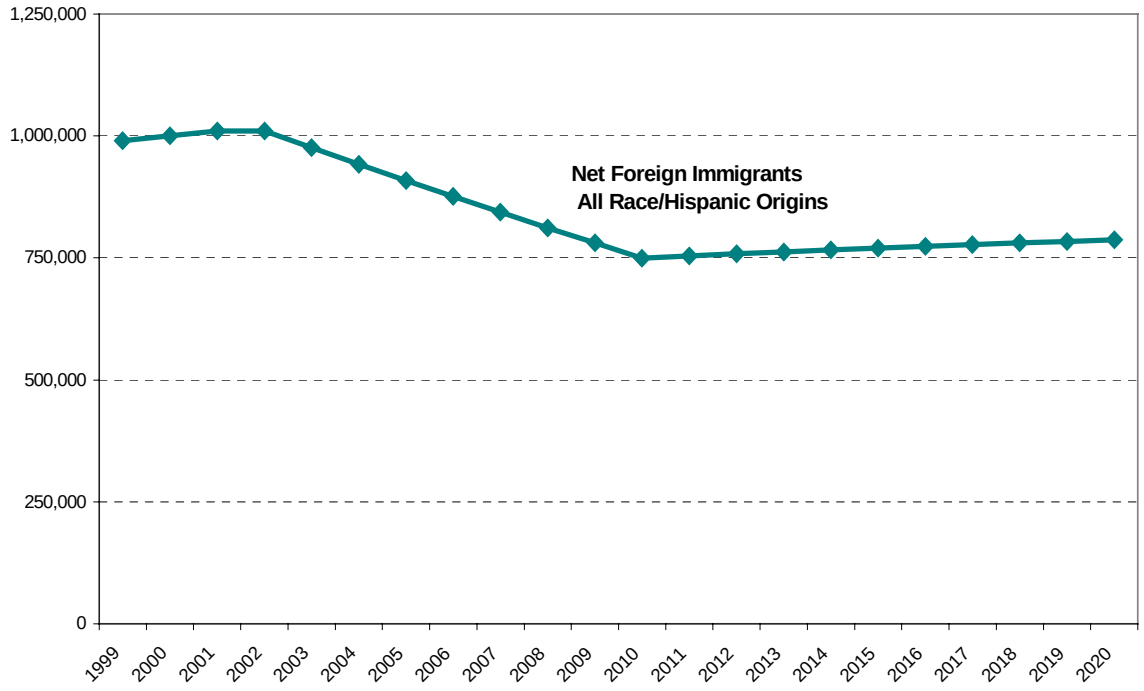
Devising a Sensitivity Analysis Strategy

The Census Bureau's population projections, which are important inputs to our household projection model, are based upon certain assumptions about future immigration within each of the four race/Hispanic origin categories. A major assumption is that we will have less immigration in the decades ahead than we experienced in the 1990s, particularly of Hispanics. In addition, the Census Bureau also has produced a set of population projections assuming zero future foreign immigration. We use these zero-immigration population projections to explore the contribution that future immigrants are expected to make to overall future household growth. Our results show that, even with an assumption of reduced immigration, immigrants and their offspring will continue to make a significant contribution to overall future household growth.

The Census Bureau's Underlying Immigration Assumptions

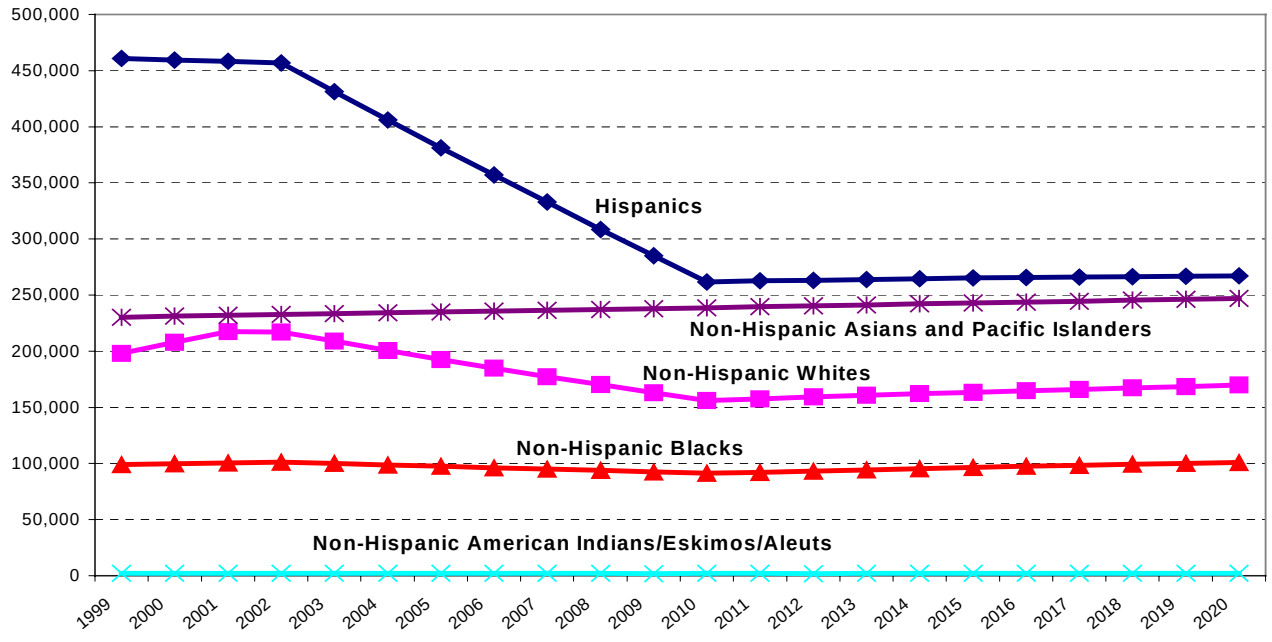
The Census Bureau middle series population projections assume that annual net foreign immigration is at about 1 million until 2002, after which the level drops steadily to about 750,000 annually in 2010 and remains slightly above 750,000 until 2020 (Figure 7). This assumption of declining immigration was made over 2 years prior to September 11, so it has nothing to do with post-September 11 political or national security thinking. Rather, it was based on a recognition that the rapid increase in the level of immigration during the 1990s occurred because millions of people legalized in 1987 and 1988 under the Immigration Reform and Control Act (IRCA) were becoming U.S. citizens. As they became citizens, they could sponsor immediate relatives to immigrate to the United States without being subject to quotas. The Bureau demographers deemed this reunification flow to be transitory, as potential reunification is exhausted (U.S. Census Bureau, 2000b).

Figure 7 **Census Bureau January 2000 Middle Series Population Projections**
Net Foreign Immigration Assumption



Source: U.S. Bureau of the Census. 2000a. Projections of the Resident Population by Race, Hispanic Origin, and Nativity: 1999 to 2100. Available on the Census Bureau site of the Worldwide Web. http://www.census.gov/population/www/projections/natproj.html.

Figure 8 **Projected Immigration by Race/Hispanic Origin**
Census Bureau January 2000 Population Projections



Source: U.S. Bureau of the Census. 2000a. Projections of the Resident Population by Race, Hispanic Origin, and Nativity: 1999 to 2100. Available on the Census Bureau site of the Worldwide Web. http://www.census.gov/population/www/projections/natproj.html.

As seen in Figure 8, the projected declines in immigration were mainly allocated to Hispanic immigration, where net immigration is projected to fall in just 8 years from just over 450,000 annually to about 250,000 per year in 2010 (a 45-percent decline). Non-Hispanic white levels were also assumed to decline from almost 220,000 to 156,000 annually (a 28-percent decline) as reunification of immigrants from former Soviet-bloc countries ran its course. Non-Hispanic black and non-Hispanic Asian and Pacific Islander annual net immigration were projected to remain roughly constant for the next two decades at 100,000 and 230,000, respectively.

Even though the Census Bureau's population projections are based on an assumption of declining Hispanic immigration over the next 8 years, the cumulative impact of Hispanic immigration on population growth is still substantial. The projected Hispanic immigration is concentrated among young adults. As time moves forward, the cohort sizes both increase and

shift to the right toward older age groups (Figure 9a). In 2005, it will be the age group of 20–24-year-olds that has the largest number of immigrants who arrived after 1998, but by 2020, it will be the age group of 30–34-year-olds that has the largest number of adult post-1998 immigrants. However, by then the largest number in any age group is the 0–4-year-olds, who are the children of post-1998 immigrants, a modality that was already established even by 2010. These youngsters are mostly born in this country and are the legacy of post-1998 immigrants that will continue to have a major impact on household formation and housing consumption beyond 2020.

Figure 9a

Cumulative Post-1998 Immigrants Plus Immigrant Natural Increase
Hispanic Middle Series Population Projections

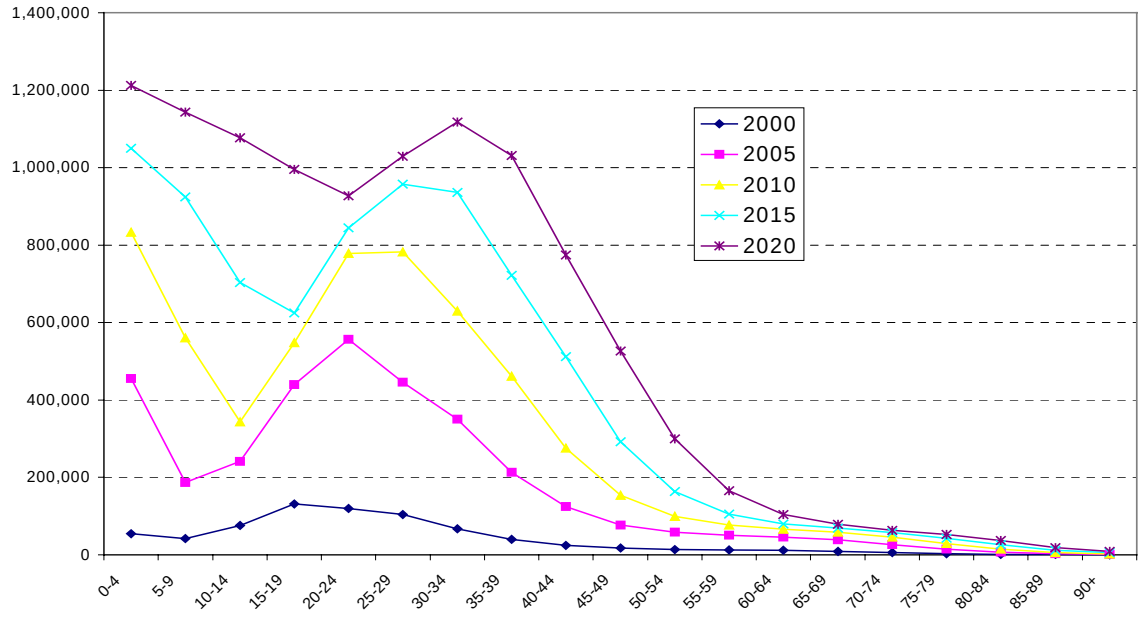
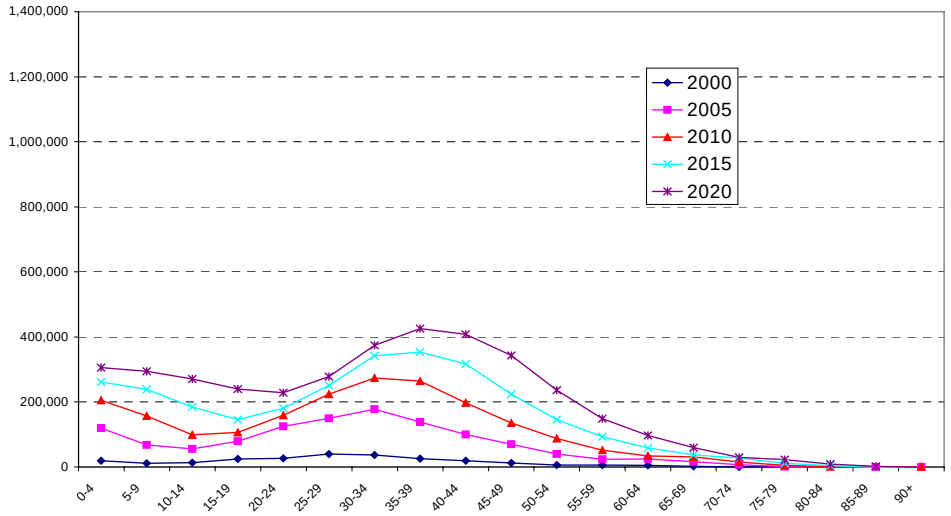


Figure 9b shows the projected cumulative age distributions of non-Hispanic white immigrants and their offspring. One can see that this group of immigrants are a little older than Hispanics when they arrive (late 20s and early 30s), so that by 2020 the modal age category is 35–39, with there being as many 50–54 year olds as 20–24 year olds at that date. One can also see that the children of these immigrants are smaller in number relative to the number of potential parents, because of lower non-Hispanic white fertility, and consequently these offspring

will have less of a relative impact on long-term household growth than the children of Hispanic immigrants.

Figure 9b

Cumulative Post-1998 Immigrants Plus Immigrant Natural Increase
Non-Hispanic White Middle Series Population Projections



Figures 9c and 9d present similar information on the cumulative age distributions of projected non-Hispanic black and non-Hispanic Asian/other post-1998 immigrants and their offspring. Their age patterns more resemble that of non-Hispanic whites, with their older age structures and lower fertility, compared to the Hispanic patterns.

Figure 9c Cumulative Post-1998 Immigrants Plus Immigrant Natural Increase
Non-Hispanic Black Middle Series Population Projections

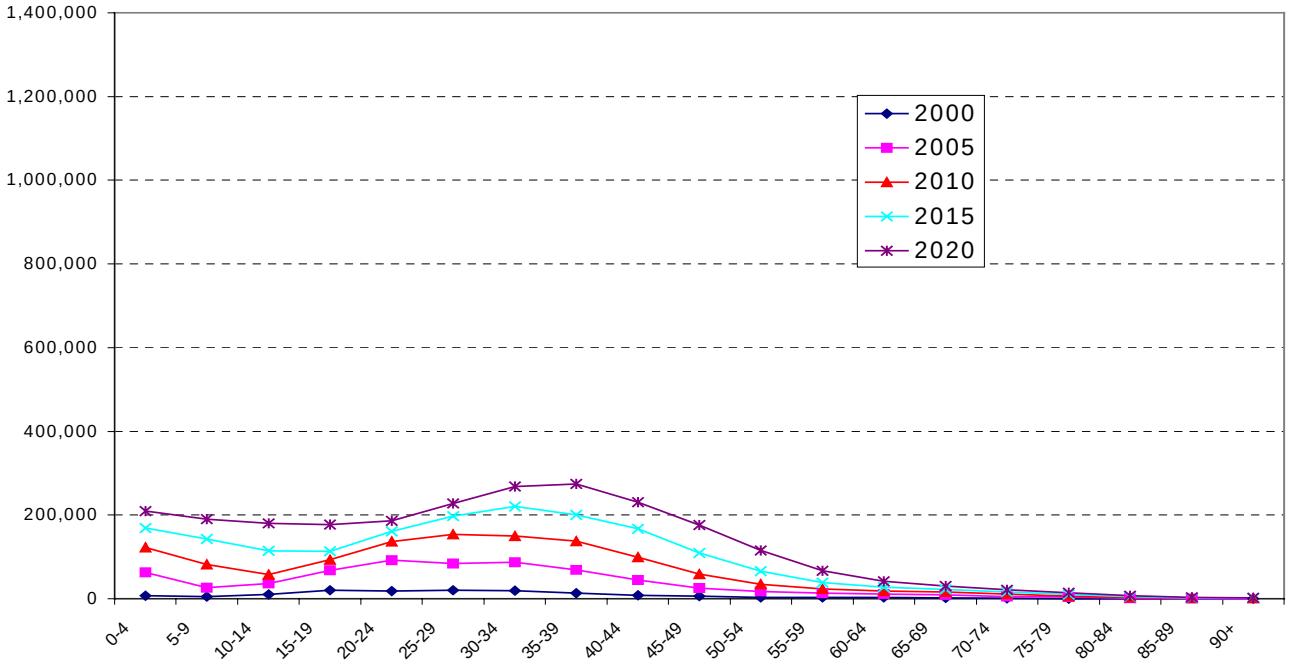
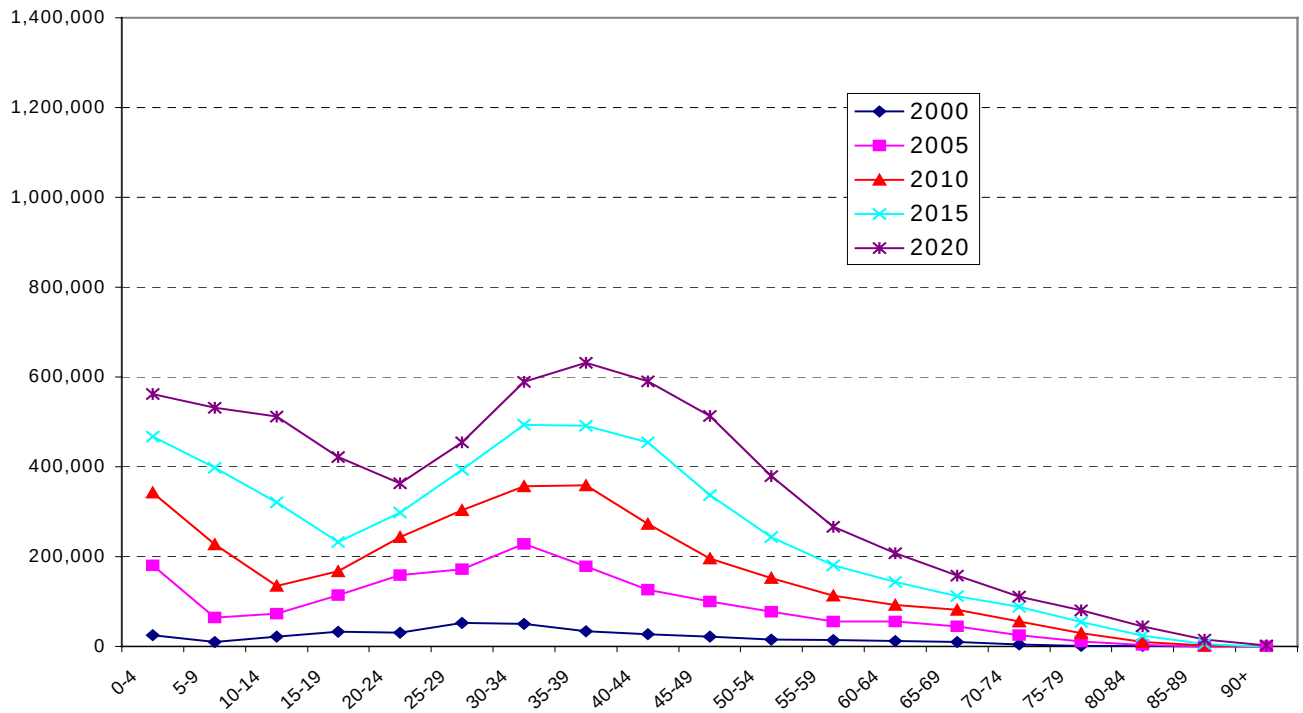


Figure 9d Cumulative Post-1998 Immigrants Plus Immigrant Natural Increase
Non-Hispanic Asians/Other Middle Series Population Projections



The Numbers of Households Expected from Projected New Immigrants

By running the PHD model using the Census Bureau's zero-imigration population projections, it is possible to compare the results with our baseline projections. The zero-immigration household projections allow us to estimate the approximate numbers of net households to be formed by persons already resident in the population on July 1, 1998 (and their future offspring). Subtracting these numbers from the baseline household projections, we arrive at an estimate of the approximate number of households due to projected immigration after July 1, 1998. These differences do not exactly measure the effects of immigration because we do not have a set of cohort-trended headship rates that exclude recent immigrants (this would be a major, if not impossible, undertaking given the available data).

The rates used in the baseline projections were derived from cohort trending between 1993 and 1998 that included an infusion of immigrants into the population base. We could not follow our cohort methodology to produce a set of immigrant-free 1993–98 cohort trended headship rates because of lack of available nativity data in the early years. We would have needed nativity data for 1992, 1993, and 1994 to produce reliable data points for 1993. Unfortunately, the nativity question did not appear regularly in the CPS until 1994. We did, however, estimate "order of magnitude" impacts of alternative immigrant-free rates by recomputing headship rates for 1998 that exclude recent immigrants (those arriving earlier in the 1990s) and examining the impact of holding the immigrant-free rates constant compared to the baseline 1998 rates held constant. The results of this test were conclusive—projected zero-immigration households were almost identical using the two sets of constant 1998 headship rates computed with and without recent immigrants.[1]

Figures 10a-10d show the projected household growth by the four race/Hispanic origin groups decomposed into two parts: one is due to the projected immigrants and the other is due to those who were already U.S. residents on July 1, 1998. As expected, Hispanic immigrants produce the largest number of projected households of the four groups of immigrants, over 1.3

[1] Two facts led to this outcome. First, 1990s immigrants are only about 3 percent of the total population. Second, foreign-born family headship rates are quite close to rates for the native born.

million in each of the next two decades (Figure 10a). This increase is slightly more than one-third of all projected future Hispanic household growth, with the other two-thirds of the total projected growth derived from the aging of Hispanic persons already in the United States by 1998. Because the projected decline in Hispanic net immigration from 2002 to 2010 is gradual, the number of Hispanics assumed to immigrate during 2000–10 averages about 100,000 more per year than Hispanic immigrants during 2010–20. Despite this lower immigration in the later period, projected Hispanic immigrant driven household growth for 2010–2020 is still slightly higher than in 2000–10. This is because the delayed household formation of immigrants arriving in the first decade who did not form households in that decade boosts the 2010–20 growth.

Of all projected growth due to all immigrants arriving after July 1, 1998, Hispanics contribute 40 percent, with the second highest level of projected immigrant household growth coming from the Asian/other category (at about 70 percent of the Hispanic level). Unlike Hispanics, where only one-third of projected household growth is from future immigrants, two-thirds of projected Asian/other household growth is due to post-1998 projected immigrants.

Non-Hispanic white and non-Hispanic black future household growth is being driven mostly by the aging of the population already resident in the United States on July 1, 1998. For whites, there are over 5 times as many net gains in households due to aging as due to projected net post-1998 immigration, and for blacks the ratio averages about 4 to 1 for the two decades (Figures 10b and 10c). Overall, when combining all four race/Hispanic origin groups, over the next two decades about 17 million net new households will derive from the aging of the population already resident on July 1, 1998. This is fully 2.5 times the roughly 7 million net household additions we expect from projected immigrants.

Figures 10a-d Decomposition of Projected Household Growth into Immigration Components

Figure 10a Hispanics

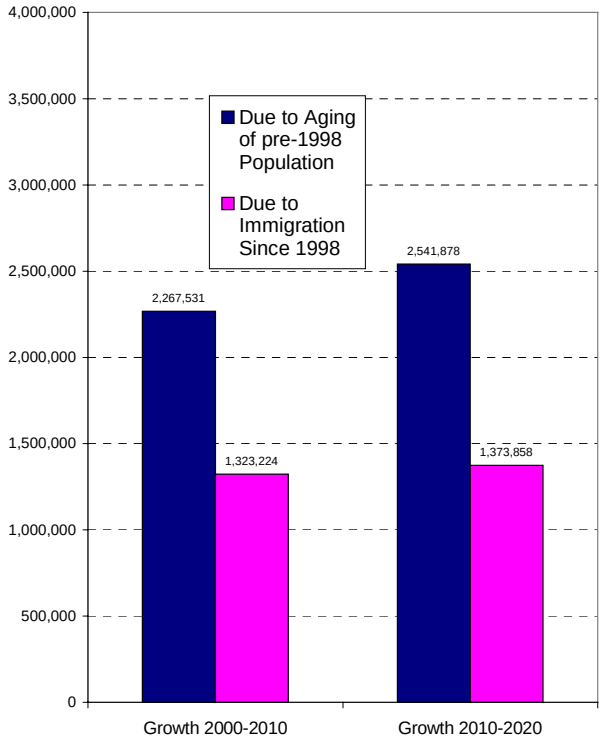


Figure 10b Non-Hispanic Whites

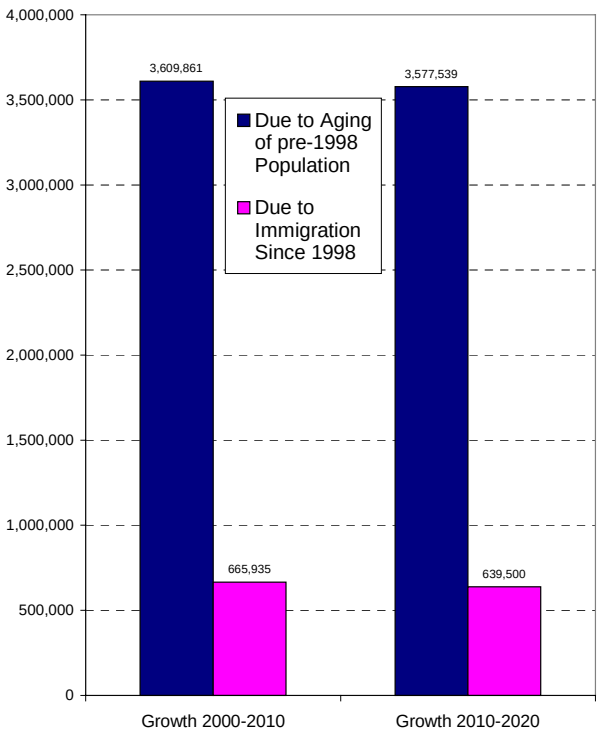


Figure 10c Non-Hispanic Blacks

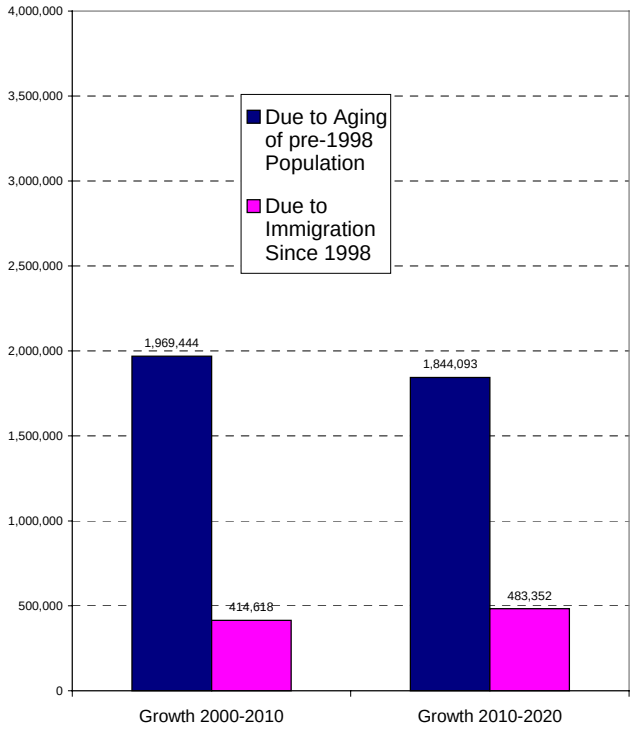
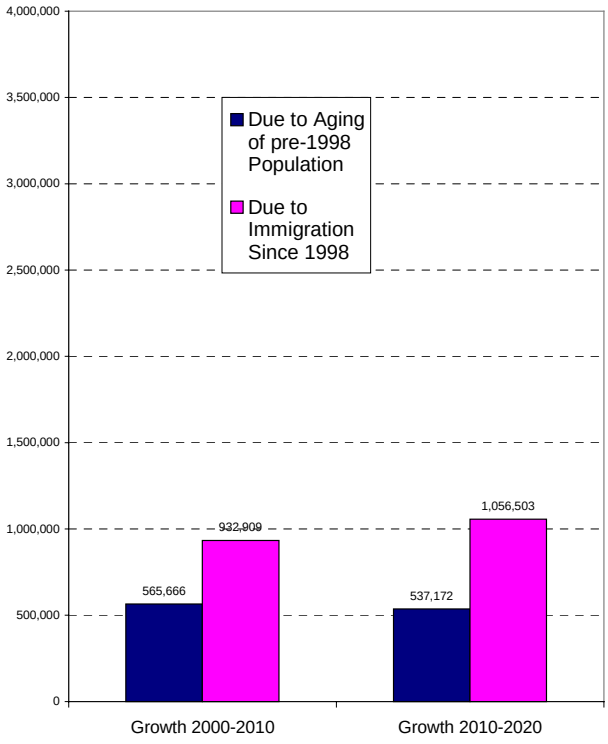


Figure 10d Non-Hispanic Asians/Others



Alternative Immigration Assumptions

The Census Bureau also produced a low and a high set of population projections with different assumptions about net foreign migration. It is therefore possible, in theory, to test the impact of those alternative immigration assumptions on our household projections. However, the range of immigration assumptions between the Census low and high series is extremely wide, a decline (from 2000 to 2020) to 120,000 per year in the low series and an increase up to 1,850,000 per year in the high series. We judge those series to be highly unlikely to represent reasonable alternative scenarios. Instead, we calculated approximate household growth scenarios under the assumption that low net immigration sees immigration decline to 500,000 annually by 2010. Alternatively, a high series was estimated under the assumption that immigration remains constant throughout the 2000–20 projection period at approximately 1,000,000 annually. Table 2 presents our estimates of projected households under these three different assumptions about future immigration levels.[2]

The middle series Census Bureau population projections assume a decline in net immigration from about 1.0 million in 2000 to about 750,000 in 2010. Most of this assumed decline is concentrated in the Hispanic population, with the implication that the share of future Hispanic household growth due to immigration will decline from 45 percent to 36 percent. If immigration falls to 500,000 and Hispanics absorb a similar share of the decline, the share of Hispanic household growth from immigration will fall to 23 percent. The alternative immigration scenarios have far less of an impact on immigration shares for the three other population subgroups, with non-Hispanic whites the most affected. For the total population, the

[2] We did this estimation without running these alternative assumptions through the PHD model. To make these calculations we noted that, for the year that immigration reached 750,000 in the baseline household projections (2010), household growth due to immigration would have been one-third higher for that year if immigration was 1,000,000. In other years during which the immigration decline is taking place in the baseline series, immigrant driven household growth under the constant immigration assumptions would be the observed immigrant household growth in the baseline series multiplied by the ratios of constant to baseline projected immigration levels. Differences between the constant immigration and baseline series could then be subtracted from the baseline series to produce the low household series where immigration declines to 500,000. The portion of projected household growth due to the aging of the population already resident on July 1, 1998 remains identical to baseline levels in both the high and low series. These calculations were performed separately for each of the four race/Hispanic origin subgroups.

share of future household growth due to projected immigration ranges from 24 percent in the low scenario to 33 percent in the high scenario, with a 29-percent share in the baseline series.

In terms of household numbers to be added over the next 20 years, under the low immigration scenario, 22.2 million net new households will be formed. Under the high (constant immigration) scenario, 25.3 million will be added. These numbers are only $\pm$ 7 percent of the 23.8 million household additions projected in the baseline series. Translated into average annual household growth over the next two decades, the low scenario results in 1.11 million per year, the baseline scenario 1.19 million, and the constant immigration scenario 1.27 million annually. In short, although future immigration plays a significant role in projected household growth, the range of immigration we have assumed in these three scenarios indicates that future total household growth will vary only modestly if actual immigration deviates from the baseline assumptions within the range we have considered above.

Section III - Homeownership Trends

Three Homeownership Trend Scenarios

We use the PHD model to disaggregate our household projections into owner and renter households using both a low and high set of homeownership rates for each race/Hispanic origin group. A middle series is taken as the average of the low and high series (Figures 11a–11d). As with the headship rate trends, we chose the 1993–98 period to establish one set of cohort trajectories that we can use to project future homeownership rates. This period happened to have a rapid increase in homeownership and therefore resulted in a set of projected ownership rates that is on the high side. We also selected the trends of the 1990–95 period as input data for our model. Since the increases in homeownership rates during this period were much more modest, the projected future ownership rates based on this input can be described as a low scenario. All cohort trended homeownership rates are calculated within the PHD model.

Table 2 Household Growth under Three Immigration Scenarios

(Numbers in Thousands)

	Low Immigration Scenario			Baseline Immigration Projection			Constant Immigration Scenario		
	Total HH Growth	Due to Immig.	Share from Immig.	Total HH Growth	Due to Immig.	Share from Immig.	Total HH Growth	Due to Immig.	Share from Immig.
Hispanic									
2000-2010	3,367	1,099	33%	3,591	1,323	37%	3,815	1,547	41%
2010-2020	2,898	356	12%	3,916	1,374	35%	4,933	2,391	48%
2000-2020	6,265	1,456	23%	7,506	2,697	36%	8,748	3,938	45%
White									
2000-2010	4,198	588	14%	4,276	666	16%	4,353	743	17%
2010-2020	4,006	429	11%	4,217	640	15%	4,428	850	19%
2000-2020	8,205	1,017	12%	8,493	1,305	15%	8,781	1,594	18%
Black									
2000-2010	2,370	400	17%	2,384	415	17%	2,398	429	18%
2010-2020	2,304	460	20%	2,327	483	21%	2,351	507	22%
2000-2020	4,674	860	18%	4,712	898	19%	4,749	936	20%
Asian/Other									
2000-2010	1,499	933	62%	1,499	933	62%	1,499	933	62%
2010-2020	1,594	1,057	66%	1,594	1,057	66%	1,594	1,057	66%
2000-2020	3,092	1,989	64%	3,092	1,989	64%	3,092	1,989	64%
Total									
2000-2010	11,434	3,021	26%	11,749	3,337	28%	12,065	3,652	30%
2010-2020	10,802	2,302	21%	12,054	3,553	29%	13,305	4,805	36%
2000-2020	22,236	5,323	24%	23,803	6,890	29%	25,370	8,457	33%

Note: Baseline Immigration assumption is based on the Census Bureau's Middle Series projected change in annual net immigration from approximately 1.0 million in 2000 to 750,000 by 2010, then remaining approximately steady until 2020. Low Immigration assumption reduces immigration to 500,000 by 2010. Constant immigration scenario keeps immigration at approximately 1 million. Asian/Other immigration levels are identical in all scenarios and increase slightly from 2000 levels. Baseline household projections are Joint Center middle series.

Figures 11a-d Low, Middle and High Baseline Ownership Projections by Race/Hispanic Origin

Figure 11a Hispanics

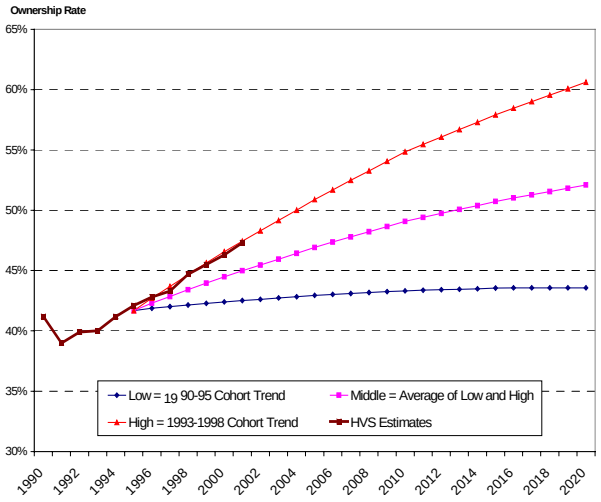


Figure 11b Non-Hispanic Whites

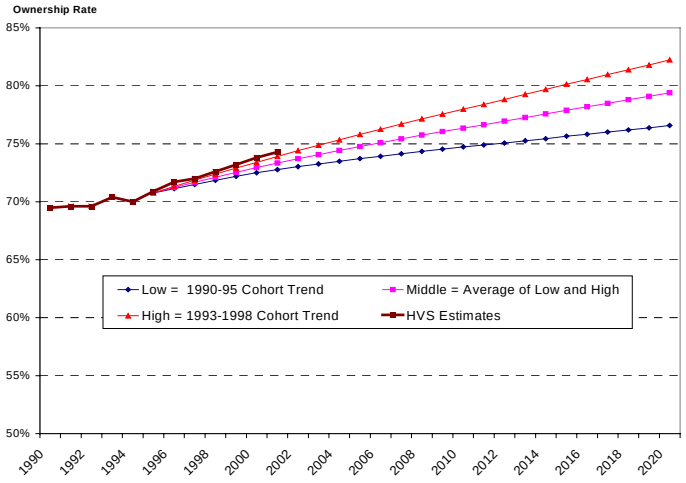


Figure 11c Non-Hispanic Blacks

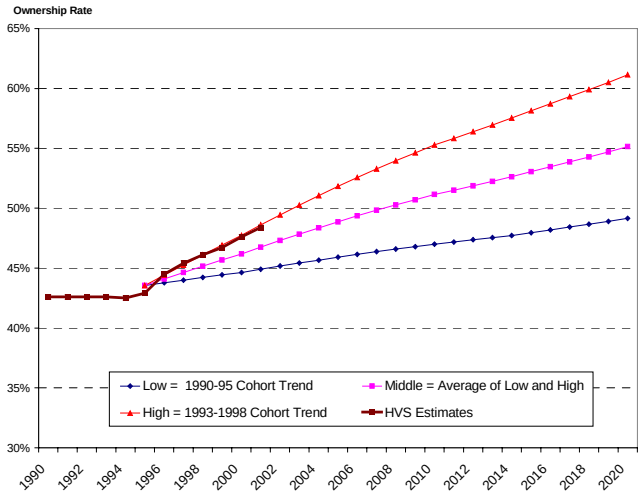
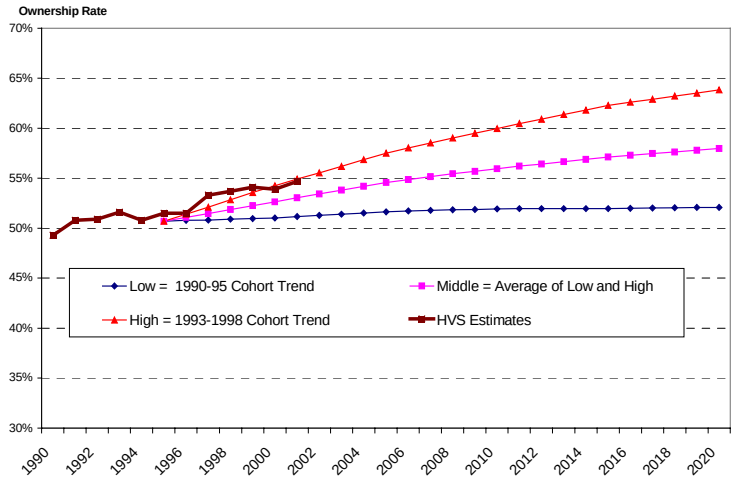


Figure 11d Non-Hispanic Asians/Others



Several conclusions can be reached from these calculations of alternative projected homeownership rates plotted in Figures 11a–11d. The widening difference between the low and high projected rates in each panel indicates the magnitude of the underlying differences between the 1990–95 and 1993–98 periods in regards to homeownership. These are not historical periods with fundamentally different immigration levels, but they are periods with very different macro-economic and housing market conditions. Factors influencing aggregate homeownership rates include income and unemployment levels, interest rates, inflation, mortgage lending practices, and consumer confidence. These variables in the future are likely to be exactly that—variable. We can therefore characterize the widening gap between the low and high series as a reminder of the uncertainty about future trends in these macro-economic and housing market variables and their impact on homeownership rates. The further into the future, the more uncertainty there will be. And this uncertainty is greater for minorities.

Holding Projected Homeownership Rates Constant at 2000 Levels

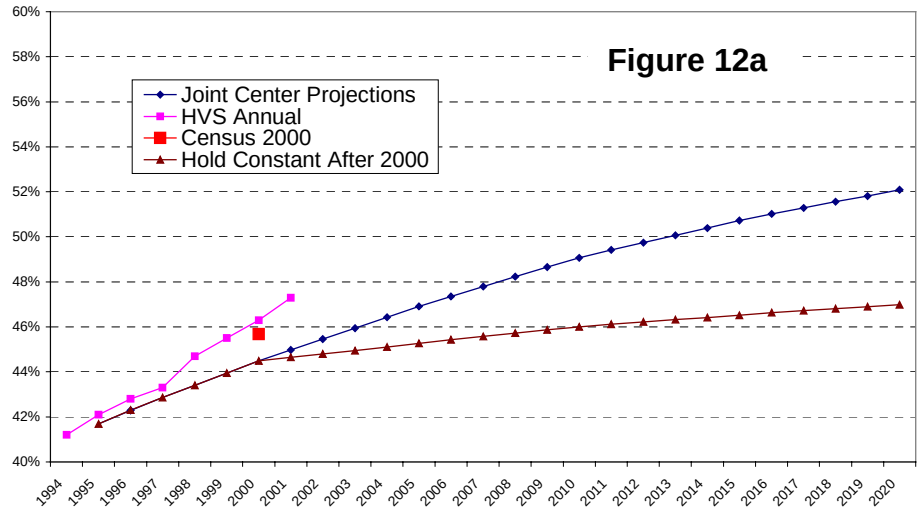
Holding projected homeownership rates constant at 2000 levels can help us answer two questions. First, how much will the simple aging of the population into the higher ownership age groups serve to raise the aggregate homeownership rates for each race/Hispanic origin subgroup? Second, how much growth is being added to aggregate homeownership rates by the cohort trending above what would be expected to result from the simple aging of the population into the higher ownership age groups?

Figures 12a–d show that simple aging will result in an increase in aggregate homeownership in all four race/Hispanic origin groups, even if the age and family type specific homeownership rates are held constant at 2000 levels. These figures also show that the continued upward cohort trending in the Joint Center's middle series ownership projections will raise the aggregate homeownership rates significantly above what simple aging implies.

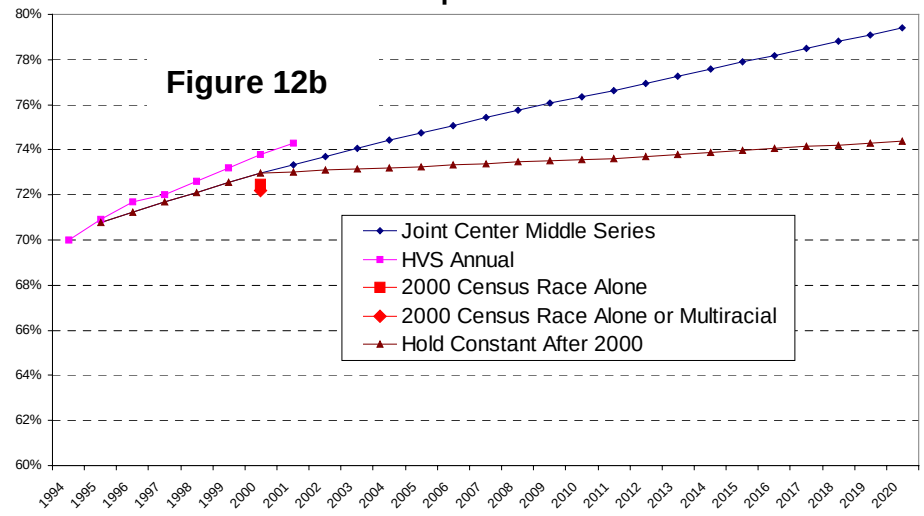
Figures 12a-d

Alternative Projections Holding Homeownership Rates Constant

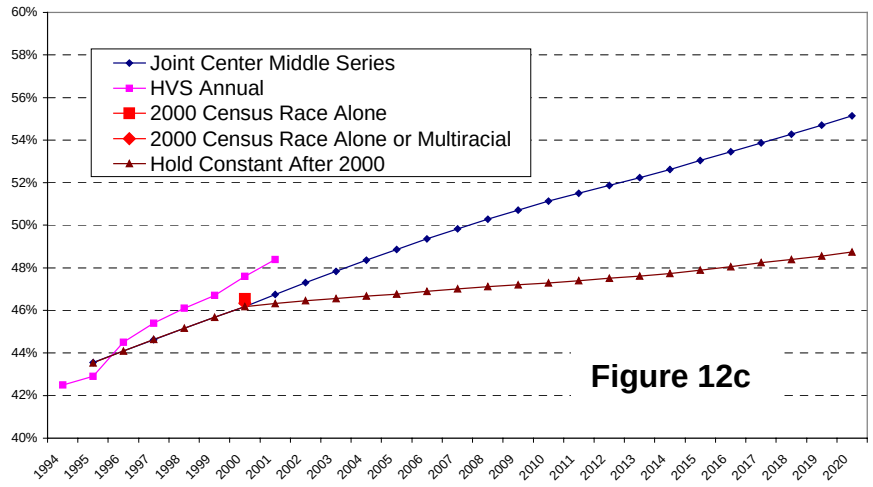
Estimated and Projected Homeownership Rates Hispanics



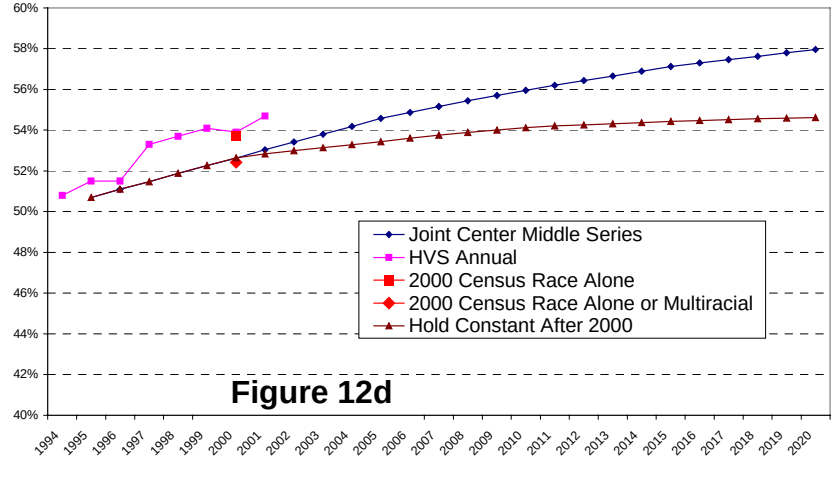
Estimated and Projected Homeownership Rates Non-Hispanic White



Estimated and Projected Homeownership Rates Non-Hispanic Black



Estimated and Projected Homeownership Rates Non-Hispanic Asians/Others



Through 2001, all race/Hispanic origin groups are still tracking on the high ownership trajectory of the 1993–98 period. This is testimony to how robust the housing sector of the economy has been during the 2001–02 recession. Over the longer term, if history offers us any lessons, all groups will likely return toward a flatter homeownership trajectory or may even experience declining homeownership rates, if only temporarily, if interest rates go up and consumer confidence goes down.

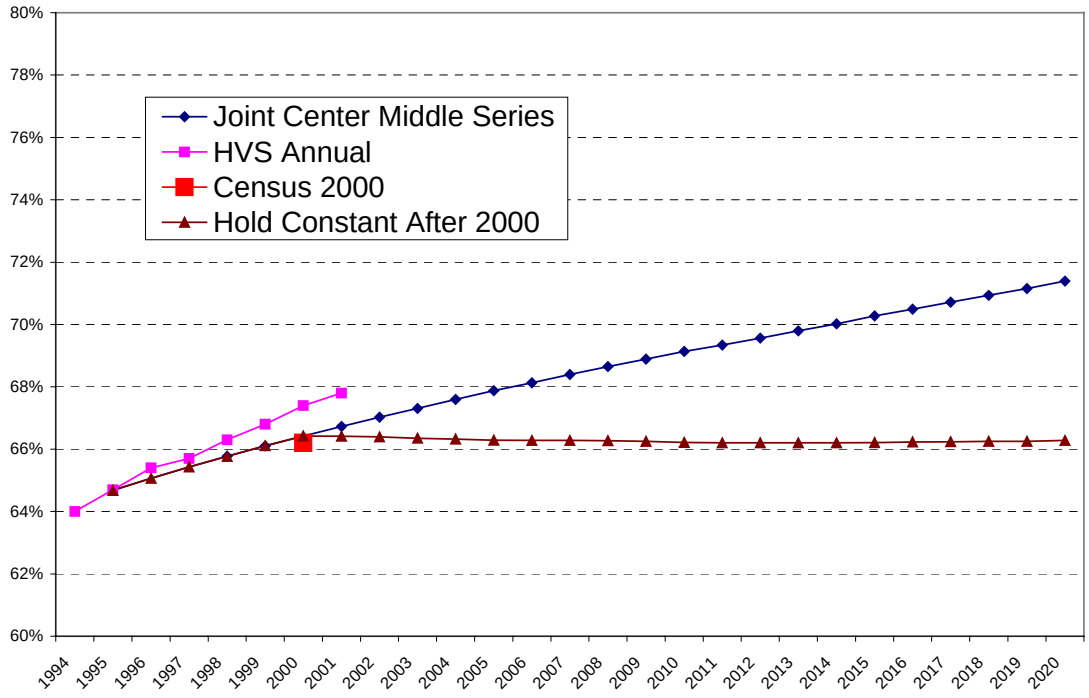
It is notable that when the projected trends based on holding ownership rates constant for the four race/Hispanic origin groups are combined (Figure 13), the aggregate homeownership rate trajectory for the total population appears flat or even to slightly decline. This is because, even though the aging of the population is causing the homeownership rate of each race/Hispanic origin group to increase, the lower ownership minority households are growing at a faster rate. This shift in the race/Hispanic origin composition of the population negates the effects of the demographic changes within the groups. The various ownership rate estimates and projections are summarized in Table 3.

Also included in Figures 12 and 13 are the homeownership rate estimates from the 2000 census. Two census estimates are plotted, one for persons who answered one race only when filling out the census questionnaire, and one estimate for all persons who checked off that race, including those who answered more than one race. For non-Hispanic whites this rate is below our 2000 projections. For Hispanics, the census estimate is above our projections. One possible source of the differences between the 2000 census and our projections for whites and Hispanics is the change made in the census in the question on Hispanic origin (to include Latino) and its placement (earlier) in the questionnaire. For both black and Asian/other, the more inclusive 2000 census estimates are fairly close to our 2000 projections. The 2000 census total homeownership rate (66.2 percent) is very close to our middle series projections for 2000 (66.4 percent).[3]

[3] Since the census figure is an April estimate and the projections are a July figure, during a period of increasing homeownership we expect the July number to be slightly greater than the April.

Figure 13

Estimated and Projected Homeownership Rates
All Race/Hispanic Origin Groups Combined



The Immigrant Influence on Alternative Homeownership Scenarios

The influence of alternative immigration scenarios on projected homeownership rates is difficult to evaluate in the context of the general uncertainty about future homeownership rate trends underlying our baseline household projections. Since our middle series ownership projections are based on averaging a high and low series, any specification of immigrant and native components of homeownership would need to be done separately for each series. Because nativity data have only been collected by the Current Population Survey during the extremely favorable post-1994 housing boom, such an analysis cannot easily be done for our low series, which is based on the 1990–95 cohort trends. Furthermore, a careful study of the immigrant influence on homeownership rates would require the modeling of the interactions between alternative immigration assumptions and alternative economic and housing market conditions.

Part of the large increases in owner-occupied housing we have experienced in recent years has surely been due to immigrant pressure on both the owner and renter housing stock. Hypothetically, a much lower level of future immigration than assumed in our baseline projections might reduce the pressure on the rental stock, which in turn might reduce homeownership rates if rents begin to soften. On the other hand, reducing the number of immigrants would tend to raise aggregate homeownership rates as the composition of the population growth shifts toward the higher ownership native born and longer duration immigrant residents. Very low immigration might be a consequence of a poorly performing economy, but it could also cause a poor performance in sectors of the economy where immigrant labor is paramount, including housing construction. It is therefore difficult to separate immigration effects from housing market economics when picking future alternative immigration/homeownership scenarios. How to weigh the immigrant contribution independent of economic and housing market influences using historical data to fine tune projected homeownership trends remains quite a challenge.

Table 3 Observed and Projected Homeownership Rates by Race/Hispanic Origin

	2000 annual HVS	2000 Census	2000 Projection	2005 Projection	2010 Projection	2015 Projection	2020 Projection
Non-Hispanic White							
L			72.7%	74.1%	75.2%	75.6%	76.6%
M	**73.8%**	**(72.2-72.4)***	**73.2%**	**75.2%**	**76.8%**	**77.9%**	**79.4%**
H			73.6%	76.2%	78.4%	80.1%	82.2%
Non-Hispanic Black							
L			45.0%	46.6%	47.7%	48.0%	49.1%
M	**47.6%**	**(46.3-46.6)***	**46.5%**	**49.4%**	**51.6%**	**53.0%**	**55.1%**
H			48.0%	52.2%	55.6%	58.1%	61.1%
Non-Hispanic Asian/Other							
L			50.7%	51.3%	51.4%	52.0%	52.1%
M	**53.9%**	**(52.4-53.7)***	**52.3%**	**54.3%**	**55.5%**	**57.1%**	**58.0%**
H			53.8%	57.3%	59.5%	62.3%	63.8%
Hispanic							
L			42.2%	42.9%	43.3%	43.5%	43.6%
M	**46.3%**	**45.7% ** **	**44.3%**	**46.8%**	**48.9%**	**50.7%**	**52.1%**
H			46.4%	50.8%	54.5%	57.9%	60.6%
All Races Combined							
L			65.7%	66.2%	66.6%	66.9%	67.2%
M	**67.4%**	**66.2%**	**66.4%**	**67.9%**	**69.1%**	**70.3%**	**71.4%**
H			67.2%	69.5%	71.6%	73.6%	75.6%

L=Low=1990-1995 cohort trended ownership
M=Middle=average of L and H
H=High=1993-1998 cohort trended ownership

* First figure is non-Hispanic race alone or in combination with one or more other races, second figure is non-Hispanic race alone.

** 2000 Census = Hispanic or Latino, all other data = Hispanic.

Conclusions

Future household formation and owner/renter specific projections are important information for planners and policymakers. Based on our model work and sensitivity analysis, we conclude that the United States will continue to witness a substantial growth in the number of households over the next two decades. Household growth between 2000 and 2020 should be in the neighborhood of 23.8 million, with a low of 22.2 million and a high of 25.3 million. On an annual basis, this translates into a range of 1.1 to 1.3 million households per year, with 1.2 million being the two-decade average in our baseline series.

Minorities will contribute almost two-thirds of the projected household growth (64 percent) over the next two decades, with 31 percent contributed by Hispanics, 20 percent by blacks, and 13 percent by other minorities (mostly Asians). Whites will contribute 36 percent of the total projected household growth. Immigrants will contribute about 29 percent of the total projected household growth, with Hispanic immigrants projected to account for 11 percent, Asian/other immigrants 8 percent, white immigrants almost 6 percent, and black immigrants 4 percent.

Within the separate race/Hispanic origin groups, a strong majority of the projected Asian/other household growth is immigrant driven (64 percent), while 36 percent of future Hispanic household growth is due to immigration. If total immigration levels remain at about 1 million annually instead of declining to 750,000 as the Census Bureau projects, the Hispanic household growth due to immigration could be 45 percent.

While immigration is an important component of minority household growth, another factor that elevates minority growth above that of whites is the younger age structures of the minority populations. Because there are now relatively few older minority households compared to whites, the household growth from younger minority household formation will not be offset by much household dissolution in the older range of the age distribution. For whites, a relatively large number of households headed by older persons means that these households will become a negative force on net household growth over the next 20 years as they dissolve.

Whites will continue to dominate owner household growth, as they have done in the past, exactly because both the older white age structure and the low incidence of young adult immigrants favor owner household formation. However, minority owners are slowly but steadily gaining ground. We project that 22.3 million owner households will be formed over the first two decades of this new century, with 53 percent of those being non-Hispanic whites and 47 percent being minority. The share of owner households that are minority stood at 17 percent in 2000 and will reach almost 25 percent by 2020.

Projected net renter household formation, on the other hand, is exclusively on the minority side, while whites are going to lose 3.4 million renter households over the next two decades. Minorities are projected to add almost 5 million renter households during this period. By 2020 a majority of all renter households will be minority, up from 39 percent in 2000. Both the younger minority age structures, their higher immigration influence, and the overall lower minority ownership rates account for these patterns.

There is a great uncertainty about homeownership rates, both now and in the future. The 2000 estimates of the Housing Vacancy Survey (HVS) are higher than those of the 2000 census. Our projections for the year 2000 are closer to the census numbers than to the HVS estimates. We also conclude that it is extremely difficult to estimate the influence of alternative immigration assumptions on our home ownership projections.

The gap between our low and high projected homeownership rates for each race/Hispanic origin group underscores this uncertainty about the future. Our middle series ownership trends, calculated as an average of the high and low projections, is therefore the safest forecast given the large degree of uncertainty. The uncertainty is greatest for the minority populations. A shift toward higher mortgage interest rates or a severe economic recession should not be ruled out when looking 20 years into the future, and such events could lead to a flattening, or even decline, in homeownership rates, especially for minorities.

A lower trajectory of homeownership will mean that more net renter household formation will take place. While renter additions from 2000 to 2020 in our baseline projections total only 1.5 million households for all race/Hispanic origin groups combined, our low homeownership rate scenario could boost that number to 6.1 million while dropping owner growth from 22.3 to 17.7 million. Alternatively, if homeownership trends continue on the high track, renter growth over the next 20 years could remain negative (Table 4).

Table 4

Owner and Renter Household Growth 2000-2020
Three Ownership Rate Scenarios

	Homeownership Rate Projections		
	Low	**Middle**	**High**
Households			
2000			
Owner	69,284,864	70,093,903	70,902,941
Renter	36,245,909	35,436,871	34,627,832
Total	105,530,773	105,530,774	105,530,773
2010			
Owner	78,124,545	81,077,734	84,030,923
Renter	39,155,416	36,202,227	33,249,038
Total	117,279,961	117,279,961	117,279,961
2020			
Owner	86,946,421	92,332,369	97,718,317
Renter	42,387,435	37,001,487	31,615,539
Total	129,333,856	129,333,856	129,333,856
Household Growth			
2000-2010			
Owner	8,839,681	10,983,831	13,127,982
Renter	2,909,507	765,356	-1,378,794
Total	11,749,188	11,749,187	11,749,188
2010-2020			
Owner	8,821,876	11,254,635	13,687,394
Renter	3,232,019	799,260	-1,633,499
Total	12,053,895	12,053,895	12,053,895
2000-2020			
Owner	17,661,557	22,238,466	26,815,376
Renter	6,141,526	1,564,616	-3,012,293
Total	23,803,083	23,803,082	23,803,083

Low = 1990-1995 cohort trended ownership rates
High = 1993-1998 cohort trended ownership rates
Middle = Average of Low and High

Note: projections done separately by race/Hispanic origin and summed to total.

References

Apgar, William C., H. James Brown, George S. Masnick and John R. Pitkin. 1985. The Housing Outlook: 1980-1990 (New York: Praeger).

Masnick, George S. 1989a. U.S. Household Trends: The 1980s and Beyond, Harvard University Joint Center for Housing Studies, Working Paper W89-1.

Masnick, George S. 1989b. New Projections of Population and Households for States and Regions, Harvard University Joint Center for Housing Studies, Working Paper W89-9.

Masnick, George S. 1989c. New State Population Projections by Age, Harvard University Joint Center for Housing Studies, Working Paper W89-10.

Masnick, George S. 1998. Understanding the Minority Contribution to U.S. Owner Household Growth, Joint Center for Housing Studies, Harvard University, Working Paper W98-9.

Masnick, George S. 2002. The New Demographics of Housing, Housing Policy Debate, Vol. 13, #2.

Masnick, George S., William C. Apgar, Jr. and H. James Brown. 1992. Evaluation of the Potential Housing Demand Projection Model, report prepared for the Canada Mortgage and Housing Corporation, Ottawa, Ontario.

Masnick, George S. and Nancy McArdle. 1993. Revised U.S. Household Projections: New Methods and New Assumptions, Joint Center for Housing Studies, Harvard University, Working Paper W93-2.

Masnick, George S. and Nancy McArdle. 1994. State Household Projections Based Upon Census Bureau P25-1111 Population Projections, Joint Center for Housing Studies, Harvard University, Working Paper W94-4.

Masnick, George S., Nancy McArdle, and William C. Apgar, Jr. 1996. U.S. Household Trends: the 1990s and Beyond, Joint Center for Housing Studies, Harvard University, Working Paper W96-2.

Masnick, George S. and Zhu Xiao Di. 2000. Updating and Extending the Joint Center Household Projections Using New Census Bureau Population Projections, Joint Center for Housing Studies, Harvard University, Research Note N00-1.

Pitkin, John R. and George S. Masnick. 1980. Projections of Housing Consumption in the U.S., 1980 to 2000, by a Cohort Method, Annual Housing Survey Studies, No. 9 (Washington: U.S. Dept. of Housing and Urban Development, June 1980.)

Pitkin, John R. and George S. Masnick. 1981a. Linking Projections of Households with Housing Consumption: An Exploration of Alternative Series, prepared for Office of Policy Development and Research, U.S. Dept. of Housing and Urban Development, Washington, D.C.

Pitkin, John R. and George S. Masnick. 1981b. The Housing of Young Adults and the Elderly: An Analysis of 1960 to 1970 Changes, prepared for Office of Policy Development and Research, U.S. Dept. of Housing and Urban Development, Washington, D.C., 1981.

Pitkin, John R. and George S. Masnick. 1983. Alternative Models for Cohort Methods of Projecting Housing Consumption, prepared for Office of Policy Development and Research, U.S. Dept. of Housing and Urban Development, Washington, D.C.

U.S. Bureau of the Census. 2000a. Projections of the Resident Population by Race, Hispanic Origin, and Nativity: 1999 to 2100. Available on the Census Bureau site of the Worldwide Web.
http://www.census.gov/population/www/projections/natproj.html.

U.S. Bureau of the Census. 2000b. Methodology and Assumptions for the Population Projections of the United States: 1999 to 2100. Population Division Working Paper No. 38.

Appendix A

Projected Households by Race/Hispanic Origin, Tenure and Family Type

	Owners			Renters			Grand
Period	Family	Non-family	Total	Family	Non-family	Total	Total
Total Households							
2000	53,165,549	16,928,354	70,093,903	19,097,967	16,338,904	35,436,871	105,530,773
2005	56,678,576	18,920,644	75,599,220	18,956,251	16,827,821	35,784,072	111,383,292
2010	60,377,695	20,700,039	81,077,734	18,941,262	17,260,965	36,202,227	117,279,961
2015	64,105,693	22,600,350	86,706,043	19,024,314	17,652,318	36,676,632	123,382,674
2020	67,641,461	24,690,909	92,332,369	19,010,970	17,990,518	37,001,487	129,333,856
Non-Hispanic White Households							
2000	43,292,237	14,631,577	57,923,814	9,865,712	11,610,275	21,475,987	79,399,801
2005	44,885,545	16,066,357	60,951,901	9,066,655	11,504,161	20,570,815	81,522,716
2010	46,594,919	17,298,013	63,892,932	8,432,725	11,349,940	19,782,665	83,675,597
2015	48,302,695	18,603,581	66,906,276	7,852,203	11,135,675	18,987,878	85,894,154
2020	49,743,134	20,051,574	69,794,708	7,226,995	10,870,933	18,097,928	87,892,636
Non-Hispanic Black Households							
2000	4,429,792	1,433,731	5,863,523	4,143,845	2,690,043	6,833,888	12,697,410
2005	5,028,125	1,753,347	6,781,472	4,177,540	2,918,397	7,095,937	13,877,409
2010	5,658,488	2,054,424	7,712,912	4,240,368	3,128,193	7,368,561	15,081,472
2015	6,284,483	2,360,646	8,645,129	4,315,361	3,336,792	7,652,153	16,297,281
2020	6,898,383	2,701,122	9,599,505	4,321,274	3,488,138	7,809,412	17,408,917
Non-Hispanic Asian/Other Households							
2000	1,803,406	330,100	2,133,506	1,198,261	721,533	1,919,794	4,053,300
2005	2,194,050	424,490	2,618,540	1,332,102	847,052	2,179,154	4,797,693
2010	2,597,176	509,379	3,106,555	1,473,884	971,436	2,445,320	5,551,875
2015	3,006,160	612,206	3,618,366	1,627,201	1,088,528	2,715,729	6,334,094
2020	3,431,073	710,788	4,141,861	1,781,329	1,222,361	3,003,690	7,145,550
Hispanic Households							
2000	3,640,114	532,946	4,173,060	3,890,149	1,317,053	5,207,202	9,380,262
2005	4,570,857	676,451	5,247,308	4,379,955	1,558,212	5,938,167	11,185,474
2010	5,527,113	838,223	6,365,336	4,794,286	1,811,396	6,605,682	12,971,017
2015	6,512,356	1,023,917	7,536,273	5,229,550	2,091,323	7,320,873	14,857,145
2020	7,568,871	1,227,425	8,796,296	5,681,372	2,409,086	8,090,458	16,886,753
Total Minority Households							
2000	9,873,312	2,296,777	12,170,089	9,232,255	4,728,629	13,960,884	26,130,972
2005	11,793,032	2,854,288	14,647,319	9,889,597	5,323,661	15,213,257	29,860,576
2010	13,782,776	3,402,026	17,184,802	10,508,537	5,911,025	16,419,562	33,604,364
2015	15,802,998	3,996,769	19,799,767	11,172,111	6,516,643	17,688,754	37,488,520
2020	17,898,327	4,639,335	22,537,661	11,783,975	7,119,585	18,903,559	41,441,220

Appendix B

Projected Household Growth by Race/Hispanic Origin, Tenure and Family Type

	Owners			Renters			Grand
Period	Family	Non-family	Total	Family	Non-family	Total	Total
Total Household Growth							
2000-05	3,513,028	1,992,290	5,505,318	-141,716	488,917	347,202	5,852,519
2005-10	3,699,119	1,779,395	5,478,514	-14,989	433,144	418,155	5,896,669
2010-15	3,727,998	1,900,311	5,628,309	83,052	391,353	474,405	6,102,713
2015-20	3,535,768	2,090,559	5,626,327	-13,345	338,200	324,856	5,951,182
Non-Hispanic White Household Growth							
2000-05	1,593,308	1,434,780	3,028,087	-799,058	-106,115	-905,172	2,122,915
2005-10	1,709,375	1,231,657	2,941,031	-633,930	-154,221	-788,150	2,152,881
2010-15	1,707,776	1,305,568	3,013,344	-580,522	-214,265	-794,787	2,218,557
2015-20	1,440,439	1,447,993	2,888,432	-625,208	-264,742	-889,950	1,998,482
Non-Hispanic Black Household Growth							
2000-05	598,334	319,616	917,950	33,696	228,354	262,050	1,179,999
2005-10	630,363	301,077	931,440	62,828	209,796	272,624	1,204,063
2010-15	625,995	306,222	932,217	74,993	208,599	283,592	1,215,809
2015-20	613,901	340,476	954,377	5,914	151,346	157,260	1,111,636
Non-Hispanic Asian/Other Household Growth							
2000-05	390,644	94,390	485,034	133,841	125,519	259,360	744,393
2005-10	403,127	84,889	488,016	141,783	124,384	266,167	754,182
2010-15	408,984	102,827	511,811	153,317	117,092	270,409	782,219
2015-20	424,913	98,582	523,495	154,128	133,833	287,961	811,456
Hispanic Household Growth							
2000-05	930,743	143,505	1,074,248	489,806	241,159	730,965	1,805,212
2005-10	956,256	161,773	1,118,028	414,331	253,185	667,515	1,785,543
2010-15	985,244	185,694	1,170,937	435,265	279,927	715,191	1,886,128
2015-20	1,056,515	203,508	1,260,023	451,822	317,763	769,585	2,029,608
Total Minority Household Growth							
2000-05	1,919,720	557,511	2,477,231	657,342	595,032	1,252,374	3,729,604
2005-10	1,989,745	547,739	2,537,483	618,941	587,365	1,206,305	3,743,788
2010-15	2,020,222	594,743	2,614,965	663,574	605,618	1,269,192	3,884,156
2015-20	2,095,329	642,566	2,737,895	611,864	602,942	1,214,806	3,952,700

Source: Joint Center Middle Series ownership projections. Detailed age data available by request.

How Changes in the Nation's Age and Household Structure Will Reshape Housing Demand in the 21st Century

Martha Farnsworth Riche, Ph.D.

I. Executive Summary

The demographic context for Americans' housing needs can be expected to change considerably during the first quarter of the 21st century. Yet while demographic trends push Americans in new directions, longstanding preferences continue to shape their housing choices. This interaction between changing demographics and persistent wants will heighten the need for housing professionals to monitor evolving housing patterns and verify housing preferences, so they can base policies on new realities rather than old assumptions.

This paper addresses current and projected changes in the nature of the nation's population and its households that will affect the demand for housing.[1] Perhaps the most important change is that, for the first time in history, we are looking at a population that will have roughly equal numbers of people in every age group. (The age picture of the country is looking more like a pillar than the classic pyramid.) Although the nation's population continues to grow at all ages, the largest growth is in the population that has largely completed its child rearing. Other things equal, this shift should in itself increase the proportion of the population that owns, rather than rents, its housing.

Households are a better predictor of changes in housing demand than population, and the nation's increasingly [MR1] diverse age structure is changing its household composition. In particular, household size is shrinking, as married couples *without* children (in the home) and single-person households each outnumber "traditional family" households. Among other things, this trend is undermining old assumptions about age-based choices of city versus suburban housing.

The combination of longer life expectancies and the continuing preference for one or two children will make households without children even more numerous. In 2000, the traditional family represented fewer than one in four households. With household growth concentrated in older age groups, the traditional family is projected to account for only one in five households in

2025.[2] Whether for financing, constructing, or managing housing, professionals will need to investigate ways to accommodate the greater variety of household types.

Meanwhile, the nation's minority population has grown significantly in recent decades, and minority household patterns are somewhat different from those of non-Hispanic white households. In particular, minority households tend to have more children and are more likely to include multiple generations and/or be headed by a single individual. Minority households are also projected to be relatively younger in 2025, so the trend toward more older people, and thus more households without children in them, affects the majority population disproportionately. In any case, these differences are a guide to preferences about housing size, characteristics, and location. They also signal a challenging context for people concerned about maintaining community viability.

Income plays a major role in determining Americans' housing resources and preferences. Households that are post-family and pre-retirement generally have higher incomes than the average for all households, while younger households with children, and minority households in general, tend to have lower incomes. However, income inequality is far greater in the growing older population than it is among households under age 55. This divergence suggests that the owner/renter dichotomy may become an important issue in the debates over adjusting basic policies to accommodate a population that contains more older people, both absolutely and relatively.

All these changes suggest some directions for research to aid housing professionals in managing their response to changes in America's demographic context. They need to:

1. Discover what the growing household segments—largely without children in the home—really want from housing, and modify their assumptions accordingly.
2. Understand the relationship between household composition and housing preferences for each minority group.
3. Develop an understanding of the relationship between household income, household composition, and housing, especially in relation to life stage and to race and ethnic origin, with particular attention to ownership issues.

II. Who We Are, and Who We Are Becoming

A. For the first time in history, we are looking at a population that will have roughly equal numbers of people in every age group.

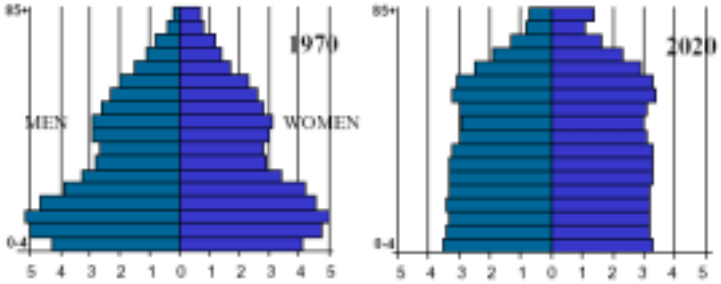
The demographic changes that will reshape the nation's residential landscape in the 21st century are first and foremost age-driven population changes. These changes are motivated by the growing number of years individual Americans remain in the population. Given Americans' continuing preference for the two-child family, this "failure" of Americans to die in middle- or early old age is increasing the number of childless households that are pre- and, increasingly, post-family relative to the number that contain children. Thus, new needs and preferences are likely to come into play as Americans make their housing choices.

Throughout history, the age picture of any population has been a pyramid, with a wide base representing a large share of babies; a narrowing midsection because many died in early childhood and others died (at a lower rate) as they aged; rising to a pinnacle depicting the few individuals who survived to old age. In this world, roughly half the population were children, many of whom died before they had children of their own. The few elderly, along with the children, could be cared for by the people in the middle. This is the population the nation's communities and housing were designed for, and this was very much the U.S. population as recently as 1970.

Figure 1 shows two age pictures for the United States: 1970 and 2020, as projected by the U.S. Census Bureau.[3] The age picture for 1970 is still the traditional population pyramid, but for 2020 it is more of a population "pillar," because each age group is roughly the same size, except the very oldest. This shift is not because people are having fewer children. For over a decade now, U.S. fertility rates have steadily reflected American families' longstanding preference for two children, and more babies have been born each year than the year before. But with fewer people dying before old age, the bars toward the top are becoming much wider, as shown in Figure 1.[4]

Figure 1. From Pyramids to Pillars, 1970 and 2020

(% of population in each five-year age group)



Source: U.S. Census Bureau

As a result, the size of each of the three basic household-forming age groups is expected to become more similar by 2025, as shown in Table 1:

Table 1. Major U.S. Age Groups

(in thousands)

Age group	2000	2025
25–44	85,041	86,106
45–64	61,952	78,416
65 and over	34,992	62,641

Source: Table DP–1, 2000 census, and Table NP–T4–F, population projections, U.S. Census Bureau, www.census.gov

In 2000, the youngest of the three age groups, 25–44, accounted for almost as many people as the two older groups put together. By 2025, it will barely exceed the group aged 45–64, with the older group not far behind. So the increase in population is largely among people in middle age and beyond, as more Americans survive to older ages.

From a housing perspective, the most potentially intriguing change is the evening out of the householder age distribution, as shown in Table 2:

Table 2. Household Composition by Age of Householder, 2000 and 2025

(in thousands)

2000	All ages	Under 25	25–44	45–64	65 plus
All households	105,480	6,328	42,135	35,484	21,533
Family households	72,111	3,454	31,247	25,868	11,542
Without children <18	37,629	1,461	6,878	17,888	11,402
Married	30,118	599	5,288	14,917	9,314
Not married	7,511	862	1,590	2,971	2,088
With children <18	34,483	1,993	24,370	7,980	140
Married	25,489	873	18,074	6,437	104
Not married	8,994	1,120	6,295	1,543	36
Nonfamily households	33,369	2,874	10,888	9,616	9,991
Single	27,175	1,422	7,831	8,265	9,657
With relatives	6,194	1,452	3,057	1,351	334
2025					
All households	132,436	7,058	44,940	40,221	40,218
Family households	88,836	4,021	33,482	29,316	22,017
Without children <18	51,707	1,708	7,329	20,983	21,687
Married	40,840	638	5,477	17,141	17,585
Not married	10,867	1,070	1,848	3,842	4,102
With children <18	37,129	2,313	26,153	8,333	330
Married	27,078	1,028	19,167	6,641	242
Not married	10,051	1,286	6,986	1,692	88
Nonfamily households	43,600	3,036	11,458	10,905	18,201
Single	36,633	1,491	8,147	9,454	17,540
With relatives	6,968	1,545	3,311	1,451	661

Source: 2000 census, U.S. Census Bureau, www.census.gov; Thomas G. Exter

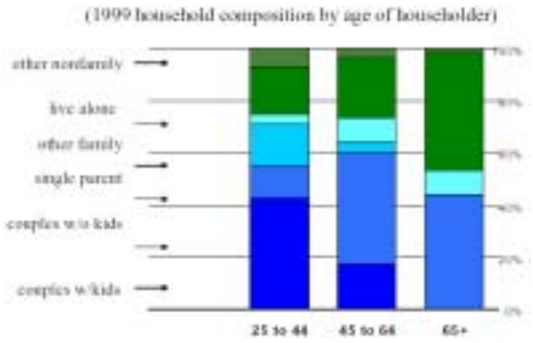
This table suggests that the considerable increase in the nation's households will occur largely in the older, post-childrearing age groups. Part of this growth will, of course, result from the aging of the baby boom. This large cohort will swell the 55–64 and 65–74 age groups in 2025. However, it may be more useful to think in terms of a long-term trend toward three roughly equal groups of householders—young adults, middle-aged, and older—than in terms of the aging of the baby boom. The latter phenomenon is temporary, the former very likely long lasting, given the underlying trends shaping the population as a whole.

Although ownership trends are largely dependent on economic trends and therefore outside the scope of this paper, the shift to an increasing presence of older households should, other things equal, increase the proportion of the population that owns, rather than rents, its housing. In any case, the trend toward increasing numbers of householders at virtually all adult ages will make it more important to pay attention to age-based differences in household types.

B. Household size is shrinking, and fewer households contain children.

Households tend to be very different for young, middle-aged, and older adults, as shown in Figure 2:[5]

Figure 2. The Life Stage of Households



Source: U.S. Census Bureau

These differences augur a significant impact from the shift towards a population made up of several different age groups of roughly equal size, if only because housing needs and choices are very different for households with and without children. Longer life expectancies are compressing child-rearing into an increasingly small proportion of adult life, compared to virtually the entirety of adult life only a few generations ago. Americans now spend an average of only 35 percent of the years between ages 20 and 70 in parenting, although there are considerable differences by gender and by race.[6] The overall effect of this shift is that the nation's households are smaller, and families make up a smaller proportion of them. In 2000, the

average household contained 2.6 people (down from 3.6 as recently as 1970), and only 68 percent of them were families (down from 81 percent).[7]

The shift toward relatively equal-sized age groups is also making family households much more diverse, as shown in Table 3. When today's decisionmakers grew up, the most common family arrangement was a married couple with one or more children.[8] However, the combination of longer life expectancy and the two-child family has made married couples without children more numerous—put simply, couples have more years together after their children have reached age 18. By 2000, the traditional family represented just 35 percent of all family households and only 24 percent of all households. Meanwhile, married couples without children had become the nation's most common family (and household) type. Single-parent households (more than four in five headed by a woman) were also more common, growing from 4 percent of family households in 1950 to 12 percent in 2000.

Households that do not contain a family, i.e. persons related by blood or marriage, make up the rest of the nation's households. These "nonfamily" households are growing rapidly, and the majority of them consist of persons living alone. Single-person households are the nation's second most numerous household type, accounting for over 25 percent of all households.[9] This is not surprising, considering that people ages 65 and older are the largest share of single-person households. Until recent decades, a widowed parent, most often a mother, would move into a child's household. Since 1960, older people's increasing financial independence has been accompanied by increasing residential independence. The proportion of Americans ages 65 and older who live in a relative's household has been nearly halved since 1970, to less than 7 percent in 2000, while about 30 percent now live alone.[10] However, Figure 2 shows that single-person households are common in every age group—1 in 10 Americans ages 25 to 44, the most common ages for marriage, lives alone.

It is important to examine the household characteristics of each broad age group before assessing their housing wants and needs, rather than making assumptions about them. Although older adults are a major factor in the growing importance of single-person households, the majority of Americans ages 65 and older either head their own family household or are married to the household head. Moreover, although most of these older family households are married couples, many young or middle-aged adults live in households headed by an elderly, usually widowed parent. The adult child tends to be divorced or otherwise have low income, presumably offering companionship and assistance in exchange for sharing the parent's home.[11]

Clearly, the traditional family household of married couples with children is common among households headed by someone under age 45. However, with population growth

concentrated in older age groups, this household type is projected to account for only one in five households in 2025, or 30 percent of all family households, as shown in Table 3:

Table 3. Household Composition, 2000 and 2025

(In thousands)	2000	2025	Growth rate
All households	105,480	132,436	26%
Family households	72,111	88,836	23%
Without children <18	37,629	51,707	37%
Married	30,118	40,840	36%
Not married	7,511	10,866	45%
With children <18	34,483	37,129	8%
Married	25,489	27,078	6%
Not married	8,994	10,051	12%
Nonfamily households	33,369	43,600	31%
Single	27,175	36,633	35%
With nonrelatives	6,194	6,968	13%

Source: Thomas G. Exter; based on 2000 census, U.S. Census Bureau

Overall, households with children in them are likely to account for only 28 percent of all households. However, since statistical convention makes children into adults at age 18, other households will actually contain children of the householder, most likely wholly or partially dependent young adults. This latter group merits watching, especially to see whether and how it influences parental housing choices, since young adults tend to alternate living with parents with other living situations.

The trend to a higher proportion of people at older ages means even more households without children in them, whether married couples (the great majority), people living alone (especially women, even among the young), or people living with others to whom they are not related. Nearly 40 percent of households are expected to be families without children in them, while fully a third are expected to be nonfamily households, mostly people living alone. As Table 3 shows, only the age group 25–44 will continue to display the traditional pattern of child-

centered family households. Even so, a quarter of households in this age group will be nonfamily households, and nearly a fifth will consist of single people.

Not too many years ago, housing professionals thought almost exclusively about the housing needs and preferences of families with children. (Indeed, houses were generally referred to as "family" houses.) Now they need to understand the needs and preferences of several different household types, not just for housing construction but also including preferences for refitting a current home to meet the needs of a new, post-child-rearing household configuration and avoid a move from a cherished home or valued neighborhood.

One clear implication is a need to build flexibility into new or existing housing, to accommodate a variety of uses. Some builders are already designing spaces that can serve equally well as home offices or foster semi-independent living (for younger or older family members) before, after, or instead of housing children. Doing this effectively requires adapting basic processes—for instance, thinking through plumbing and other key structural features with an eye to potential modifications, either by the same or subsequent residents.

Building flexibility into housing financing is another implication, given the increasing numbers of householders at different stages of the life course. Financing has traditionally been designed for young couples acquiring a home they might live in for most of their adult lives (and has been based on the assumption that their income would increase over the life of the mortgage). But longer lives are creating new life stages, as well as multiple household types for a given individual over a lifetime.

Reverse mortgages may represent the first attempt to address this trend, but others are called for. For instance, there might be some way to make it easier for people who are not married to one another to jointly acquire housing without necessarily requiring joint dissolution. Similarly, changes in a given household, notably through family break-up or reformation, call for flexible financing instruments. Many midlife or older married couples started married life with someone else, complicating issues of homeownership and ownership transfer. These and other household changes make for a shorter duration in a given home, as well as more variation in income expectations.

Whether for financing, constructing, or managing housing, professionals could benefit from "thinking out of the box" about ways to accommodate the greater variety of household types. This implies considerable consumer research to validate new thinking before undertaking major changes. A common failing of housing specialists has been to act on assumptions about what a given household type might want instead of querying a representative group. Early

examples of high-rise condominiums designed for singles, or attached housing designed for the elderly, tended to underestimate Americans' overwhelming preferences for a house with its own private yard—however small and maintenance-free it might be—no matter what kind of household they lived in. A more varied household population calls for more varied housing, but it must be varied according to real preferences, not facile assumptions.

A broader range of households also raises several policy issues. For example, people have a tendency to share preferences and lifestyles according to their broad age group and family situation. On the one hand, that implies a "balkanization" of neighborhoods that could be harmful to maintaining a viable community. On the other hand, it implies that "mixed" neighborhoods could be riven by disputes over such classic issues as noise, appearance, and use and support of community resources, like parks. In the past, differences in affordability assured a certain homogeneity of tastes among those living in a given neighborhood. In the future, housing policymakers may have to be more proactive in managing age-based differences and establishing consensus-based standards.

Finally, households are not becoming equally diverse everywhere in the country. First, tabulations of 2000 census results for The Brookings Institution show that growing cities are adding population faster than households, and declining cities are losing population faster than households.[12] This seeming conundrum largely reflects the dominance of young adults among interstate movers. As they leave their parents' households, many choose new cities with vibrant job markets. They have their children in the new location, thus swelling the population. As a result, the traditional married with children families are a growing segment in many parts of the South and West, while they are now outnumbered by single-parent families in northern and midwestern cities, where population has declined significantly.

At the same time, the life course changes described earlier continue to challenge conventional notions of who lives where. For instance, the Brookings Institution's tabulations found that singles now make up a larger share of suburban households than married couples with children. Taken together, these analyses support the view that household change is more important than simple population change in determining changes in housing demand.[13] The study also calls for validating national trends via local studies before undertaking significant policy revisions based on any estimated changes.

C. The nation's traditional household is increasingly minority, while the nation's majority population increasingly lives in nontraditional households.

The nation's minority populations have grown significantly in recent decades, making an understanding of their housing wants and needs more than a simple gesture of sensitivity, particularly in metropolitan areas where these populations are numerous and/or growing. Nationwide, non-Hispanic whites now represent 70 percent of the population, while the minority population is more diverse as well as more numerous than in previous decades. Non-Hispanic blacks slightly outnumber Hispanics, but each group accounts for about 12 percent of the population. Asians account for over 4 percent. Although the number of American Indians, including Alaska Natives, nearly tripled over the century (partly due to better reporting but mostly due to improved socioeconomic status), they account for less than 2 percent of all Americans.[14]

Current projections from the U.S. Census Bureau factor in the relative youthfulness of minority populations, differences in their fertility and mortality, and likely trends in immigration. Pre-2000 projections suggested that in 2025 non-Hispanic whites will account for about 62 percent of the population, Hispanics for 18 percent, non-Hispanic blacks for 13 percent, Asians and Pacific Islanders for 6 percent, and American Indians for 1 percent.[15] When these projections are updated to incorporate the results of the 2000 census, which found higher than expected numbers of minority residents, they will probably suggest an even greater shift toward minority populations.

Minority groups' growing share of the nation's population is also changing the nation's household composition. Since household composition is so important in determining Americans' housing practices and preferences, housing professionals need to understand the differences between minority- and majority-group households, which occur in large part because minorities are younger than the majority population. The 2000 census recorded a median age of 38.5 for the majority, non-Hispanic white population, nearly a dozen years older than the median age of the Hispanic population (26.6). American Indians (28.5) were almost as young as Hispanics, while the median ages of the African-American population (30.5) and the Asian population (32.3) were not much higher. As a result, these populations are still dominated by households in the family-formation stage, and consequently contain a much larger proportion of families with children.

Minority households also differ from the majority pattern to the extent that so many, particularly Hispanics and Asians, are recent immigrants who have not yet established or

reconstituted their families. In addition, minority groups often display slightly different household patterns. For example, nuclear families are often more fluid and extended families more prominent, especially when raising children or caring for elders.[16] Thus, "subfamilies" are relatively more common, i.e. a nuclear family or portions of a nuclear family living in the household of another, related family—with obvious implications for housing.

The 2000 census found that white non-Hispanics accounted for 75 percent of the nation's households, as shown in Table 4.[17] Black non-Hispanic households represented 12 percent, Hispanic households 9 percent, and other races (largely Asians, American Indians, and Pacific Islanders) 5 percent. However, for housing purposes, it is important to look beyond simple differences in the numbers of households and pay appropriate attention to differences in the size and type of households within each group. For instance, the majority of white family households have no children in them, while the reverse is true for minority family households, especially Hispanics. This difference is a product of variations in both age and fertility.[18] For housing, these distinctions are a guide to preferences about size, characteristics, and location.

Table 4. Household Composition by Race/Ethnicity of Householder, 2000 and 2025

(in thousands)	All	White non-Hispanic	Black non-Hispanic	Hispanic origin	Other races
2000					
All households	105,480	79093	12055	9222	5109
Family households	72,111	53,014	7931	7375	3791
Without children <18	37,629	29501	3563	2840	1725
Married	30,118	25117	1924	1745	1331
Not married	7,511	4384	1639	1095	394
With children <18	34,483	23514	4368	4535	2066
Married	25,489	18604	1916	3261	1707
Not married	8,994	4384	1639	1274	359
Nonfamily households	33,369	26079	4124	1847	1318
Single	27,175	21425	3466	1338	946
With relatives	6,194	4654	658	509	372
2025					
All households	132,436	87854	17059	17924	9600
Family households	88,836	56932	10889	13970	7045
Without children <18	51,707	36014	5765	6352	3576
Married	40,840	30723	3257	4051	2809
Not married	10,867	5291	2508	2301	767
With children <18	37,129	20918	5124	7618	3469
Married	27,078	16493	2247	5482	2856
Not married	10,051	4425	2877	2136	613
Nonfamily households	43,600	30922	6170	3954	2555
Single	36,633	26361	5332	3052	1888
With relatives	6,968	4561	838	902	667

Source: 2000 census, U.S. Census Bureau; Thomas G. Exter

Another important difference for housing, especially for affordability and homeownership, is the different proportion of husband-wife families, especially among households with children. The great majority of white and "other races" families are husband-wife families, compared to less than half of black families and two-thirds of Hispanic families. As a result, compared to the majority population, more than twice as many black and Hispanic families with children are headed by someone who is not married.[19] Households with two parents can have two incomes or one income/one caretaker; households with just one parent have only one person who must be both provider and caretaker.

Nonfamily households also differ significantly by race and Hispanic origin. Blacks have the largest proportion of single-person households—nearly 30 percent. There are almost as many single-person as married-couple households in this population. Non-Hispanic white households have almost as large a share of single-person households, compared to just 15 percent of Hispanic households and 20 percent of Asian and other race households. These and other household differences reflect different family patterns, often different choices, such as a preference (or a financial need) to live with other family members or other people, versus residential independence.

The greater youthfulness of the nation's minority population, compared to the majority, drives household projections to 2025. Their principal implication for housing is that the trend toward more older people, and thus more households without children in them, affects the white population disproportionately. That is not to say that there will not be larger numbers of older people among minority groups, because they share the same trend to longer life expectancy. However, the relative youthfulness and high fertility rates of minority groups mute the impact of this shift. For instance, although only 28 percent of all households are projected to have children in them in 2025, 43 percent of Hispanic households should have children, 36 percent of Asian and other race households, and 30 percent of black households—compared to 24 percent of white non-Hispanic households. Thus, builders and planners interested in traditional family housing should be relatively more attuned to the housing preferences and needs of the growing minority populations.

The assumption of a continuation of each group's current household patterns yields some intriguing results. For instance, although the Hispanic population is beginning to outnumber the black population, the projections suggest almost equal numbers of black and Hispanic households in 2025—again underlining the value of following household over population trends for housing. This disparity reflects the slightly older nature of the black population, as well as a greater tendency for older African Americans than Hispanics to live independently, thus creating more households. It also reflects the more varied household composition of the black population, compared to the heavily family-oriented nature of the Hispanic population, which puts more

people into fewer households. Meanwhile, white non-Hispanic households will represent only two-thirds of all households, underscoring the value of understanding racial and ethnic differences that are relevant for housing.[20]

In sum, the nation's two major demographic changes—shifts in the population's age and racial composition—have already created appreciable differences in the nation's household picture. In an overall sense, the nation's traditional household is increasingly minority, while the nation's majority population increasingly lives in nontraditional households.

Perhaps the most important implication for housing comes from the industry's traditional focus on families with children. The survival of most adults to older ages has increased the share of older, childless adult households, and the increase in the minority population via immigration and higher fertility rates has increased the minority share of younger adult households. Consequently, households with children in them are increasingly minority.

The effects of this shift are already being seen in changing character of familiar locations. The 2000 census found that cities where growth reflected large numbers of recent immigrants were particularly likely to develop a more "suburban" character via strong growth in the numbers of married couples with children. Meanwhile, suburbs around the country became more "urban," as nonfamily households, especially young singles and elderly people living alone, came to outnumber traditional families in their populations.

Given the obvious differences in household type and income by lifestage, the intersection of trends in age and racial and ethnic origin suggest that housing analysts need to understand each large age/race/income/household segment within their particular housing market. Such an understanding will enable them to identify needs and preferences that are shared, and thus constitute a large market, and distinguish those needs and preferences that need special treatment.

For instance, key differences in household composition may call for substantial differences in housing and community design. In particular, the greater prevalence of multi-generational households among minority populations contradicts the nuclear family assumption of designers and builders and challenges them to think beyond a norm that is largely Northern European in origin. If careful consumer research supports such innovation, it may well prove attractive to the broad community, as three-, four-, and even five-generation families become more prevalent across all population groups. In general, the wider range of households and traditions calls for research to see if financing mechanisms need to be varied, or policies re-

evaluated, to make sure that facilities and other public parts of the community fit a more diverse household population.

D. Households that are post-family and pre-retirement generally have higher incomes than the average for all households, while households in minority populations tend to have generally lower incomes at all life stages.

Income plays a major role in determining Americans' housing resources and preferences, especially for homeownership. Much has been written about the increase in household income inequality in recent decades, but researchers have not fully identified the role demographic changes may have played, including the increasing diversity in age, race, and household composition described above.[21] In 2000, the bottom two-fifths of households accounted for less than 13 percent of the nation's household money income, down from 15 percent in 1967. The share held by the second and third fifths also declined. In contrast, the share held by the top fifth rose from 44 to 50 percent.

American household income reached an all-time high toward the end of the 20th century, and this trend continued as the new century opened: median household income in 2000 was $42,151, as shown in Table 5.[22] Population trends played a role, with record-low household size, a record-low dependency rate, especially of children, and a not unrelated record-high proportion of the population in the paid work force. Leaving nonfamily households aside, family income more than doubled in the last half of the century**,** despite the increasing diversity of family types. Married-couple families, often with two earners, had an income far above other household types, most of which tend to have one or no earners.

Table 5. Median Household Income, 2000

	Median income	Median income per household member	Gini ratio
All Households	$42,151	$21,972	0.447
25-34	$44,477	$19,112	0.402
35-44	$53,243	$20,497	0.402
45-54	$58,217	$26,366	0.402
55-64	$44,993	$28,436	0.457
65 +	$23,047	$19,793	0.472

Source: Table HINC-02, U.S. Census Bureau, www.census.gov

Household income varies considerably by age, as young adults tend to occupy the lower rungs of career ladders and older adults tend to have withdrawn, partly or completely, from the workforce. Consequently, the lengthening of the life span is creating a mid-life stage characterized by relatively high income**,** as shown by median income for 2000:

Households that are post-family but pre-retirement—essentially householders aged 45 to 64—generally have fewer dependents. In general, households in this age group also have higher incomes than the average for all households. The result is distinctly higher per capita income (income per household member). A common expectation among housing professionals has been that people would need less housing when their children departed for independent living and that city apartments might replace suburban houses for "empty-nest" households.[23] Yet anecdotal evidence suggests that many in this mid-life group are instead buying more, not less, housing and in a variety of residential locations.

Meanwhile, the Gini ratio in Table 5 shows that income inequality is particularly pronounced at older ages, reflecting in part different retirement resources as well as the cumulative effect of different lifetime earnings. Consequently, housing planners need to understand the full range of housing resources and needs among the rapidly growing older population.

By and large, Americans seem to accept the relative wealth of people in mid-life and older ages as natural and appropriate. Instead, their concerns about income inequality have focused on racial and ethnic minority groups. Household income is highest for Asians, followed by non-Hispanic whites, and lowest for blacks and then Hispanics. Since these population groups tend to have different sizes and types of households, per capita income is perhaps more descriptive of racial and ethnic differences. Non-Hispanic whites had the highest per capita income in 2000, followed by Asians, while Hispanics had the lowest, followed by blacks. This ordering parallels the relative age of each of these population groups, as well as their relative educational attainment—except that Asians have more education than non-Hispanic whites.

Some racial and ethnic populations are likelier to be poor than others. For example, the poverty rate for the non-Hispanic white population in 2000 was one-third the rate for Hispanics and non-Hispanic blacks and noticeably lower than the poverty rate for Asians and Pacific Islanders. Three decades earlier, the gap was slightly wider for blacks and slightly narrower for Hispanics.[24] These persistent racial differences reflect demographic differences (e.g. differences in age, educational attainment, marital status, and geographic location) as well as historically different treatment in the workplace, and they are reinforced by differences in ownership of assets and other kinds of wealth, particularly home ownership. [25]

Clearly, current demographic and income trends suggest that the housing research agenda should expand to include investigating and differentiating the needs and preferences, as well as the resources, of people in the second half of income-earning life, along with those who have retired. Overall, housing professionals might do well to think in terms of three or four different age-based household/family scenarios, at different income levels, now that older age groups are coming to equal younger ones in size.

For instance, recent experience has challenged assumptions that empty-nest households would "free up" valuable housing stock, and/or move into modestly sized housing of the type traditionally designed for young adults or retirees—the two historically childless types of households. Instead, many mid-life households seem to have used their increased per capita wealth to "trade up" to more lavish versions of the houses in which they raised their children.[26] At the same time, builders have learned that Sun City-type retirement communities have a limited audience among the elderly, even those that can afford them, and that older people have a varied range of housing preferences that are not just based on their economic resources. In fact, both mid-life and older Americans seem to favor housing that is very like the housing they chose when they were younger—single-"family" detached houses—even though they may transform the interiors to suit a different life stage.

Similarly, tracking trends in income by race and ethnicity for different age groups and household types seems logical, given the strong connection between income and residential choices, especially homeownership. For instance, although minority populations are younger than the majority, they, too, are experiencing longer life spans and thus the potential for greater wealth after children are grown but before income has necessarily peaked. Financing implications should be explored, including the role and effectiveness of government assistance/incentives, as well as such broad policy implications as issues of community cohesiveness.

III. Conclusion

The demographic context for housing is changing in two important ways. First, trends in life expectancy are increasing the population that is mid-life and older, both absolutely and relatively. Second, trends in fertility and immigration are increasing the racial and ethnic minority population, both absolutely and relatively. Both changes have considerable impact on the nation's household composition and thus on its housing needs and preferences.

From a housing perspective, it is vitally important to understand that longer lives are not only increasing the numbers of older adults but also offering them new life stages. Many people have jumped to the conclusion that a longer life span means more sick, old people—in other words, that it is adding unhealthy years to the end of life. But for several years now, research conducted at Duke University has signaled that health (active) life expectancy is growing as fast as overall life expectancy.[27] As a result, by 1997 Americans' life expectancy at birth was about 20 years longer than it was in 1929, and the number of years the average American lives past age 45 continues to grow.

Just as a rubber band, when stretched, expands in the middle, Americans are experiencing those "new" years in mid-life and reinventing mid-life in the process. At the same time, a new standard of energy and vitality has pushed old age into the 70s and beyond. As mid-life and older Americans take advantage of their new opportunities, it would be unwise to assume that housing location, design, and finance largely developed around young families will suit them in their later years.

It would be equally unwise to assume that America's growing minority populations are simply larger versions of minority populations of the past. Demographic changes are taking place within each group—notably, improvements in educational attainment and employment outcomes are creating more within-group income inequality. Other changes in both the social and economic environment are transforming preferences and opportunities for these populations, too.

Consequently, making specific recommendations for housing this changing population would be foolish, if only because many of its characteristics are new. Instead, housing professionals must make a concerted effort to investigate the needs and resources of a much more diverse household population if they wish to take advantage of, rather than suffer from changes in, the demographic context. Some directions for investigation are:

1. ***Discover what growing household segments really want from housing.***

   The already large and fast-growing household segments are mid-life post-child-rearing couples, older empty nesters, and single-person households in both stages. Other growing segments, such as nonmarital types of family households (e.g. older mother/mid-life child; mid-life parent(s)/young adult child), are considerably smaller.

   In particular, midlife Americans are pioneering a new life stage. Anecdotal evidence suggests that many understand that they have as many as 20 "new"

years, and they are not willing to spend them according to old patterns.[28] Many are using the absence of children to change careers, go back to school, or start a business, often out of a home office. Midlife married couples are now the nation's largest household type. Are they continuing to live in the home they bought for raising their children? Are they in a new home for a new life stage? Answers to these and similar questions can guide housing professionals in understanding this growing demographic group.

Older Americans are also taking the opportunity to carve out new life patterns or embellish old ones. Housing professionals have found that such financial aspects as tax levels, land values, and cost of living are most important to some older people. Others prioritize such health issues as access to medical facilities or simply a warmer climate, while still others are most interested in remaining close to their families. The latter priorities may be more important to people, generally women living alone, in later old age. In any case, the uneven success of much housing developed in recent years for the growing numbers of older Americans calls for greater understanding of their wants and needs.

Other newly important segments also call for answers to such housing questions as: do people newly living alone really want smaller spaces in new locations? What are the priorities of post-child households? The important thing is to substitute knowledge for assumptions.

2. ***Investigate household composition for each minority group, including any relationships with housing preferences.***

Since minority populations are growing rapidly, it is particularly important to understand what drives their housing choices. It would be disastrous to assume that these populations resemble non-Hispanic whites or even one another without verification: they each have their differences. Instead, investigations should start from ground zero. To illustrate, the nuclear family may be less useful as a concept for thinking about minority households than it is for non-Hispanic whites. For many groups, their culture of origin features extended family living arrangements, including more fluid child-raising responsibilities. Similarly, people from the Caribbean, Central America, and Africa often take consensual rather than marital unions for granted.[29] In particular, it might be useful to investigate sub-families (families living in the household of another family member) within these groups.

To what extent, if any, do these differences extend to housing needs and choices? And are there cost-effective ways to accommodate them?

3. ***Develop an understanding of the relationship between household income and household composition, especially in relation to life stage and to racial and ethnic origin.***

   To a great extent, younger adults (ages 25–44) are simultaneously investing in family/children, housing, and careers, while mid-life adults (ages 45–64) are simultaneously harvesting those same investments. This general tendency has profound implications for how much housing younger adults have access to, whether in terms of quality, location, or ownership. Monitoring the relative ease of homeownership is particularly important for that part of the population that is engaged in raising the next generation.

   At the same time, longer life spans mean that people now live in a greater variety of households over their life course and thus undergo more transitions between them. Renting may be something people look to during such transitions, perhaps apartment or townhouse living, too. Or these preferences may well be income-driven, or cost-driven, rather than true preferences.

   Over the longer term, how does affordability differ by life stage? It would be particularly useful to understand the dynamic between ownership and housing for the growing numbers of single-person households in mid-life and older age, especially since homeownership is Americans' primary way to hold wealth. Longitudinal databases could be helpful for addressing these and similar questions regarding the role of housing as an asset as well as shelter.

In the end, projections like the ones used in this paper tell us what will happen if preferences don't change, if policies and programs don't change, i.e., if people don't change. But people do change, along with the context in which they make their choices. Housing professionals who take a marketing, rather than a sales, approach to residential choices will influence those changes and thus those choices. Recall the fundamental difference between marketing and selling: selling is getting people to buy what you have, marketing is having what people want. This means finding out what people truly want, whether it be schools, security, convenience, price appreciation, or a particular type of house or neighborhood, and designing realistic and comprehensive packages accordingly.

[1] Projections are simple statements of what will happen if things keep going the way they are right now. Demographic projections are relatively reliable, largely because so much of the future population is present when the projections are being made. Moreover, U.S. trends have been relatively stable for more than a decade. However, households, not individuals, make housing choices. And household composition, as opposed to individual-level demographics, is driven by traditions and tastes as well as by the socioeconomic context. It is risky to predict changes influenced by preferences, especially when they involve fundamental beliefs and values about such core life activities as choosing a partner or having a child. Thus the household projections to 2025 developed for this paper have an illustrative value for directing future research and planning but not a predictive value for directing resource and investment decision-making.

[2] This paper is based on projections of the nation's households, originally developed by Thomas G. Exter for a study by this author for The Brookings Institution and updated and extended for this paper. (See Martha Farnsworth Riche, "The Implications of Changing U.S. Demographics for U.S. Cities," The Brookings Institution, Center on Urban and Metropolitan Policy, Washington, DC, 2001.) Although the Census Bureau also projects households, the bureau's projections have not been updated for many years and in any case cover a much shorter time span.

[3] These Census Bureau projections include net migration, i.e., immigrants, as well as natural increase. For an understanding of the thinking that underlies current government population projections, see U.S. Census Bureau, "Methodology and Assumptions for the Population Projections of the United States: 1999 to 2100," Population Division Working Paper No. 38, issued January 13, 2000.

[4] An oft-quoted Biblical verse (Isaiah 65:17–25) includes this promise: "No more shall there be … an infant that lives but a few days, or an old person who does not live out a lifetime; for one who dies at a hundred years will be considered a youth, and one who falls short of a hundred will be considered accursed." Some demographers estimate that this prophecy is close to being realized, and that current population projections, such as the Census Bureau projections used in this paper, significantly understate future life expectancy. See, for example, James W. Vaupel, "The Average French Baby May Live 95 or 100 Years," in Longevity: To the Limits and Beyond, ed. Jean-Marie Robine, James W. Vaupel, Bernard Jeune, and Michel Allard (New York, Springer-Verlag, 1997).

[5] A household consists of all the people who occupy a housing unit. A house, an apartment or other group of rooms, or a single room, is regarded as a housing unit when it is occupied or intended for occupancy as separate living quarters; that is, when the occupants do not live and eat with any other persons in the structure and there is direct access from the outside or through a common hall. There are two major categories of households, "family" and "nonfamily." A family household includes the related family members and all the unrelated people, if any, such as lodgers, foster children, wards, or employees who share the housing units. A nonfamily household can be a person living alone in a housing unit, or a group of unrelated people sharing a housing unit such as partners or roomers. The count of households excludes group quarters. U.S. Census Bureau; www.census.gov.

[6] Rosalind Berkowitz King, "Time Spent in Parenthood Status Among Adults in the United States," Demography 36 (August 1999), p. 380. Women spend slightly more of their lives parenting, men slightly less, as women tend to retain custody of their children after divorce. However, given remarriage rates, men spend about twice as much time as women as custodial, rather than biological parents, as well as mixed (biological and custodial) parents. Overall, white men spend an estimated 93 percent of the time white women do in parenting; African-American men spend an estimated 83 percent of African American women's time.

[7] For statistics from 1970 and earlier, see U.S. Census Bureau, Historical Statistics of the United States, Washington, DC, 1975, Series A 288–319.

[8] For statistical purposes, the official definition of children is "under age 18, living in the home."

[9] The official definition of a householder is: "The person (or one of the people) in whose name the housing unit is owned or rented (maintained) or, if there is no such person, any adult member, excluding roomers, boarders, or paid employees. If the house is owned or rented jointly by a married couple, the householder may be either the husband or the wife. The person designated as the householder is the 'reference person' to whom the relationship of all other household members, if any, is recorded. The number of householders is equal to the number of households." (U.S. Census Bureau).

[10] U.S. Census Bureau, March 2000 Current Population Survey, "Families and Living Arrangements," www.census.gov.

[11] Diane J. Macunovich, Richard A. Easterlin, Eileen M. Crimmins, and Christine Macdonald, "Echoes of the Baby Boom and Bust: Recent and Prospective Changes in Living Alone Among Elderly Widows in the United States," Demography 32 (February 1995): 17–28.

[12] William H. Frey and Alan Berube, "City Families and Suburban Singles: An Emerging Household Story from Census 2000, February 2002, Brookings Institution Center on Urban and Metropolitan Policy, www.brookings.edu.

[13] For instance, Frey and Berube also found that during the 1990s, "central city population growth was at a three-decade high, but household growth was at a three-decade low."

[14] The American Indian population is so small that it is included with Asians and Pacific Islanders in most of the tabulations displayed in this paper, under the heading " Other Races."

[15] The percentages do not add to 100 because of rounding. Hispanics have been excluded from all racial groups, but since Hispanic is an ethnic, not a racial identification, it is quite possible that a shift in identification patterns could reshape these

proportions. U.S. Census Bureau, "Projections of the Total Resident Population," NP-T4-E, Internet Release, December 1999; www.census.gov.

[16] See, for example, Roderick J. Harrison and Claudette Bennett, "Racial and Ethnic Diversity," in State of the Union: America in the 1990s, Reynolds Farley, ed. (New York, Russell Sage, 1995), p. 191; Kelvin M. Pollard and William P. O'Hare, "America's Racial and Ethnic Minorities," Population Bulletin, vol. 54, no. 3 (Washington, DC: Population Reference Bureau, September 1999), pp. 22–23.

[17] Although Hispanics may be of any race, the Census Bureau has begun to publish data for non-Hispanic racial populations to meet users' demands for a crisp picture of the nation's racial and ethnic composition. When using these data, it is important to remember that households may, and often do, contain people of more than one race or ethnic group.

[18] The age difference between racial and ethnic populations is a product of both immigration and differences in fertility, as the white non-Hispanic population has lower fertility (i.e., fewer children per woman).

[19] Current international data show that consensual unions, rather than marital unions, are prevalent in Sub-Saharan Africa and many parts of Latin America and the Caribbean. U.S. family patterns may well reflect patterns prevailing in the countries of origin of minority populations.

[20] These projections do not take into account the potential effects on racial identification of intermarriage between population groups. In addition, since Hispanic is an ethnic, not a racial origin, it is possible that racial definitions may become more (or less) important to members of the Hispanic origin population.

[21] For an early look, see "Growth in Family Income Inequality, 1970–1990: Industrial Restructuring and Demographic Change," By Albert Chevan and Randall Stokes, Demography 37 (August 2000): 365–380. The authors conclude that both industrial restructuring and demographic change were behind the rise in family income inequality.

[22] After taking account of inflation, this represented no change from 1999. U.S. Census Bureau, "Money Income in the United States: 2000," P60–213, 2001.

[23] See, for example, Jennifer T. Moulton, "Ten Steps to a Living Downtown," a discussion paper prepared for The Brookings Institution Center on Urban and Metropolitan Policy, October 1999, p. 3.

[24] See Roderick J. Harrison and Claudette Bennett, "Racial and Ethnic Diversity," in State of the Union: America in the 1990s, Reynolds Farley, ed.,Vol 2 (New York: Russell Sage, 1995), p. 195.

[25] See William P. O'Hare, A New Look at Poverty in America, Population Reference Bureau Bulletin, Vol. 51, no. 2 (Washington, DC: Population Reference Bureau, Inc., 1996), p. 12.

[26] Evidence for this phenomenon is still largely anecdotal and awaits serious life-course based research.

[27] See, for example, Kenneth G. Manton and Kenneth C. Land, "Active Life Expectancy Estimates for the U.S. Elderly Population: A Multidimensional Continuous-Mixture Model of Functional Change Applied to Completed Cohorts, 1982–96," Demography 37 (August 2000): 253–256; Kenneth G. Manton, Larry Corder, and Eric Stallard, "Chronic Disability Trends in Elderly United States Populations: 1982–94," Proceedings of the National Academy of Sciences 94 (1997): 2593–98.

[28] Focus groups of mid-life women commissioned by the author for a major publishing firm clearly displayed this phenomenon.

[29] See, for example, Chapter 2, "Women and Men in Families," in The World's Women 2000: Trends and Statistics (New York: United Nations, 2000).